INITIAL STUDY

The Department of Toxic Substances Control (DTSC) has completed the following Initial Study for this project in accordance with the California Environmental Quality Act (§ 21000 et seq., California Public Resources Code) and implementing Guidelines (§15000 et seq., Title 14, California Code of Regulations).

I. PROJECT INFORMATION

Project Name: PG&E TOPOCK COMRESSOR STATION SITE – In-Situ Hexavalent Chromium Reduction Pilot Test Work Plan

Site Address: Approximately 15 miles southeast of Needles, California

City: Unincorporated State: CA Zip Code: _____ County: San Bernardino

Company Contact Person: Yvonne J. Meeks, Site Remediation – Portfolio manager, Pacific Gas and Electric Company

Address: 4325 South Higurea Street

City: San Luis Obispo State: CA Zip Code: 93401 Phone Number: (805) 243-2257

PROJECT DESCRIPTION:

Pursuant to Chapter 6.5 of the Health & Safety Code, the Department of Toxic Substances Control (DTSC) is considering a request from the Pacific Gas and Electric Company (PG&E) for approval of a Corrective Action Work Plan[1] that describes field activities for pilot tests to be conducted to evaluate in-situ technologies to reduce hexavalent chromium (CrVI) to trivalent chromium (CrIII) in groundwater in the Colorado River floodplain adjacent to the Topock site. The results of the pilot test would be used to:

- Evaluate the effectiveness and persistence of selected in-situ reductants under actual site conditions
- Provide additional information on site conditions necessary to determine the feasibility of in-situ reduction of the CrVI plume up-gradient of the current TW-2 pumping system
- Assist with the selection of preferred in situ reductant(s) for possible long-term site management

PROJECT ACTIVITIES:

The following is a summary of activities which are described in more detail in the Work Plan and are proposed to be undertaken as part of the In-Situ Pilot test:

- Injection Well Installation

  One injection well cluster PTI-1S/D and six monitoring well nests (PT-1 to PT-6) will be installed on the floodplain in the area east of the monitoring well MW-20 Bench (see Figure 1). All wells will be installed during one mobilization, if possible.

  Access to the floodplain will occur off Park Moabi Road near existing monitoring well (MW) 35, located approximately 1,500 feet north of the project site. This access route has been previously established by the Bureau of Land Management (BLM), which has responsibility for managing this portion of the floodplain, including the project site.

  The wells will be drilled using a rotosonic drilling rig equipped with a 10-inch outside diameter drill casing. The borehole for the PTI-1D will be drilled to total depth (i.e. the top of the bedrock) first; continuous coring and geologic logging will be performed at this location and for each of the monitoring well locations. PG&E will then confer with DTSC regarding gravel pack and screen size for the deep well; the selection of shallower screened intervals (if applicable) and gravel pack for that location will also be made at that time.

[1] MWH, *In-Situ Hexavalent Chromium Reduction Pilot Test Work Plan - Floodplain Reductive Zone Enhancement, August 2005*

The total depth of drilling at each location (except PTI-1S) will be approximately 120 feet or until the Miocene Conglomerate bedrock is encountered, so that the deepest well screens can be placed at the bottom of the saturated alluvium. At PTI-1S the total depth of the boring will be approximately 70 feet so that the well screen is roughly centered within the saturated fluvial material.

- Well Development and Pre-Injection Sampling

  Following well construction, each well will be developed using a surge block, bailer, and submersible pump. During development, temperature, pH, specific conductance, and turbidity will be measured using field instruments.

- Tracer Tests

  Concurrent with the pilot test injection, a short-duration tracer test will also be initiated to better understand the flow conditions in the pilot test area. The conservative, non-toxic tracer potassium bromide will be injected in wells PTI-1S/D and PTI-2 S/M/D. Monitoring in the nearby well network will demonstrate the injected solution migration and confirm the gradient influenced by extraction wells TW-2 and PE-1. The test data will also be used to refine estimates of aquifer porosity, dispersivity, and groundwater velocity, which will be useful for pilot test interpretation and potential full-scale design.

- Reagent Injection

  The reagent and chase water will be allowed to gravity feed if possible, but depending on the rate of flow a pump will be available to assist in injection. The injection pressures will be kept below 50 pounds per square inch (psi). No permanent aboveground equipment will be employed during the pilot test. The proposed approach will minimize the duration and nature of site disruptions, by using temporary hoses to convey batches of reagents from transportable containers to the injection wells. Extracted and treated groundwater from the currently operating extraction system will be used as the dilutant and chase water for the reagent. The groundwater will be blended with the reagents in above ground transportable containers and the resulting mixture will be sent to the injection well via hose. The transportable containers and hoses will be removed from the area following the injection, leaving only the wells on site.

- Groundwater Monitoring and Sampling

  It is planned to conduct groundwater monitoring and sampling immediately following injection, and then daily for the first week, weekly for the first month, and then monthly thereafter through the completion of the test. It is anticipated that the conservative bromide tracer will be detected first, followed later by detections of the reductant or the influence of the reductant. Field instruments and test kits will be used to monitor for the arrival of the bromide tracer and reductant effect in the pilot test monitoring well network.

- Waste Management and Equipment Decontamination

  Drill cuttings generated during drilling of the pilot test wells will be contained in lined roll-off bins temporarily staged near the MW 35 well or MW 20 bench. After sampling and characterization of the drill cuttings are completed, the cuttings bins will be removed from the drilling sites for disposal by PG&E. The drill cuttings will be screened for chromium. If the drill cuttings are characterized as a hazardous waste, they will be transported off site for disposal at a permitted hazardous waste facility. It is anticipated that the cuttings bins will be temporarily staged at the drilling sites for no longer than 45 days.

  Water generated during drilling, well development, and sampling activities will be collected in drums or portable storage tanks temporarily and transferred by forklift or truck to storage tanks in a staging area (MW 35 site or MW 20 bench) for characterization and treatment or disposal at a permitted facility. Elevated chromium concentrations are anticipated in the groundwater removed from the pilot test wells. Therefore, secondary containment will be provided for the storage tanks in the staging area.

  Incidental trash will be collected from the work area at the conclusion of each workday and placed in a trash collection bin.

'I. DISCRETIONARY APPROVAL ACTION BEING CONSIDERED BY DTSC

☐ Initial Permit Issuance ☐ Closure Plan ☐ Removal Action Workplan

☐ Permit Renewal ☐ Regulations ☐ Interim Removal

☐ Permit Modification ☐ Remedial Action Plan ☒ Other (Specify) In-Situ Pilot Study Workplan

Program/ Region Approving Project: Geology, Permitting & Corrective Action Branch/ Cypress Office

DTSC Contact Person: Norman Shopay, Sr. Engineering Geologist

Address: 700 Heinz Avenue, Suite 100

City: Berkeley State: CA Zip Code: 94710 Phone Number: (510) 540-3943

III. ENVIRONMENTAL RESOURCES POTENTIALLY AFFECTED

The boxes checked below identify environmental resources in the following ENVIRONMENTAL SETTING/IMPACT ANALYSIS section found to be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact."

☒ None Identified ☐ Aesthetics ☐ Agricultural Resources

☐ Air Quality ☐ Biological Resources ☐ Cultural Resources

☐ Geology And Soils ☐ Hazards and Hazardous Materials ☐ Hydrology and Water Quality

☐ Land Use and Planning ☐ Mineral Resources ☐ Noise

☐ Population and Housing ☐ Public Services ☐ Recreation

☐ Transportation and Traffic ☐ Utilities and Service Systems

IV. ENVIRONMENTAL IMPACT ANALYSIS

The following pages provide a brief description of the physical environmental resources that exist within the area affected by the proposed project and an analysis of whether or not those resources will be potentially impacted by the proposed project. Preparation of this section follows guidance provided in DTSC's California Environmental Quality Act Initial Study Workbook [Workbook].

Mitigation measures which are made a part of the project (e.g.: permit condition) or which are required under a separate Mitigation Measure Monitoring or Reporting Plan which either avoid or reduce impacts to a level of insignificance are identified in the analysis within each section.

1. Aesthetics

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Waste Management and Equipment

Description of Environmental Setting:

The In-Situ Pilot Study site is located in the floodplain of the Colorado River and in an area above the floodplain, identified as the MW-20 bench. Views of the Colorado River are afforded from nearby elevated areas. Interstate 40, located immediately south of the site, is not a state designated scenic highway.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Have a substantial adverse effect on a scenic vista.

The project would have an effect on the existing scenic quality of the floodplain area and on an area above the flood plain on the MW-20 bench. However, this effect is not considered adverse because project activities would be conducted within a relatively short time frame, and would not involve construction of any permanent, above-ground structures.

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

The project would not result in damage to scenic resources because it is not located within a state scenic highway.

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

Refer to Response a. above.

d. Create a new source of substantial light of glare that would adversely affect day or nighttime views in the area.

The project does not have the potential to affect day or nighttime views in the area because project activities do not involve the use of lights, and all activities would be conducted during daylight hours.

Specific References:

- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Aesthetics Section. Topock Compressor Station, Topock, California. September.

- CH2M HILL. 2005. Environmental Information Sheet, PE-1 Pipeline, Aesthetics Section, Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

2. Agricultural Resources

Project activities likely to create an impact:

- None

Description of Environmental Setting:

The project site is located on land managed by the Bureau of Land Management (BLM) for the U.S. Bureau of Reclamation (BOR) and is not subject to local zoning laws and regulations. The project site is not located within an area of prime, unique, or important farmland.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

The proposed project is not located within an area of prime, unique, or important farmland. Further, proposed activities do not entail conversion of existing zoning or land uses.

b. Conflict with existing zoning or agriculture use, or Williamson Act contract.

The project site is located on land managed by the BLM for the BOR and is not subject to local zoning laws and regulations or Williamson Act provisions.

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses.

See Response a. above

Specific References:

- County of San Bernardino Planning Department. Site Data Sheet. Provided by Shirley Hall, Planning Department.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

3. Air Quality

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Groundwater Monitoring and Sampling
- Waste Management and Equipment Decontamination

Description of Environmental Setting:

The project site falls within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). The U.S. Environmental Protection Agency (EPA) has designated certain geographical areas within the jurisdiction of the MDAQMD as not being in compliance with (i.e., not being attained) National Ambient Air Quality Standards (NAAQS): the project site falls within an area classified as non-attainment for particulate matter (PM_{10}) and ozone. In addition, the California Air Resources Board has classified the Mojave Desert Air Basin as non-attainment for PM_{10} and ozone pursuant to the provisions of the California Clean Air Act. The MDAQMD has adopted State and Federal attainment plans for these constituent pollutants.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Conflict with or obstruct implementation of the applicable air quality plan.

Construction of the proposed facilities would result in temporary ground use for well installation activities and emissions from construction vehicles and equipment. Project operations involve one or two truck trips to deliver the reagents. Injection of the reagent is expected to occur via gravity flow; however, a temporary pump will be available onsite if needed to facilitate injection which would be powered by a generator. Subsequent monitoring activities involve periodic short-term operation of small power generator to purge groundwater from the monitoring wells.

The MDAQMD has prepared the *Federal Particulate Matter (PM_{10}) Attainment Plan* to address the EPA's moderate non-attainment classification for PM_{10}. However, the project site is not located within the planning area. Therefore, project construction and operations would not affect implementation of the attainment plan. However,

to insure that the project will not have an adverse impact on air resources, project activities will comply with the applicable provisions of MDAQMD Rule 403 to minimize fugitive dust emissions, as noted in Section 3(b) below. MDAQMD has also adopted the *2004 Ozone Attainment Plan (State and Federal)*. As noted in the Attainment Plan, MDAQMD does not propose any additional measures beyond the existing Reasonably Available Control Technology requirements applicable to new sources. This would not apply to project construction or operations. Implementation of the project would not obstruct implementation of this Ozone Attainment Plan.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Ground-use activities during construction would result in short-term emissions of PM_{10} and ozone precursors. The temporary increase in emissions would be limited to an approximately four-week time period. Given the relatively small area of use (approximately one-quarter acre) and short construction period, construction activities would not result in substantial emissions that would exceed air quality standards. Construction activities would be conducted consistent with MDAQMD Rule 403.2, which provides reasonable precautions to minimize fugitive dust emissions, including the following:

- Use periodic watering for short-term stabilization of surface area to minimize visible fugitive dust emissions
- Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days, except when such a delay is due to precipitation that dampens the surface sufficiently to eliminate visible fugitive dust emissions
- Cleanup project-related track-out or spills on publicly maintained paved surfaces within twenty-four hours
- Reduce non-essential earth-moving activity under high wind conditions.

During project operations, reagent injection is planned to occur via gravity flow. However, a pump will be available if needed, which would be powered by a generator. Emissions from the short-term use of this generator would be limited to a one-week period, and would not result in substantial emissions of criteria pollutants. No violation or substantial contribution to a violation of air quality standards would result from project implementation.

c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The project site is located in an area designated as non-attainment for ozone and PM_{10}. However, project construction activities would result in a use of less than one-quarter acre and would be complete within approximately one month. These short-term activities would result a minor and temporary increase in PM_{10} and ozone emissions. Project operations are also temporary, and would be completed within an approximately one-year time frame. Within this period, small quantities of air emissions may result from temporary use of a power generator. Project implementation would not result in a significant cumulative increase in PM_{10} or ozone.

d. Expose sensitive receptors to substantial pollutant concentrations.

No sensitive receptors, including schools, hospitals and senior residences, are located in proximity to the project site. The project would result in minor temporary emissions during construction activities, and negligible emissions during project operations. No impact to sensitive receptors would result from project implementation.

e. Create objectionable odors affecting a substantial number of people.

The proposed project may produce detectable odors resulting from operation of diesel equipment during construction. No detectable odors would be generated during operations. Further, the project is located in a remote area with minimal population in surrounding areas. No impact would result from project implementation.

f. Result in human exposure to Naturally Occurring Asbestos (see also Geology and Soils, f.).

Minimal ground use would be required during construction of the project facilities. The soils in the area are not known to contain naturally occurring asbestos, and no impact is anticipated.

Specific References:

- MDAQMD jurisdiction map: http://www.mdaqmd.ca.gov/index.htm

- MDAQMD PM_{10} Attainment Plan: http://www.mdaqmd.ca.gov/rules_plans/documents/MDPAPM10Plan.pdf

- MDAQMD Ozone Attainment Plan: http://www.mdaqmd.ca.gov/rules_plans/documents/MDOzonePlanFinal.pdf

- MDAQMD Rule 403.2: http://www.mdaqmd.ca.gov/rules_plans/documents/403_2_000.pdf
- California Department of Conservation. Report and map of areas of naturally occurring asbestos: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ofr/ofr_2000-019.pdf

- National Area Designation Map (Ozone): http://www.epa.gov/air/oaqps/greenbk/mapo8h1h.html

- National Area Designation Map (PM_{10}): http://www.epa.gov/air/oaqps/greenbk/mappm10.html

- State Area Designation Maps: http://www.arb.ca.gov/desig/adm/adm.htm#state

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

4. Biological Resources

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Tracer Tests
- Reagent Injection
- Groundwater Monitoring and Sampling
- Waste Management and Equipment Decontamination

Description of Environmental Setting:

- Candidate, Sensitive Or Special Status Species

Several federally listed species are known to occur in close proximity to the site. These species include the bonytail chub (*Gila elegans*), razorback sucker (*Xyrauchen texanus*), Yuma clapper rail (*Rallus longirostris yumanensis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and desert tortoise (*Gopherus agassizii*). These species are federally listed as endangered with the exception of the tortoise which is listed as threatened. The chub and sucker occur within the aquatic habitat associated with the Colorado River. The rail and flycatcher occur within the marsh and riparian habitats associated with the Colorado River floodplain. The tortoise occurs within the desert habitat associated with the upland. The project site is not located within critical habitat for any of the listed species.

Extinction of the listed fish species is being forestalled by stocking into the remaining wild populations by the Bureau of Reclamation (BOR). Where natural recruitment is occurring, it is not known if the current level will sustain the existing population levels. Where recruitment is not occurring, loss of the remaining wild populations is expected. Due to the low probability of occurrence, surveys were not performed for these species. In Spring 2005, biological surveys were conducted for the tortoise and flycatcher in accordance with United States Fish and Wildlife Service (USFWS) protocols. The survey results indicated absence of these species at or directly adjacent to the project site. In addition, a review of the recent USFWS survey results for the rail indicated absence of this species at the site.

In 2003, a California Natural Diversity Database (CNDDB) search was performed within two miles of the project site. The search revealed records for bonytail chub, razorback sucker, Yuma clapper rail, and nelson's bighorn sheep. The search did not reveal records for the tortoise, flycatcher, or special status plant species in the area. The BLM has identified in the desert areas they manage several plants including the ocotillo (*Fouquieria splendens*), palo verde (*Cercidium* sp.), acacia (*Acacia greggii*), mesquite (*Prosopis* sp.), and all cacti species. The palo verde, acacia, mesquite, golden cholla (*Opuntia*

echinocarpa), beavertail cactus (*Opuntia basilaris*), and red barrel cactus (*Ferocactus pilosus*) are adjacent to the project area.

- Riparian Habitat Or Other Sensitive Natural Community

The pilot study project is located adjacent to the 37,515 acre Havasu National Wildlife Refuge (HNWR) that is managed by the USFWS. The Refuge extends for approximately 26 miles along the Colorado River, from Needles, California to Lake Havasu City, Arizona. The river is the primary aquatic habitat located approximately 1,800 feet east of the Topock Compressor Station. It is approximately 700 to 900 feet wide and 8 to 15 feet deep at this location. Little to no submergent vegetation exists within the river. Small patches of emergent vegetation along the banks consist of common reed (*Phragmites communis*), sedges (*Carex* sp.), cattails (*Typha* sp.), and bulrush (*Scirpus* sp.). Tamarisk (*Tamarix* sp.) thicket exists along the shoreline of the Colorado River. This plant community consists of dense monotypic stands of tamarisk. This exotic plant has invaded the riparian habitats within the Colorado River floodplain.

Mojave wash habitat comprises the Bat Cave Wash and the smaller drainages in the area. Bat Cave Wash is a dry arroyo that flows northerly to its confluence with the Colorado River approximately 3,500 feet north of the Topock Compressor Station. Although this wash may periodically flood during storm water runoff events, it remains dry throughout most of the year due to arid desert conditions. The wash floor is primarily barren of vegetation and comprises of a sand, gravel, and cobblestone substrate. Although the drainages occur within the creosote bush scrub plant community, these ephemeral washes contain small patches of acacia and mesquite. Desert riparian habitat exists at the confluence of Bat Cave Wash and the Colorado River. This plant community comprises of scattered mesquite, palo verde, and tamarisk.

- Federally Protected Wetlands

The closest designated wetland unit to the proposed site is the Topock Marsh Unit, consisting of 4,000 acres of wetlands that are managed as migratory waterbird habitat. The entrance to the marsh is upstream of the Topock Compressor Station on the east side of the river, over one mile from the facility. Several smaller wetlands are located along the Colorado River. A small wetland is associated with an inlet to the river approximately 1,700 feet east of the Topock Compressor Station. The wetlands are primarily dominated by common reed with various other emergents including cattails, sedges, and bulrushes.

- Native Resident, Migratory Fish, Wildlife Species, Nursery Sites Or Corridors

The Colorado River floodplain serves as a nursery and corridor for several wildlife species. The aquatic habitat of the Colorado River supports several game fish species including striped bass (*Morone saxatillis*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), white crappie (*Pomoxis annularis*), flathead catfish (*Pylodictis olivaris*), and channel catfish (*Ictalurus punctatus*). The marsh and riparian habitat associated with the HNWR including the Topock Marsh provides a sanctuary for nearly 300 resident and migratory bird species. Avian species commonly associated with the refuge include American coot (*Fulica americana*), mallard (*Anas platyrhynchos*), pied-billed grebe (*Podilymbus podiceps*), great egret (*Casmerodius albus*), great blue heron (*Ardea herodias*), and belted kingfisher (*Ceryle alcyon*). Mammalian species may include coyote (*Canis latrans*), stripped skunk (*Mephitis mephitis*), beaver (*Castor canadensis*), and raccoon (*Procyon lotor*).

The terrestrial habitat within the Topock Compressor Station supports very little to no wildlife due to the removal of native vegetation, presence of fencing, and high level of human activity. The undeveloped terrestrial habitat surrounding the facility supports a higher diversity and abundance of wildlife. Reptiles that may occur in the area include chuckwalla (*Sauromalus obesus*), side-blotched lizard (*Uta stansburiana*), western whiptail lizard (*Cnemidophorus tigris*), zebra-tailed lizard (*Callisaurus draconoides*), coachwhip (*Masticophis flagellum*), gopher snake (*Pituophis melanoleucus*), and western dimondback rattlesnake (*Crotalus atrox*). Avian species include red-tailed hawk (*Buteo jamencensis*), Gambel's quail (*Callipepla gambelii*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), song sparrow (*Melospiza melodia*), Canyon wren (*Catherpes mexicanus*), and brewer's blackbird (*Euphagus cyanocephalus*). Small mammals may include deer mouse (*Peromyscus maniculatus*), Merriam's kangaroo rat (*Dipodomys merriami*), desert woodrat (*Neotoma lepida*), California ground squirrel (*Spermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), and black-tailed hare (*Lepus californicus*). Predators may include coyote (*Canis latrans*), desert kit fox (*Vulpes macrotis*), American badger (*Taxidea taxus*), and bobcat (*Lynx rufus*). Bat Cave Wash and other adjacent ephemeral washes may be used as wildlife corridors between the surrounding Chemehuevi Mountains and Colorado River.

- Local Policies Or Ordinances

San Bernardino County has various policies relating to the conservation and protection of biological resources. Native desert plants and trees are protected in Chapter 4 (Desert Native Plant Protection), Division 9 (Plant Protection and Management) of San Bernardino County's Development Code (Title 8). In accordance with Chapter 4, Desert Native Plant Protection, a permit is needed for the removal or transplantation of mature *Dalea spinosa* (smoke trees), mature individuals of the genus *Prosopis* (mesquite trees), all species of the family Agavaceae (century plants, nolinas, yuccas), creosote bush (*Larrea tridentata*) rings (10 feet or greater in diameter), and all Joshua trees (*Yucca brevifolia*).

Additionally, the BLM has identified in the desert areas they manage several plants including the ocotillo (*Fouquieria splendens*), palo verde, acacia, mesquite, and all cacti species. The palo verde, acacia, mesquite, golden cholla, beavertail cactus, and red barrel cactus are adjacent to the project area.

- Habitat Conservation Plan, Natural Community Conservation Plan, Or Other Approved Local, Regional, Or State Habitat Conservation Plan

In 2004, six Federal agencies including the BOR completed the lower Colorado River (LCR) Multi-species Conservation Program (MSCP). The LCR MSCP planning area is defined by the LCR and its historical floodplain from the full pool elevation of Lake Mead in the Grand Canyon to the Southerly International Boundary (SIB) with Mexico and includes portions of Mohave, La Paz, and Yuma counties in Arizona; San Bernardino, Riverside, and Imperial counties in California; and Clark County, Nevada. The USFWS worked closely with the LCR MSCP Federal and non-Federal participants to develop the Habitat Conservation Plan (HCP) and other documents. A USFWS biological opinion was issued for the MSCP in March 2005.

PG&E has been issued a non-jeopardy biological opinion by USFWS for ongoing maintenance activities on the PG&E gas pipeline system in the California desert on lands managed by the BLM and its effects on the desert tortoise and its critical habitat. In addition, a finding of no effect was made by USFWS in September 2004 regarding implementation of the recently constructed Topock Water Treatment Plant project.

The March 2005 biological opinion issued by the USFWS for the MSCP includes specific anticipated actions undertaken by the BOR, BLM, and USFWS and other federal, state and local agencies. However, the specified actions do not include remedial and investigative activities typically undertaken at the Topock site, including the proposed In Situ Pilot Study.

However, because the project is located on BLM lands, all project activities are expected to be subject to stipulations provided previously by the BLM in the September 17, 2004 Action Memorandum. These include, but are not limited to, the following:

- Preconstruction surveys for avian nesting pairs, nests, and eggs will occur in areas proposed for any vegetation removal and active nesting areas flagged. If nesting birds are detected, vegetation removal will be avoided during the nesting season (generally March 15 to October 1 for most birds). All construction activity within 200 feet of active nesting areas will be prohibited until the nesting pair/young have vacated the nests. (Note: construction will occur outside the nesting season; therefore, impacts to nesting birds are not anticipated).
- The biologist will be responsible for assisting crews in compliance with the minimization measures, performing surveys in front of the crew as needed to locate and avoid listed species, and monitoring compliance. Preconstruction surveys by a biologist will be implemented in impact areas immediately prior to initiation of ground-disturbing activities. The inspection will provide 100 percent coverage of the area within the project limits.
- To the maximum extent possible, facilities will be sited within an existing right–of-way (ROW) and previously-disturbed or barren areas to limit new surface disturbance.
- All PG&E employees and its contractors involved with the proposed project will be required to attend PG&E's threatened and endangered species education program prior to initiation of activities. New employees will receive formal, approved training prior to working on-site.
- Palo verde, ocotillo, mesquite, cat-claw, smoke tree, and cacti species are considered sensitive by the BLM. To the extent practicable, these species will be avoided. If avoidance is not possible, these species will be transplanted when practical. Should any of the aforementioned plants be destroyed, they will be replaced.
- PG&E will designate a field contact representative (FCR) who will be responsible for overseeing compliance with the minimization measures. The FCR must be onsite during all construction activities. The FCR will have authority to halt all activities that are in violation of the minimization measures and/or pose a danger to listed species. The FCR will have a copy of all minimization measures when work is being conducted on the site. The FCR may be a project manager, PG&E representative, or a biologist.
- The area of disturbance will be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public health and safety, and other limiting factors. As needed, work area

boundaries will be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying.
- All activities will be restricted to a pre-determined corridor. If unforeseen circumstances require project expansion, the potential expanded work areas will be surveyed for listed species prior to use of the area. All appropriate minimization measures will be implemented within the expanded work areas based on the judgment of the agencies and the project biologist. Work outside of the original ROW will proceed only after receiving written approval from the BLM.
- All construction vehicles and equipment will be periodically checked to ensure proper working condition and to ensure that there is no potential for fugitive emissions of oil, hydraulic fluid or other hazardous products. The BLM will be informed of any hazardous spills.
- Workers will exercise caution when traveling to and from the project area. To minimize the likelihood for vehicle strikes of listed species, speed limits when commuting to project areas on ROW roads will not exceed 20 miles per hour.
- Employees will be required to check under their equipment or vehicle before it is moved. If a desert tortoise is encountered, the vehicle is not to be moved until the animal has voluntarily moved to a safe distance away from the parked vehicle.
- Intentional killing or collection of either plant or wildlife at construction sites and surrounding areas will be prohibited. The BLM will be notified of any such occurrences.
- Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to predators.
- No pets or firearms will be allowed onsite.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

No candidate, sensitive, or special status species are known to occur at the project site, as documented through recent biological surveys. There is a small potential for the southwestern willow flycatcher to occur at the site during the nesting bird season, generally considered to be March 15 to October 1. However, project construction activities would fall outside of the nesting bird season and would comply with established stipulations provided by the BLM to insure that nor impacts to biological resources occur.

Equipment utilized during project operations, specifically during reagent injection, would be staged above the floodplain on the MW-20 bench. This would limit the potential for impacts in the event that southwestern willow flycatcher was present. Subsequent groundwater monitoring will be consistent with procedures prescribed by BLM and DTSC for wells located on the river floodplain. No impacts are anticipated during project operations.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

During construction, an estimated 0.25 acre would be used on the Colorado River floodplain. Minimal vegetation removal is required, consisting mainly of non-native tamarisk. However, project implementation will be subject to a Streambed Alteration Agreement, pursuant to Section 1600 et seq. of the California Fish and Game Code. Any impact to non-native tamarisk on the river floodplain is considered a less than significant impact.

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

No jurisdictional wetlands occur at or directly adjacent to the project site, as defined under Section 404 of the Clean Water Act. Therefore, no impact would result from project implementation.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Project activities are limited to the river floodplain and adjacent upland area and would not affect any migratory fish species. Construction equipment would temporarily occupy an approximately one-quarter acre portion of the

floodplain during the approximately one-month construction period. Project construction would add one injection well cluster and six monitoring well nests to the existing network of groundwater wells on the floodplain. Given the minimal surface expression associated with these wellheads, the project would not substantially interfere with the migration of any wildlife species in the project vicinity.

e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

As noted previously, the BLM has classified several plant species in the project vicinity as sensitive. None of these plant species are known to occur at the site. However, if located during pre-construction surveys or during monitoring of construction activities, these plant species will be avoided or transplanted if necessary, in accordance with existing BLM stipulations. This potential impact is considered less than significant.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Project implementation would not conflict with the provisions of the LCR MSHCP. That plan is applicable to actions undertaken by the BOR and other agencies related to management of the Colorado River flows.

Specific References:

- California Department of Fish and Game. California Natural Diversity Database (CNDDB). Commercial version. Information, dated July 1, 2003. Information accessed November 4, 2003.
- CH2M HILL. 2004. *Final Biological Resources Investigations for Interim Measures No. 3: Topock Compressor Station Expanded Groundwater Extraction and Treatment System San Bernardino County, California.* September.
- CH2M HILL. 2005. *Work Plan for Special Status Species Survey within the Area of Potential Effect (APE), Topock Compressor Station, Needles, California.* March.
- Garcia and Associates. 2005. Desert Tortoise Presence/Absence Surveys for the PG&E Compressor Station Expanded Groundwater Extraction and Treatment System. July.
- Garcia and Associates. 2005. Southwestern Willow Flycatcher Presence/Absence Surveys for the PG&E Compressor Station Expanded Groundwater Extraction and Treatment System. August.
- U.S. Bureau of Land Management. 2004. Action Memorandum. September 17.
- U.S. Bureau of Reclamation. 2004. *Lower Colorado River Multi-Species Conservation Program Final Habitat Conservation Plan.* Lower Colorado Region, Boulder City, NV. December.
- U.S. Fish and Wildlife Service. 2000. *Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Company Gas Pipeline System in the California Desert* (6840, CA-063.50) (1-8-99-F-71). January.
- U.S. Fish and Wildlife Service. 2005. *Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program, Arizona, California, and Nevada.* March.
- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Aesthetics Section. Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

5. Cultural Resources

Project activities likely to create an impact:

- Injection Well Installation

- Well Development and Pre-Injection Sampling
- Groundwater Monitoring and Sampling
- Waste Management and Equipment Decontamination

Description of Environmental Setting:

The project vicinity includes various historic resources including segments of old Route 66. Existing Park Moabi Road is one of the former alignments of Route 66. Park Moabi Road is now a County of San Bernardino roadway which is regularly maintained (e.g., repaved). Therefore, while Park Moabi Road is listed in the National Register of Historic Places, the fabric of the road supports regular commercial traffic levels and is not considered sensitive. Old Route 66 and other historic resources are documented in the *Cultural Resources Investigations for Interim Measures No. 3* (August 2004) and addendum. No other historic resources are present at or adjacent to the project site.

Previous surveys (Applied Earthworks 2005) in the River Floodplain concluded that no cultural resources are present in the in-situ project area. Project implementation will include pre-construction surveys to re-confirm that no cultural resources are present at the project site. If deemed necessary by the survey results, monitors will be present during construction activities.

The project vicinity includes various archeological resources including the Topock Maze. This and other archeological resources are documented in the *Cultural Resources Investigations for Interim Measures No. 3* (August 2004) and addendum. Portions of the Topock Maze are located upland of the project site. However, no archeological resources are present at the project site and no direct impacts are anticipated to occur from project implementation.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5.

   The project site has been the subject of extensive cultural resource surveys. No historic resources are known to occur on the project site. However, pre-construction surveys will be conducted to confirm no historic resources are present. Cultural resource monitors will be present during pre-construction and construction activities to insure that no impacts to cultural resources occur.

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5.

   According to the results of recent cultural resource surveys, no archeological resources are located at the project site or nearby vicinity. However, as noted previously, pre-construction surveys will be conducted to confirm no archeological resources are present. Cultural resource monitors will be present during pre-construction and construction activities to insure that no impacts to archeological resources occur.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

   The project site is located on the floodplain and adjacent upland areas of the Colorado River. No paleontological resources are known to occur at the project site. No impact to paleontological resources or any unique geologic feature is anticipated to result from project implementation.

d. Disturb any human remains, including those interred outside of formal cemeteries.

   No human remains are known to occur in this area. Therefore, no impact is anticipated to result from project implementation.

Specific References:

- Applied Earthworks. 2005. (Draft) Cultural Resources Investigations Third Addendum: Survey of the Original and Expanded APE for Interim Measures No. 3: Topock Compressor Station Expanded Groundwater Extraction and Treatment System. March.

- CH2M HILL. 2004. Cultural Resources Investigations for Interim Measures No. 3. Topock Compressor Station Expanded Groundwater Extraction and Treatment System. August.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

6. Geology and Soils

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling

Description of Environmental Setting:

The local near-surface geology consists of recent and older river deposits, progressing westward to older alluvial fan deposits derived from the local mountains. The sequence of unconsolidated alluvial fan and fluvial deposits comprise the principal groundwater aquifer at the site, collectively referred to as the Alluvial Aquifer. In the floodplain area, the alluvial fan deposits interfinger with and are replaced by the fluvial deposits. The unconsolidated alluvial and fluvial deposits are underlain by bedrock formations consisting of Miocene consolidated/cemented conglomerate and sandstone (Miocene Conglomerate unit), which in turn are underlain by pre-Tertiary metamorphic and igneous crystalline bedrock.

There are no known recent active faults identified by California Division of Mines and Geology. Older faults greater than 10,000 years from the Late Quaternary or Tertiary age exist within 6 miles. Topographically, the project is located on the floodplain of the Colorado River. The floodplain site is within a shifting sand-dune system.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

   - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42).
   - Strong seismic ground shaking.
   - Seismic-related ground failure, including liquefaction.
   - Landslides.

   The pilot study site is not located near any active fault. Therefore the potential to expose people or structures to adverse effects related to an earthquake or other seismic event is minimal. Landslides are unlikely due to the flat topography of the site.

b. Result in substantial soil erosion or the loss of topsoil.

   The installation of the injection and monitoring wells will not disturb large areas of topsoil. No additional grading or soil movement is proposed that could result in erosion or loss of topsoil.

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

   The pilot study site is not located on an unstable geologic unit or soil. Project activities are limited in extent and would not affect the soil stability as it pertains to the project site or surrounding land. The injection and monitoring wells will be constructed in accordance to conditions established in the well construction permits issued by the San Bernardino County Department of Public Health.

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

The pilot study site is not located on expansive soils.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water.

Implementation of the project will not require use of septic tanks or other waste water disposal systems. Wastewater generated during drilling, well development, sampling and equipment decontamination will be tested and disposed of at a permitted facility.

f. Be located in an area containing naturally occurring asbestos (see also Air Quality, f.).

Minimal ground use would be required during construction of the project facilities. The soils in the area are not known to contain naturally occurring asbestos, and no impact is anticipated.

Specific References:

- Alisto Engineering Group. Current Conditions Report, PG&E Topock Compressor Station, Needles, California. May 1997.

- California Department of Conservation, Division of Mines and Geology. Fault Activity Map of California and Adjacent Areas. Compiled by Charles W. Jennings. 1994.

- Ecology and Environment, Inc. Draft RCRA Facility Investigation (RFI) Report, Bat Cave Wash Area, PG&E's Topock Compressor Station, Needles, California. April 17, 2000.

- Topozone.com. Topographic map of site: **http://www.topozone.com/map.asp?z=11&n=3844206&e=729627&s=25&size=l&u=0&layer=DRG25**

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

7. Hazards and Hazardous Materials

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Tracer Tests
- Reagent Injection
- Groundwater Monitoring and Sampling
- Waste Management and Equipment Decontamination

Description of Environmental Setting:

An Interim Measure (IM) is currently being implemented by PG&E to address hexavalent chromium in groundwater at the site. The IM consists of a groundwater extraction and treatment system that provides hydraulic control of the groundwater plume boundaries located near the Colorado River. Due to the influence of the Colorado River stage on groundwater levels, DTSC determined that extracting groundwater at a rate of approximately 130 gallons per minute (gpm) was necessary to maintain the stated goal of hydraulic control. To achieve this extraction rate, DTSC directed PG&E to install one deep extraction well (TW-2D) with a pumping capacity of 90 gpm, one shallow extraction well (TW-2S) with a pumping capacity of 40 gpm, and a monitoring well (MW-34-100) in the floodplain area of the Colorado River.

Groundwater samples collected on September 20, 2005 show that concentrations of hexavalent chromium in MW-34-100 located approximately 65 feet from the Colorado River increased from 400 ppb to 673 ppb from when the well was installed in February 2005 (the California MCL for total chromium is 50 ppb). This suggests that hydraulic control of the contaminated groundwater is not being maintained. Compounding this problem, beginning in September 2005 and continuing through January 2006, Colorado River levels are expected to decline, requiring an increase in pumping rates in the deeper, more contaminated portion of the aquifer near MW-34-100 in order to maintain sufficient gradients away from the river. Planned hook-up and operation of an existing extraction well (PE-1) installed in March 2005 in the floodplain area would provide an additional pumping capacity necessary to regain hydraulic control of the contaminated groundwater. In addition, in a letter dated June 30, 2005, DTSC requested that PG&E prepare and submit a work plan to install an additional groundwater extraction well for the IM groundwater extraction system. The purposes of the additional extraction well, as described in DTSC's letter, are to provide redundant pumping capacity for the currently-operating extraction well and to allow for pumping and conveyance of groundwater at a maximum rate of 135 gallons per minute (gpm) from the lower interval of the aquifer in the floodplain area to the IM No. 3 treatment plant.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.

– Drilling, Well Installation, Well Development, and Associated Field Activities

All drilling, well installation, well development, and associated field activities will be performed in accordance with the applicable procedures contained within the *Sampling, Analysis, and Field Procedures Manual, PG&E Topock Program, Revision 1* (SAFPM), or the version of that document that is current at the time the field activities are performed. (All newly installed wells will be monitored and sampled at least twice for the analytes prior to the injection of reagents, to establish baseline conditions. Purging and sampling will be performed with the pump intake placed in the middle of the screened interval, and will follow the methods in the SAFPM.

– Investigation-Derived Waste

Several waste materials will be generated during the drilling, development and sampling of the proposed pilot test and conveyance system wells. These investigation-derived waste (IDW) materials will include groundwater, drill cuttings, decontamination rinsate, and incidental trash.

Drill cuttings generated during drilling of the test and extraction wells will be contained in lined roll-off bins temporarily staged at the drilling sites. After sampling and characterization of the drill cuttings are completed, the cuttings bins will be removed from the drilling sites for disposal by PG&E. The drill cuttings will be screened for chromium. If the drill cuttings are characterized as a hazardous waste, they will be transported off site for disposal at a permitted hazardous waste facility. Cuttings bins will be temporarily staged at the drilling sites for no longer than 45 days.

Water generated during drilling, well development, and sampling activities will be collected in drums or portable storage tanks temporarily located at each drilling site and transferred by forklift or truck to storage tanks in a staging area for characterization, and treatment or disposal at a permitted facility. Elevated chromium concentrations are expected in the groundwater that will be removed from the pilot test wells. Therefore, secondary containment will be provided for the storage tanks in the staging area. Incidental trash will be collected from the work area at the conclusion of each workday and placed in a trash collection bin.

If all IDW management is performed in accordance with the procedures specified in the SAFPM, significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials are not anticipated.

– Equipment Decontamination

Down-hole drilling and development equipment and the back end of the drill rig will be steam-cleaned prior to starting work at each new drilling site. Steam cleaning will be performed on a decontamination pad such that all rinsate can be contained and collected. Rinsate from the decontamination of drilling equipment will be transferred to the cuttings bin or water storage tank that contains material from the borehole last drilled. Water used for

sampling equipment decontamination will be transferred at the end of each workday into the water storage tank that contains water from the wells sampled that day.

If all equipment decontamination is performed in accordance with the methods specified in the SAFPM, significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials are not anticipated.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

See response to comment a. above.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

No existing or proposed school sites are located within one-quarter mile of the proposed project. In addition, see response to comment a. above.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.

The site where project activities are proposed is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Further, activities proposed to be conducted are intended to reduce the potential for significant hazards to the public or the environment.

e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Proposed project activities will not impair implementation of interfere with emergency response capabilities because they will be confined to a relatively small area that is easily accessible to emergency response personne' and equipment by existing roads.

Specific References:

- MWH. 2005. In-Situ Hexavalent Chromium Reduction Pilot Test Work Plan, Floodplain Reductive Zone Enhancement.
- CH2M HILL. 2005. Sampling, Analysis, and Field Procedures Manual, PG&E Topock Program, Revision 1 (SAFPM)
- DTSC website. http://www.dtsc.ca.gov/database/Calsites/Index.cfm
- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Hazards and Hazardous Materials Section. Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

8. Hydrology and Water Quality

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Tracer Tests
- Reagent Injection
- Groundwater Monitoring and Sampling
- Waste Management and Equipment Decontamination

Description of Environmental Setting:

Groundwater below the project site is known to contain hexavalent chromium. Water from the aquifer in this area is continually monitored and is the subject of ongoing investigation activities. This includes an extensive network of groundwater monitoring wells on the Colorado River floodplain. In addition, a nearby groundwater extraction well is currently in operation; water from this well is conveyed to an existing groundwater treatment plant and re-injected into the aquifer at a location several thousand feet west of the river floodplain. The proposed project wells would be installed on the floodplain of the Colorado River, which is subject to periodic flooding.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Violate any water quality standards or waste discharge requirements.

The proposed project involves the injection of a food-grade reagent into the groundwater aquifer. Implementation of this activity is subject to the prior approval of the Colorado River Basin Regional Water Quality Control Board (RWQCB). Specifically, injection of the reagent is subject to approval of waste discharge requirements (WDR's) issued by RWQQB. Based on draft WDR's issued by RWQCB in August 2005 (Order No. R7-2005-0108), the proposed discharge of food-grade reagent materials to the aquifer is consistent with the anti-degradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution No. 68-16; the expected result of the pilot study is the reduction of hexavalent chromium levels in groundwater. This is considered a beneficial impact. Groundwater monitoring and sampling will be conducted immediately following injection, and then daily for the first week, weekly for the first month, and monthly thereafter through the completion of the test. The results of the monitoring activities will be compiled in regular reports prepared for the RWQCB to ensure compliance with WDRs. Therefore, no violation of water quality standards or waste discharge requirements is anticipated to result from project implementation.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Project implementation does not involve the withdrawal of groundwater. Therefore, no depletion of groundwater supplies or interference with groundwater recharge would result.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.

Project implementation involves the development of one injection well cluster and six monitoring well nests on the Colorado River floodplain. The project site is located several hundred feet west of the Colorado River channel, and would have no impact on river flows. Were the project site to become inundated by river flows during a low frequency flood event, the minimal surface expression of the project wells would have a nominal effect on drainage; no additional erosion or offsite siltation would result.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site.

As noted above, the proposed project facilities are located on the Colorado River floodplain. Were the project site to become inundated by river flows during a low frequency flood event, the minimal surface expression of the project wells would have a nominal effect on drainage patterns, and would not substantially increase surface runoff.

e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

The project site is located on the Colorado River floodplain; no existing or planned storm water drainage facilities are located at the project site. Food-grade compounds injected into the project wells would enter the groundwater aquifer, and would not have the potential to affect surface water runoff. If a portion of the reagent solution

inadvertently entered surface runoff flows, the non-toxic nature of the reagent would not represent a substantial source of pollution to surface waters.

f. Otherwise substantially degrade water quality.

As noted previously, the expected result of the project is a reduction in hexavalent chromium levels in groundwater below the project site. This is considered a beneficial impact. The pilot test area is within the zone of influence of the extraction system and therefore would not affect water quality outside the treatment zone. In the unlikely event that the reagent solution inadvertently entered surface water flows, the non-toxic (food-grade) nature of the solution would not result in a substantial degradation of water quality.

g. Place within a 100-flood hazard area structures which would impede or redirect flood flows.

One injection well cluster and six monitoring well nests would be installed in the floodplain of the Colorado River. Given the limited surface expression of these facilities, there is minimal potential to redirect or otherwise impede flood flows.

h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

The project facilities are designed to withstand potential flood flows from the Colorado River. The proposed project would not expose any people or structures to a significant loss, injury, or death that would result in the unlikely event of the failure of an upstream dam.

i. Inundation by sieche, tsunami or mudflow.

The Colorado River floodplain in the vicinity of the project site is not subject to sieche, tsunami, or mudflows.

Specific References:

- Colorado River Basin RWQCB. Draft Order No. R7-2005-0108 Waste Discharge Requirements for Pacific Gas and Electric, Floodplain Reductive Zone In-Situ Pilot Test. August 23, 2005.

- Topozone.com. Topographic map of site: **http://www.topozone.com/map.asp?z=11&n=3844206&e=729627&s=25&size=l&u=0&layer=DRG25**

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

9. Land Use and Planning

Project activities likely to create an impact:

- None

Description of Environmental Setting:

The project site is located on federal land managed by the US Bureau of Land Management (BLM). No local zoning or plans apply at the project site. The project site is not located within a habitat conservation plan or natural community conservation plan.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

The project site is located on federal land managed by the US Bureau of Land Management (BLM). No local zoning or plans apply at the project site.

b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

The project site is located within the lower Colorado River (LCR) Multi-species Conservation Program (MSCP), which extends from Lake Mead north of Topock down to the Mexican border in the south. The March 2005 biological opinion issued by USFWS for the MSCP includes specific anticipated actions undertaken by the BOR, BLM, and USFWS and other federal, state and local agencies. However, the specified actions do not include remedial and investigative activities typically undertaken at the Topock site. In addition, the PG&E gas pipeline system in the project vicinity was the subject of a Section 7 consultation with USFWS and associated habitat conservation plan; ongoing maintenance activities were issued a non-jeopardy biological opinion by USFWS.

Specific References:

- County of San Bernardino, General Plan. 1989.
- U.S. Bureau of Reclamation. 2004. *Lower Colorado River Multi-Species Conservation Program Final Habitat Conservation Plan.* Lower Colorado Region, Boulder City, NV. December.
- U.S. Fish and Wildlife Service. 2000. *Biological Opinion for Maintenance Activities on the Pacific Gas and Electric Company Gas Pipeline System in the California Desert* (6840, CA-063.50) (1-8-99-F-71). January.
- U.S. Fish and Wildlife Service. 2005. *Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program, Arizona, California, and Nevada.* March.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

10. Mineral Resources

Project activities likely to create an impact:

- None

Description of Environmental Setting:

No mineral resources of value are known to be located at the project site. The project site and vicinity are not designated by the County of San Bernardino as a known mineral resource location.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state because no mineral resources of value are known to be located at the project site.

b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

The proposed project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan because the project site and vicinity are not designated by the County of San Bernardino as a known mineral resource location.

Specific References:

- County of San Bernardino. General Plan. 1989.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

11. Noise

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Tracer Tests
- Reagent Injection

Description of Environmental Setting:

Ambient noise levels are generated by BNSF railway located directly south of the project, as well as from vehicle traffic on I-40 located further south. Local noise ordinances do not apply because the project is located on federal lands managed by the BLM,

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

The project would temporarily generate noise during the estimated one-month construction period. Short-term noise is also anticipated during injection of the in-situ compounds, which will involve 10 to 12 trucks trips and pumping for injection. Injection activities are estimated to occur over one to seven days.

b. Exposure of persons to or generation of excessive groundbourne vibration or groundbourne noise levels.

Drilling of wells during project construction would temporarily generate groundbourne vibration and increased noise levels. These activities are only expected to last less than one month and would not be felt by persons other than the on-site workers who have noise protective equipment available for use. No sensitive receptors, including schools, hospitals and senior residences, are located in proximity to the site that may otherwise be impacted by the project.

c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project.

Any increase in noise will be short-term and temporary.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Refer to Response a. above.

Specific References:

- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Noise Section. Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

12. Population and Housing

Project activities likely to create an impact:

- None

Description of Environmental Setting:

The project does not involve the construction of new housing or infrastructure that could result in substantial population growth, displace existing housing, or displace substantial numbers of people.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

   The project does not involve the construction of new housing or infrastructure that could result in the inducement of population growth or the addition of new housing.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

   No housing would be displaced by the project.

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

   No persons would be displaced by the project.

Specific References:

- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Population and Housing Section. Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

13. Public Services

Project activities likely to create an impact:

- None

Description of Environmental Setting:

The proposed project site is located in an unpopulated area within land managed by the Bureau of Land Management (BLM) for the U.S. Bureau of Reclamation (BOR). Fire and police services are provided by the County of San Bernardino. No other public services are available at the site. Pilot study activities do not increase the risk of fire.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities

The proposed project is small in scale and duration that will not require additional fire or police protection services. Further, the proposed project will not result in a population increase that might otherwise require construction of new schools, parks or other public facilities. Also refer to responses to Population and Housing above.

Specific References:

– CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Public Services Section. Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

14. Recreation

Project activities likely to create an impact:

- None

Description of Environmental Setting:

The Colorado River is located directly east of the project site, and is a popular location for water-related recreational activities. The HNWR to the south and east supports a variety of recreational activities including fishing, boating, hunting, water skiing, and camping. Moabi Regional Park is located approximately one mile northwest and includes numerous mobile home sites, boat docks, and associated infrastructure. The Topock Marina is located on the Arizona side of the river, north of the railway. However, no recreation facilities are located on the project site and proposed activities are localized.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

The proposed project will not result in a population increase that might otherwise result in an increase in the use of existing neighborhood and regional parks or other recreational facilities.

b. Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The proposed project does not include provisions for construction or expansion of recreational facilities which might otherwise have an adverse physical effect on the environment.

Specific References:

- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Recreation Section. Topock Compressor Station, Topock, California. September.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

15. Transportation and Traffic

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Tracer Tests
- Reagent Injection
- Groundwater Monitoring and Sampling
  Waste Management and Equipment Decontamination

Description of Environmental Setting:

The San Bernardino Associated Governments (SANBAG) has developed the *Congestion Management Program for San Bernardino County* (SANBAG 2001). However, the project site is located in a rural area, which is reflected in the traffic patterns on local roadways (i.e., there is minimal traffic congestion). No roadway or intersection in the project vicinity is subject to an established standard for level of service.

Ingress and egress at the project site is provided by Park Moabi Road, a two-lane paved road which is accessible from Interstate 40. Park Moabi Road maintains minimal traffic levels in the project vicinity, generated mainly by staff employed at the Topock compressor station and water treatment plant. Emergency access to and from the project site is provided by Park Moabi Road. Interstate 40 provides emergency access regionally.

Access to the floodplain will occur off Park Moabi Road near existing monitoring well (MW) 35, located approximately 1,500 feet north of the project site. This access route has been previously established by the Bureau of Land Management (BLM), which has responsibility for managing this portion of the floodplain, including the project site.

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

Construction activities would temporarily add approximately xxx vehicle trips to local roadways due to the transport of materials, equipment and staff to the project site. However, given the small scale of the project, the additional traffic is not expected to adversely impact the existing roadway system.

b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.

Refer to Response a. above.

c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

The proposed pilot study will not increase hazards due to a design feature or incompatible use.

d. Result in inadequate emergency access.

Project activities are short-term and temporary and will not impact emergency access.

e. Result in inadequate parking capacity.

The site located on open land managed by the BLM. Adequate parking is available for workers during construction, sampling and monitoring activities.

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

No alternative transportation programs are applicable to the project site.

Specific References:

- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Transportation and Traffic Section. Topock Compressor Station, Topock, California. September.

- San Bernardino Associated Governments. Congestion Management Program for San Bernardino County. 2001.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

16. Utilities and Service Systems

Project activities likely to create an impact:

- Injection Well Installation
- Well Development and Pre-Injection Sampling
- Tracer Tests
- Reagent Injection
- Groundwater Monitoring and Sampling
- Waste Management and Equipment Decontamination

Description of Environmental Setting:

Electric service is provided through the City of Needles. The site is under the jurisdiction of the Colorado River Basin Regional Water Quality Control Board (RWQCB).

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

The site will be initially injected with approximately 1,700 gallons of prepared emulsified vegetable oil and sodium lactate (both food-grade compounds) followed by 4,300 gallons of treated groundwater to facilitate injection. These activities will be subject to approval of Waste Discharge Requirements issued by the RWQCB.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

The purpose of the pilot study is to evaluate in-situ technologies that would reduce groundwater contamination. Very little wastewater will be generated. Wastewater generated during drilling, well development, sampling and equipment decontamination will be tested and disposed of at a permitted facility.

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Activities associated with the pilot study are not expected to affect stormwater run-off levels and therefore, would not result in construction or expansion of existing facilities.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

No new sources of water are necessary to implement the proposed project. Extracted and treated groundwater, from the site, will be used as dilutant and chase water for the reductant solution.

e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

Refer to Responses a., b. and d. above.

f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.

Investigation derived waste materials will include groundwater, drill cuttings, decontamination rinse and incidental trash. Drill cuttings, groundwater and decontamination rinse will be tested for chromium, and if appropriate, transported off site for disposal at a permitted hazardous waste facility. Due to the relatively small quantity of waste generated, sufficient landfill and permitted facilities' capacity exists.

g. Comply with federal, state, and local statutes and regulations related to solid waste.

Refer to Response f. above.

Specific References:

- CH2M HILL. 2005. Environmental Information Sheet, In-Situ Pilot Study, Utilities and Service Systems Section. Topock Compressor Station, Topock, California. September.

- MWH. 2005. In-Situ Hexavalent Chromium Reduction Pilot Test Work Plan, Floodplain Reductive Zone Enhancement.

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

17. Mandatory Findings of Significance

Analysis of Potential Impacts. Describe to what extent project activities would:

a. Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

Implementation of the pilot study will not degrade the environment. The purpose of the study is to evaluate the best method to reduce existing Chromium VI contamination in the groundwater. This is a beneficial impact. Project activities will not have a significant effect the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Controls have been built into the project to reduce or eliminate any potential adverse impacts. These findings are documented in the Initial Study.

b. Have impacts that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The Initial Study found that the pilot study would not impact Aesthetics, Agricultural Resources, Cultural Resources, Land Use, Mineral Resources, Population and Housing, Public Services, and Recreation. The Initial Study identified less than significant impacts on Air Quality, Biological Resources, Geology and Soils, Hazards, Hydrology and Water Quality, Noise, Transportation and Traffic and Utilities and Service Systems. The impacts associated with the pilot study will not have a cumulatively considerable effect when considered with the impacts of past, current or future projects because the pilot study is limited in term and scope. Any impacts associated with future remedial actions resulting from the outcome of the pilot study will comply with CEQA.

c. Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

The pilot study will not have adverse effects on human beings, either directly or indirectly. The purpose of the study is to evaluate the best method to reduce existing Chromium VI contamination in the groundwater. This is a beneficial impact. Precautions will be taken to ensure the health and safety of onsite workers.

Specific References:

- Specific sections of this Initial Study

Findings of Significance:

☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

VI. DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT

On the basis of this Initial Study:

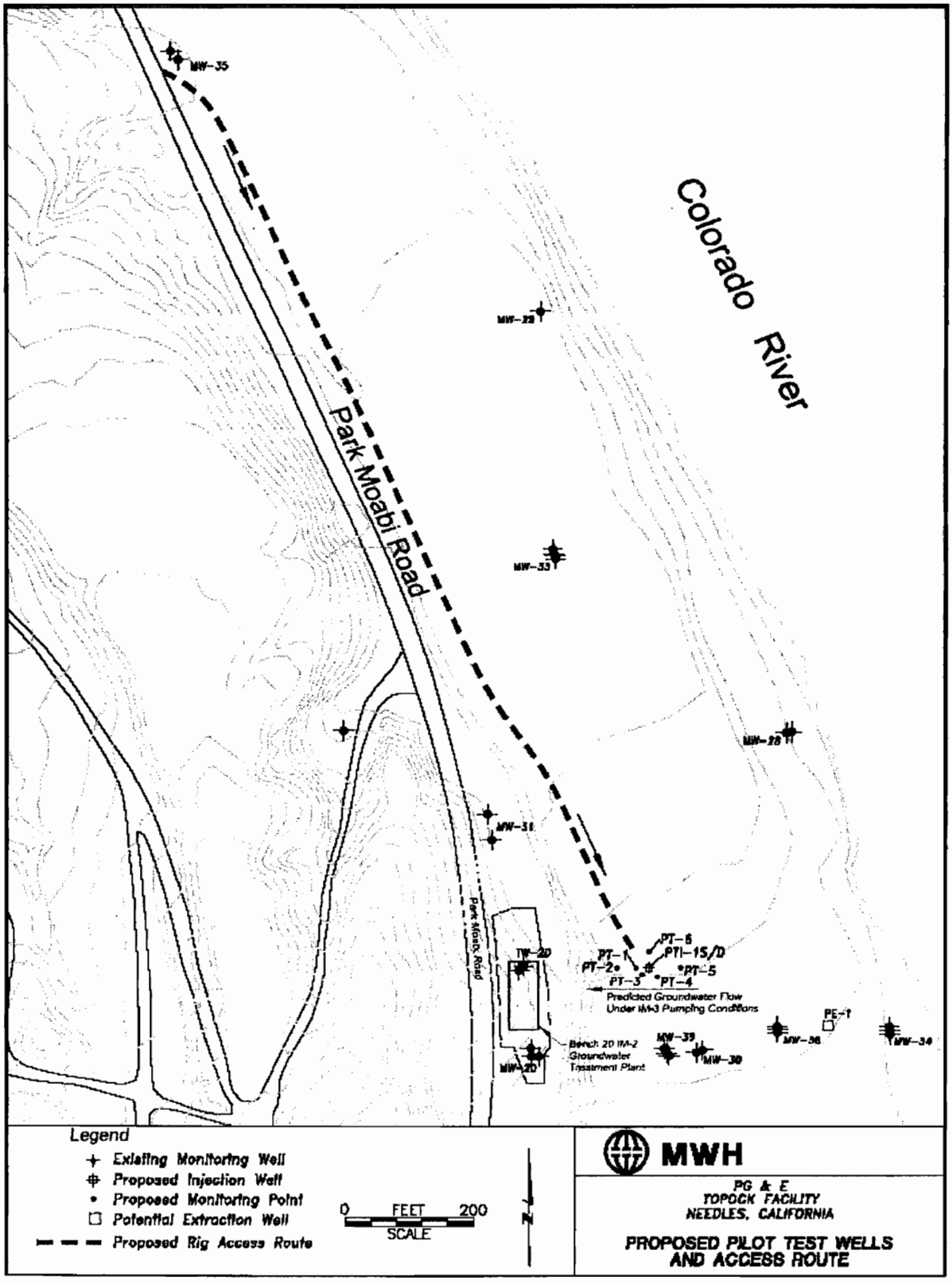
☒ I find that the proposed project COULD NOT have a significant effect on the environment. A NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED DECLARATION will be prepared.

☐ I find that the proposed project MAY HAVE a significant effect on the environment. An ENVIRONMENTAL IMPACT REPORT will be prepared.

Norman Shopay DTSC Project Manager Signature	10/14/05 Date
Norman Shopay DTSC Project Manager Name	Sr. Engineering Geologist DTSC Project Manager Title
(510) 540-3943 Phone #	
Karen Baker DTSC Branch/Unit Chief Signature	10/14/05 Date
Karen Baker, CHG, CEG DTSC Branch/Unit Chief Name	Chief, Geology, Permitting & Corrective Action Branch DTSC Branch/Unit Chief Title
(714) 484-5423 Phone #	

FIGURE 1


MW-35
Colorado River
Park Moabi Road
MW-33
MW-31
TW-2D
PT-6
PT-1
PT-15/D
PT-2
*PT-5
PT-3
*PT-4
Predicted Groundwater Flow
Under IM-3 Pumping Conditions
PE-1
MW-36
MW-34
MW-39
MW-38
Bench 20 IM-2
Groundwater
Treatment Plant
MW-20
Legend
Existing Monitoring Well
Proposed Injection Well
Proposed Monitoring Point
Potential Extraction Well
Proposed Rig Access Route
0 FEET 200
SCALE
N
MWH
PG & E
TOPOCK FACILITY
NEEDLES, CALIFORNIA
PROPOSED PILOT TEST WELLS
AND ACCESS ROUTE