TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT

Environmental Impact Report Addendum No. 1 for Alternative Freshwater Source Evaluation Activities

Prepared for
Department of Toxic
Substances Control

August 2013

ESA

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626 Wilshire Boulevard
Suite 1100
Los Angeles, CA 90017
213.599.4300
www.esassoc.com

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TOPOCK COMPRESSOR STATION GROUNDWATER REMEDIATION PROJECT

EIR Addendum No. 1 for Alternative Freshwater Source Evaluation Activities

This document is an Addendum to the Final Environmental Impact Report (Final EIR; DTSC, 2011) and Errata certified by the California Department of Toxic Substances Control (DTSC) for the Topock Compressor Station Groundwater Remediation Project (project) on January 31, 2011 (SCH No. 2008051003). The approved project, as discussed in the EIR, final project approval documents, and in more detail herein, involves manipulation of subsurface water flow to move a contaminated groundwater plume with hexavalent chromium Cr(VI) and other chemicals of potential concern (COPCs), originating from past operations at the Pacific Gas & Electric Company (PG&E) Topock Compressor Station (compressor station) site, through a treatment zone. This treatment zone or "in situ reactive zone (IRZ)" will be created by introducing a carbon substrate such as, but not limited to, ethanol, molasses, lactate, or whey to induce microbial growth which, in turn, creates an environment where the Cr(VI) is reduced and precipitated.

The Final EIR considered the potentially significant adverse environmental impacts of adopting the preferred remedy, determined to be Alternative E – In Situ Treatment with Freshwater Flushing - through 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) process, completed in December 2009.

As with preparation and certification of the Final EIR, DTSC is the lead agency under the California Environmental Quality Act (CEQA) for purposes of this Addendum to the Final EIR and for purposes of considering the potential effects of proposed project modifications. The groundwater remedy project is currently in the design stage, and construction of the final remedy is scheduled to begin in fall of 2014.

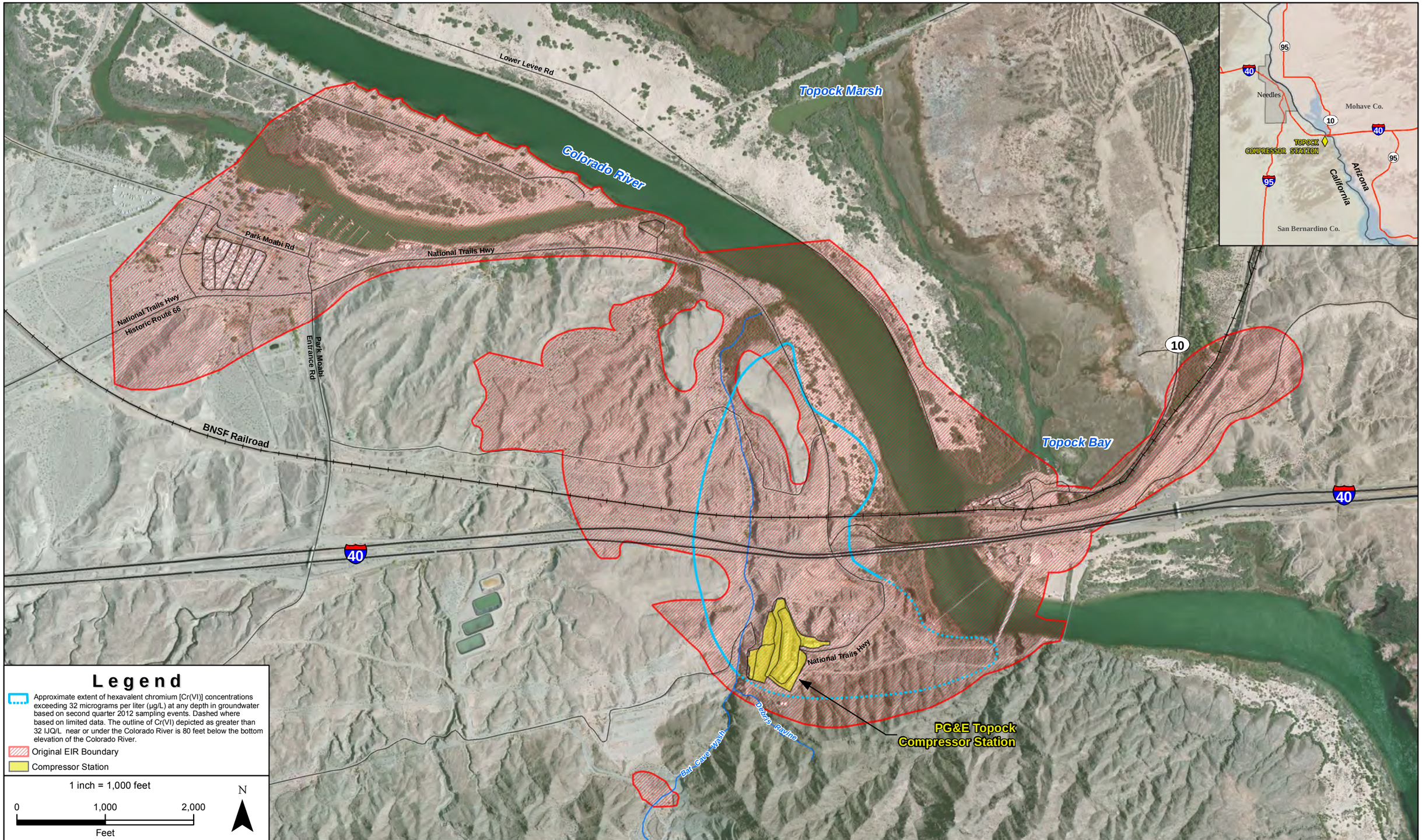
This EIR Addendum considers the potential environmental effects associated with the alternative freshwater source evaluation activities proposed in the Freshwater Implementation Plan. The Freshwater Implementation Plan proposes to expand the EIR project area in order to identify a freshwater source as needed in the final remedy, which will require two exploratory borehole drilling sites and construction of up to two wells (as previously approved by the project) in a new area located outside the original project boundary.

The Final EIR, Errata, and this Addendum serve as the environmental review for the proposed modifications to the existing project approvals as required by CEQA. (Pub. Resources Code, § 21166, CEQA Guidelines, § 15162 and § 15164.)

1. Project Overview

Groundwater beneath and near the compressor station has been contaminated by chemicals associated with historical releases in areas known as Bat Cave Wash and East Ravine. The main contaminant of concern in groundwater is Cr(VI), which was used in the past as an additive to the cooling water at the compressor station, and is harmful to human health and ecological receptors in the environment. Other chemicals present in the groundwater include total chromium [Cr(T)], molybdenum, selenium, and nitrates. Ongoing interim remedial efforts are being conducted prior to implementation of the final remedy to ensure that Cr(VI) does not reach the Colorado River or nearby wells. Remediation of the contaminated groundwater at the compressor station 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). DTSC implements RCRA under such delegated authority from the U.S. Environmental Protection Agency through state law. The U.S. Department of Interior (DOI) is the lead federal agency overseeing response actions pursuant to CERCLA. Cleanup of the contaminated groundwater plume is being designed to protect the environment and all identified potential receptors. Refer to **Figure 1** for the project boundary that was the basis for the environmental analysis in the Final EIR (779.2 acres), and extent of groundwater contamination.

As described in more detail in Section 3.5.1.2, “Freshwater Flushing” of the Final EIR (page 3-16) and Section 3.5.2.5 and “Construction of the Freshwater Flushing Element” of the Final EIR (page 3-25), the project involves flushing the contaminated groundwater plume through an IRZ of extraction and injection wells, and installing extraction wells near the Colorado River to hydraulically control the plume, accelerate cleanup of the groundwater within the floodplain, and flush the groundwater with elevated Cr (VI) through the IRZ. The project consists of five main components: (1) creation of an IRZ zone along a portion of National Trails Highway and the Colorado River shoreline; (2) extraction wells near the Colorado River and the East Ravine area that would pump approximately 640 gallons per minute (gpm) of contaminated groundwater that would be amended with organic carbon to enhance chemical reduction of Cr(VI) before reinjection in the western end of the plume; (3) injection of approximately 500 gpm of freshwater outside the plume boundaries to the northwest, west, and southwest of the plume to accelerate (flush) groundwater flow toward the IRZ; (4) institutional controls limiting the use of groundwater at the project area until Cr(VI) concentration within the main plume area is comparable to the established background level of 32 micrograms per liter; and (5) monitoring of the chemical parameters and hydraulic properties of the groundwater at the site, including concentrations of the three chemicals of potential concern and possibly byproduct of treatment within and around the groundwater plume.



Legend

Approximate extent of hexavalent chromium [Cr(VI)] concentrations exceeding 32 micrograms per liter (µg/L) at any depth in groundwater based on second quarter 2012 sampling events. Dashed where based on limited data. The outline of Cr(VI) depicted as greater than 32 IJQ/L near or under the Colorado River is 80 feet below the bottom elevation of the Colorado River.

Original EIR Boundary

Compressor Station

1 inch = 1,000 feet

0 1,000 2,000

Feet

N

Topock Compressor Station
Groundwater Remediation Project *EIR Addendum No. 1*
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Topock Groundwater Remediation Final EIR Project Boundary

Figure 1

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The project description in the Final EIR is divided into sequential phases of project implementation, all phases of which were evaluated for the potential for environmental impacts: construction, operations and maintenance, long-term monitoring, and decommissioning. It is estimated that the duration of these project phases is 3 years, 29 years (could be up to 110 years), 10 years, and 2 years, respectively.

Aside from the investigation and monitoring well areas identified in the East Ravine Groundwater Investigation, Topock Compressor Station (ERGI/TCS) Work Plan Addendum for the East Ravine and the compressor station area, the ultimate number and specific locations of the elements that make up the project (e.g., remediation wells, monitoring wells, pipelines, freshwater intake locations, and associated infrastructure) have yet to be determined and will be finalized during the final remediation system design. The actual number, location, and configuration of the extraction, treatment, and injection systems and/or changes to the type, method, and configuration of the treatment delivery systems may occur to enhance performance of the remedy to attain the cleanup goals and to respond to site conditions and performance issues.

As described in more detail in Section 3.5, "Description of the Proposed Project" of the Final EIR (pages 3-7 through 3-12), the EIR considered a maximum of 110 new remediation wells (extraction, injection, and IRZ) and 60 new monitoring wells within an 779.2 acre project area. Freshwater sources were anticipated to be located within an additional 74.51 acres. A condition of approval stipulated that the total number of new remediation and monitoring wells within the project area not exceed a total of 170 (excluding replacement wells which will be installed on an as needed basis with priority given to previously drilled locations). The precise locations of remedial structures will be determined through the final remedy design phase, which will be reviewed by DTSC as well as DOI, affected Tribes, landowners, and other stakeholders. Remedial structure locations will also be determined in consideration of treatment efficiency, accessibility for construction and operation and maintenance, topography, sensitive cultural and biological resources, and existing infrastructure.

2. Environmental Procedures

In general, once a project has been approved under CEQA, the lead agency's role on project approval is complete, unless further discretionary approval on that project is required, in which case it is the obligation of the agency with future discretionary approval authority to determine what form of additional environmental review is required, if any, prior to taking action. (See Cal. Code Regs., Tit. 14, § 15162, subd. (c) ("CEQA Guidelines"); see also §§ 15163, 15164.) CEQA allows lead agencies to restrict their review of modifications to a previously approved project to the incremental effects associated with the proposed modifications, compared against the anticipated effects of the previously approved project at build-out. (See Benton v. Board of Supervisors (1991) 226 Cal. App. 3d 1467, 1475-1482; Mani Bros. Real Estate Group v. City of Los Angeles (2007) 153 Cal. App. 4th 1385; Temecula Band of Luiseño Mission Indians v. Rancho California Water Dist. (1996) 43 Cal. App. 4th 425, 438.)

CEQA Guidelines, § 15164, subdivision (a), provides that a lead agency shall "prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in § 15162 calling for preparation of a subsequent EIR have occurred." (CEQA Guidelines, § 15164, subd. (a); see also Pub. Resources Code, § 21166.) Thus, when an EIR has been certified for a project, as here, no subsequent environmental review is required unless the agency determines, on the basis of substantial evidence and in light of the whole record, one or more of the following:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant 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 or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(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 of the previous EIR, was certified as complete or the negative declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

(CEQA Guidelines, § 15162, subd. (a); see Pub. Resources Code, § 21166.)

DTSC has evaluated the environmental impacts of drilling two exploratory boreholes and construction of up to two freshwater source wells (as previously approved by the project) in an area located outside the original Final EIR project boundary. DTSC has reached out to interested Native American Tribes and stakeholders throughout the review of the Freshwater Implementation Plan and preparation of this EIR Addendum. This includes two site visits with Native American Tribes (March 13-14 and June 5, 2013) and outreach specifically regarding aesthetic impacts (including letters soliciting input on April 15 and June 24, in which the comment period was extended by DTSC to encourage input). Response to comments on the Draft

(CH2M HILL, 2012) and Revised (CH2M HILL, 2013a) iterations of the Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area (referred to as the Freshwater Implementation Plan) were reviewed and considered in the analysis and design, in order to reduce environmental impacts. During this process, two freshwater sites that were being considered (Sites A and C, with alternative sites located near the primary site identified for each) were eliminated in order to avoid certain environmental impacts (refer to Section 5.6, "Alternatives Considered but Withdrawn.")

As noted in Section 7.0, "Environmental Determination" of this EIR Addendum, based on this environmental evaluation and outreach process, DTSC (acting as the lead agency) has determined that none of the conditions listed in Public Resources Code § 21166 apply and that an Addendum to the Final EIR is the appropriate environmental documentation for the proposed modifications. Where a lead agency determines, as here, that neither substantial changes in the project, changed circumstances, nor new information triggers the need for major revisions to the EIR, "the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation." (CEQA Guidelines, § 15162, subd. (b); see also CEQA Guidelines, § 15164, subd. (b).) This EIR Addendum, including the modified initial study/checklist, reviews the changes proposed to the project to include the additional freshwater well location, and whether there has been any substantial change in circumstances or new information as set-forth above since certification of the Final EIR.

3. Proposed Alternative Freshwater Source Locations Overview

The purpose of this EIR Addendum is to consider the potential environmental effects of two alternate well locations for a freshwater source for possible use in implementing the final remedy. This EIR Addendum considers the potential environmental effects associated with expanding the EIR project area to identify a freshwater source in Arizona, which will require drilling two exploratory boreholes, and constructing and aquifer testing up to two new wells (as previously approved by the project) in a new area located outside the original project boundary. In addition, this Addendum considers the potential environmental impacts associated with aquifer testing at the existing Havasu National Wildlife Refuge 1 (HNWR-1) well. Aquifer testing of wells would involve pumping over four days to evaluate well performance and aquifer response with respect to water quality and hydraulic response.

As discussed in the Final EIR, implementation of the final remedy will involve piping water in from a source outside the compressor station. The EIR considered several options for obtaining freshwater for use in the overall remediation project as described in Section 3.5.1.2, "Freshwater Flushing" of the Final EIR (page 3-16) and Section 3.5.2.5, "Construction of the Freshwater Flushing Element" of the Final EIR (page 3-25). Freshwater for the flushing portion of the project would come from PG&E's existing Lower Colorado Water Supply Subcontract entitlements. The Final EIR stated that the freshwater would be pumped either from: (1) new or existing Arizona wells (within the defined project area shown in Figure 1 of this EIR Addendum); (2) from new wells in California north of the compressor station (within the defined project area shown in

Figure 1 of this EIR Addendum), or; (3) from a new surface water intake at or near the Colorado River (within the defined project area shown in Figure 1 of this EIR Addendum). Freshwater would be transported by pipelines to injection wells located north, west, and/or south of the plume. As stated in the Final EIR, the source of freshwater may change during the operation and maintenance phase of the remedy; not all freshwater supply structures (wells, intakes, pipelines) would need to be constructed at the outset of the remedy, but could be constructed as needed during the operation and maintenance phase. As stated in the Final EIR, to accommodate the flow volume that would be required for remediation, new pipelines would need to be constructed connecting the water supply with the injection wells.

This EIR Addendum involves evaluating potential alternate freshwater supply locations outside the project boundary originally defined in the Final EIR (refer to Figure 2). The potential alternative freshwater supply locations are referred to as Site B and the HNWR-1 site, or "the freshwater sites" throughout this EIR Addendum. After completion of this freshwater evaluation and an ultimate freshwater source is identified, the pipelines, electrical connections, and any other infrastructure that will need to be constructed to connect the water supply with the injection wells for future remediation activities will be identified in future final remedy design documents, and will undergo future CEQA evaluation (see Section 2.1.1.1, "Future Review of Project-Level Designs" of the Final EIR, on page 2-3).

The project modifications include exploratory borehole drilling and groundwater quality sampling at the two potential freshwater sites. The disturbance area is shown on **Figures 2** and **3**. Based on groundwater quality testing results from these sites, one well, as previously approved by the project, may be installed at each site to further assess the hydraulic capacity of the aquifer at the well site. The hydraulic capacity of the existing HNWR-1 well site would also be tested. Aquifer testing would be conducted by pumping over four days to evaluate well performance and aquifer response with respect to water quality and hydraulic response. The proposed freshwater sites are both located outside the original project boundary on the Arizona side of the Colorado River, but within the general vicinity of the original project boundary (refer to Figure 2). The proposed modifications consider only changes to the location of the freshwater wells, not the number of proposed wells; 170 remains the maximum number of allowable wells (excluding replacement wells). Note that borings for supply wells would be installed over the same boring used for exploratory borehole installation to minimize the level of project disturbance and the number of boreholes used as a modification. However, exploratory boreholes that are not converted into wells would not be considered wells and therefore, do not affect the allowable well count.

Proposed Expanded Project Area

Legend

- Approximate extent of hexavalent chromium [Cr(VI)] concentrations exceeding 32 micrograms per liter (µg/L) at any depth in groundwater based on second quarter 2012 sampling events. Dashed where based on limited data. The outline of Cr(VI) depicted as greater than 32 IJQ/L near or under the Colorado River is 80 feet below the bottom elevation of the Colorado River.
- Existing Supply Well Location
- Approximate Sprinkler Location
- Approximate Exploratory Boring/ Supply Well Location
- Approximate Route of Sprinkler Piping
- Existing Unpaved Access Route
- Proposed Unpaved Access Route
- Approximate Sprinkled Area
- Approximate Freshwater Source Evalutation Work Area (1 acre)
- Potential Tank Storage Area
  -Actual area used will be less than area shown, and when combined with area used for drilling, will be within the one acre disturbance limit.
- Original EIR Boundary
- Addendum EIR Boundary:
  -Outer Work Area Boundary
- Additional Area Surveyed for Biological and Cultural Resources
- Compressor Station

1 inch = 1,200 feet

0 500 1,200 2,400

Feet

N

Notes

1. Groundwater source evaluation site and access routes are not precisely located and will be adjusted as necessary to minimze disturbance of biological and cultural resources.

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Figure 2

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Site B

Irrigation pipe to existing HNWR Revegetation Area. Details to be finalized with HNWR prior to work

210-30-008
HNWR

210-30-008
HNWR

BNSF Railroad

HNWR-1
Existing Well

Legend

- Existing Supply Well Location
- Approximate Exploratory Boring/ Supply Well Location
- Approximate Sprinkler Location
- Approximate Route of Sprinkler Piping
- Existing Unpaved Access Route
- New Unpaved Access Route
- Sprinkler Area
- Approximate Freshwater Source Evalutation Work Area (1 acre)
- Potential Tank Storage Area
  -Actual area used will be less than area shown, and when combined with area used for drilling, will be within the one acre disturbance limit.
- Approximate Sprinkler Coverage Area
- Approximate Property Lines
- Original EIR Boundary
- Addendum EIR Boundary:
  -Outer Work Area Boundary
- Additional Area Surveyed for Biological and Cultural Resources
- Waters of the State
- USACE Jurisdiction

1 inch = 300 feet

0 100 300 600

Feet

N

Notes

1. Groundwater source evaluation site and access routes are not precisely located and will be adjusted as necessary to minimze disturbance of biological and cultural resources.

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Proposed Alternate Freshwater Source Location

Figure 3

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4. Reason for Proposed Alternative Freshwater Locations

As an element of the final groundwater remedy design, freshwater sources including groundwater supply wells and the Colorado River were considered for use during remedy operation in the Final EIR. In the 30 percent design for the final groundwater remedy, PG&E presented a plan to obtain freshwater from existing HNWR-1 well (CH2M HILL, 2011). As part of the response to comments to the 30 percent design, PG&E prepared a technical memorandum that provided additional detail on this potential freshwater source (PG&E, 2012). In evaluating the water quality from the HNWR-1 well, DTSC noted that the Arizona water at HNWR-1 has naturally occurring arsenic at concentrations that exceed California state potable water standards (PG&E, 2012). The use of the HNWR-1 well water for injection may need treatment to remove naturally occurring arsenic prior to injection. Arsenic treatment of HNWR-1 water would require additional infrastructure, would increase electricity use, and would generate wastes (CH2M HILL, 2013b). Using Colorado River water (via an intake structure as considered in the Final EIR) would also require significant infrastructure construction, increased electricity use and waste generation, and is estimated by PG&E to be too costly (river water requires filtration and possibly disinfection and would also involve construction of a water treatment facility) and result in implementation issues under federal and state law, due to special status fish that occur in the Topock area, (PG&E, 2012).

5. Description of Proposed Alternative Freshwater Source Evaluation Activities

In order to identify a freshwater supply source of sufficient quantity and quality to be used in the Topock groundwater final remedy, exploratory borehole drilling and groundwater quality sampling would occur at Site B and near the existing HNWR-1 well (the HNWR-1 Site), both of which are located just outside the Final EIR project boundary, on the Arizona side of the Colorado River. Groundwater quality sampling and drilling of one borehole would occur at each site. If sufficient quality and quantity are identified, one water supply well would be constructed at each site. The proposed location in relation to the Final EIR project boundary is shown in Figure 2.

5.1 Site Location, Access, and Setting

The two potential freshwater sites are located in Arizona on HNWR property managed by USFWS. Site B is roughly 100 feet west of Oatman-Topock Highway (also known as “Mohave County Highway 10”) and north of the main channel of Sacramento Wash. The existing HNWR-1 well is located roughly 150 feet west of Oatman-Topock Highway and south of the main channel of Sacramento Wash. The nearest residential development in proximity to the freshwater sites is located approximately two miles (10,560 feet) north. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of HNWR-1 well. Site B is approximately 0.64 mile (3,400 feet) outside of the original Final EIR project

boundary and the existing HNWR-1 well is located approximately 300 feet outside of the original Final EIR project boundary. Figure 3 shows the proposed work areas at the freshwater sites.

Both Site B and the HNWR-1 well site would be accessed directly along an existing unpaved roadway that follows an existing electrical transmission line (refer to **Figure 4**, photo A), which is accessible directly from Oatman-Topock Highway. The freshwater sites are flat, and there is sufficient space to conduct exploratory borehole drilling and testing (refer to Figure 4, photo B); however, if a supply well is installed, site improvements may be required (e.g., fencing and wellhead protection infrastructure). The area in and around the freshwater Site B is heavily disturbed from a wildfire that burned 240 acres of dense tamarisk in October 2008, and the ensuing grading and earth work resulted in debris mounds (refer to **Figure 5**, photo A). In addition, earth work has occurred in connection with flood control activities conducted by Mohave County after major storm events when sediment is cleared from the road and the Sacramento Wash. These maintenance activities can occur up to three times per year and have resulted in large sediment berms on either side of the wash, south of the freshwater site (refer to **Figure 5,** photo B). The large berms would not be affected by the freshwater exploration. This area is generally devoid of vegetation in the area of proposed improvements.

Existing HNWR-1 well site is located approximately 0.62 miles (3,270 feet) south of Site B and south of the large sediment berms. This area is less impacted from the fire and Mohave County maintenance activities, but has been heavily disturbed as a result of vegetation clearing activities associated with the HNWR revegetation project, and as a result, is similar in appearance to Site B. The proposed boring and potential well activities would be adjacent to the existing HNWR-1 well site; this area of proposed improvements is barren disturbed land (refer to **Figure 6**, photos A and B).

Both Site B and the HNWR-1 well site would use the same irrigation area (also referred to as "sprinkled area") for aquifer/well testing, which is located between the two sites. This area is of similar disturbed condition as the two sites. The irrigation area for the freshwater evaluation sites is approximately 17 acres and is generally open space with large berms and woody debris (refer to Figure 5). A large soil berm (varying in height but approximately 10 feet tall) lines the northern end of the sprinkled area, thereby preventing direct access to the main channel of Sacramento Wash. This large berm would not be affected by the activities included in the Freshwater Implementation Plan. The pull-out area along the Topock-Oatman Highway in the vicinity of the freshwater sites is used by Mohave County for equipment staging for flood maintenance activities. For this reason, the pull-out area along the road would be avoided when siting the well. The freshwater sites are generally devoid of vegetation in the proposed well areas. Vegetated areas are being avoided and would not be disturbed as part of the project.

Photo A: View of access roadway along backside of Freshwater Site B.

Photo B: View of Site B boring and well location.

SOURCE: ESA, 2013.

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Figure 4
Existing Setting Photos

Photo A: View of berm blocking direct access to Site B drilling locations. Limited visibility to Site B from Oatman-Topock Highway with disturbed berm in place.

Photo B: View of Freshwater Sprinkled Area for Site B and existing HNWR-1 Well. A berm is existing along the bank of the Wash. As such, this berm would prevent any back flow of water into the channel.

SOURCE: ESA, 2013.

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Figure 5
Existing Setting Photos

Photo A: HNWR-1 Site View – West Side of Well House.

Photo B: View South from Irrigation Area toward HNWR-1.

SOURCE: ESA, 2013.

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Figure 6
Existing Setting Photos

5.2 Exploratory Borehole Drilling, Aquifer Testing, and Decommissioning

The following activities would occur at Site B and the HNWR-1 site. These are activities that, in general, were anticipated to occur by the Final EIR; however, the location of these activities is now proposed to be in Arizona, as described in Section 3, which is outside of the project boundary described in the Final EIR. This EIR Addendum also describes the activities in greater detail than the Final EIR. The project activities have been designed to use existing roads, where feasible. The borehole drilling site locations have been located on previously disturbed land, as depicted on Figures 3 through 6.

5.2.1 Drilling and Testing Methods

One exploratory borehole would be drilled at Site B and one near the existing HNWR-1 well, both using the same methodology, a rotary drilling method, which uses air and potentially water as the primary drilling fluid (chemical additives are not required when drilling with air or fresh water). While it is not anticipated, and not preferred, the use of bentonite-based drilling mud may be needed depending on the conditions encountered in the field. The use of drilling mud containing polyacrylamide is discouraged. . The equipment required to conduct the exploratory borehole drilling would include a drilling rig, support truck (highway rated), water truck (highway rated), forklift/backhoe (rubber tire), and crew vehicles (highway rated).

Examples of additional miscellaneous equipment that might be required to conduct the work include, but are not limited to, storage tanks and bins, auxiliary compressors, pumps, and generators.

The use of these vehicle types and equipment were considered in the Final EIR (see Section 3.5.2.2, "Construction of Wells" of the Final EIR, pages 3-21 through 3-23). Drilling work for the exploratory boreholes would not exceed one acre each of ground surface and is considered a temporary impact. This one acre area is in addition to any road access, storage areas, and freshwater sprinkled areas that would be required. Refer to Figure 3 for the location of the freshwater source evaluation areas, road access, storage areas, and freshwater sprinkled area for the freshwater sites. The exploratory borehole may be drilled to a depth of up to 400 feet below ground surface (bgs) and have a diameter of up to 8 inches. Groundwater samples would be collected from the exploratory boreholes approximately every 50 feet to assess changes in water quality with depth and to qualitatively assess production capacity. These samples would be collected by pumping from within the drill casing (using an electric submersible pump or equivalent that minimizes disturbance of the purged water and maximizes data quality) and monitoring water quality at the surface.

5.2.2 Management of Material Generated During Drilling of Exploratory Boreholes

Three types of materials would be generated during drilling of the exploratory boreholes: drill cuttings, purged groundwater, and trash. Drill cuttings and purged groundwater would be managed in accordance with site specific and regulatory practices for drilling. The approach to managing each of these materials is presented below:

- **Drill cuttings** would be comprised of a combination of dry and saturated unconsolidated soil and rock materials. These materials would be contained at the ground surface and placed in a storage bin. Cuttings would then be spread on the ground in the vicinity of the drilling site. If, however, a clay bed is encountered during drilling, then the cuttings from those interval(s) would be set aside for future disposition, following discussions with the Tribes. As requested by comments from the Hualapai Department of Cultural Resources, drill cuttings generated from clay beds would be separated from the other material and stored aside on cotton material. PG&E would notify the agencies and the Tribes in the event clay material is encountered and separated for storage.

  In accordance with Best Management Practices in Arizona, "drilling fluids and cuttings shall be contained in a manner which prevents discharge into any surface water" (State of Arizona Department of Water Resources, *Title 45 Waters, Chapter 2 Groundwater Code, Article 10 Wells, Section R12-15-811 Minimum Well Construction Requirements,* 2011).

- **Purged groundwater** would include water generated during exploratory borehole drilling and sampling. The quantities of groundwater purged would depend on the specific activity and duration of activity. During exploratory borehole drilling and sampling, the volume of water generated could be up to 80,000 gallons per location. All purged groundwater would be discharged to the ground surface. The purged groundwater generated during each exploratory borehole drilled would be discharged to the ground surface in a controlled manner (controlled flow outlet) so that water would percolate on-site. It may also be necessary to temporarily store purged groundwater in water tanks located at or near the drill sites, such that the water could be discharged at a slower rate to control surface runoff and avoid scouring. Surface runoff would be contained on-site or allowed to flow at a controlled rate into an identified area shown as the freshwater sprinkled area on Figure 3. The purged groundwater may result in temporary ponding in some low lying areas, but would not result in the flooding of large areas. Runoff would be controlled such that no runoff would reach Oatman-Topock Highway, jurisdictional waterways, or the Colorado River.

  If it is determined that runoff from two exploratory borehole drilling activities cannot be adequately controlled through direct surface discharge to the ground, then sprinklers may be employed as described in more detail below, under Section 5.3.3, "Management of Materials Generated During Well Installation and Aquifer Testing" of this EIR Addendum.

- **Trash** associated with normal work operations, which may include well material packaging, plastic sheeting, and food waste, would be removed from the work site daily and transferred to a dumpster located on PG&E property. Dumpster contents are disposed of at an appropriate off-site landfill, consistent with Section 4.11.1.3, "Solid Waste Disposal" of the Final EIR, on page 4.11-2.

5.2.3 Decommissioning Method

Following completion of testing, the two exploratory borehole sites would be decommissioned, in accordance with state water well regulations (State of Arizona Department of Water Resources,

Title 45 Waters, Chapter 2 Groundwater Code, Article 10 Wells, Section R12-15-816 Abandonment, 2011), and consistent with Section 3.5.4, "Decommissioning of the Proposed Project" of the Final EIR (see pages 3-28 through 3-31). The two exploratory borehole sites would be backfilled from total depth to 22 feet bgs with either bentonite grout or clean granular material (variance option "Alternative 4" of the Well Abandonment Handbook). The interval from 2 to 22 feet bgs of each borehole would be sealed using cement bentonite grout, reserving the upper most 2 feet for backfill with granular material from the existing site area (e.g., drill cuttings from the borehole). This plan is a slight variance to Alternative 4 in that the 20 foot grout seal would be placed from 2-22 feet bgs and not from 0-20 feet bgs. If this variance is not approved by Arizona Department of Water Resources (ADWR), then the interval from 0-20 feet bgs would be sealed. In the event that multiple aquifers are encountered, additional intervals of sealing material may be required to properly decommission the exploratory borehole. Using granular materials rather than grout to backfill at the two exploratory borehole sites allows the option of using the same borehole for the construction of a supply well in the future, thereby minimizing the total number of boreholes drilled.

5.3 Freshwater Supply Well Installation, Aquifer Testing, and Decommissioning

Based on the data (water quality and geologic) collected during exploratory borehole drilling and testing, up to two groundwater supply wells (as previously approved by the project) may be installed as part of the Freshwater Implementation Plan (one at each site). If water quality (e.g., key analytes at concentrations below the maximum contaminant level (MCL) [see planned analytical list in Section 3.1 of the Freshwater Implementation Plan]) and geologic data (e.g., a significant thickness [tens of feet] of coarse sand and gravel) is favorable, then a supply well would be installed. Freshwater supply well installation and testing is necessary to obtain a true estimate of the quantity of available groundwater, which can only be obtained by testing a properly constructed supply well.

The color of the selected well head to be installed would be in muted earth tone, consistent with existing wells at and in the vicinity of the compressor station and in accordance with the Final EIR mitigation measures AES-1 and AES-2 (see pgs. 4.1-48, "Mitigation Measures AES-1," and 4.1-49, "Mitigation Measure AES-2").

The Final EIR identified that the groundwater remediation project would require approximately 500 gpm of freshwater (see Section 3.5.1.2, "Freshwater Flushing" of the Final EIR pages 3-16). However, based on current modeling, the estimated volume of freshwater required for remediation is 450 gpm average and 900 gpm maximum. Therefore, an increase of up to 400 additional gpm may be required for remediation purposes. This increase would still be within PG&E's existing Lower Colorado Water Supply Subcontract entitlements of 422 acre feet annually (afa) (see Section 4.12.1.3, "Existing Pacific Gas and Electric Company Entitlements and Usage" of the Final EIR page 4.12-2). Because nearly all water would be diverted from the Colorado River Basin and would be returned to groundwater within the Colorado River Basin, the net consumptive use would be approximately zero (see Section 4.12.3.3, "Water Supply Impact Analysis" of the Final EIR, pages 4.12-7 through 4.12-10).

5.3.1 Drilling and Testing Methods

If possible, the boreholes for supply well construction would be drilled over the backfilled exploratory borehole sites to minimize the total number of boreholes installed; however, this approach is not always practicable as the sealing material could interfere with the production of groundwater from the formation. In this case, a new borehole would be drilled in the vicinity of the exploratory boreholes. The boreholes for supply well construction would be larger in diameter than the exploratory boreholes. Borehole diameter may be up to 42 inches in the uppermost part of the well where surface casing would be set. Borehole diameter in the deeper sections of the supply well would likely be 18 to 24 inches. Therefore, supply well drilling would require a larger drill rig and associated support equipment including, but not limited to, storage tanks and bins, auxiliary compressors, pumps, and generators.

Well construction details would be determined based on the lithologic, water quality, and hydraulic data collected. As described above, physical drilling efforts would not exceed one acre of ground surface at the site, and this same one acre work area would be used for drilling work for the freshwater supply well installation.

Following construction, a combination of bailing, surging, and pumping would be used to remove fluids introduced during drilling and development of the hydraulic connection between the well screen, gravel envelope, and the formation. Dilute chemical additives that might be used during well development to enhance well performance include dispersants and sodium or calcium hypochlorite (disinfection). Hydraulic tests, including step-rate and constant-rate extraction tests, would be conducted at the newly installed supply well to collect data about the performance of both the well and the aquifer, and changes to water quality, when pumped over a period of multiple days. It is assumed that a step-rate extraction test would occur over two days and that a constant-rate extraction test would require up to 96 hours (four days) of continuous pumping; however, the duration of these tests may be shorter or longer, depending on the data collected and/or identified discharge constraints (discharge constraints include persistent ponding, runoff towards a jurisdictional channel, the Colorado River, or Oatman-Topock Highway 10, or filling storage vessels (if used).).

Because it is unknown if the well location will provide sufficient quantity and quality of water, final design of the associated infrastructure, including piping and power supply, would be included in the future design of the groundwater remedy.

5.3.2 Temporary Wellhead Protection

If the well locations are determined to provide sufficient quantity and quality of water, final design of the well head protection and associated instrumentation and control equipment, as necessary, would be included in the future design of the groundwater remedy; however, temporary well head protection measures, which are intended to be similar to those used for the existing HNWR-1 well, would be installed at the time of construction. Newly installed supply wells would be constructed so that they are sealed to prevent surface water inundation or so that the well seal is above the 100-year floodplain level. In addition, the wellhead would be completed with a steel monument casing within a concrete foundation with steel bollards at the foundation

perimeter to resist damage and stabilize the well casing, and a temporary perimeter fence would be installed to secure the location from unauthorized access until the groundwater remedy design is finalized. Temporary wellhead protection measures and signage requirements would be developed in coordination with USFWS HNWR. All signage used for the temporary and permanent wellhead completion would be for the purpose of compliance, and not to identify or draw unnecessary attention to the infrastructure. The design of these structures would be consistent with the description provided in Section 3.5.1, "Description of Proposed Project Features" of the Final EIR (see pages 3-12 to 3-15).

5.3.3 Management of Material Generated During Well Installation and Aquifer Testing

Similar to drilling of exploratory borings, three types of materials would be generated during well development: drill cuttings, purged groundwater, and trash. Drill cuttings and purged groundwater would be managed in accordance with site specific and regulatory practice for groundwater supply well drilling. The approach to managing each of these materials is presented as follows:

- **Drill cuttings** would be comprised of a combination of dry and saturated unconsolidated materials. These materials would be contained at the ground surface and placed in a storage bin. Cuttings would then be spread on the ground in the vicinity of the drilling site. If, however, a clay bed is discovered during drilling, the cuttings from the clay bed would be set aside for future disposition, following discussion with Tribal representatives. As requested by comments from the Hualapai Department of Cultural Resources, drill cuttings generated from clay beds would be separated from the other material and stored aside on cotton material. PG&E would notify the agencies and the Tribes in the event clay material is encountered and separated for storage.

  In accordance with Best Management Practices in Arizona, "drilling fluids and cuttings shall be contained in a manner which prevents discharge into any surface water" (State of Arizona Department of Water Resources, *Title 45 Waters, Chapter 2 Groundwater Code, Article 10 Wells, Section R12-15-811 Minimum Well Construction Requirements*, 2011).

- **Purged groundwater** would be generated during drilling, well development, and aquifer/well testing activities. All purged groundwater would be discharged to the ground surface. The volumes of water generated during well drilling may be similar to those generated during exploratory borehole drilling (i.e., 80,000 gallons per location). Relatively smaller volumes of water may be managed by direct discharge to ground at or near the drill site, as described above in Section 5.2.2, "Purged Groundwater" of this EIR Addendum. During well development and aquifer testing, should the location be determined to have sufficient conditions, the volume of water generated could be as much as 5.5 million gallons per well (1,000 gallons per minute for a 96-hour continuous aquifer test). For this much larger volume of water, a conventional agricultural sprinkler system would be set up to distribute the water over a relatively large area of ground near the well site.

The location of the sprinkled area is shown in Figure 3, and is the same for both freshwater sites. The freshwater sprinkled area is approximately 17 acres. Irrigation would be conducted using a network of high-volume sprinklers that would be connected by temporary, above grade aluminum irrigation pipes (approximately 4-8 inches in diameter); however, final design and associated details (e.g., pipe diameter, specific sprinkler location and range, etc.) might need to be adjusted based on actual field conditions (e.g., well capacity or location of sensitive biological or cultural resources) at the time of testing. In addition to the indicated discharge area, if requested by HNWR at the time of work, PG&E would include piping and equipment in the irrigation system such that some discharge water could be delivered to the area of the ongoing Sacramento Wash Revegetation Project. PG&E would continue to coordinate with HNWR to determine the specific area outside of the potential work area that should receive irrigation water. Personnel would remain on site during the duration of discharge activities to monitor for persistent ponding and runoff. Water would be discharged to these areas in a manner that minimizes ponding and limits the potential for runoff. During discharge, if persistent ponding or runoff towards a jurisdictional channel, the Colorado River, or the Topock-Oatman Highway is observed, corrective action (e.g., modification of sprinkler layout, change in discharge rate, or using hand tools to control disperse ponding/control runoff) would be taken. If it is determined that persistent ponding or runoff cannot be easily corrected, then discharge would be discontinued. If rainfall occurs during discharge to the extent that the runoff of discharged water cannot be effectively monitored, then the discharge would be discontinued. It is impossible to predict the infiltration rate of the discharge areas. Therefore, the degree of infiltration and runoff would be closely monitored at all times during discharge. The discharge would be stopped if it is determined that persistent ponding and runoff towards a jurisdictional channel, the Colorado River, or the Topock-Oatman Highway cannot be effectively controlled. To minimize total ground disturbance temporary irrigation pipes would be installed on the ground surface whenever possible. Vehicle traffic would be diverted away from above-ground irrigation piping using signage and delineators. Temporary pipe crossings/ramps would be used when vehicle crossing of above-ground irrigation pipes cannot be avoided. Temporary irrigation pipes would only be recessed in the ground if the pipe diameter is too large to be safely crossed using a temporary pipe crossing/ramp.

Sprinkler heads would be located along the length of the aluminum pipe, with individual valves to control which heads are in service. Water from the well would be discharged up to four 20,000 gallon capacity frac tanks (mobile steel storage tanks used to hold liquids). The discharge from the frac tanks would be connected to a portable gasoline or diesel powered booster pump which would provide pressure to the sprinkler system. The design flow rate of the sprinkler system is up to 1,000 gpm. Depending on the layout of the sprinklers, the rate of water application would be between ¼ and ½ inch per hour. The sprinkled water would be applied on flat ground in the bottom of washes. The portable pump would be located near the frac tanks (not in a wash) and have containment to capture any potential fuel leakage.

- **Trash** associated with normal work operations, which might include well material packaging, plastic sheeting, and food waste, would be removed from the work site daily and transferred to a dumpster located on PG&E property. Dumpster contents would be disposed at an off-site landfill, consistent with Section 4.11.1.3, "Solid Waste Disposal" of the Final EIR (see page 4.11-2).

5.3.4 Decommissioning Method

Any freshwater supply well that is installed would be decommissioned once they are no longer of use, consistent with Section 3.5.4, "Decommissioning of the Proposed Project" of the Final EIR (see pages 3-28 through 3-31), and in accordance with state water well regulations. Once a well is determined to be no longer of use, it would be decommissioned in accordance with Arizona water well regulations (State of Arizona Department of Water Resources, Title 45 Waters, Chapter 2 Groundwater Code, Article 10 Wells, Section R12-15-816 Abandonment, 2011) and the associated well sites would be returned to pre-construction conditions, to the maximum extent practicable. If the wells are incorporated into the final groundwater remedy, it would be decommissioned in accordance with the methods and procedures included in the Operations and Maintenance Manual that will be prepared for the Final Groundwater Remedy and evaluated as part of the final remedy design. The Arizona water regulations require that a well that is no longer in use must be capped or destroyed to assure that groundwater supply is protected and that potential physical hazards are eliminated. Specific decommissioning procedures must be determined based on the condition of the well at the time of work, but in all cases the applicable state regulations (including any agency-approved variance conditions identified at the time) would be followed. This includes but is not limited to the following:

- The condition of the well would be evaluated prior to work to assess if there are obstructions in the well or other conditions that may prevent successful sealing of the well.
- The well casing would be backfilled from total depth with suitable filler materials (e.g., clean granular material). The selection of filler or sealing materials (e.g., bentonite grout), and the proper methods for placement, would depend on the geologic materials observed during drilling, and the condition of the well and aquifer at the time of decommissioning. At a minimum, the upper 20 feet of the well would be backfilled with sealing material per Arizona well regulations at or near the ground surface.

5.4 Existing HNWR-1 Well Aquifer Testing

A constant-rate extraction test would also be conducted on the existing HNWR-1 well (see Figure 3). The purpose and implementation details of this test would be similar to that for the potential new supply well. Based on the well operation data obtained from HNWR-1 and collected during well sampling events, this test would be conducted by pumping the well near its maximum yield (approximately 800 to 1,000 gpm) for approximately 96 continuous hours (eight days). Assuming a flow rate of 1,000 gpm, the total estimated discharge is over 5.5 million gallons. The duration of the test may need to be shorter or longer depending on the data collected and/or potential discharge constraints. If possible, the test would be conducted using the pump that is currently

installed in the well; however, depending on the final design of irrigation pipe layout, a temporary test pump may need to be installed. Groundwater flow and arsenic profile testing would also be conducted in the HNWR-1 well site to determine where arsenic is entering the well.

As shown in Figure 2, groundwater purged during HNWR-1 well aquifer testing would be discharged using a surface irrigation system approximately 1,500 feet north of the HNWR-1 well to the freshwater sprinkled area identified for future re-vegetation. Irrigation would be conducted using a network of high-volume sprinklers that would be connected by temporary, above grade aluminum irrigation pipes (approximately 4-8 inches in diameter); as described in more detail in Section 5.3.3, "Management of Material Generated During Well Installation and Aquifer Testing."

5.5 Timing and Intensity of Activities

Each exploratory borehole drilling and groundwater sampling effort is estimated to require six field days for drilling and sample collection. Laboratory analysis and data validation activities would require approximately one week after sample collection. Approximately one week after the receipt of all validated laboratory data collected during the exploratory phase of the investigation, coordination with the agencies and interested stakeholders would occur to discuss the path forward for supply well installation and aquifer testing.

The installation of a supply well is estimated to require five field days for conductor casing installation and an additional 11 field days for well installation and development; for a total of 16 field days. Immediately following well development at each site, an additional eight to 13 field days are estimated for aquifer testing.

PG&E would provide the agencies and interested stakeholders with periodic schedule updates as mobilization dates are finalized and as work progresses in the field. In general, activities would include the mobilization of equipment, supplies, and workers to and from the project site. Nighttime lighting may be required to support the required 96 hour well testing activities. All other activities would be limited to daylight hours, to the extent practicable, to limit the need for lighting. If needed, lighting associated with construction and well testing activities would be limited to active construction equipment in operation during nighttime operations and would consist of downward facing fixtures fitted with cutoff shields to reduce light diffusion. An estimated crew of up to twenty workers may be present on-site each day throughout the duration of activities. As previously stated, heavy equipment would include a drilling rig, support truck (highway rated), water truck (highway rated), forklift/backhoe (rubber tire), and crew vehicles (highway rated). Examples of additional miscellaneous equipment that might be required to conduct the work include, but are not limited to, storage tanks and bins, auxiliary compressors, pumps, and generators. It is estimated that five to as many as 15, 20,000-gallon mobile water tanks (frac tanks) may be staged in the work area during various phases of work to temporarily store purged groundwater if the generation rate exceeds the irrigation rate. Work site practices would be designed to limit dust, noise, and nighttime light generation.

Best management practices, such as use of plastic sheeting over the ground surface, would be employed in the drilling and staging areas as necessary to keep the drilling materials and equipment clean and to minimize contact of the drilling materials and equipment with the ground surface. Materials to be temporarily stored at the well site may include drilling equipment and well construction materials (e.g., casing, sand, bentonite, and grout). Additional supplies and equipment not in use would be stored at the compressor station, near the core storage area, or within the already developed or disturbed areas within the freshwater activity areas. Drilling and well installation activities would conform to state and local regulations.

5.6 Alternatives Considered But Withdrawn

PG&E first presented the Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area, Topock Compressor Station, Needles, California on November 16, 2012. Three sites located within two general areas—both located within channels of relatively large desert washes—were identified where hydrogeologic conditions may have been favorable for developing a well capable of producing 450 gpm nominal and 900 gpm maximum (CH2M HILL, 2013b). Within these two general areas, three specific locations were identified for evaluation: Sites A, B, and C (refer to Appendix B). Two of these locations (Sites A and B) were near the Sacramento Wash, in Arizona. Site A was located within the surface channel of the wash, while Site B was located just north of the surface expression of the wash. Site C was in an unnamed wash in California about 1.75 miles north of Moabi Regional Park. The Implementation Plan was distributed to the agencies, tribes, and interested parties for review and comment.

On December 31, 2012, DTSC submitted a comment letter to PG&E in response to the Implementation Plan, detailing that DTSC had determined, through review of the Implementation Plan and discussion with the agencies, tribes, and interested parties that additional exploratory work at or around the vicinity of the area in California (known as Site C) would not be approved due in part to the proximity of Site C to culturally sensitive areas and a U.S. Bureau of Land Management (BLM) designated Area of Critical Concern (Beale Slough). As a result, Site C was removed from further consideration.

On January 28, 2013, PG&E submitted a revised Implementation Plan that was distributed to the agencies, tribes, and interested parties for review and comment. The revised Implementation Plan removed Site C from further consideration and considered two potential locations at Site A (A and A-Alternative) and one location at Site B. The Department of the Interior (DOI), BLM, USFWS, and the BOR had additional discussions regarding the revised Implementation Plan. They also consulted with representatives from the Fort Mojave, Hualapai, Chemehuevi and Colorado River Indian Tribes. DOI submitted a letter to PG&E on March 26, 2013, detailing DOI's position on use of Sites A and A-Alternative; DOI stated the addition of wells at Sites A and A-Alternative would result in disturbance of habitat and wildlife at the HNWR that was not in the best interest for its conservation mission. DOI stated that using the HNWR-1 water supply well is their preferred option for a source of freshwater; however, they did not object to the investigation and presumed drilling of Site B. However, DOI stated their expectation is that new

disturbance associated with the exploratory borehole drilling activities be minimized to the maximum extent practicable. Therefore, this EIR Addendum is limited to an analysis of freshwater investigation activities at Site B and the HNWR-1 well site.

6. Environmental Checklist

The purpose of the checklist is to evaluate the categories in terms of any "changes" or "new information" that may result in a changed environmental impact evaluation. A "no" answer does not necessarily mean that there are no potential impacts relative to the environmental category, but that there is no relevant change in the condition or status of the impact due to its insignificance or its treatment in a previous environmental document.

Overriding considerations were adopted with the certification of the previous EIR that accepted the possibility of certain impacts regardless of whether mitigations could reduce them to a less-than-significant level. Thus, certain environmental categories might be answered with a "no" in the checklist because the proposed alternative freshwater source evaluation activities do not introduce changes that would result in a modification to the conclusion of the EIR Findings Document.

6.1 Explanation of Checklist Evaluation Categories

Where Impacts Analyzed in the Final EIR.

This column provides a reference to the pages of the Final EIR where information and analysis may be found relative to the environmental issue listed under each topic.

Do Proposed Changes Involve New or More Severe Impacts?

Pursuant to § 15162(a)(1) of the CEQA Guidelines, this column indicates whether the changes represented by the proposed modifications to the project would result in new impacts that have not already been considered and mitigated by the Final EIR or that substantially increase the severity of a previously identified impact. If a "yes" answer is given, additional mitigations will be specified in the discussion section including a statement of impact status after mitigation.

Any New Circumstances Involving New or More Severe Impacts?

Pursuant to § 15162(a)(2) of the CEQA Guidelines, this column indicates whether there have been changes to the project site or the vicinity (environmental setting) that have occurred subsequent to the certification of the Final EIR, which would result in the proposed modifications having significant impacts that were not considered or mitigated by that EIR or which substantially increase the severity of a previously identified impact.

Any New Information Indicating New Significant Impacts?

Pursuant to § 15162(a)(3) of the CEQA Guidelines, this column indicates whether there are any new significant environmental impacts due to new information becoming available that would require an update to the analysis of the Final EIR. This applies to any new regulations that might

change the nature of analysis or the specifications of a mitigation measure. If additional analysis is conducted as part of this initial study and the environmental conclusion remains the same, no new or additional mitigation is necessary. If the analysis indicates that a mitigation measure requires supplemental specifications, no additional environmental documentation is needed if it is found that the modified mitigation achieves a reduction in impact to the same level as originally intended.

Final EIR Mitigation Measures Address Impacts?

Pursuant to § 15162(a)(3) of the CEQA Guidelines, this column indicates whether mitigation measures that are considerably different from those analyzed in the Final EIR would substantially reduce one or more significant effects. If N/A is indicated, this initial study concludes that the impact does not occur with this project, and therefore no mitigation is needed. If mitigation measures from the Final EIR have been incorporated, as applicable, it is indicated within this column. The mitigation measures from the Final EIR for are, in places, programmatic in nature and, as a result, the applicable mitigation measures included from the Final EIR have been slightly modified in instances where further clarification and project-specific direction is needed to ensure no new significant impacts will result from the proposed alternative freshwater source evaluation activities. The revisions or clarifications are not changes to the original mitigation measure included in the Final EIR but rather are consistent with the overall intent of the referenced measure included in the Final EIR. The revisions to the measures included in the Final EIR are shown in ~~strikeout~~ format for deletions and <u>underline</u> for additions.

6.2 Cumulative Impacts

CEQA requires that an EIR evaluate a project's cumulative impacts. Cumulative impacts are the project's impacts combined with the impacts of other related past, present, and reasonably foreseeable future projects. As set forth in the CEQA Guidelines, the discussion of cumulative impacts must reflect the severity of the impacts, as well as the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. As stated in CEQA, Title 14, § 21083(b), "a project may have a significant effect on the environment if the possible effects of a project are individually limited but cumulatively considerable."

According to the CEQA Guidelines:

> "Cumulative impacts refer to two or more individual effects which, when considered together, are considerable and which compound or increase other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonable foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively

> significant projects taking place over a period of time" (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, § 15355).

In addition, as stated in CEQA Guidelines, it should be noted that:

> "The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable." (CCR, Title 14, Division 6, Chapter 3, § 15064[h][4]).

Cumulative impacts from the Final EIR were analyzed in Section 6.0, "Cumulative Impacts" beginning on page 6-1. A list and description of past, present, and reasonably foreseeable projects near the project sites can be found in Table 6-3 of the Final EIR beginning on page 6-4. Cultural resources were identified as a cumulatively impacted resource from the Final EIR. No feasible mitigation exists that would reduce this impact below the level of significance. However, the Final EIR Mitigation Monitoring and Reporting Program (MMRP) (refer to Exhibit 2 to Attachment B) describes measures that would reduce significant impacts to the resource. These issues, and others that could contribute considerably to cumulatively significant effects from the proposed alternative freshwater source evaluation activities, are discussed by resource topic in Section 6.0, "Environmental Checklist" of this Freshwater Addendum in the context of cumulative development.

Cumulative impacts are determined by geographic scope and by timing of the other projects relative to the proposed alternative freshwater source evaluation activities. Related projects include those projects that, in conjunction with the proposed alternative freshwater source evaluation activities, can potentially cause cumulatively significant adverse environmental impacts. The area within which cumulative impacts could occur depends upon the project activity and type of impact. For example, the cumulative conditions for regional air quality account for impacts within the entire Mohave Desert Air Basin (MDAB) because air quality impacts occur on a regional or basin-level scale, while the cumulative impacts for archaeology would be limited to a more local scale for ground-disturbing activities in the vicinity that could be affected by cumulative projects. For routine operations, the cumulative impact study area is the area surrounding the project facilities.

For this Addendum, the cumulative impact study area includes projects consistent with the Final EIR that are near the freshwater sites, located just outside of the Final EIR boundary on the Arizona side of the Colorado River. Table 6-3, "List of Projects Located at or within the Vicinity of the Proposed Project" in Section 6 of the Final EIR beginning on page 6-4, identified related projects that are located within 15 miles of the compressor station. A review of Table 6-3 was conducted to confirm if the projects listed in Table 6-3 remain current and valid. In addition, new projects that may have come online after the certification of the Final EIR were researched; however, no new projects were reported by the respective agencies as active within the project area, including BOR, BLM, USFWS, Arizona Department of Transportation, San Bernardino County, City of Needles, Mohave County, and Lake Havasu City. The projects listed in Table 6-3 of the Final EIR, beginning on page 6-4, remain current and valid for evaluation of the freshwater sites.

6.3 Checklist Evaluation

Aesthetics

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
AESTHETICS — Would the project:					
a) Have a substantial adverse effect on a scenic vista?	Section 4.1 (Aesthetics), pgs. 4.1-27 to 4.1-47.	No	No	New viewshed areas to freshwater sites. No new significant impacts. See discussion below.	N/A
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Section 4.1 (Aesthetics), pgs. 4.1-27 to 4.1-49.	No	No	New viewshed areas from freshwater sites. No new significant impacts. See discussion below.	N/A
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	Section 4.1 (Aesthetics), pgs. 4.1-27 to 4.1-50.	No	No	New viewshed areas from freshwater sites. No new significant impacts. See discussion below.	N/A
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	Section 4.1 (Aesthetics), pg. 4.1-50.	No	No	No	N/A

Discussion

The analysis of impacts to visual resources from implementation of the project was evaluated in Section 4.1.3.3, "Aesthetics Impact Analysis" of the Final EIR beginning on page 4.1-27, Section 4.1, and described the project's existing on-site and surrounding visual resources. The proposed changes to the project involve two sites located approximately one mile east/northeast of the Colorado River and adjacent to the Oatman-Topock Highway where two exploratory boreholes would be drilled (temporary impact) in order to identify a freshwater source that could be available for the groundwater remedy. If a satisfactory freshwater source is identified at the sites, installation of up to two wells (permanent impact) could take place. While the location of the exploratory boreholes and wells are outside of the original Final EIR project area boundary, the sites are situated within a viewshed similar in nature and context to the project area evaluated in the Final EIR, with exposure to similar foreground, middle ground, and background viewing distances.

The area in and around the freshwater sites (foreground views) is heavily disturbed from a previous wildfire that occurred in October of 2008. In addition, earth work has occurred in connection with flood control activities conducted by Mohave County after major storm events when sediment is cleared from the road and the Sacramento Wash using bulldozers and other heavy equipment. These maintenance activities can occur up to three times per year and have resulted in large sediment berms on either side of the wash, south of Site B (refer to Figure 5). The berms would not be affected by the freshwater explorations. The pull-out area along the Topock-Oatman Highway in the vicinity of Site B is used by Mohave County for equipment staging for these maintenance activities. For this reason, the pull-out area along the road would be avoided when siting the well. Site B is generally devoid of vegetation in the proposed well area. The sediment berms and any vegetated areas are being avoided and would not be disturbed as part of the alternative freshwater source evaluation activities. The identified freshwater sprinkled area is of similar condition as the well site itself. The freshwater sprinkled area is approximately 17 acres and is generally open space with large berms and woody debris.

Existing HNWR-1 well is located south of Site B and south of the large sediment berms. This area is less impacted from the fire and Mohave County maintenance activities. The proposed geotechnical boring activities would be adjacent to the existing HNWR-1 well which is barren disturbed land and presently consists of two well sheds surrounded by chain-linked fencing (refer to Figure 6). The freshwater sprinkled area for the proposed boring and existing HNWR-1 well is the same as proposed for Site B, as described above (refer to Figure 5, photo B)

Foreground views of Site B are available to vehicular and pedestrian viewers from Topock-Oatman Highway. Views from the south of Site B are generally obscured by the sediment berms and views from the north and east of Site B are obscured by the curvature of the highway and dense tall vegetation. Middle ground and background views of Site B are relatively unobstructed, particularly from the west and northwest, due to the generally flat surrounding topography. Middle ground views of the sprinkled area are visible to pedestrian viewers from higher elevations along a low ridgeline across Topock-Oatman Highway to the northeast of Site B. Due to the presence of trees at the base of this ridgeline, Site B itself is not visible from any point along the crest of the ridgeline.

Given the distance of the site from key viewing points identified in Section 4.1 of the Final EIR, including Moabi Regional Park, the Colorado River, and other areas of visual and recreational significance identified in the Final EIR, a clear view is not available from these locations, as further described in the analysis below.

a) Foreground views of the existing HNWR-1 well are available to vehicular and pedestrian viewers from Topock-Oatman Highway. The HNWR-1 well location itself is not visible to pedestrian viewers from higher elevations along a low ridgeline across Topock-Oatman Highway, although as mentioned previously, middle ground views of the sprinkled area are visible. The proposed activities associated with the freshwater explorations would not have a substantial adverse effect on scenic vistas in the project area, since views of the freshwater sites are limited and localized. Key scenic vistas

previously identified in the Final EIR, including the Colorado River, "Needles" rock outcrop, Topock Maze, and Chemehuevi Mountain (see Table 4.1-3 in Section 4.1, "Aesthetics" in the Final EIR, on page 4.1-46), many of which represent key viewshed points of importance to Native American Tribes, are not located within close proximity to the freshwater sites and would not present a perceptible visual change in background views from these key viewing points.

Although the freshwater sites are located within the HNWR, the sites would not be typically frequented by boaters, campers, hikers, birders, and visitors to the HNWR due to lack of appeal even though the sites may be accessed off Oatman-Topock Highway. Recreational use of this area is generally discouraged by the HNWR due to restoration efforts. Furthermore, since the Colorado River, a scenic resources corridor, is located approximately one mile south of the freshwater sites at a lower elevation with intervening vegetation, recreational views of project activities and equipment would be from a long distance, and no alteration of foreground views from the floodplain would occur. In addition, the ongoing flood control and maintenance activities conducted by Mohave County in the area of the proposed freshwater sites, creates a similar level of equipment activity; this activity typically occurs several times a year, depending on the severity and frequency of storm events. The Mohave County General Plan designates the Oatman-Topock Highway in the vicinity of the freshwater sites as a Scenic Route (Mohave County General Plan, 2005), but no scenic vistas are identified on or near the freshwater sites. No impacts to scenic vistas are anticipated and no mitigation is required. Impacts identified in Section 4.1.3.3, "Aesthetics Impact Analysis" of the Final EIR, beginning on page 4.1-27, would not be made more severe by implementation of the alternative freshwater source evaluation activities. Impacts to designated scenic routes are described further under response (b) below.

b) The portion of the Oatman-Topock Highway that is located near the freshwater sites is identified as a Scenic Route in the Mohave County General Plan (Mohave County, 2005). However, there are no rock outcroppings or historic buildings on or near the freshwater sites that contribute to the scenic importance of the route. The freshwater sites lie directly west and adjacent to the Oatman-Topock Highway. However, these areas are generally devoid of live vegetation.

The freshwater sprinkled area and Site B are lined with large disturbed berms of tamarisk debris, as a result of a wildfire that burned 240 acres of dense tamarisk in the HNWR. Refer to Figures 4 and 5 for views of Site B and the freshwater sprinkled area, including the large sediment berms and woody debris. These areas are considered highly disturbed and foreground views from the highway are mainly of the large debris berms, which are generally considered to be a low quality viewshed. As noted above, the flood control and maintenance activities in the area also create a similar level of equipment activity, typically several times a year. As a result, project activities at Site B and freshwater sprinkled areas are not expected to significantly impact views from the Oatman-Topock Highway, or change the overall designation of the highway as a Scenic Route.

The existing HNWR-1 well sheds and surrounding chain-linked fence are currently visible from the highway, which is generally considered to be a low quality viewshed. There is no vegetation immediately surrounding the structures or within the fenced area. Refer to Figure 6 for views of existing HNWR-1 well.

Alteration of scenic resources to the west of the Oatman-Topock Highway would be minimal and existing views are already of a highly disturbed area. In addition, vehicular views from this route would be primarily of the existing HNWR-1 well sheds and fencing and the large berms; these views are considered infrequent and of short duration. Therefore, impacts to the scenic route would be less than significant and no mitigation is required. Impacts identified in Section 4.1.3.3, "Aesthetics Impact Analysis" of the Final EIR beginning on page 4.1-27, would not be made more severe by implementation of the proposed alternative freshwater source evaluation.

c) The existing character of the freshwater sites is generally disturbed from past fires, the debris berms, and the existing HNWR-1 well sheds and fencing. However, the area is part of the overall Colorado River valley that has a unique visual character that is of particular importance to Native American Tribes, as well as to pedestrian and vehicular viewers. Site B and its surrounding area was visited and explored by DTSC, PG&E, ESA staff, and Tribal representatives on March 14, 2013. Tribal representatives expressed general concern over views of Site B and the sprinkled area as they relate to the broader landscape (background and middle ground views). Additionally, potential viewshed concerns as they relate to views from nearby archaeological resources (foreground views) were explored. No specific viewpoints of concern from which the freshwater sites can be seen were identified at that time. After a subsequent field visit to Site B on June 5, 2013, one specific viewpoint was identified by the Hualapai Tribe. In a letter dated June 28, 2013, the Hualapai indicated that the vantage point from a ridgeline just to the northeast of Site B is considered by the Tribe to constitute a key viewpoint from a 360 degree perspective because the entire valley can be seen from that vantage point.

An ESA staff member and representatives from the Hualapai Tribe and Fort Mojave Indian Tribe visited the suggested viewpoint on July 30, 2013. This ridgeline offers views of Tribal traditional lands and mountain ranges and peaks surrounding the valley, many of which hold significant traditional, cultural, and spiritual value to Tribes. Representative photos from this vantage point are provided in **Figure 7**. This vantage point does not offer views of either the Site B or the HNWR-1 well locations. This vantage point does, however, offer middle ground views of the sprinkled area.

Photo A: The Hualapai Tribe identified viewpoint. This ridgeline offers views of Tribal traditional lands and mountain ranges and peaks surrounding the valley, many of which hold significant traditional, cultural, and spiritual value to Tribes.

Photo B: The Hualapai Tribe identified viewpoint. This ridgeline offers views of Tribal traditional lands and mountain ranges and peaks surrounding the valley, many of which hold significant traditional, cultural, and spiritual value to Tribes.

SOURCE: ESA, 2013.

Figure 7
Existing Setting Photos

Construction activities would be visible to pedestrian and vehicular viewers at the freshwater sites due to the proximity to the Oatman-Topock Highway and the sprinkled area would be visible from the Tribal-identified key viewpoint from the ridgeline to the northeast. Since construction and decommissioning operations are dynamic, they would have a limited effect on existing form, lines of sight, and textural patterns. Additionally, views of construction activity at the sites would be minimized by intervening landforms, and would be of short duration. Exploratory borehole drilling and groundwater quality sampling would likely involve the use of large construction equipment such as a drilling rig, support truck (highway rated), water truck (highway rated), forklift/backhoe (rubber tire), and crew vehicles (highway rated). Examples of additional miscellaneous equipment that might be required to conduct the work include, but are not limited to, storage tanks and bins, auxiliary compressors, pumps, and generators. Water tanks may be used to temporarily store water on-site; this larger equipment may be seen from the Oatman-Topock Highway and from the Tribal-identified viewpoint. This equipment is consistent with the types of construction equipment analyzed in the Final EIR. Furthermore, given that the freshwater sites are in a highly disturbed or barren state as described above, construction and decommissioning activities of the two exploratory boreholes and wells would possess a weak degree of contrast and would not be considered significant effects to the quality or character of the freshwater sites and would not substantially alter the pre-construction character of the project area, therefore resulting in a less than significant impact. Construction and decommissioning activities from the proposed alternative freshwater source evaluation would not substantially degrade the existing visual character or quality of the freshwater sites.

Once constructed, the proposed freshwater wells would result in a small change to the existing character and quality of the landscape. The presence of a water supply well with security fencing would not result in a substantial change to the existing quality or character of the landscape of the freshwater site because the existing HNWR-1 well and associated infrastructure are nearby, as well as roadway and railroad infrastructure. As described in Section 5.3.1, “Drilling and Testing Methods” of this EIR Addendum, the dimensions of the proposed well heads for supply well construction could be up to 42 inches in diameter. The well head would be surrounded by a concrete pad, which would not be in excess of 15 feet by 30 feet. The color of the selected well head would be a muted earth tone, consistent with the surrounding natural color palette. A temporary perimeter fence would be installed around the concrete pad to secure the location until the design of the groundwater remedy is finalized. The color of the selected temporary perimeter fence would also be consistent with the surrounding natural color palette.

The freshwater infrastructure (e.g., the temporary fence) may be a visible foreground feature, but would not be viewed on a constant basis by motorists. Vehicular viewers are considered to have a low sensitivity to change of existing visual character because of distance, angle, duration, and expectation of views. Motorists traveling along Oatman-Topock Highway may experience short-duration foreground and middle-ground views; however, background views would not be altered. Implementation of the proposed

alternative freshwater source evaluation activities would introduce a low degree of contrast to the existing visual character within the viewshed of Oatman-Topock Highway.

In addition, as noted above, one identified Tribal viewing point is located to the northeast of Site B. The Site B and HNWR-1 well locations are not visible from this viewing point, however, the sprinkled area is visible. Implementation of the proposed alternative freshwater source evaluation activities would result in temporary changes to the character of middle ground views during activities associated with sprinkling, however, would not otherwise alter the character of foreground, middle ground, or background views from this Tribal-identified viewing point. Even with the installation of a permanent well at either Site B or near HNWR-1 well, because these two locations are not visible from this vantage point, no change to the visual character of the area would be observable. For these reasons, the proposed alternative freshwater source evaluation activities would introduce a weak degree of contrast to the existing quality or character within the viewshed and no significant visual impacts would occur. Impacts identified in the Final EIR would not be made more severe by implementation of the proposed alternative freshwater source evaluation activities.

d) Nighttime lighting may be required to support the required 96 hour well testing activities. All other activities would be limited to daylight hours, to the extent practicable, to avoid the need for lighting. If needed, lighting associated with construction and well testing activities would be limited to active construction equipment in operation during nighttime operations and would consist of downward facing fixtures fitted with cutoff shields to reduce light diffusion. Views of lighting and nighttime construction activity would be of short duration as primary views would be from passing motorists, and would not include features that would create glare. In addition, the nearest residential development in proximity to the freshwater sites is located approximately two miles (10,560 feet) north. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of HNWR-1 well. Lighting at these distances would not create a substantial nuisance. Therefore, impacts related to nighttime lighting or glare, consistent with Section 4.1, “Introduction of Light and Glare” of the Final EIR, beginning on page 4.1-50 would be less than significant.

The proposed alternative freshwater source evaluation activities would include two new exploratory boreholes and construction of up to two new wells in a highly disturbed area and near existing well infrastructure (HNWR-1). In addition, well testing would occur of HNWR-1 well and the new wells. Because impacts to aesthetic sources are generally limited, local, and typically immediate to the surrounding area only, and would not exceed the envelope of the impacts identified and considered in the Final EIR, the proposed alternative freshwater source evaluation activities would not result in a cumulatively considerable or significant incremental increase in aesthetic impacts. The activities associated with the proposed freshwater sites are consistent with those efforts and impacts identified in the Final EIR, and are largely considered to be temporary changes. Aesthetic resources viewed from the scenic Colorado River and known Tribal

viewing areas would not be cumulatively affected, as the scenic river corridor is located at a sufficient distance from the area of impact and generally not within direct view. In addition, the landscape already includes existing infrastructure such as the HNWR-1 well sheds and fencing, transmissions poles and lines, roadways, and existing railroad development such as the BNSF, leading to a weak degree of contrast. There would be no new cumulative impacts related to aesthetic resources, so no mitigation is required.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures from the Final EIR are required.

New Mitigation Measures:

No new mitigation measures are required for the alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project could result in potentially significant impacts related to aesthetics and viewshed. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to aesthetic resources, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to aesthetic resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Agricultural and Forest Resources

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
AGRICULTURAL AND FOREST RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.					
Would the project:					
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?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
d) Result in the loss of forest land or conversion of forest land to non-forest use?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	Section 5.3.1 (Other CEQA Sections), pg. 5-18.	No	No	No	N/A

Discussion

a–e) The County of Mohave General Plan designates the freshwater sites as Public Lands (Mohave County, 2005). The freshwater sites are located on HNWR lands in Arizona that are not used for farmland purposes. The nearest farmlands appear to be in and around the Town of Needles. In addition, no forestland or timberland is in the project area. The HNWR is managed by USFWS, which serves to preserve watersheds and wildlife habitats. The freshwater sites are not currently used for agricultural purposes. Consistent with the Final EIR (see Section 5.3.1, "Agriculture Resources" of the Final EIR page 5-18), no agricultural resources have been identified on or within the vicinity of the

freshwater sites, therefore no direct or indirect impacts on agricultural resources would occur from implementation of the proposed alternative freshwater source evaluation activities. However, water that may be used to irrigate crops in the areas outside the project vicinity could come from the Colorado River. As described in more detail in the "Water Supply" section in this EIR Addendum checklist, the proposed alternative freshwater source evaluation activities would have a less than significant impact on nearby existing supply wells, and would not generate a demand for water that exceeds existing entitlements; no interruptions with existing water delivery or supply are likely. As a result, the proposed alternative freshwater source evaluation activities would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; no new impacts to agricultural resources would occur. In addition, no impacts to forestland or timberland would occur.

Because the construction and operation of the freshwater facilities would not impact any farmland, conflict with any agriculture and forestland zoning, or convert any forestland to non-forest uses, the project's contribution to cumulative agricultural and forest resources impacts is not considered to be significant.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures from the Final EIR are required.

New Mitigation Measures:

No new mitigation measures are required for the alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would have no significant impacts, either directly or indirectly, to agricultural or forestry resources. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to these resources, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts to agricultural resources. Similarly, no new information of substantial importance related to agricultural resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Air Quality

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
AIR QUALITY — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**					
a) Conflict with or obstruct implementation of the applicable air quality plan?	Section 4.2 (Air Quality), pgs. 4.2-26 to 4.2-31.	No	No	No	N/A
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Section 4.2 (Air Quality), pgs. 4.2-26 to 4.2-31.	No	No	No	See mitigation measures summarized below. No new mitigation measures required.
c) Result in a 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)?	Section 6.0 (Cumulative Impacts), pgs. 6-28 to 6-29.	No	No	No	See mitigation measures summarized below. No new mitigation measures required.
d) Expose sensitive receptors to substantial pollutant concentrations?	Section 4.2 (Air Quality), pgs. 4.2-32 to 4.2-33.	No	No	No	N/A
e) Create objectionable odors affecting a substantial number of people?	Section 4.2 (Air Quality), pg. 4.2-33.	No	No	No	N/A

Discussion

The proposed changes to the project involve two sites located approximately one mile east/northeast of the Colorado River and adjacent to the Oatman-Topock Highway where two exploratory boreholes would be drilled (temporary impact) in order to identify a freshwater source location that could be available for the groundwater remedy. If a satisfactory freshwater source is identified at the sites, installation of up to two wells (permanent impact) could take place. While the location of Site B and the HNWR-1 well site are 3,400 feet and 300 feet from the original project area boundary, respectively, the freshwater sites are situated in relatively remote location and are not located in immediate proximity to any permanent sensitive receptors that could be affected by air pollution, as previously defined in the Final EIR. The nearest residential development in proximity to the freshwater sites is located approximately two miles (10,560 feet) north. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of the existing HNWR-1 well.

a–c) The analysis of the project's construction emissions was considered in two phases in the Final EIR: (1) well construction, and (2) water conveyance/utilities/roadways construction. For well construction, the Final EIR air quality analysis assumed site preparation (e.g., grading, clearing) of approximately ½ acre per well for up to 170 wells, and approximately one day to five weeks for the construction of each well, depending on depth and soil content. Heavy equipment would include a drilling rig, support truck (highway rated), water truck (highway rated), forklift/backhoe (rubber tire), and crew vehicles (highway rated). Examples of additional miscellaneous equipment that may be required to conduct the work include, but are not limited to, storage tanks and bins, auxiliary compressors, pumps, and generators. Based on the estimated site preparation area (1 acre for each site) and the amount of equipment that would be used for the well, the modeled emissions of criteria air pollutants and ozone precursors for project construction in the Final EIR (see Table 4.2-6 in Section 4.2, "Air Quality" in the Final EIR on page 4.2-28), showed that construction-related activities during 2010-2014 would not generate daily unmitigated reactive organic gases (ROG), oxides of nitrogen (NOx), or particulate matter of less than 2.5 micrometers (PM2.5) emissions that would exceed the applicable Mojave Desert Air Quality Management District (MDAQMD) thresholds of significance, identified as 137, 137, and 82 pounds (lb) per day, respectively. During the 2013 construction year, which is the year that construction activities associated with the proposed exploratory borehole drilling and well sites are anticipated to occur, the worst-case daily construction emissions for the project were estimated to be 5.5 lb/day of ROG, 43.0 lb/day of NOx, and 46.6 lb/day of PM2.5. Given the low emissions of these pollutants relative to their respective MDAQMD thresholds (i.e., the emissions of ROG, NOx, and PM2.5 represent approximately 4 percent, 31 percent, and 57 percent of their thresholds, respectively), emissions generated by the additional construction activities for two exploratory boreholes followed by construction activities for up to two groundwater supply wells, already accounted for in 2013 emissions within the total previously approved maximum of 170 wells, would not result in an exceedance of the MDAQMD thresholds for ROG, NOx, and PM2.5.

The construction equipment that would be required to drill the two exploratory boreholes and potential installation and testing of up to two wells would include a drilling rig, rig support truck, water truck, forklift/backhoe, and crew vehicles, which are similar but less intensive than the equipment list assumed for the project in the Final EIR. In addition, additional miscellaneous equipment required to conduct the work include, but are not limited to, storage tanks and bins, auxiliary compressors, pumps, and generators. The Final EIR analyzed the construction of up to 170 wells for the project, an average of approximately 43 wells could possibly occur in any given year over the 2010-2014 construction period. Thus, the construction of two exploratory boreholes and up to two wells would not result in emissions that would cause the project to exceed MDAQMD's thresholds for ROG, NOx, and PM2.5. Furthermore, because the decommissioning phase of the facilities would be less intense than the initial construction activities, the magnitude of decommissioning operations would be less than those related to construction and therefore emissions would also be below MDAQMD significance

thresholds. Because the proposed alternative freshwater source evaluation activities would not violate or contribute substantially to an existing or projected air quality violation, it would not conflict with air quality planning efforts or obstruct implementation of the applicable air quality plan. As such, consistent with the findings in the Final EIR, the regional air quality impacts associated with these pollutants during construction and decommissioning would remain less than significant and no mitigation is required.

Section 4.2, "Air Quality" in the Final EIR (see Table 4.2-6, see page 4.2-28) determined that the worst-case construction day emissions of particulate matter of less than 10 micrometers (PM10) during project construction would exceed the MDAQMD's threshold of 82 lb/day. The modeled PM10 emissions during project construction in 2013 would be 215.8 lb/day. However, with implementation of Mitigation Measure AIR-1, which would require implementation of fugitive dust control measures (e.g., periodic watering throughout the day, covering of loaded haul vehicles, stabilizing graded site surfaces with soil binders or vegetative cover, etc.) for all construction and demolition activities, the PM10 emissions would be reduced by a minimum of 75 percent and would be substantially reduced to below MDAQMD's threshold of 82 lb/day. Similar to the discussion above, the daily PM10 emissions from the construction of two exploratory boreholes followed by the construction of up to two previously approved groundwater supply wells, when compared to the daily PM10 emissions that would result from the construction of up to 170 wells for the project over a four-year period, would not be substantial enough to exceed the MDAQMD's threshold of 82 lb/day. Additionally, with implementation of Mitigation Measure AIR-1, the PM10 emissions would also be reduced by a minimum of 75 percent (see Section 4.2, "Emissions of Fugitive Dust" of the Final EIR, on page 4.2-27). Furthermore, as the emissions generated during the decommissioning phase of the facilities would be less intense than the initial construction activities, the PM10 emissions generated during the decommissioning activities would also be below the MDAQMD significance threshold. Overall, consistent with the findings in the Final EIR, the regional air quality impact from PM10 emissions generated during construction and decommissioning would remain less than significant with implementation of Mitigation Measure AIR-1.

Two groundwater supply wells may be approved and installed at the freshwater sites based on the results of the drilling activities. Emissions generated from the operation of two wells would include those generated by mobile sources (e.g., trips for inspection and maintenance operations) and stationary sources (e.g., pumps). As discussed in Section 4.2, "Air Quality," Table 4.2-7 of the Final EIR (see page 4.2-30), the mobile source and stationary source emissions for full project operations (i.e., up to 170 wells) would consist of 0.8, 9.37, 0.27, and 0.25 tons per year (tpy) of ROG, NOx, PM10, and PM2.5, respectively. These emissions would be substantially less than the applicable MDAQMD thresholds of 25 tpy for ROG and NOx, and 15 tpy for PM10 and PM2.5. Thus, the addition of two exploratory boreholes and two wells would not result in operational emissions that would exceed MDAQMD's pollutant thresholds. Thus, regional air quality

impacts during project operation would remain less than significant and no mitigation is required.

d) With regard to the exposure of sensitive receptors to substantial pollutant concentrations, the operation of the well sites would not involve new significant adverse impacts to sensitive receptors due to the remote desert location. This conclusion remains the same for the consideration of any additional traffic that would be generated offsite due to the proposed alternative freshwater source evaluation activities, including any congested intersections operating at a poor level of service (LOS). As analyzed and determined in the Final EIR, the project sites are located in remote areas that are not affected by heavy traffic or long idling times, which are typically associated with carbon monoxide (CO) hotspots. While the two proposed exploratory boreholes and two well sites would be located outside of the project area, the sites are also located in similarly remote areas that are not affected by heavy traffic. Thus, consistent with the findings of the Final EIR, long-term operation of the alternative freshwater source evaluation activities would not result in the generation of local CO emissions that violate or contribute substantially to an existing or projected air quality violation, expose sensitive receptors to substantial pollutant concentrations, or conflict with air quality planning efforts. In addition, the construction period for the project along with construction of the two proposed exploratory boreholes and well sites would be much less than the 70-year period used for health risk determination, and the construction equipment would be located at distances greater than 1,000 feet from sensitive receptors as recommended by MDAQMD. As such, construction-related emissions would not expose sensitive receptors to substantial concentrations of Toxic Air Contaminants (TACs). Furthermore, all stationary sources of TACs associated with the project such as pumps and generators would be subject to the substantive requirements of MDAQMD's rules and regulations, including Regulations 201-202 (Permits to Construct), 203 (Permit to Operate), 475 (Electric Power Generating Equipment), and 1300 (New Source Review); and maximum available control technology (MACT) and best available control technology for toxics (T-BACT) requirements. Consequently, all stationary sources of TACs associated with the project would be required to be reduced to below MDAQMD's applicable significance threshold; otherwise the operating permits for the project would be denied by MDAQMD. Overall, impacts associated with the exposure of sensitive receptors to substantial pollutant concentrations would remain less than significant and no mitigation is required.

e) While construction and decommissioning of the two proposed exploratory boreholes and two well installations would result in odors from exhaust emissions from on-site diesel equipment and operation of the new facilities would generate exhaust from pumps, these emissions would dissipate rapidly from the source and any odors resulting from these emissions would be expected to be negligible beyond 500 feet from the source. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of HNWR-1 well. The nearest residential development to the freshwater sites are located approximately two miles (10,560 feet) north. As the nearest sensitive receptors to the proposed exploratory boreholes and well installation sites are all

located beyond 500 feet of the source, no receptors would be exposed to substantial odor concentrations. Thus, this impact would remain less than significant and no mitigation is required.

As discussed in Section 6.4.2, "Cumulative Air Quality Impacts" of the Final EIR (see page 6-28), because the project's construction and operational emissions would not exceed the established thresholds of MDAQMD, which are established in consideration of potential concurrent projects, the project's contribution to cumulative air quality impacts is not considered to be significant. In addition, implementation of Mitigation Measure AIR-1 would further reduce construction-related impacts from emissions of PM10 associated with the project. Because it has been determined that the project's construction and operational emissions, in addition to the construction and operational emissions associated with the proposed exploratory boreholes and well sites, would remain below MDAQMD's established thresholds, the project's contribution to cumulative air quality impacts would remain less than significant.

Applicable Mitigation Measures from the Final EIR:

Mitigation Measure AIR-1: PG&E shall implement the fugitive dust control measures below for any construction and/or demolition activities:

a. 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;

b. Cover loaded haul vehicles while operating on publicly maintained paved surfaces;

c. 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;

d. Cleanup project-related track out or spills on publicly maintained paved surfaces within twenty-four hours; and

e. 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.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to air quality during

construction activities. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to air quality, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to air quality has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Biological Resources

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
BIOLOGICAL RESOURCES — Would the project:					
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?	Section 4.3 (Biological Resources), pgs. 4.3-27 to 4.3-37	No	No	Biological surveys conducted at the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation measures required.
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	Section 4.3 (Biological Resources), pgs. 4.3-25 to 4.3-27	No	No	Biological surveys and wetland assessment conducted at the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation measures required.
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?	Section 4.3 (Biological Resources), pg. 4.3-37	No	No	Biological surveys and wetland assessment conducted at the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation measures required.
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?	Section 4.3 (Biological Resources), pgs. 4.3-36 to 4.3-37	No	No	No	N/A
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Section 4.3 (Biological Resources), pgs. 4.3-36 to 4.3-37	No	No	No	N/A
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?	Section 4.3 (Biological Resources), pgs. 4.3-36 to 4.3-37	No	No	No	N/A

Discussion

The proposed changes to the project involve the identification of a freshwater site that is outside of the original project area where two exploratory boreholes would be drilled and installation and testing of up to two wells could take place, in order to identify a freshwater source available for the groundwater remedy (refer to Figures 3 through 5). The two exploratory boreholes are a temporary activity that would use similar construction efforts, materials, and practices as addressed in the Final EIR (see Section 3.5.2.5, "Construction of the Freshwater Flushing Element" of the Final EIR page 3-25). The wells would be similar in size (up to 42 inches in diameter) and appearance (muted earth tone) as described in the Final EIR (see Section 3.5.1, "Description of Proposed Project Features" of the Final EIR on page 3-12, and Section 4.1, "Aesthetics" Table 4.1-2 of the Final EIR on page 4.1-28). General biological surveys and an assessment of wetlands and waters were conducted at the freshwater sites in May, July, October, and December 2012. Results of these surveys are summarized below and detailed in the attached biological survey and wetland assessment reports (Appendices A, B, C and D of this EIR Addendum).

Site B and the existing HNWR-1 well occur west of Oatman-Topock Highway and just west and north of the BNSF Railway (Figure 3). Portions of the freshwater sites occur within the HNWR and near the Sacramento Wash. Areas to the east of the freshwater sites are dominated by dense athel tamarisk thickets with occasional honey mesquite (*Prosopis glandulosa*), smoke tree (*Psorothamnus spinosus*), bush seepweed (*Suaeda nigra*), and blue palo verde. Areas to the west have been disturbed due to a wildfire in October of 2008 that burned 240 acres of dense tamarisk in the HNWR. A portion of the area proposed for freshwater explorations are located in this 240-acre burn area and may be used as a freshwater discharge sprinkle site (Figure 3). The USFWS cleared the area of debris after the fire and, in the spring of 2011, planted a variety of native trees, shrubs, and grasses in a portion of the burn area, including a mesquite known as screw bean (*Prosopis pubescens*), four-wing saltbush (*Atriplex canescens*), and alkali sacaton (*Sporobolus airoides*). At the time of the July 2012 survey, most of the area west of Oatman-Topock Highway was devoid of vegetation, with the exception of the revegetation area planted in 2011. The remainder of the burn area is devoid of vegetation, with piles of tamarisk debris that dot the landscape. A few emergent tamarisks and Russian thistle (*Salsola tragus*) occur within the burned area, and a few palo verde trees line the banks of the Sacramento Wash on the west side of Oatman-Topock Highway.

Wildlife species observed or detected (via vocalization, scat, tracks, or burrows) during the 2012 biological surveys of the proposed freshwater sites included western whiptail (*Aspidoscelis tigris*), desert iguana (*Dipsosaurus dorsalis*), side-blotched lizard (*Uta stansburiana*), verdin (*Auriparus flaviceps*), Gambel's quail (*Callipepla gambelii*), turkey vulture (*Cathartes aura*), killdeer (*Charadrius vociferus*), Abert's towhee (*Melozone aberti*), ash-throated flycatcher (*Myiarchus cinerascens*), blue-grey gnatcatcher (*Polioptila caerulea*), black phoebe (*Sayornis nigricans*), white-winged dove (*Zenaida asiatica*), mourning dove (*Zenaida macroura*), coyote (*Canis latrans*), kangaroo rat (*Dipodomys sp.*), pocket mouse (*Chaetodipus sp.*), bobcat (*Lynx rufus*), and desert cottontail (*Sylvilagus audubonii*).

a) Special-status species are plants and animals that are legally protected under the California Endangered Species Act and/or Federal Endangered Species Act (CESA/FESA); protected under local or regional plans, policies, or regulations (such as Habitat Conservation Plans [HCPs] or Natural Community Conservation Plans [NCCPs]; or species that are considered sufficiently rare or sensitive by the scientific community to qualify for such listing. These species are categorized as follows:

- Plants or animals listed or proposed for listing as threatened or endangered under the FESA (50 Code of Federal regulations [CFR] 17.12 [listed plants], 17.11 [listed animals];
- Plants or animals that are candidates for possible future listing as threatened or endangered under the FESA (61 FR 40, February 28, 1996);
- Plants or animals listed or proposed for listing by the State of California as threatened or endangered under the CESA (14 California Code of Regulations [CCR] 670.5);
- Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.);
- Plants that meet the definitions of rare and endangered under CEQA (State CEQA Guidelines, Section 15380);
- Plants considered by California native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B, and 2 in CNPS Inventory 2012);
- Plants listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (Lists 3 and 4 in CNPS 2012), which may be included as special-status species on the basis of local significance or recent biological information; and
- Animals fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Plants and animals covered by the Lower Colorado River Multiple Species Conservation Program (LCR MSCP) and/or the County of San Bernardino 2007 General Plan.

No special-status wildlife species were observed or detected during the 2012 surveys of the freshwater sites (Appendices A, B, C, and D of this EIR Addendum). A total of 13 special-status wildlife species were determined to have potential to occur within the original project area identified in the Final EIR (Section 4.3.1.3, "Sensitive Biological Resources" Table 4.3-3 of the Final EIR, pages 4.3-8 to 4.3-19). Through Section 7 consultation for the extension (through 2017) and modification of the *2007 Programmatic Biological Assessment* (PBA) *for Pacific Gas and Electric Topock Compressor Station Remedial and Investigative Actions* to include the freshwater sites (USFWS, 2012), the USFWS and Bureau of Land Management (BLM) concurred that the proposed activities may affect, but are not likely to adversely affect five listed species found in the vicinity of the freshwater sites: southwestern willow flycatcher (*Empidonax traillii extimus*), Yuma

clapper rail (*Rallus longirostris yumanensis*), Mojave desert tortoise (*Gopherus agassizii*), razorback sucker (*Xyrauchen texanus*), and bonytail chub (*Gila elegans)* and its Critical Habitat. In addition, USFWS and BLM also concurred that activities within the freshwater sites area may affect, but are not likely to adversely affect one candidate species, Sonoran desert tortoise (*Gopherus morafkai*), which was not addressed in the Final EIR (BLM, 2012; USFWS, 2012). The following summarizes the conclusions of the Section 7 consultation for the alternative freshwater sites (USFWS, 2012).

Southwestern willow flycatcher

The tamarisk thickets near the freshwater sites provide suitable nesting habitat for southwestern willow flycatcher during the summer nesting season. Much of the upland portions of the freshwater sites are comprised of creosote bush scrub and disturbed bare ground, which are of limited suitability for nesting flycatchers. Recent surveys have detected only migrant flycatchers in the vicinity of the freshwater sites and no nesting individuals were detected during the May 2012 surveys of the freshwater source sites. Impacts to southwestern willow flycatcher as a result of the alternative freshwater source evaluation activities are unlikely because no impacts to suitable nesting habitat is anticipated; however, in the event a nesting flycatcher is detected during the course of work at the freshwater sites, impacts would be reduced to a less than significant level by avoiding direct and indirect impacts to flycatcher nesting habitat (i.e., tamarisk thickets), where feasible, and only removing vegetation outside of the flycatcher's nesting season (March 15 – September 30). Any vegetation removal during the nesting season shall require preconstruction surveys for active nests, implementation of no-disturbance buffers around each active nest, worker awareness training and biological monitoring as described in Mitigation Measures BIO-2a and BIO-2c in the Final EIR.

Yuma clapper rail

Recent surveys have detected Yuma clapper rails in Topock Marsh, to the west of the freshwater sites. Topock Marsh provides freshwater marsh and emergent wetland habitat suitable for nesting clapper rails; however, the nearest component of the alternative freshwater source evaluation activities to Topock Marsh is the HNWR-1 well, which occurs approximately 500 feet east within highly disturbed creosote bush scrub habitat. The alternative freshwater source evaluation activities do not occur within or directly adjacent to suitable habitat for clapper rails; therefore, no impacts to Yuma clapper rail are anticipated and no mitigation is required.

Desert tortoise (Sonoran and Mojave)

No impacts to desert tortoise are anticipated. A survey was completed in 2012 for the alternative freshwater sites to determine if there is suitable desert tortoise habitat. The freshwater sites do not support suitable habitat for desert tortoise due to the dense vegetative cover east of Oatman-Topock Highway and high levels of disturbance and/or grading west of Oatman-Topock Highway. Potential burrows found near the freshwater sites during previous surveys were deemed by experienced tortoise surveyors not to be those of the desert tortoise, but rather small mammal burrow openings that were enlarged

by environmental factors such as wind and rain erosion. However, the freshwater sites are adjacent to suitable habitat for desert tortoises (i.e., creosote bush scrub to the north and northeast) and in the unlikely event a desert tortoise is detected during the course of work at the freshwater sites, impacts would be reduced to a less than significant level by conducting preconstruction clearance surveys, implementing workers awareness training and biological monitoring, and minimizing the potential for predation by ravens and coyotes, as described in Mitigation Measures BIO-2b and BIO-2c in the Final EIR.

Razorback sucker and bonytail chub

Occupied habitat for the razorback sucker and bonytail chub occurs within the Colorado River and would not be affected by the proposed alternative freshwater source evaluation activities. The freshwater sites are limited to upland areas, which are not suitable habitat for these species. Direct or indirect impacts are also not likely to occur since the freshwater sites are outside of designated Critical Habitat for bonytail chub. No mitigation is required.

Of the remaining eight special-status species originally identified in the Final EIR as having potential to occur within the project area (Section 4.3.1.3, " Sensitive Biological Resources" Table 4.3-3 of the Final EIR, see pages 4.3-8 to 4.3-19), only four have the potential to occur at the freshwater sites, based on the results of the recent biological surveys. These species include Sonoran yellow warbler (*Dendroica petechia sonorana*), yellow-breasted chat (*Icteria virens*), crissal thrasher (*Toxostoma crissale*), and Arizona Bell's vireo (*Vireo bellii arizonae*), all of which could potentially utilize the tamarisk thickets east of the freshwater sites for nesting and foraging. No impacts are anticipated to occur to these four special-status species as the tamarisk thickets are not anticipated to be impacted by the proposed alternative freshwater source evaluation activities. However, while vegetation typically utilized by tree and shrub nesting avian species is sparse onsite, the sites do have the potential to support ground nesting species including, but not limited to, Gamble's quail and killdeer; both of which were detected or observed during the biological surveys. These two species (and several others observed during the biological surveys) are protected by the federal Migratory Bird Treaty Act. Project-related direct impacts on nesting birds could include mortality of individuals by crushing or vehicle collisions and destruction of nests and eggs through vegetation clearing and grading. Indirect impacts could include interference with reproductive success and nest abandonment brought on by increased noise levels during construction within the breeding season (March 15 – September 30). Such impacts would be considered significant under CEQA. Impacts to special-status birds and birds protected under the MBTA would be reduced to a less than significant level by avoiding direct and indirect impacts to nesting habitat (i.e., tamarisk thickets), where feasible, and only removing vegetation/grading outside of the species' nesting season (March 15 – September 30). Any vegetation removal during the nesting season shall require preconstruction clearance surveys for active nests, implementation of no-disturbance buffers around each active nest, worker awareness training and biological monitoring as described in Mitigation Measures BIO-2a and BIO-2c in the Final EIR.

b,c) The Sacramento Wash is shown as a blue line stream on the Topock U.S. Geological Survey (USGS) 7.5-minute quadrangle and as an intermittent stream in the National Hydrologic Dataset (NHD). The primary channel is a broad, open sandy channel that ranges from approximately 50 to 70 feet in width and has a flat, generally uniform bed that lacks well defined low flow channels. The majority of the primary channel is devoid of vegetation with extensive athel tamarisk thickets present along both sides of the wash. The Sacramento Wash runs immediately south of the freshwater sites. The wash runs just north of the proposed sprinkle area but does not overlap with it (Figures 3 and 4).

According to the results described in the biological evaluations conducted for the freshwater sites (see Appendices A, B, C, and D of this EIR Addendum), certain primary and secondary channels within the Sacramento Wash are considered under the jurisdiction of the United States Army Corps of Engineers (USACE) and the state (Appendices A, C, and D of this EIR Addendum). Impacts to these resources, including dredge, fill, scouring, or any other alteration of bed and banks would not require securing permits under Section 401 or 404 of the Clean Water Act (CWA) as the project activities fall under the CERCLA Section 121(e)(1) permit exemption. Per a July 10, 2013 letter from the USACE confirming the same, the proposed project is not required to obtain a Section 404 permit, as described in Mitigation Measure BIO-1 in the Final EIR, and therefore, also does not need to complete any Section 401 permitting process (USACE, 2013). It was also determined through coordination with the Arizona Game and Fish Department (AZGFD) that the State of Arizona does not provide for separate regulations over waters or wetlands beyond the federal regulations provided by the USACE (Dave Weedman, personal communication, March 8, 2013).

Sprinklers used to purge the water generated during well testing may cause an increase in invasive plant species recruitment, as well as increased feral hog usage if excessive water impoundment occurs. Feral hogs are known to occur in the areas south and east of the freshwater sites and are attracted to muddy areas with standing water. Retaining any water onsite may attract them to sensitive areas, most likely during the night when no one is around to scare them off. Hogs can negatively impact native habitats through rooting, trampling, soil compaction, disruption of the nutrient cycle, increase in soil erosion, and decreased water quality through introduction of fecal matter, bacteria and parasites. Frequent rooting disturbance also favors invasive plants, which can out-compete native plant communities. The introduction of both feral hogs and invasive plant species could have detrimental adverse effects on the jurisdictional resources and native habitats within and adjacent to the freshwater sites. Control of invasive species recruitment and protection of native habitats and indigenous plant species of biological significance would be achieved through implementation of Mitigation Measure BIO-1 in the Final EIR. Mitigation Measure BIO-1 (Final EIR at pages 4.3-26 to 4.3-27) requires, to the extent feasible, that elements of the project be designed to avoid direct effects on floodplain and riparian areas (including desert riparian areas), desert washes, wetlands, and waters of the United States. In addition, if during the design process it is shown that complete avoidance of habitats under USACE jurisdiction is not feasible, Mitigation Measure BIO-1 requires the acreage of affected

jurisdictional habitat to be replaced and/or rehabilitated to ensure "no-net-loss." As a result, impacts to jurisdictional wetlands and waters and native habitats as a result of the freshwater source evaluation would be less than significant.

e,f) Impacts to aquatic and terrestrial wildlife corridors, local policies, ordinances, habitat conservation plans, natural community conservation plans, and other approved local, regional, or state habitat conservation plan from implementation of the alternative freshwater source evaluation activities are consistent with those described in the Final EIR; therefore impacts would be less than significant.

The alternative freshwater source evaluation activities would contribute incrementally to the cumulative loss of sensitive habitats in the project area from this and other projects, specifically those projects listed in Section 6.3.2, "List of Projects in the Vicinity" pages 6-3 to 6-9 in the Final EIR that may impact riparian and wetland areas. Mitigation that has been identified for the alternative freshwater source evaluation activities would fully mitigate any loss of habitat (Mitigation Measures BIO-1, BIO-2a, BIO-2b, and BIO-2c,); thus, the project's contribution to cumulative impacts to sensitive habitat is less than cumulatively significant with mitigation.

Applicable Mitigation Measures from the Final EIR:

The mitigation measures from the Final EIR for biological resources that apply to this EIR Addendum are, in places, programmatic in nature and, as a result, the applicable mitigation measures included from the Final EIR below have been slightly modified where further clarification and project-specific direction is needed to ensure no new significant impacts will result from the proposed alternative freshwater source evaluation activities. The revisions or clarifications are not changes to the original mitigation measure included in the Final EIR but rather are consistent with the overall intent of the referenced measure included in the Final EIR. The revisions to the measures included in the Final EIR are shown in ~~strikeout~~ format for deletions and <u>underline</u> for additions.

MM BIO-1: Potential Fill of Wetlands and Other Waters of the United States and Disturbance or Removal of Riparian Habitat.

Areas of sensitive habitat in the project area have been identified during project surveys. These areas include floodplain and riparian areas, ~~wetlands,~~ and waters of the United States. ~~Habitats designated by CDFG as sensitive, including desert washes and desert riparian, are also included.~~ To the extent feasible, elements of the project shall be designed to avoid direct effects <u>to</u> these sensitive areas. ~~During the design process and b~~ <u>B</u>efore ground disturbing activities within such areas ~~(not including East Ravine)~~, a qualified biologist shall <u>conduct a one-time survey of the work area immediately before the field mobilization to designate and mark the acceptable work zone that avoids impacts to sensitive vegetation, habitat, and jurisdictional resources. The biologist shall also train and authorize biological resources Field Contact Representatives (FCRs) who will be responsible for ensuring compliance with all biological-related requirements and best practices. At least one FCR will be onsite whenever active fieldwork is being conducted</u>

at the work site. A knowledgeable biologist will be on-call at all times during fieldwork. ~~shall coordinate with PG&E to ensure that the footprints of construction zones, drill pads, staging areas, and access routes are designed to avoid disturbance of sensitive habitats to the extent feasible.~~ Through the request of USFWS, proposed access routes within jurisdictional drainages such as Sacramento Wash, will be designated as alternative routes in case the primary access roads are inaccessible. This is to dissuade public access to environmentally sensitive areas. PG&E shall notify the HNWR prior to utilizing these alternative access routes. DTSC shall be responsible for enforcing compliance with design and all preconstruction measures. The indigenous plant species of biological significance as identified in Appendix PLA of the Final EIR shall be protected during project implementation. Trimming or removal of native trees such as palo verde (*Cercidium floridum*) shall also be avoided, where possible. For any newly disturbed areas or abandoned well sites located within the HNWR, PG&E shall provide mitigation by planting disturbed areas with native vegetation, even if the disturbed areas contained non-native species, such as tamarisk. PG&E shall coordinate with the HNWR Manager on the restoration activities. Furthermore, a qualified biologist or FCR shall monitor purging activities throughout the 96-hour testing period to ensure water is percolating into the soils at a steady rate and that impoundment or scouring is not occurring. The monitor will also be responsible for making sure the system is running as planned and that no sprinkler/equipment failures are causing persistent ponding. This will ensure no project-generated water or sediment is unintentionally discharged into jurisdictional waters; ensure no alteration of bed or banks occurs within the adjacent jurisdictional drainages via scouring from purge runoff; and ensure feral hogs are not attracted to sensitive areas due to persistent ponding. A survey (or surveys) for invasive plant species shall follow well testing and necessary corrective actions shall be taken to address invasive species if they are identified. With input from the qualified biologist, PG&E shall coordinate with the HNWR Manager on the timing of the survey(s) and any corrective actions that may result from high invasive recruitment in the HNWR. Two surveys shall occur: one early in the spring and one in late spring/early summer, to account for the full range of germinating/blooming periods. With regards to invasive species removal, herbicide application shall be approved by the HNWR. Should herbicide application not be approved, removal using hand tools shall be implemented. After the invasive species removal is complete, a report shall be submitted to HNWR and DTSC which includes methods, results, species targeted for removal, and most importantly the amount of chemicals used and the success of the removal effort.

~~If during the design process it is shown that complete avoidance of habitats under USACE jurisdiction is not feasible, the Section 404 permitting process shall be completed, or the substantive equivalent per CERCLA Section 121(e)(1). In either event, the acreage of affected jurisdictional habitat shall be replaced and/or rehabilitated to ensure "no-net-loss."~~

~~Before any ground-disturbing project activities begin in areas that contain potentially jurisdictional wetlands, the wetland delineation findings shall be documented in a detailed report and submitted to USACE for verification as part of the formal Section 404 wetland~~

~~delineation process and to DTSC. For all jurisdictional areas that cannot be avoided as described above, authorization for fill of wetlands and alteration of waters of the United States shall be secured from USACE through the Section 404 permitting process before project implementation. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods agreeable to USACE and consistent with applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented.~~

~~Alternatively, if USACE declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, the substantive equivalent of the Section 404 permitting process shall be complied with by ensuring that the acreage of jurisdictional wetland affected is replaced on a "no-net-loss" basis in accordance with the substantive provisions of USACE regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods consistent with USACE methods, and consistent with the purpose and intent of applicable county and agency policies and codes. Minimization and compensation measures adopted through any applicable permitting processes shall be implemented. In any event, a report shall be submitted to DTSC to document compliance with these mandates~~.

~~If during the design process it is shown that complete avoidance of habitats under DFW jurisdiction (such as changes to the natural flow and/or bed and bank of a waterway) is infeasible, a Section 1602 streambed alteration agreement shall be obtained from DFW and affected habitats shall be replaced and/or rehabilitated. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be replaced or rehabilitated on a no-net-loss basis in accordance with DFW regulations and, if applicable, as specified in the streambed alteration agreement, if needed. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to DFW and consistent with the purpose and intent of applicable county policies and codes, as well as those policies outlined under the respective federal agency guidance documents. Minimization and compensation measures adopted through the permitting process shall also be implemented. 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 habitat restoration plan submitted to DFW, BLM, and USFWS that is agreeable to these agencies, or, alternately, through the implementation of a habitat restoration plan consistent with the substantive policies of DFW, BLM, and USFWS. 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.~~

~~Alternately, if DFW declines to assert jurisdiction because it determines that CERCLA Section 121(e)(1) applies, and during the design process it is shown that complete avoidance of habitats under DFW jurisdiction (such as changes to the natural flow and/or bed and bank of a waterway) is infeasible, the substantive mandates of a streambed~~

~~alteration agreement shall be implemented, and affected habitats shall be replaced and/or rehabilitated. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be replaced or rehabilitated on a "no-net-loss" basis in accordance with DFW regulations and, if applicable. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods agreeable to DFW and consistent with the purpose and intent of applicable county policies and codes, as well as those policies outlined under the respective federal agency guidance documents. Minimization and compensation measures adopted through the permitting process shall also be implemented. 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 habitat restoration plan developed consistent with the substantive policies of DFW, BLM and USFWS. 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.~~

MM BIO-2a: Disturbance of Special-Status Birds and Loss of Habitat.

To the extent feasible, the project implementation plans shall be designed to minimize removal of habitat for special-status birds, as defined in Table 4.3-3 of the Final EIR and those species protected under the federal Migratory Bird Treaty Act. During the design process and before ground disturbing activities ~~(except within the East Ravine as described in the Revised Addendum and unless otherwise required as noted below)~~, a qualified biologist shall coordinate with PG&E to ensure that the footprints of project elements and construction zones, staging areas, and access routes are designed to avoid direct or indirect effects on habitat and nesting habitat for other special-status species, to the extent feasible. DTSC will ensure compliance with all preconstruction and construction phase avoidance measures identified during this process and included in any design plans. Vegetation removal and other activities shall be timed to avoid the nesting season for any special-status bird species that may be present. The nesting cycle for most birds in this region spans from March 15 through September 30.

Preconstruction Measures

If ground disturbing activities are anticipated to occur during the general nesting period (March 15 through September 30), then ~~P~~ preconstruction ~~breeding season~~ clearance surveys shall be conducted by a qualified biologist no more than five days prior to ground disturbing activities within all reasonably potential nesting locations on and within 500 feet of project components—this includes ground nesting species, such as killdeer and Gambel's quail, all shrubs that could support nests, and suitable raptor nest sites such as nearby trees and power poles. ~~during the general nesting period, which encompasses the period from March 15 through September 30.~~ If the proposed alternative freshwater source evaluation activities are anticipated to occur outside of the general nesting period (October 1 – March 14), no preconstruction surveys or additional measures are required. If construction begins in the non-breeding season and proceeds continuously into the breeding season, then a qualified biologist shall perform routine clearance surveys

(beginning at the onset of the breeding season) once every five days to ensure that no nest building is occurring within all reasonably potential nesting locations on and within 500 feet of project components. If a nest is discovered that is not occupied (i.e., contains no eggs or birds), then the nest can be removed by a qualified biologist, provided that no possession of eggs or birds occurs during the removal of the nest. If an occupied nest (i.e., contains eggs or birds) is found, then suitable avoidance buffers shall be implemented as described below.

If active nests are found, a suitable buffer (e.g. 200-300 feet for common raptors and 30-50 feet for passerines) shall be established around active nests and no construction within the buffer allowed until a qualified biologist has determined that the nest is no longer active (e.g. the nestlings have fledged and are no longer reliant on the nest). The FCR or qualified biologist shall be responsible for making sure no impacts occur within the designated buffers. Encroachment into the buffer may only occur at the discretion of a qualified biologist. All no-disturbance buffers shall be delineated in the field with visible flagging or fencing material.

~~, if the final design (including East Ravine investigation Sites I, K and L) could result in disturbance or loss of active nests of special-status bird species. If vegetation removal or other disturbance related to project implementation is required during the nesting season, focused surveys for active nests of special-status birds shall be conducted before such activities begin. A qualified biologist shall conduct preconstruction surveys to identify active nests that could be affected. The appropriate area to be surveyed and the timing of the survey may vary depending on the activity and the species that could be affected. For the Yuma clapper rail, the preconstruction surveys shall specifically identify habitat within 300 feet of construction areas, in accordance with substantive policies of USFWS including those set out in USFWS protocols.~~

Construction Measures

Before the initiation of project elements that could result in disturbance of active nests or nesting pairs of other special-status birds, a qualified biologist shall be consulted to identify appropriate measures to minimize adverse impacts during the construction phase of the project. If deemed appropriate for the final project design because of the potential for impacts, minimization measures will include prohibiting construction near or in occupied sensitive bird habitat, focusing construction activities that must be conducted during the nesting season to less-sensitive periods in the nesting cycle, implementing buffers around active nests of special-status birds to the extent practical and feasible to limit visual and noise disturbance, conducting worker awareness training, and conducting biological monitoring (including noise monitoring to determine if construction noise at the edge of suitable nesting habitat is elevated above 60 dBA Leq or ambient levels). PG&E shall ensure that all food-related trash is disposed of in closed containers and removed at least once a week and prohibit feeding of wildlife by staff and subcontractors in order to avoid attraction of ravens, coyotes, and other scavenging wildlife species, which are common predators of many special-status bird species in the project vicinity. PG&E shall also

prohibit non-security-related firearms or weapons and domestic pets on site in order to avoid inadvertent impacts to special-status birds in the project vicinity. Any inadvertent injuries or deaths shall be reported immediately to the FCR or biological monitor. The FCR or biological monitor shall then ensure prompt reporting of the incident to the appropriate agencies, including DTSC.

~~An avoidance and minimization plan for special status bird species, as defined in Table 4.3-3 and those species protected under the federal Migratory Bird Treaty Act, including the Yuma clapper rail, shall be developed and implemented in consultation with USFWS, and agreed upon by DTSC. Avoidance and impact minimization measures, such as prohibiting construction near or in sensitive bird habitat, limiting construction during breeding seasons, and requiring an on-site biological monitor, shall be included in the design plan and implemented to the extent necessary to avoid significant impacts on sensitive bird species.~~

MM BIO-2b: Disturbance of Desert Tortoise and Loss of Habitat.

Preconstruction Measures

~~In areas where impacts to potential desert tortoise habitat are unavoidable, measures outlined in the Programmatic Biological Agreement (PBA) and in the USFWS letter concurring with the PBA, shall be implemented, as described below. To the extent feasible, project construction shall be designed to minimize removal of habitat for the desert tortoise.~~ Before any ground-disturbing project activities begin, ~~and except within the East Ravine for which potential effects to the tortoise have been considered per the PBA),~~ a qualified ~~USFWS-authorized desert tortoise~~ biologist shall identify potential desert tortoise habitat in areas that could be affected by the final project design. Through coordination with the ~~authorized~~ 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. These measures include the presence of a ~~USFWS-authorized desert tortoise~~ qualified biologist on-site who will examine work areas and vehicles for the presence of desert tortoises, and who will conduct preconstruction ~~desert tortoise~~ clearance surveys within 24 hours of the onset of the surface disturbance. ~~in areas where unavoidable impacts to tortoise habitat would occur. 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).~~ The preconstruction surveys shall be in full accordance with the substantive requirements of USFWS protocols.

Construction Measures

Before the initiation of project elements that could result in disturbance of desert tortoises or desert tortoise habitat, a ~~USFWS-authorized desert tortoise~~ qualified biologist shall be consulted to identify appropriate measures to minimize adverse impacts. Minimization measures are likely to include micro-siting structures, pipelines, and access roads in previously disturbed areas or in areas with sparse scrub vegetation, conducting worker awareness training, and conducting biological monitoring (by either the qualified biologist

or the FCR). PG&E shall ensure that all food-related trash is disposed of in closed containers and removed at least once a week and prohibit feeding of wildlife by staff and subcontractors in order to avoid attraction of ravens, coyotes, and other scavenging wildlife species, which are common predators of desert tortoises. PG&E shall also prohibit non-security-related firearms or weapons and domestic pets on site in order to avoid inadvertent impacts to desert tortoises in the project vicinity. Any inadvertent injuries or deaths shall be reported immediately to the biological monitor or FCR. The biological monitor or FCR shall then ensure prompt reporting of the incident to the appropriate agencies, including DTSC.

MM BIO-2c: Disturbance of Special-Status Species and Loss of Habitat Caused by Decommissioning.

To avoid impacts on special-status species that may occur within the project area as a result of decommissioning activities of the alternative freshwater source evaluation exploratory borings and wells, an avoidance and minimization plan shall be developed and implemented through consultation with ~~DFG~~ DFW, BLM, and USFWS. These measures shall be based on surveys conducted prior to decommissioning, and during the breeding season (as previously defined in the Final EIR for each species or suite of species). 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 habitat restoration plan submitted to ~~DFG~~DFW, BLM, and USFWS that is agreeable to these agencies. The plan shall include a revegetation native 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.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to sensitive biological species and habitats. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of a previously identified significant impacts to biological resources, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to biological resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Cultural Resources

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
CULTURAL RESOURCES — Would the project:					
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	Section 4.4 (Cultural Resources), pgs. 4.4-60 - 4.4-70.	No	No	Archaeological and historical resources surveys conducted at the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation required.
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Section 4.4 (Cultural Resources), pgs. 4.4-70 - 4.4-71.	No	No	Archaeological and historical resources surveys conducted at the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation required.
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Section 4.4 (Cultural Resources), pgs. 4.4-71 - 4.4-72.	No	No	Paleontological resources study conducted for the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation required.
d) Disturb any human remains, including those interred outside of formal cemeteries?	Section 4.4 (Cultural Resources), pgs. 4.4-72 - 4.4-74.	No	No	Archaeological and historical resources surveys conducted at the freshwater sites. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation required.

Discussion

As discussed in Section 4.4.3, "Cultural Resources Environmental Impacts and Mitigation Measures" of the Final EIR, beginning on page 4.4-50, substantial adverse changes to historical resources, unique archaeological resources, paleontological resources, and human remains could result from ground disturbing activities associated with the construction, operation, and

decommissioning of the project. In addition, the presence of the project components such as wells and pipelines may create ongoing impacts, such as visual or auditory intrusions, to the resource identified in the Final EIR as the Topock Cultural Area largely because such features are inconsistent with the traditional uses of the Topock Cultural Area which is sacred to local Indian tribes. Although designed to avoid direct physical impacts to National Register of Historic Places (NRHP) listed and NRHP and California Register of Historical Resources (CRHR) eligible site CA-SBR-219 (Loci A, B, and C of the Topock Maze), an integral part of the Topock Cultural Area, the Final EIR nevertheless concluded that the project would result in significant and unavoidable impacts to historical resources (including the Topock Cultural Area), unique archaeological resources, and human remains, even after implementation of mitigation measures (see Section 4.4.3, "Environmental Impacts and Mitigation Measures" of the Final EIR, pages 4.4-60-4.4-74). The Final EIR reached these conclusions after identifying and analyzing the direct and indirect effects that would occur to the Topock Cultural Area as a result of the project, including impacts from noise. Impacts to paleontological resources were determined to be less than significant after mitigation (Section 4.4.3, "Environmental Impacts and Mitigation Measures" of the Final EIR page 4.4-71).

a) The Final EIR acknowledged that the boundaries of the Topock Cultural Area, which is considered a historical resource, extend beyond the project area as defined in the Final EIR (see Exhibit 4.1-1). The freshwater sites are located between 300 feet to 3,400 feet north/northeast of the original Final EIR project boundary and, for the reasons stated on pages 4.4-50 through 4.4-58 of the Final EIR, for the purposes of this EIR Addendum the location of the piping, sprinkler system, and well areas are considered to be part of the project area and are conservatively assumed to be part of the Topock Cultural Area in this CEQA analysis.[1] Specifically, as in the Final EIR, DTSC "looked beyond the specific cultural resources recorded by previous archaeological surveys" and considered tribal comments, including the comment from the Fort Mojave Indian Tribe that the "Tribe attributes high cultural value to the entire area in which the project is located, and to areas beyond the defined project area, including the constituent parts of that area (landforms, water, plants, and animals)," to inform its decision. (Final EIR at p. 4.4-57.)

   However, no new significant environmental impacts beyond those analyzed and disclosed in the Final EIR are anticipated to occur to the Topock Cultural Area because the proposed exploratory borings and possible well installations would be of the same type and method as that analyzed in the Final EIR, and would therefore be consistent with activities considered in the original project approval and Final EIR. Inclusion of the alternative freshwater source location activities also would not exceed the 170 total maximum wells identified as part of the project approval. The impacts to the historical resource identified as the Topock Cultural Area would remain significant and

[1] Note that DTSC has not attempted to evaluate whether the Topock Cultural Area as defined in this EIR Addendum would be determined to be a TCP by the federal government. Because DTSC is not a federal agency and is not responsible for compliance with the NHPA, DTSC cannot make a determination of what resources in the project area constitute historic properties or the effect that federal undertakings necessary to implement the remediation would have on these resources. (Final EIR at p. 4.4-58.)

unavoidable with the alternative freshwater source evaluation activities, even with the implementation of Mitigation Measure CUL-1a.

Because the freshwater sites are located outside of the original project boundary, additional archival research and archaeological and historical resources surveys were conducted for this area in August, October, and November 2012 and March 2013 in order to identify any additional potential historical resources (Mirro and Hearth, 2012; Hearth and Mirro, 2013). The investigation resulted in the identification of three additional resources, including one (AZ I:15:156 [Historic Route 66]) within the project area and two (AZ L:7:16 [multi-component archaeological site]; AZ L:7:76 (AE-Topock-154) [prehistoric archaeological site with historic concrete and masonry lined pit]) adjacent to the project area. Resource AZ I:15:156 (Historic Route 66) had been previously recorded and determined eligible for listing in the NRHP (CH2MHill 2004). Resource AZ L:7:16 (multi-component archaeological site) had been previously recorded but not evaluated for NRHP eligibility. Resource AZ L:7:76 (prehistoric archaeological site with historic concrete and masonry lined pit) had not been previously recorded or evaluated for NRHP eligibility.

Although the two resources (AZ L:7:16 and AZ L:7:76) located adjacent to the project area have not been formally evaluated, they may qualify as eligible for listing in the NRHP and therefore would also be considered historical resources for the purposes of CEQA and for listing in the Arizona State Register of Historic Places. These two resources may have the potential to qualify for the NRHP for their associations with significant historical events (NRHP Criterion A) or for the information that they can provide in the study of prehistory and history (NRHP Criterion D), and may also contribute to the significance of the Topock Cultural Area. Thus, it is reasonable to conservatively consider that the documented, but currently unevaluated, resources identified adjacent to the freshwater source locations (AZ L:7:16 and AZ L:7:76) would qualify as historical resources under CEQA and are therefore treated as such for the purposes of this analysis. The alternative freshwater source sites are located roughly 470 feet from the nearest adjacent resource (AZ L:7:76) and both AZ L:7:16 and AZ L:7:76 would be avoided under the proposed alternative freshwater source evaluation activities. The alternative freshwater source evaluation activities would not result in direct impacts to either resource. There is potential for indirect impacts to the resources due to increased activity in the area; however, with the implementation of Mitigation Measures CUL-1b and CUL-1c the alternative freshwater source evaluation activities would result in a less than significant impact to resources AZ L:7:16 and AZ L:7:76

Resource AZ I:15:156 (Historic Route 66) has been previously determined eligible for listing in the NRHP and is therefore a historical resource under CEQA. Historic Route 66 (AZ I:15:156) is located within the alternative freshwater source project area and is a paved two-lane highway that will be used for vehicle travel and transport of equipment to the site. The roadway is currently used for heavy and light vehicular traffic and thus the alternative freshwater source evaluation activities would have no direct or indirect

impacts to resource AZ I:15:156. No mitigation in connection with this resource is required.

Due to ground disturbing activities associated with the alternative freshwater source evaluation, it is possible that as yet undiscovered archaeological resources qualifying as eligible for listing in the NRHP, and therefore qualifying as historical resources under CEQA, may be encountered. Ground disturbances and the resultant potential for discoveries is, however, consistent with activities considered in the Final EIR and no new significant environmental impacts are anticipated. As such, impacts to any as yet undiscovered historical resources would remain significant and unavoidable, even with the implementation of Mitigation Measures CUL-1b and CUL-1c.

b) The two archaeological resources (AZ L:7:16 and AZ L:7:76) identified above have not yet been formally evaluated to determine whether they qualify as unique archaeological resources under CEQA, but may qualify as unique archaeological resources and are treated as such for the purposes of this analysis. Resources AZ L:7:16 and AZ L:7:76 would be avoided under the proposed alternative freshwater source evaluation activities and there would be no direct impacts to either resource. There is potential for indirect impacts to the resources due to increased activity in the area; however, with the implementation of Mitigation Measure CUL-2 the alternative freshwater source evaluation activities would result in a less than significant impact to resources AZ L:7:16 and AZ L:7:76

It is possible that as yet undiscovered potential unique archaeological resources may be encountered during ground-disturbing activities. As such, activities associated with the alternative freshwater source evaluation are consistent with the activities considered in the Final EIR and no new significant environmental impacts are anticipated to any as yet undiscovered unique archaeological resources. Impacts to any as yet undiscovered unique archaeological resources would remain significant and unavoidable, even with the implementation of Mitigation Measure CUL-2.

c) As required by Mitigation Measure CUL-3 from the Final EIR, PG&E conducted a paleontological resources investigation which covered the freshwater sites (Cogstone, 2012). Per Mitigation Measure CUL-3, the investigation determined whether preconstruction recovery of sensitive resources and/or construction monitoring would be warranted in the final design area. The paleontological investigation concluded that paleontologically sensitive Chemehuevi and Bouse Formations may underlie the lower-sensitivity Holocene sediments in the alternative freshwater source evaluation area (Cogstone, 2012; ARCADIS 2013). The study recommended that paleontological resources awareness training be completed by all personnel to outline procedures to follow in the event of a find. PG&E will have a paleontologist on call to respond in the event fossils are encountered. These recommendations are incorporated into Mitigation Measure CUL-3, as shown below. With the implementation of Mitigation Measure CUL-3, impacts

to unique paleontological resources or sites or unique geologic features would remain less than significant.

d) While no human remains are known to exist within the freshwater sites and surrounding area, ground-disturbing activities have the potential to encounter previously undiscovered human remains associated with past uses of the area. However, no new impacts outside of those identified in the Final EIR are anticipated to human remains, if present, as the proposed alternative freshwater source evaluation activities are consistent with those activities considered in the Final EIR. Mitigation Measure CUL-4 would serve to reduce any impacts associated with the potential discovery of human remains. Impacts to human remains would remain significant and unavoidable even with the implementation of Mitigation Measure CUL-4.

As discussed in Section 6.4.4, "Cumulative Impacts Cultural Resources" of the Final EIR page 6-33 through 35, cumulative impacts to cultural resources may occur at the local level (EIR project area) and regional level (Lower Colorado River Valley). The analysis concluded that the proposed Final Groundwater Remedy would result in a cumulatively considerable contribution to a cumulative impact on cultural resources and that no feasible mitigation exists that would reduce this impact to less than significant. Several projects listed in Section 6.3.2, "List of Projects in the Vicinity" Table 6-3 of the Final EIR page 6-4, involved substantial amounts of ground disturbance, such as the soils investigation and remediation activities (1D), AOC4 (1E), and the cathodic protection system (9A), and were likely to further impact nearby unknown or buried cultural resources. Other projects, such as the Moabi Regional Park Improvements (5A), Pirate Cover Resort (2C), and Topock Marina (7) have the potential not only to disturb or alter buried resources, but were also likely to result in additional traffic, aesthetic, noise, and air quality impacts to cultural resources, including the Topock Cultural Area.

Implementation of the project would result in significant and unavoidable cumulative impacts to historical resources (including the Topock Cultural Area), unique archaeological resources, and human remains, and as such, the proposed freshwater activities also contribute to a significant and unavoidable cumulative impact to these resources. While Mitigation Measures CUL-1a, CUL-1b, CUL-1c, CUL-2, and CUL-4 would reduce project-related impacts, implementation of the measures would not reduce the level of significance. Impacts to unique paleontological resources would be reduced to a less than significant level with the implementation of Mitigation Measure CUL-3. The proposed alternative freshwater source evaluation activities are consistent with activities considered in the Final EIR and no new significant cumulative impacts, or substantial increase in the severity of impacts, would occur. The proposed alternative freshwater source evaluation activities would not alter the significance conclusions of the previously certified EIR. No new significant impacts would occur.

Applicable Mitigation Measures from the Final EIR:

The mitigation measures from the Final EIR for cultural resources that apply to this Addendum are, in places, programmatic in nature and, as a result, the applicable mitigation measures included from the Final EIR below have been slightly modified where further clarification and project-specific direction is needed to ensure no new significant impacts will result from the proposed alternative freshwater source evaluation activities. The revisions or clarifications are not changes to the original mitigation measures included in the Final EIR but rather are consistent with the overall intent of the referenced measure included in the Final EIR. The revisions to the measures included in the Final EIR are shown in ~~strikeout~~ format for deletions and underline for additions.

Measure CUL-1a:

During Design, Construction, O&M, and Decommissioning Implement Measures to Avoid, Minimize, or Mitigate Impacts on Cultural Resources.

Establishment of a cultural impact mitigation program and a Corrective Measures Implementation Workplan (CMI Workplan), with specific activities stipulated for each phase of the project, will reduce the potential for impacts on historical resources within the project area, and will help preserve the values of and access to the Topock Cultural Area for local tribal users. As detailed below, measures will be implemented to avoid known resources, re-use existing disturbed areas to the extent feasible and consistent with the Final Remedy, allow for tribal input to the final design and maintain access for tribal users during design, construction, operation, and decommissioning activities, as appropriate. During construction, a Worker Education Program and regular archaeological and tribal monitoring will be implemented, and measures intended to reduce the potential for incursion by outside parties will be strengthened. ~~This measure does not apply to the activities included as part of the East Ravine Revised Addendum, Groundwater Investigation (dated December 31, 2010).~~ During the alternative freshwater source evaluation, all activities will occur entirely on federal land. PG&E shall ensure that all archaeological and historical sites shall be avoided during implementation to the maximum extent feasible, and that all work shall comply with all applicable cultural resources mitigation requirements as prescribed by the *Programmatic Agreement* (BLM, 2010) and *Cultural and Historic Properties Management Plan* (*CHPMP)* (BLM, 2012).

Mitigation during the design, construction, O&M, and decommissioning phases includes these specific actions:

CUL-1a-1: During development of the final design and the construction, operation, and decommissioning phases of the project, PG&E shall carry out and require all subcontractors to carry out all investigative, testing, and remediation activities, including all supporting operations and maintenance activities, in ways that avoid, minimize, and mitigate significant adverse effects to historically significant cultural and historic resources, consistent with the CEQA Guidelines, and including the Topock Cultural Area, to the maximum extent feasible as determined by DTSC.

CUL-1a-2: ~~As part of the CMI Workplan,~~ PG&E shall develop a written access plan to preserve tribal members' access to, and use of, the project area for religious, spiritual, or other cultural purposes. This plan will allow access to the extent PG&E has the authority to facilitate such access, and be consistent with existing laws, regulations, and agreements governing property within the project area. The access plan may place restrictions on access into certain areas, such as the Compressor Station and the existing evaporation ponds, subject to DTSC review with regard to health and safety concerns and to ensure noninterference with approved remediation activities. This access plan may be developed in coordination with the federal agencies with land management responsibilities in the project area (e.g., BLM and USFWS) in accordance with the related stipulation (General Principle I.C) contained in the Programmatic Agreement (Appendix PA of the Final EIR). PG&E shall demonstrate a good faith effort to coordinate with Interested Tribes by including communication logs ~~as part of the CMI Workplan~~. Because the alternative freshwater source evaluation sites are located on federal land, PG&E will work with the federal agencies regarding tribal access during implementation of the freshwater activities, including tribal access consistent with the November 26, 2011 BLM "PG&E Topock Remediation Project Tribal Access Plan for Federal Properties." Tribal access to work areas during the implementation of alternative freshwater source evaluation activities shall be consistent with the safety limitations and other requirements of the Programmatic Agreement's Monitoring Protocol (Appendix C).

CUL-1a-3: 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 Cultural Area, by:

a. Retaining a Qualified Cultural Resource Consultant to implement the Mitigation Monitoring and Reporting Program (MMRP) and conducting yearly inspections (or less frequently upon approval by DTSC) of identified historical resources, including inspections of the Topock Cultural Area, to determine if substantial adverse changes have occurred relative to the condition of the historical resources during the past year or prior to the implementation of the project. 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 inspections. The Qualified Cultural Resource Consultant shall be a person who is acceptable to DTSC and who is also a qualified archaeologist with a graduate degree in archaeology, anthropology or closely related field, plus at least 3 years of fulltime professional experience in general North American archaeological research and fieldwork, with expertise/experience in the Southwest preferred.

b. Developing a site security plan ~~as part of the CMI Workplan~~. The site security plan shall include, but not be limited to, instructions for PG&E personnel to inspect the project site routinely during construction and report any human-caused disturbance to

project facilities and the surrounding environment to DTSC and the appropriate landowner, such as BLM, USFWS, or FMIT, as appropriate, depending on the ownership of the property involved in the incursion. Notification shall be within a specified period, as established in the site security plan for the event, and shall also be summarized as part of the periodic implementation status report, as approved by DTSC for remedy implementation. This measure does not impose any obligation on PG&E to perform law enforcement duties on federal or private lands, but is intended to provide increased observation of potential intrusions into the project area during construction and operation of the final remedy that may impact significant cultural resources. PG&E staff, or assigned agents, should be instructed to report any outside disturbance to the environment personally observed over the course of the working day. Information shall be reported within a specific period, as established in the site security plan, to DTSC and the appropriate landowners, such as BLM, USFWS, or FMIT, depending on the ownership of the property intruded upon. The site security plan may also include the use of PG&E security cameras at major ingress/egress gates into the project site. Finally, if requested by the FMIT the plan may include the use of private security personnel to patrol the FMIT-owned parcel within the project area to prevent outside incursions. During the implementation of alternative freshwater source evaluation activities, PG&E shall ensure that the daily monitoring logs prepared by the archaeological monitor will include a description of any disturbances observed that might suggest a breach of site security that may impact significant cultural resources. The logs shall be filed daily with PG&E.

~~c. Coordinating with BLM and San Bernardino County to facilitate an outreach effort 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 the surrounding tribes in this outreach effort, providing Interested Tribes with the opportunity to comment on outreach materials or provide a tribal cultural resources specialist the opportunity to participate in the outreach activities. As part of this outreach effort, PG&E shall work with Park Moabi and offer to design, develop, and fund the installation of an informational kiosk within Park Moabi that informs visitors of the work being done at the project site. PG&E shall involve the tribes to the maximum extent feasible, as determined by DTSC, in the design and development of the informational kiosk.~~

d. Posting 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.

CUL-1a-5: Should any indigenous plants of traditional cultural significance and listed in Appendix PLA of the Final EIR be identified within the ~~project~~ alternative freshwater source evaluation activity area, PG&E shall avoid, protect, and encourage the natural regeneration of the identified plants when developing the remediation design, final restoration plan, and IM-3 decommission plan. In the event that impacts on the identified plants cannot be avoided and such plants will be displaced, PG&E shall retain a qualified botanist who shall prepare a plant transplantation/monitoring plan which can be included as part of the Cultural Impact Mitigation Program (CIMP) referenced in CUL-1a-8 either by (1) transplanting such indigenous plants to an on-site location, or (2) providing a 2:1 ratio replacement to another location decided upon between PG&E and members of the Interested Tribes. Plans to transplant or replace such plants shall be approved by DTSC. In coordination with the qualified botanist, PG&E shall monitor all replanted and replacement plants for at least 5 years, and shall ensure at least a 75 percent survivorship rate during that time. 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. During the implementation of the alternative freshwater source evaluation activities, PG&E shall ensure that the indigenous plant species of traditional cultural significance as identified in Appendix PLA of the Final EIR shall be protected or avoided during implementation. A biologist shall be present at the initiation of work within the alternative freshwater source evaluation area to educate construction personnel, and to flag (or otherwise mark) indigenous plant specimens that shall be protected and avoided during implementation.

CUL-1a-8: Prior to commencement of construction, PG&E shall submit as part of the final Remedial Design, a CIMP developed in coordination with Interested Tribes for DTSC's review and approval. The CIMP may be developed in coordination with the federal agencies with land management responsibilities in the project area (e.g., BLM and USFWS) in accordance with the Programmatic Agreement (Appendix PA). The CIMP shall include, at a minimum and to DTSC's satisfaction, the following:

a. Protocols for continued communication. Consistent with past practice and the communication processes previously entered into by PG&E with Interested Tribes, the company shall continue to communicate with Interested Tribes during the design, construction, operation, and decommissioning of the project. Prior to implementation of construction, PG&E shall communicate with Interested Tribes that place cultural significance on the Topock Cultural Area. Outreach efforts between the Tribes and PG&E shall be communicated by PG&E to DTSC quarterly during the design and construction phase for review and input, and annually during project operations. Until the CIMP is approved, during the implementation of the alternative freshwater source evaluation activities, PG&E shall continue to communicate with Interested Tribes in a manner consistent with past practices.

b. Protocols for the appropriate treatment of archaeological materials that may be disturbed or discovered during implementation of the final remedy, including protocols for the repatriation of significant items of cultural patrimony that may be recovered during the project, and protocols for the curation of cultural materials recovered during the project. Treatment of archaeological sites may include data recovery or capping. If data recovery is proposed, a Research Design following California Office of Historic Preservation guidelines or federal guidelines, as applicable, shall be prepared and reviewed and approved by DTSC. Until the CIMP is approved, during the implementation of alternative freshwater source evaluation activities, protocols for the appropriate treatment of archaeological materials that may be disturbed or discovered on federally-owned property shall be consistent with the CHPMP (BLM, 2012).

c. Protocols for the review of cultural resource-related documents throughout the design, construction, and operational phases. Until the CIMP is approved, during the implementation of the proposed freshwater activities, PG&E shall ensure that cultural resources-related documents generated during activities associated with the alternative freshwater source evaluation activities will be made available for review by interested Tribes.

d. Protocols for the review of project design documents before the beginning of construction, including reviews of project design documents throughout the design process (e.g., Preliminary [approximately 30% completed], Intermediate [approximately 60% completed] and Pre-final design).

e. Protocols for the appropriate methods to be used to restore the environment to its preconstruction condition upon decommissioning of individual groundwater remedy facilities.

~~f. A plan for the decommissioning and removal of the IM-3 Facility and proposed restoration of the site (to be an appendix to the CIMP).~~

g. Protocols for the repatriation of clean soil cuttings generated during construction activities and during drilling associated with repair/replacement activities during operations and maintenance phases. The soil cuttings shall be managed in compliance with applicable laws and regulations on site. Until the CIMP is approved, during the implementation of the alternative freshwater source evaluation activities, PG&E will handle soil cuttings in a manner consistent with Section 3.3 of the Freshwater Implementation Plan.

h. Protocols for the appropriate methods, consistent with Mitigation Measure NOISE-3, to reduce auditory impacts.

i. Protocols for the appropriate methods, consistent with Mitigation Measures AES-1 and AES-2, to reduce visual intrusions. Until the CIMP is approved, during the

implementation of the alternative freshwater source evaluation activities, PG&E will comply with Mitigation Measures AES-1 and AES-2.

j. Protocols for tribal notification in advance of project-related activities that the Interested Tribes may feel have the potential to cause adverse impacts to sensitive cultural resources. Until the CIMP is approved, during the implementation of alternative freshwater source evaluation activities, PG&E shall notify Tribes as early as possible, but at least three (3) business days as defined by the Programmatic Agreement, in advance of activities related to the Freshwater Implementation Plan.

k. Protocols to be followed by project personnel to accommodate, if feasible as determined by DTSC, key tribal ceremonies that involve the Topock Cultural Area. Until the CIMP is approved, during the implementation of alternative freshwater source evaluation activities, PG&E shall accommodate, if feasible as determined by DTSC, key tribal ceremonies that involve the Topock Cultural Area.

l. Provisions affording sufficient tribal monitors to observe ground disturbing activities and/or other scientific surveying (e.g., biological surveys) that may occur in preparation for construction activities. Ground-disturbing activities include trenching, excavation, grading, well excavation/drilling, decommissioning of the IM-3 Facility and subsurface pipeline, or other construction-related activities Until the CIMP is approved, during the implementation of the alternative freshwater source evaluation activities, PG&E shall invite the Tribes to arrange for tribal monitors to observe pre-construction archaeological and indigenous plant surveys as well as all ground disturbing activities including protective fence installation, vegetation removal, and all earth moving. PG&E shall notify tribes as early as possible, but at least three (3) business days, in advance of activities related to the freshwater activities.

m. Provisions of reasonable compensation for tribal monitors consistent with historic rates. Until the CIMP is approved, during the implementation of alternative freshwater source evaluation activities, compensation shall be in accordance with the existing Memoranda of Understanding (MOU) between PG&E and the Tribes.

n. Protocols for locations requiring specific protective devices, such as temporary fencing, flagging, or other type of demarcation during construction. During the implementation of alternative freshwater source evaluation activities, PG&E shall ensure that work areas are clearly demarcated and project personnel shall be instructed not to leave designated work areas or access roads, thereby restricting access to cultural resources in the vicinity of the project footprint.

o. Protocols for the reporting of discoveries of cultural importance consistent with existing statutes and regulations. Until the CIMP is approved, during the implementation of alternative freshwater source evaluation activities, protocols reporting discoveries of cultural importance shall be consistent with the CHPMP (BLM, 2012).

p. Protocols for the inspection of remediation facilities and/or staging areas throughout the construction phase. Until the CIMP is approved, during the implementation of alternative freshwater source evaluation activities, PG&E will continue to communicate with Interested Tribes in a manner consistent with past practices.

Mitigation during the design phase includes these specific actions:

CUL-1a-9: During selection of the design and specific locations for physical remediation facilities, 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 reuse of existing physical improvements, such as but not limited to wells and pipelines, but not including IM-3 facilities. "Disturbed" areas in this context means those areas outside of documented archaeological site boundaries that have experienced ground disturbance in the last 50 years. PG&E shall produce an aerial map of these disturbed areas to guide project design, and PG&E shall make a good faith effort to provide tribes with an opportunity to review and comment on the information displayed on the map in determining "disturbed" areas.

Mitigation during the construction phase includes these specific actions:

CUL-1a-12: PG&E shall provide sufficient opportunity, as determined by DTSC, for Interested Tribes to conduct a traditional healing/cleansing ceremony (or ceremonies) before and after ground disturbing construction activities occur.

Mitigation during the construction and O&M phases includes these specific actions:

CUL-1a-13: PG&E shall, in communication with Interested Tribes, develop ~~as part of the CMI Workplan,~~ a worker cultural sensitivity education program. The program shall be implemented before commencement of construction and throughout construction and operations as personnel are added. This program may include information provided directly by tribal entities either in written form or on video, in a manner consistent with Appendix C in the existing BLM Programmatic Agreement. The worker cultural sensitivity education program shall ensure that every person working on the project as an employee or contractor, before participating in design or outdoor activities at the project site, is informed regarding:

- the cultural significance of the Topock Cultural Area,
- appropriate behavior to use within the Topock Cultural Area,
- activities that are to be avoided in the Topock Cultural Area, and
- consequences in the event of noncompliance.

During implementation of alternative freshwater source evaluation activities, PG&E shall conduct worker cultural resources sensitivity training for all personnel prior to the start of implementation and to new staff added to the construction crew following commencement of work. Given the cultural sensitivity of the Topock Cultural Area, PG&E shall ensure that the worker sensitivity training stresses appropriate behavior in

these settings. PG&E shall ensure that all work is being carried out in a manner that respects cultural resources. PG&E shall afford Tribal entities the opportunity to contribute to the worker sensitivity training.

Mitigation Measure CUL-1b and CUL-1c:

During Design, Construction, O&M, and Decommissioning Consider the Location of Historical Resources and Implement Measures to Avoid Resources to the Extent Feasible.

The following actions will reduce the potential for impacts on identified historically significant resources (other than the Topock Cultural Area, which is separately addressed in CUL-1a) within the project area. As detailed below, these actions include consideration of the location of historical resources, preparation of a cultural resources study, and preparation of a treatment plan. Monitoring of ground-disturbing activities during project construction will further protect historically significant resources. Protective actions are also described pertaining to the discovery of any previously unidentified potentially significant cultural resources.

CUL-1b/c-1: PG&E shall consider the locations of the identified historic resources described above in this EIR Addendum ~~(Table 4.4-3)~~ during the design of the physical improvements necessary for the project and avoid, minimize, or mitigate impacts on historical and archaeological resources to the maximum extent feasible, as determined by DTSC. The final design plans for the project will be submitted to DTSC for review and discretionary approval.

CUL-1b/c-2: During preparation of the final design, and consistent with CUL-1a-3, PG&E shall retain a Qualified Cultural Resources Consultant to prepare a cultural resources study that assesses the potential for the construction, operations, or decommissioning of specific proposed improvements to result in significant impacts on identified historically significant resources described in Impacts CUL-1b and CUL-1c. This may include a geoarchaeological investigation and/or non-destructive remote sensing surveys of potentially disturbed areas to determine if a potential exists for buried historical and archaeological resources. “Significant impacts” as used here means the potential for construction to demolish or materially alter in an adverse manner those physical characteristics of a resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR. The study will be submitted to DTSC for review and evaluation to determine if existing mitigation measures are appropriate.

CUL-1b/c-3: If the cultural resources study determines that the construction of physical improvements would result in significant impacts on identified historically significant resources described in Impacts CUL-1b and CUL-1c, and avoidance of the resource is not feasible, PG&E shall prepare a treatment plan that identifies measures to reduce these impacts (see above description of the CIMP) for DTSC’s review and approval. The treatment plan shall identify which criteria for listing on the CRHR contribute to the

affected resource's significance and which aspects of significance would be materially altered by construction, operations, 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. Methods of accomplishing this may include capping or covering the resource with a layer of soil. To the extent that a resource cannot feasibly be preserved in place or left in an undisturbed state, excavation as mitigation shall be restricted to those parts of the resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a historically significant resource if the treatment plan determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource. The plan shall require communication with all Interested Tribes with regard to their perspectives and wishes for the treatment of the resources.

Mitigation during the construction phase includes these specific actions:

CUL-1b/c-4: Consistent with CUL-1a-3a above, PG&E shall retain a Qualified Cultural Resources Consultant to observe ground-disturbing activities and shall be required to request the participation of tribal monitors during those activities, including steps necessary during operations and decommissioning activities to ensure that historically significant resources are avoided to the maximum extent feasible, as determined by DTSC, during actual construction (see the description of the CMI Workplan, above). The Qualified Cultural Resources Consultant shall provide training to construction personnel on the locations of identified resources, values associated with the identified resources, responsibility for reporting suspected historic resources, and procedures for suspension of work in the immediate vicinity of the discovery, and shall use exclusionary fencing, flagging, or other appropriate physical barriers to mark the boundaries of identified resources. The Qualified Cultural Resources Consultant shall invite participation from Interested Tribal members to participate in the training.

In the event that previously unidentified potentially significant cultural resources are discovered during ground-disturbing activities, the Qualified Cultural Resources Consultant shall have the authority to divert or temporarily halt ground disturbing activities in the area of discovery to allow evaluation of the potentially significant cultural resources. If such discoveries occur on land managed by a federal agency, Stipulation IX (Discoveries) of the Programmatic Agreement and Appendix C (Discovery Plan) of the CHPMP shall apply and ~~are~~ if deemed adequate by DTSC. If a discovery occurs on other lands within the project area, the Qualified Cultural Resources Consultant shall contact the PG&E and DTSC project managers at the time of discovery and, in consultation with DTSC and tribal monitors, shall evaluate the resource before construction activities will be allowed to resume in the affected area. For significant cultural resources, and before construction activities are allowed to resume in the affected area, the resource(s) shall be recovered with coordination of the tribal monitors and DTSC. Recovery may include a Research Design and/or Data Recovery Program submitted to DTSC for review and approval. The Qualified Cultural Resources Consultant (and tribal monitors) shall determine the amount of material to be recovered

for an adequate sample for analysis or data recovery. Any concerns or recommendations regarding the ground-disturbing activities or the handling of cultural resources shall be directed to the Qualified Cultural Resources Consultant or PG&E's site supervisor.

During the implementation of alternative freshwater source evaluation activities, PG&E shall direct the Qualified Cultural Resources Consultant to conduct pre-construction archaeological surveys of the one-acre drill locations, staging areas, and unpaved access roads to ensure avoidance of archaeological resources and to assist in the demarcation of work areas so that identified cultural resources are avoided. The Qualified Cultural Resources Consultant shall also conduct archaeological monitoring of all ground-disturbing activities and shall have the authority to temporarily divert or halt any activities in the event that previously unidentified potentially significant cultural resources are discovered. Where feasible, preservation in place shall be the preferred manner of mitigating impacts to such resources. Discoveries shall be treated in accordance with Stipulation IX (Discoveries) of the Programmatic Agreement and Appendix C (Discovery Plan) of the CHPMP

Mitigation Measure CUL-2:

During Project Design Consider the Location of Unique Archaeological Resources and Avoid Resources to the Maximum Extent Feasible

Cultural resources that qualify as unique archaeological sites in the project area would probably also meet one or more of the criteria for historical resources and would therefore be subject to Mitigation Measures CUL-1b/c-2 and CUL-1b/c-3. The mitigation measures under this identified impact are the same as listed for Impact CUL-1b and CUL-1c.

These mitigation measures would reduce the potential for impacts on unique archaeological resources.

Mitigation Measure CUL-3:

Conduct Survey and Construction Monitoring.

A paleontological investigation, including a detailed survey of the project area by a qualified paleontologist, shall be conducted to refine the potential impacts on unique paleontological resources within the final design area and determine whether preconstruction recovery of sensitive resources and/or construction monitoring would be warranted. If construction monitoring is determined to be warranted, ground-altering activity ~~would~~ will be monitored by a qualified paleontologist to assess, document, and recover unique fossils. Monitoring shall include the inspection of exposed surfaces and microscopic examination of matrix in potential fossil bearing formations. In the event microfossils are discovered, the monitor shall collect matrix for processing. In the event paleontological resources are encountered during earthmoving activities, recovered specimens shall be prepared by the paleontologist to a point of identification and permanent preservation for curation. PG&E shall retain a Qualified Paleontologist to observe ground disturbing activities where determined necessary based on the results of

the paleontological investigation and shall be required to request the participation of tribal monitors during those activities, including steps necessary during operations and decommissioning activities to ensure that historically significant resources are avoided to the maximum extent feasible, as determined by DTSC, during actual construction (see above description of the CMI Workplan). Paleontological resources of scientific value shall be identified and curated into an established, federally approved and accredited, professional museum repository in the region with permanent retrievable paleontological storage. ~~This measure does not apply to the activities included as part of the East Ravine Revised Addendum, Groundwater Investigation.~~

During implementation of alternative freshwater source evaluation activities, PG&E shall retain a qualified paleontologist to conduct paleontological awareness training and shall be available to respond in the event of a paleontological find. No paleontological monitoring is required during activities associated with the alternative freshwater source evaluation activities.

Mitigation Measure CUL-4:

With Discovery of Human Remains or Burials, Suspend Work, Protect Remains, and Comply with Local, State, and Federal Laws Regarding Discoveries During Ground-Disturbing Activities.

Ground-disturbing activities may disturb as-yet undiscovered human remains or Native American burials and associated grave goods or funerary objects (artifacts or other items buried with the deceased). PG&E shall retain a Qualified Cultural Resource Consultant and request that designated tribal monitor(s) train construction personnel in the identification of human remains so that they may aid in the identification of such resources (see above description of the CIMP). A Qualified Cultural Resource Consultant and tribal monitor(s) shall be in place to adequately oversee all ground-disturbing activities. In the event human remains are uncovered over the course of project construction, operation and maintenance, and/or decommissioning activities, the following procedures shall be followed to ensure compliance with all applicable local, state, and federal laws.

Activities associated with the alternative freshwater source evaluation are located on federally-owned property therefore in the event of discovery of human remains and associated grave goods or funerary objects, the stipulations of the Programmatic Agreement (Appendix PA of the Final EIR) and the procedures outlined in the *CHPMP* (BLM, 2012) shall be followed. The Programmatic Agreement and *CHPMP* specify that human remains and funerary objects discovered on federal lands must be treated in a culturally appropriate and respectful manner and in compliance with the Native American Graves Protection and Repatriation Act (NAGPRA) and any other applicable state or federal laws.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in significant and unavoidable impacts related to historical resources, unique archaeological resources, and human remains. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant environmental impacts or a substantial increase in the severity of previously identified significant impacts to these resources, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts to cultural resources. Similarly, no new information of substantial importance related to cultural resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Geology, Soils, and Seismicity

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
GEOLOGY, SOILS, AND SEISMICITY — Would the project:					
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: i) 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.) ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction? iv) Landslides?	Section 4.5 (Geology and Soils), pg. 4.5-46.	No	No	No	N/A
b) Result in substantial soil erosion or the loss of topsoil?	Section 4.5 (Geology and Soils), pgs. 4.5-47. to 4.5-49.	No	No	Potential erosion related to pumped well water discharge. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation required.
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?	Section 4.5 (Geology and Soils), pg. 4.5-47.	No	No	No	N/A
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?	Section 4.5 (Geology and Soils), pg. 4.5-47.	No	No	No	N/A
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	Section 4.5 (Geology and Soils), pg. 4.5-46.	No	No	No	See mitigation measures summarized below. No new mitigation required.

Discussion

a.i-iv.) The nearest active fault trace is about 93 miles west-southwest of the compressor station. This is approximately 94 miles west-southwest of the freshwater sites in Arizona. The nearest Arizona faults are at the Needles Graben, located about six miles northeast of the compressor station (see Section 4.5, "Geology and Soils" Exhibit 4.5-2 of the Final EIR,

on page 4.5-5) and five miles northeast of the freshwater sites. However, the Needles Graben has not experienced movement since the late Pleistocene era. Therefore, the freshwater sites are not located on active faults and there would be no impact from fault rupture. The freshwater sites are located about 8,000 feet northeast of the compressor station and would therefore experience a similar level of seismic shaking as described in Section 4.5, "Geology and Soils" of the Final EIR, on pages 4.5-46 to 47. As described in the Final EIR, because of the project area's substantial distance from active faults and the low risk associated with ground shaking, any seismic-related earth failure, including liquefaction, is not expected to be substantial. Therefore, the proposed alternative freshwater source evaluation activities would not increase the exposure of people or structures to potential substantial adverse effects related to earthquakes or seismic events, and impacts are considered less than significant. The proposed alternative freshwater source evaluation activities would be consistent with this conclusion and would not result in any new or more severe impacts related to faults. No mitigation is required.

b,e) The installation and operation of some project components including access roads and wells proposed in the Final EIR would result in potentially significant impacts relative to erosion. These would be reduced to less than significant by implementation of Mitigation Measures GEO-1a and GEO-1b, and HYDRO-1. The construction and operation activities of the proposed exploratory borings and freshwater wells would include similar types of activities as those evaluated in the Final EIR. A new component of the proposed freshwater wells includes the necessary distribution of groundwater generated from the aquifer pump tests back to the groundwater aquifer by using aboveground sprinkler systems. The proposed freshwater sites have an identified area within which the pumped water would be sprinkled on the ground surface and allowed to infiltrate back into the aquifer. As described in Section 5.3.3, "Management of Material Generated During Well Installation and Aquifer Testing" of this EIR Addendum, about 5,500,000 gallons of groundwater would be sprinkled evenly within each sprinkled area over the 96-hour aquifer pump test time period. For the sprinkled area, there would be a loading rate of approximately 0.31 inch per hour. Section 4.5, "Geology and Soils" Exhibit 4.5-2 of the Final EIR, on page 4.5-5, identifies the soil type for the freshwater sites as Quaternary Colorado River and Recent Floodplain Deposits. Section 4.5 "Geology and Soils" Table 4.5-2 of the Final EIR (see page 4.5-13), identifies that the soil units in the freshwater sites are excessively to somewhat excessively drained, with permeability ranging from 6.0 to 22.0 inches per hour. The infiltration rate of the soil units exceeds the sprinkler application rate by more than an order of magnitude, indicating that there is little potential for overland flow. Based on the infiltration rate, water is not expected to pond and would not be expected to result in runoff from the site for significant distances or at significant rates that would cause erosion. Therefore, the use of the sprinkler system is considered a less than significant impact related to erosion of soils. In addition, implementation of Mitigation Measures GEO-1a, GEO-1b, and HYDRO-1 from the Final EIR would further reduce any potential impacts to less than significant.

c, d) The project area evaluated in the Final EIR is located in a geological area that is relatively stable and not susceptible to landslides, rock falls, subsidence, expansion (also referred to as shrink-swell or linear extensibility). The Final EIR concluded the groundwater remedy project would have less than significant impacts and required no mitigation measures. The proposed alternate freshwater well sites are within the same geologic area with the same attributes as those analyzed in the Final EIR, and therefore would also have less than significant impacts as a result of the proposed alternative freshwater source evaluation activities.

The cumulative impact setting for geology and soils consists of the area within which activities are proposed and immediately adjacent properties. Potential effects to geologic and soil conditions are typically considered site specific, unless specific geologic features or hazards that span a project boundary could be affected by nearby activities. However, none of these significant features exist at the freshwater sites or the surrounding properties. Additionally, controlling project-specific erosion will ensure that these effects are not compounded with other projects in the area. Furthermore, no cumulative projects are known to exist in the immediate vicinity of the freshwater sites. For these reasons, no cumulative geology and soils impacts would occur with implementation of the alternative freshwater source evaluation activities.

Applicable Mitigation Measures from the Final EIR:

The mitigation measures from the Final EIR for geology and soils that apply to this Addendum are, in places, programmatic in nature and, as a result, the applicable mitigation measures included from the Final EIR below have been slightly modified where further clarification and project-specific direction is needed to ensure no new significant impacts will result from the proposed alternative freshwater source evaluation activities. The revisions or clarifications are not changes to the original mitigation measures included in the Final EIR but rather are consistent with the overall intent of the referenced measure included in the Final EIR. The revisions to the measures included in the Final EIR are shown in ~~strikeout~~ format for deletions and underline for additions.

Mitigation Measure GEO-1a. Construction, Operation and Maintenance, and Decommissioning Impacts Related to Erosion of Soils.

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.

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 shall develop a ~~Storm Water Pollution Prevention Plan (SWPPP)~~ Best Management Practices (BMP) Plan as discussed in mitigation measure HYDRO-1 of the "Hydrology and Water Quality" section of ~~this~~ the Final EIR. The ~~SWPPP~~ BMP Plan shall identify ~~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 Arizona Department of Environmental Quality ~~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 Arizona Department of Environmental Quality ~~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-2 and HAZ-2 shall be implemented. Mitigation Measure GEO-2 provides the provisions for mitigating erosion through BMPs which shall be implemented. Mitigation Measure HAZ-2 provides the provisions for safe work practices and handling of contaminated soils as investigation derived wastes.

Mitigation Measure GEO-1b. Construction, Operation and Maintenance, and Decommissioning Impacts Related to Differential Compaction of Soils.

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 Arizona Department of Environmental Quality ~~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 Arizona Department of Environmental Quality ~~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 re-grading 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 outlined in mitigation measure BIO-1 shall include 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.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to geologic and soil resources. Based on the analysis presented above, the additional activities proposed to identify a potential location of an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to geology and soils, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to geology and soil resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
GREENHOUSE GAS EMISSIONS — Would the project:					
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Section 4.2 (Air Quality), pg. 4.2-31.	No	No	No	N/A
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Section 4.2 (Air Quality), pg. 4.2-31.	No	No	No	N/A

Discussion

a,b) As discussed in Section 4.2.3.4, "Air Quality Impact Analysis" of the Final EIR page 4.2-31, the total operational Green House Gas (GHG) emissions associated with the groundwater remediation project would be 1,739 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year, while total groundwater remediation project construction emissions would generate up to 2,618 MT CO_2e/year. When the construction emissions are normalized over the four years of construction (2010-2014) the total GHG emissions would be 2,394 MT CO_2e/year for the first four years and then 1,739 MT CO_2e/year after, which would be well below the 25,000 MT CO_2e/year threshold that has been established under AB-32 as an integral component in achieving AB-32 goals. Additionally, in MDAQMD's 2011 CEQA and Federal Conformity Guidelines document, the District indicated an annual GHG threshold of 90,718 MT CO_2e/year (100,000 tons CO_2e/year), which the project's GHG emissions would also be well below. The approved groundwater remediation project allowed for the construction and operation of up to 170 new wells along with water conveyance/utilities/roadways; the GHG emissions generated from the construction and operation of two exploratory boreholes and two well sites would not result in an exceedance of the 25,000 or 90,718 MT CO_2e/year thresholds. Thus, consistent with the analysis provided in Section 4.2.3.4, "Air Quality Impact Analysis" of the Final EIR page 4.2-31, the project would not have a significant impact on the environment as a result of direct or indirect GHG emissions and would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. This impact would remain less than significant and no mitigation is required.

Because the proposed freshwater activity's construction and operational emissions would not result in an exceedance of the 25,000 or 90,718 MT CO_2e/year thresholds, the project makes a less than cumulatively significant contribution to cumulative GHG emissions.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures from the Final EIR are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in less than significant impacts related to greenhouse gas emissions. Based on the analysis presented above, the activities proposed to identify a potential location for a freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to greenhouse gas emissions, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to greenhouse gas emissions resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
HAZARDS AND HAZARDOUS MATERIALS — Would the project:					
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Section 4.6 (Hazards), pgs. 4.6-14 to 4.6-17.	No	No	No	See mitigation measures summarized below. No new mitigation required.
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?	Section 4.6 (Hazards), pgs. 4.6-17 to 4.6-19.	No	No	No	See mitigation measures summarized below. No new mitigation required.
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
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 the public or the environment?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	Section 4.6 (Hazards), pg. 4.6-13.	No	No	No	N/A
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Section 4.6 (Hazards), pgs. 4.6-13 to 4.6-14.	No	No	No	N/A
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	Section 4.6 (Hazards), pg. 4.6-14.	No	No	No	N/A

Discussion

As discussed in Section 4.6.3, "Hazardous Materials, Environmental Impacts and Mitigation Measures" of the Final EIR beginning on page 4.6-12, the construction, operation, and

decommissioning activities of some of the groundwater remediation project components evaluated in the Final EIR would result in potentially significant impacts relative to hazards and hazardous materials. The project components proposed in the Final EIR included the drilling and backfilling of boreholes, construction and decommissioning of wells, and construction and use of access roads. The construction and operation activities of the proposed exploratory boreholes and freshwater wells would include similar types of activities and would therefore result in the same types of potentially significant impacts. As with the original groundwater remediation project description analyzed in the Final EIR, implementation of Mitigation Measure HAZ-1a would address the potential impacts of the freshwater exploration that are associated with the routine transport, use, and disposal of hazardous materials. With the implementation of this mitigation measure, no significant impact would occur and no new or more severe impacts are anticipated.

a) The two proposed exploratory boreholes and freshwater wells include the return of groundwater generated from aquifer pump tests to the aquifer by infiltrating the water into the subsurface. The proposed alternate freshwater supply well locations are outside and upgradient or cross-gradient of the Cr(VI) plume, and therefore are not expected to have been impacted by the Cr(VI) plume from the compressor station. Existing HNWR-1 well, located east of the compressor station across the Colorado River in Arizona (see Figures 1 and 2), is also being investigated as a potential freshwater supply well. However, naturally-occurring arsenic concentrations in groundwater at that location may require treatment before the water can be injected into the aquifer for the final remedy (CH2M HILL, 2013b). PG&E has engaged the State Water Resources Control Board (SWRCB) on the acceptability of injecting the water without treatment. The SWRCB has indicated that a final decision on this matter is pending, and in the interim PG&E has proposed investigating potential alternate locations at the freshwater sites where an adequate quantity of water of sufficient quality may be present. Groundwater from the test boreholes would be evaluated for arsenic, as well as total chromium and Cr(VI), iron, manganese, silica, fluoride, nitrate, petroleum hydrocarbons, pesticides, herbicides, chloride, sulfate, nitrite, fluoride, bromide, phosphate, general minerals, total organic carbon, pH, and stable oxygen isotopes, to assess whether groundwater at the alternate locations has chemicals at concentrations above action levels. If key analyses show concentrations above maximum contaminate levels, as regulated by the RWQCB, no well would be installed, no aquifer pump test performed, and thus no water would be generated or discharged back to the aquifer using the proposed sprinkler system. However, existing HNWR-1 well would have an aquifer test performed regardless of water quality sample results from the exploratory boring next to the existing HNWR-1 well. Therefore, as a result of the chemical testing that is a part of the proposed alternative freshwater source evaluation activities, there would be no impact relative to the discharge of hazardous materials (water with chemical concentrations above action levels) from the use of the sprinkler system to discharge water back to the aquifer.

b) As discussed in Section 4.6.3.3, “Hazards Impact Analysis” of the Final EIR pages 4.6-14 to 4.6-17, the construction, operation, and decommissioning of some of the groundwater remediation project components proposed in the Final EIR would result in potentially

significant impacts relative to the potential spill or accidental release of hazardous materials. The potentially significant impacts would be reduced to less than significant by implementation of Mitigation Measure HAZ-1b. The groundwater remediation project components proposed in the Final EIR included the drilling and backfilling of boreholes, construction and decommissioning of wells, and construction and use of access roads. The construction and operation activities of the proposed exploratory borings and freshwater wells would include the same types of activities as those analyzed in the Final EIR and would therefore result in the same types of potentially significant impacts. Therefore, the implementation of the Mitigation Measures HAZ-1b proposed in Section 4.6, "Hazardous Materials" of the Final EIR pages 4.6-14 to 4.6-17) would also reduce the potential impacts associated with the potential for accidental spills or releases to less than significant. Therefore, no new or more severe impact related to the reasonably foreseeable release of hazardous materials is anticipated.

c) The freshwater sites are not located within one-quarter mile of an existing or planned school and the proposed alternative freshwater source evaluation activities would not result in hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or planned school. As discussed in Section 4.6.3.3, "Hazards Impact Analysis" of the Final EIR pages 4.6-13 to 4.6-14, the groundwater remediation activities would not occur within ¼ mile of a school and therefore this significance criteria was not considered further. The components of the proposed alternate freshwater project are similar to those analyzed in the Final EIR, would have no impact, and are not considered further. There would be no new or more severe impacts related to schools.

d) The proposed alternative freshwater source evaluation activities would not be located on a site listed on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List). As indicated in Section 4.6.1, "Hazardous Materials Existing Setting" of the Final EIR (see page 4.6-2), the entire compressor station is on the Cortese list. Completion of this cleanup effort would result in the removal of the compressor station from the Cortese database and elimination of the significant hazard to the public or environment associated with the previous contamination remediated by the project. No new or significant hazards would be presented to the public or the environment and no mitigation is required.

e,f) The freshwater sites are not located within two miles of a public airport or public use airport and are not within the vicinity of a private airstrip; the closest airport to the freshwater sites are Eagle Airpark, located approximately 13 miles north. As discussed in Section 4.6 "Hazardous Materials" of the Final EIR page 4.6-13, the groundwater remediation activities would have no impacts under these significance criteria and were not considered further. The project would not have new or more severe impacts related to airports.

g) The proposed alternative freshwater source evaluation activities would not adversely affect I-40 and Oatman-Topock Highway other than adding a relatively small amount of additional vehicles related to project construction activities that would not degrade level of service on roadways or result in congestion at intersections, as described further under "Transportation," and would therefore not interfere with the designated evacuation routes or impair implementation of an adopted emergency response plan or evacuation plan. Therefore, impacts related to emergency response and evacuation plans would not occur and are consistent with the evaluation presented in Section 4.6.3.3, "Hazards Impact Analysis" of the Final EIR pages 4.6-13 to 4.6-14.

h) Because the proposed alternative freshwater source evaluation activities are not located in the foothills of the San Bernardino Mountains or in an area in which dense vegetation exists adjacent to developed areas, the freshwater sites are not at risk from wildland fires. However, these sites are within the HNWR and were previously burned as a result of a wildfire of 240 acres of dense tamarisk. Given that the freshwater wells are not habitable structures, people would not be exposed to significant risk of loss, injury, or death involving wildland fires. In addition, the proposed freshwater wells would not contribute to a potential wildland fire as no combustible equipment would be permanently located onsite. As discussed in Section 4.6.3.3, "Hazards Impact Analysis" of the Final EIR pages 4.6-13 to 4.6-14, the groundwater remediation activities would have no impacts under these significance criteria and were not considered further. There would be no new or more severe impacts related to wildfires from the alternative freshwater source evaluation activities.

To assess cumulative impacts involving hazardous materials, the nature of the potential impacts would limit the cumulative setting to the project sites and to other coincident or adjacent projects in the project vicinity. Based on review of projects in the surrounding region, there are no projects expected to occur in the immediate vicinity of the freshwater sites. Thus, there are no activities that could compound or exacerbate the expected hazards and hazardous materials effects considered in this analysis. Thus, no cumulatively significant hazardous impacts would occur.

Applicable Mitigation Measures from the Final EIR:

Mitigation Measure HAZ-1a: Spills or Releases of Contaminants during Operation and Maintenance Activities.

a. PG&E shall store, handle, and transport hazardous material 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 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.

c. A project-specific 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 HMBP 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.

Mitigation Measure HAZ-1b: Spill or Release of Contaminants during Construction and Decommissioning Activities.

a. Fueling areas and maintenance areas would be supplied with proper secondary containment and spill response equipment.

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.

c. PG&E shall comply with local, state, and federal regulations related to the bulk storage and management of fuels.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to hazards and hazardous materials. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to hazards and hazardous materials, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to hazards and hazardous materials has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162

and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
HYDROLOGY AND WATER QUALITY — Would the project:					
a) Violate any water quality standards or waste discharge requirements?	Section 4.7 (Hydrology and Water Quality), pgs. 4.7-48 to 4.7-54.	No	No	No	See mitigation measures summarized below. No new mitigation measures required.
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit 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)?	Section 4.12 (Water Supply) - see Water Supply Section of this Addendum and pgs. 4.12-9 to 4.12-12.	No	No	Groundwater discharge associated with well testing and installation. No new significant impacts. See discussion below.	N/A
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	Section 4.7 (Hydrology and Water Quality), pg 4.7-54.	No	No	Groundwater discharge associated with well testing and installation. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation measures required.
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	Section 4.7 (Hydrology and Water Quality), pg 4.7-54.	No	No	Groundwater discharge associated with well testing and installation. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation measures required.
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Section 4.7 (Hydrology and Water Quality), pgs. 4.7-48 to 4.7-55.	No	No	Groundwater discharge associated with well testing and installation. No new significant impacts. See discussion below.	See mitigation measures summarized below. No new mitigation measures required.
f) Otherwise substantially degrade water quality?	Section 4.7 (Hydrology and Water Quality), pgs. 4.7-48 to 4.7-54.	No	No	No	N/A

Issues (and Supporting Information Sources):		Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A
i)	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?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A
j)	Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	Section 4.7 (Hydrology and Water Quality), pg. 4.7-47.	No	No	No	N/A

Discussion

a,c–e) As discussed in Section 4.7.3.3, "Hydrology and Water Quality Impact Analysis" of the Final EIR (pages 4.7-48 to 4.7-54), the construction, operation and maintenance, and decommissioning activities associated with the project components in the Final EIR could alter the drainage pattern in the area, resulting in the exceedance of water quality standards. These are considered potentially significant impacts. These activities could also result in substantial erosion, siltation, or flooding, and would be considered a potentially significant impact. The Final EIR determined these impacts are reduced to less than significant by implementation of Mitigation Measure HYDRO-1. The project components evaluated in the Final EIR included the drilling and backfilling of boreholes, construction and decommissioning of wells, and construction and use of access roads. The construction, operation, and decommissioning activities of the exploratory boreholes and freshwater wells would include the same types of activities and could result in the same types of potentially significant impacts. Consequently, implementation of Mitigation Measure HYDRO-1 in the Final EIR would also reduce the potential impact from construction of the exploratory boreholes and freshwater wells associated with the water quality standards to less than significant.

As described in Section 5.3.3, "Management of Material Generated During Well Installation and Aquifer Testing" of this EIR Addendum, about 5,500,000 gallons of groundwater would be sprinkled evenly within each sprinkled area over the 96-hour aquifer pump test time period. A loading rate of at least approximately 0.31 inch per hour is anticipated. Section 4.5, "Geology and Soils" Exhibit 4.5-2 of the Final EIR (see page 4.5-5), identifies the soil type for the freshwater sites as Quaternary Colorado River and Recent Floodplain Deposits. Section 4.5, "Geology and Soils" Table 4.5-2 of the Final EIR (see page 4.5-13), identifies the soil units in the freshwater sites as excessively to

somewhat excessively drained, with permeability ranging from 6.0 to 22.0 inches per hour. The infiltration rate of the soil units exceeds the sprinkler application rate by more than an order of magnitude, indicating that there is little potential for overland flow. Based on the infiltration rate, water is not expected to pond and would not be expected to result in runoff from the freshwater sites for significant distances or at significant rates that would alter drainage patters in a manner that could cause substantial erosion, siltation, or flooding. The implementation of Mitigation Measure HYDRO-1 in the Final EIR would also reduce the potential impact from the discharge of water from the exploratory boreholes and freshwater wells testing activities associated with drainage patterns to less than significant.

To comply with EIR mitigation measure HYDRO-1, PG&E proposed activities are required to implement Best Management Practices (BMPs) to meet the substantive criteria of the Arizona Pollutant Discharge Elimination System (AZPDES) program for Construction and Land Disturbance Activities (General Permit) (Order No. AZG2013-001); as well as, applicable federal, State, and local permit and regulatory requirements. PG&E has prepared a BMP plan based on the requirements of the AZPDES General Permit as well as the Arizona Department of Transportation (ADOT) Erosion and Pollution Control Manual. The BMP plan was prepared by a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD) and would be implemented prior to alternative freshwater source evaluation activities under the direction of a Qualified SWPPP Practitioner (QSP). The BMPs identified in the BMP Plan for the proposed alternative freshwater source evaluation activities would be inspected, implemented and maintained by PG&E and the QSP.

A Risk Type 1 has been calculated per the General Permit for the alternative freshwater source evaluation activities. The sediment risk was determined from a combination of the Rainfall Erosivity Factor (R value), the Soil Erodibility Factor (K value), and the hill slope length-to-gradient factor (LS value) to account for the effect of topography on erosion. These three values are multiplied to obtain a watershed erosion estimate, which then directly corresponds to a certain level of sediment risk. The combined watershed erosion estimate was found to be 0.43 tons per acre. Because it was calculated to be less than 15 tons per acre, per the AZPDES General Permit, this project is considered a Low Sediment Risk. The freshwater activity area drains to the Colorado River. This portion of the Colorado River is not a 303d listed impaired water body for sediment or siltation and is not deemed to have a beneficial reuse pertaining to COLD, SPAWN, and MIGRATORY. As a result, it is classified as a Low Receiving Water Risk.

The BMP plan for the proposed alternative freshwater source evaluation activities identifies the use of soil stabilization BMPs, to be used where soils are disturbed as a result of construction activities to minimize erosion and transport during work. Sediment control BMPs would be used at the perimeter of areas where soil disturbance occurs as a result of construction. Wind erosion BMPs would be used to prevent or alleviate dust nuisance and minimize the movement of sediment disturbed during project activities.

Tracking control BMPs would be used to limit project-related track out or spills. BMPs would be used to stabilize stock piles (i.e., drill cuttings) staged during work activities. Finally, BMPs would be used to prevent the release of non-storm water associated with alternative freshwater source evaluation activities.

In conformance with the substantive requirements of the AZPDES General Permit, inspections and monitoring are required to evaluate the effectiveness of the BMPs and to determine whether modifying or implementing additional BMPs is required during work. The BMP Plan includes a site inspection program to assess the effectiveness of BMPs and to modify BMPs, if necessary, to continue to reduce pollutants and impacts on receiving waters. The PG&E Project Manager (or appointed Field Team Leader) would maintain an erosion control field book that includes maps, figures, and inspection and corrective action report forms. The PG&E Project Manager would retain the field book, with all attachments, forms, and field notes until project completion.

Implementation of the proposed BMP Plan would be in conformance with Mitigation Measure HYDRO-1 in the Final EIR and would also reduce the potential impact from the exploratory boreholes and freshwater wells associated with drainage patterns and water quality to less than significant.

b) Refer to the Water Supply analysis below in this EIR Addendum checklist section, for a discussion regarding potential impacts to water supply.

f) A component of the proposed exploratory boreholes and freshwater wells includes the return of groundwater generated from aquifer pump tests to back into the aquifer by infiltrating the water into the subsurface using sprinkler systems. The proposed freshwater supply wells alternate locations are located across the Colorado River in Arizona and outside and upgradient and/or crossgradient of the Cr(VI) plume, as shown on Figure 1 of this EIR Addendum, and therefore are not expected to be affected by the contaminated groundwater plume from the compressor station. Existing HNWR-1 well, located east of the compressor station across the Colorado River, is also being evaluated as a potential freshwater supply well. However, naturally-occurring arsenic concentrations in groundwater at that location may require treatment before the water can be injected into the aquifer for the remediation phase of the project (CH2M HILL, 2013b). PG&E has engaged the SWRCB on the acceptability of injecting the water without treatment. The SWRCB has indicated that a final decision on this matter is pending, and in the interim PG&E has proposed investigating potential alternate locations at the freshwater sites where an adequate quantity of water of sufficient quality may be present. . As described in the Freshwater Implementation Plan, groundwater from the exploratory boreholes would be analyzed for arsenic, as well as total and Cr(VI), iron, manganese, silica, fluoride, nitrate, petroleum hydrocarbons, pesticides, herbicides, chloride, sulfate, nitrite, fluoride, bromide, phosphate, general minerals, total organic carbon, pH, and stable oxygen isotopes, to assess whether groundwater at the alternate locations has chemicals at concentrations above action levels. Alternate locations with

chemical concentrations in groundwater above action levels would not have a well installed, would not have an aquifer pump test performed, and thus would not generate water that would be discharged back to the aquifer using the proposed sprinkler system. Therefore, as a result of the chemical testing that is a part of the proposed alternative freshwater source evaluation activities, there would be no impact relative to the discharge of water that would degrade water quality (water with chemical concentrations above action levels) from the use of the sprinkler system to discharge water back to the aquifer. Therefore, impacts would remain less than significant, and no mitigation is required.

g–i) As discussed in Section 4.7.3.2, "Hydrology and Water Quality Thresholds of Significance" in the Final EIR page 4.7-47, the groundwater remediation project would have no impacts under these criteria and they were not considered further. The components of the proposed alternate freshwater source are similar – no housing is proposed and no structures would be placed in a floodplain; therefore, there would be no impacts related to flooding and floodplain issues.

j) The proposed alternative freshwater source evaluation activities are located in remote locations, approximately one mile east/northeast of the Colorado River. There are no other significant bodies of waters in vicinity of the freshwater sites. Therefore, no impacts from inundation by seiche, tsunami, or mudflow would occur.

The cumulative projects described in Section 6.3.2, "List of Projects in the Vicinity" Table 6-3 of the Final EIR page 6-4, could involve construction and operational activities that could have similar water resources impacts, as would any construction project in the vicinity of the proposed activities. Based on review of projects in the surrounding region, there are no projects that are expected to occur in the immediate vicinity of the freshwater exploration sites. The BMPs described in the impact analysis for this project would likely be similarly required as mitigation for water quality impacts for each of these other respective projects. Although it is possible than two or more of these projects may occur simultaneously, it is more likely that these other projects may occur independently of one another and thus avoid the potential for compounding effects from simultaneous construction projects in the same area. For this reason, the proposed alternative freshwater source evaluation activities may contribute incrementally to water quality impacts during the aquifer pump testing phase, but this impact is not cumulatively considerable.

Applicable Mitigation Measures from the Final EIR:

The mitigation measures from the Final EIR for hydrology and water quality that apply to this Addendum are, in places, programmatic in nature and, as a result, the applicable mitigation measures included from the Final EIR below have been slightly modified where further clarification and project-specific direction is needed to ensure no new significant impacts will result from the proposed alternative freshwater source evaluation activities. The revisions or clarifications are not changes to the original mitigation measures included in the Final EIR but rather are consistent with the overall intent of the

referenced measure included in the Final EIR. The revisions to the measures included in the Final EIR are shown in ~~strikeout~~ format for deletions and underline for additions.

Mitigation Measure HYDRO-1: Exceedance of Water Quality Standards - The project shall implement Best Management Practices (BMPs) to meet the substantive criteria of the ~~National~~ Arizona Pollutant Discharge Elimination System (AZ~~N~~PDES) General Permit for Stormwater Discharges Associated with Construction ~~and Land Disturbance Activities Order No. 2009-0009-DWQ NPDES No. CAS000002~~To Waters of the U.S. (~~General Permit~~ AZG2013-001) (~~SWRCB~~ Arizona Department of Environmental Quality, 2013~~09~~) as well as all other applicable federal, state, and local permit and regulatory requirements, even if a permit is not required pursuant to CERCLA Section 121(e)(1) permit exemption, for purposes of ensuring the protection of receiving water quality. As such, a BMP plan shall be prepared and implemented for the project prior to construction and decommissioning phase activities.

Impacts on water quality from pollutants, including soils from erosion, shall be controlled through use of the following types of BMPs, which shall be incorporated into the appropriate project-specific BMP plan. ~~The General Permit requirements include specific BMPs as well as numeric effluent levels (NELs) and numeric action levels (NALs) to achieve the water quality standards (SWRCB 2009:3).~~ Types of BMPs cited in the AZPDES General Permit include:

a. Scheduling of Activities;

b. Prohibitions of Practices;

c. Maintenance Procedures;

d. Other Best Management Practices to Prevent or Reduce Discharge of Pollutants to Waters of the United States; and

~~e. Treatment Requirements; and~~

f. Operating Procedures and Practice to Control Site Runoff, Spillage or Leaks, Sludge or Waste Disposal, or Drainage from Raw Materials Storage.

Visual inspections and monitoring and sampling are required under the Construction General Permit to evaluate the effectiveness of the BMPs and to determine whether modifying BMPs or implementing additional BMPs is required. The BMP designations cited below are based on those used by the ~~California Stormwater Quality Association Construction BMP Handbook (California Stormwater Quality Association 2003)~~ Arizona Department of Transportation (ADOT) Erosion and Pollution Control Manual and are consistent with the types of BMPs referenced in the ~~General Permit~~ AZPDES General Permit:

g. Scheduling (SS-1): Proper scheduling assists in identifying ways to minimize disturbed areas, which allows for a reduction in the active project area requiring protection and also minimizes the length of time disturbed soils are exposed to erosive processes.

h. Preservation of Existing Vegetation (SS-2): Preserving existing vegetation to the maximum extent practicable facilitates protection of surfaces from erosion and can also help to control sediments. Sensitive areas should also be clearly identified and protected.

~~i. Hydraulic Mulch (SS-3), Straw Mulch (SS-6), and Wood Mulching (SS-8): Using various mulches is a method for temporarily stabilizing soil and can be used on surfaces with little or no slope.~~

j. Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats (SS-7): These erosion control methods can be used on flat or, usually, sloped surfaces, channels, and stockpiles.

k. Stabilized Construction Entrance/Exit (TC-1): A graveled area or pad located at points where vehicles enter and leave a construction site can be built. This BMP provides a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to help control dust.

l. Runoff Control Measures (SS-9, SS-10, and SC-10): These include graded surfaces to redirect sheet flow, diversion dikes or berms that force sheet flow around a protected area~~, and stormwater conveyances (swales, channels, gutters, drains, sewers) that intercept, collect, and redirect runoff. Diversions can be either temporary or permanent. Temporary diversions include excavation of a channel along with placement of the spoil in a dike on the downgradient side of the channel, and placement of gravel in a ridge below an excavated swale. Permanent diversions are used to divide a site into specific drainage areas, should be sized to capture and carry a specific magnitude of storm event, and should be constructed of more permanent materials. A water bar is a specific kind of runoff diversion that is constructed diagonally at intervals across a linear sloping surface such as a road or right-of-way that is subject to erosion. Water bars are meant to interrupt accumulation of erosive volumes of water through their periodic placement down the slope, and divert the resulting segments of flow into adjacent undisturbed areas for dissipation.~~

~~m. Silt Fence (SC-1): A temporary sediment barrier consisting of fabric is designed to retain sediment from small disturbed areas by reducing the velocity of sheet flows.~~

n. Gravel Bag Berm (SC-6) and Sand/Gravel Bag Barrier (SC-8): A temporary sediment barrier consisting of gravel-filled fabric bags is designed to retain sediment from small disturbed areas by reducing the velocity of sheet flows.

o. ~~Desilting Basin (SC-2) and Sediment Trap (SC-3): Constructing temporary detention structures facilitates the removal of sediment from waters. The devices provide time for sediment particles to settle out of the water before runoff is discharged.~~

Secondary concerns include potential pollutants from inappropriate material storage and handling procedures and non-stormwater discharges. These will be addressed through the following types of BMPs, which shall be incorporated into the stormwater BMP plan:

p. Material Delivery and Storage (WM-1): Provide covered storage for materials, especially toxic or hazardous materials, to prevent exposure to stormwater. Store and transfer toxic or hazardous materials on impervious surfaces that will provide secondary containment for spills. Park vehicles and equipment used for material delivery and storage, as well as contractor vehicles, in designated areas.

q. Spill Prevention and Control (WM-4): Ensure that spills and releases of materials are cleaned up immediately and thoroughly. Ensure that appropriate spill response equipment, preferably spill kits preloaded with absorbents in an overpack drum, is provided at convenient locations throughout the site. Spent absorbent material must be managed and disposed of in accordance with applicable regulations. In particular, absorbents used to clean up spills of hazardous materials or waste must be managed as hazardous waste unless characterized as nonhazardous.

r. Solid Waste Management (WM-5): Provide a sufficient number of conveniently located trash and scrap receptacles to promote proper disposal of solid wastes. Ensure that the receptacles are provided with lids or covers to prevent windblown litter.

s. Hazardous Waste Management (WM-6): Provide a sufficient number of proper receptacles to promote proper disposal of hazardous wastes.

t. Concrete Waste Management (WM-8): Dispose of excess concrete in specific concrete washout facilities.

u. Sanitary/Septic Waste Management (WM-9): Locate sanitary and septic waste facilities away from drainage courses and traffic areas. Maintain the facilities regularly.

v. Vehicle and Equipment Cleaning (NS-8): Clean vehicles and equipment that regularly enter and leave the construction site.

w. Vehicle and Equipment Fueling (NS-9): Fuel vehicles and equipment off-site whenever possible. If off-site fueling is not practical, establish a designated on-site fueling area with proper containment and spill cleanup materials.

x. Vehicle and Equipment Maintenance (NS-10): Use off-site maintenance facilities whenever possible. Any on-site maintenance areas must be protected from stormwater runoff and on-site flooding.

~~In addition to BMPs implemented to avoid or reduce impacts from the construction and decommissioning phases, BMPs shall also be implemented to avoid or reduce impacts from the operations and maintenance phases. To address potential violation of water quality standards caused by insufficient treatment, system failure at concentrations in excess of water quality standards, proper design shall include contingency measures such~~

as safeguards to shut down the extraction wells in case of pipeline failure or malfunction. In addition, operation of the project will be governed by and follow an operations and maintenance plan.

PG&E will comply with all applicable water quality standards, the General Permit, and any SWRCB or RWQCB resolutions identified as ARAR, as well as a corrective action monitoring program. Under the corrective action monitoring program, data will be collected to measure performance of the remedy, compliance with standards, and progress of the remedial action as a part of the project description. In addition, the project will be operated to continually assess performance issues and to modify the type, method, and configuration of the treatment delivery systems to enhance performance of the remedy to attain the cleanup goals and to respond to site conditions and performance issues as described in the project description.

A SWPPP will also be prepared for the project, which will contain BMPs related to industrial activities (industrial SWPPP). The BMPs are designed to reduce pollutants in discharges that may affect receiving water quality during operations and maintenance of the project. As noted above, BMP designations are based on those used by the California Stormwater Quality Association Construction BMP Handbook (California Stormwater Quality Association 2003) and those referenced in the General Permit. The SWPPP will incorporate BMPs such as the following:

y. Good Housekeeping: Maintain facility in a clean manner and train facility personnel to contribute to a safe, clean, and orderly environment by properly disposing of trash in designated containers, storing materials in appropriate locations, and keeping equipment clean and in good working condition.

z. Preventative Maintenance: Prevent or minimize release of pollutants. Develop Standard Operating Procedures for operation and maintenance of facility components and train employees to follow the procedures.

aa. Non-Stormwater Discharges (SC-10): Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Conduct regular inspections of high priority areas.

bb. Spill Prevention, Control, and Cleanup (SC-11): Store materials properly to prevent spills from entering the storm drain system or surface waters. Ensure that spill cleanup materials are located on-site and are easily accessible. Clean up leaks and spills immediately using proper absorbent materials. Absorbents used to clean up hazardous materials must be disposed of as hazardous waste. Educate employees about spill prevention and cleanup.

cc. Vehicle and Equipment Fueling (SC-20): Maintain clean fuel-dispensing areas using dry cleanup methods, such as sweeping or using rags and absorbents for leaks and spills. Cover the fueling area to prevent contact with stormwater. Train personnel in pollution prevention, focusing on containment of spills and leaks.

dd. Outdoor Loading/Unloading (SC-30): Load and unload chemicals during dry weather, if possible, and load and unload in designated areas. Check equipment regularly for leaks.

ee. Outdoor Liquid Container Storage (SC-31): Cover the storage area with a roof and provide secondary containment. Inspect storage areas regularly for leaks or spills.

ff. Outdoor Equipment Operations (SC-32): Perform activities during dry weather, cover the work area with a roof, and use secondary containment. Train employees in proper techniques for spill containment and cleanup.

gg. Waste Handling and Disposal (SC-34): Cover storage containers with leak-proof lids, check for leaks weekly, and clean storage areas regularly. Ensure that wastes are disposed of properly.

hh. Tank Design System: Ensure that tank systems have sufficient strength to avoid collapse, rupture, or failure and that they are protected against physical damage and excessive stress. Provide adequate secondary containment.

In conformance with the substantive requirements of General Permit (Order No. 2009-0009-DWQ, a monitoring and reporting program will be implemented to assess the effectiveness of BMPs and to modify BMPs and revise the SWPPP, if necessary, to continue to reduce pollutants and impacts on receiving waters. The monitoring program shall include the following minimum elements as per the General Permit:

ii. quarterly, non-stormwater visual inspections,

jj. storm-related visual inspections within 2 business days of a qualifying rain event (producing precipitation of one-half inch or more of discharge),

kk. visual inspection after a storm event,

ll. monitoring of nonvisual pollutants based on the calculated risk level for the project, with Risk Level 2 and 3 requiring a minimum of three samples per day during qualifying rain events (SWRCB 2009:Tables 5 and 6, 22–27), and

mm. monitoring and reporting for linear projects as per Attachment A of the General Permit

Results of this monitoring shall be reported annually to DTSC and to the Storm Water Multi-Application Reporting and Tracking System (SMARTS). The annual report shall include a summary and evaluation of all sampling and analysis results, original laboratory reports, and chain of custody forms; a summary of all corrective actions taken during the compliance year; and identification of any compliance activities or corrective actions that were not implemented.

NEL Violation Reports and/or NAL Violation Reports are required for Risk Level 3 and linear underground/overhead project (LUP) Type 3 Discharges. Should the project meet these criteria, the respective reports shall be submitted within 5 days of the end of the

~~storm event, as per General Permit requirements, and provide the required information identified (SWRCB 2009:26–27 and Attachment A).~~

~~The implementation of stormwater plans shall include an education component to train workers on water quality concerns and proper BMP implementation, maintenance, and repair, in addition to stormwater management program training on the construction BMP plan and industrial SWPPP.~~

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to hydrology and water quality. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to hydrology and water quality, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to hydrology and water quality has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Land Use and Land Use Planning

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
LAND USE AND LAND USE PLANNING — Would the project:					
a) Physically divide an established community?	Section 4.8 (Land Use and Planning), pgs. 4.8-9 to 4.8-10.	No	No	No	N/A
b) 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?	Section 4.8 (Land Use and Planning), pgs. 4.8-10 to 4.8-11.	No	No	No	N/A
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	Section 4.8 (Land Use and Planning), pgs. 4.8-10 to 4.8-11.	No	No	No	N/A

Discussion

The analysis of impacts to land use and planning from implementation of the groundwater remediation project was evaluated in Section 4.8.3, "Land Use and Planning Environmental Impacts and Mitigation Measures" of the Final EIR (see page 4.8-9), which described the project's existing onsite and surrounding land uses as well as land use compatibility. The Final EIR considered project facilities that would be constructed on lands owned by PG&E, the DOI (owned and/or managed by the BOR, BLM or USFWS), or land under the jurisdiction of Mohave County, Arizona. Two residential communities exist in the vicinity of the project area: the Moabi mobile home park, located in the Moabi Regional Park in San Bernardino County, California, and the residential community of Topock, located along I-40 on the eastern bank of the Colorado River in Mohave County, Arizona. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of HNWR-1 well.

a) The proposed changes to the groundwater remediation project involve the identification of freshwater sites just outside of the original project area in Arizona where exploratory boreholes would be drilled and potential installation and testing of two wells would take place in order to identify a freshwater source available for the groundwater remedy. While the location of the two exploratory boreholes and wells are outside of the original ~~project~~ area boundary, the sites are situated in remote locations, and are approximately two miles south of the nearest community of Topock. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of HNWR-1 well. No other communities are located within the vicinity of the proposed freshwater sites. As such, the exploratory boreholes and two wells would not conflict

with existing land uses or physically divide existing communities. This impact would remain at a less than significant level, and no mitigation is required.

b,c) The groundwater remediation project as analyzed in the Final EIR would require construction and operation of remediation facilities on parcels of land managed by other agencies and entities. The County of Mohave General Plan designates the freshwater sites as Public Lands (Mohave County, 2005). The freshwater sites are located on open space lands within the HNWR. The HNWR is managed by USFWS, which serves to preserve watersheds and wildlife habitats. The Final EIR determined the proposed facilities, including development of wells in HNWR, are consistent with the goals of planning policies and documents applicable to the groundwater remediation project area (see Section 4.8, "Land Use and Planning" page 4.8-14 of the Final EIR). Section 4.8, "Land Use and Planning" Table 4.8-1 of the Final EIR page 4.8-12, identified portions of the project (including wells and pipelines) that would be constructed and operated within the HNWR, managed by the USFWS. The Final EIR stated that USFWS preliminarily determined that the facilities and activities associated with the remediation of the groundwater contamination are compatible with management of the BLM lands in the area and are compatible with management of the wildlife refuge. This determination is in large part a result of the need to clean the contaminated groundwater plume in order to address health and safety concerns. This determination would be extended to the freshwater sites, since the proposed alternative freshwater source evaluation activities are consistent with the activities approved in the Final EIR. Further, as stated in Final EIR, (see Section 4.3.3.3, "Biological Resources Impact Analysis" of the Final EIR page 4.3-36), the project would not conflict with the resource management goals of the USFWS. Section 4.8, "Land Use and Planning" Table 4.8-1 of the Final EIR page 4.8-12, determined that operation of the groundwater remediation project is not anticipated to result in any conflicts with land use or management requirements of USFWS. These same conclusions would be extended to the activities analyzed by this addendum because they are consistent with the activities analyzed by the Final EIR.

Because the proposed alternative freshwater source evaluation activities would not physically divide an established community or conflict with existing land uses or conservation plans, the project's contribution to cumulative land use and planning impacts is not considered to be significant.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in less than significant impacts related to land use. Based on the

analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to land use, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to land use has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Mineral Resources

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
MINERAL RESOURCES — Would the project:					
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?	Section 5.3.2 (Other CEQA Sections), pg. 5-18-19.	No	No	No	N/A
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?	Section 5.3.2 (Other CEQA Sections), pg. 5-18-19.	No	No	No	N/A

Discussion

a,b) The freshwater sites are located on HNWR lands in Arizona. The HNWR is managed by USFWS, which serves to preserve watersheds and wildlife habitats. The freshwater sites are not currently used for mining of mineral resources. Two exploratory boreholes would be drilled and potential installation and testing of two previously approved wells would not result in the loss of availability of a known mineral resource or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Although there is the potential for some mineral resources to exist in and around the freshwater sites, the proposed alternative freshwater source evaluation activities would not significantly reduce the availability or accessibility of known mineral resources. There are no mining claims on or immediately adjacent to the freshwater sites. In addition, as discussed in the Final EIR (see Section 5.3.2, "Mineral Resources" of the Final EIR, on page 5-18), the majority of federal lands in the original project area are closed to mineral entry (i.e., mining claims) under the General Mining Act of 1872, as amended. This analysis also applies to the area where the alternative freshwater source evaluation activities would occur. Therefore, no impact would occur related to loss of availability of a known mineral resource, either of regional or local importance.

The proposed alternative freshwater source evaluation activities are not located on lands used for mining mineral resources and its construction and operation would not result in the loss of availability of known mineral resources, and therefore its contribution to cumulative mineral resources impacts is not considered to be significant.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to mineral resources. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to minerals, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to mineral resources has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Noise

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
NOISE — Would the project:					
a) Result in 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?	Section 4.9 (Noise), pgs. 4.9-18 to 4.9-19.	No	No	No	N/A
b) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	Section 4.9 (Noise), pgs. 4.9-19 to 4.9-20.	No	No	No	See mitigation measures summarized below. No new mitigation required.
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Section 4.9 (Noise), pgs. 4.9-18 to 4.9-19.	No	No	No	N/A
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Section 4.9 (Noise), pgs. 4.9-21 to 4.9-24.	No	No	No	See mitigation measures summarized below. No new mitigation required.
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	Section 4.9 (Noise), pgs. 4.9-18.	No	No	No	N/A
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	Section 4.9 (Noise), pgs. 4.9-18.	No	No	No	N/A

Discussion

a,c,d) The proposed changes to the groundwater remediation project involve the identification of the freshwater source sites, just outside of the original project area where two exploratory boreholes would be drilled and potential installation and testing of two wells would take place in order to identify a freshwater source available for freshwater flushing. While the location of the alternative site is outside of the original project area boundary, the site is situated in a remote location and is not located in proximity to any noise-sensitive receptors (e.g., residential areas). The nearest residential development in proximity to the freshwater sites is located approximately two miles (10,560 feet) north. The Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, is approximately 0.35 mile (1,848 feet) south of HNWR-1 well. Given that similar construction equipment would be used for the two exploratory boreholes being drilled and well installation activities, as anticipated in the Final EIR, the noise levels generated

from the exploratory boreholes drilling activities and potential wells would be similar to the noise levels generated from the construction of the wells associated with the project that was analyzed in the Final EIR. As discussed in Section 4.9.3.3, "Noise Impact Analysis" of the Final EIR (see page 4.9-21), it was estimated that construction activities on the project site would result in hourly average noise levels of up to approximately 86 decibels (dB) Leq, at a distance of 50 feet, with maximum noise levels up to 93 dB Lmax at a distance of 50 feet. Consequently, it was determined that construction activities conducted within 1,850 feet and 5,830 feet from California receptors would exceed San Bernardino County's daytime and nighttime noise standards of 55 dB and 45 dB Leq, respectively, while construction activities conducted within 330 feet and 735 feet from Arizona receptors would exceed Mohave County's daytime and nighttime noise standards of 70 dB and 63 dB Leq, respectively.

The nearest receptors are permanent residents of the Topock Bay Marina, located off the I-40 at Oatman-Topock Highway, approximately 0.35 mile (1,848 feet) south of HNWR-1 well site. Currently, there are no noise-sensitive receptors located within the aforementioned distances from the freshwater sites. The nearest residential noise-sensitive receptors to the freshwater sites is the Topock Bay Marina that is located approximately 0.35 mile (1,848 feet) north. As such, the established noise standards of San Bernardino County and Mohave County would not be exceeded during construction activities for the two exploratory boreholes and potential well installations. This impact would remain at a less than significant level and no mitigation is required.

Based on the data collected during the two exploratory boreholes drilling and testing activities, two previously approved groundwater supply wells may be installed at the freshwater sites. As with the wells that were analyzed in the Final EIR, the wellheads of these new groundwater supply wells would be completed with a steel monument casing within a concrete foundation, and the noise levels generated from electric submersible pumps that are encased in the concrete foundation would be adequately reduced. In addition, as no noise-sensitive receptors are located in the immediate vicinity of the freshwater sites, the operational noise generated from the new groundwater supply wells would not result in a significant adverse impact on any sensitive receptors. Thus, as was analyzed in the Final EIR, the operation of a groundwater supply wells would not result in a permanent increase in ambient noise levels relative to existing sensitive receptors in the project area above levels existing without the project or consequently expose persons to or generate noise levels in excess of applicable standards. This impact would remain at a less than significant level and no mitigation is required.

As discussed in the Final EIR, future construction, operations and maintenance, and decommissioning activities associated with the groundwater remediation project could increase noise levels within the Topock Cultural Area. The Topock Cultural Area is depicted in Section 3, "Project Description" Exhibit 3-2 of the Final EIR page 3-4, and generally consists of the project area and the Topock Maze. Refer to Section 4.4, "Cultural Resources" of the Final EIR page 4.4-26, for additional information regarding

the Topock Cultural Area. While construction and decommissioning of the project would be considered short-term isolated noise events and operations and maintenance of the project components would only generate relatively low noise levels, the Topock Cultural Area would nonetheless be exposed to increased noise levels for short-term periods due to project component activities. The Final EIR concluded that noise impacts to the Topock Cultural Area were significant and unavoidable despite implementation of Mitigation Measure NOISE-3, which established a liaison with the Tribes to alert them to project activities that would generate new noise in the Topock Cultural Area, and also required implementation of Mitigation Measures NOISE-1 and NOISE-2. The freshwater sites would be considered an extension of the project boundary and, as such, would also be considered to be part of the Topock Cultural Area. In addition, there are known archaeological sites near the freshwater sites that are considered sacred by Native American Tribes, and may be used as gathering areas that are sensitive to increased noise levels. This sensitive area would be exposed to noise generated from the construction, operations and maintenance, and decommissioning activities associated with the exploratory boreholes and potential previously approved wells. Thus, consistent with the analysis in the Final EIR, the noise impacts on the Topock Cultural Area would be significant and unavoidable, even after implementation of Mitigation Measure NOISE-3. However, these impacts would not be more severe than anticipated in the Section 4.9.3.3, "Noise Impact Analysis" of the Final EIR page 4.9-21.

b) With regard to groundborne vibration, Section 4.9.3.3, "Noise Impact Analysis" of the Final EIR (see page 4.9-19), indicated that vibration standards would be exceeded when construction and decommissioning activities occur within 30 feet and 275 feet from a vibration-sensitive land use when conducted in the California and Arizona project areas, respectively. The nearest vibration-sensitive receptor and land use to the freshwater sites is the Topock Bay Marina, located approximately 0.35 mile (1,848 feet) south of HNWR-1 well site. As no vibration-sensitive land uses are currently located within the aforementioned distances from the two proposed exploratory boreholes and potential well installation sites, no vibration impacts would result. This impact would be less than significant and no mitigation is required.

e,f) The proposed freshwater sites are not located within two miles of a public airport or public use airport, or in the vicinity of a private airstrip; the closest airport to the freshwater sites is Eagle Airpark, located approximately 13 miles north. As discussed in Section 4.9.3.2, "Thresholds of Significance" of the Final EIR page 4.6-18, there would be no impacts under these significance criteria and they were not considered further. The changes addressed in this Addendum do not create new or more severe impacts related to airports.

As noise is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases, only projects and ambient growth in the nearby area could combine with the two proposed exploratory boreholes and potential well installation sites to result in cumulative noise impacts. Consequently, in order to achieve a substantial

cumulative increase in construction noise levels, more than one source emitting high levels of construction noise would need to be in close proximity to the two proposed exploratory boreholes and well installation sites. Given the remote location of the freshwater sites, and the distance from noise-sensitive receptors in the area, with the exception of Native American Tribal members as addressed above (i.e., the nearest receptors to the freshwater sites is the Topock Bay Marina, located approximately 0.35 mile (1,848 feet) south of HNWR-1 well site), no other known construction sites are located in proximity to the two proposed exploratory boreholes and well sites such that a substantial cumulative increase in construction noise levels would occur. Additionally, as operational noise levels associated with the two proposed exploratory boreholes and well installation sites would be much lower than the construction noise levels, a substantial cumulative increase in noise levels would also not occur during operation of the proposed site. Thus, cumulative noise impacts resulting from the construction and operation of the two proposed exploratory boreholes and well installation sites would be less than significant and no mitigation is required.

Applicable Mitigation Measures from the Final EIR:

The mitigation measures from the Final EIR for noise that apply to this Addendum are, in places, programmatic in nature and, as a result, the applicable mitigation measures included from the Final EIR below have been slightly modified where further clarification and project-specific direction is needed to ensure no new significant impacts will result from the proposed alternative freshwater source evaluation activities. The revisions or clarifications are not changes to the original mitigation measures included in the Final EIR but rather are consistent with the overall intent of the referenced measure included in the Final EIR. The revisions to the measures included in the Final EIR are shown in ~~strikeout~~ format for deletions and <u>underline</u> for additions.

Mitigation Measure NOISE-1:

a. Construct new wells a minimum of 45 feet from vibration-sensitive receptors. Avoid constructing wells within 30 feet of vibration-sensitive land uses located in California and 275 feet of vibration-sensitive land uses located in Arizona;

b. A disturbance coordinator will be designated by the project applicant, which will post contact information in a conspicuous location near the entrance so that it is clearly visible to nearby receivers most likely to be disturbed. 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.

Mitigation Measure NOISE-2:

a. 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.

b. Construction equipment shall not idle for extended periods of time (more than 15 minutes) when not being utilized during construction activities.

c. Construction activities shall include 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 above (i.e., 1,850 feet and 5,830 feet from California receptors for daytime and nighttime noise, respectively, 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 conducted by 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. If noise levels are still determined to exceed noise standards, 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. 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 a qualified acoustical consultant.

d. A disturbance coordinator will be designated by the project applicant, which will post contact information in a conspicuous location near construction areas so that it is clearly visible to nearby receivers most likely to be disturbed. In addition, mailing of the same information will be sent to nearby receptors and all tribes. The coordinator will manage complaints resulting from the construction noise. 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 noise-sensitive receptors, advising them of the construction schedule.

Mitigation Measure NOISE-3:

a. Implement all of the mitigation measures outlined for Impact NOISE-1 and Impact NOISE-2;

b. Upon completion of detailed project design, the determination of remediation activities and the schedule established to achieve these activities shall be communicated to Native American tribes. PG&E shall maintain a liaison with requesting Tribes to alert them to project activities that would generate new noise in the Topock Cultural Area on at least an annual basis.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in significant and unavoidable impacts related to noise, specifically in relation to sensitive tribal uses of the Topock Cultural Area. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to noise, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to noise has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Population and Housing

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
POPULATION AND HOUSING — Would the project:					
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Section 5.3.3 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	Section 5.3.3 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	Section 5.3.3 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A

Discussion

a–c) Consistent with Section 5.3.3, "Population and Housing" of the Final EIR page 5-19, the proposed alternative freshwater source evaluation activities do not involve displacement of existing housing or people. The proposed alternative freshwater source evaluation activities involve the identification of freshwater sites just outside of the original project area where exploratory boreholes would be drilled and potential installation and testing of up to two wells would take place in order to identify the freshwater source that could be available for the groundwater remedy. While the location of the two proposed exploratory boreholes and wells are outside of the original project area boundary, the sites are situated in remote locations, approximately 0.35 mile north of the Topock Bay Marina and over two miles south of the community of Topock. As such, the two proposed exploratory boreholes and wells would not displace existing housing or people. In addition, the proposed alternative freshwater source evaluation activities would not result in new full-time employees nor result in the creation of new residences on or adjacent to the project sites. The construction phase may result in up to 20 temporary construction workers coming on-site. It is expected that the majority of these new employees would be from the local employment base. Based on the existing labor pool, there would be no need for new housing to be constructed as a result of the project. For these reasons, implementation of the proposed alternative freshwater source evaluation activities would not result in primary or secondary environmental effects related to additional growth.

Because the construction and operation of the project would not induce population growth, requiring the construction of new housing, or displace any people or existing

housing, the project's contribution to cumulative housing and population impacts is not considered to be significant.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to population and housing. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to population and housing, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to population and housing has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Public Services

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
PUBLIC SERVICES — Would the project:					
a) Result in substantial adverse physical impacts associated with the provision of, or the 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:					
i) Fire protection?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
ii) Police protection?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
iii) Schools?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
iv) Parks?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A
v) Other public facilities?	Section 5.3.4 (Other CEQA Sections), pg. 5-19.	No	No	No	N/A

Discussion

a.i–.v) The proposed alternative freshwater source evaluation activities do not involve the provision of public services, consistent with the project as analyzed in Section 5.3.4, "Public Services" of the Final EIR page 5-19. The proposed alternative freshwater source evaluation activities involve the identification of freshwater sites just outside of the original project area where two exploratory boreholes would be drilled and potential installation and testing of up to two wells would take place in order to identify the freshwater source that could be available for the groundwater remedy. The location of the two exploratory boreholes and wells is outside of the original project area boundary. Construction of the proposed alternative freshwater source evaluation activities is not anticipated to require fire protection, police protection, schools, parks or other public facilities due the relatively short duration of the construction activities. In addition, the installation of two previously approved wells would not require fire protection, police protection, schools, parks or other public facilities, as the proposed alternative freshwater

source evaluation activities would not generate additional residents or permanent employees. No new or expanded public services would be required with implementation of the proposed alternative freshwater source evaluation activities. Therefore, no impact would occur related to fire protection, police protection, schools, parks or other public facilities.

Because construction and implementation of the proposed alternative freshwater source evaluation activities is not expected to require fire protection, police protection, schools, parks, or other public facilities, the project's contribution to cumulative public services impacts is not considered to be significant.

Applicable Mitigation Measures:

No mitigation measures are required.

New Mitigation Measures:

No new mitigation measures are required for the project modifications to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in less than significant impacts related to public services. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to public services, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to public services has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Recreation

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
RECREATION — Would the project:					
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	Section 5.3.5 (Other CEQA Sections), pgs. 5-19 to 5-20.	No	No	No	N/A
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	Section 5.3.5 (Other CEQA Sections), pgs. 5-19-5-20.	No	No	No	N/A

Discussion

a,b) The proposed modifications do not propose construction of any new recreational facilities, consistent with the project as analyzed in Section 5.3.5, "Recreation" of the Final EIR pages 5-19 through 5-20. In addition, the proposed alternative freshwater source evaluation activities would not introduce facilities that would preclude existing recreational uses that occur on the Topock Bay Marina, Colorado River or the HNWR, which includes boating, wildlife observation and photography, education and interpretation, hunting, and fishing. The freshwater sites are located on HNWR lands in Arizona. The HNWR is managed by USFWS, which serves to preserve watersheds and wildlife habitats. The proposed modifications would not increase the use of the HNWR such that substantial physical deterioration of the facility would occur or be accelerated. As previously stated, the proposed alternative freshwater source evaluation activities would not result in the creation of new residences or permanent employees. The construction phase is temporary in nature (several weeks) and may result in up to 20 temporary construction workers on-site. As part of the project, the construction workers would have access to the work areas only. The Final EIR determined the proposed facilities are consistent with the goals of planning policies and documents applicable to the project area (see Section 4.8, "Land Use and Planning" of the Final EIR page 4.8-14). Section 4.8, "Land Use and Planning" Table 4.8-1 of the Final EIR page 4.8-12, identified that portions of the groundwater remediation project (i.e., wells and pipelines) would be constructed and operated within the HNWR managed by the USFWS. The Final EIR stated that USFWS preliminarily determined that the facilities and activities associated with the remediation of the groundwater contamination are compatible with management of the BLM lands in the area and are compatible with management of the wildlife refuge. This determination is in large part a result of the need to remediate the plume to address health and safety concerns. Further, as stated in Final EIR (see Section 4.3.3.3, "Biological Resources Impact Analysis" of the Final EIR page 4.3-36), the groundwater remediation project would not conflict with resource management goals of

the USFWS. For the reasons stated above, the analysis and conclusions in the Final EIR remain valid despite the changes proposed by this EIR Addendum. Therefore, there would be no recreation related impacts.

Because the proposed alternative freshwater source evaluation activities would not increase the use of existing recreational facilities or require their expansion, the project's contribution to cumulative recreation impacts is not considered to be cumulatively considerable.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in less than significant impacts related to recreation. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to recreation, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to recreation has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Transportation and Traffic

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
TRANSPORTATION AND TRAFFIC — Would the project:					
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	Section 4.10 (Transportation) pg. 4.10-23.	No	No	New roadways to be accessed by proposed freshwater source evaluation activities. No new significant impacts. See discussion below.	N/A
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Section 4.10 (Transportation) pgs. 4.10-12 to 4.10-23.	No	No	New roadways to be accessed by proposed freshwater source evaluation activities. No new significant impacts. See discussion below.	N/A
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	Section 4.9 (Noise), pg. 4.9-18.	No	No	No	N/A
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Section 4.10 (Transportation) pg. 4.10-23.	No	No	No	N/A
e) Result in inadequate emergency access?	Section 4.6 (Hazards) pgs. 4.6-13 to 4.10-14.	No	No	No	N/A
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Section 4.10 (Transportation) pgs. 4.10-23.	No	No	No	N/A

Discussion

The proposed changes to the project involve two freshwater sites, which are outside of the original project area where two exploratory boreholes would be drilled and potential installation and testing of up to two wells would take place in order to identify the freshwater source that could be available for the groundwater remedy. While the location of the exploratory boreholes and wells are outside of the original project area boundary, the sites are accessed primarily from I-40. The transportation study area evaluated in the Final EIR included local roads that serve the compressor station, Moabi Regional Park, and adjacent lands, and I-40, a major regional highway

that serves northern Arizona and the Mojave Desert region. The freshwater sites are accessed from I-40 at Oatman-Topock Highway and then using an unpaved road that originates from Oatman-Topock Highway.

a,b) Section 4.10.3, "Transportation Environmental Impacts and Mitigation Measures" of the Final EIR page 4.10-9, evaluated transportation impacts associated with construction and operation from the groundwater remediation project. The intersections and roadway segments assessed in the Final EIR impact analysis included facilities that provide direct access to I-40 (the ramp terminal intersections and segments of Park Moabi Road), because these intersections and roadway segments were determined to have the highest potential to result in a project impact (e.g., they are currently the most utilized roadway facilities in the project area and the project would add traffic to them). Park Moabi Road is a two-lane paved facility in the project area, with one travel lane in each direction. Section 4.10.3.1, "Transportation Analysis Methodology" of the Final EIR page 4.10-9, considered construction of up to 170 wells installed in the project area. Section 4.10.3.3, "Transportation Impact Analysis" Table 4.10-8 in the Final EIR page 4.10-17, estimated that up to 76 daily truck trips would occur during the construction phase of the project. As indicated in Table 4.10-8 and Table 4.10-9 of the Final EIR pages 4.10-7 and 4.10-18, all roadway segments and study intersections, including unsignalized intersections, currently operate at an acceptable level of service and would continue to operate acceptably during all phases of the groundwater remediation project. Transportation impacts from the proposed freshwater well explorations would occur in Arizona at I-40 and Oatman-Topock Highway, which is outside of the original project area. Based on the equipment, supplies, and workers required for the proposed alternative freshwater source evaluation activities, up to 25 daily truck trips may occur (20 for workers and 5 for deliveries). Similar to Park Moabi Road, Oatman-Topock Highway is also a two-lane paved facility that is now in the proposed project area, with one travel lane in each direction. Based on information provided at the Arizona Department of Transportation, Traffic Count Database System, the Oatman-Topock Highway at I-40 is an unsignalized intersection operating in good condition, with a daily traffic flow between 0-5,000 (Arizona Department of Transportation, 2013). Because this intersection is already operating in good condition, the temporary addition of up to 25 daily truck trips would not significantly impair this intersection. The County of Mohave designates Oatman-Topock highway as a primary arterial road. Policy 52.2 of the Mohave County General Plan requires traffic impact analyses for major development projects (over 500 trips per day) and in areas experiencing or projected to experience traffic problems (Mohave County, 2005). Because the proposed alternative freshwater source evaluation activities would only generate up to 25 daily truck trips during the construction period, no traffic impact analysis would be required. As such, consistent with the findings in the Final EIR, due to the limited number of trips associated with the proposed alternative freshwater source evaluation activities, traffic and circulation on the local and regional transportation networks would not be significantly impaired. Impacts to traffic would remain less than significant and no mitigation is required.

c) The proposed changes to the project involve the identification of freshwater sites, which are outside of the original project area where two exploratory boreholes would be drilled and potential installation and testing of up to two wells would take place in order to identify the freshwater source that could be available for the groundwater remedy. The proposed alternative freshwater source evaluation activities would not result in a change in air traffic patterns. No impacts to traffic would occur and no mitigation is required.

d) There are no known hazards or safety concerns associated with I-40 at Oatman-Topock Highway. While the proposed alternative freshwater source evaluation activities would add traffic to this roadway during the construction, operation and maintenance, and decommissioning phases of the project, this increase in traffic is not anticipated to pose a hazard or safety concern such that it would result in a significant environmental impact. Impacts related to transportation hazards associated with the proposed alternative freshwater source evaluation activities would remain less than significant and no mitigation is required.

e) The proposed alternative freshwater source evaluation activities would not adversely affect I-40 and Oatman-Topock Highway other than adding a relatively small amount of additional vehicles related to project construction activities that would not degrade level of service on roadways or result in congestion at intersections and would therefore not interfere with the designated evacuation routes. Therefore, impacts related to transportation networks and emergency response would be less than significant and no mitigation is required.

f) As described Section 4.10.1.2, "Existing Public Transit System" of the Final EIR page 4.10-1, no alternative transportation services are in the study area analyzed in the Final EIR that would be affected by construction, operations and maintenance, and decommissioning of the project. Additionally, as described in Section 4.10.2.3, "Regional and Local Plans, Policies, Regulations, and Laws" of the Final EIR page 4.10-6, the project would not conflict with any specific plans or policies supporting alternative transportation. Impacts to alternative transportation services associated with the proposed alternative freshwater source evaluation activities would remain less than significant and no mitigation is required.

Although the proposed alternative freshwater source evaluation activities required new analysis related to roadway access, it has been determined that the project will not impair traffic flow, conflict with any applicable circulation or congestion plans, result in a change in air traffic patterns, increase hazards due to design, or result in inadequate emergency access. Therefore, the project's contribution to cumulative transportation and traffic impacts is not cumulatively considerable.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures from the Final EIR are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to traffic. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to traffic, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to traffic has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Utilities and Service Systems

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
UTILITIES AND SERVICE SYSTEMS — Would the project:					
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	Section 4.11 (Utilities), pg. 4.11-4.	No	No	No	N/A
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?	Section 4.11 (Utilities), pg. 4.11-4.	No	No	No	N/A
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?	Section 4.11 (Utilities), pg. 4.11-4.	No	No	No	N/A
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	Section 4.12 (Water Supply), pgs. 4.12-7 to 4.12-9.	No	No	No	N/A
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Section 4.11 (Utilities), pg. 4.11-4.	No	No	No	N/A
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	Section 4.11 (Utilities), pgs. 4.11-4 to 4.11-6.	No	No	No	N/A
g) Comply with federal, state, and local statutes and regulations related to solid waste?	Section 4.11 (Utilities), pgs. 4.11-4 to 4.11-6.	No	No	No	N/A

Discussion

The proposed changes to the project involve the identification of freshwater sites, which are outside of the original project area where two exploratory boreholes would be drilled and potential installation and testing of up to two wells would take place in order to identify the freshwater source that could be available for the groundwater remedy. While the location of the two exploratory boreholes and wells are outside of the original project area boundary, the impact on utilities from the exploratory boreholes and potential well installations would be similar to the utilities impacts generated from the construction of the wells associated with the project analyzed in the Final EIR (see Section 4.11, "Utilities and Service Systems" of the Final EIR beginning on page 4.11-1).

a,b,e) As described in Section 4.11.3.2, "Utilities Impact Analysis" of the Final EIR page 4.11-4, the construction, operation, and decommissioning of the groundwater remediation project would not generate substantial amounts of domestic wastewater (sewage or gray water). Similarly, because the two exploratory boreholes and potential installation and testing of up to two wells are also not wastewater-intensive facilities, it is not anticipated that the proposed alternative freshwater source evaluation activities would generate effluent that would require treatment or exceed applicable standards or capacity, nor would the proposed alternative freshwater source evaluation activities require the construction of new treatment facilities. Thus, as was analyzed in the Final EIR, the proposed alternative freshwater source evaluation activities would have less than significant impacts related to wastewater. This impact would remain at a less than significant level and no mitigation is required.

c) The proposed alternative freshwater source evaluation activities would include two exploratory boreholes and potential installation and testing of two previously approved wells. Operation and maintenance activities associated with the proposed alternative freshwater source evaluation activities may include the long-term presence of new impervious surfaces (well improvements) that would minimally increase runoff immediately surrounding the well sites; however, these surfaces would not add a substantial amount of impervious surface such that runoff from the site would occur and cause erosion. Stormwater would continue to flow predominantly as sheet flow and/or percolate on-site. Increased flows from increased impervious surfaces would be minimal to none and are not expected to result in flooding on-site or off-site; and thus would not require construction of new storm water drainage facilities or expansion of existing facilities. No impacts related to new stormwater drainage facilities are anticipated.

d) Refer to the Water Supply Section below in this EIR Addendum for a discussion regarding water supplies available to serve the proposed alternative freshwater source evaluation activities.

f,g) The project would generate incidental nonhazardous waste and hazardous waste during construction, operation, and decommissioning activities. Sources of waste during construction include construction debris (empty cement and sand bags, pallets and scrap material, empty drink and food containers, and plastic sheeting). Operation of the proposed alternative freshwater source evaluation activities may generate nonhazardous waste that would include incidental trash (i.e., food containers and other routine waste) generated by personnel, and construction materials from repair of constructed facilities. Decommissioning of the proposed wells would also generate a variety of construction debris, including concrete, metal sheeting, and pipe. As described in Section 4.11.3.2, "Utilities Impact Analysis" of the Final EIR page 4.11-4, much of the material generated during decommissioning of PG&E facilities is diverted and reclaimed under existing practices. These practices would be applied to the proposed alternative freshwater source evaluation activities, and thus substantial portions of anticipated waste streams would also be diverted and possibly reclaimed. As described in Section 4.11.3.2, "Utilities

Impact Analysis" of the Final EIR page 4.11-4, the waste streams anticipated from the groundwater remediation project are minimal in relation to available or foreseeable capacity at the receiving landfills. The waste generated from the two exploratory boreholes and wells would not add a significant amount to the total waste stream for the project. The Final EIR concluded because the projected waste stream would not exceed the available daily capacity of the receiving landfills, impacts from solid waste would be less than significant. In addition, the proposed alternative freshwater source evaluation activities would comply with federal, state, and local statutes and regulations related to solid waste. As such, impacts to landfills from the proposed alternative freshwater source evaluation activities would also be less than significant and no mitigation is required.

As identified in the Final EIR, potential sources of electricity for the project would be supplemental power from the compressor station, a dedicated portable diesel fuel generator (approximately 320 kW), or small solar panels. These sources of electricity would be used either individually or in combination to meet the electrical demands of the project. Section 4.11.3.2, "Utilities Impact Analysis" of the Final EIR page 4.11-6," concluded that because PG&E has adequate sources of electricity available from on-site sources (identified above), the impacts would be less than significant and no mitigation is required. The two exploratory boreholes and potential installation and testing of up to two wells would use a portable gasoline or diesel powered booster pump to support the construction and testing activities. No permanent source of power would be installed at this time; a power source would be identified as part of the final remedy, which would require additional environmental evaluation. As such, the proposed alternative freshwater source evaluation activities would also have a less than significant impact and no mitigation is required.

The proposed alternative freshwater source evaluation activities impacts on utilities would be similar to the impacts generated by the original project and analyzed in the Final EIR. The project would not conflict with regional wastewater treatment requirements, require additional treatment facilities, or exceed the capacity of the wastewater treatment provider. Any project-related stormwater runoff would be minimal and is not expected to result in flooding. Solid waste from the project would comply with federal, state, and local regulations, and the projected nonhazardous waste stream would not exceed the available daily capacity of receiving landfills. Electricity needed for construction and operation of the proposed alternative freshwater source evaluation activities would come from on-site sources, and would not require the installation of a permanent power source. Therefore, the project's contribution to cumulative utilities impacts is not cumulatively considerable.

Applicable Mitigation Measures from the Final EIR:

No mitigation measures are required.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in less than significant impacts related to utilities. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to utilities, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to utilities has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

Water Supply

Issues (and Supporting Information Sources):	Where Impact Was Analyzed in the Final EIR.	Do Proposed Changes Involve New Significant Impacts or Substantially More Severe Impacts?	Any New Circumstances Involving New Significant Impacts or Substantially More Severe Impacts?	Any New Information Indicating New Significant Impacts?	Final EIR Mitigation Measures Address Impacts?
WATER SUPPLY—					
Would the project:					
a. Have insufficient water supplies available to serve the project from existing or permitted entitlements and resources, or require new or expanded entitlements?	Section 4.12 (Water Supply), pgs. 4.12-7 to 4.12-9.	No	No	Groundwater would be discharged as part of well testing and installation. No new significant impacts. See discussion below.	No new mitigation required.
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Section 4.12 (Water Supply), pgs. 4.12 to 4.12-9.	No	No	Groundwater would be discharged as part of well testing and installation. No new significant impacts. See discussion below.	No new mitigation required.

Discussion

As shown on the Groundwater Flow Direction Figure on page 4.12-3 of the Final EIR , the direction of groundwater flow in the proposed freshwater well areas is generally southwest toward the Colorado River. The section of the Colorado River in the Topock Gorge just south of the compressor station enters into a narrow area with minimal to no floodplain, causing subsurface groundwater flow to be forced into the narrower channel area.

a, b) A survey to identify wells located within the region was conducted by CH2M HILL and documented in the technical memorandum *PG&E Topock Background Study, Step 1 Results*, dated March 10, 2005 (CH2M HILL, 2005). There is one existing well located within the proposed alternative freshwater source evaluation activities area, HNWR-1 well. The nearest private wells are Topock 2 and 3 and are located approximately 840 feet from HNWR-1 well, but outside of the proposed alternative freshwater source evaluation activities area. One new well was recently installed at the Topock Bay Marina located approximately 0.35 mile (1,848 feet) south of HNWR-1 well. In addition, there are several nearby PG&E compressor station wells.

A component of the proposed freshwater well and testing of HNWR-1 well includes conducting a 96 hour aquifer pump test to evaluate the hydraulic parameters of the aquifer at the proposed location. The proposed freshwater supply well alternate locations are shown on Figure 2. The aquifer pump test will result in pumping approximately

5,500,000 gallons of groundwater from the aquifer. Nearly all of the water would be returned to the aquifer using a sprinkler system, as discussed further below.

As presented in Section 4.12, "Water Supply" of the Final EIR page 4.12-10, Mitigation Measure WATER-1 requires a hydrologic analysis to be conducted to evaluate the proposed pumping rates, the potential cone of depression, and the extraction effect on nearby existing wells. To evaluate the potential radius of influence of the proposed aquifer pump test from the proposed freshwater sites, an aquifer pump test was conducted on the existing HNWR-1 well. HNWR-1 well is located about 3,100 feet south and downstream and down-gradient of Site B (see Figures 1 and 2). Wells located down-gradient of the proposed freshwater well would be more strongly affected; wells located up-gradient would be less affected. The aquifer pump test results are described in Technical Memorandum, Results of Water Level Monitoring During Testing of HNWR-1 Irrigation Pumping, CH2M HILL, November 30, 2012 (Attachment E). The aquifer pump test was conducted for 24 hours at an average rate of 880 gpm. The aquifer response was monitored in HNWR-1 well and several nearby compressor station wells located within the radius of influence. The nearest private wells, Topock 2 and 3, are located approximately 840 feet from HNWR-1 well. PG&E wells are located within the vicinity as well. Based on the results of the aquifer pump test, the projected drawdown at Topock 2 and 3 was less than 0.5 foot. This small amount of drawdown would have no adverse effect on the ability of Wells Topock 2 and 3 to provide an adequate amount of water because well pumps are routinely set well below a given wells historic low water levels to prevent the pump intakes from being exposed to air and burning out. The maximum drawdown observed in any of the monitoring wells was 0.23 feet in the deeper well at the Well MW-55 cluster, located about 1,880 feet from HNWR-1 well. The new Marina well is located 0.35 mile (1,848 feet) away from the HNWR-1 well, so the anticipated drawdown would be similarly small. In general, the deeper wells in the monitoring well clusters showed more drawdown than the shallower wells, which is typical in alluvial aquifers due to semi-confined aquifer conditions at depth. The maximum radius of influence for this aquifer pump test was about 4,000 feet. Assuming that the aquifer conditions at the proposed alternate freshwater well sites are similar, then the only wells that would be affected by a 24-hour aquifer pump test would be wells within 4,000 feet of the proposed alternate freshwater well sites.

Wells Topock 2 and 3 are the closest private supply wells and are located generally down-gradient of the freshwater sites. As discussed above, the drawdown in the Topock wells was estimated at 0.5 feet for a 24-hour aquifer pump test. A 96-hour aquifer pump test would result in continuing drawdown but at a decreasing rate as the cone of depression increases in volume. Eventually, the cone of depression would effectively stabilize once the rate of groundwater removal is matched by the inflow of groundwater from the increased size (volume) of the cone of depression. Thus, the rate of the increase in volume of the cone of depression decreases to near zero with time at less than a simple arithmetic rate of increase. However, to provide a very conservative estimate, if the increase in the radius of influence is arithmetic, then the radius of influence would be

assumed to increase by a factor of 4 (96 hours divided by 24 hours). The 0.5 foot drawdown experienced during a 24-hour aquifer pump test would increase to something less than four times 0.5 feet, or 2 feet. This amount would still be above the pump intakes of the Topock supply wells. The screen intervals are Topock 2: 100 to 140 feet, Topock 3: 85 to 150 feet. The nearest known active well located up-gradient of the proposed freshwater well is the Serrano irrigation well located about 7,000 feet to the north. This up-gradient location at this distance would not be anticipated to experience any drawdown.

Based on the discussion above, the 96-hour aquifer pump test would have a less than significant impact on local water supply wells because existing public or private supply wells that could be affected by a project of this type are not located in the radius of influence of the aquifer pump test (within 4,000 feet of the proposed freshwater well site). In addition, the groundwater would be returned to the aquifer by infiltrating the water back into the subsurface through the use of sprinkler systems as described in the Project Description (see Section 5.3.3, "Management of Material Generated During Well Installation and Aquifer Testing" of this Addendum). As discussed above in the Geology, Soils, and Seismicity section, discussion subsections b and e, the infiltration rate (6.0 to 22.0 inches per hour) exceeds the discharge rate (0.31 inches per hour) by one to two orders of magnitude. This would further ensure that the impact would be less than significant.

Implementation of the proposed alternative freshwater source evaluation activities would require minor amounts of water during the construction and decommissioning phases, and a negligible amount of water during operations, since nearly all of the water pumped during the aquifer pump test would be returned back to the aquifer through the sprinkler system, albeit some minor water loss due to evapotranspiration.[2] As described in Section 5.3.3, "Management of Material Generated during Well Installation and Aquifer Testing" of this Addendum, about 5,500,000 gallons of groundwater would be sprinkled evenly within each sprinkled area over the 96-hour aquifer pump test time period. A loading rate of at least approximately 0.31 inch per hour is anticipated. Section 4.5, "Geology and Soils" Exhibit 4.5-2 of the Final EIR page 4.5-5 identifies the soil type for the freshwater sites as Quaternary Colorado River and Recent Floodplain Deposits. Section 4.5, "Geology and Soils" Table 4.5-2 of the Final EIR page 4.5-13, identifies the soil units in the freshwater sites are excessively to somewhat excessively drained, with permeabilities ranging from 6.0 to 22.0 inches per hour. The infiltration rate of the soil units exceeds the sprinkler application rate by more than an order of magnitude, indicating that water would be returned to the basin fairly quickly. Therefore, the project would result in a negligible amount of water use compared to existing conditions. In addition, all of this water use is well within PG&E's existing (Lower Colorado River Water Supply Project) contracted entitlement of 422 acre-feet annually, as discussed in Section 4.12.3.3, "Water

[2] Evapotranspiration is defined as the water lost to the atmosphere from the ground surface, evaporation from the capillary fringe of the groundwater table, and the transpiration of groundwater by plants whose roots tap the capillary fringe of the groundwater table; USGS Webpage, http://ga.water.usgs.gov/edu/watercycleevapotranspiration.html, accessed 03/11/2013.

Supply Impact Analysis" of the Final EIR page 4.12-7. Because the project requires a negligible amount of water, would have a less than significant impact on nearby existing supply wells, and would not generate a demand for water that exceeds existing entitlements, the project does not make a significant contribution to cumulative impacts on water supply.

The aquifer pump tests to be conducted on the proposed alternate freshwater supply well is specifically to comply with Mitigation Measure WATER-1 which requires a hydrologic analysis during this design phase of the project to evaluate the proposed pumping rates for extraction, the potential cone of depression, and the extraction effect on any existing wells in proximity. Implementation of Mitigation Measure WATER-1 has confirmed that the project's potential contribution to cumulative localized effects on the groundwater would not be cumulatively considerable.

Applicable Mitigation Measures from the Final EIR:

Mitigation Measure WATER-1: To mitigate potentially significant effects on local groundwater levels associated with the freshwater extraction wells, in the event that freshwater is to be supplied from wells rather than from a surface intake, a hydrologic analysis shall be conducted during the design phase of the project to evaluate the proposed pumping rates for extraction, the potential cone of depression, and the extraction effect on any existing wells in proximity. Proximity shall be defined by the cone of depression boundary of any well to be used in the extraction process. Extraction well location and/or extraction rates shall be adjusted during project design based on this analysis to ensure that extraction does not substantially adversely affect the production rates of existing nearby wells (e.g., adversely affect well production such that existing land uses would not be supported). It shall be demonstrated using computer simulations or other appropriate hydrologic analysis that production rates of existing nearby wells will not be substantially affected before the installation of any new freshwater extraction wells.

New Mitigation Measures:

No new mitigation measures are required for the proposed alternative freshwater source evaluation activities to ensure no new significant adverse impacts.

The Final EIR concluded that the Topock Compressor Station Groundwater Remediation Project would result in potentially significant impacts related to water supply. Based on the analysis presented above, the additional activities proposed to identify a potential location for an alternative freshwater source would not result in new significant adverse impacts or a substantial increase in the severity of previously identified significant impacts to water supply, nor have any substantial change in circumstances been identified that would result in new significant impacts or substantially more severe impacts. Similarly, no new information of substantial importance related to water supply has been identified. Thus, none of the conditions described in Public Resources Code section 21166 or CEQA

Guidelines sections 15162 and 15163 calling for preparation of a subsequent or supplement to an EIR have been met.

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7. Summary of Effects

The two proposed exploratory boreholes and installation and testing of up to two previously approved wells at the freshwater sites for possible use in implementation of the final groundwater remedy would not result in any new significant impacts or increase in the severity of previously identified significant impacts identified in the certified Final EIR prepared for the Groundwater Remediation Project and, specifically, to aesthetic resources, agricultural and forest resources, air quality, biological resources, cultural resources, geology, soils, and seismicity, greenhouse gas emissions, 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, and water supply (Pub. Resources Code, § 21166, CEQA Guidelines, §§ 15162-15164).

Based on the evaluation of the proposed alternative freshwater source evaluation activities, the impacts to resources would be similar to what was stated in the Final EIR. Although the location of the two proposed exploratory boreholes and wells would change, the overall potential impacts would remain substantially the same because the total number of extraction and monitoring wells will not exceed a total of 170 as previously approved. No additional mitigation measures are required above and beyond those referenced in the Final EIR. However, in some instances where mitigation measures in the EIR refer to the preparation of resource protection plans for the final remedy design, which has yet to be complete, the measures have been revised to provide more specific information regarding resource protection at the freshwater well sites; namely, with respect to cultural resources, biological resources, geology and soils, and hydrology and water quality. The revisions to the mitigation measures are consistent with the overall intent of the mitigation measures adopted in the Final EIR and do not include the addition of mitigation measures to address any new significant adverse impacts, or substantial increase in the severity of previously identified significant impacts, as none were identified.

The proposed alternative freshwater source evaluation activities do not change the conclusions of the Final EIR or those made by DTSC in adopting the CEQA Findings of Fact and Statement of Overriding Considerations for the project. The proposed modifications to the previously-approved project do not meet any of the conditions that would require the preparation of a negative declaration, Supplemental or Subsequent EIR as set forth in §§ 15162 - 15163 of the *CEQA Guidelines*. Therefore, no further environmental documentation other than this Addendum is necessary for purposes of CEQA compliance.

8. Environmental Determination

Section 15164(a) of the CEQA Guidelines states the following:

> The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in § 15162 calling for the preparation of subsequent EIR have occurred.

The proposed modification to the original project would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects. Furthermore, new information associated with the proposed alternative freshwater source evaluation activities does not indicate that: the project will have one or more significant effects not discussed in the adopted Final EIR; significant effects previously examined will be substantially more severe than shown in the adopted Final EIR; mitigation measures or alternatives previously found not to be feasible would in fact be feasible; or mitigation measures or alternatives which are considerably different from those analyzed in the adopted Final EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternative. (Pub. Resources Code, § 21166.) Accordingly, an addendum has been prepared as opposed to a supplemental or subsequent EIR. DTSC is adopting this EIR Addendum No. 1 in accordance with the CEQA Guidelines, § 15164.

9. References

This EIR Addendum to the certified Final EIR for the Topock Compressor Station Groundwater Remediation Project (January 2011) (SCH No. 2008051003) relies on information contained in the Final EIR, including the appendices, and on the following documents, many of which are available for review on DTSC's website, and all of which are available for review at DTSC's offices, at 5796 Corporate Avenue, Cypress, California 90630.

ARCADIS, 2013. Response to Comments on *Paleontological Resources Management Plan, Topock Groundwater Remediation Project, San Bernardino County, California and Mohave County, Arizona*, prepared for Pacific Gas and Electric, December.

Arizona Department of Transportation, Transportation Data Management System, Traffic Data for Oatman-Topock Highway at I-40. Accessed at: http://adot.ms2soft.com/tcds/tsearch.asp?loc=Adot&mod=; January 7, 2013.

Bureau of Land Management. 2010. Programmatic Agreement among the Bureau of Land Management, Arizona 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. U.S. Department of the Interior, Bureau of Land Management. October.

Bureau of Land Management. 2012. *Cultural and Historic Properties Management Plan (CHPMP) Topock Remediation Project*. U.S. Department of the Interior, Bureau of Land Management. January.

California Department of Toxic Substances Control (DTSC), 2011. *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). January.

CH2M Hill. 2004. *Cultural Resources Investigations for Interim Measures No. 3, Topock Compressor Station Expanded Groundwater Extraction and Treatment System, San Bernardino County, California*. Prepared by CH2M Hill, Sacramento, California. Submitted to Pacific Gas & Electric Company, San Francisco, California.

CH2M HILL, 2005. PG&E Topock Background Study, Step 1 Results. March 10, 2005.

CH2M HILL, 2009. T*he 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). December.

CH2M HILL, 2011. *Draft Basis of Design Report/Preliminary (30%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. November.

CH2M HILL, 2012. Biological Survey of Expanded Areas for Sites A, B, and C of the Alternative Freshwater Source Areas. December.

CH2M HILL, 2012. Biological Survey of the Action Area for the 2012 Programmatic Biological Assessment Encompassing Site B of Alternative Freshwater Source Areas. December.

CH2M HILL, 2012. *Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area*. November.

CH2M HILL, 2012. Technical Memorandum, Results of Water Level Monitoring During Testing of HNWR-1 Irrigation Pumping. November.

CH2M HILL, 2013a. *Revised Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area*. January.

CH2M HILL, 2013b. *Draft Basis of Design Report/Intermediate (60%) Design Submittal for the Final Groundwater Remedy, PG&E Topock Compressor Station, Needles, California*. April.

Cogstone Resource Management, Inc., 2012. Draft Paleontological Resources Management Plan: MMRP CUL-3: Topock Groundwater Remediation Project, San Bernardino County, California and Mohave County, Arizona, prepared by ARCADIS U.S., Inc., prepared for Pacific Gas and Electric Company, December.

E2 Consulting Engineers, 2012. Pacific Gas and Electric Company Topock Compressor Station Wetland Assessment for Freshwater Well Locations San Bernardino County, California. December.

Hearth, Nicholas F. Hearth and Vanessa Mirro, *Archaeological Survey for the Evaluation of Alternative Fresh Water Sites in the Topock Remediation Project Area*, prepared for Pacific Gas and Electric Company, prepared by Applied Earthworks, Inc., March 12, 2013.

Mirro, Vanessa and Nicholas F. Hearth. 2012. Technical Memorandum: Updated Archaeological Survey for the Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area, prepared by Applied Earthworks, Inc., prepared for Pacific Gas and Electric Company, December.

Mohave County, Arizona General Plan, Revised December 5, 2005. Accessed at: http://legacy.co.mohave.az.us/depts/pnz/pnz_default.asp; January 7, 2013.

PG&E, 2012. *Request for Second Extension of Groundwater Remedy 60% Design Submittal.* November.

State of Arizona Department of Water Resources, *Title 45 Waters, Chapter 2 Groundwater Code, Article 10 Wells, Section R12-15-816 Abandonment*, 2011.

U.S. Army Corps of Engineers (USACE). 2013. Memorandum response to request SPL-2013-0476 regarding USACE permits. From Gerrard Salas. July 10, 2013.

U.S. Department of the Interior, Bureau of Land Management, 2012. *Cultural and Historic Properties Management Plan (CHPMP) Topock Remediation Project*. January.

U.S. Fish and Wildlife Service (USFWS). 2012. *Section 7 Consultation with BLM – Concurrence for the Extension and Modification of the Programmatic Biological Assessment for Pacific Gas and Electric Topock Compressor Station Remedial and Investigative Actions January 2007*. December 27, 2012.

APPENDIX A

Biological Surveys of Proposed Sites for Geophysical Surveys (October 16, 2012)

Biological Survey of Proposed Sites for Geophysical Surveys

PREPARED FOR: Virginia Strohl, PG&E

PREPARED BY: Gabe Valdes, CH2M HILL

DATE: October 16, 2012

Purpose

The purpose of this technical memorandum is to document the biological resources survey that was performed on October 2, 2012 to identify sensitive species, potential project constraints and delineate potential Waters of the US within the sites proposed for geophysical surveys. The survey results will be used as a planning tool for the proposed activities to avoid, reduce, and mitigate potential impacts to sensitive biological resources and identify appropriate regulatory permits.

Site Locations

The Topock Compressor Remediation Project is located near Needles, California and includes a 65-acre property owned by PG&E and adjacent lands owned and managed by a number of federal, state, and regional agencies as well as private land owners.

Two areas are proposed for Geophysical surveys (Figure 1). One is located on the California side approximately 1.3 miles north of the Park Moabi Action Area. The other area is on the Arizona side approximately .30 mile northeast of County Hwy 10 up Sacramento Wash.

Survey Results

California Site

The California survey site is predominatly creosote bush scrub with a few scattered blue palo verde (*Parkinsonia florida*). This is characterized by widely-spaced creosote bush (*Larrea tridentata*) with associated species such as white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinose*), beavertail cactus (*Opuntia basilaris*) and silver cholla (*Opuntia echinocarpa*). A single California barrel cactus (*Ferocactus cylindraceus* var. *cylindraceus*) was also observed at this site. Along the Colorado River, there is a dense narrow strip of tamarisk thicket dominated by saltcedar (*Tamarix ramosissima*) and western honey mesquite (*Prosopis glandulosa* var. *torreyana*).

The creosote scrub area of this site would be considered potential desert tortoise habitat although no individuals or sign were observed. The tamarisk thickets along the Colorado

River provide suitable southwestern willow flycatcher habitat during the summer nesting season although no individuals were detected during 2012 surveys of the Action Area near Park Moabi. No wildlife or sign of any species was observed during the survey.

There is one ephemeral drainage system originating from the southeastern road underpass, extending east to a tamarisk and mesquite thicket along the Colorado River. This channel is approximately 100 feet wide at the road underpass but divides into several braided swales containing no OHWM. There is no defined channel through the tamarisk thicket. This series of braided swales forms one flood plain providing a means for storm water to flow to the tamarisk thicket (Figure 2). There is a blue line along the southern portion of this area on the USGS topographical maps. This would be considered a jurisdictional Water of the US given that it potentially drains the Colorado River.

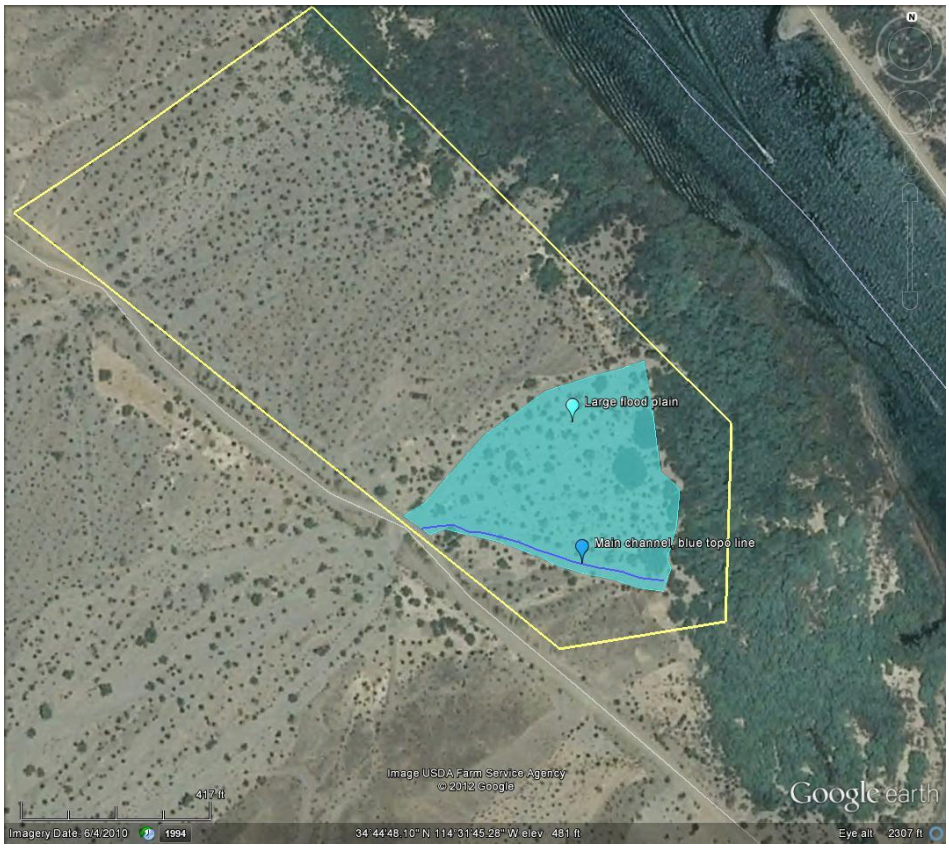


Figure 2. Drainage area for California Site.

Arizona Site

The majority of this site lies within the sandy Sacramento Wash which is dominated by dense athel tamarisk (*Tamarix aphylla*) thickets. The site is also bisected north to south by a pipeline right-of-way leaving a disturbed area approximately 200 feet wide. There is an area of creosote scrub along the railroad and east of the pipeline right-of-way.

Abert's towhee (*Melozone aberti*) and blue-grey gnatcher (*Polioptila caerulea*) were the only wildlife observed on the site. No other wildlife or sign was observed. The tamarisk thickets provide suitable southwestern willow flycatcher habitat during the summer nesting season although no individuals were detected during 2012 surveys of the adjacent areas to the west.

The majority of the area provides drainage for Sacramento Wash southwest through the site. However, the main ephemeral channel appears to be along the hills on the northern edge of the site boundary (Figure 3). The channel contains no OHWM but appears to provide sheet flow during storm events to the dense tamarisk thickets to the west and the sandy area west of Co. Hwy 10. This area is also indicated as a blue line on the USGS topographical maps. This would be considered a jurisdictional Water of the US given that it potentially drains the Colorado River.

Figure 3. Arizon Site with main drainage.

APPENDIX B

Biological Survey of Expanded Areas for Sites A, B, and C of the Alternative Freshwater Source Areas (December 20, 2012)

Biological Survey of Expanded Areas for Sites A, B, and C of the Alternative Freshwater Source Areas

PREPARED FOR: Virginia Strohl, PG&E

PREPARED BY: Gabe Valdes, CH2M HILL

DATE: December 20, 2012

Purpose

The purpose of this technical memorandum is to document the biological resources survey that was performed on December 10, 2012 to identify sensitive species and their potential habitat within the expanded freshwater sites. The survey results will be used as a planning tool for the proposed activities to avoid, reduce, and mitigate potential impacts to sensitive biological resources and identify appropriate regulatory permits.

Site Locations

The Topock Compressor Remediation Project is located near Needles, California and includes a 65-acre property owned by Pacific Gas and Electric Company and adjacent lands owned and managed by a number of federal, state, and regional agencies as well as private land owners.

Two areas near the proposed freshwater sites were surveyed. One is located on the California side approximately 1.3 miles north of the Park Moabi Action Area. The other area is on the Arizona side approximately .30 mile northeast of Arizona County Highway 10 (Oatman-Topock Highway) up Sacramento Wash. The following areas were surveyed: the areas within Sites A, B, and C not previously surveyed; orange area on map near Site C; and the approximate sprinkled area. Figure 1 is included in Attachment A.

Survey Results

California Site (Site C)

The California survey site is predominantly creosote bush scrub with a few scattered blue palo verde (*Parkinsonia florida*). This is characterized by widely-spaced creosote bush (*Larrea tridentata*) with associated species such as white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinose*), beavertail cactus (*Opuntia basilaris*) and silver cholla (*Opuntia echinocarpa*). Several California barrel cacti (*Ferocactus cylindraceus* var. *cylindraceus*) were also observed in the area between the railroad and south of the dirt road. Along the Colorado River, there is a dense narrow strip of tamarisk thicket dominated by saltcedar (*Tamarix ramosissima*) and western honey mesquite (*Prosopis glandulosa* var. *torreyana*).

The creosote scrub area of this site would be considered potential desert tortoise (*Gopherus agassazii*) habitat although no individuals or sign were observed. The tamarisk thickets along the Colorado River provide suitable southwestern willow flycatcher (*Empidonax traillii extimus*) habitat during the summer nesting season although no individuals were detected during 2012 surveys of the Action Area near Park Moabi.

Blue-grey gnatcatcher (*Polioptila caerulea*), black-tailed jack rabbit (*Lepus californicus*), and Wild burro (*Equus asinus*) (scat) were the only wildlife or sign observed in this area.

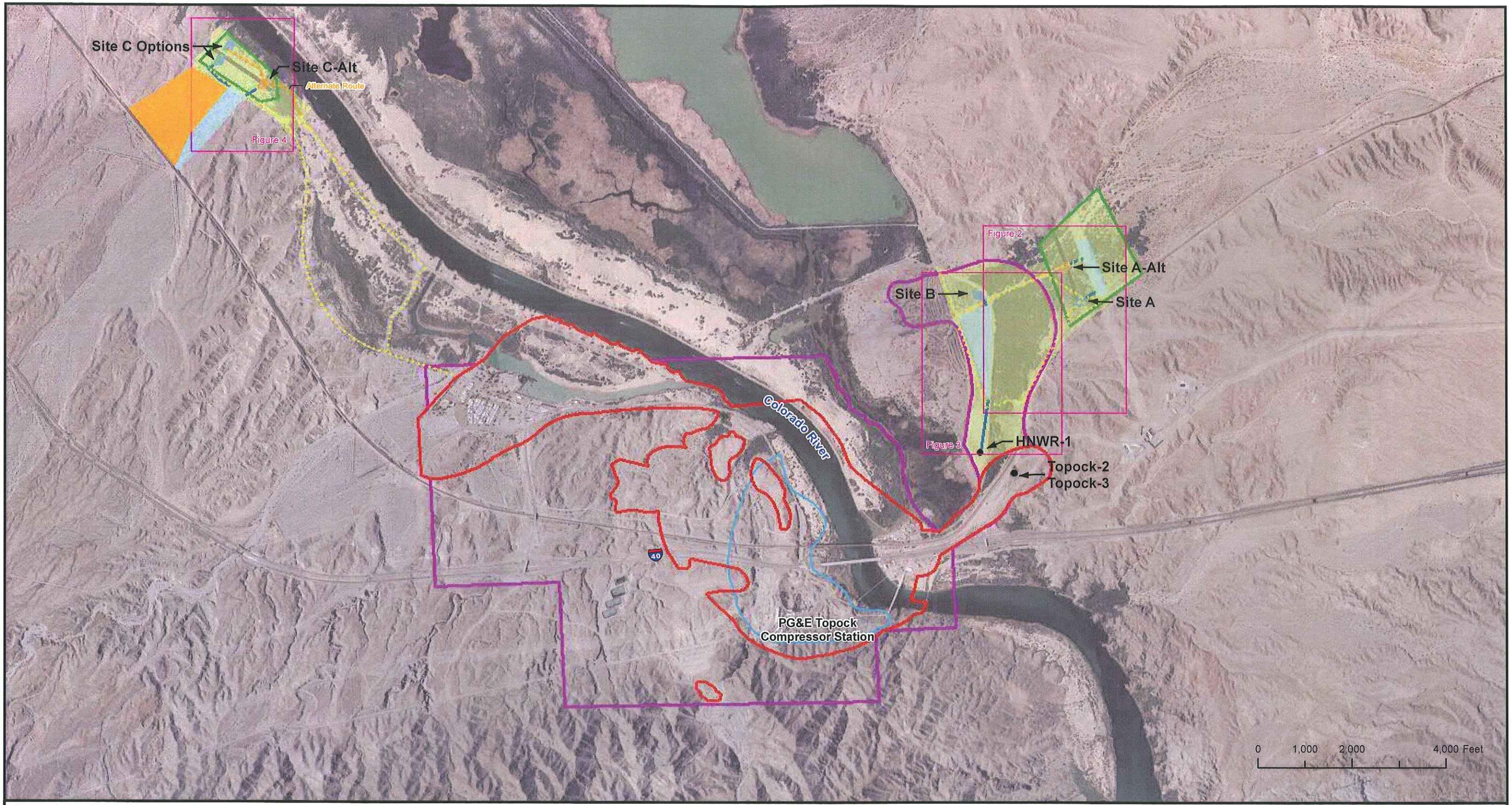
Arizona Sites (Sites A and B)

The majority of this site lies within the Sacramento Wash which is dominated by dense athel tamarisk (*Tamarix aphylla*) thickets on the east of Highway 10 and disturbed habitat to the west of the highway. In October of 2008, a wildfire burned 240 acres of dense tamarisk in the Havasu National Wildlife Refuge on the west side of the Highway in this area. The U.S. Fish and Wildlife Service cleared the area of dead trees, logs and woody debris after the fire. In the spring of 2011, a portion of the burn area was planted with a variety of native trees, shrubs, and grasses. Most of the area west of the Highway is devoid of vegetation with piles of tamarisk debris. The area east of the Highway lies within the sandy Sacramento Wash which is dominated by dense athel tamarisk thickets. The site is also bisected north to south by a pipeline right-of-way leaving a disturbed area approximately 200 feet wide. There is an area of creosote scrub along the railroad and east of the pipeline right-of-way and along the northern edge of the site on the hillside.

Verdin (*Auriparus flaviceps*) and black phoebe (*Sayornis nigricans*) were the only wildlife observed on the site. No other wildlife or sign was observed. There is no habitat in this area that would be considered potential or suitable habitat for the Morafkai's desert tortoise (*Gopherus morafkai*). The tamarisk thickets provide suitable southwestern willow flycatcher habitat during the summer nesting season although no individuals were detected during 2012 surveys of the adjacent areas to the west.

ATTACHMENT A

Figure 1: Site Map



Approximate 1-acre area for primary work activities

- Freshwater Source Evaluation Locations
- Contingency Freshwater Source Evaluation Locations

Notes

1. Groundwater source evaluation sites (including contingency sites) and access routes are not precisely located, and will be adjusted as necessary to minimze disturbance of biological and cultural resources.
2. Sprinkled Area at Site C is Awaiting Cultural and Biological Surveys.

- Surface Resistivity Survey
- EIR Project Area
- Additional Area Surveyed for Biological and Cultural Resources
- Action Area for 2012 PBA re-initiation
- Geophysical Survey Area
- Approximate Route of Sprinkler Piping
- Approximate Sprinkled Area
- Existing Unpaved Access Route
- New Unpaved Access Route
- New Unpaved Access Route (Alternate)
- Alternate Sprinkle Area
- Approximate extent of hexavalent chromium [Cr(VI)] concentrations exceeding 32 micrograms per liter (µg/L) at any depth in groundwater based on second quarter 2012 sampling events.

FIGURE 1
SITE MAP

PROJECT DESCRIPTION FOR EVALUATION OF ALTERNATIVE FRESHWATER SOURCES IN THE TOPOCK REMEDIATION PROJECT AREA
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

Path: D:\Projects\Topock\MapFiles\2012\PBA\ReInitiation\BioSurvey\ActionAreaSiteMap_Bio.mxd Date Saved: 12/6/2012 3:26:12 PM

APPENDIX C

Biological Survey of the Action Area for the 2012 Programmatic Biological Assessment Encompassing Site B of Alternative Freshwater Source Areas (December 20, 2012)

Biological Survey of the Action Area for the 2012 Programmatic Biological Assessment Encompassing Site B of Alternative Freshwater Source Areas

PREPARED FOR: Virginia Strohl/PG&E

PREPARED BY: Gabe Valdes/CH2M HILL
Russ Huddleston/E2 Consulting Engineers

DATE: December 20, 2012

Purpose

The purpose of this technical memorandum is to document the biological resources survey that was performed in May, July, and December, 2012 to identify sensitive species and delineate potential Waters of the US within an area proposed for the 2012 Programmatic Biological Assessment (PBA). The survey results will be used as a planning tool for proposed activities in this area to avoid, reduce, and mitigate potential impacts to sensitive biological resources and identify appropriate regulatory permits.

Site Location

The Topock Compressor Remediation Project is located near Needles, California and includes a 65-acre property owned by PG&E and adjacent lands owned and managed by a number of federal, state, and regional agencies as well as private land owners.

One area proposed for addition to the Action Area of the PBA is located on the Arizona side north of US Route 95/Interstate 40 approximately 0.9 miles up the Arizona County Highway 10 (Oatman-Topock Highway) (Figure 1).

Survey Results

The majority of this site occurs on the Havasu National Wildlife Refuge (HNWR). Vegetation along the east side Highway 10 is characterized by dense athel tamarisk (*Tamarix aphylla*) thickets with occasional honey mesquite (*Prosopis glandulosa*) and blue palo verde (*Parkinsonia florida*). The area on the west side of the highway is highly disturbed as a result of a wildfire that burned 240 acres of dense tamarisk within HNWR in October 2008. A portion of the area proposed for addition to the Action Area of the PBA is located in this 240-acre burn area.

The U.S. Fish and Wildlife Service cleared the area of dead trees, logs and woody debris after the fire. In the spring of 2011, a portion of the burn area was planted with native trees, shrubs, and grasses including including screw bean (*Prosopis pubescens*), four-wing saltbush

(*Atriplex canescens*) and alkali sacaton (*Sporobolus airoides*). At the time of the July 2012 field survey, most of the burned area west of the highway was devoid of vegetation, with the exception of the revegetation area planted in 2011. The remainder of the burn area is devoid of vegetatation, with the exception of the occasional resprouting tamarisk and Russian thistle (*Salsola tragus*) and a few palo verde trees (*Parkinsonia florida*) along the banks of the Sacramento Wash on the west side of the Highway 10. Photos are included in Attachment A.

Wildlife species observed during the survey are listed in Table 1. Suitable habitat for Morafkai's desert tortoise (*Gopherus morafkai*) does not exist in this area due to dense vegetative cover to the east and open, disturbed habitat to the west of Highway 10. The tamarisk thickets to the east provide suitable southwestern willow flycatcher habitat during the summer nesting season although no individuals were detected during the May 2012 surveys.

Table 1. Wildlife Species Observed in the Area Proposed for Addition to the Action Area of the PBA

Common Name	Scientific Name
Birds	
Gambel's quail	*Callipepla gambelii*
Turkey vulture	*Cathartes aura*
Killdeer	*Charadrius vociferus*
Ash-throated flycatcher	*Myiarchus cinerascens*
White-winged dove	*Zenaida asiatica*
Mourning dove	*Zenaida macroura*
Reptiles	
Western whiptail	*Aspidoscelis tigris*
Desert iguana	*Dipsosaurus dorsalis*
Side-blotched lizard	*Uta stansburiana*
Mammals	
Coyote (tracks and scat)	*Canis latrans*
Kangaroo rat (tracks and burrows)	*Dipodomys* sp.
Pocket mouse (tracks and burrows)	*Chaetodipus* sp.
Bobcat (tracks)	*Lynx rufus*
Desert cottontail (tracks)	*Sylvilagus auduboni*

The Sacramento Wash is located near the northern end of the study area, east of the Topock Marsh. Within the study area Highway 10 bisects the wash with an at-grade crossing. The Sacramento Wash is shown as a blue line stream on the Topock USGS 7.5-minute quadrangle as an intermittent stream in the National Hydrologic Dataset. Within the study area the Sacramento Wash is a broad, open, sandy channel that ranges from approximately 50 to 70 feet wide and has a flat, generally uniform bed that lacks well-defined low flow channels. There are minor benches and terraces along the channel in a few locations, but there is no active floodplain outside of the channel. Constructed earthen levees are presesent along much of the channel in this area. On the east side of Highway 10, the channel is devoid of vegetation with extensive athel tamarisk thickets present along both sides of the wash. On the west side of the road, the wash continues to flow through a channel confined by levees for approximately 950 feet where it then broadens out along the floodplain adjacent to the Topock Marsh. As a result of the significant rainfall immediately prior to the July surveys, evidence of recent flow including debris, flow lines, cracked soils, water marks and in some cases moist to saturated soil were noted throughout the channel. The Sacramento Wash has a large and generally unaltered watershed, and as a result

significant flows and flooding of the highway area are relatively common in this area when heavy rainstorms occur in the region.

During previous wetland delineation surveys several sample points were taken along the low terrace east of the Topock Marsh. Four sample points were established on the west side of the Highway 10. One sample point was established in an area characterized by big saltbush (*Atriplex lentiformis*) scrub and one sample point was established in the area that was burned in the 2008 wildfire that was recently planted with native trees, shrubs and grasses. Two sample points were established in areas formerly characterized by saltcedar and athel that were cleared following the 2008 wildfire, but were not yet revegetated. Three sample points were established on the east side of the highway including one in an area with bush seepweed, and two in the athel tamarisk thicket. Soil in all of these areas consisted of brown (10 YR 5/3, 10 YR 4/3) to yellowish brown (10 YR 5/4) and dark yellowish brown (10 YR 4/4) sand. Soils in this area ranged from moderately alkaline (pH 8.2) to very strongly alkaline (pH 9.6). Evidence of flooding as a result of the significant precipitation immediately prior to the July 2012 field surveys was noted in some parts of the cleared area west of the highway, but there was no evidence of prolonged surface inundation or shallow groundwater (within 24 inches of the surface) at any of the sample locations in this area.

Figure 1. Area Proposed for Addition to the Action Area of the PBA

ATTACHMENT A

Project Site Photos

Restoration site efforts at Havasu National Wildlife Refuge

Burn area cleared of vegetation

Sacramento Wash

APPENDIX D

Pacific Gas and Electric Company Topock Compressor Station Wetland Assessment for Freshwater Well Locations San Bernardino County, California (December 20, 2012)

Pacific Gas and Electric Company Topock Compressor Station
Wetland Assessment for Freshwater Well Locations
San Bernardino County, California

Prepared For: Pacific Gas and Electric Company

Prepared By: Russell Huddleston, Certified Professional Wetland Scientist/E2 Consulting Engineers

Date: December 20, 2012

Copies: Marjorie Eisert/CH2M HILL
Mike Cavalier/CH2MHILL

Introduction

In December 1951, the Topock Compressor Station began operations to compress natural gas supplied from the southwestern U.S. for transport through pipelines to Pacific Gas and Electric Company's (PG&E) service territory in central and northern California. The compressor station is still active and is anticipated to remain active into the foreseeable future. The operations at the compressor station consist of six major activities: water conditioning; compressing natural gas; cooling compressed natural gas and compressor lubricating oil; wastewater treatment; facility and equipment maintenance; and miscellaneous operations.

In 1996, PG&E entered into a Corrective Action Consent Agreement with the California Department of Toxic Substances Control (DTSC) to oversee the investigation and remediation of the Topock Compressor Station site under California state law. DTSC is the California state lead agency charged with directing investigative activities in the action area in accordance with the Resource Conservation and Recovery Act (RCRA). In July 2005, PG&E and the Federal Agencies entered into a Consent Agreement that outlined the process by which PG&E would comply with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements during the investigation and remediation of the action area, which included coordinating response actions with the requirements of the DTSC to the extent practicable. DTSC issued a Final Environmental Impact Report (FEIR) for the project in January 2011.

PG&E is evaluating three potential locations for the installation of a freshwater well in support of remedial activities. This memorandum presents the results of a wetland assessment for each of the three well location alternatives.

Project Location and Land Use

The Topock Compressor Station is located near the California and Arizona border in eastern San Bernardino County, approximately 12 miles southeast of the city of Needles, California. Potential well locations A and B are located in Mohave County, Arizona on the Havasu National Wildlife Refuge. These sites are located north of Interstate 40 and east of the Topock Marsh (Figure 1). Site C is located in California, on the south side of the Colorado River just northwest of the Park Moabi campground (Figure 1).

Methods

Russell Huddleston, a wetland ecologist, conducted a site visit on December 12 and 13, 2012. The purpose of the site visit was to identify and map potential wetlands and other waters that may be subject to state and federal regulations pertaining to discharge and/or fill into waters of the United States or Waters of the State. The preliminary mapping of water features (ephemeral washes) was based on the methods and procedures described in *A Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008) and the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Curtis and Lichvar 2010). Field observations included changes in sediment size, indicators of flow events such as drift and debris deposits, scouring, mud cracks, defined bed and bank and the presence of vegetation characteristic of desert washes. The limits of the larger channels were determined based on the lateral extent of the active floodplain that was considered to be representative of low to moderate flow events that are expected to occur every five to ten years. Smaller erosional drainage features, characterized by single, relatively narrow channels were mapped based on evidence of recent flow such as sediment deposits, scouring and drift deposits.

The boundaries of many of the water features were mapped in the field using a Trimble Geo XH Global Positioning System (GPS) unit. A portion of the northwest part of Site C was mapped based on aerial photographs due to heavy rainfall on December 13 and 14th that resulted in unsafe field conditions in the wash areas.

Results

Site A

Site A is located on the north side of the Burlington Northern –Santa Fe Railroad track, east of Arizona County Highway 10 (Figure 2). Vegetation in this area is characterized by a dense athel (*Tamarix aphylla*) with scattered creosote bush (*Larrea tridentata*) and white bur-sage (*Ambrosia dumosa*). Native blue palo verde trees (*Parkinsonia florida*) are also present in scattered locations. A large pipeline easement bisects the area to the northeast of the well sites; this area is generally devoid of vegetation and may be used as a sprinkler site. The Sacramento Wash is located near the northern end of the Site A well location (Figure 2). The Sacramento wash is shown as a blue line stream on the Topock United States Geological Survey (USGS) 7.5minute quadrangle as an intermittent stream in the National Hydrologic Dataset (NHD). Within the project area the Sacramento Wash is a broad, open sandy channel that has a flat, generally uniform bed that lacks well defined low flow channels. There are minor benches and terraces along the channel in a few locations, but there is no active floodplain outside of the main channel. There is a secondary overflow channel that runs to the southwest of the main channel that appears to convey flows during high flow events that overtop the main channel banks. This overflow channel, as well as additional overland flooding, enters what appears to be a constructed storm water channel with large earthen levees. This constructed channel conveys excess flows to the west back into the main channel of the Sacramento Wash (Figure 2). The majority of the channel is devoid of vegetation with extensive athel tamarisk thickets present along both sides of the wash.

No other wetlands or waters were identified in Site A.

Site B

Site B is located on the east side of Arizona County Highway 10 (Oatman-Topock Highway), immediately north of the Sacramento Wash (Figure 3). Immediately south and east of the proposed well site the Sacramento Wash is bisected by Highway 10 with an at-grade crossing. Just south of the proposed well location the wash flows through a channel confined by large earthen levees for approximately 950 feet where it then broadens out along the floodplain adjacent to the Topock Marsh. Some blue palo verde trees are present along the levees on the west side of the road and a few small trees and shrubs including saltcedar (*Tamarix ramosissima*), smoke tree (*Psorothamnus spinosus*), bush seepweed (*Suaeda nigra*) and creosote bush occur within the wash channel in this area. In October of 2008 a wildfire burned 240 acres of dense tamarisk in the Havasu National Wildlife Refuge on the west side of the highway, including the area of the proposed well location. After the fire the U.S. Fish and Wildlife Service began clearing the area of dead trees, logs and woody debris. At the time of the survey both the proposed well location on the north side of the Sacramento Wash, as well as the proposed sprinkler area on the south side of the wash were devoid of vegetation with the exception of the occasional Russian thistle (*Salsola tragus*) and one or two re-sprouting tamarix.

No other wetlands or waters were identified in Site B.

Site C

Site C is located on the southwest side of the Colorado River just north of the Park Moabi Campground (Figure 4). Most of the site characterized by highly dissected terraces composed of Tertiary and Quaternary alluvium and surficial deposits consisting of moderately consolidated sandy gravel and silty-clayey gravel. A portion of the site is located on the low terrace along the Colorado River that is comprised of Quaternary and recent floodplain deposits. The majority of the vegetation in this area is characterized by open creosote bush shrubs with areas of dense tamarix along the low terrace adjacent to the Colorado River. The natural hydrology of the area has been significantly altered by a large railroad berm that is present along the southwestern edge of the study area. Water flows in this area are channeled under a large wooded railroad trestle at the southwestern site boundary (Figure 4). On the northeast side of the trestle the wash broadens out into a wide floodplain characterized by multiple low flow channels. Near the northeastern corner of the site the wash is confined by a large roadway berm that has been partial reinforced with concrete. There is a narrow area where the road dips down allowing flows to continue to the east, where the floodplain quickly broadens out and eventually becomes unconfined sheet flow through dense tamarix, eventually discharging into the Colorado River (Figure 4). This large wash is shown as a blue line stream on the Whale Mountain USGS topographic quadrangle map and is also included in the NHD as an ephemeral stream. A smaller wash feature is also present along the northern border of the site, but appears to have a much smaller effective watershed as a result of the railroad berm. This stream is not shown as a blue line on the USGS topographic map, nor is it included in the NHD; however, it exhibits a defined channel with an active floodplain, contains typical wash vegetation and is a direct tributary to the Colorado River; it was therefore considered a potential water of the United States.

The vegetation associated with the larger wash features is notably different that the surrounding creosote bush scrub and tamarix thickets. Within the active floodplain areas the vegetation is characterized by native species such as blue palo verde and cheesebush (*Ambrosia salsola*) with scattered catclaw (*Senegalia greggii*), smoke tree, sweetbush (*Bebbia juncea* var*. aspera*), and desert lavender (*Hyptis emoryi*). Some creosote bush is also present. Herbaceous vegetation was largely absent at the time of the survey with the exception of scattered spurge (*Chamaesyce* spp.).

In addition to the larger washes there are a number of small erosional features that were likely formed prior to the construction of the railroad and roadway berms. These features all occur within the

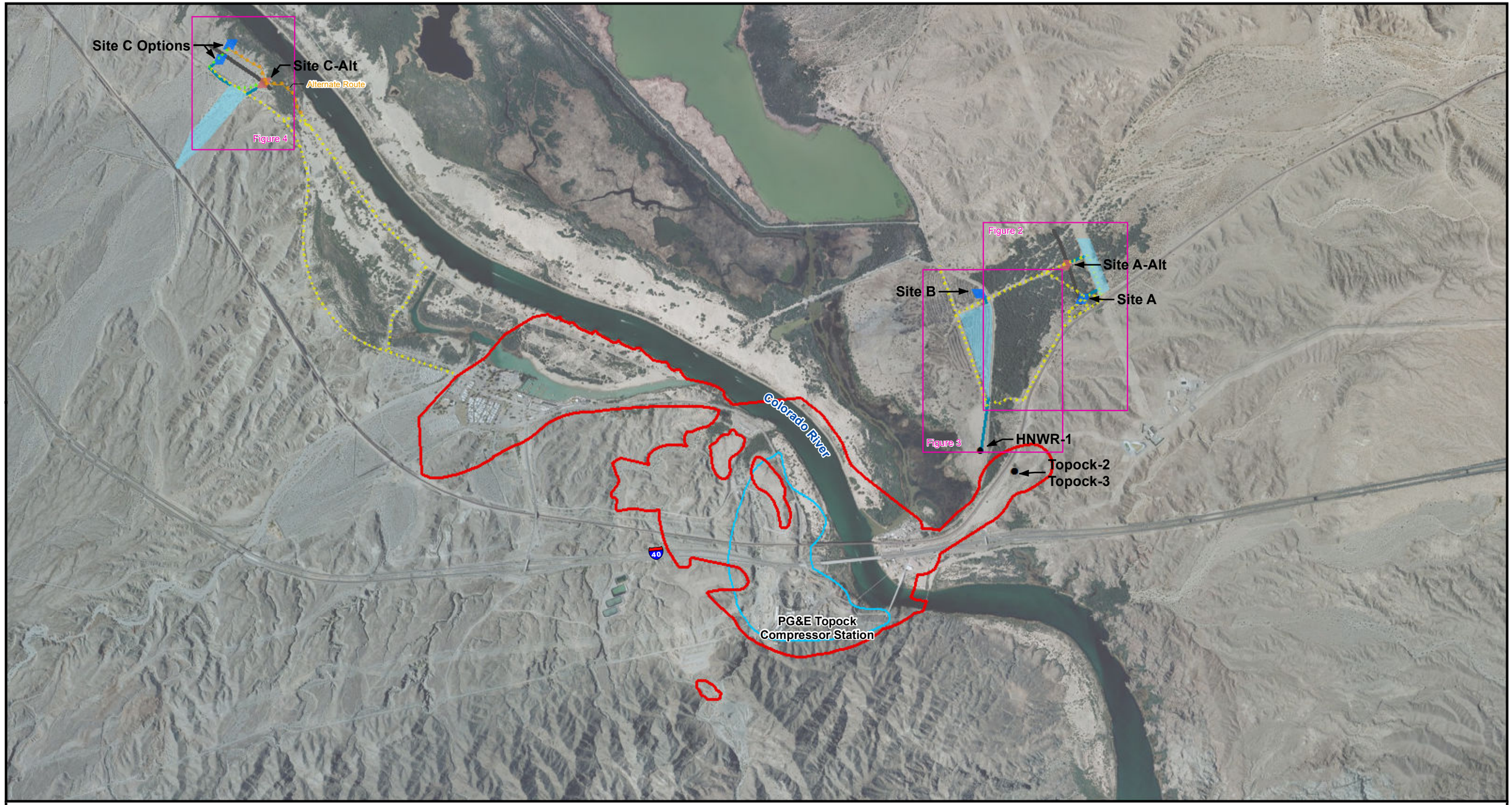
creosote bush scrub habitat and lack most of the plant species typically found in the larger washes. In general the bed and banks of these features are only moderate to weakly expressed and while the historic hydrology has been significantly altered, they exhibit evidence of recent flows such as sediment deposits, debris lines and scouring.

No other wetlands or waters were identified in Site C.

References

Curtis and Lichvar. 2010. *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* ERDC/CRREL TN-10-1. US Army Corps of Engineers Research and Development Center, Cold regions Research and Engineering Laboratory.

Lichvar, R. W. and S.M. McColley. 2008. *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States.* ERDC/CRREL TR-08-12. US Army Corps of Engineers Research and Development Center, Cold regions Research and Engineering Laboratory.



Approximate 1-acre area for primary work activities

- Freshwater Source Evaluation Locations
- Contingency Freshwater Source Evaluation Locations
- Surface Resistivity Survey
- EIR Project Area
- Approximate Route of Sprinkler Piping
- Approximate Sprinkled Area
- Existing Unpaved Access Route
- New Unpaved Access Route
- New Unpaved Access Route (Alternate)

Approximate extent of hexavalent chromium [Cr(VI)] concentrations exceeding 32 micrograms per liter (µg/L) at any depth in groundwater based on second quarter 2012 sampling events.

0 1,000 2,000 4,000 Feet

Notes

1. Groundwater source evaluation sites (including contingency sites) and access routes are not precisely located, and will be adjusted as necessary to minimze disturbance of biological and cultural resources.
2. Sprinkled Area at Site C is Awaiting Cultural and Biological Surveys.

Work in Progress, 12/04/2012

FIGURE 1
SITE MAP

PROJECT DESCRIPTION FOR EVALUATION OF ALTERNATIVE FRESHWATER SOURCES IN THE TOPOCK REMEDIATION PROJECT AREA
PG&E TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

CH2MHILL

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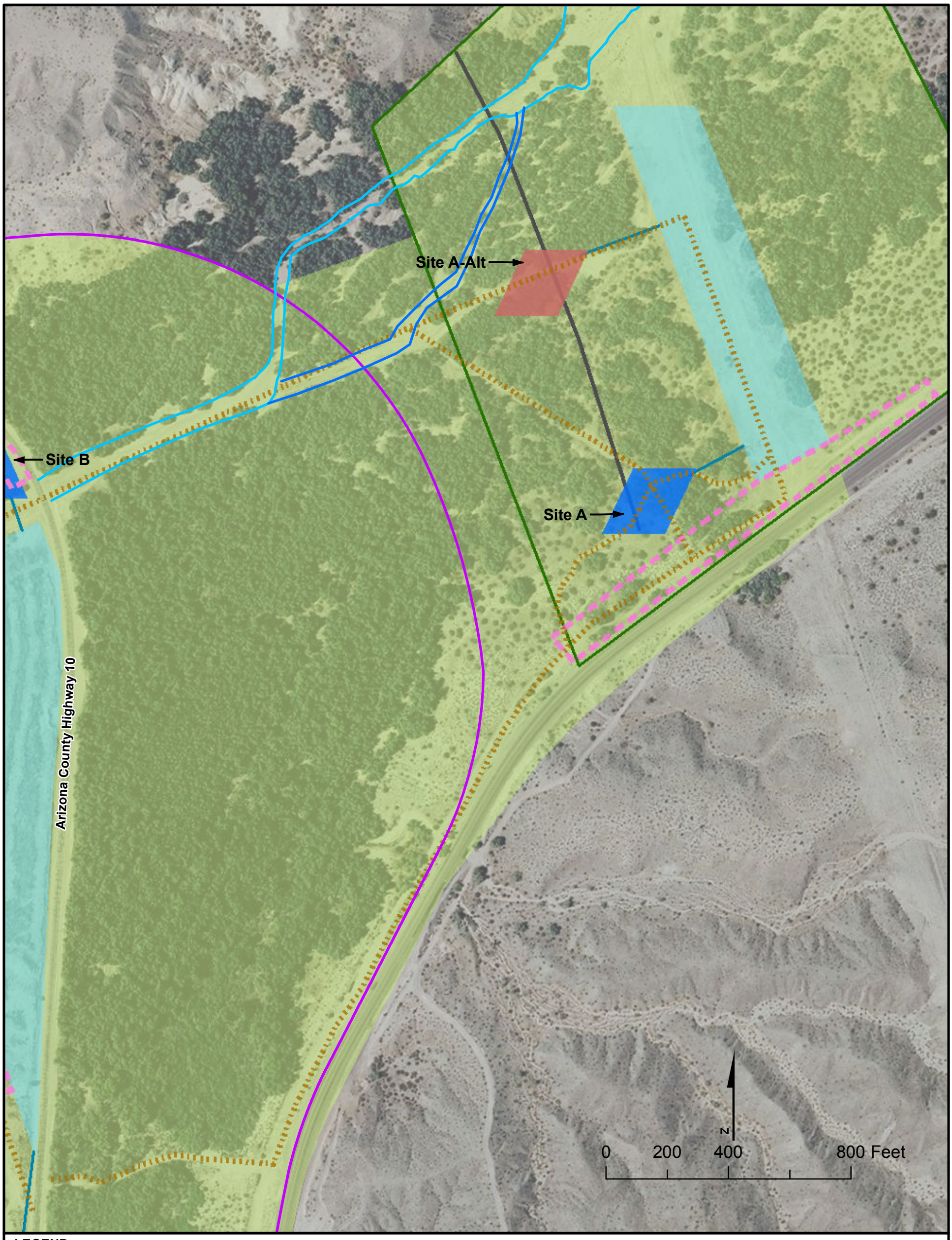

LEGEND

- Approximate Freshwater Source Evalutation Work Area (1 acre)
- Approximate Contigency Freshwater Source Evalutation Work Area (1 acre)
- Potential Tank Storage Area
  - Actual area used will be less than area shown, and when combined with area used for drilling, will be within the one acre disturbance limit.
- Approximate Sprinkled Area
- Additional Area Surveyed for Biological and Cultural Resources
- Approximate Route of Sprinkler Piping
- Surface Resistivity Survey
- Existing Unpaved Access Route
- New Unpaved Access Route
- Action Area for 2012 PBA re-initiation
- Geophysical Survey Area
- Waters of the State
- USACE Jurisdiction

Work in Progress, 12/17/2012

Notes

1. Groundwater source evaluation sites (including contingency sites) and access routes are not precisely located, and will be adjusted as necessary to minimze disturbance of biological and cultural resources.
2. Jurisdictional areas willl be added after the completion of the biological survey planned for the week of December 10, 2012

FIGURE 2
SITE A WORK AREA

Project Description for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area
PG&E Topock Compressor Station
Needles, California

CH2MHILL

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Site B

Arizona County Highway 10

HNWR-01

N

0 200 400 800 Feet

LEGEND

- Approximate Freshwater Source Evalutation Work Area (1 acre)
- Approximate Contigency Freshwater Source Evalutation Work Area (1 acre)
- Potential Tank Storage Area
  - Actual area used will be less than area shown, and when combined with area used for drilling, will be within the one acre disturbance limit.
- Approximate Sprinkled Area
- Additional Area Surveyed for Biological and Cultural Resources
- Action Area for 2012 PBA re-initiation
- Geophysical Survey Area
- Approximate Route of Sprinkler Piping
- Existing Unpaved Access Route
- New Unpaved Access Route
- Waters of the State
- USACE Jurisdiction

Work in Progress, 12/17/ 2012

Notes

1. Groundwater source evaluation sites (including contingency sites) and access routes are not precisely located, and will be adjusted as necessary to minimze disturbance of biological and cultural resources.
2. Jurisdictional areas willl be added after the completion of the biological survey planned for the week of December 10, 2012.

FIGURE 3
SITE B WORK AREA

Project Description for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area
PG&E Topock Compressor Station
Needles, California

CH2MHILL

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UNITED STATES OF AMERICA 065020107

UNITED STATES OF AMERICA 065020113

UNITED STATES OF AMERICA 065020112

ANUL CUWHAL SANTA ISABEL MUSEU 065019202

Site C Options

UNITED STATES OF AMERICA 065019206

Site C-Alt

UNITED STATES OF AMERICA 065019207

ANUL CUWHAL SANTA ISABEL MUSEU 065019203

ATCHISON TOPEKA & SANTA FE RR 065019204

N

0 250 500 1,000 Feet

LEGEND

- Approximate Freshwater Source Evalutation Work Area (1 acre)
- Approximate Contigency Freshwater Source Evalutation Work Area (1 acre)
- Potential Tank Storage Area
  - Actual area used will be less than area shown, and when combined with area used for drilling, will be within the one acre disturbance limit.
- Property Boundary
- Approximate Route of Sprinkler Piping
- Approximate Sprinkled Area
- Surface Resistivity Survey
- Additional Area Surveyed for Biological and Cultural Resources
- Existing Unpaved Access Route
- New Unpaved Access Route
- New Unpaved Access Route (Alternate)
- Waters of the State
- USACE Jurisdiction

Work in Progress, 12/17/ 2012

Notes

1. Groundwater source evaluation sites (including contingency sites) and access routes are not precisely located, and will be adjusted as necessary to minimze disturbance of biological and cultural resources.
2. Sprinkled Area at Site C is Awaiting Cultural and Biological Surveys.
3. Jurisdictional areas willl be added after the completion of the biological survey planned for the week of December 10, 2012

FIGURE 4
SITE C WORK AREA

Project Description for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area
PG&E Topock Compressor Station
Needles, California

CH2MHILL

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APPENDIX E

CH2MHILL, Results of Water Level Monitoring during Testing of HNWR-1 Irrigation Pumping (November 30, 2012)

Results of Water Level Monitoring During Testing of HNWR-1 Irrigation Pumping

Prepared For: Pacific Gas & Electric Company

Prepared By: Martin Barackman/CH2M HILL
Brian Schroth/CH2M HILL

Date: 11/30/2012

This technical memorandum provides documentation of water level measurements made by Pacific Gas and Electric (PG&E) during the initial testing of the Havasu National Wildlife Refuge (HNWR) irrigation well (HNWR-1 well), conducted by Dr. Bradley Guay on behalf of the HNWR in November 2010. During this test, the HNWR-1 well was pumped at an average rate of about 880 gallons per minute (gpm). Water level transducers were deployed in several PG&E monitoring wells located within the radius of influence of the HNWR-1 well. Using a method of deconvolution to mathematically damp out the groundwater level fluctuations related to the constantly changing levels in the Colorado River (USGS 2006), it was possible to process the water level data from the transducers and observe drawdown in several surrounding monitoring wells. Based on the observed drawdown in the monitoring wells, projections were made for drawdown in other nearby privately owned wells where transducers were not deployed.

Figure 1 shows the drawdown measured at the surrounding monitoring wells at the end of the 24-hour pumping test. There was approximately 75 feet of drawdown in the pumping well, HNWR-1. The maximum drawdown observed in any of the monitoring wells was 0.23 feet in the deeper well at the MW-55 cluster, located about 1,880 feet from HNWR-1. In general, the deeper wells in the monitoring well clusters showed more drawdown than the shallower wells, which is typical in alluvial aquifers due semi-confined aquifer conditions at depth.

Figure 2 shows a distance drawdown plot based on observed drawdown in three of the monitoring wells that are screened at similar depths. Also shown on this plot is the projected drawdown at three private wells where water levels were not monitored during this test. The nearest private wells, Topock 2 and 3, are located approximately 840 feet from HNWR-1. The projected drawdown at Topock 2 and 3 was less than 0.5 feet. This small amount of drawdown had no adverse effect on the ability of Topock 2 and 3 to provide an adequate amount of water.

The potential new fresh water supply well locations that PG&E has identified as Sites A, B, and C in the *Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area* (CH2M HILL 2012), are located further from existing wells than HNWR-1 was from Topock 2 and 3. The potential new fresh water supply wells are proposed to be pumped at a similar rate of 600 to 1,000 gpm as was used in the HNWR-1 test, although the duration of pumping is proposed to be up to three

days. Assuming the aquifer conditions in the areas of the new wells are similar, there is no reason to expect that drawdown from the pumping tests at the new wells would have an adverse effect on any existing wells.

References

CH2M HILL. 2012. *Implementation Plan for Evaluation of Alternative Freshwater Sources in the Topock Remediation Project Area*. November 20.

United States Geological Survey (USGS). 2006. *Documentation of a Spreadsheet for Time-Series Analysis and Drawdown Estimation.* USGS Scientific Investigations Report 2006-5024.

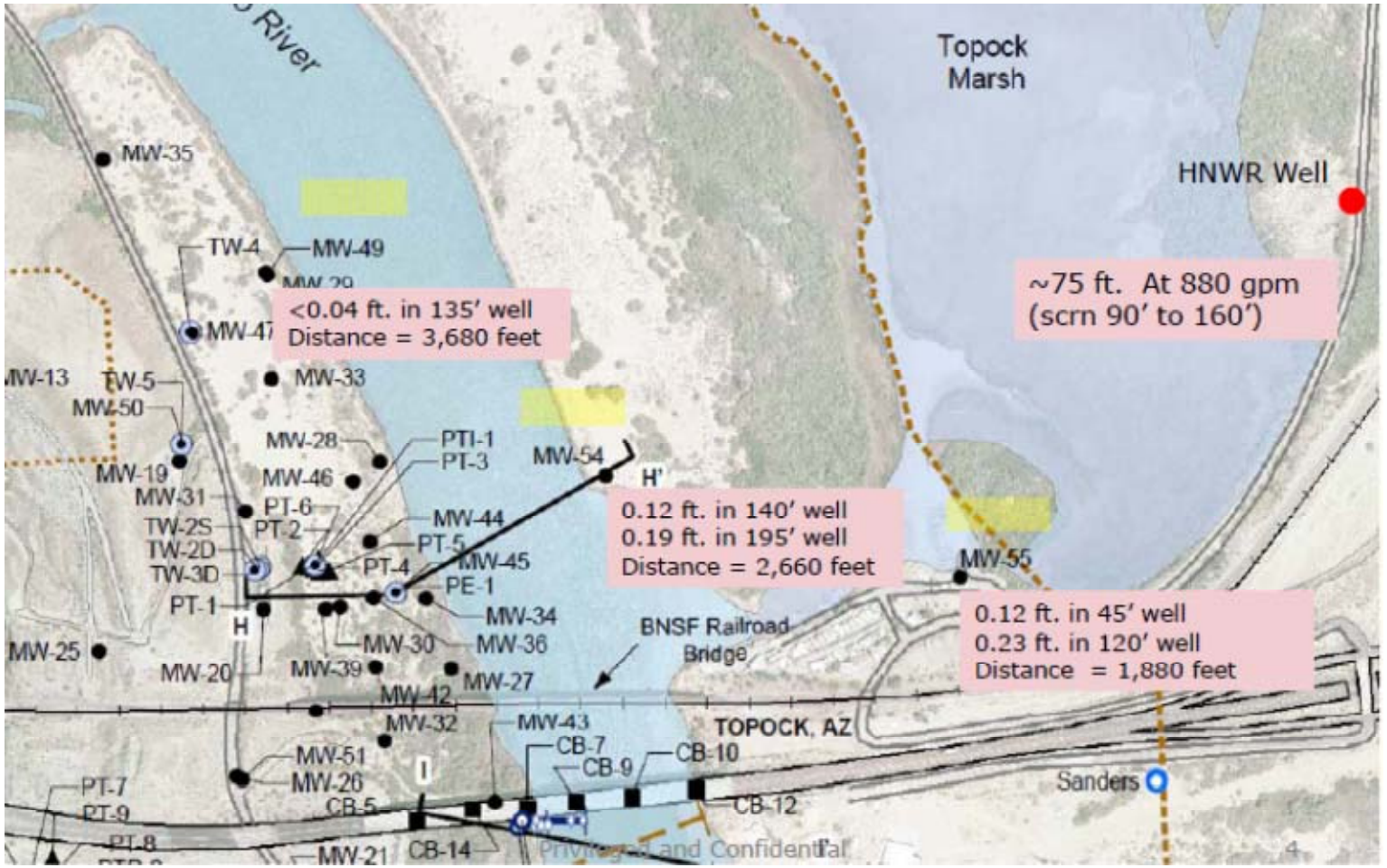

Figure 1. Drawdown in surrounding wells during startup of HNWR-1 irrigation system

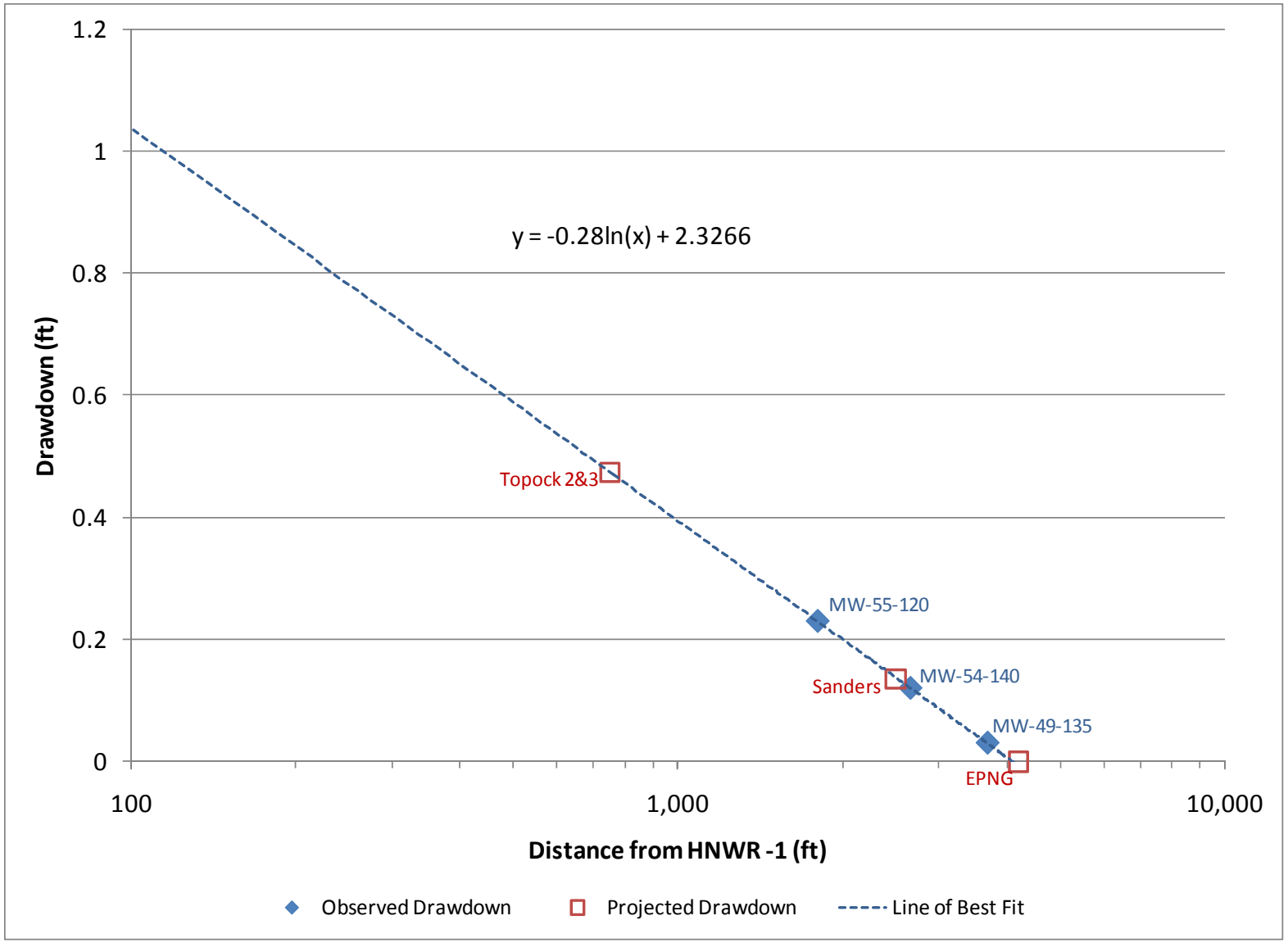

Figure 2. Drawdown with distance from HNWR-1 in wells screened at similar depths.