DEPARTMENT OF TOXIC SUBSTANCES CONTROL

California Environmental Protection Agency

Community Outreach Plan

Pacific Gas and Electric Company's Topock Compressor Station
Needles, California

Prepared for

California Environmental Protection Agency, Department of Toxic Substances Control

5796 Corporate Avenue
Cypress, California 90630

January 2013

CH2MHILL

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Approved by: _____ January 10, 2013*

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** The signatory has determined that this document contains the required elements for a Community Outreach Plan. CH2M HILL assisted DTSC in preparation of this plan in accordance with the requirements of the Corrective Action Consent Agreement (revised): Pacific Gas and Electric Company's Topock Compressor Station, Needles, California, EPA ID No. CAT080011729, February 26, 1996; Health and Safety Code Sections 25187 and 25200.10; and DTSC's 2001 Public Participation Policy and Procedures Manual.*

Community Outreach Plan
PG&E Topock Compressor Station

California Department of Toxic Substances Control (DTSC)

January 2013

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Acronyms and Abbreviations

ADEQ	Arizona Department of Environmental Quality
AOC	Area of Concern
BLM	United States Department of the Interior, Bureau of Land Management
BOR	United States Department of the Interior, Bureau of Reclamation
CACA	Corrective Action Consent Agreement
Cal/EPA	California Environmental Protection Agency
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMI	Corrective Measures Implementation
CMS	Corrective Measures Study
Cr(III)	Trivalent chromium
Cr(VI)	Hexavalent chromium
CRIT	Colorado River Indian Tribes
CWG	Consultative Workgroup
CTF	Clearinghouse Task Force
DOI	United States Department of the Interior
DTSC	California Department of Toxic Substances Control
FS	Feasibility Study
HNWR	Havasu National Wildlife Refuge
IM	Interim Measure
I-40	Interstate Highway 40
MWD	Metropolitan Water District of Southern California
PG&E	Pacific Gas and Electric Company
Project	The investigations and cleanup of the PG&E Topock site
Plan	Community Outreach Plan
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	Resource Conservation and Recovery Act Facility Assessment
RFI	Resource Conservation and Recovery Act Facility Investigation
RI	Remedial Investigation
Site	PG&E Topock Project Site
Station	PG&E Topock Compressor Station
TLP	Topock Leadership Partnership

TRC	Technical Review Committee
TWG	Technical Work Group
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region

SECTION 1
Introduction

1.1 Community Outreach Plan Overview

This Community Outreach Plan (Plan) was developed to present the general strategy and specific outreach activities the California Department of Toxic Substances Control (DTSC) will conduct to facilitate community, stakeholder, and Tribal government involvement in the environmental cleanup of the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station).

In August 2003, DTSC was designated as the lead regulatory agency for the investigation and cleanup of the PG&E Project Topock Site (Site). Federal and state laws, policies, and regulations require that DTSC provide opportunities for community members and other stakeholders to participate in the planning, decisions, and activities regarding the environmental cleanup of the site. DTSC has prepared this plan in accordance with the Health and Safety Code Sections 25187 and 25200.10, and DTSC's 2001 Public Participation Policy and Procedures Manual.

DTSC has worked closely with the community, regulatory agencies, Tribal governments, and key stakeholders during the cleanup process; feedback that DTSC has received from these groups is discussed within this Plan. Community concerns and future activities are identified to keep people informed and participating in the cleanup process. This plan includes the following:

- Description of the Site and history of the Station
- Description of the nearby communities and nearby Tribal Nations
- Overview of the cleanup process
- Description of the Community Outreach Program
- Review of feedback from community members, key stakeholders and Tribal government representatives

1.2 Oversight Agencies

The California Environmental Protection Agency (Cal/EPA) has been given authority by the United States Environmental Protection Agency (USEPA) to implement the Resource Conservation and Recovery Act (RCRA) – which regulates the use, treatment, storage, and disposal of hazardous waste – in California. DTSC was designated as the lead agency for the Site cleanup by Cal/EPA. As the lead California regulatory agency, DTSC directs all site investigation and cleanup activities in accordance with RCRA as well as implementation of the California Environmental Quality Act (CEQA). PG&E, as the responsible party, entered into an agreement with DTSC in 1996 to conduct environmental investigation and cleanup actions at the Site.

Federal agencies which own or manage the surrounding land also have jurisdiction over the remediation process. In July 2005, PG&E and these federal agencies, which include the United States Department of the Interior (DOI), the United States Bureau of Land Management (BLM), United States Fish and Wildlife Service (USFWS) and the United States Bureau of Reclamation (BOR), entered into a Consent Agreement to facilitate federal oversight of remediation activities at the Site. In accordance with this agreement, environmental investigations and cleanup activities at the Station must also be conducted to meet the requirements set forth by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; also known as Superfund) in addition to the RCRA Corrective Action Process.

1.3 Community Engagement Process

DTSC uses a comprehensive community engagement process for the Topock project and other environmental cleanup sites that it oversees. The purpose of this Community Outreach Plan is to present the general strategy and specific outreach activities DTSC will conduct to facilitate community, Tribal government, and stakeholder involvement in the Topock project. DTSC is committed to keeping the public informed about the environmental

investigation and cleanup activities at the Site. Additional details regarding the Community Outreach Program and specific outreach activities can be found in Section 5 of this Plan.

SECTION 2

Background and Site History

2.1 Site Description

The Topock Compressor Station is located in eastern San Bernardino County, California, in the Mojave Desert, approximately 12 miles southeast of the City of Needles, California, and one mile southeast of the Moabi Regional Park in California. The Station is 0.5 mile west of the community of Topock, Arizona, which is situated directly across the Colorado River from the Station, and is 4 miles south of Golden Shores, Arizona. The Station is approximately 1,500 feet west of the Colorado River (California shoreline) and less than 0.5 mile south of Interstate Highway 40 (I-40) (see Figure 1).

The Site, which includes the Station and surrounding federal lands, is located within an environmentally sensitive area with public land that has been designated as an Area of Critical Environmental Concern by the BLM. This area includes a habitat for endangered species, migratory birds, as well as lands designated as the Havasu National Wildlife Refuge managed by the USFWS (see Figure 2).

This area also has cultural and spiritual significance to Native American Tribal Nations with ancestral ties to the region. Figure 3 (Colorado River Communities and Tribal Reservations) illustrates these neighboring lands. A more detailed description of nearby lands and communities is provided in Section 3.

2.2 Site/Cleanup History

PG&E began operations at the Station in December 1951. The Station was built to compress natural gas supplied from the southwestern United States for transport through pipelines to PG&E's service territory in central and northern California. Records show that PG&E held rights to operate a gas pipeline and compressor station dating back to the Federal Act of February 25, 1920 (41 Stat. 449, as amended). According to title records, PG&E gained full ownership of the land in 1965.

Operations at the Station have been fairly consistent since the facility opened in 1951. The operations involve compression of natural gas, cooling of the compressed natural gas and compressor lubrication oil, water conditioning, wastewater management, facility and equipment maintenance, and miscellaneous gas line operations. The greatest use of chemical products involves treatment of cooling water, and the greatest volume of waste produced consists of blowdown. Blowdown is the wastewater from cooling towers. Blowdown is periodically removed from the cooling system because it contains too much salt, which is the result of repeated evaporation of the water.

From 1951 to 1985, hexavalent chromium-based corrosion inhibitors and biocides were added to the cooling water system to protect the piping and equipment in the cooling towers. After 1964, the cooling tower blowdown was treated to remove hexavalent chromium prior to discharge. Until approximately 1970, cooling tower blowdown was discharged directly into Bat Cave Wash, an unlined dry wash area immediately west of the Station and either percolated into the ground or evaporated at the surface. During this period of uncontrolled wastewater discharge, an area of groundwater contamination, or "plume," was formed. Around 1970, PG&E discontinued blowdown discharge to the wash and began discharging treated blowdown into four single-lined evaporation ponds located west of Bat Cave Wash. From 1970 to 1973, PG&E injected treated blowdown into bedrock beneath the site using an injection well, but that process proved impractical and was discontinued.

In 1985, PG&E replaced the hexavalent chromium-based cooling water treatment products with non-hazardous phosphate-based products, at which time PG&E discontinued operation of the chromium blowdown treatment system. Use of the four single-lined evaporation ponds continued until 1989, when they were replaced with four new double-lined ponds that are still in use under permits by the California Colorado River Basin Regional Water Quality Control Board.

FIGURE 1
Site Location Map
Community Outreach Plan, PG&E Topock Compressor Station

Source: Aerial from Google Earth Pro © 2012. Modified by CH2M HILL.
ES071612182658BAO_Topock_SiteLocMap_COP_v2.indd 01-04-13 dash

FIGURE 2
Surrounding Properties
Community Outreach Plan, PG&E Topock Compressor Station

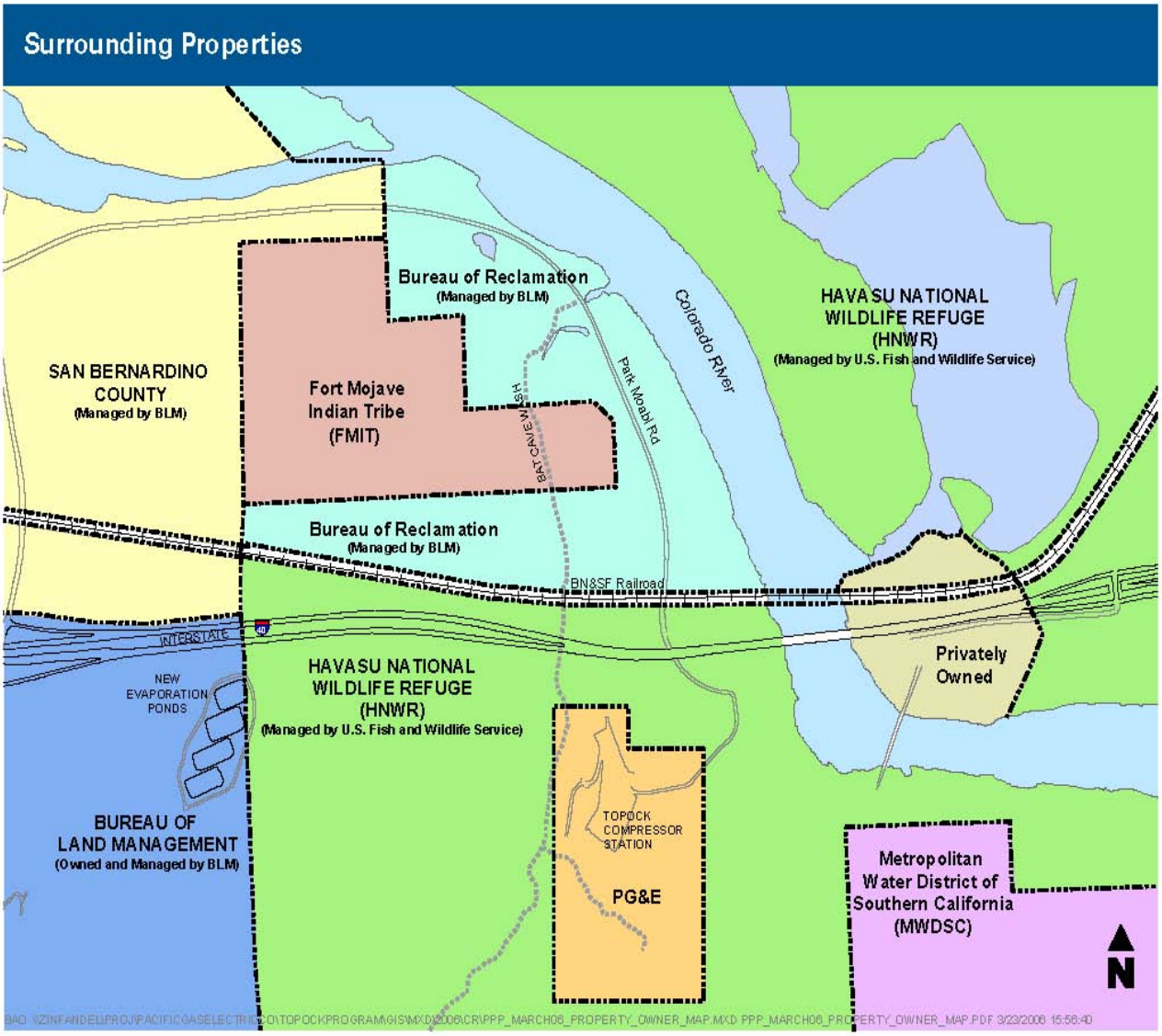
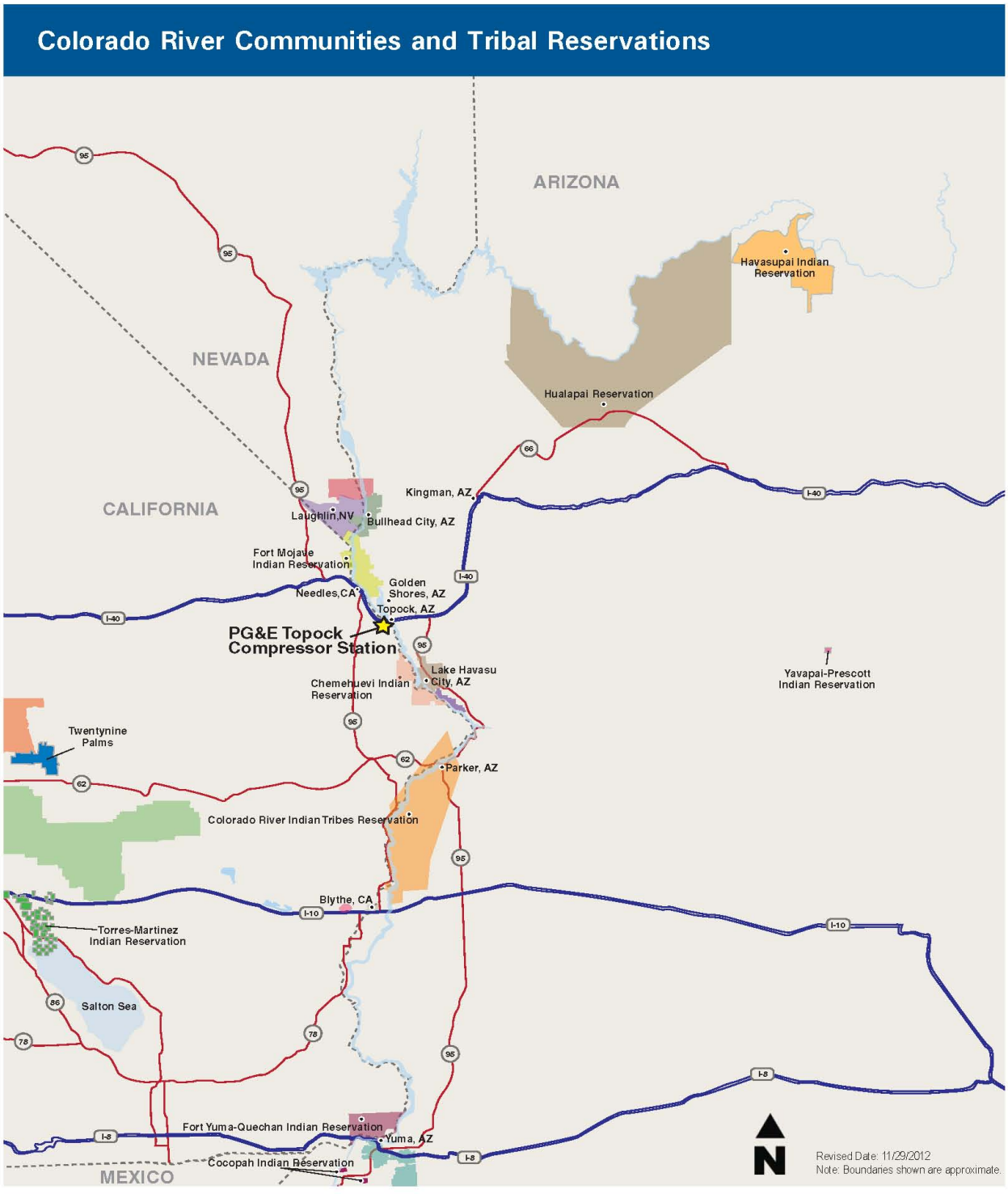


FIGURE 3
Colorado River Communities and Tribal Reservations
Community Outreach Plan, PG&E Topock Compressor Station



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In addition to waste water management, the Station also generated and managed other solid and liquid waste throughout its operation. Under the direction of DTSC, PG&E has researched its records and has identified over 50 areas inside the Station and its surrounding lands for environmental investigation. Although PG&E has collected many soil samples within the investigation areas over the years, the investigation continues with a goal to define the nature and extent of contamination. Fieldwork to collect additional soil samples within 44 areas is currently planned for 2013.

2.2.1 Environmental Investigation

Investigation activities at the Station by PG&E and DTSC date to the late 1980s, with the identification of potential areas of environmental concern through an assessment of the Station under the RCRA process. In 1995, PG&E notified the Regional Water Quality Control Board of elevated hexavalent chromium discovered in groundwater. In 1996, PG&E and DTSC entered into a Corrective Action Consent Agreement (CACA) in which PG&E agreed to perform environmental studies and cleanup subject to the oversight and approval of DTSC.

2.3 Timeline

Below is a brief chronology of important events at the Station, including investigation and cleanup activities:

1950s

1951 – PG&E began Topock Compressor Station operations.

1951 to 1985 – Hexavalent chromium is used at the Station as an anti-corrosion agent in its cooling towers.

1951 to 1968 – Cooling tower wastewater is discharged into percolation beds in a dry wash area, Bat Cave Wash, next to the Station.

1960s

1964 – PG&E begins treating the wastewater to remove the hexavalent chromium.

1970s

1970 – PG&E installs an underground injection well to receive treated wastewater.

1971 – PG&E installs a series of lined evaporation ponds to receive treated wastewater.

1971 to 1974 – PG&E alternates disposal of the treated wastewater between the injection well and the lined ponds.

1974 – PG&E begins disposal of all wastewater exclusively in the lined ponds.

1980s

1980 – PG&E notifies USEPA of Hazardous Waste Activities.

1981 – PG&E identified as an owner/operator of a Treatment, Storage, and Disposal Facility from USEPA.

1985 – PG&E replaces the chromium-based anti-corrosion additive with a phosphate-based solution.

1985 – PG&E files intent to close all Treatment, Storage, and Disposal related units instead of pursuing an operation permit.

1987 – Corrective action at the Station begins with a RCRA Facility Assessment (RFA) conducted by USEPA.

1988 – Soil investigation is conducted at the former percolation bed and the surrounding area of Bat Cave Wash discharge area.

1990s

1990 to 1993 – PG&E submits closure certification reports for former hazardous waste management units.

1995 – DTSC accepts PG&E's closure certification reports.

1996 – PG&E signs agreement with DTSC to identify and clean up past environmental contamination.

2000s

2000 – DTSC establishes Consultative Workgroup (CWG), comprised of stakeholder agencies, to provide input and recommendations to DTSC in its oversight of the project.

2004 – DTSC imposes Interim Measures due to hexavalent chromium detection near the Colorado River to prevent contamination from reaching the river.

2005 – Interim Treatment Plant construction completed; PG&E began removing chromium from extracted groundwater and re-injecting clean water into the ground as part of the interim measures.

2005 – PG&E enters into a voluntary Consent Agreement with the DOI to perform corrective actions and response actions as a result of Site contamination.

2007 – PG&E submits and DTSC accepts the Volume 1, RCRA Facility Investigation (RFI) report on site background and history

2007 – DTSC directs PG&E to begin a phased approach to soil sampling and investigation of the Site.

2009 – PG&E submits and DTSC conditionally accepts the Volume 2, Groundwater and Surface Water Investigation Report and Addendum.

2009 – DOI directs PG&E to conduct a Time Critical Removal Action to remove contaminated debris from the southern portion of the site.

2009 – DTSC accepts groundwater Corrective Measures Study/Feasibility Study for evaluation of viable cleanup technologies.

2010s

2011 – DTSC certifies the final Environmental Impact Report for the proposed groundwater remedy in accordance with CEQA and adopts the groundwater remedy.

2011 – PG&E is in the process of designing a proposed remedy for groundwater.

Additional details of the site investigation history can be found in the document library of the project website at: http://www.dtsc-topock.com/.

SECTION 3

The Colorado River and Nearby Communities

This section includes a profile of the Colorado River and identifies the nearby local communities and Tribal Nations surrounding or downstream of the Site, and located along the river.

3.1 Colorado River

The Colorado River spans 1,440 miles and provides water, electricity, recreation, and natural and cultural resources to the Pacific Southwest. The river has 244,000 square miles of drainage and flows through Colorado, New Mexico, Utah and Wyoming (collectively the Upper Basin); Arizona, California and Nevada (collectively the Lower Basin); and Mexico.

The Colorado River provides water to more than 25 million people in the Pacific Southwest. Its system of dams generates enough power to meet the partial electrical needs of 9 to 12 million people. The Colorado River is also a recreational and economic resource to nearby communities. Additionally, it holds spiritual significance to many Tribal governments. It is an important part of the sacred ancestral territory for native peoples. Many Tribal, federal, state, and local governments, along with private organizations are interested in protecting the valuable resources of the Colorado River**.** Figure 3 shows Colorado River Communities and Tribal Reservations.

3.2 Nearby Local Communities

The Station is located in eastern San Bernardino County, California, which shares a border with both Nevada and Arizona. The six major communities located near the Site are spread out along the Colorado River, often over large distances. DTSC is committed to communicating with all interested stakeholders, no matter their proximity to the Site, and who may be located beyond the typically required distance for community outreach.

The land within 1 mile of the Station boundary provides industrial, spiritual, recreational, and wildlife management uses. The industrial site is the PG&E Topock Gas Compressor Station. The area is also a transportation corridor, with the Burlington Northern Santa Fe railroad, I-40, and old Route 66 nearby. Several gas pipelines beyond those owned by PG&E pass through this corridor. Residential properties are located in Arizona, across the river from the Station, as well as limited term lodging within and around the Moabi Regional Park. Recreational facilities are located near the Topock/Golden Shores Marina and Moabi Regional Park. The Havasu National Wildlife Refuge is located near the Station along both the California and Arizona sides of the Colorado River. Other lands surrounding the Station are managed by the BLM. Figure 2 shows the approximate boundaries and ownership of the properties surrounding the Station.

There are no hospitals, schools or day care centers located near the Station. The closest hospital is located approximately 12 miles to the northwest in Needles, California, and the closest schools are located across the river and 5 miles to the northeast in Golden Shores, Arizona.

3.2.1 Moabi Regional Park, California

Located on a side channel of the Colorado River, Moabi Regional Park is a part of San Bernardino County's regional parks system. The park is approximately one mile west of the river's main channel, along the road used to access the Station from I-40. Moabi Regional Park is primarily used as a recreational area for swimming and boating, and includes houses, trailer homes, camping units, and a boat marina. The homes are used mainly as weekend or vacation residences. The park is located on BOR land that is leased to San Bernardino County and managed by BLM. The Park also is the location of the Pirate's Cove Resort, a concessionaire to the County offering rental cabins and recreational activities.

3.2.2 City of Needles, California

The City of Needles is located near the borders of California, Arizona and Nevada, and has a population of approximately 5,300 people. The City of Needles is located approximately 12 miles northwest of the Station on I-40 on the west side of the Colorado River. Needles' economy relies primarily on the operations of the Burlington Northern Santa Fe Railroad and tourism. Several small businesses are located in the area; these and related service industries provide jobs to residents of Needles and nearby communities. The city has a number of active civic associations and business organizations.

3.2.3 Topock, Arizona

In Arizona, across the Colorado River, nearby communities include Topock, Golden Shores, Lake Havasu City and Parker. Topock is a community of approximately four single-family homes and approximately 15 people in a small mobile home park near the Topock Marina on the eastern bank of the Colorado River. The residents rely on Golden Shores and surrounding communities for their commercial and educational needs. Many of the residents are retired senior citizens who live in the area part of the year, from late fall through spring. Some of the residents travel to work in the neighboring communities.

3.2.4 Golden Shores, Arizona

Golden Shores is a small community of approximately 2,047 in Mohave County, Arizona, approximately 5 miles northeast of the Station on the east side of the Colorado River. The community includes small businesses, a fire station, a post office and one elementary school. Golden Shores also has an active Chamber of Commerce and Women's Club. A civic center is the hub of community activity, housing the Chamber of Commerce and serving as a regular meeting site for several local associations.

3.2.5 Lake Havasu City, Arizona

Lake Havasu City is located on the east shore of Lake Havasu on the Colorado River, approximately 18 miles south of the Station. With a population of 52,527, it is the largest population center of southern Mohave County, one of the fastest-growing counties in the United States. The city offers a broad range of community facilities, including several parks, two movie theater complexes, a county/city library, tennis courts, several beaches, a bowling alley and four golf courses. Recreational facilities located in the city include camping and fishing areas and a marina. Tourism and recreation are Lake Havasu City's principal economic activities.

3.2.6 Parker, Arizona

Parker is located in La Paz County, Arizona, on the eastern side of the Colorado River, approximately 20 miles south of Lake Havasu City and approximately 40 miles south of the Station. Parker sits on a mesa overlooking the Colorado River at an elevation of approximately 450 feet above sea level. Parker is almost completely surrounded by the Colorado River Indian Tribes Reservation. The community of 3,120 has an elementary school, junior high school and high school. It also maintains its own safety and fire services and operates a hospital. A community and senior center serves as a regular meeting site for various activities and several local associations.

3.3 Nearby Tribal Nations

The Tribal Nations involved and interested in the Topock Remediation Project and whose government representatives are contacted regularly by DTSC about the project are the Fort Mojave Indian Tribe, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Yuma-Quechan Indian Tribe, Cocopah Indian Tribe, Hualapai Indian Tribe, Torres-Martinez Desert Cahuilla Indian Tribe, Havasupai Indian Tribe, Twenty-Nine Palms Indian Tribe and Yavapai-Prescott Indian Tribe.

Nine of the ten Tribes are federally recognized sovereign nations. The Tribes are economically and culturally reliant on the Colorado River, and they are historically and spiritually rooted to the region. The Tribes have a long-term and consistent cultural and historical affiliation with the land and river resources on or near the Site. Although each Tribe has its own history and belief system tied to the region and Colorado River, all share an

overall interest in the health and welfare of their people, land and natural resources, sustaining important spiritual and religious beliefs and practices, honoring oral and cultural traditions, and maintaining the economic vitality and ecological well-being of the Colorado River and related cultural values and resources located at the Site.

Collectively, the Tribes include nearly 17,000 people located across hundreds of thousands of acres of land along the Colorado River corridor and within the region. The nearest Tribes are the Fort Mojave Indian Tribe with reservation lands 8 miles north of the project area and the Chemehuevi Tribe approximately 8 miles south. For these reasons, DTSC, the federal bureaus, and PG&E are actively engaging the Tribes and Tribal government representatives to foster involvement and shared understanding as the Topock Remediation Project moves forward. For example, several Tribal representatives have been actively engaged as members of the project's Technical Work Group, Clearinghouse Task Force, Topock Leadership Partnership and Consultative Workgroup (see Section 5), as well as in other project-specific deliberative bodies formed for purposes of meaningful coordination and communication during the remedial decision making process.

Brief descriptions of the Tribal Nations involved in the Topock Remediation Project and whose Government representatives are contacted regularly by DTSC about the project are provided below. Additional information about each tribe is available by accessing the Internet links provided and by contacting the Tribal Nations directly.

3.3.1 Fort Mojave Indian Tribe

The Fort Mojave Indian Tribe has a population of 1,202 people living on the reservation. The reservation lands are divided into three segments over three states. The reservation has a total area of 41,884 acres and includes parts of the Colorado River. Of the nearly 42,000 acres, a 23,669-acre segment is located in Mojave County, Arizona; a 12,633-acre segment is located in California, San Bernardino County; and the remaining 5,582-acre segment is located in Clark County, Nevada. The Fort Mojave Indian Tribe was granted 132,000 acre feet of entitled water rights to the Colorado River in 1963. The Mojave people have traditionally and continuously inhabited this region of the Mojave Valley. The Fort Mojave Indian Tribe has aboriginal ties to this region and project area.

Resources: http://mojaveindiantribe.com/

3.3.2 Chemehuevi Indian Tribe

The Chemehuevi Indian Tribe has a population between 150 and 345 people living on the reservation. The reservation has a total area of 30,653 acres and includes 36 miles of Lake Havasu and the Colorado River shoreline. The Chemehuevi Indian Tribe was granted water rights to the Colorado River in 1963.

Resources: http://www.chemehuevi.net/home.php

3.3.3 Colorado River Indian Tribes

Colorado River Indian Tribes (CRIT) has a population of approximately 3,950 active tribal members. The latest Census data reported a population of 9,201 people living on Tribal lands, or within the Colorado River Indian Reservation. The reservation is unique in that it includes just over one square mile (973.3 acres) of non-tribal owned lands comprising the Township of Parker, Arizona, incorporated in 1948, and encompassed entirely within the boundaries of the reservation.

CRIT is composed of four distinct Tribal groups – Mohave, Chemehuevi (Nuwu), Navajo and Hopi. Historically the lower Colorado River corridor was the ancestral home to the Mohave and Chemehuevi peoples, among others. The Mohave people living at the Colorado River Indian Reservation and the Mojave living at Fort Mojave Indian Reservation are of the same origin, and have the same aboriginal ties to the area. As a result of modern developments – and the establishment of separate reservations – they live at two locations and spell their name slightly differently.

The reservation has a total land area of approximately 300,000 acres, stretching along the Colorado River in both California and Arizona. The main economic activity is agriculture, with over 85,000 acres of cropland in production in a typical year. CRIT government administers departments of Education, Healthcare, Tribal Police, a Tribal Court,

an Office of the Attorney General (providing civil, criminal, public defender, victim's advocacy and legal aid services to the Tribal government and the membership), a Fire Department, Realty services, Utilities services, Housing services, numerous social welfare services, a Fish and Game department, an Environmental Protection Office, as well as a number of commercial enterprises including the Blue Water Resort and Casino. CRIT is the largest employer in La Paz County, Arizona.

Resources: http://www.crit-nsn.gov/

3.3.4 Fort Yuma-Quechan Indian Tribe

The Fort Yuma-Quechan Indian Tribe has an approximate population of 2,475 members on the reservation. The reservation has a total approximate area of 45,000 acres and borders Arizona, California, Baja California and Mexico. The reservation is located along both sides of the Colorado River. The Fort Yuma-Quechan Indian Tribe was granted water rights to the Colorado River in 1963.

Resources: http://itcaonline.com/?page_id=1173

3.3.5 Cocopah Indian Tribe

The Cocopah Indian Tribe has an approximate population of 1,000 members living and working on or near the reservation. Divided into three separate segments (North, West and East), the reservation has a total approximate area of 6,500 acres along the Colorado River. The West Cocopah Reservation contains 7 miles of Colorado River within the Limitrophe region. (The Limitrophe is a unique designation given to a water border between two countries.) This unique ecoregion includes a wide variety of habitats for many rare and sensitive plant and animal species that are both biologically and culturally significant. The Cocopah people (Kwapa) have lived along the banks of the Colorado River for many centuries utilizing the various resources the river sustains. The Kwapa people think of themselves as caretakers of the river and strive to maintain the natural character of the river. The Cocopah Indian Tribe was granted water rights to the Colorado River in 1963.

Resources: http://www.cocopah.com/

3.3.6 Hualapai Indian Tribe

The Hualapai Indian Tribe has an approximate population of 1,621 residents, of which 1,353 are Tribal members. The 947 Tribal members not living on the reservation increases the total to 2,300. Divided into four segments, the reservation has an approximate area of 994,146 acres along 108 miles of the Grand Canyon and the Colorado River. Water rights to the Colorado River are still being negotiated according to the tribal office.

Resources: http://hualapai-nsn.gov/

3.3.7 Torres-Martinez Desert Cahuilla Indian Tribe

The Torres-Martinez Desert Cahuilla Indian Tribe has an approximate population of 858 tribal members. The reservation has an approximate area of 24,024 acres. Although the Torres Martinez Desert Cahuilla Indian Tribe is not located on the Colorado River, the tribe has significant ties by way of water coming from the Colorado River via the Coachella Valley Canal. It is then being recharged by the Coachella Valley Water District into the aquifer. The aquifer is the primary drinking water source.

Resources: http://www.torresmartinez.org/

3.3.8 Havasupai Indian Tribe

The Havasupai Indian Tribe has a population of approximately 639 members. The reservation has an approximate area of 251,000 acres along the western edge of Grand Canyon's south rim. The Havasupai Indian Tribe was granted water rights to the Colorado River in 1963.

Resources: http://www.havasupai-nsn.gov/

3.3.9 Twenty-Nine Palms Indian Tribe

Twenty-Nine Palms Indian Tribe has an unknown population of tribal members. The reservation has an approximate area of 402 acres in San Bernardino County.

Resources: http://www.29palmstribe.com/index-1.html

3.3.10 The Yavapai-Prescott Indian Tribe

The Yavapai-Prescott Indian Tribe has an approximate population of 159 tribal members. The reservation has an approximate area of 1,395 acres. The Yavapai-Prescott Indian Tribe is not located on the Colorado River.

Resources: http://www.ypit.com/

SECTION 4

Cleanup Process Overview

4.1 What is Corrective Action?

Corrective action refers to the investigation and cleanup process at a hazardous waste site. The mandate to conduct corrective action at the Station is contained in laws that govern facilities that are either regulated as a hazardous waste Treatment, Storage, and/or Disposal facility or at any time have been regulated under such laws. The PG&E Topock Compressor Station was regulated under RCRA when PG&E notified the USEPA of their hazardous waste management activities in 1980. Currently, DTSC is authorized, by Federal delegation, to be the lead agency overseeing the corrective action program under RCRA for California.

The Corrective Action process can be broken down into six steps, from investigation to implementation of a remedy (see Figure 4,). Further, each of the six steps has specific communication activities that are suggested or required. For a more detailed description of the communication activities that will take place at each step (see Appendix F).

4.2 Corrective Action History at the Topock Site

RCRA Corrective Action activities at the Site were initiated in 1987 with the completion of a RCRA Facility Assessment (RFA) conducted by the USEPA. The RFA identified 13 areas of possible contamination through records review, data evaluation, interviews and a visual site inspection. Although several of these areas, including the sludge or mud drying beds, old evaporation ponds, and wastewater treatment tank areas, have been investigated by PG&E and their closure report accepted by DTSC in 1995, PG&E has identified additional areas of concern throughout the Corrective Action investigation and cleanup process. In February 1996, PG&E and DTSC entered into a voluntary agreement that requires PG&E to follow the RCRA Corrective Action investigation and cleanup process with DTSC oversight.

As the oversight agency, DTSC must do the following to protect public health and the environment:

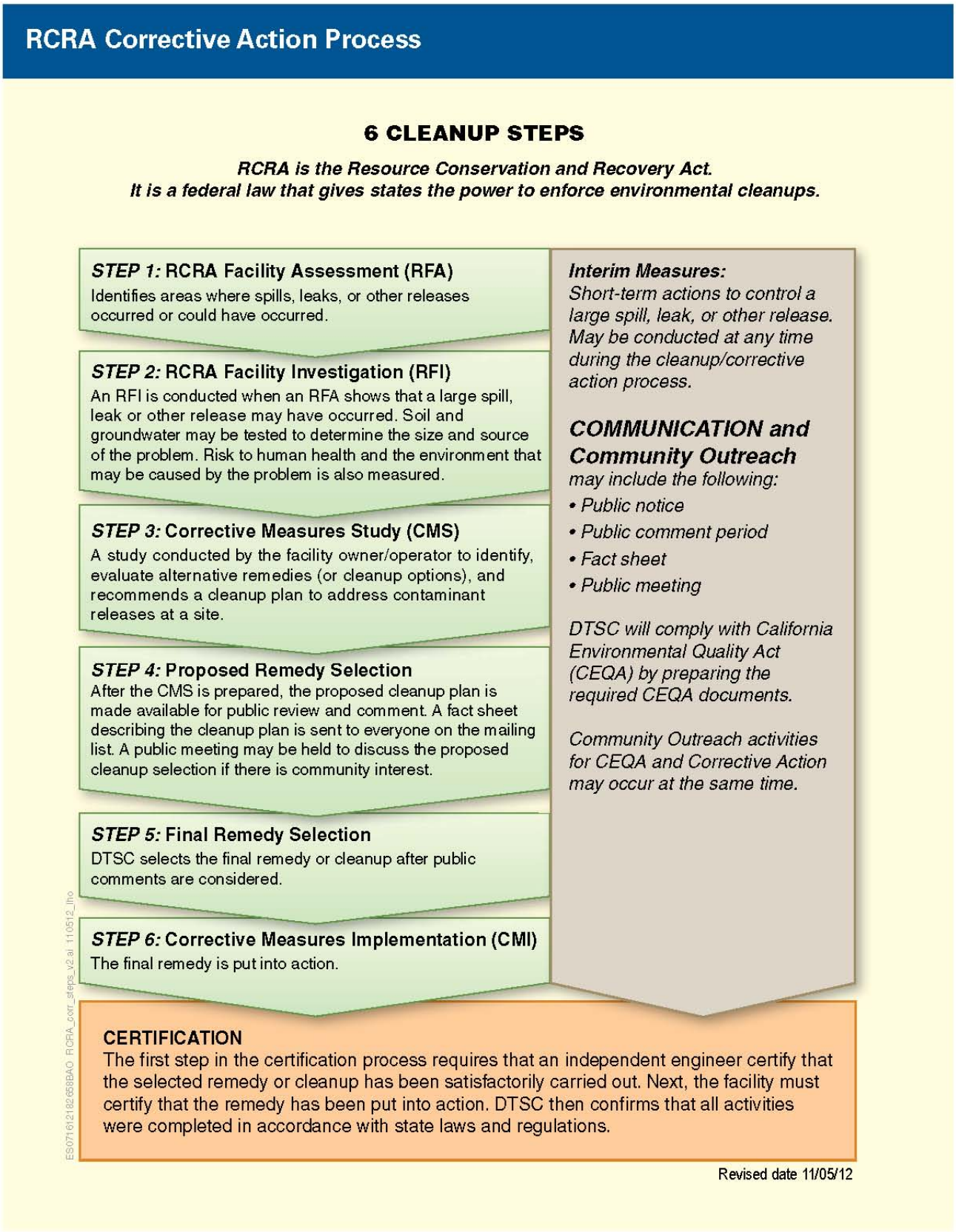
1. Determine the extent of the contamination
2. Determine what should be done to clean it up
3. Take steps to clean it up.

Currently, PG&E has determined in the 2012 RFI soil work plan that 44 distinct areas will require further investigation, out of more than 50 areas identified as potential concerns. In addition, PG&E is in the process of designing a groundwater remedy to implement at the site.

4.2.1 Groundwater and Surface Water Sampling

Groundwater and river water sampling, also known as “monitoring,” began in 1998 as part of initial site investigation activities, and has been incorporated into a regular monitoring program. Monitoring activities at the Site include sampling a network of over 130 monitoring wells, 4 river shoreline locations, 2 other surface monitoring locations and 10 in-channel river sampling locations. Groundwater sampling occurs in selected wells monthly, quarterly, semiannually and biennially. River water is sampled monthly during low river periods (during the winter) and quarterly during the rest of the year. The monitoring program has helped to define the level and extent of hexavalent chromium or Cr(VI) in groundwater. Furthermore, by monitoring the wells at regular intervals, DTSC is able to determine if changes to the Cr(VI) plume occur and to take appropriate steps to control its movement and migration if necessary. DTSC has also learned from the surface water sampling that the quality of the Colorado River has not been adversely impacted by site contamination.

FIGURE 4
RCRA Corrective Action Process
Community Outreach Plan, PG&E Topock Compressor Station



4.2.2 Interim Measures at the Site

Interim Measures (IMs) are cleanup actions that are taken to protect public health and the environment while long-term solutions are being developed and evaluated. A series of three IMs were imposed at the Topock site in 2004 for protection of the Colorado River after PG&E detected elevated levels of Cr(VI) in newly installed groundwater monitoring wells located next to the Colorado River. Although surface water and pore water beneath the river did not detect elevated levels of Cr(VI), DTSC required PG&E to begin groundwater removal and treatment of the extracted groundwater to control the movement of the groundwater towards the river. Under IM No. 3, groundwater that contains Cr(VI) is extracted and piped to a treatment facility, which removes the Cr(VI) and re-injects the treated groundwater back into the subsurface. The treated groundwater meets standards set by DTSC and the California Regional Water Quality Control Board. This IM will remain operational until the final groundwater remediation system is operational. The IM work plans and associated documents are available in the Information Repositories (listed in Appendix D). Between 2004 and 2012, 7,428 lbs of total chromium have been removed by the IM activities.

In addition to the groundwater IMs, hazardous substances were found at elevated concentrations within a steep slope and its associated ravine located at the southern portion of the Compressor Station. This area has been identified as the Debris Ravine or Area of Concern (AOC) 4 where historical waste disposal took place. The DOI determined that the contamination posed a substantial threat of release onto the Havasu National Wildlife Refuge, managed by USFWS. On June 24, 2009, DOI requested PG&E to conduct a Time-Critical Removal Action to remove the hazardous debris and soil at AOC 4. PG&E initiated removal activities at AOC 4 in January 2010. As a result of the cleanup action, PG&E removed over 11,000 cubic yards of contaminated fill material and debris. The removed material was loaded into covered bins and was transported off-site for proper disposal.

4.2.3 Status of Groundwater Design

A Corrective Measure Study (CMS)/Feasibility Study (FS) was completed by PG&E and approved by DTSC and DOI in December 2009. The purpose of the CMS/FS was to evaluate different cleanup alternatives for the Cr(VI) in groundwater that was a result from past releases in and around Bat Cave Wash. The CMS/FS established cleanup goals for the groundwater remedy, and evaluated each of the alternatives against RCRA Corrective Action and CERCLA-mandated criteria. In the CMS/FS, PG&E recommended to DTSC and DOI the use of in situ (defined as in place or in position) Treatment with Fresh Water Flushing as the final groundwater remedy. Based on information presented in the CMS/FS document, DTSC and DOI agreed with PG&E's recommendation. DTSC formally adopted the recommended remedy on January 31, 2011.

PG&E is currently in the design phase for the groundwater remedy. A Preliminary (or 30 percent) Design plan was submitted to the oversight agencies in late 2011 and approved in February 2012. This design plan outlines the initial design criteria, renderings and other preliminary information required for implementing the groundwater remedy. Feedback will be considered and incorporated into the next iteration of the design process, known as the Intermediate (or 60 percent) Design (currently scheduled to be submitted to DTSC in January 2013). After additional input and comments on the Intermediate Design, PG&E will complete the Final Design for DTSC approval prior to construction of the remedy. Once the design is approved, it is anticipated that PG&E will take up to two years to complete construction of the groundwater remedy system. The length of time to treat the Cr(VI) plume in groundwater is estimated to take approximately 30 or more years. Extensive groundwater monitoring will continue throughout the life of the remedy.

4.2.4 Soils Investigation

PG&E has prepared and submitted a 2012 supplemental soil investigation work plan to further define the nature and extent of contaminants in the ground and subsurface soil inside and outside of the compressor station property. Forty-four areas have been identified as requiring further investigation. Once DTSC evaluates the environmental impacts through an Environmental Impact Report; and approves the work plan, PG&E will begin the necessary fieldwork to collect and analyze the proposed samples. The results gathered from this investigation will be used to evaluate risks and, if necessary, evaluate cleanup alternatives and recommend a cleanup action at the site.

4.2.5 Additional Information

For more information on these Site activities, refer to the project documents in the Information Repositories listed in Appendix D or contact Mr. Aaron Yue, DTSC Project Manager, by phone at (714) 484-5439 and by email at aaron.yue@dtsc.ca.gov.

Although limited activities will be conducted across the Colorado River in Arizona, any environmental investigation activities to be conducted and its results will be reported to the Arizona Department of Environmental Quality (ADEQ). Information on environmental investigation activities conducted by the State of Arizona is located on ADEQ's Website at www.azdeq.gov. Additional information regarding ADEQ's involvement in the project can be directed to Ms. Wendy Flood, ADEQ Outreach Manager, by phone at (602) 771-4410 and by email at wv1@azdeq.gov.

SECTION 5

Community Outreach Program

5.1 Objectives of the Community Outreach Program

DTSC has a Community Outreach Program that is an integral part of the RCRA Corrective Action process. The Topock Project includes a proactive public participation component that encourages involvement by providing free flowing information to and from the communities and stakeholders as well as identifying concerns and obtaining input. This Community Outreach Program is guided by DTSC's Public Participation Manual, which lays out goals and procedures for community outreach. The objectives of DTSC's Community Outreach Program in Topock are as follows:

- Objective 1: Provide timely and accurate information about environmental investigations and cleanup activities to local residents, community organizations, elected officials and governmental bodies.
- Objective 2: Provide easy-to-understand information about potential health effects and technical issues so that residents and stakeholders are empowered to provide input.
- Objective 3: Provide opportunities for Tribal government representatives, community members, and other stakeholders to ask questions, provide comments, become involved and give feedback on project plans.

5.2 Communications with Community, Stakeholders and Tribal Governments

DTSC recognizes the importance of the environmental investigation and cleanup activities at the Site and the concern of the many diverse stakeholders who value the surrounding desert habitat and the Colorado River. As the lead agency, DTSC oversees communication and community outreach activities connected with the site investigation and cleanup.

A history of past community outreach activities includes distribution of fact sheets and project updates to the following:

- Tribal government representatives
- Residents and businesses in the Golden Shores and Topock communities in Arizona
- Elected officials
- Community organizations
- Other key stakeholders in Needles, California and Lake Havasu City, Arizona
- Issuing public notices through news media and local club publications to announce upcoming events or other activities with input opportunities

5.3 Communication with the Federal Government

DTSC recognizes the importance of communicating and coordinating all cleanup and outreach activities with federal agencies to ensure the protection of the Colorado River and the surrounding communities. In March 2000, DTSC established a Consultative Workgroup (CWG) that included various federal agencies that exercise regulatory authority in the affected area to facilitate consultation and coordination. The CWG has since expanded to include other state and local responsible agencies, stakeholders and sovereign Tribal nations. The federal government agencies currently represented in the CWG include; the DOI, BLM, BOR, USFWS, U.S. Bureau of Indian Affairs and the HNWR. The CWG meets regularly to discuss project activities and provide opportunities for input, discussion and recommendations to DTSC.

5.4 Communication with State and Local Governments

The environmental investigation and cleanup of the Site affects the State of California and all other surrounding local governments. Interested state agencies and local governments are invited to participate in the cleanup process, and many have chosen to do so by participating in the CWG.

DTSC realizes that the State of Arizona adjoins the affected groundwater system and relies on water from the Colorado River. Moreover, the majority of populated communities along the Colorado River are residences and businesses within the State of Arizona. DTSC has and will continue to engage with its counterpart ADEQ regarding this Site. ADEQ participates in the CWG and provides input on technical matters, including, but not limited to, the interim measures and future corrective action measures. Efforts will be made to ensure that representatives from ADEQ are actively involved when outreach activities are planned and conducted in the State of Arizona.

5.5 Communication with Tribal Governments

Several Native American Tribes have lands that border the Colorado River. Nine of these Tribes are federally recognized. All are sovereign Nations that are historically and spiritually rooted to the land and are economically reliant on the Colorado River. There are several Tribes located along the river (from north to south) that are engaged on this Project: the Hualapai Indian Tribe, Fort Mojave Indian Tribe, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Yuma-Quechan Indian Tribe and Cocopah Indian Tribe. DTSC also communicates with other interested Tribes in southern California and Arizona (see Section 3.3). These include, the Torres-Martinez Desert Cahuilla Indian Tribe, Havasupai Indian Tribe, Twenty-Nine Palms Indian Tribe and Yavapai-Prescott Indian Tribe. Representatives of these Tribal governments are involved in project workgroups and are kept informed of the Site project and key decisions for the cleanup.

5.6 Project Workgroups

DTSC recognizes the importance of the environmental investigation and cleanup activities at the PG&E Topock site to those who value the surrounding land and Colorado River. DTSC has established the following workgroups focused on engaging these groups for input into the cleanup process.

5.6.1 Consultative Work Group

The Consultative Work Group was first established in 2000 to facilitate participation of key stakeholders in the site investigation and remediation process. DTSC expanded the CWG after being designated as the Administering Agency in 2004. The CWG is comprised of 15 stakeholder and government groups with approximately 100 participants. The objective of the CWG is to facilitate participation of these state, regional and federal agencies and the Native American Tribal governments in the cleanup process, and through such participation, integrate applicable federal and state regulatory authorities and requirements. In addition, the CWG provides opinions, comments and recommendations to DTSC, helping DTSC make decisions for the effective and expeditious remediation of past releases from the Site; the objective is to manage the lands and waters of the Colorado River basin in a manner that is respectful and minimizes impacts to sensitive cultural and environmental resources. DTSC currently convenes the CWG quarterly and at multiple locations convenient to stakeholders to encourage involvement and participation.

5.6.2 Technical Work Group

DTSC established the Technical Work Group (TWG) as a subgroup of the CWG. The TWG meets to discuss specific project-related issues in greater technical detail among the experts of the focused scientific field. The result of their deliberation is then reported back to the CWG. Past areas of discussion include groundwater investigation, hydrogeology, soil investigation, modeling and engineering design, human/ecological risk evaluations and assessments, and remediation alternatives for the Site. The TWG is composed of stakeholders and Tribal government representatives, and their technical experts. The TWG meets regularly, depending on need, ranging from monthly to quarterly.

5.6.3 Clearinghouse Task Force

The Clearinghouse Task Force (CTF) was formed to develop processes and tools to improve communications and understanding of technical and regulatory project information. The goal of the CTF is to foster timely and effective project management, and promote early collaboration with clear information and feedback to the state and federal agencies for decision making on the Site. CTF members are also CWG members. The CTF is a smaller group with approximately 15 people. The CTF meets regularly, depending on need, ranging from monthly to quarterly. The CTF communicates progress to the Topock Leadership Partnership (TLP) and the Consultative Work Group, and integrates feedback and direction from these groups into future process improvement efforts.

5.6.4 Topock Leadership Partnership

The TLP was created to enable senior officials of stakeholders, Tribal governments and responsible government agencies to provide input to DTSC and DOI on the direction of actions necessary to complete the Project. The TLP exchanges information, views and opinions on various actions proposed by the DTSC and DOI with respect to the development, selection and implementation of the groundwater remedy for the Project. The intent is to provide a senior level perspective of each participant's interests and gain understanding of differing points of views that could be considered before critical decisions are made by the agencies. The TLP has met five times since 2008, principally prior to critical project decisions. Generally, the TLP discusses larger, conceptual and broader policies or decisions, while the TWG and the CWG continue to deal with more detailed and technical issues. Senior leaders of CWG stakeholder groups and the 10 nearby Tribal governments are invited to the TLP to provide broad representation and perspectives.

5.6.5 Technical Review Committee

The Technical Review Committee (TRC) was established to convene and retain a multidisciplinary panel of independent scientific and engineering experts who will review project-related documents, participate in project-related meetings, and advise interested Tribal members on technical matters relating to the Topock project final groundwater design and remedy.

5.7 Community Outreach Tools and Activities

DTSC has a responsibility to ensure effective community outreach and communication. DTSC uses the following outreach tools for that purpose:

- Surveys and interviews
- Briefings, presentations and meetings
- Fact sheets and Community Updates
- Public notices
- Public meetings
- Public comment periods
- Site tours
- Electronic and hardcopy mailing lists
- Information repositories
- Topock website

5.7.1 Surveys and Interviews

DTSC has conducted four community surveys regarding the Project, in 1997, 2002, 2009 and 2012. Community surveys allow DTSC to assess and monitor the level of community interest and update and improve DTSC's communication efforts. A written survey can also provide useful feedback about the needs and concerns within the surrounding communities. Information collected in surveys helps identify the best way for DTSC to communicate with the members of the community. DTSC has also conducted community interviews with community members, stakeholders and Tribal governments. Interviews provide additional information and help

identify concerns in the community about the Project. (Additional information about the surveys can be found in Appendix B: Community Survey Results Summary).

5.7.2 Briefings, Presentations and Meetings

DTSC representatives welcome the opportunity to participate in meetings sponsored by community or neighborhood organizations who are interested in learning more about the Project. Comments or questions from the public will be answered during the meetings, when possible, or noted and answered by DTSC at a later date if more research is required. To request that the project staff provide a briefing to your community or organization, please contact DTSC's Community Outreach contact, identified under the project contacts listed in Section 5.8.

5.7.3 Fact Sheets/Community Updates

DTSC produces and distributes fact sheets, also known as Community Updates, to share information with the public and other stakeholders on project developments, findings and field activities. Fact sheets are also used to announce public meetings and the release of technical documents that require public review and comment. Fact sheets are written in easy-to-understand language. Technical terms, when used, will be explained in simple terms. Graphs, figures and photos will be used to help improve understanding. All fact sheets list the Information Repositories (such as local libraries) where interested parties and the public can find copies of project documents and the locations, names, addresses and phone numbers of people to contact. Copies of previously produced fact sheets are available in Appendix E. Fact sheets, the 1998 Public Participation Plan, the 2007 Public Participation Plan Addendum, and this 2012 Community Outreach Plan are available in the Document Library of the project website at http://www.dtsc-topock.com.

5.7.4 Public Notices

Public Notices also provide timely information about the Project. The notices are prepared to inform the community of upcoming DTSC actions, as well as identify comment periods for specific documents, such as a draft Environmental Impact Report. Public notices will be posted or kept in the Information Repositories and selected community gathering areas at the beginning of any public comment period. Examples of information that might be included in a public notice are as follows:

- Start and end dates of public comment periods and the process for submitting comments
- Announcement of the release of milestone technical documents
- Announcement of the time, date and location for a public meeting
- Contact information for whom to call with questions

The public notice may also be published in local newspapers around Topock in both Arizona and California. The list of papers includes, but is not limited to, the Desert Star in the Needles, California area; Today's News-Herald in the Lake Havasu City, Arizona area; Topock Topics in the Golden Shores, Arizona area; and the Parker Pioneer in the Parker, Arizona area. Public notices are also posted in community centers and tribal council offices.

5.7.5 Public Meetings and Hearings

DTSC may hold formal public meetings or hearings to share information and receive comments on important project documents. Public meetings will provide an opportunity for DTSC to explain technical information, answer questions and receive public comments. Meetings may be held in more than one location in different parts of California, Nevada or Arizona. DTSC will also hold public hearings prior to adoption of remedies and for draft Environmental Impact Reports. Formal hearings are usually recorded and all comments received are kept as administrative record for the project.

For public meetings and hearings, local officials and Tribal representatives will be briefed about the purpose and agenda in advance by phone, memorandum or personal meeting. Meeting location and time will be announced via public notice in the local newspapers, in a fact sheet or notice posted in the Information Repositories, or in both. Meeting announcements and other meeting information will also be posted on the Topock and DTSC websites.

From community survey and interview information, the DTSC proposed several locations for public meetings and hearings, including public schools, auditoriums or government-owned buildings in communities along the length of the Colorado River. A listing of proposed meeting locations is provided in Appendix D.

5.7.6 Public Comment Periods

As part of a continuing effort to involve affected communities and interested parties in the cleanup process, DTSC will invite public comments and input at key junctures of the project prior to a significant decision regarding the Site. Formal public comment periods will be at least 30 days. DTSC will issue notices to the public that specific governing documents for the proposed decision are available for review and comment. DTSC will post public comment documents on the project website and in the local Information Repositories listed in Appendix D. DTSC will take comments in writing by regular mail, email, fax and submission from the project website. If a formal public hearing is proposed, comments can also be submitted in person at the hearing. DTSC will evaluate and consider all comments received before finalizing those key documents and decisions. Based on the evaluation of comments and input received, DTSC may adopt the proposed decision with or without modifications, or deny the proposed action. DTSC will issue a formal written response to all comments in a document called Response to Comments along with the final decision. The Response to Comments and the final decision will be made available in local Information Repositories and on the project Website.

5.7.7 Site Tours

DTSC can arrange with PG&E to provide site tours to key individuals and elected officials. These tours provide an overview of the cleanup activities and have been a helpful communication tool used to brief elected officials, CWG members and Tribal government representatives on the Corrective Action process, including current and upcoming field activities. Project overview and orientation can be provided for key stakeholders, leaders and project managers and newcomers that plan to be involved in the project. Contact DTSC for further information.

5.7.8 Mailing List

DTSC has established an electronic and hardcopy mailing list of individuals and parties interested in the site. It is used to provide upcoming information, opportunities for input or involvement, or notice of key decisions. The complete mailing list for this site includes the following:

- Representatives from California and Arizona Tribes
- Members of the CWG
- Local, state and federal elected officials
- Local, state and federal government agency officials
- Key individuals and organizations in Needles and the Mojave Valley area
- Other interested community individuals
- Business associations
- Local news media
- Statewide DTSC mandatory mailing list of key individuals and groups

The mailing list is updated at least quarterly. In addition, it is updated when individuals request to be added or removed from the list; after meetings, site tours or public meetings (based on sign-in sheets); when new members join the CWG, and when elected officials change office. Anyone can request to be included on the mailing list by contacting DTSC.

5.7.9 Information Repositories

Documents in electronic and written form related to the environmental investigation and cleanup can be viewed in the local Information Repositories. The Information Repositories are set up to provide easy local access to this Plan, project work plans, technical reports, fact sheets and other important project documents. The repositories are located in Havasu Lake, California at the Chemehuevi Indian Reservation; in the Golden Shores, Lake Havasu City, Parker and Needles public libraries; in the CRIT library; and in DTSC's Cypress regional office file room. Appendix D provides a list of the Information Repositories as well as their locations and hours of operation.

5.7.10 Topock Website

DTSC maintains a project website for the Project. This project website provides an overview of current site activities and other site-related information. The following information is on the website:

- Site description and history
- Site activity overview
- Groundwater and surface water monitoring activities
- Interim measures activities
- Site investigation and cleanup activities and reports
- Identification of communities near the Topock Compressor Station
- Outreach activities related to the environmental investigation at the Topock site
- Information Repository locations
- Frequently asked questions about the Topock site
- Web based option for adding or removing your name from the Topock mailing list
- Project contact information and links to various interested parties
- Document Library containing project documents

The Topock website is located at http://www.dtsc-topock.com. Information about the Project is also provided on DTSC's website at http://www.dtsc.ca.gov/SiteCleanup/Projects/PGE_Topock.cfm

5.7.11 Additional Activities

DTSC will conduct additional outreach activities as appropriate or as requested by members of the community. Additional activities could include:

- Information in local newsletters or publications (such as Topock Topics)
- Announcements on local radio or television stations
- Community flyers distributed to community members and placed in areas of interest to the community (such as community recreation centers)
- Emailing important project information to community members who sign up to be on the mailing list

5.8 Contact Persons

DTSC's Community Outreach Staff are responsible for responding to public inquiries and coordinating the distribution of fact sheets and public notices and organizing other community outreach activities.

DTSC encourages all interested parties to contact the Community Outreach Staff person or the Project Manager with questions or concerns regarding the project. For media inquiries, contact the Public Information Officer. These contacts will be updated as needed.

Department of Toxic Substances Control

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California Department of Toxic Substances Control
5796 Corporate Avenue
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Pacific Gas and Electric Company

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Stephanie Isaacson, Director, Environmental Remediation
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(415) 624-5436
sli4@pge.com

Jeff Smith, External Communications Manager
Pacific Gas and Electric Company
2445 Capitol Street
Fresno, CA 93721
(559) 263-5314
j5St@pge.com

For questions or comments related to federal involvement, contact the lead federal agency:

U.S. Department of the Interior, Bureau of Land Management

Pamela Innis, CHF Remedial Project Manager
U.S. Department of the Interior
Office of Environmental Policy and Compliance
Denver Federal Center, Bldg. 67
Room 118, PO Box 25007, MS D108
Denver, CO 80225
(303) 445-2502
Pamela_Innis@ios.doi.gov

For questions or comments from Arizona residents or related to Arizona involvement, contact:

Arizona Department of Environmental Quality

Tina LePage, Remedial Projects Section Manager
Arizona Department of Environmental Quality
1110 W. Washington Street
Phoenix, AZ 85007
(602) 771-4293
tl1@azdeq.gov

Julie Hoskin, Voluntary Remediation Program Unit Manager
Arizona Department of Environmental Quality
1110 W. Washington Street
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Wendy Flood, Community Outreach Coordinator
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Mark Shaffer, Communications Director
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Danielle Taber, Project Manager, Voluntary Remediation Program (Topock)
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1110 W. Washington Street
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(602) 771-4414
dt3@azdeq.gov

SECTION 6

Community/Stakeholder/Tribal Feedback

6.1 Community Assessment Process

To help prepare this Community Outreach Plan, DTSC has a community assessment process that consists of in person interviews, phone interviews, and surveys sent to all the interested parties on the Topock mailing list. The purpose of this process is to: 1) document community interest, views and concerns related to the environmental investigation; and 2) identify specific public participation activities that will facilitate community involvement in DTSC's decision-making process for this site. DTSC has conducted four formal community assessments as part of its Community Outreach process. The first assessment, conducted in 1997, included both survey questionnaires and interviews. The second community assessment, conducted in June 2002, included a survey and interviews that were completed in January 2003. The third community assessment survey was conducted in 2009. In 2012, a survey questionnaire and community interviews took place in order to prepare this Plan.

6.2 Community Surveys

The purpose of the survey conducted in January 2012, was to evaluate interest in, and knowledge of, the environmental investigation and cleanup at the Site. In addition to the mailing, the survey was sent to the designated information repository libraries for the project and was posted online at www.dtsc-topock.com/survey for respondents to fill out electronically. From 2,524 survey questionnaires that were mailed to Topock/Golden Shores residents, tribal government representatives and community stakeholders, a total of 74 surveys were filled out and returned to DTSC, with 59 hard copies and 15 electronic surveys completed.

The survey asked 19 questions, including some questions with several parts. Many of the questions were yes/no or multiple-choice questions, but other questions asked the respondents to answer the questions in their own words.

The feedback received from the surveys and interviews can be organized into the following six topic categories:

- Groundwater Impacts/Water Quality
- Health Concerns
- Adequate Communication
- Cleanup Process
- Property Values
- Miscellaneous

A summary of the Community Survey feedback received is provided in Appendix B: Community Survey Results Summary.

6.3 Community Interviews

From April 2012 to July 2012, DTSC conducted 50 interviews with community members, key stakeholders and Tribal government representatives. Four out of the 10 Tribes listed in Section 3.3 participated in the interviews. The interviews were conducted in-person or over the phone. All individuals interviewed were asked a series of questions developed to determine the level of interest and concern about the Project and to identify local communication needs and preferences. See Appendix C for Interview questionnaires. Feedback from the interviews is grouped into three categories:

- Community interviews
- Stakeholder interviews
- Tribal Government interviews

6.3.1 Community Interviews

Presented below is a summary of key issues and concerns raised by community members during the individual interviews. The primary concerns raised during community interviews were:

- Groundwater impacts/water quality
- Health concerns
- Project communication
- Cleanup process
- Miscellaneous

Groundwater Impact/Water quality

Most community respondents stated that they are concerned about the water quality in a variety of forms, either drinking water or the quality of water in the aquifers and in the Colorado River. Some respondents were also concerned about the fish and wildlife habitats. One respondent was concerned about the possibility of contaminated groundwater migrating to Arizona. Some respondents felt more options should be made available to homeowners to protect their water quality (well water filtration, testing kits, etc.).

Health Concerns

Three respondents stated that they were concerned about health effects of chromium, particularly to their own health and the health of their children and grandchildren. Respondents commented that they had personally experienced unexplained health problems since moving to the area, including migraine headaches and cancer.

Project Communication

When asked during interviews, most of the community respondents indicated they are aware of the cleanup work underway due to the proximity of the Site to their work or home.

Most of the respondents stated that fact sheets are the best form of communication regarding the project. They felt that the fact sheets were well organized, easy to understand, provided important information and clearly explained technical terms and procedures. Some respondents felt that the fact sheets were going out at the wrong time when community members were unavailable due to seasonal changes. Nine out of sixteen respondents reported that the Topock Topics would be a good way to receive information about the project as well as through their liaisons and community contacts.

Most community members stated that a public meeting would be beneficial if there were important notifications on the project. Most respondents stated that the Golden Shores Community Center was the best location for a public meeting for that community, especially in the evenings and during winter when the “snowbirds” are there.

Cleanup Process

Some respondents are glad that there is a cleanup plan in progress. Some respondents expressed concern that the cleanup was taking too long.

Miscellaneous

As a general concern, some people expressed that they feel the government is not being truthful about how serious the risks are in their communities or location. Many of the local community members are concerned that their property values will decrease.

When asked if they understand the role of DTSC, most community respondents stated that they understand the role of DTSC and the role that other regulatory agencies play in the cleanup. However, some people are confused with the role of DTSC verses DOI and have frequently asked for clarification. Some think others may not understand the duo-jurisdiction between DTSC and DOI on this Site and that a good tool is to provide an organizational chart of each agency. Most community respondents felt that DTSC and the agencies are providing sufficient information and feel that DTSC representatives have been forthcoming and available to answer community concerns.

6.3.2 Stakeholder Interviews

The primary concerns raised during stakeholder interviews were:

- Groundwater Impacts/Water Quality
- Adequate Communication
- Cleanup process
- Miscellaneous

Presented below is a summary of key issues and concerns raised by stakeholders during the interviews.

Groundwater Impacts/Water Quality

Eight out of the 15 stakeholders said that their level of concern about the Project was "high." Three individuals expressed a concern about the quality of the water; one interviewee was concerned that perceptions about water quality could have a negative economic impact. Two individuals expressed a concern that the plume may spread to Arizona.

Adequate Communication

Most of the stakeholder respondents were aware of the cleanup work underway at Topock. Most of the respondents received their information from DTSC and PG&E at CWG meetings. Some respondents received their information through the Topock website, through the media, and by attending public meetings. Many of the stakeholders stated that the CTF and the CWG were helpful in their understanding and coordination of the project.

Most respondents believe that the information is sufficiently understandable. Many believe there is too much technical information, and that it is difficult to comprehend when parts of the information are provided rather than as a comprehensive whole. Some commented that the general comprehensibility of the information is getting better.

Cleanup process

Two respondents stated that they were concerned about the schedule for the groundwater remedy design and implementation of the cleanup, and stressed the importance of maintaining an aggressive cleanup schedule.

Miscellaneous

Four stakeholders said it was important to be sensitive to the needs of the Native American Tribal Governments and their culture and values while performing the remediation.

Suggestions for improvement include being better prepared to answer questions at meetings and providing short summaries to new members of the work groups. Some members value the handouts distributed via email as they cannot travel to attend the meetings and then lose the advantage of being able to see the accompanying presentations.

6.3.3 Native American Tribal Government Interviews

While all 10 Tribal governments were invited to participate in the interviews, 4 tribes provided comments. The primary concerns raised during tribal government interviews were:

- Project Communication and Involvement
- Groundwater Impacts and Water Quality
- Health Concerns and Cultural Resources
- Cleanup process

Presented below is a summary of key issues and concerns raised by tribal government representatives during the interviews.

Project Communication and Involvement

When asked during interviews, many of the Tribal representatives indicated they are aware of the cleanup work underway at the Site. Tribal liaisons provide most of the information, through their administrative, environmental roles. Other members are informed by word of mouth or through the Tribal Council meetings, and by fact sheets or bulletins.

The Tribal interviews revealed that for some, the project information provided is too technical and contains too much confusing information, such as acronyms. The Glossary has been found to be a helpful tool, but many feel there are too many acronyms that need to be remembered and explained. Some respondents had more moderate feelings about the information provided and thought it was understandable, but also indicated concern that others may have trouble understanding the information due to the technical language used for the project.

Results show the preferred or best way to communicate with the Tribes is through face to face meetings and briefings. Elders in the community are not as aware of the Project, since many are not tied into web-based information, or are limited in mobility and are homebound. Elders may be limited to information that is located in senior centers or the Elder's Center. As a way to better reach homebound elders, one respondent suggested using meal times to share and discuss information. Another suggested working with the tribal liaison to convey information at important milestones using the local newsletter for communicating with the Tribes. However, most elders get information by attending the Tribal Council Meetings.

Some respondents mentioned that there is a need to convey environmental issues such as the Topock Project to the youth. In this age of information, communication between the elders and the young people is lessened due to a variety of factors that include tribal members relocating to cities. One respondent suggested outreach using multi-media formats of communication that can be accessed easily and transmitted to multiple locations. These can be in the form of films, slides and also web based outlets to begin discussing the issues at Topock and bridge the gap between the elders and the youth.

Tribal respondents suggested meetings be held in the evening after work. One respondent suggested the best time for meetings is during summer. Many respondents said that meetings or briefings should be provided especially when there is something of great significance or importance to communicate. Otherwise, tribal liaisons, fact sheets and tribal council meetings are the best ways to communicate information to the Tribal communities.

For future contact, the DTSC was referred by Tribal respondents to the tribal council, environmental tribal liaison and the executive committee. Other suggestions for DTSC outreach included the Land Conservancy Board and UC Riverside, which have a tribal student population.

Overall, Tribal representatives who attend the workgroup meetings rated their communication with DTSC as relatively high (range of 8 to 10 on a scale of 1 to 10, with 10 being highest). Respondents said they thought DTSC was doing a "good job" of getting information out about the Project. However, respondents who do not usually attend workgroup meetings mentioned that there was a lot of information that was too technical to decipher, or felt that other members of the community would have a difficult time deciphering the technical information.

Groundwater Impacts/Water Quality

Eight out of 11 respondents stated that they were concerned about the quality of the water, specifically potential effects on drinking water, fish, wildlife and plants and the effects on the Colorado River. Their overall level of concern about the Site is high to moderate, including a concern over the effects of contamination on the Colorado River and Lake Havasu, and a more general concern about water as a source of life and reverence. Respondents indicated this concern is because the Colorado River is of great significance to the Tribal communities as it has sustained the communities for many years.

Health Concerns and Cultural Resources

Tribal respondents also expressed human health concerns, including the number of miscarriages in the community. Many are concerned about the fish and wildlife, as well as the effects on agriculture because plants have valuable traditional medicinal uses.

Cleanup process

Some respondents commented that they want to see the Site cleaned up as soon as possible. Concerns include the drilling of holes to remediate the area without the public's consent or notice. Two respondents said they were concerned about potential surprises along the way that could affect the schedule.

6.4 Meetings and Briefings

The DTSC has received feedback from various community members and stakeholders during the course of many briefings and meetings, especially during the planning and implementation stages of the Interim Measures.

Incorporating input from the agencies and organizations on the CWG membership has helped shape project direction and has been reflected in work plans and technical decisions at every step in the process. Elected officials, staff of downstream cities, and Tribal representatives have all expressed their concern that the Colorado River be protected, because many rely on the river as a source of drinking water and a source of revenue from recreation, tourism and other pursuits.

References

Websites

Arizona Department of Environmental Quality
www.azdeq.gov

Colorado River Board of California Homepage
www.crb.ca.gov

Colorado River Water Users Association
www.crwua.org

Department of Toxic Substances Control
PG&E Topock Compressor Station
www.dtsc-topock.com

Golden Shores, Arizona
www.goldenshores.net

InterTribal Council of Arizona
www.itcaonline.com

Lake Havasu Area Chamber of Commerce
www.havasuchamber.com

Metropolitan Water District of Southern California
www.mwdh2o.com

Town of Parker, Arizona
www.ci.parker.az.us

United States Census Bureau
www.census.gov; factfinder2.census.gov

U.S. Department of the Interior, Bureau of Land Management
www.blm.gov

Appendix A
Comparison of State (RCRA) and Federal (CERCLA) Outreach Activities

APPENDIX A

Comparison of State (RCRA) and Federal (CERCLA) Outreach Activities

The table shown below provides a comparison between the Resource Conservation and Recovery Act (RCRA) public outreach activities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) community involvement activities. Additionally, the table provides a quick reference to compare the differences in the document titles between the two regulatory programs. Differences are shown in with bolded text.

General Activity	CERCLA Action	CERCLA Community Involvement Activities (per CERCLA and NCP)	RCRA Action	RCRA Public Outreach Activities (per DTSC guidelines)
Evidence of Contamination Discovered or Reported	Establish a lead agency		Establish a lead agency	
Evaluate Community Interest	Community Involvement Plan (CIP)	1. Publish **CIP** 2. Conduct interviews of key community members and organizations 3. Establish Repository for Public Documents 4. Publish Fact Sheet* 5. Public Meeting*	Public Participation Plan (PPP)	1. Publish **PPP** 2. Conduct interviews of key community members and organizations 3. Establish Repository for Public Documents 4. Publish Fact Sheet* 5. Public Meeting*
Investigate the Nature and Extent of Contamination	Remedial Investigation (RI)	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*	RCRA Facility Investigation (RFI)	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*
Identify and Analyze Alternative Actions to Address Site Contamination	Feasibility Study (FS)	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*	Corrective Measure Study (CMS)	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*
Propose a Final Remedy	Proposed Plan (Pre-ROD Significant Changes)	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*	Proposed Remedy Selection	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*
Select Final Remedy	Record of Decision (ROD)	1. **Publish Public Notice of ROD**	Statement of Basis	1. **Publish Notification of Final Decision**
Revisions to Final Remedy (if necessary)	Post-ROD Significant Changes Explanation of Significant Differences (ESD)	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*	Revise Statement of Basis	1. Publish Public Notice* 2. Publish Fact Sheet* 3. Public Comment Period* 4. Public Meeting*
Conduct Cleanup Operations	Remedial Design and Remedial Action (RD/RA)	1. Publish Fact Sheet on **Final Engineering Design**	Corrective Measures Implementation (CMI)	1. Publish Fact Sheet* 2. **Add Remedial Design Plans to Repository**
Evaluate Effectiveness of Final Remedy	5-Year Review	1. **Publish Public Notice**		
When Cleanup Goals are Achieved	Site Closeout Report		Certification of Remedy Completion	

*If necessary, as determined by community involvement specialist

Appendix B
Community Survey Results Summary

APPENDIX B

Community Survey Results Summary

1.0 Introduction

The following memorandum contains the results of 2,524 California Department of Toxic Substances Control (DTSC) community surveys that were provided to community members, stakeholders, tribal government representatives and residents in the Topock/Golden Shores on January 31, 2012.

The purpose of the survey was to evaluate interest in, and knowledge of, the environmental investigation and cleanup at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station Site. In addition to the mailing, the survey was sent to the designated information repository libraries for the project and was posted online at www.dtsc-topock.com/survey for respondents to fill out electronically.

The survey offered three ways of returning the survey to DTSC: electronically on the website, via a postage-paid return mail envelope, and by email to the DTSC Community Outreach Supervisor, Mona Bontty. The survey was initially due by March 1, 2012, with the deadline extended to March 16, 2012. There were 59 hard copies and 15 electronic surveys that were filled out and returned to DTSC, for a total of 74.

The survey asked 19 questions, with some including several parts. The questions were presented in various formats: some were in a yes/no or multiple choice format, while others asked the respondents to answer in their own words. For this memo, the majority of the responses are recorded verbatim from the survey responses; other answers were categorized into groups to help quantify responses. Additional information is provided before each question, for authentication of the results.

2.0 Results of Community Survey Responses

Question 1

Question 1 looked at community awareness of the cleanup project. Approximately eighty-eight percent of respondents answered affirmatively that they were aware of the project and cleanup efforts. Question 1b asked respondents how and when they became aware of the project, in a "fill in the blank" answer format. The table below presents their responses, separated into categories.

Question 1	Responses	Number of Responses	Percentage
Are you aware that an environmental investigation and cleanup effort is taking place at the PG&E Topock Compressor Station?	Yes	65	87.8%
	No	6	8.1%
	No Answer	3	4.1%
Question 1b	**Responses**	**Number of Responses (Total number represents 'yes' in Question 1)**	**Percentage**
If yes, how and when did you first become aware of the site?	No Answer	26	39.4%
	Others	8	12.1%
	Media	9	13.6%
	Within the last few years	13	19.7%
	Beginning of cleanup investigation	7	10.6%
	Community meeting	2	3.0%
	Information repositories	1	1.5%

Question 2

Question 2 was a multiple choice question asking how long respondents have lived or worked in the area. Approximately thirty-two percent of the respondents indicated they have lived in the area for 21 or more years.

Question 2	Responses	Number of Responses	Percentage
How long have you lived or worked in the area?	21 or more years	24	32.4%
	13-20 years	16	21.6%
	6-12 years	20	27.0%
	0-5 years	13	17.6%
	No Answer	1	1.4%

Question 3

Question 3 was a multiple choice question asking that respondents indicate their level of concern or interest in the Topock Site. Approximately fifty-eight percent of the respondents indicated they have high concern or interest in the Topock Site.

Question 3	Responses	Number of Responses	Percentage
What is your current level of concern or interest in the Topock Site, if any?	High	43	58.1%
	Moderate	19	25.7%
	Low	5	6.8%
	None	4	5.4%
	No Answer	3	4.1%

Question 4

Question 4 was a "fill in the blank" format question requesting that respondents comment on any concerns they might have about the Topock Site. The highest recorded concerns among the respondents were water quality for drinking, aquifer, and well contamination. The table below presents their responses, separated into categories. Fifty-two percent of the respondents commented on this question; some of the respondents had multiple comments that were separated out into the categories found below. Forty-eight percent of respondents did not comment on this question.

Question 4	Categories of Responses	Number of Responses
Do you have any specific questions about the site? Please indicate which ones are most important to you?	Water Quality	13
	Health Concerns	8
	Quality of Colorado River	8
	Property values	5
	Remedy of the site (outline)	4
	Unbiased or contradictory information	3
	No	3
	Toxicity information of chromium	2

Question 4	Categories of Responses	Number of Responses
	Comparison to other sites (Hinkley)	2
	Layman terms	2
	Well tests	2
	Water company accuracy of information	2
	Secondary site cleanup	1
	Water quality of the Topock Marsh	1
	Water quality of Lake Havasu	1
	Hire locals for work	1
	Filtration system needs	1

Below are respondents' written responses to Question 4: "Do you have any specific questions about the site? Please indicate which ones are most important to you?" These comments have been placed into several general categories.

Groundwater Impacts/Water Quality

- I am concerned about recent reports that there may be hexavalent chromium contamination of the aquifer that provides our water for drinking and other domestic uses here in Golden Shores. I have heard that some private wells and possibly the GS Water Co. wells have been independently tested and showed an alarming amount of Chromium 6. I want to know if this is true or not?
- When will the contamination eventually reach the river?
- What is the possibility of the Colorado River and Topock Marsh being contaminated?
- At the 12-12-11 Golden Shores meeting, the Project Manager, began by saying that there is no chromium 6 on the Golden shores side of the river. There were later statements from others indicating varying levels of Chromium 6 that had recently been found in wells, and tap water (from the G.S. Water wells). Which of these contradictory statements is accurate? Will you continue to test GS water Co. wells periodically? Where can I send sample from my water source for evaluation?
- What problems can occur to our drinking water in Topock? If our water is contaminated, what do you intend to do about it? Why did you not take steps to keep the hexavalent Chromium discharge in check?
- Don't understand how the chromium-6 toxic plume has not impacted the Colorado River, very close proximity and just stopped short of impacting the quality of the water? How is the phenomenon explained? It's somewhat difficult for the common lay-person, non-geologist type to comprehend.
- Are you positive [there is] no river contamination?
- Asked for a risk assessment on municipal water supply in Golden Shores for Chromium 6: Nov 2011 test as follows in 3 wells: <5.0 ppb, 9.0 ppb, <5.0ppb. Keeping in mind the following how many people in a million might get cancer from chromium 6--inhalation and oral assessment requested.
- Will it affect our water in Golden Shores-Topock Area?
- What are you doing about the contamination in my drinking water?
- How is it possible for the contaminated groundwater not to get in the river water?

- I'm concerned about the quality of our water. I attended a meeting where well test results were claimed to be suspect for health concerns. The meeting in Topock in December appeared to contradict those prior results without addressing them directly. It again becomes an issue of who is telling the truth?
- The chromium six in the water [is a concern].
- Why were they allowed to dump in the Colorado River? How many years have they dumped there? Has anyone been paid off to allow this situation to exist?
- The water is poison just like the town of Hinkley. What are you doing about it?

Health Concerns

- If this is the cause of different medical issues.
- Toxic health problems regarding chromium.
- Most important, are the health effects from ground water aquifer plume infected in the Golden Shores Water-like evaporative coolers, shower steam, drinking, skin, etc. It is my understanding there are no safe levels of hexavalent chromium and is not naturally occurring. Future property values may be affected negatively.
- Health is my concern. We are having a kidney transplant March 13, 2012 from previous cancer-is this a reason of this problem or not? The health concerns go back in time with us and future concerns worry me also.
- Why if everything is being done, why are you trying to convince us there is nothing to be afraid of regarding our drinking water.
- I have cancer caused by Chromium 6. What are you doing to get the Chromium 6 out of my drinking water?
- Health risks now and down the road[is a concern].

Adequate Communication

- I am concerned that we were told that there are no contaminated wells in Topock, yet there was a 2005 study done that shows numerous wells being contaminated. I'm concerned that we won't be given true information.
- Explain problems in terms ordinary people can understand.
- Why is our local water company telling customers they have contamination in their wells? Erin Brockovich is scaring the public, they are ill informed and trying to force PG&E to redo their wells.
- I am not qualified to determine what is or is not satisfactory testing of the water-I must rely on persons involved in water quality to make decisions.
- [I] have not been informed on the danger that is happening in the Topock area.
- Keep me informed about all aspects.
- Why don't you people quit sending us all this “technical” language that the majority of us do not understand and tell us if our wells are contaminated or what is going on with them. I went to the last monthly meeting at the community center-what a joke that was. If our wells are contaminated start furnishing this town with bottled water.

Cleanup Process

- I want to know why the public hasn't been advised about a secondary cleanup. It seems Chromium 6 may be the least of our concerns if the second site has the contaminants I think it does.
- Why are you stealing good water from Topock‘s AZ warm springs aquifer to pump into your bad water when you could go a few miles up or down and pump your own water? Because the California Department of Environmental office and you have some selfish ideas. I don't know how AZ allows it. I would not! Until you

change that I will never support your efforts. How about bringing in an unbiased agency like US DEQ or even better the U.S. Department of Justice? Then I would believe your reports!

- They didn't know what they were doing when they put the chromium 6 in the water now where are they putting the bacteria? Now it's in my water and they better damn get it out and what are they doing with this six thousand pounds of dirt where are they putting the dirt in a hole somewhere?

Property Values

- We have a Commercial building in Golden Shores and hope it does not de-value our property value.
- If there is no problem with Chromium 6 levels, will you publicize that periodically so that our property values may recover?
- We own a home in Golden Shores, and we are concerned with contamination of the water supply and/or [the] negative impact on property values.

Miscellaneous

- Will it become another Hinkley? Is it as bad as Hinkley, or could it become worse?
- Will locals be hired for help in construction? Will any other jobs become available for local residents?
- How much money are we going to squeeze out of PG&E? 2. Will I have a chance to meet Erin Brockovich? 3. Can Hexavalent chromium close Lake Havasu?
- The biggest issue I see affecting the community is a sense of panic caused by ignorance. Several individuals in the community appear to be actively spreading fear in an attempt to further their own personal agendas.
- Am I being put at risk by living here and using the water. What is it doing to our food, people and all the animals that depend on this water just to stay alive, eat, drink, be the young, old, all of us?
- For DTSC to state that Chromium 6 [is not] in Golden Shores is reckless and presumptuous. Our problem may or may not be the result of activities at PG&E, but it is a problem and not of natural origin. DTSC forgot to notify the public of a second onsite problem. Although [the public found out] through another agency, [which] discredits [DTSC] and compromises [DTSC's] integrity [and] findings.

Question 5

Question 5 was a multiple-part question asking if the respondents were aware of community involvement activities at the site. Approximately sixty-eight percent were aware of the activities, but most had not been involved in the site (81.8%), nor were they aware of any active community leaders (75.7%). Of the respondents that knew of community leaders, both the Golden Shores Water Co. and Erin Brockovich group were the most recognized. Question 5bc asked if the respondents felt like their concerns are being addressed (multiple choice question). Approximately forty-three percent did not answer this question, although twenty-three percent stated a belief that their concerns are "adequately raised" and approximately twenty-two percent believe there concerns are "not raised at all".

Question 5	Responses	Number of Responses	Percentage
Are you aware of DTSC's ongoing community involvement activities regarding the environmental cleanup at the Site?	Yes	50	67.6%
	No	21	28.4%
	No Answer	3	4.1%

Question 5a	Responses	Number of Responses	Percentage
Have you been actively involved with the Site in any way?	Yes	6	8.1%
	No	60	81.1%
	No Answer	8	10.8%
Question 5b	**Responses**	**Number of Responses**	**Percentage**
Are you aware of any individuals or groups who have emerged as leaders among the interested community regarding this Site?	Yes	15	20.3%
	No	56	75.7%
	No Answer	3	4.1%
Question 5ba	**Responses**	**Number of Responses (Total number represents 'yes' in Question 5b)**	**Percentage**
If yes, who?	Golden Shores Water Company	3	20%
	Erin Brockovich group	3	20%
	Chemehuevi and Fort Mohave Indian Tribe	2	13.3%
	Civic Center leaders	2	13.3%
	Cee Edrick Hunt	2	13.3%
	Golden Shores Community group	1	6.6%
	Angela Buckler	1	6.6%
	KTOX 1340	1	6.6%
	No Comment	0	0%
Question 5bb	**Responses**	**Number of Responses**	**Percentage**
Do you feel they adequately represent your perspective?	Yes	13	17.6%
	No	15	20.3%
	No Answer	46	62.2%
Question 5bc	**Responses**	**Number of Responses**	**Percentage**
Do you feel that your concerns are:	Adequately raised	17	23.0%
	Raised but not addressed	9	12.2%
	Not raised at all	16	21.6%
	No Answer	32	43.2%

Question 6

Question 6 was a two-part question, where the respondents were asked if they had been informed about the site. Approximately forty-seven percent responded yes, while forty-three percent responded no. The second part was a "fill in the blank" question, where the respondent could comment on how they could be better informed on this site.

The table below represents categories of their responses, not the actual written responses. Some of the respondents had multiple comments that were separated into the categories found below, while other respondents had no comment on this question. Of the 74 respondents, fifty-percent (37 respondents)

commented on this question. The most frequent response was to request more information on the aquifer, well tests, and drinking water and river contamination.

Question 6	Responses	Number of Responses	Percentage
Do you feel you have been kept adequately informed about the Site?	Yes	35	47.3%
	No	32	43.2%
	No Answer	7	9.5%
Question 6b	**Categories of Responses**		**Number of Responses**
If not, please explain and let us know how we can do better.	Detail aquifer issues, well test results, drinking water and river contamination		13
	Notify people of problem in a more precise manner (news, media, monthly updates in community newsletter, physical appearance in community)		9
	Proactively display the problem so the community can trust information		6
	More meetings/fact sheets		4
	Explain future remedy		2
	Explain problems in layman terms		1
	Try to minimize misinformation		1
	Health concerns		1

Below are respondents' written responses to Question 6B: "Do you feel you have been kept adequately informed about the Site? If not, please explain and let us know how we can do better."

- Explain problems in terms ordinary people can understand.
- Monthly updates in our community newsletter would be good as well as physical appearance as often as possible.
- Prior to this letter, didn't know there was a problem.
- River tribes may be kept informed, but the people need to be informed in some way.
- The water company needs to be nicer to people when they have questions about this. They don't know the difference between chromium 6 and natural chromium.
- After more frequent dissemination of information. To my knowledge, we were not informed of private wells in area testing high, nor the GS Water Company wells sending Chromium 6 into our homes-until the Brockovich group called a meeting. Only after that did you call a meeting. Leaves an impression that you are not proactively addressing the problem.
- Tell us what you feel may be the end result of this unnatural contamination of both the river water and the adjacent communities drinking water systems.
- Did not know of any investigation going on.
- Presentation, documentation, test evaluations for Golden Shores, health concerns, future remedy and when?
- Have a meeting in Golden Shores.

- Somewhat don't think the whole truth has come out.
- How can we believe DTSC when they are paid off by PG&E? It's political and involves money. PG&E pays CA legislation and individuals for campaign finance and support, and throws off in turn support PG&E. That's why nothing ever gets done between 2007 and 2011. Can we believe that honesty prevails now? Why? I'm the same as Congressional Lobbying-that's one reason for the Gridlocking of Progress-Pay as you GO!
- What are you doing about the contamination in my drinking water filter.
- In frequent reports you should contact the radio 760-326-4500 or web site.
- Our local newspaper has written only 1 or 2 articles on this.
- Long overdue, action should be taken-not just studies. Filters should be put on all our wells.
- Not enough information.
- Just tell the truth don't cut cost because it cost too much. There are too many people and animals that both eat the food and take in the water through their skin.
- The meeting in December put on by various State and Federal agencies provided technical information in a matter of fact way. It did not address the fact that there appears to be claimed conflicting well test results from other sources.
- The information included with the survey ("FACT SHEET-January 2012") did not provide specifics regarding levels of contaminants in the wells near the site.
- Your fact sheet gets sent out June, July, Aug, Sept. the months that no one can go outside or there snow birds. I know that Cr6 is on the AZ side.
- They don't seem to want to tell anyone about what is really going on.
- Not in the news.
- Conflicting information.
- From the very beginning they should have told everybody.
- I brought up some information on it but am puzzled by the lack of detail on whether it is in the ground water which is used by the Golden Shores community.

Question 7

Question 7 asked if the respondents had received fact sheets from the DTSC about the Topock Site. Seventy-three percent responded that they had received fact sheets; the highest percentage (39.7%) said they had received 1 to 2 factsheets. The survey also had a rating system; the table presents the averages of how they rated the fact sheet. With "1" being strongly disagree with the question, and "5" strongly agree, most of the averages fell in the middle (3.6 to 3.7). Most of the respondents that answered yes to receiving the fact sheet did rate their experience.

Question 7	Responses	Number of Responses	Percentage
Have you received fact sheets from DTSC about the Site?	Yes	54	73.0%
	No	16	21.6%
	No Answer	4	5.4%
Question 7a	**Responses**	**Number of Responses**	**Percentage**
If yes, how many?	1-2	29	39.7%
	3-4	14	19.2%

Question 7		Responses	Number of Responses	Percentage
		5 or more	7	9.6%
		No Answer	21	31.5%
If yes, please rate your experience: 1=Strongly disagree 5=Strongly Agree				
			Average	**Number of Responses**
Question 7b_1	The fact sheet was easy to understand		3.6	51
Question 7b_2	The fact sheet was well organized		3.7	50
Question 7b_3	The fact sheet provided important information		3.6	51
Question 7b_4	Technical terms and procedure were clearly explained in the fact sheet		3.6	50
Question 7b_5	Community outreach activities and opportunities were clearly provided in the fact sheet		3.6	50

Question 8

Question 8 referred to the type of internet access the respondents have. Approximately sixty-six percent responded that they had internet access, and most of these respondents have DSL.

Question 8	Responses	Number of Responses	Percentage
Do you have internet access?	Yes	49	66.2%
	No	22	29.7%
	No Answer	3	4.1%
Question 8a	**Responses**	**Number of Responses**	**Percentage**
If yes, what type?	DSL	35	71.4%
	Cable	2	4.1%
	Smartphone	4	8.2%
	Dial-up	3	6.1%
	No Answer	5	10.2%

Question 9

Question 9 asked if the respondents had been to the PG&E Topock website. Approximately seventy-two percent responded that they had not seen the website. The survey also had a rating system for the website, included as a multi-part Question 9b. Of the 17 people that responded that they have seen the website, between 13 and 15 filled out various questions on the rate chart. One respondent provided a rating of “strongly disagree” and five provided a rating of “strongly agree,” leading to an average for all parts of between 2.9 and 4.1.

Question 9	Responses	Number of Responses	Percentage
Have you been to the PG&E Topock Compressor Station Project website?	Yes	17	23.0%
	No	53	71.6%
	No Answer	4	5.4%

If yes, please rate your experience: 1=Strongly disagree 5=Strongly Agree			
		Average	**Number of Responses**
Question 9b_1	The website is easy to navigate and it is easy to find information on the website	2.9	16
Question 9b_2	The website provides important information and project updates	3.3	15
Question 9b_3	The website is easy to access	3.5	15
Question 9b_4	It is easy to download project documents on the website	3.1	15
Question 9b_5	I would visit the website again to get Site information	4.1	14

Question 10

Question 10 summarized the information repository information as a several part question. Approximately seventy-four percent of respondents indicated that they had not visited the repository at their local site. Of the 16 respondents that had visited the repository, the Golden Shores and Topock libraries were the most used. Most of the respondents that had visited the repository had said it was helpful (62.5%); for those who said it was not helpful, documentation of some of their responses are listed in Question 10c. This table presents their responses, separated into categories.

Question 10	Responses	Number of Responses	Percentage
Have you visited or do you know about the local information repositories where project documents are available for your review on CDs and in hardcopy?	Yes	16	21.6%
	No	55	74.3%
	No Answer	3	4.1%
Question 10a	**Responses**	**Number of Responses**	**Percentage**
If yes, which information repository location?	Topock Library	4	25%
	Golden Shores Library	5	31.2%
	Chemehuevi Environmental Department	2	12.5%
	Lake Havasu Library	1	6.2%
	Needles Branch Library	1	6.2%
	No Answer	3	18.7%

Question 10b	Responses	Number of Responses	Percentage
Was the information provided helpful? (only included answers that people answered 'Yes' in Q10)	Yes	10	62.5%
	No	4	25.0%
	No Answer	2	12.5%

Question 10c	Categories of Responses	Number of Responses
If no, why not?	Have not been informed	3
	We cannot trust your opinions	1
	Just received this information	1
	Biased	1
	Not good with computers	1

Question 11

Question 11 summarized the other ways the respondents have gathered information about the site. Most of the respondent's primary source of information is either newspapers or friends/relatives. The "Other" category listed meetings, news media such as Topock Topics, and mailings.

Question 11	Responses	Number of Responses
What other ways have you received information about the Topock Site?	Friends/ Relatives	34
	Newspapers	33
	TV	7
	Radio	6
	Employees /Former employees of the Site	6
	Elected Officials	5
	Other:	13 (total)
	Community Meeting	*6*
	Topock Topics	*3*
	Mail	*2*
	Information Repository	*1*
	Investigation on my own-internet search-well test logs	*1*

Question 12

Question 12 summarized the responses of media coverage. Fifty percent felt that the media does not portray an accurate picture of what is happening at the Topock Site.

Question 12a is a summary of responses as to why they did not feel like the media is presenting the situation well. This table presents their responses, separated into categories. The most frequent response was that respondents had not seen any media coverage related to the site.

Question 12	Responses	Number of Responses	Percentage
Do you feel that the media coverage has presented an accurate picture of the situation?	Yes	20	27.0%
	No	37	50.0%
	No Answer	17	23.0%
Question 12a	**Categories of Responses**	**Number of Responses**	
Why or why not?	Haven't seen any	10	
	Need more coverage	4	
	No way of knowing facts are accurate	4	
	Sensationalism	2	
	Undecided	1	
	Erin Brockovich gets the most coverage	1	

Question 13

Question 13 asked from which TV, radio stations, websites, or newspapers respondents got their news. The majority of respondents said Mohave Valley Daily News.

Question 13	Responses	Number of Responses
From what TV, radio stations, websites, or newspapers do you get the news? Be specific	Mohave Valley Daily News	22
	Topock Topics	7
	CBS, NBC, ABC	5
	Fox News	5
	Phoenix	5
	KFLG Radio	1
	Rush Station 1440 AM	1
	Channel 5-12-15	1
	Channel 3	1
	KTOX 1340 radio	3
	KLUK	1
	TV Channel 10	1
	Lake Havasu newspaper	1
	KAET	1
	KRCY Radio	1
	Kingman Standard Newspaper	1
	Coast to Coast	1
	1490 AM	1
	Today's news Herald, LHC, AZ	1
	Golden Shores Topic	1

Question 14

Question 14 asked if respondents had attended any community meetings or open houses for the project. Approximately fifty-four percent responded that they had not attended any community meetings. Of the 28 respondents that answered that they had been to the community meetings, the majority (64.3%) responded that they had found the meeting useful, and 22 had found the meeting times and locations convenient. Question 14c asked why they did not attend. This table presents their responses, separated into categories.

Question 14	Responses	Number of Responses	Percentage
Have you attended any community meetings or open houses about the project?	Yes	28	37.8%
	No	40	54.1%
	No Answer	6	8.1%
Question 14a	**Responses**	**Number of Responses (Total number represents 'yes' in Question 14)**	**Percentage**
If yes, how many?	1 meeting	10	35.7%
	2 meetings	7	25.0%
	4-5 meetings	1	3.5%
	No Response	10	35.7%
Question 14a	**Categories of Responses**	**Number of Responses**	**Percentage**
In which city or community?	Topock	10	35.7%
	Golden Shores	10	35.7%
	Chemehuevi	1	3.5%
	Undecided	1	3.5%
	Parker, AZ	1	3.5%
	CRIT Casino Resort	1	3.5%
	Stakeholders	1	3.5%
	No Answer	3	10.7%
Question 14b	**Responses**	**Number of Responses (Total number represents 'yes' in Question 14)**	**Percentage**
If yes, did you find them useful? Why or why not?	Yes	18	64.3%
	No	2	7.1%
	No Answer	8	28.6%

Question 14c	Categories of Responses	Number of Responses
If no, why not?	Not around	6
	No knowledge of the meetings	7
	Inconclusive/contradictory statements	5
	Other	8
Question 14d	Categories of Responses	Number of Responses
Were the meetings conveniently located and scheduled for you? If no, please recommend other specific locations and times.	Yes	22
	No	1
	Location good, day times were not good; and/or meeting needs to go longer	2
	One specific place was for Golden Shores Community Center	1

Questions 15 and 16

Questions 15 and 16 asked which language was spoken in the community, and whether communications should be presented in another language. All respondents said that English was the spoken language, with 8 out of the 50 including Spanish and 2 including Native American (Chemehuevi and Native American) as additional spoken languages. Of those that included a language other than English, forty percent said future communications should be translated.

Question 15	Responses	Number of Responses	Percentage
What languages are spoken in your community?	English	44	59.5%
	English, Spanish	8	10.8%
	English, Chemehuevi	1	1.4%
	English, Spanish, Native American	1	1.4%
	No Answer	20	27.0%
Question 16	**Responses**	**Number of Responses (Total number represents other responses than English in Question 15)**	**Percentage**
If you named a language besides English, do you feel that future communication to community members regarding this Site should be written in that language?	Yes	4	40%
	No	5	50%
	No Answer	1	10%

Questions 17-19

Questions 17 through 19 asked for the contact information of the respondents of this survey. To protect the privacy of respondents, all personal contact information has been removed. Of the 74 respondents, 46 added their contact information. Of these 46 respondents, 43 would like to be added to the Topock mailing list. Also, 39 of the 46 respondents did check that they would be willing to be contacted about this survey, if needed. Respondents were located in the following cities: Bullhead City, Golden Shores, Havasu Lake, Kingman, Lake Havasu City, Needles, and Topock.

Appendix C
2012 Interview Questionnaires

APPENDIX C

2012 Interview Questionnaires

Stakeholder Interview Questions

1. Prior to receiving the recent DTSC fact sheet and community survey, were you aware of the cleanup work taking place related to the Pacific Gas and Electric Topock facility?

2. Where have you received most of your information about the PG&E Topock Compressor Station Project?

3. Do you feel the information that you received was understandable?

4. What is your current level of concern about this project, if any?

   _____ No Concern _____ Low _____ Moderate _____ High Concern

5. Are there any aspects of the Topock project or Site cleanup that concern you? If so, please explain.

6. Do you find the following subgroups helpful in your understanding and/or coordination of the project? Rate 1-5 (1 more helpful to 5 less helpful) or Not Applicable (N/A)

   _____ Consultative Work Group
   _____ Technical Workgroup
   _____ Project Briefings/Updates
   _____ Clearinghouse Task Force
   _____ Topock Leadership Partnership
   _____ Other

7. Are there particular activities/meetings that are helpful? If so, which one's?

8. On a scale of 1 to 10 (with 10 being great and 1 being bad) how would you rate communications and outreach efforts related to this project?

9. What is the best way to provide you with information about the PG&E Topock Compressor Station Project? What would be your order of preference?

   ____ Fact Sheets
   ____ Public Notices
   ____ DTSC Topock Website
   ____ Community Meetings
   _____ E-mail
   _____ Postcard
   _____ Radio ad
   _____ Work Notices
   _____ Publications
   _____ Others?

10. Are there any other comments, suggestions or concerns you would like to add?

Community Interview Questions

1. Prior to receiving the recent DTSC fact sheet and community survey, were you aware of the cleanup work taking place related to the Pacific Gas and Electric Topock facility?

2. Where have you received most of your information about the PG&E Topock Compressor Station Project?

3. Do you feel the information that you received was understandable?

4. What is your current level of concern about this project, if any?

   _____ No Concern _____ Low _____ Moderate _____ High Concern

5. Are there any aspects of the Topock project or Site cleanup that concern you? If so, please explain.

6. Do you understand the role that DTSC and other regulatory agencies play in the cleanup?

7. What officials, groups, organizations or individuals should we contact regarding this project?

8. Do you believe a public meeting in the future would be

   _____ Necessary _____ Beneficial _____ Helpful _____ Not Helpful

9. What do you suggest is the best location(s) and time for community meetings?

10. On a scale of 1 to 10 (with 10 being great and 1 being bad) how would you rate communications and outreach efforts related to this project?

11. What is the best way to provide you with information about the PG&E Topock Compressor Station Project? What would be your order of preference?

____ Fact Sheets	_____ E-mail	_____ Work Notices
____ Public Notices	_____ Postcard	_____ Publications
____ DTSC Topock Website	_____ Radio ad	_____ Others?
____ Community Meetings		

12. Are there any other comments, suggestions or concerns you would like to add?

Tribal Interview Questions

1. Prior to receiving the recent DTSC fact sheet and community survey, were you aware of the cleanup work taking place related to the Pacific Gas and Electric Topock facility?

2. Where have you received most of your information about the PG&E Topock Compressor Station Project?

3. What is your current level of concern about this project, if any?

   _____ No Concern _____ Low _____ Moderate _____ High Concern

4. Do you feel the information that you received was understandable?

5. What is the best way to communicate with you and your tribe?

6. How do we best communicate with the elders of your tribe?

7. Are there any aspects of the Topock project or site cleanup that concern you? If so, please explain.

8. Are the roles and responsibilities of DTSC and other regulatory agencies clearly defined? Do you understand the difference?

9. What Tribal officials, groups, organizations or individuals should we contact regarding this project?

10. Do you believe a community meeting in the future would be Necessary, helpful, not helpful?

11. What do you suggest is the best location and time for community meetings to DTSC inside the reservation? Outside the reservation?

12. On a scale of 1 to 10, 10 being the greatest and 1 low, how would you rate communications and outreach efforts related to this project?

13. What is the best way to provide you with information about the PG&E Topock Compressor Station Project? What would be your order of preference?

____ Fact Sheets	_____ E-mail	_____ Work Notices
____ Public Notices	_____ Postcard	_____ Publications
____ DTSC Topock Website	_____ Radio ad	_____ Others?
____ Community Meetings		

14. Are there any other comments, suggestions or concerns you would like to add?

Appendix D
Information Repositories and Suggested Meeting Locations

APPENDIX D

Information Repositories and Suggested Meeting Locations

Information Repositories

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson (714) 484-5337
Monday - Friday: 9am - noon, 1pm - 4pm
Please call for an appointment.

Needles Branch Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Eva Webster (760) 326-9255
Monday - Wednesday: 11am - 7pm
Thursday: 10am - 6pm,
Friday: Closed
Saturday: 9am - 5pm

Golden Shores/Topock Station Library
13136 Golden Shores Parkway
Topock, AZ 86436
Contact: Kim Stoddard (928) 768-2235
Monday: Closed
Tuesday, Thursday, Saturday: 9am - 1pm
Wednesday: 2pm - 5pm

Chemehuevi Indian Reservation
Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Tom Pradetto (760) 858-1140
Monday - Friday: 8am - 4pm

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Audrey LaCommare (928) 453-0718
Monday and Wednesday: 9am - 6pm
Tuesday and Thursday: 9am - 8pm
Friday and Saturday: 9am - 5pm

Colorado River Indian Tribes Library
2nd Avenue and Mohave Road
Parker, AZ 85344
Contact: Elvira Bailey-Holgate (928) 669-1332
Monday - Friday: 8am - noon, 1pm - 5pm

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jeannie Smith (928) 669-2622
Monday - Thursday: 9am - 7pm
Friday: Closed

Meeting Locations

For open houses and public meetings, suitable locations will be determined based on public input. The following are meeting sites recommended by residents and stakeholders during interviews and project meetings:

Needles, California
Needles Council Chamber
1111 Bailey Avenue
Needles, CA 92363
(760) 326-2113
Meeting Capacity: 80 people

Needles High School
1600 Washington Avenue
Needles, CA 92363
(760) 326-2191
Meeting Capacity: Approximately 1500 people

Palo Verde College-Needles Center
725 W. Broadway
Needles, CA 92363
(760) 326-5033 Ext. 315
Meeting Capacity: Approximately 35 people

Topock/Golden Shores Area
Topock Civic Association Building
13136 Golden Shores Parkway
Topock, AZ 86436
(928) 768-2121
Meeting Capacity: Approximately 200 people

Topock Elementary/Middle School
5083 Tule Drive
Topock, AZ 86436
(928) 768-3344
Meeting Capacity: 200 people

Lake Havasu City, Arizona
Lake Havasu School District
2200 Havasupai Boulevard
Lake Havasu City, AZ
(928) 855-7861
Meeting Capacity: 80 people

Lake Havasu Parks and Recreation Aquatic Center
86403 100 Park Avenue
Lake Havasu City, AZ 86403
(928) 453-8686
Meeting Capacity: Over 150 people

Appendix E
Fact Sheets

Department of Toxic Substances Control

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances through the restoration of contaminated resources, enforcement, regulation and pollution prevention.

State of California

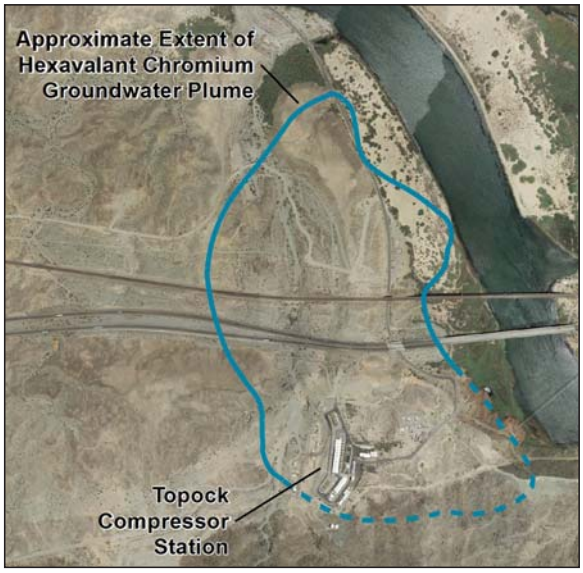
California Environmental Protection Agency

FACT SHEET – January 2012

PG&E Topock Environmental Investigation Update

Introduction

The California **Department of Toxic Substances Control (DTSC)** is the lead state agency overseeing the soil and **groundwater** investigation and cleanup (also known as **remediation**) at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) and adjacent land, collectively known as the Topock Site (Site) in San Bernardino County, California.



Map of Topock project site and approximate affected groundwater plume boundary

Topock site location map showing the compressor station and surrounding communities

Site Background and History

The Station is located in eastern San Bernardino County, California. It is located approximately 12 miles southeast of Needles, California, south of Interstate 40.

In 1951, the Station began compressing natural gas for transportation through pipelines to PG&E's service area in central and northern California. As natural gas is compressed, its temperature increases and the compressed gas must be cooled. From 1951 to 1985, PG&E added chromium to the water used in the cooling towers and other equipment to prevent corrosion of the cooling tower equipment. During parts of those years, cooling tower wastewater containing **hexavalent chromium** was discharged into a natural wash adjacent to the Station. Over time, the hexavalent chromium seeped into the groundwater and created a plume that extends from below the Station towards the Colorado River. Based on results from periodic testing of the river water, the hexavalent chromium plume is not impacting the quality of the river water.

In 1996, PG&E signed an agreement with DTSC to conduct investigations to identify and clean up past environmental contamination. In 2005, PG&E signed a similar agreement with the United States **Department of the Interior (DOI)** as the federal

Words in **bold** *appear in the glossary on Page 4 of the fact sheet.*

lead agency to protect lands owned by the federal government. Environmental investigations since this time have shown groundwater at the site contains elevated levels of chemicals, including **total chromium**, hexavalent chromium, **molybdenum**, **selenium**, and **nitrates**.

Groundwater Remedy Adopted

DTSC selected a final groundwater remedy approach for the site and certified the Topock **Environmental Impact Report (EIR)** on January 31, 2011. The selected remedy involves **in-situ treatment** with freshwater flushing. The concept of the remedy is to install injection and extraction wells along a road approximately 600 feet west of the Colorado River. This water stimulates the growth of harmless, but helpful, naturally occurring bacteria which then create geochemical conditions that remove hexavalent chromium from groundwater by converting it to non-soluble **trivalent chromium**. Extraction wells near the river act as a barrier to prevent contamination from reaching the river. Additional injection wells located around the plume inject fresh water and groundwater, removed from locations near the river, to push the plume toward the treatment zone. DTSC identified mitigation measures in the EIR to minimize the potential environmental impacts associated with the remedy during its construction, operation and maintenance. PG&E will implement these measures as required by the EIR as part of the remedy.

Groundwater Remedy Implementation Timeline

Groundwater Remedy Design

Efforts are currently underway on the design of the approved groundwater remedy. PG&E anticipates the design to be completed by November 2012. After DTSC and DOI approve the design, construction and start–up of the remedy will occur. Operation and maintenance of the groundwater remedy will continue until the cleanup goals are achieved. PG&E estimates cleanup will be complete in approximately 30 years.

Focused Groundwater Evaluation

Groundwater investigation at the Site revealed contamination under the Station and in an adjacent area called East Ravine. Additional data is being collected in these areas to assist in the design of the remedy. Throughout 2011, PG&E installed 11 new wells in these areas and collected monthly groundwater samples during the ongoing groundwater investigation. This additional information will be used to refine the **groundwater conceptual model**, or the understanding of groundwater conditions, in the vicinity of the East Ravine/ Station and will be incorporated in the Site-wide **Groundwater Monitoring Program**.

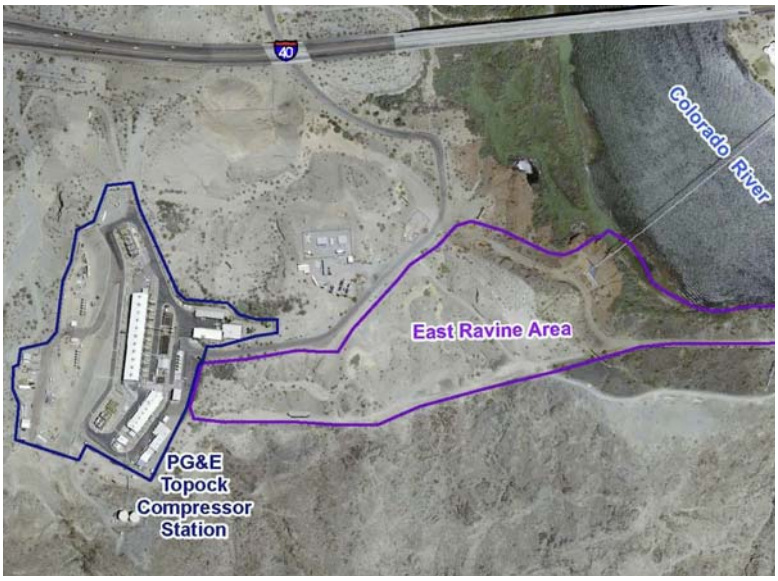
Well drilling in the East Ravine Area

Soil Investigation is Being Planned

PG&E is working with DTSC and DOI in planning and preparing a soil investigations **work plan**. The soil work plan will guide the field work in gathering data to assess any potential adverse impacts to the land that may have resulted from PG&E's historical operations. The work plan will investigate:

- Nine areas outside the Station which may have had historical activities
- Twenty five areas inside the Station
- Perimeter adjacent to the Station
- Onsite storm drains and their offsite outfalls

It is anticipated that the soil work plan will be approved by Summer 2012. After the completion



Site location map showing the PG&E Topock Compressor Station and East Ravine Area

of field work, PG&E will use the collected data to evaluate and recommend a cleanup action, if necessary. All the soil investigation data will be presented in the soil work plan in Summer 2012.

Community Outreach

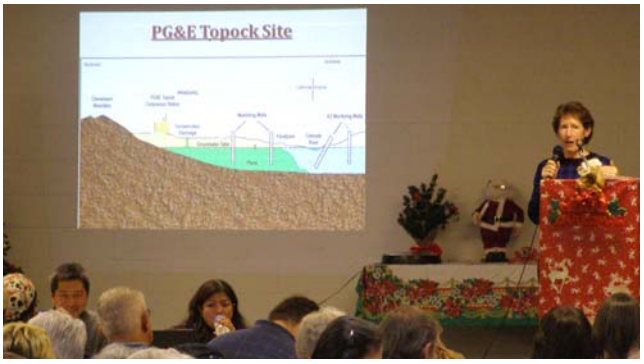
Community outreach continues to remain an integral and interactive part of the project. DTSC actively engages with stakeholders to obtain input and share information with tribes, communities, individuals and groups. In December 2011, DTSC convened a meeting to provide a project update for the Golden Shores Community and listen to community concerns. DTSC also continues to provide periodic updates and convene meetings with stakeholders including agencies, tribal leadership and representatives. As part of our outreach, we are working on updates to our community outreach strategy to be outlined in a Community Outreach Plan.

This Community Outreach Plan will be a revision of the June 9, 1998 Public Participation Plan, which was updated in February 2007 and appended in July 2009. The current plan can be found on the project website at www.dtsc-topock.com or at any of the information repositories listed on page 5 of this fact sheet. This plan uses a variety of communication tools to share information and to gain input from the community including surveys, fact sheets, meetings, written and electronic documents. We anticipate completing the Community Outreach Plan by September 2012.

The purpose of the Community Outreach Plan is to keep the community informed in a timely fashion, to formally document community perspectives regarding the environmental investigation and remediation at the Station, and to identify specific community outreach activities to be conducted to ensure community involvement in the agency decision-making process.

Part of the Community Outreach process is conducting a community survey, which is included with this fact sheet. There are two options for completing the survey: you can log on to www.dtsc-topock.com/survey to complete the survey online or you can fill out and return the enclosed hard copy by mail.

By completing this survey, you will share with us your knowledge of the investigation and remediation activities at the Station, your perspectives, your level of participation, and how best to keep you updated about Site activities. Your response within 30 days will help us to improve our process and interactions with you and the community. If you have any questions regarding the completion of this survey please contact Mona Bontty. Please see the “DTSC Welcomes Your Feedback” section of this fact sheet on page 5.



Karen Baker, Chief of DTSC’s Office of Geology, presents a project update at the Golden Shores Community Meeting held December 12, 2011.

Glossary of Terms

Department of the Interior (DOI): The principal conservation agency of the United States, responsible for stewardship of land, water, recreation, Native American lands and needs, and energy needs. The department is composed of member bureaus such as the Bureaus of Indian Affairs, Land Management, and Reclamation, among others.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency in charge of the regulation of hazardous waste from generation to final disposal, DTSC oversees the investigation and cleanup of hazardous waste sites.

Environmental Impact Report (EIR): A detailed review of a proposed project, its potential adverse impacts on the environment, measures that may avoid or reduce those impacts, and alternatives to the proposed project.

Final Design: The final design for the groundwater remedy.

Groundwater: Water beneath the Earth's surface that flows through soil and rock openings (aquifers).

Groundwater Conceptual Model: A description of how groundwater flows throughout the site and surrounding areas that has been developed using a combination of regional and site-specific data, as well as expert judgment based on site conditions.

Groundwater Monitoring Program: A network of groundwater wells installed to periodically test for different chemicals to assess the long-term site conditions.

Hexavalent Chromium: A form of chromium. Chromium is a metal naturally found in rocks, soil and the tissue of plants and animals. Hexavalent chromium is used in industrial products and processes and is a known carcinogen when inhaled (i.e., through breathing).

In-situ Treatment: Treatment of the contaminated groundwater in place (below the ground surface).

Molybdenum: A metallic element widely distributed in the Earth's crust that is used in industrial products and processes.

Nitrate: Nitrates and nitrites are nitrogen-oxygen chemical compounds which combine with various organic and inorganic compounds.

Plume: A body of contaminated groundwater. The movement of a groundwater plume can be influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

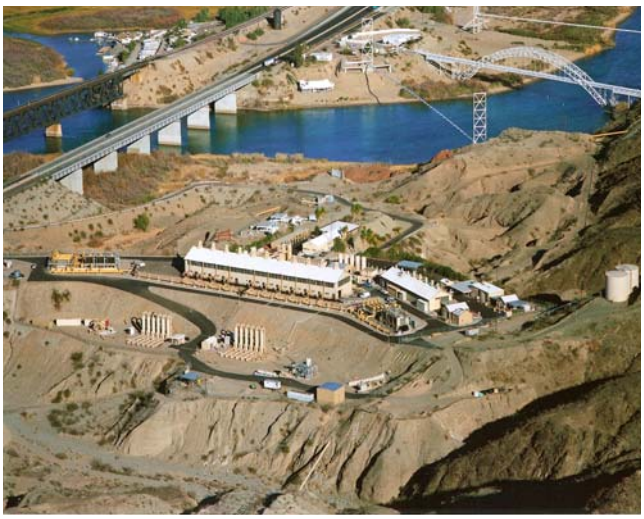
Remediation: Actions taken to remove or contain a toxic spill or a release of hazardous substances at a site.

Selenium: A non-metallic element abundant in the Earth's crust that is used in industrial products and processes.

Total Chromium: The additive of concentrations from all forms of chromium, mainly comprising hexavalent and trivalent forms. The California drinking water standard for total chromium is 50 micrograms per liter (or parts per billion), while the Federal standard is 100 micrograms per liter.

Trivalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Trivalent chromium is considered an essential nutrient and is relatively harmless. It does not dissolve in groundwater and tends to bind to soil; thus it does not travel readily in the environment.

Work Plan: A document that presents key elements of the approach for a proposed action. These may include health and safety, waste management, data collection, construction activities and methods, the schedule, approvals, a reporting plan and reporting schedule.



Topock Compressor Station and Surrounding Area

Where to find Project Information

Project reports, fact sheets, and other project documents can be found at the Information Repositories listed below:

On the Internet
www.dtsc-topock.com
www.dtsc.ca.gov

Needles Branch Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kristin Mouton, 760.326.9255
11am – 7pm, Monday through Wednesday
10am – 6pm, Thursday
Closed, Friday
9am – 5pm, Saturday

Golden Shores/Topock Station Library
13136 Golden Shores Parkway
Topock, AZ 86436
Contact: Kim Stoddard, 928.768.2235
9am – 1pm, Tuesday, Thursday, Saturday
2pm – 5pm, Wednesday

Chemehuevi Indian Reservation Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Tom Pradetto, 760.858.1140
8am – 4pm, Monday – Friday

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Cindy Amador, 928.453.0718
9am – 6pm, Monday and Wednesday
9am – 8pm, Tuesday and Thursday
9am – 5pm, Friday and Saturday

Colorado River Indian Tribes Library
2nd Avenue and Mohave Road
Parker, AZ 85344
Contact: Elvira Bailey-Holgate, 928.669.1332
8am – noon, 1pm – 5pm, Monday – Friday

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jeannie Smith, 928.669.2622
9am – 7pm, Monday – Thursday

California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson, 714.484.5337
9 am–noon, 1 pm–4 pm, Monday–Friday
Please call for an appointment.

Alternate Format: *All documents made available to the public by DTSC can be made available in an alternative format (Braille, large format print, etc.) or in another language as appropriate, in accordance with state and federal law. Please contact Mona Bontty for assistance.*

DTSC Welcomes Your Feedback

If you have questions, comments, or would like to be added to the mailing list for the Topock Site, please contact the DTSC representatives listed below.

Aaron Yue
DTSC Project Manager
5796 Corporate Avenue
Cypress, CA 90630
714.484.5439
AYue@dtsc.ca.gov

Mona Bontty
DTSC Community Outreach Supervisor
5796 Corporate Avenue
Cypress, CA 90630
714.816.1978 or Toll Free: 866.495.5651 (press 5 and 1)
MBontty@dtsc.ca.gov

For Media Inquiries Contact
Jeanne Garcia, DTSC Public Information Officer
9211 Oakdale Avenue
Chatsworth, CA 91311
818.717.6573
JGarcia1@dtsc.ca.gov

Notice to Hearing-Impaired Individuals
You can obtain additional information about the Topock Compressor Station Site by using the California State Relay Service at 888.877.5378 (TDD). Ask them to contact Mona Bontty at 714.816.1978.

In This Fact Sheet

Mona Bontty
DTSC Community Outreach Supervisor
5796 Corporate Avenue,
Cypress, CA 90630-4732

Department of Toxic Substances Control

The Mission of the Department of Toxic Substances Control is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

State of California

California Environmental Protection Agency

FACT SHEET – June 2010

PG&E Topock Project Update

Public Comments Requested on Proposed Remedy and Draft Environmental Impact Report Now Available for Public Review

The State of **California Department of Toxic Substances Control (DTSC)** is the lead state agency that is overseeing the investigation and cleanup (also known as **remediation**) of the contaminated **groundwater** at and in the vicinity of the Pacific Gas & Electric (PG&E) Topock Compressor Station in San Bernardino County, California. The groundwater was contaminated by historical releases of chemicals, including total chromium, **hexavalent chromium**, **molybdenum**, **selenium**, and **nitrates**. DTSC reviewed nine clean-up options considered in the Final Groundwater **Corrective Measures Study/Feasibility Study (CMS/FS)** Report prepared by PG&E. DTSC is proposing In Situ Treatment with Freshwater Flushing as the cleanup action that best balances the ability to achieve cleanup goals consistent with the remedy selection criteria, while minimizing the potential impacts to the environment during implementation.

Topock Compressor Station

The **Statement of Basis** is a document that describes the rationale for the preferred groundwater remedy and is prepared by DTSC in accordance with the administrative process of the **Resource Conservation and Recovery Act**. The proposed **final remedy** and alternatives are evaluated in the draft **Environmental Impact Report (EIR)** prepared by DTSC under the requirements of the **California Environmental Quality Act (CEQA).** The draft EIR analyzes the expected environmental impacts of the proposed final remedy. The EIR also identifies actions (called mitigation measures) which may be taken to avoid or reduce environmental impacts. Simultaneously, the U.S. **Department of the Interior (DOI)** is also releasing a **Proposed Plan** identifying In Situ Treatment with Freshwater Flushing as DOI's preferred cleanup action among the nine options considered in accordance with the requirements of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)** process. These documents, along with related project materials and references, are available for public review and comment from June 4 to July 19, 2010.

Project Background

The Compressor Station is located 12 miles southeast of Needles, California and 1,500 feet west of the Colorado River. In 1951, the Compressor Station began compressing natural gas for transportation through pipelines to PG&E's service territory in Central and Northern California. From 1951

PUBLIC COMMENT PERIOD

June 4, 2010 - July 19, 2010

Comments may be submitted to DTSC and/or DOI during the public comment period in writing, by mail, email, fax, or in person at the public hearings. Written comments must be postmarked, emailed, or faxed no later than July 19, 2010.

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Project Manager, DTSC

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Pamela S. Innis
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P.O. Box 25007, MS D108
Denver, CO 80225-0007

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Email: Pamela_Innis@ios.doi.gov

Words in **bold** appear in the Glossary of Terms on page 3

to 1985, PG&E added chromium to the water used in the cooling towers and other equipment to control corrosion of the cooling tower equipment.

During parts of those years, cooling tower wastewater containing hexavalent chromium was discharged directly to the ground surface. Over time, the hexavalent chromium seeped into the groundwater and created a **plume**, which is a body of contaminated groundwater that extends from below the Compressor Station to beneath the Colorado River.

In 1985, PG&E discontinued the use of hexavalent chromium. In 1996, PG&E signed an agreement with DTSC to conduct environmental investigations to identify and cleanup past contamination to the environment. In 2004, PG&E signed a similar agreement with DOI.

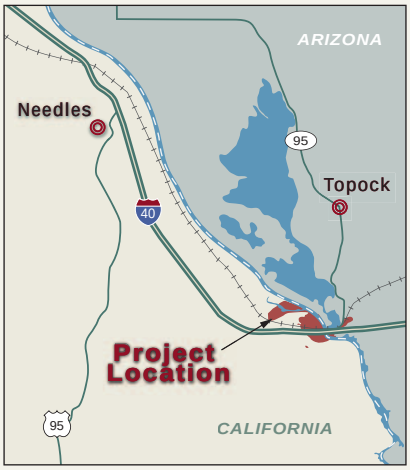
Overview of Proposed Final Remedy

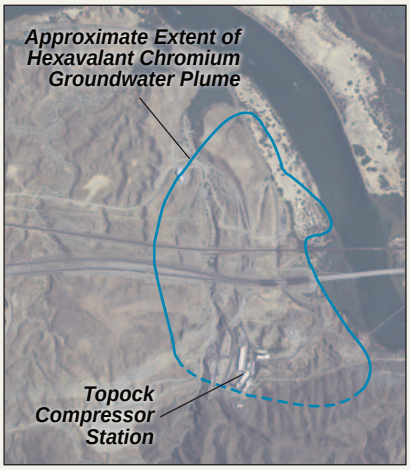
The objective of the proposed final remedy is to cleanup groundwater and ensure protection of the Colorado River. The proposed final remedy involves flushing the plume below ground with clean water through a treatment area made up of a series of **injection** and **extraction wells**, known as an **in-situ reactive zone** or treatment zone. The treatment zone would be made by adding nutrients, known as reductants, to stimulate the growth of harmless, but helpful, naturally occurring bacteria. The growth cycle of these helpful bacteria then creates chemical conditions that convert hexavalent chromium to the less harmful and less **soluble** trivalent chromium, thereby removing hexavalent chromium from groundwater. The plume would be pushed through the treatment zone by injecting clean freshwater at the western (or back end) of the plume, while the groundwater would also be pulled through the treatment zone using extraction wells located near the Colorado River. After treatment is complete, bacteria levels would return to normal (pretreatment) conditions.

The extraction wells installed near the Colorado River would prevent the plume from reaching the river. Additionally, extraction wells would be installed in the southeast edge of the plume to extract contaminated water that is not able to flow through the treatment zone. The contaminated water extracted from this area would be transported by pipelines and recirculated through the treatment zone, or injected along the western edge of the plume along with nutrient amended water to treat the contamination.

The proposed remedy would include the following:

- Use of roads, pipelines, and utility connections to power the remediation system and provide access to the wells and related remediation facilities.
- Use of water for freshwater injection from one of three sources: freshwater wells in California, freshwater wells in Arizona, or directly from the Colorado River.
- Four phases: construction of new facilities (estimated 3 years), operation and maintenance of the remediation system (estimated 29 years, but up to 110 years), long-term monitoring (estimated 10 years), and decommissioning of facilities following successful remediation (estimated 2 years).
- **Monitored natural attenuation** as a potential long-term component to address any remaining contamination that may be present in portions of the groundwater after treatment.
- The **Interim Measures** currently operating would be decommissioned once the final remedy is functioning adequately.





The proposed project consists of five main elements:

1. A treatment zone consisting of a series of wells along a portion of National Trails Highway where nutrients would be added to stimulate the growth of helpful bacteria.
2. Extraction wells near the Colorado River that would provide a barrier to protect the river. The extracted groundwater would be pumped to the western end of the plume where additional nutrients would be added.
3. Injection of clean freshwater west of the plume to accelerate groundwater flow towards the treatment zone.
4. Restrictions on groundwater use (known as **institutional controls**) to protect human health and the environment.
5. Continued monitoring of the plume.

Glossary of Terms

***California Environmental Quality Act (CEQA)*:** Enacted in 1970 to provide long-term environmental protection, this law requires that governmental decision makers and public agencies study the environmental effects of proposed activities and that significant adverse effects be avoided or reduced where feasible.

***Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*:** A federal law, commonly known as "Superfund", enacted in 1980 by Congress to provide broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

***Corrective Measure Study/Feasibility Study (CMS/FS)*:** A study conducted by the facility owner/operator, in this case PG&E, to identify and evaluate alternative cleanup options to address contamination at a project site.

***Cumulative Impact*:** The total effect on a natural resource, ecosystem, or human community due to past, present, and future activities or actions of federal, non-federal, public, and private entities. Cumulative impacts may also include the effects of natural processes and events. Accordingly, there may be different cumulative impacts on different environmental resources.

***Department of the Interior (DOI)*:** The principal conservation agency of the United States, responsible for stewardship of land, water, recreation, Native American lands and needs, and energy needs. The department is composed of member bureaus such as the Fish and Wildlife Service, Bureau of Land Management, and Bureau Reclamation, among others.

***Department of Toxic Substances Control (DTSC)*:** A department within the California Environmental Protection Agency in charge of regulating hazardous waste from generation to final disposal and overseeing the investigation and cleanup of hazardous waste sites.

***Environmental Impact Report (EIR)*:** A detailed review of a proposed project, in this case the proposed remedy, its potential adverse impacts on the environment, measures that may avoid or reduce those impacts, and alternatives to the proposed project.

***Extraction Wells*:** Wells that are used primarily to remove contaminated groundwater. Water level measurements and water samples can also be collected from extraction wells.

***Final Remedy*:** The final cleanup action proposed for managing contaminants at a project site.

***Groundwater*:** Water beneath the Earth's surface that flows through soil and rock openings (aquifers).

***Growth Inducement*:** The effects a proposed project could have on economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment.

***Hexavalent Chromium*:** Known as Cr(VI), a form of chromium, which is a metal naturally found in rocks, soil, and the tissue of plants and animals. Hexavalent chromium is also used in industrial products and processes and is a known carcinogen when inhaled (i.e., through breathing).

***Injection wells*:** Wells used to introduce a substance to groundwater or to return water to the aquifer.

***In-situ Reactive Zone* :** A series of injection and extraction wells that create a treatment zone for the contaminated groundwater.

***Institutional Controls*:** Non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

***Interim Measures*:** Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

***Molybdenum*:** A metallic element widely distributed in the Earth's crust that is used in industrial products and processes.

***Monitored Natural Attenuation*:** Monitoring of the naturally occurring degradation and dilution properties of the groundwater system.

***Nitrates*:** Nitrates and nitrites are nitrogen-oxygen chemical compounds which combine with various organic and inorganic compounds. Once taken into the body, nitrates are converted into nitrites.

***Plume*:** A body of contaminated groundwater. The movement of a plume in groundwater can be influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

***Proposed Plan*:** A CERCLA document, made available for public comment, which proposes a preferred alternative for a site cleanup.

***Remediation*:** Actions taken to remove or contain a toxic spill or a release of hazardous substances at a site.

***Resource Conservation and Recovery Act*:** A federal law that establishes a regulatory system to track and provide safe procedures for management of hazardous wastes from the time of generation to final disposal.

***Selenium*:** A non-metallic element abundant in the Earth's crust that is used in industrial products and processes.

***Soluble*:** Capable of being dissolved in some solvent (usually water).

***Statement of Basis*:** A document that describes the basis for the proposed remedy and cleanup standards.

Where to Find the Draft EIR and other Project Information

Project Reports, fact sheets, and other project documents can be found in the Information Repositories listed below:

On the Internet:
www.dtsc-topock.com
www.dtsc.ca.gov

Needles Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kristin Mouton, 760.326.9255
10 a.m.–6 p.m., Monday and Tuesday
10 a.m.–4 p.m., Wednesday
10 a.m.–5 p.m., Thursday through Saturday

Chemehuevi Indian Reservation Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Gilbert Parra, 760.858.1140
8:00 a.m.–4 p.m., Monday–Friday

Golden Shores/Topock Station Library
13136 S. Golden Shores Parkway
Topock, AZ 86436
Contact: Kim Stoddard, 928.768.2235
8 a.m.–2 p.m., Tuesday and Thursday
3 p.m.–6 p.m., Wednesday

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Audrey LaCommare, 928.453.0718
9 a.m.–6 p.m., Monday and Wednesday
9 a.m.–8 p.m., Tuesday and Thursday
9 a.m.–5 p.m., Friday and Saturday

Colorado River Indian Tribes Library
Second Avenue and Mohave Road
Parker, AZ 85344
Contact: Elvira Bailey-Holgate 928.669.1285
8 a.m.–noon, 1 p.m.–5 p.m., Monday–Friday

Parker Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jeannie Smith, 928.669.2622
9 a.m.–7 p.m., Monday–Friday
9 a.m.–2 p.m., Saturday

California Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson, 714.484.5337
9 a.m.–noon, 1 p.m.–4 p.m., Monday–Thursday
Please call for an appointment.

DTSC Welcomes Your Feedback

For more information about the draft Statement of Basis or draft EIR and other project documents, or to be added to the mailing list please contact the following DTSC representatives:

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(714) 484-5488
(866) 495-5651 (press 4 twice)
TTY/TDD/STS users dial 711
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cfu@dtsc.ca.gov

For media inquiries, please call:

Jeanne Garcia
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For more information about the Proposed Plan, please contact DOI:

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Denver, CO 80225-0007
(303) 445-2502
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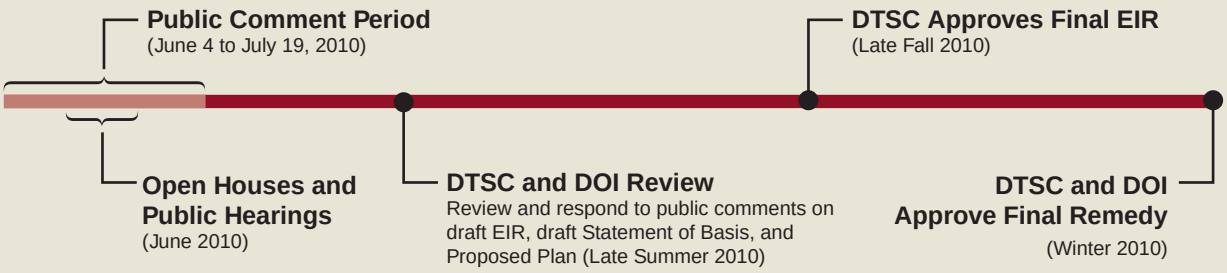
Public Review and Approval Process



Contents of the Draft Environmental Impact Report

In accordance with CEQA, a draft EIR has been prepared to evaluate the potential environmental impacts of the proposed final remedy and alternatives. The draft EIR is organized to include a summary, introduction, project description, and an analysis of environmental resource areas that could be affected by project phases, as follows:

- aesthetics, or visual quality
- air quality
- biological resources
- cultural resources
- geology & soils
- hazardous materials
- hydrology & water quality
- land use & planning
- noise
- transportation
- utilities & service systems
- water supply

The draft EIR also addresses other topics that are required by CEQA such as **growth inducement**, **cumulative impacts**, and alternatives to the proposed project.

Public Comment Opportunities

Members of the public and interested parties are encouraged to submit comments on the draft Statement of Basis, draft EIR, and Proposed Plan during the 45-day public comment period from June 4, 2010 to July 19, 2010. DTSC and DOI will host four public meetings in different locations during the public comment period. These meetings will consist of an open house followed by a public hearing. During the open house, information about the draft Statement of Basis, draft EIR, and Proposed Plan will be provided and the project documents will be available for viewing.

During the public hearing, members of the public will have the opportunity to provide verbal or written comments. All individuals and groups who are interested in this project are encouraged to attend. If you are unable to attend, written comments can be submitted using the comment card provided during the public comment period. However, the use of the comment card is not required and all forms of written comments will be accepted.

Next Steps

Following the close of the public comment period on July 19, 2010, DTSC and DOI will review all comments received and prepare a response to comments document and final EIR. However, only DTSC will be responding to comments on the draft EIR. The final remedy decision and the response to comments document will be made available as part of the remedy selection process. The proposed remedy may be modified as applicable based on comments received. If the proposed remedy is approved, DTSC and DOI will jointly oversee the implementation of the final remedy.

Public Open Houses and Hearings on Proposed Remedy

DTSC & DOI invites you to attend one of the four open house and public hearing sessions to be held on the following dates and locations during the 45-day public comment period. Oral and written comments will be accepted at the hearing immediately following the open house.

Tuesday, June 22, 2010
Open House: 5:00–6:30 p.m.
Public Hearing: 6:30–8:00 p.m.

Parker Community/Senior Center
1115 12th Street
Parker, Arizona 85344

Wednesday, June 23, 2010
Open House: 5:30–7:00 p.m.
Public Hearing: 7:00–8:30 p.m.

Lake Havasu City Aquatic Center, Relics and Rods Hall
100 Park Avenue
Lake Havasu City, AZ 86403

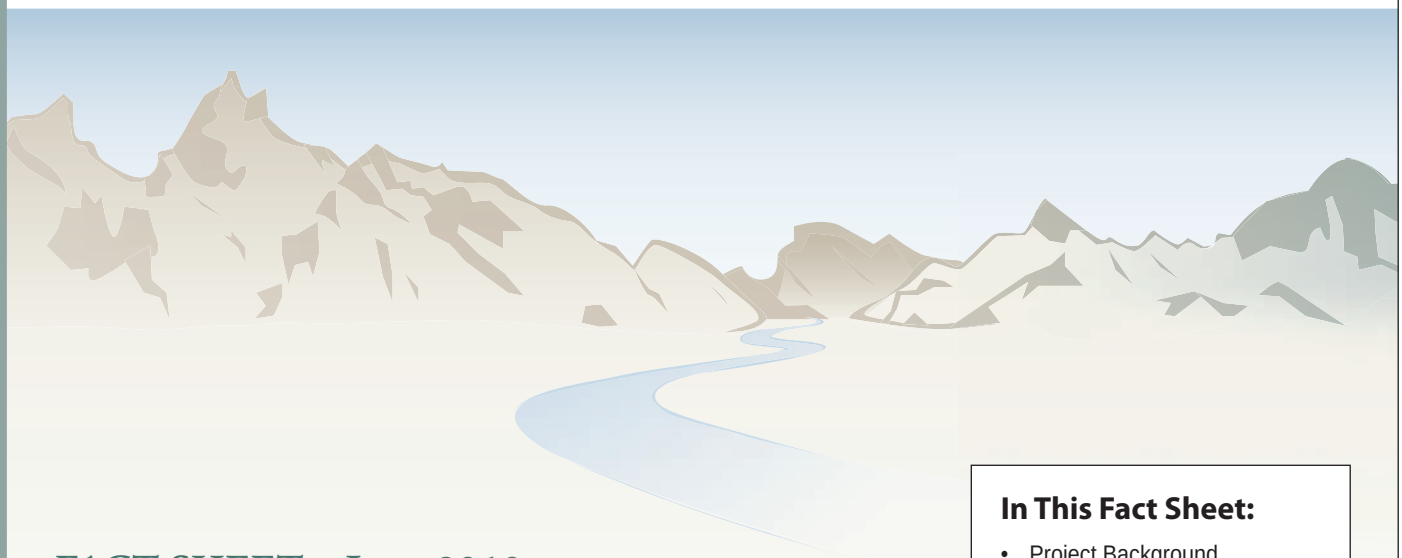
Tuesday, June 29, 2010
Open House: 5:00–6:30 p.m.
Public Hearing: 6:30–8:00 p.m.

Needles High School, Auditorium
1600 Washington Street
Needles, CA 92363

Wednesday, June 30, 2010
Open House: 5:00–6:30 p.m.
Public Hearing: 6:30–8:00 p.m.

Topock Elementary School, Auditorium
5083 East Tule Drive
Topock, AZ 86436

If you require an accommodation due to a disability or need a translator/interpreter for this event please call Christina Fu at (714) 484-5488 or toll free (866) 495-5651 no later than 10 business days before the scheduled event. In addition, you may contact Ms. Fu to receive this or related publications in an alternate format or language. TTY/TDD Speech to Speech users may dial 711.



FACT SHEET – June 2010

PG&E Topock Project Update

Public Comments Requested on Proposed Remedy and Draft Environmental Impact Report Now Available for Public Review

MARK YOUR CALENDAR for Upcoming Open Houses and Public Hearings

VIEW DRAFT DOCUMENTS at www.dtsc-topock.com

In This Fact Sheet:

Department of Toxic Substances Control

The Mission of the Department of Toxic Substances Control is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

State of California

California Environmental Protection Agency

FACT SHEET – March 2010
PG&E Topock Environmental Investigation Update

Cleanup Options Evaluation Report Is Complete

The California **Department of Toxic Substances Control (DTSC)**, as a **lead** State **agency**, is overseeing environmental investigations and cleanup activities at the Pacific Gas and Electric Company (PG&E) Topock Compressor Station (Station) and adjacent land, collectively known as the Topock Site (Site) near Needles, California. DTSC has directed PG&E to investigate and evaluate options to clean up the **groundwater** and protect the Colorado River from groundwater contamination resulting from past operations at the Station. On December 18, 2009, DTSC approved PG&E's summary of the cleanup options evaluation report called a Final **Corrective Measures Study/ Feasibility Study (CMS/FS)** Report.

IN THIS FACT SHEET

Site Background and History

The PG&E Topock Gas Compressor Station is located in eastern San Bernardino County, about 12 miles southeast of Needles, south of Interstate 40, just west of the Colorado River. The area has cultural and spiritual significance to local Tribal Nations.

The Station, which began operation in 1951, compresses natural gas for transportation to PG&E's customers in Central and Northern California. As natural gas is compressed, its temperature increases and the compressed gas must be cooled. Historically, PG&E added a chromium-based substance to the water in the cooling towers to prevent corrosion of the equipment. Until 1964, untreated cooling tower wastewater containing **hexavalent chromium** was discharged into Bat Cave Wash, an adjacent normally dry wash which ends at the Colorado River.

Aerial photo of PG&E's Topock Compressor Station

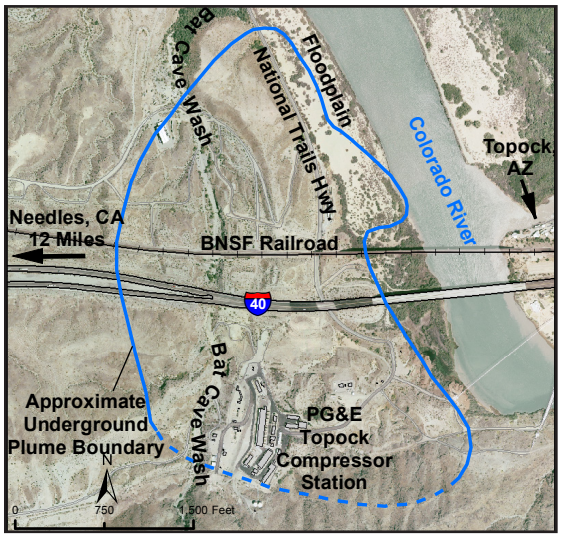
In the mid 1960's, PG&E began treating the cooling tower wastewater to convert hexavalent chromium to **trivalent chromium**, a less mobile form of chromium. By the mid 1970's, wastewater was discharged exclusively to single-lined ponds for storage until it evaporated. In 1985, PG&E stopped using chromium and switched to a more environmentally-safe additive to control corrosion. The old single-lined evaporation ponds were closed and replaced by new triple-lined ponds for disposal of chromium-free wastewater. These ponds are regulated by the California **Regional Water Quality Control Board (RWQCB)**.

In 1996, an environmental investigation was initiated to assess impacts from PG&E's operations. The investigation revealed contamination in soil and groundwater, and PG&E entered into a voluntary agreement with DTSC to investigate and clean up the contamination.

Words in **Bold** *appear in the glossary on the insert page.*

Environmental Investigation Process and the Cleanup Options Evaluation Report

Under DTSC's direction, PG&E is required to investigate and address all releases of hazardous waste and materials that may have occurred at the Site. This site investigation and cleanup process is called a **Corrective Action** under the **Resource Conservation and Recovery Act (RCRA)**. The **Remedial Facility Investigation/ Remedial Investigation (RFI/RI)** is a key step in the site cleanup process and describes, in a report, current environmental conditions at the Site. The RFI/RI report found that groundwater is affected by hexavalent chromium, and to a limited degree **molybdenum**, **selenium** and **nitrate**. The affected groundwater, referred to as the "**plume**", extends from the Station towards the Colorado River, but is not impacting the quality of the river water.



Map of Topock Project Site and Approximate Underground Plume Boundary

Based on the results summarized in the approved groundwater RFI/RI report, DTSC directed PG&E to prepare a Corrective Measures Study/Feasibility Study (CMS/FS) Report (Cleanup Options Evaluation Report). The CMS/FS Report identifies and evaluates a range of potential cleanup options and recommends a preferred cleanup option. Each cleanup option is evaluated against nine technical and regulatory (legal) criteria. The CMS/FS Report prepared by PG&E evaluates nine different cleanup options and provides DTSC with technical information to conduct an independent and objective review of the cleanup options identified.

Criteria Used to Evaluate Cleanup Options

Performance Standards

Any option selected by the agency as the final cleanup option must meet these performance standards. If the option does not meet these standards, the option will be rejected.

- **Protect Human Health and the Environment, Attain Media Cleanup Goals, Control Sources of Releases**
  The clean up must protect human health and the environment, meet the selected cleanup goals, and control or eliminate any sources of contamination.
- **Comply with Applicable Legal Requirements**
  The clean up action must meet all relevant state and federal legal requirements or provide a basis for being granted a legal waiver.

Modifying Criteria

Two additional criteria for consideration are public and state government concerns and preferences in selecting a remedy. These criteria are evaluated during the public comment period for the agency's proposed final cleanup action/plan.

- **State Acceptance**
  The extent to which an option is acceptable to the State.
- **Community Acceptance**
  The extent to which an option is supported and accepted by the community.

Balancing/Evaluation Criteria

Balancing/Evaluation criteria are used to compare options that can achieve the performance standards (to the left) against one another.

- **Long-term effectiveness, permanence, and reliability**
  The extent to which the cleanup action is effective and reliable at maintaining protection of human health and the environment over time, taking into account any risk to people or the environment after the cleanup is complete.
- **Reduction of toxicity, mobility, or volume through treatment**
  How effective the cleanup action will be at controlling or reducing the contaminant's level of potential harm (toxicity), its movement (mobility) and amount (volume) at the site.
- **Short-term effectiveness**
  The length of time needed to implement the cleanup action, and the risk the clean up poses to workers, residents, the community and the environment while it is being carried out.
- **Implementability**
  The anticipated technical and administrative feasibility of the cleanup option, including the availability of materials and services needed to carry it out.
- **Cost**
  The estimated construction, operation, and maintenance costs of the option for the anticipated life of the cleanup action.

Cleanup Options Evaluated

The nine different cleanup options evaluated in PG&E's Report include:

Alternative A: No Action
"No Action" is defined as no further treatment, operations, sampling or remediation. RCRA requires that this alternative be considered, and it serves as a baseline for comparison.

Alternative B: Monitored Natural Attenuation
Monitored Natural Attenuation takes advantage of naturally occurring conditions, such as helpful bacteria in the floodplain, which convert hexavalent chromium to trivalent chromium, a less mobile form of the metal. **Monitoring wells** would be installed to track this process, and non-engineered controls, such as groundwater use restrictions, would be put in place to protect human health and the environment. Molybdenum, selenium and nitrate will also be monitored under this and all the alternatives except Alternative A: No Action.

Alternative C: High Volume In-situ Treatment
In-situ treatment refers to treatment that occurs within the ground. For this alternative, **injection wells** would be used to inject water with added nutrients to promote the growth of harmless, but helpful, naturally occurring bacteria. The growth cycle of these helpful bacteria would then create chemical conditons that convert hexavalent chromium to trivalent chromium. After treatment is complete and nutrients removed, the bacteria level will return to pretreatment conditions. **Extraction wells** would be used to remove water out of the ground at key areas for re-injection. This injection and extraction process would evenly distribute the bacteria throughout the plume and reduce the size of the existing plume.

Alternative D: Sequential In-situ Treatment
This alternative uses alternating lines of extraction and injection wells. Extraction wells would first be used to extract groundwater from locations near the river, mix it with nutrient-added water to promote the growth of harmless but helpful, naturally occurring bacteria, then re-inject it through injection wells along National Trails Highway. The injection wells would then be converted to extraction wells and the re-injection process would be moved west toward the center of the plume. This process would continue across the upland area, treating the plume in sections in a phased approach. This option would also involve the installation of additional monitoring wells to ensure the plume is not increasing in size and that the treatment is working.

Alternative E: In-situ Treatment with Freshwater Flushing
Injection and extraction wells would be installed along National Trails Highway to create a "treatment zone" by continuously mixing the contaminated plume groundwater with nutrient-added water to stimulate harmless, but helpful, naturally occurring bacteria whose growth creates chemical conditions that convert haxavalent chromium to trivalent chromium. Extraction wells near the river would act as a barrier to prevent contamination from reaching the river, and would help convert hexavalent chromium in the floodplain. Additional injection wells located around the plume would inject fresh water and groundwater, removed from locations near the river, to push the plume toward the treatment zone.

Alternative F: Pump and Treat
Groundwater would be extracted from wells in the plume area and transported by pipelines to an above-ground treatment plant. This treatment method is called "pump and treat". Treated groundwater would be injected back into the ground outside of the plume boundaries. Hazardous materials removed from the groundwater would be collected as a solid material in the treatment plant and transported offsite to an appropriately-licensed disposal facility.

Alternative G: Combined Floodplain In-situ with Pump and Treat
This option is a combination of in-situ treatment and "pump and treat." The floodplain groundwater by the river will be treated as described in Alternative C, but the "pump and treat" method as described in Alternative F would be used to treat the rest of the area, where the main portion of the plume is located.

Alternative H: Combined Upland In-situ with Pump and Treat
This option is also a combination of in-situ treatment and "pump and treat" but the scenario would be reversed from that proposed under Alternative G. In-situ would be used to clean up the main portion of the plume, while the floodplain groundwater would be extracted and treated aboveground in a treatment plant.

Alternative I: Continued Operation of Interim Measures
This alternative would involve continued operation of the current **Interim Measure** treatment plant as the final cleanup action at the Site. The Interim Measure is a small scale version of Alternative F. The Interim Measure was established in 2004 to control groundwater flow to protect the Colorado River.

Cleanup Options Still Under Evaluation

The preferred cleanup option recommended by PG&E is Alternative E: In-situ Treatment with Fresh Water Flushing. However, DTSC and the **Department of the Interior (DOI)** are still evaluating the cleanup options, and have not yet selected a preferred option. DTSC's proposal for the final cleanup plan may be, or may not be, the same as the one recommended by PG&E.

Next Steps in Selecting a Groundwater Final Remedy

DTSC is preparing a Draft Programmatic **Environmental Impact Report (EIR)** which will analyze and summarize the expected environmental impacts of the cleanup options. The EIR also will identify actions (called mitigation measures) which may be taken to avoid or reduce environmental impacts.

DTSC will also prepare a **Statement of Basis** which will identify DTSC's proposed cleanup option and cleanup plan for the Site (the groundwater **Final Remedy**), and also explain the practical and legal reasons for the proposal. DOI will prepare an equivalent document called a **Proposed Plan**.

DTSC expects to release the Draft EIR and the Statement of Basis, together with DOI's Proposed Plan, for public review in late spring 2010. DTSC will issue a fact sheet and public notice which will announce the availability of the Draft EIR, the Statement of Basis that identifies the agency's proposed cleanup plan, and announce the beginning of a 60-day public comment period. The public comment period is designed to give the public and other government bodies (such as Tribal Nations) time to review the documents and to submit comments and input to DTSC and DOI. During the public comment period, DTSC will host an open house and public hearing at several locations in the Topock and Mohave Valley area to answer questions and take comments in person. The anticipated locations for these events include: Needles, Golden Shores/Topock, Lake Havasu City, and Parker.

Based on comments received, DTSC and DOI may determine that it is necessary to revise the proposed cleanup option or to choose a different one. DTSC will issue a final Statement of Basis and a **Notice of Determination (NOD)**. Similarly, DOI will issue a **Record of Decision (ROD)** that will identify and describe the final cleanup option selected. PG&E will be directed to implement the agencies' selected option.

January – April 2010
Finalize Draft EIR, Statement of Basis, Proposed Plan

May – June 2010
60-day Public Comment Period and Meetings

Late Summer 2010
Consider Public and Government Agency Comments

Fall 2010
DTSC Selects Final Remedy and Issues NOD

Winter 2010
DOI issues ROD
DTSC Directs PG&E to Prepare Workplan for Cleanup Action

CHRISTINA FU
DTSC PUBLIC PARTICIPATION SPECIALIST
5796 CORPORATE AVENUE
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Inside: Update on PG&E Topock Compressor Station Environmental Investigation and Cleanup

DTSC Contacts

If you have questions, comments, or **would like to be added to the mailing list for the Topock Site**, contact the project staff listed below.

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Notice to Hearing-Impaired Individuals

You can obtain additional information about the site by using the California State Relay Service at 1.888.877.5378 (TDD). Ask them to contact Christina Fu at 714.484.5488.

Where Can I Find More Information?

Project reports, fact sheets, and other project documents can be found on the web at www.dtsc-topock.com, or in the Information Repositories listed below.

Needles Public Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kirsten Mouton
✆ 760.326.9255
Hours:
10am – 6pm, Monday and Tuesday
10am – 4pm, Wednesday
10am – 5pm, Thursday through Saturday

Chemehuevi Indian Reservation
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Gilbert Parra
✆ 760.858.1140
Hours:
8am – 4pm, Monday – Friday

Golden Shores/Topock Library Station
13136 Golden Shores Parkway
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Contact: Kim Stoddard
✆ 928.768.2235
Hours:
8am – 2pm, Tuesday and Thursday
3pm – 6pm, Wednesday

Lake Havasu City Library
1770 North McCulloch Blvd.
Lake Havasu City, AZ 86403
Contact: Audrey LaCommare
✆ 928.453.0718
Hours:
9am – 6pm, Monday and Wednesday
9am – 8pm, Tuesday and Thursday
9am – 5pm, Friday and Saturday

Colorado River Indian Tribes Public Library
2nd Avenue and Mojave Road
Parker, AZ 85344
Contact: Elvira Bailey-Holgate
✆ 928.669.1285
Hours:
8am – noon, 1pm – 5pm
Monday – Friday

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jeannie Smith
✆ 928.669.2622
Hours:
9am – 7pm, Monday – Friday
9:30am – 1pm, Saturday

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Contact: Julie Johnson
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Hours:
9am – noon, 1pm – 4pm
Monday – Thursday

Glossary of Terms

Corrective Action: Specific activities designed to investigate and cleanup contamination at a site resulting from present and past hazardous waste handling practices.

Corrective Measure Study/Feasibility Study (CMS/FS): A study conducted by the facility owner/operator to identify and evaluate alternative cleanup options to address contamination at a project site.

Department of the Interior (DOI): The principal conservation agency of the United States, responsible for stewardship of land, water, recreation, Native American lands and needs, and energy needs. The department is composed of member bureaus such as the Bureaus of Indian Affairs, Land Management, and Reclamation, among others.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency in charge of the regulation of hazardous waste from generation to final disposal, and of overseeing the investigation and cleanup of hazardous waste sites.

Environmental Impact Report (EIR): A detailed review of a proposed project, its potential adverse impacts on the environment, measures that may avoid or reduce those impacts, and alternatives to the proposed project.

Extraction wells: Wells that are used primarily to remove groundwater from the ground. Water level measurements and water samples can also be collected from extraction wells.

Final Remedy: The final cleanup action proposed for managing contaminants at a project site.

Groundwater: Water beneath the Earth's surface that flows through soil and rock openings (aquifers).

Hexavalent chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals, which is also used in industrial products and processes.

Injection wells: Wells used to add something to groundwater or to return water to the aquifer.

In-situ: In its original place; unmoved, unexcavated; remaining at the site or in the subsurface (underground).

Interim Measures: Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

Lead Agency: A public agency with the principal responsibility for ordering and overseeing site investigation and cleanup.

Molybdenum: A metallic element widely distributed in the Earth's crust that is used in industrial products and processes.

Monitoring wells: Specially-constructed wells used exclusively for testing water quality.

Nitrate: Nitrates and nitrites are nitrogen-oxygen chemical compounds which combine with various organic and inorganic compounds.

Notice of Determination (NOD): A formal document filed according to the California Environmental Quality Act (CEQA) and made available to the public once an agency approves a project. The notice provides the name and location of the project, a clear project description, the date of lead agency approval and a lead agency statement that the project will not have an adverse effect on the environment or that any adverse effects are either mitigated or outweighed by the benefits of the cleanup project.

Plume: A body of contaminated groundwater. The movement of a groundwater plume can be influenced by such factors as local groundwater flow patterns, the character of the aquifier in which the groundwater is contained, and the density of contaminants.

Proposed Plan:A document that summarizes the Remedial Investigation results and cleanup options evaluated in the Feasibility Study, and describes DOI's proposed cleanup methods and the rationale for their selection.

Record of Decision (ROD): A formal document that describes the selected remedies for a site.

Regional Water Quality Control Board (RWQCB): A California agency that maintains water quality standards for a specific geographic jurisdiction and enforces state water quality laws.

Resource Conservation and Recovery Act (RCRA): A federal law that establishes a regulatory system to track and provide safe procedures for management of hazardous wastes from the time of generation to final disposal.

RCRA Facility Investigation/Remedial Investigation (RFI/RI): An investigation that occurs in the corrective action process following a RCRA Facility Assessment. It is an in-depth study designed to gather data needed to determine the nature and extent of contamination at a site.

Selenium: A non-metallic element abundant in the Earth's crust that is used in industrial products and processes.

Statement of Basis: A document that describes the basis for DTSC's proposed remedy and cleanup standards.

Trivalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Trivalent chromium is considered an essential nutrient and is relatively harmless. It does not dissolve in groundwater and tends to bind to soil; thus it does not travel readily in the environment.

Department of Toxic Substances Control

Preventing environmental damage from hazardous waste, and restoring contaminated sites for all Californians.

State of California

California Environmental Protection Agency

Fact Sheet – July 2009

Pacific Gas and Electric Company (PG&E) Topock Environmental Investigation Update

The **Department of Toxic Substances Control** (**DTSC**) has sent you this fact sheet to provide current information about the environmental investigation and cleanup activities for the PG&E Topock Compressor Station (referred to as the "Site"). The Site is located in San Bernardino County, 15 miles southeast of Needles, California and one-half-mile west of the Colorado River.

This fact sheet includes the following information:

- Summary of Environmental Site Investigations to date
- Summary of the 2009 **Community Survey** Results
- Next Steps

Community Meetings

Community meetings will be held to further inform the community members about the clean up process and to provide a summary of environmental investigations at the Site. DTSC invites you to attend one of the following meeting times and locations:

Tuesday, July 28, 2009	Thursday, July 30, 2009
Parker Community/Senior Center Time: 4:30 p.m. – 7:30 p.m. 1115 12th St. Parker, Arizona 85344 928. 669.9514	Golden Shores Civic Association Times: 11 a.m. – 2 p.m. & 4 p.m. – 7 p.m. 13136 S. Golden Shores Parkway Topock, Arizona 86436 928.768.2121

DTSC representatives will provide visual displays and will be available to answer your questions or concerns about the Site.

Overview

As the **lead agency** overseeing environmental investigations at the Site, DTSC has directed PG&E, in accordance with California and federal laws, to investigate the nature and extent of **groundwater** and soil contamination resulting from operations of the compressor station. The investigation known as the **RCRA Facility Investigation/Remedial Investigation** (**RFI/RI**) is a key step in the Site cleanup process.

The RFI/RI is divided into three different volumes with general content as follows:

- Volume 1 – Site background and history (completed August 2007)
- Volume 2 and Addendum – Groundwater and surface water characterization associated with the Bat Cave Wash contamination (completed in June 2009)
- Volume 3 – Soil characterization and remaining areas of concern (anticipated completion in 2012)

RFI/RI results and the Site **risk assessment** will be used to develop and evaluate appropriate clean-up methods in a report called **Corrective Measures Study/ Feasibility Study** (**CMS/FS**). Once the CMS/FS is complete, DTSC will propose a **final remedy** for the Site in a **Statement of Basis** document. Along with the Statement of Basis, DTSC will issue a Draft **Environmental Impact Report** (**EIR**), which documents the potential environmental impacts of the clean-up project as proposed. There will be a 60-day public comment period and a public hearing before the proposed final remedy is approved. The RFI/RI Volumes 1 and 2 can be found at the Topock website: www.dtsc-topock.com, or at the local repositories listed on the last page of this fact sheet.

Summary of Investigation Findings

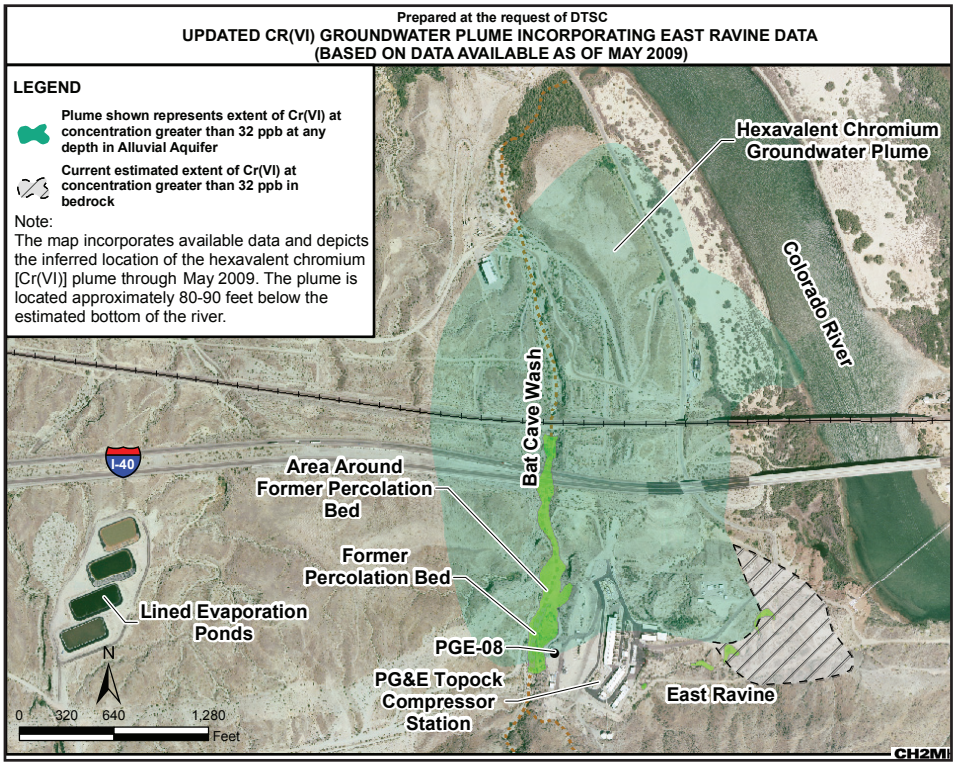
The RFI/RI Volume 1 Report, completed in August 2007, documents information about compressor station operations, past disposal practices, and **constituents of potential concern** The report also identified 32 **areas of concern** that required further investigation. Three of the 32 areas were investigated and reported in Volume 2 as it relates to the groundwater contamination released into a natural desert dry wash called the "Bat Cave Wash." The remaining areas are being investigated and will be reported in Volume 3.

Words in **bold** *are defined in the Glossary of Terms.*

The three areas of concern investigated as part of Volume 2 are:

- The former **percolation bed** in the Bat Cave Wash
- Area around former percolation bed
- Inactive injection well (PGE-08)

The figure to the right shows the three areas investigated. The focus of the investigation was to define the nature and extent of contamination in groundwater, **surface water**, **pore water** and river **sediment** from historic releases in the Bat Cave Wash area and the inactive injection well, PGE-08.



The current plume map above includes the East Ravine area. PG&E is preparing a report on the East Ravine. The report will be placed at the local information repositories when completed.

After finding groundwater contamination, PG&E installed over 100 monitoring wells, collected data for more than 10 years, and summarized the water quality data in the RFI/RI Volume 2 Report (completed in February 2009) and its addendum (completed in June 2009). As a result of the studies, the report identified the extent of the groundwater contamination associated with the historical releases in the three focused areas. The report also identified that constituents of potential concern for groundwater are **hexavalent chromium**, **total chromium**, **molybdenum**, **selenium**, and **nitrate**. The figure to the left highlights the hexavalent chromium **plume** associated with past releases in the Bat Cave Wash area. The data did not suggest a current impact to the Colorado River surface water, pore water, or river sediment in the vicinity of the Site.

Pictured above is a flush mount groundwater monitoring well at the Site.

Investigation of soil contamination and other areas of concern are ongoing. As of May 2008, PG&E has installed new monitoring wells in eight locations. Findings from the East Ravine study area will be presented in upcoming reports, while the RFI/RI Volume 3 report will be completed in the first quarter of 2012.

2009 Topock Community Survey

DTSC distributed a community survey to the public in January 2009. The survey was designed to gather information about the community's level of awareness and interest in the Site and allow an opportunity for the community to express any specific concerns about the Site and the public involvement process. The survey results also provided useful community feedback regarding the needs and concerns of the Site's surrounding community.

DTSC received over 200 responses to the survey. In general, survey results showed that the community is most interested in the following:

- Receiving more information about the environmental impacts of the Site.
- Learning about potential effects of chromium on public health.
- Determining whether there are any chromium impacts to the Colorado River and the surrounding environment.
- Being informed about the timeline for Site cleanup.

Next Steps

PG&E is currently preparing the CMS/FS to evaluate alternatives for the cleanup of the groundwater plume associated with past releases in the Bat Cave Wash area. The study is anticipated to be completed at the end of 2009. In addition, PG&E will complete a soil investigation of the remaining areas of concern and will summarize the data in the forthcoming RFI/RI Volume 3 Report, anticipated to be completed in 2012.

DTSC anticipates holding a public comment period on the proposed groundwater cleanup plan and associated draft EIR in Spring 2010. Public hearing dates will be held during the public comment period to allow an opportunity for community input on the final groundwater remedy selection.

2009
Complete RFI/RI Volume 2 & Addendum

2009
Complete CMS/FS

2009 – 2010
Public Comment on Statement of Basis for final remedy

2012
RFI/RI Volume 3: Soil

Glossary of Terms

Area of Concern: Areas in and around a project site that either have shown high levels of contamination or may have been contaminated from past operations, making them focus areas of the site investigation.

Community Survey: A survey prepared by DTSC and distributed to the community surrounding a project site. The survey is a tool to gather information about the community's level of awareness and interest in a project site, understand specific concerns about a project site and to gather project specific public involvement questions or concerns.

Constituents of Potential Concern: Chemical elements or compounds (e.g. chromium) which may or may not be present at a project site.

Corrective Measure Study/Feasibility Study (CMS/FS): A study conducted by the facility owner/operator to identify and evaluate alternative cleanup options to address contamination at a project site.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency in charge of the regulation of hazardous waste from generation to final disposal, and for overseeing the investigation and cleanup of hazardous waste sites.

Environmental Impact Report (EIR): A report designed to examine the potential environmental impacts of proposed activities.

Final Remedy: The final cleanup action proposed for managing contaminants at a project site.

Groundwater: Water beneath the earth's surface that flows through soil and rock openings (aquifers) and often serves as a primary source of drinking water.

Hexavalent Chromium: A form of chromium. Chromium is a metal naturally found in rocks, soil and the tissue of plants and animals. Hexavalent chromium is used in industrial products and processes and is a known carcinogen when inhaled (i.e., through breathing).

Lead Agency: A public agency with the principal responsibility for ordering and overseeing site investigation and cleanup.

Molybdenum: A metallic element widely distributed in the Earth's crust that is used in industrial products and processes.

Nitrate: Nitrates and nitrites are nitrogen-oxygen chemical compounds which combine with various organic and inorganic compounds. Once taken into the body, nitrates are converted into nitrites.

Percolation Bed: An unlined bed with built-up sides constructed of soil that collects discharged wastewater and allows it to soak into the ground and/or evaporate.

Plume: A body of contaminated groundwater flowing from a specific source. The movement of the groundwater is influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

Pore Water: Pore water is characterized as water located within pore spaces between the grains of sediment beneath the bottom of the river.

Resource Conservation and Recovery Act (RCRA): A federal law that establishes a regulatory system to track and provide safe procedures for management of hazardous wastes from the time of generation to final disposal.

RCRA Facility Investigation/Remedial Investigation (RFI/RI): An investigation that occurs in the corrective action process following a RCRA Facility Assessment. It is an in-depth study designed to gather data needed to determine the nature and extent of contamination at site.

Risk Assessment: Qualitative and quantitative evaluation of the risk posed to human health and/or the environment by the actual or potential presence and/or use of specific pollutants.

Sediment(s): The soil, sand and minerals at the bottom of surface waters, such as streams, lakes and rivers. The term may also refer to solids that settle out of any liquid.

Selenium: A non-metallic element abundant in the Earth's crust that is used in industrial products and processes.

Statement of Basis: A document which describes the basis for DTSC's proposed remedy and cleanup standards.

Surface Water: All water naturally open to the atmosphere such as rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries, etc.

Total Chromium: The additive of concentrations from all forms of chromium, mainly comprising of hexavalent and trivalent forms. The California drinking water standard for total chromium is 50 micrograms per liter (or parts per billion), while the Federal standard is 100 micrograms per liter.

DTSC Contacts

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AYue@dtsc.ca.gov

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Monday – Thursday

CHRISTINA FU
DTSC PUBLIC PARTICIPATION SPECIALIST
5796 CORPORATE AVENUE
CYPRESS, CA 90630

Inside: Information about
PG&E Topock Compressor Station

Department of Toxic Substances Control

The Mission of the Department of Toxic Substances Control is to provide the highest level of safety, and to protect public health and the environment from toxic harm.

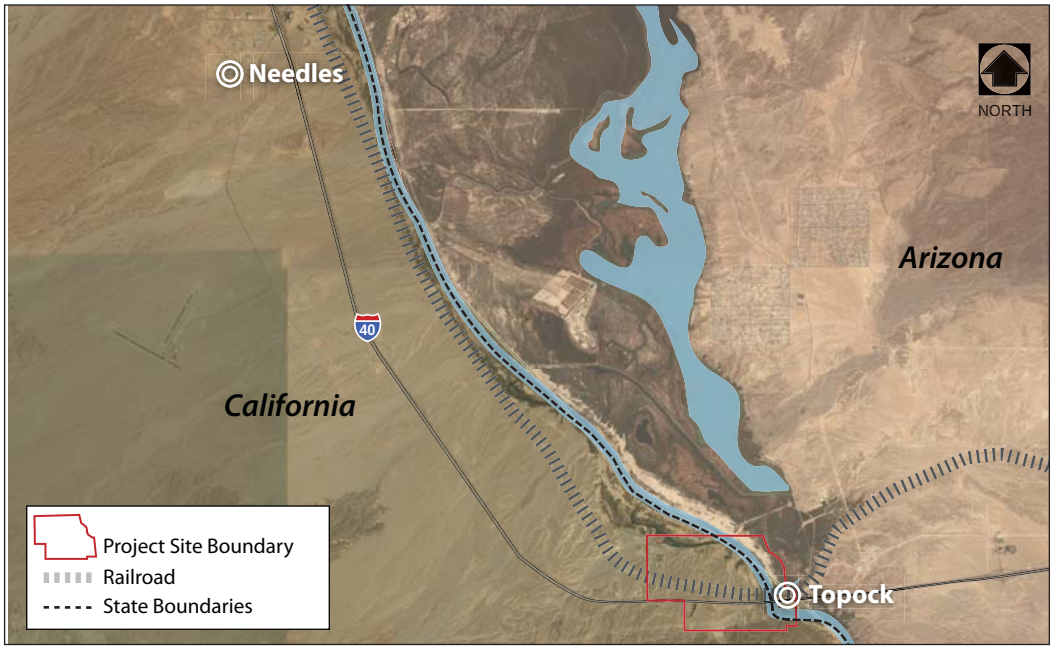
State of California

California Environmental Protection Agency

FACT SHEET – May 2008

PG&E Topock Compressor Station Project Availability of a Notice of Preparation

The ***Notice of Preparation*** (NOP) is currently available for review and comment. The purpose of the NOP is to solicit guidance from agencies and stakeholders for the scope and content of the environmental information to be included in the ***Environmental Impact Report*** (EIR). The Department of Toxic Substances Control (DTSC) is the ***lead regulatory agency*** for the cleanup of the PG&E Topock Compressor Station (referred to as the "Station"). Under the ***California Environmental Quality Act*** (CEQA), DTSC must evaluate the environmental impacts of a project as part of the approval process. In order to select the most appropriate final cleanup remedy, DTSC will prepare an EIR to document the potential environmental impacts of the action. *(Words in bold and italics appear in the Glossary of Terms.)*



Project Location

Public Scoping Meetings

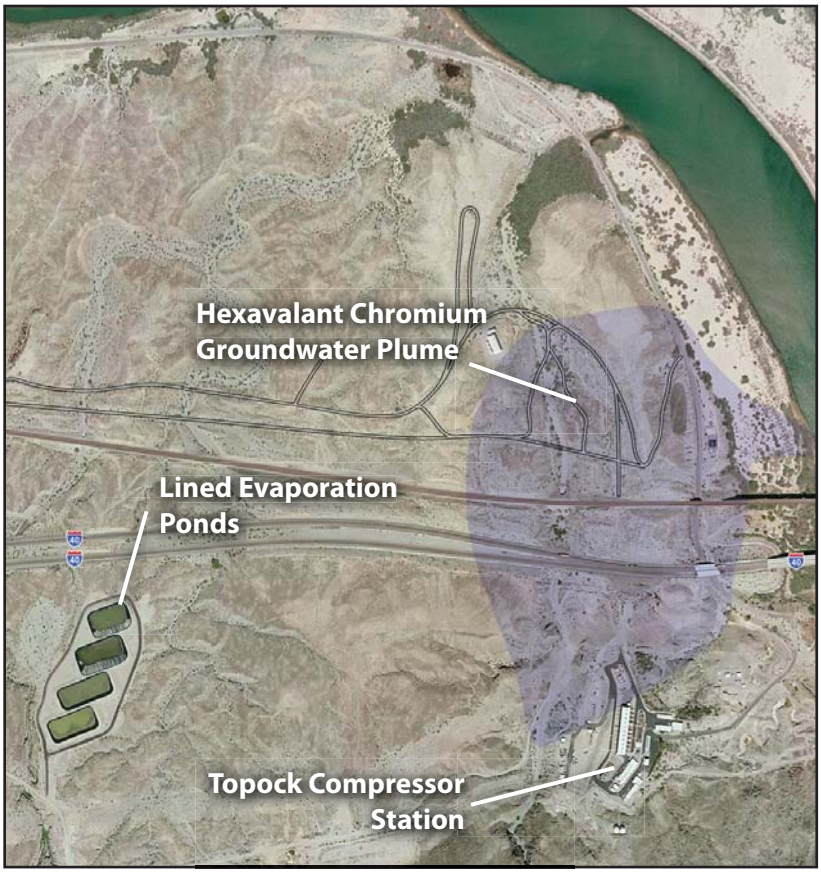
Public Comment Period for the NOP runs from May 2 to July 1, 2008.

For information on accessibility and to request reasonable accommodations, please contact Susan Callery at (818) 717-6567 at least one week before the meeting.

- City of Palm Desert, City Council Chamber, Palm Desert, CA 92260
  Tuesday, May 27, 1:30-4:30
- Gila Ridge High School Auditorium, 7150 E. 24th Street, Yuma, AZ 85365
  Wednesday, May 28, 1:30–4:30 p.m.
- Needles Elks Lodge, 1000 Lillyhill Dr., Needles, CA 92363
  hursday, May 29, 5:30–8:30 p.m.
- City Council Chamber, 2360 McCulloch Blvd. North, Lake Havasu City, AZ
  Monday, June 2, 2:00-5:00 p.m.
- Big River Development Enterprises, 150313 Rio Vista Dr.,Big River, CA 92242
  Thursday, June 5, 5:00-7:00p.m.

Project Background

The Station is one-half mile west of the Colorado River and south of Interstate 40 (I-40). The Station is surrounded by federal lands including the Havasu National Wildlife Refuge managed by the United States Fish and Wildlife Service (USFWS) and lands managed by the Bureau of Land Management (BLM). The area has cultural and spiritual significance to Native American people and it is part of their traditional lands.



Topock Compressor Station and Plume

Pacific Gas & Electric Company (PG&E) owns the Station which began operating in 1951. The Station compresses natural gas for transportation through pipelines to PG&E's service territory in central and northern California. From 1951 to 1985, PG&E added chromium to the water in the cooling towers at their facility to prevent corrosion of the cooling tower equipment. During the 1950s and 1960s, untreated wastewater from the cooling towers containing ***hexavalent chromium*** was released into a streambed adjacent to the site. This streambed is known as the Bat Cave Wash. In 1973, PG&E began treating the wastewater and storing the treated wastewater in evaporation ponds. In 1985, PG&E stopped using chromium and switched to a more environmentally safe additive to control corrosion at the Station. Investigation of the Station began in the 1980s to assess whether the property had been environmentally affected by the waste disposal activities. These investigation activities revealed contamination in soil and ***groundwater***.

Cleanup Program

The first phase in the cleanup process was to assess the extent of the contamination. A formal investigation of soil and groundwater at the Station began in 1987. The investigation activities included the evaluation of soil and groundwater at the Station, and determined the movement of contaminants in groundwater and the threat to the Colorado River. These activities have included:

- collecting samples from groundwater monitoring wells at and around the Station
- collecting samples of sediment from the bottom of the Colorado River
- collecting water samples from the Colorado River

The investigations show that the affected groundwater, referred to as the "***plume***," extends northeast from the Station toward the Colorado River, but did not detect any contaminants within the river water. Sampling activities continue on a regular basis and ***pilot studies*** are being performed to determine the most effective cleanup alternatives for the groundwater beneath the Station.

Under the jurisdiction of DTSC, PG&E also installed and operates a groundwater extraction and treatment system to control the directional flow of groundwater away from the river and to protect the water in the Colorado River.

The California Environmental Quality Act

CEQA is a state law that requires the lead agency of a project to consider and disclose the environmental effects of its proposed actions before approving them. DTSC has been designated the lead agency for the environmental investigation and cleanup project at the Station. DTSC will prepare an EIR to assess the potential environmental effects of the cleanup alternatives prior to the selection of the final remedy. The final remedy may consist of one or more

technologies to clean up the soil and groundwater contamination.

DTSC and PG&E entered into a Memorandum of Understanding (MOU) for the preparation of the EIR by an independent consultant, EDAW, Inc. (EDAW); however, DTSC retains full control of the content and conclusions in the EIR.

The first step in the EIR process is to prepare an NOP. The subsequent steps required to complete the EIR include the following:

- Hold scoping meetings to obtain input from other agencies with jurisdiction in the project area or over project activities and community members on the scope and content to be evaluated in the EIR
- Prepare a Draft EIR that assesses the potential environmental impacts from the proposed remedies. The Draft EIR will describe existing conditions in the project area, analyze the project's potential effects, and identify measures to avoid, reduce, or mitigate adverse impacts from the cleanup program.
- Distribute the Draft EIR for a 60-day public review period and obtain comments from agencies and the public on the content of the Draft EIR.
- Prepare written responses to comments received during the public comment period.
- Prepare and publish the Final EIR
- Certify the EIR and file the ***Notice of Determination*** (NOD).

Upcoming Scoping Meetings

A ***scoping*** meeting is a formal recorded hearing where agencies and community members can present their input on the scope of the EIR for this project. Scoping meetings will be held at times and locations listed on the front page.

Written comments can also be sent to Ms. Jeanne Matsumoto of DTSC for consideration in the EIR scoping process. All comments must be received by DTSC no later than July 1, 2008. Scoping meeting locations and dates also are provided in the NOP.

Additional Information Sources

DTSC will continue to keep you informed during the EIR process. A notice will be sent to everyone who has requested notification when the Draft EIR becomes available for review and comment. DTSC anticipates a draft EIR will be available for review during the second quarter of 2010. For general project information, the Topock website is an easy way to access information about the PG&E Topock Compressor Station environmental investigation and cleanup project. You can find the website at: **www.dtsc-topock.com**. Project information can also be found at DTSC's main website: **www.dtsc.ca.gov**. These websites contain all of the Public Notices and Fact Sheets that have been prepared on the environmental activities at the Station since 1998 and provide a useful overview of the project.

Who to Contact for Information

For more information on this project, please contact the following DTSC representatives:

Mr. Aaron Yue
DTSC Project Manager
5796 Corporate Avenue
Cypress, CA 90630
(714) 484-5439
ayue@dtsc.ca.gov

Ms. Jeanne Matsumoto
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Email: JGarcia1@dtsc.ca.gov

TDD: Call 1-888-877-5378, and ask to contact Jeanne Matsumoto at 714-484-5338

Department of Toxic Substances Control

The Topock Environmental Investigation and Cleanup EIR: A Step by Step Process

SPRING/SUMMER 2008	WINTER 2009/ SPRING 2010	SPRING 2010	SPRING/SUMMER 2010	SUMMER 2010
Notice of Preparation Distribution and Scoping Meetings	Draft EIR Prepared	Public Review of Draft EIR and Receipt of Comments	Preparation of Responses to Comments and Final EIR	Final EIR Certified and Notice of Determination Filed
■	■	■	■	
◆	◆	◆		
✳	✳		✳	✳

Legend
■ Fact Sheet
◆ Public Meeting
✳ Information Repository

Glossary of Terms

California Environmental Quality Act (CEQA): Enacted in 1970 to provide long-term environmental protection, this law requires that governmental decision-makers and public agencies study the environmental effects of proposed activities, and that significant adverse effects be avoided or reduced where feasible.

Environmental Impact Report (EIR): A report designed to examine the potential environmental impacts of proposed activities.

Groundwater: Water beneath the earth's surface that flows through soil and rock openings.

Hexavalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Also used in industrial products and processes.

Lead Regulatory Agency: The public agency responsible for decision making on a project.

Notice of Determination (NOD): Formal notice filed with the California State Clearinghouse after the Final EIR has been certified and a project approved.

Notice of Preparation (NOP): A notice that is sent by the lead agency to notify agencies and the public that an EIR is being prepared and to request input on the content of the EIR.

Pilot Study: A mini version of a full-scale study used to assess the feasibility of a particular cleanup technology in a specific location.

Plume: A body of contaminated groundwater. The movement of a plume in groundwater can be influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

Scoping: A process to gain input from agencies and the public regarding the content of the EIR.

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Avis McKinnon: 928-768-2235

Lake Havasu City Library
1770 McCulloch Blvd.
Lake Havasu City, AZ 86403
Audrey LaComarre: 928-453-0718

Colorado River Indian Tribes Public Library
2nd Avenue and Mojave Road
Parker, AZ 85344
Amelia Flores: 928-669-1285

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Jana Ponce: 928-669-2622

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Julie Johnson: 714-484-5337
9am-Noon, 1pm-4pm, Monday –Friday
Please call for an appointment

Comment and Mailing List Form for PG&E's Topock Compressor Station

If you have any comments concerning the Notice of Preparation, please fill out the information below and mail in by **July 1, 2008**.

Comments (attach additional pages as needed)

_____

_____

_____

_____

If you would like to be added to or taken off the distribution list for mail related to the site, please fill out this form and return to DTSC.

☐ REMOVE me from the mailing list ☐ ADD me to the mailing list

Name: _____

Address: _____

City/State/Zip: _____

Phone/Email _____

Please address all mailings to Aaron Yue, Project Manager, Department of Toxic Substances Control, 5796 Corporate Avenue, Cypress, CA 90630, or by email to AYue@dtsc.ca.gov.

Our mailing lists are only used for keeping you informed of our activities. We do not routinely release our mailing lists to outside parties. However, they are considered public records and, if requested, may be subject to release.

Pacific Gas and Electric Company®

WORK NOTICE

Topock Groundwater Study – Upcoming Well Drilling

February 2008

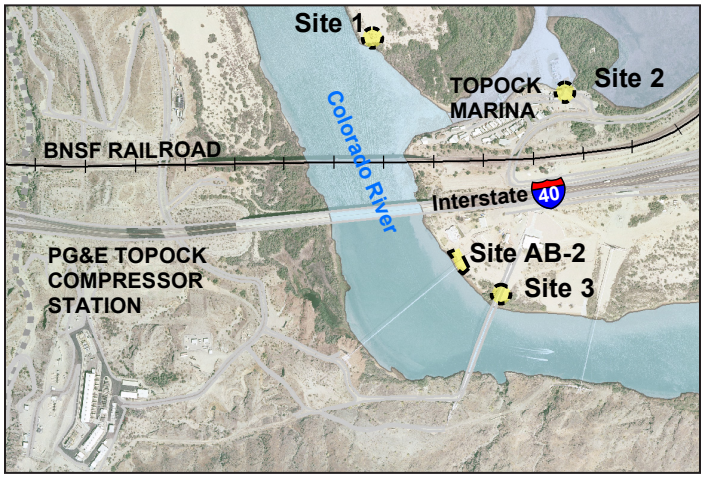
Pacific Gas and Electric Company (PG&E) is performing an environmental investigation of the groundwater near Topock, Arizona under the oversight of the Arizona Department of Environmental Quality (ADEQ) Voluntary Remediation Program (VRP). PG&E will install monitoring wells near and beneath the Colorado River to collect groundwater samples and sediments. This work is part of an ongoing investigation being conducted near PG&E's Topock Compressor Station, located one-half mile southwest of Topock, Arizona, on the California side of the Colorado River.

Monitoring Well Installation Locations

Groundwater monitoring wells will be installed at up to four locations in the Topock, Arizona area. Well installation will require the use of a drill rig and supporting equipment. Each well will include multiple well "screens," or sampling points, at different depths, nested together inside one well casing.

Site 1 - A pair of groundwater monitoring wells will be installed on the eastern shore of the Colorado River, on the Havasu National Wildlife Refuge (HNWR) peninsula north of I-40 and the Topock Marina. The installation of these wells is being conducted under the direction of the United States Department of the Interior (DOI). To minimize disturbance to habitat and wildlife, the wells will be installed along the levee road, and vehicle access to the site will follow existing roads. Pre- and post-construction surveys will be conducted by a biologist to determine that no endangered or threatened species are on site. Additional precautions, as directed by HNWR and DOI, will be taken to limit any disturbance to habitat and species.

Drill rig and support vehicle



Map of Well Installation Locations

Site 2 - One monitoring well will be installed at the Topock Marina, just north of I-40 on the Arizona shoreline. The well will be installed in the Marina's lower parking lot, approximately 15 feet west of the public boat ramp. Precautions will be taken to secure the drill site, and barriers will be put in place to protect the public.

Site AB-2 - This investigation will also include installation of a monitoring well that will allow for sampling of the groundwater 100 – 150 feet beneath the Colorado River. At Site AB-2, on the Topock shoreline just south of I-40, a "slant" well will be installed using an angled drilling method. Drilling from land at an angle allows the investigation of areas deep below the Colorado River without conducting any work in the river itself.

Site 3 - If further characterization is required, an additional groundwater monitoring well (or pair of wells) may be installed on the southern edge of the Topock peninsula, just west of the El Paso Natural Gas and PG&E pipeline arch bridge. The installation of these wells may be vertical or "slant" and will depend on the findings from the newly installed wells at Sites 1, 2 and AB-2.

At each site, samples of groundwater and sediments will be collected for chemical analysis as the boreholes are being drilled. Once the wells are completed, groundwater will be collected from them on a regular basis and analyzed for chromium and other constituents.

Impacts Will Be Minimized

We thank you for your patience and understanding during this important part of the investigation and apologize for any inconvenience caused by these

activities. During the well installation, you may notice an increase in activity and noise near the drilling sites. We are working to minimize any such disturbances. Special care will be taken to protect wildlife, their habitats, and cultural resources during all phases of this work. Every effort will be made to minimize the impact to surrounding businesses.

Why This Investigation?

PG&E is working to remediate (clean up) hexavalent chromium contamination in groundwater on the California side of the Colorado River, adjacent to the PG&E Topock Compressor Station. The cleanup effort has included extensive and ongoing monitoring of the groundwater on the California floodplain. This investigation of Arizona groundwater will provide additional information concerning groundwater and geology in the Topock area.

Schedule

Well drilling, installation and initial sampling are currently scheduled* to begin in March and run through June 2008 as follows:

Location	Dates
Site 1 (North of I-40 on HNWR levee)	March 10 - April 3
Site 2 (Topock Marina Parking Lot)	April 8 – 12
Site AB-2 (South of I-40)	April 13 – May 1
Site 3 (if needed) (South of I-40)	June 2008

** Schedule subject to change depending on field conditions and other factors*

For More Information

If you would like to be added to ADEQ's mailing list for future mailings, please contact Joey Pace, as listed below. If you have any questions or concerns regarding this project, please contact ADEQ or PG&E personnel.

Yvonne Meeks, PG&E Topock Program Manager
Phone: 805-234-2257
Email: yjm1@pge.com

Kasia Grisso, Public Outreach Specialist for PG&E
Phone: 510-587-7626
Email: kasia.grisso@ch2m.com

Jennifer Barr, ADEQ VRP Manager
Phone: 602-771-4809
Email: barr.jennifer@azdeq.gov

Joey Pace, ADEQ Project Manager
Phone: 602-771-4574
Email: pace.joey@azdeq.gov

Hearing impaired persons may call ADEQ's TDD line at 602-771-4829.

Additional information can be found on ADEQ's website at http://www.azdeq.gov/function/about/chromium.html

ES052007001SFO_v2 02-22-08

Yvonne Meeks
c/o Kasia Grisso
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Preventing environmental damage from hazardous wastes, and restoring contaminated sites for all Californians

State of California

California Environmental Protection Agency

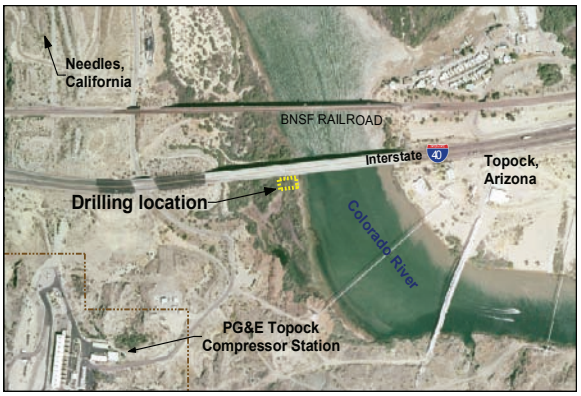
INFORMATIONAL NOTICE – February 2007

NOTICE OF UPCOMING GROUNDWATER INVESTIGATION ACTIVITIES

Upcoming Events

Pacific Gas and Electric Company (PG&E) will install monitoring wells beneath the Colorado River to collect groundwater samples and sediments as part of the ongoing environmental investigation activities near PG&E's Topock Compressor Station, located 12 miles southeast of Needles, California, along the Colorado River. The monitoring well installation is scheduled to begin February 14, 2007 and be complete by the end of March.

The wells will be installed using an "angled" drilling method. Drilling from land at an angle allows the investigation of areas deep below the Colorado River without conducting any work in the river itself. This drilling method eliminates activities and disturbances in the river and reduces the possibility of harmful impacts to the river from this investigation.



Topock Project Slant Drilling Location

A drill rig will be set up on the California shoreline of the river, just south of the Interstate 40 bridge. From this point, the following environmental investigation activities will be conducted:

- Bore holes will be drilled at two different angles to more than 100 feet below the bottom of the river.
- Monitoring wells are planned to be installed inside the bore holes to sample ground water from beneath the river.
- Samples of groundwater and sediments below the river will be collected for chemical analysis as the bore holes are being drilled.
- Once completed, the wells will allow for regular testing of groundwater.

During the well installation, you may notice an increase in activity and noise near the drilling site. We are working with PG&E to minimize any such disturbances. **Special care will be taken to protect wildlife, their habitats and cultural resources during all phases of this work.**


Typical Drill Rig

Why this Work is Important

PG&E is investigating hexavalent chromium (CrVI) at the Topock site that exists as a result of historical operations at the Topock Compressor Station. CrVI is a form of chromium, a metal, found in nature and also used in industrial products and processes. CrVI is a known carcinogen when inhaled (i.e., through breathing). An extensive network of groundwater monitoring wells has been installed to identify which areas of groundwater are contaminated with CrVI.

The results of this new sampling project will help define the limits of the groundwater contamination, and will provide valuable information for the development and implementation of a final remedy for this site. **Ongoing sampling of Colorado River water, as part of the Topock remediation project, continues to show no detection of hexavalent chromium in the river itself.**

Where to Find More Information

The California Department of Toxic Substances Control (DTSC) has created a Web site for you to learn more about the Topock project. The results of this new sampling will be posted to the project Web site when they are available. Please visit *http://www.dtsc-topock.com*.

Department Contacts:

Aaron Yue, DTSC Project Manager
714-484-5439 or email: ayue@dtsc.ca.gov

Jeanne Matsumoto, DTSC Public Participation
714-484-5338 or toll free: 866-495-5651
email: jmatsumo@dtsc.ca.gov

For media inquiries contact:

Jeanne Garcia, DTSC Public Information Officer
818-551-2176 or email: jgarcia1@dtsc.ca.gov

TDD: Call 1-888-877-5378
ask for Jeanne Matsumoto at 714-484-5338

Project documents can be found at the following information repositories:

Needles Public Library
1111 Bailey Avenue
Needles, CA 92363
Kristin Mouton: 760-326-9255

Chemehuevi Indian Reservation
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Dave Todd: 760-858-1140

Golden Shores/Topock Library Station
13136 Golden Shores Parkway
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Julie Johnson: 714-484-5337

JEANNE MATSUMOTO
DEPT. OF TOXIC SUBSTANCES CONTROL
5796 CORPORATE AVENUE
CYPRESS, CA 90630

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Preventing environmental damage from hazardous wastes, and restoring contaminated sites for all Californians

State of California

California Environmental Protection Agency

FACT SHEET – October 2006

Pacific Gas and Electric Company (PG&E) Topock Project Update

Department of Toxic Substances Control (DTSC) provides oversight of the site investigation and cleanup activities for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station. It is located in San Bernardino County, 15 miles southeast of Needles, California and one half-mile west of the Colorado River.

PG&E Topock Compressor Station Location and Surrounding Communities

Below is a brief summary of what is in this fact sheet:

- Summary of current ***Interim Measures,**** site investigation activities and water sampling results
- Information about the ***Environmental Impact Report (EIR)*** process and the EIR consultant
- Future news and updates including public, agency, and tribal outreach for the EIR
- DTSC contacts and Information Repository locations

Need for Action

Water samples taken from the groundwater under and near the PG&E Topock Compressor Station (the Station) were found to be contaminated with ***hexavalent chromium***. Under the oversight of DTSC, PG&E is pumping the contaminated ***groundwater*** away from the Colorado River and into a treatment system located near the Station.

The affected groundwater, commonly referred to as the ***plume***, lies approximately 80 to 175 feet below the ground surface. The plume extends north from the Station, approximately 2,400 feet long and 1,300 feet wide. The presence of hexavalent chromium is the result of past waste water disposal activities at the Station – hexavalent chromium has not been used at the Station since 1985.

In early 2004, DTSC determined that immediate action was necessary to ensure that groundwater containing hexavalent chromium did not reach the Colorado River.

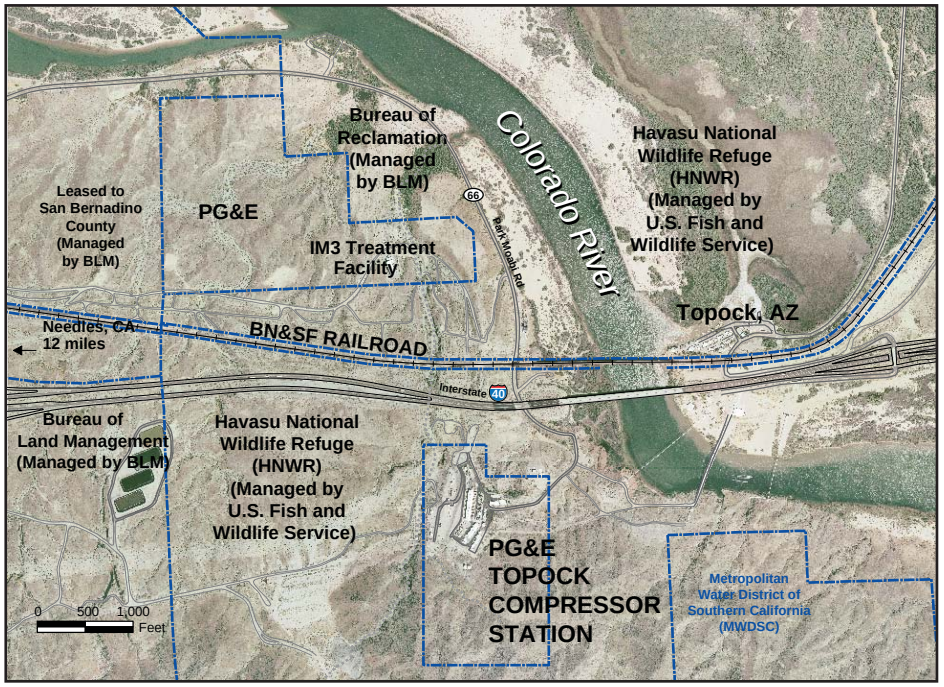
Ongoing Project Activities

Interim Measures are being implemented to prevent the plume from spreading while the ***Final Remedy*** or final cleanup plan is evaluated and selected. Interim Measures are cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

* Items in bold italics are in the glossary.

In March 2004, groundwater removal and transport for off-site treatment and disposal began. These activities were conducted under Interim Measure No. 2 (IM2). Improvements to the IM2 system over time allowed for increased extraction of groundwater and on-site treatment. The IM2 system operation was discontinued in July 2005 when the Interim Measure No. 3 (IM3) treatment system began operation.

The IM3 system was built to extract and treat more groundwater than the IM2 operations could handle. Current operations of the IM3 system remove and treat approximately 135 gallons per minute (more than 190,000 gallons per day).



Topock Project Site and Surroundings

More than 100 million gallons of groundwater have been removed and treated by both of the Interim Measures since March 2004. After removing the contaminants, the treated water from the IM3 system is reinjected into the ***aquifer*** through wells located approximately 2,500 feet west of the Colorado River.

Two new groundwater extraction wells were installed under the IM3 treatment system to allow for the increased pumping rate to 135 gallons per minute.

Colorado River Sampling

Water from the Colorado River has been sampled quarterly since 1997, and monthly since November 2003. Hexavalent chromium has not been detected in any of these samples. In addition, ***sediment*** samples from the bottom of the Colorado River show no hexavalent chromium. Also, ***pore water*** samples collected from sediments in the bottom of the Colorado River in January 2006 did not detect any hexavalent chromium.

Environmental Impact Report (EIR)

The ***California Environmental Quality Act (CEQA)*** is a state law that requires the ***lead agency*** to consider and disclose the environmental effects of the project cleanup activities before taking action on those projects. As the lead agency for the PG&E Topock Compressor Station environmental investigation and cleanup project, DTSC made a determination that an EIR will be prepared to assess the potential environmental effects of cleanup alternatives, prior to the selection of the final remedy.

DTSC and PG&E entered into a Memorandum of Understanding (MOU) for the preparation of the EIR through an independent consultant under the direction of DTSC. DTSC retains approval authority over the content and conclusions in the EIR.

About the EIR Independent Consultant

EDAW has been selected as the EIR consultant. The company is a provider of comprehensive planning, environmental, design and information technology consulting services for public and private clients. EDAW's PG&E Topock Compressor Station EIR project team will be introduced at public scoping meetings to be held later this year. You can find more information about EDAW on their website at: www.edaw.com.

What EDAW Will Be Doing

To complete the EIR, EDAW will assist in:

- Preparing a ***Notice of Preparation (NOP)*** to be sent by DTSC to notify the public, government agencies, and tribal governments that the EIR is being prepared, and to invite comments on the scope and content of the EIR.

- **Coordinating scoping meetings** to obtain input from the public, government agencies, and tribal governments about the project design, selection of proposed cleanup activities, and on the scope and content of the EIR.
- **Preparing a Draft EIR** that assesses potential environmental impacts from the remedies proposed. The goal of the final cleanup plan evaluation in the EIR is to substantially reduce or avoid any significant environmental impacts. The EIR will present ***mitigation measures*** to meet this goal.
- **Coordinating public meetings and hearings** during the Draft EIR public comment period to obtain input from community members, government agencies, and tribal governments.
- **Preparing** written response to comments received during public hearings and public comment periods.
- **Preparing and publishing** the Final EIR.

Community Outreach for the EIR

DTSC will continue to keep you informed as the EIR proceeds. We will hold public scoping meetings to get input from the public, government agencies and tribal governments about the various remedy alternatives. Once the Draft EIR has been prepared, DTSC will hold a public hearing to get input from the public and government agencies about the Draft EIR. The meeting locations, dates and times will be announced.

Future News and Updates

Coming Soon! DTSC will be releasing a Public Participation Plan (Plan) for the PG&E Topock site. The Plan documents community concerns about the PG&E Topock Project and identifies outreach activities to ensure that the community and stakeholders are involved in the decision-making process during the environmental cleanup of the Station. Look for it online and in the repositories soon. DTSC is also working on government to government plans for tribal outreach.

Find us on the Internet! Our new Topock Web site went live to the public in May 2006. The new Web site is an easy way to get information about the PG&E Topock Compressor Station environmental investigation and cleanup project. You can find the Web site at: **www.dtsc-topock.com**. Project information can also be found at DTSC's main Web site: **www.dtsc.ca.gov**.

Past Topock Site Fact Sheets

DTSC continues to provide information to community members and other interested people. Below is a list of DTSC fact sheets about the Topock project.

July 2005 – *Topock Project Begins Interim Measure No. 3 Treatment Operations*

August 2004 – *Topock Compressor Station Directed to Expand Cleanup Operations*

May 2004 – *Interim Measures at the PG&E Topock Compressor Station*

September 1999 – *Environmental Investigation Results*

March 1998 – *Hazardous Waste Investigation*

Copies of all of the DTSC fact sheets can be found on the websites previously listed.

Glossary of Terms

Aquifer: A water-bearing layer of rock or sediment that is capable of yielding useable amounts of water.

California Environmental Quality Act (CEQA): Enacted in 1970 to provide long-term environmental protection, this law requires that governmental decision-makers and public agencies study the environmental effects of proposed activities, and that significant adverse effects be avoided or reduced where feasible.

Environmental Impact Report (EIR): A report designed to examine the potential environmental impacts of proposed activities.

Final Remedy: The final cleanup action proposed for dealing with contaminants at a site.

Groundwater: Water beneath the earth's surface that flows through soil and rock openings.

Hexavalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Also used in industrial products and processes, hexavalent chromium is a known carcinogen when inhaled (i.e., through breathing).

Interim Measures: Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

Lead Agency: A public agency with the principal responsibility for ordering and overseeing site investigation and cleanup.

Mitigation Measures: Actions designed to minimize significant impacts from activities.

Notice of Preparation (NOP): CEQA document to be sent by the lead agency to notify the public, responsible agencies, trustee agencies and involved federal agencies that the EIR is being prepared.

Pore Water: Pore water is characterized as water located within pore spaces between the grains of sediment beneath the bottom of the river.

Plume: A body of contaminated groundwater. The movement of a plume in groundwater can be influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

Scoping Meeting: Meeting to gain input from the public, the local community, government agencies, and tribal government agencies regarding selection of the Final Remedy.

Sediments: The soil, sand and minerals at the bottom of surface waters, such as streams, lakes and rivers. The term may also refer to solids that settle out of any liquid.

Department Contacts

DTSC welcomes your feedback. There are several ways to contact us.

Aaron Yue
DTSC Project Manager
5796 Corporate Avenue
Cypress, CA 90630
(714) 484-5439
ayue@dtsc.ca.gov

Jeanne Matsumoto
DTSC Public Participation Specialist
5796 Corporate Avenue
Cypress, CA 90630
(714) 484-5338
Toll Free: (866) 495-5651
JMatsumo@dtsc.ca.gov

For media inquiries, please call:

Jeanne Garcia
DTSC Public Information Officer
(818) 551-2176
Email: JGarcia1@dtsc.ca.gov

TDD: Call 1-888-877-5378, and ask to contact Jeanne Matsumoto at 714-484-5338

Web sites: www.dtsc-topock.com
www.dtsc.ca.gov

JEANNE MATSUMOTO
DEPT. OF TOXIC SUBSTANCES CONTROL
5796 CORPORATE AVENUE
CYPRESS, CA 90630

Information Repository Locations

Project reports, fact sheets, and other project documents can be found in the Information Repositories listed below:

On the Internet:
www.dtsc-topock.com
www.dtsc.ca.gov

Needles Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kristin Mouton (760) 326-9255
10am – 6pm, Monday and Tuesday
10am – 4pm, Wednesday
10am – 5pm, Thursday through Saturday

Chemehuevi Indian Reservation
Environmental Protection Office
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: Dave Todd (760) 858-1140
8:00am – 4pm, Monday – Friday

Golden Shores/Topock Station Library
13136 S. Golden Shores Parkway
Topock, AZ 86436
Contact: Avis McKinnon (928) 768-2235
8am – 2pm, Tuesday and Thursday
3pm – 6pm, Wednesday

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Sharon Lane (928) 453-0718
9am – 6pm, Monday and Wednesday
9am – 8pm, Tuesday and Thursday
9am – 5pm, Friday and Saturday

Colorado River Indian Tribes Public Library
2nd Avenue and Mohave Road
Parker, AZ 85344
Contact: Amelia Flores (928) 669-1285
8am – Noon, 1pm – 5pm, Monday – Friday

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jana Ponce (928) 669-2622
9am – 7pm, Monday – Friday
9am – 2pm, Saturday

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson (714) 484-5337
9am – Noon, 1pm – 4pm, Monday – Friday
Please call for an appointment.

Comment and Mailing List Form for PG&E's Topock Compressor Station

If you would like to be added to or taken off the distribution list for mail related to the site, or to submit questions or comments, please fill out this form and return to DTSC. Please address all mailings to Jeanne Matsumoto, Department of Toxic Substances Control, External Affairs/Public Participation, 5796 Corporate Avenue, Cypress, CA 90630, or by email to JMatsumo@dtsc.ca.gov.

Name: _____

Address: _____

City/State/Zip: _____

Phone/Email: _____

Affiliation (if any): _____

Comments/Questions: _____

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DTSC mailings are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records and, if requested, may be subject to release.

Laws, Regulations &

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Public Involvemen

Cleanup

Science & Tech

State of California

Department of Toxic Substances Control

FACT SHEET – July 2005

Pacific Gas and Electric Company (PG&E) Topock Project Begins Interim Measure No. 3 Treatment Operations

Treatment facility for Interim Measure No. 3

This fact sheet describes Interim Measure No. 3 (IM3) at the PG&E Topock Compressor Station. The goal of IM3 is to treat groundwater contaminated with hexavalent chromium and to gain better control of the plume, which is adjacent to the Colorado River. The station is located about 15 miles southeast of Needles, California.

History

In February 2004, DTSC directed PG&E to begin pumping, transporting, and disposing of groundwater from the MW-20 bench location (a level patch of federal land located approximately 600 feet from the river, above the floodplain, see map, page 2) to ensure that groundwater containing hexavalent chromium would not reach the Colorado River. The level of water in the Colorado River has a large influence on groundwater levels, and during periods of low river levels, groundwater will tend to move toward the river. On March 8, 2004, PG&E began extracting groundwater and transporting it by truck to a licensed hazardous waste disposal and treatment facility in Vernon, California. In July 2004, a batch treatment system was added at the MW-20 bench to make the groundwater non-hazardous prior to transport. These actions are termed Interim Measures No. 2 (IM2). Under IM2, PG&E has been removing approximately 70 gallons per minute (gpm) of groundwater, 24 hours per day. This treated groundwater is then trucked to the disposal facility in Vernon, California.

In June 2004, DTSC determined that groundwater would need to be removed at higher rates than could be treated and managed at the current MW-20 bench site. To ensure that hexavalent chromium would not reach the Colorado River, DTSC directed PG&E to design and install a larger treatment facility capable of handling the higher groundwater flows. This facility is known as Interim Measure No. 3, or IM3. Construction of the IM3 system is complete, and it is expected to begin treating groundwater to reduce hexavalent chromium in mid-July 2005.

Elements of Interim Measure No. 3

The IM3 project consists of several elements:

- extraction of groundwater
- transportation via pipelines
- treatment to reduce hexavalent chromium
- management of the treated groundwater

These project components are described in detail below.

Removal, Piping and Transportation of Groundwater

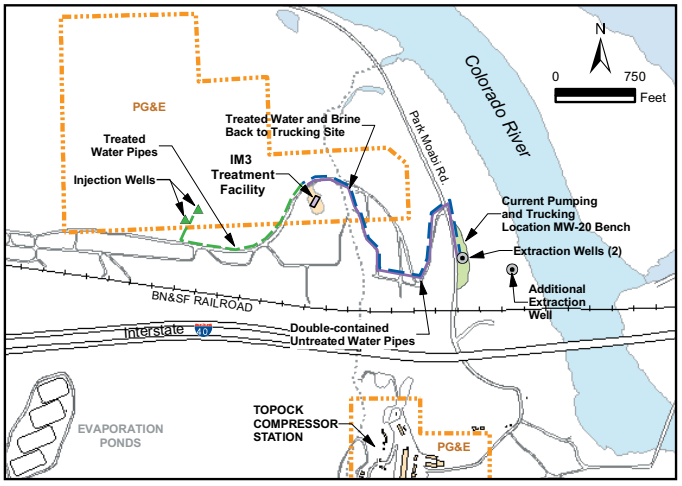
Two extraction wells are located above the floodplain on the MW-20 bench, in the area of the plume where the highest concentrations of hexavalent chromium have been detected. These extraction wells are also being utilized for the current pumping and trucking of groundwater under IM2. A third extraction well was installed in the floodplain in March 2005 (see map) to allow for extraction of groundwater within the floodplain, if deemed necessary to maintain control of the plume.

Double-walled piping will deliver untreated groundwater from the extraction wells to the IM3 treatment facility. Additional piping will carry treated water from the treatment facility back to the MW-20 bench. The water will continue to be trucked to the treatment facility in Vernon until re-injection wells are tested and approved by DTSC. Once approved by DTSC, the treated water will be injected into the local aquifer (as described below under the Management of Treated Water section).

Treatment Process

The treatment facility uses a multi-step process to ensure that groundwater is cleaned to the standards set by the Regional Water Quality Control Board (RWQCB). The cleaned groundwater will meet or be cleaner than the 50 part per billion (ppb) drinking water standard for chromium set by the State of California. This standard is well below the standard set by Arizona which is 100 ppb.

The first step of the cleanup process is the introduction of chemicals such as iron (in the form of ferrous chloride) to convert the hexavalent chromium to trivalent chromium (see glossary), which forms a solid material in water. This water-solid mixture will be pumped into a clarifier, which will remove a majority of the solids. The solids that are removed by the clarifier will be dewatered and trucked away from the site to be disposed of at a hazardous waste facility. The



Interim Measure No. 3 Treatment System Map

remaining water will be pumped through a micro-filter to remove any small solid particles which are left. After this treatment to reduce hexavalent chromium, a portion of the groundwater will be treated by a process called reverse osmosis which removes dissolved salts from the water. This step is necessary because the aquifer water in the injection area is less salty than the extracted groundwater. Reverse osmosis will result in two water streams – one with high salt content, called brine, and the other with low salt.

Management of Treated Water

After the water has been treated, the solids and brine will be trucked away for offsite disposal. The remaining treated water will be injected into two injection wells located west of the treatment facility (see map). The injection wells will reintroduce the treated groundwater back into the underground groundwater aquifer. The quality of the treated groundwater will not degrade the aquifer into which it will be injected. Injection well locations were selected based on hydrogeology, accessibility, and avoidance of biological and cultural resources.

To ensure that injection of treated water does not degrade the water quality of the aquifer, DTSC and the RWQCB directed PG&E to conduct studies to determine the current groundwater quality, and to install monitoring wells surrounding each injection well. These monitoring wells will be used to verify that the aquifer's groundwater quality is not adversely affected by the injection of treated groundwater.

Schedule

Construction of the IM3 treatment system is complete. Prior to startup, the system will be tested and any necessary adjustments made to ensure the system will operate properly. During testing, water will be trucked offsite. DTSC expects that the IM3 system will

begin treating groundwater to reduce hexavalent chromium in mid-July. Injection of the treated water will begin upon approval by DTSC. Treated water will continue to be trucked offsite until injection is approved to begin.

The Interim Measures at the Topock site are temporary measures intended to fully protect the Colorado River until a final cleanup plan can be evaluated, discussed with stakeholders and the public, selected and approved. DTSC has directed PG&E to prepare a Corrective Measures Study that will identify potential long-term cleanup technologies for the site, evaluate those technologies based on selection criteria and recommend a cleanup approach, known as the final remedy. The final remedy will be subject to the California Environmental Quality Act and to stakeholder and public review before being approved and implemented.

Glossary

Aquifer: A water-bearing layer of rock or sediment that is capable of yielding useable amounts of water.

California Environmental Quality Act (CEQA): Enacted in 1970 to provide long-term environmental protection, this law requires that governmental decision-makers and public agencies study the environmental effects of proposed activities, and that significant adverse effects be avoided or reduced where feasible. CEQA also requires that the public and stakeholders be informed and given an opportunity to provide input prior to the decision of the lead public agency.

Clarifier: A process in which solids are separated from liquids.

Corrective Action: Specific activities designed to investigate and cleanup contamination at a site resulting from present and past hazardous waste handling practices.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency charged with the regulation of hazardous waste from generation to final disposal, and for overseeing the investigation and clean-up of hazardous waste sites.

Extraction wells: Wells that are used primarily to remove contaminated groundwater from the ground. Water level measurements and water samples can also be collected from extraction wells.

Final Remedy: The final cleanup action proposed for dealing with contaminants at a site.

Groundwater: Water beneath the earth's surface that flows through soil and rock openings, aquifers, and often serves as a primary source of drinking water.

Hexavalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Also used in industrial products and processes, hexavalent chromium is a known carcinogen when inhaled (i.e., through breathing).

Hydrogeology: The geology of groundwater, with particular emphasis on the chemistry and movement of water.

Lead agency: A public agency which has the principal responsibility for ordering and overseeing site investigation and cleanup.

Monitoring wells: Specially-constructed wells used exclusively for testing water quality.

Parts per billion (ppb): A unit of measure used to describe levels or concentrations of contamination. A measure of concentration, equaling 0.0000001 percent. Most drinking water standards are expressed in ppb concentrations.

Plume: A body of contaminated groundwater flowing from a specific source. The movement of the groundwater is influenced by such factors as local groundwater flow patterns, the character of the aquifer in which the groundwater is contained, and the density of contaminants.

Regional Water Quality Control Board (RWQCB): A California agency that maintains water quality standards for a specific geographic jurisdiction and enforces state water quality laws.

Remediation: Cleanup or other methods used to remove or contain a toxic spill or hazardous materials from a site.

Reverse osmosis: A treatment process used in water and wastewater systems by adding pressure to force water through a semi-permeable membrane. Reverse osmosis removes most drinking water contaminants, including salts.

Trivalent Chromium: A form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Trivalent chromium is considered an essential nutrient and is relatively harmless. It does not dissolve in groundwater and tends to bind to soil; thus it does not travel readily in the environment.

Department Contacts

DTSC welcomes your feedback. There are several ways to contact us.

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Media inquiries please contact:
Jeanne Garcia
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818-551-2176, JGarcia1@dtsc.ca.gov

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Website: www.dtsc.ca.gov

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CYPRESS, CA 90630

Information Repository Locations

Project reports, fact sheets, and other project documents can be found in the Information Repositories listed below:

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
Contact: Julie Johnson (714) 484-5337
Fax: (714) 484-5318
9am – Noon, 1pm – 4pm, Monday – Friday
Must submit written request prior to visit

Needles Library
1111 Bailey Avenue
Needles, CA 92363
Contact: Kristin Mouton (760) 326-9255
10am – 6pm, Monday and Tuesday
10am – 4pm, Wednesday
10am – 5pm, Thursday through Saturday

Chemehuevi Indian Reservation
2000 Chemehuevi Trail
Havasu Lake, CA 92363
Contact: David Todd (760) 858-1140
8:00am – 4pm, Monday – Friday

Golden Shores/Topock Library Station
13136 Golden Shores Parkway
Topock, AZ 86436
Contact: Avis McKinnon (928) 768-2235
8am – 2pm, Tuesday and Thursday
3pm – 6pm, Wednesday

Lake Havasu City Library
1770 McCulloch Boulevard
Lake Havasu City, AZ 86403
Contact: Sharon Lane (928) 453-0718
9am – 6pm, Monday and Wednesday
9am – 8pm, Tuesday and Thursday
9am – 5pm, Friday and Saturday

Colorado River Tribes Public Library
2nd Avenue and Mohave Road
Parker, AZ 85344
Contact: Amelia Flores (928) 669-1285
8am – Noon, 1pm – 5pm, Monday – Friday

Parker Public Library
1001 Navajo Avenue
Parker, AZ 85344
Contact: Jana Ponce (928) 669-2622
9am – 7pm, Monday – Friday
9am – 2pm, Saturday

Comment and Mailing List Form for PG&E's Topock Compressor Station

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Name: _____

Address: _____

City/State/Zip: _____

Phone/Email: _____

Affiliation (if any): _____

Comments/Questions: _____

_____

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DTSC mailings are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records and, if requested, may be subject to release.

Fact Sheet
August 2004

PACIFIC GAS & ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

PG&E's Topock Compressor Station in Needles Directed to Expand Cleanup Operations

DTSC is one of six Boards and Departments within the California Environmental Protection Agency. The Department's mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, CA 90630
714-484-5474

California Environmental Protection Agency

E06200401SAC topock_08_2004_draft

Overview

The California Department of Toxic Substances Control (DTSC) has directed Pacific Gas and Electric Company (PG&E) to expand its current cleanup operations of chromium-contaminated **groundwater** in the vicinity of the Topock Compressor Station (Station). The Station is located in eastern San Bernardino County about 15 miles southeast of Needles, California along the Colorado River. Earlier this year, DTSC determined that immediate action was necessary to ensure that groundwater containing chromium does not reach the nearby river. This determination was prompted by detections of **hexavalent chromium** in the floodplain well closest to the river.

Under DTSC's direction, PG&E began pumping contaminated groundwater in March 2004 at a rate of approximately 20 gallons per minute (gpm), and transporting the extracted groundwater by tanker truck to a licensed waste treatment facility in the Los Angeles area. The groundwater pumping operation, known as "**Interim Measures**," was deemed necessary to draw groundwater away from the Colorado River and toward extraction wells located above the river floodplain to the west. The affected groundwater, commonly referred to as "the **plume**," extends northeast from the Station toward the river. Thus far, nearly 3 million gallons of groundwater containing chromium have been removed.

DTSC continues to oversee PG&E in evaluating what is needed to protect the beneficial uses of the Colorado River. These evaluations have included ongoing weekly, monthly and quarterly monitoring of chromium concentrations in over 35 groundwater wells, as well as modeling of groundwater rates and flow direction. DTSC is assisted in its oversight by a Consultative Workgroup consisting of governmental, public, and community entities who hold a vital stake in the safety of the Colorado River and its environs. The members of the Workgroup include: Arizona Department of Environmental Quality, California Regional Water Quality Control Board - Colorado River Basin, International Boundary and Water Commission, Metropolitan Water District of Southern California (MWD), Mojave County (Arizona) Department of Public Health, California State Water Resources Control Board, Colorado River Board of California, U.S. Bureau of Indian Affairs, U.S. Bureau of Land Management (BLM), U.S. Bureau of Reclamation, U.S. Department of the Interior, U.S. Fish and Wildlife Service, U.S. Geological Survey, and representatives from nearby Indian Tribes. Based on current data, DTSC has determined that it is necessary to expand the current pumping operations.

Pumping Increased to Keep Chromium Plume Away from River

Groundwater levels in floodplain monitoring wells fluctuate as the level of the Colorado River rises and falls. The river level fluctuates several feet, depending on the season and the amount of water released from Davis Dam, approximately 30 miles upstream. Releases from Davis Dam peaked this year in May, resulting in higher river levels, and are expected to decline from June to October. The river is expected to

** Words in* ***bold*** *appear in the Glossary of Terms (inside)*

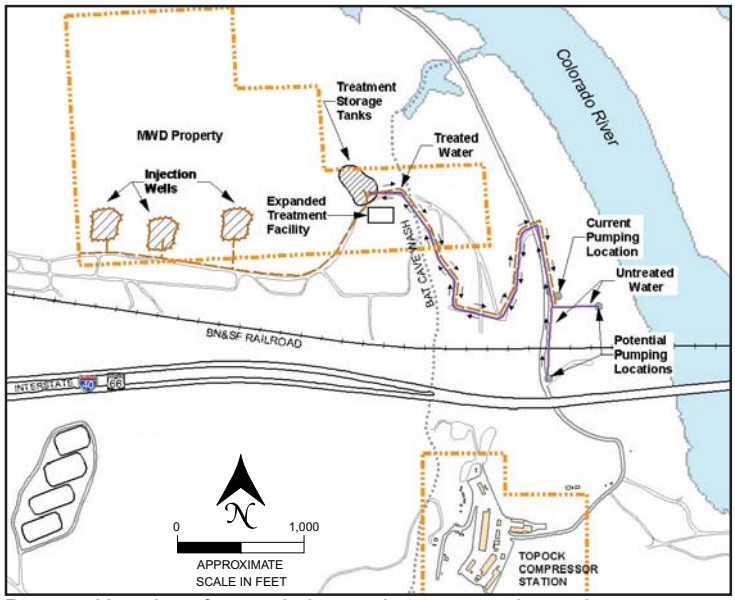
reach its lowest levels from October 2004 through January 2005.

Since pumping began in March, the combined effects of relatively high river levels and pumping at 20 gpm was adequate to provide for groundwater flow away from the river. When river levels are high, the groundwater flows away from the river. However, during the summer and fall, when overall river levels are decreasing, groundwater tends to flow toward the river. To ensure that groundwater containing chromium does not reach the river, PG&E will need to significantly increase pumping rates by winter 2004 (when the river is expected to reach its lowest levels).

The current Interim Measures pumping operation is conducted over the most contaminated part of the plume, located approximately 600 feet from the river, on a level patch of federal land managed by the BLM. PG&E is currently modifying the storage tanks to provide treatment capability that can process up to 40 gallons per minute of extracted groundwater. However, the current pumping site does not have adequate space to accommodate the increased pumping, storage and treatment facilities needed to pump at rates that will ensure groundwater will flow away from the river in the winter months.

Proposal to Expand Treatment Facility

To gain space and to reduce impacts to federal lands, PG&E is proposing to relocate the groundwater treatment operation to adjacent land they are currently seeking to purchase from the Metropolitan Water District of Southern California. The proposed expanded treatment facility would be located approximately 1,500 feet northwest of the current pumping and storage site.



Proposed location of expanded groundwater extraction and treatment system

Groundwater will continue to be extracted from the current pumping location. If necessary, additional groundwater extraction wells will be installed to maintain control of the plume. The extracted groundwater will be piped underground to the new treatment plant. Piping will be sited along existing roadways to reduce impacts to the natural habitat and to cultural resources such as the Topock Maze. Double-walled piping and a leak detection system will be installed to ensure that contaminated groundwater is contained safely.

The treated groundwater will meet California drinking water standards and will continue to be trucked offsite until evaluation of other water management options is complete. DTSC is currently evaluating reuse and disposal options for the treated water. Reuse or disposal of the treated water will be conducted under appropriate permits; these options include water provision for local commercial uses, re-injection to the aquifer and/or discharge to the Colorado River. Treated groundwater will meet or exceed relevant surface water standards if discharged to Colorado river is utilized as a part of Interim Measures.

Based on the need for immediate action, DTSC has issued a Notice of Exemption (NOE) for the expanded Interim Measures under the **California Environmental Quality Act (CEQA)**. DTSC will be reviewing and approving design documents and workplans. A more detailed fact sheet (published in May 2004), the Interim Measures workplans, the Notice of Exemption, the Interim Measures Conditional Approval letter, and other site-related documents are available in the project repositories listed. DTSC will continue to oversee PG&E in evaluating long-term alternative options for treatment and removal of chromium as part of an ongoing **Corrective Action Process**, and will continue to solicit feedback from the public during this process.

Disposal of the Treated Water

DTSC will continue to oversee PG&E in evaluating various remediation alternatives for the treatment and removal of chromium in the groundwater. At this time, DTSC has not made a final decision on how to dispose of the treated water. DTSC understands and values the importance of continuing to solicit feedback from other agencies, sovereign tribal governments and the public. Before any final decision is made on how to dispose of the treated water, DTSC will continue to consult with all interested stakeholders to understand and consider their concerns.

Glossary of Terms

California Environmental Quality Act (CEQA) A law mandating environmental impact review of governmental action. It requires that public agencies study the significant environmental effects of proposed activities and that the public be informed and allowed to comment on project decisions.

Corrective Action Process – Is designed to evaluate the nature and extent of a release of a hazardous substance and implement appropriate measures to protect public health and the environment.

Groundwater – Water beneath the earth's surface that flows through soil and rock openings, and often serves as a primary source of drinking water.

Hexavalent chromium (Cr+6) – Hexavalent chromium is a form of chromium, a metal naturally found in rocks, soil and the tissue of plants and animals. Also used in industrial products and processes, hexavalent chromium is a known carcinogen when inhaled (i.e., through breathing).

Interim Measures – Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

Plume – A body of contaminated groundwater flowing from a specific source.

DTSC Contacts

You can contact DTSC at any time to get more information about this project, be added to the mailing list, or let us know your thoughts. Please call, email or write to:

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Address: _____

City/State/Zip: _____

Phone/Email: _____

Affiliation (if any): _____

Comments/Questions: _____

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_____

_____

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DERRICK ALATORRE
DEPT. OF TOXIC SUBSTANCES CONTROL
5796 CORPORATE AVENUE
CYPRESS, CA 90630

May 2004

PACIFIC GAS & ELECTRIC COMPANY
TOPOCK COMPRESSOR STATION
NEEDLES, CALIFORNIA

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Interim Measures at the PG&E Topock Compressor Station

DTSC is one of six Boards and Departments within the California Environmental Protection Agency. The Department's mission is to restore, protect, and enhance the environment, to ensure public health, environmental quality and economic vitality by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

Department of Toxic Substances Control
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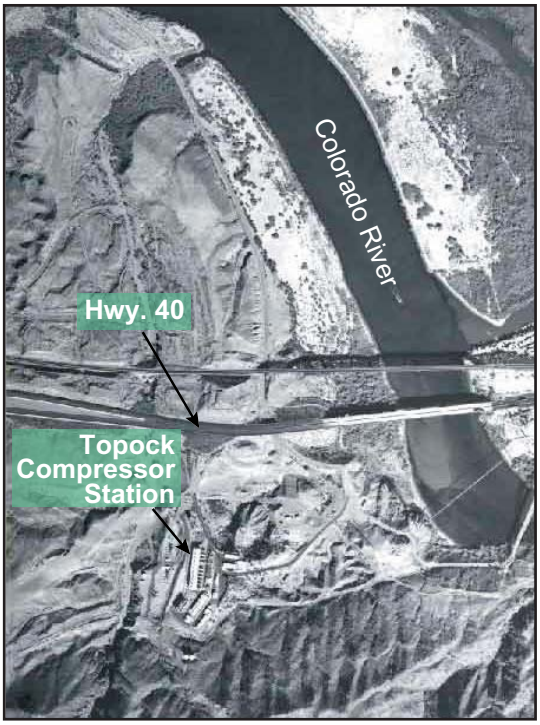
714-484-5474

California Environmental Protection Agency

E032004015SAC 5/5/04 final

What's Happening?

On March 8, 2004, Pacific Gas and Electric Company (PG&E) began extracting chromium-contaminated **groundwater*** near the Topock Compressor Station (Station) to prevent it from reaching the Colorado River. The chromium contamination is the result of discharges from past operations at the Station. The groundwater cleanup is being conducted under the oversight of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), which recently determined that urgent action is needed to ensure chromium-contaminated groundwater does not reach the Colorado River. Although the contamination has not been detected in the Colorado River and there is no imminent threat to public health, DTSC required immediate action as a precautionary measure to protect the Colorado River, a valuable drinking water resource.



PG&E Topock Compressor Station near Needles, California

The environmental investigation, which has been underway since 1997, is primarily focused on the toxic chemical **hexavalent chromium** (also known as Cr+6). The affected groundwater, commonly referred to as the **plume**, extends about 2,400 feet long and 1,300 feet wide and mostly underlies federal lands. The immediate actions required by DTSC, called **Interim Measures**, include pumping, transporting, and disposing of groundwater from three existing monitoring wells located just above the floodplain of the Colorado River. The pumping is intended to draw the chromium plume in the floodplain toward the monitoring wells and away from the Colorado River.

DTSC is working closely with various regional, state, and federal agencies through a Consultative Workgroup (CWG), which meets regularly with PG&E to discuss and consult on the site cleanup. Agencies involved in the CWG include: Arizona Department of Environmental Quality, Mojave County (Arizona) Department of Health and Social Services, California Regional Water Quality Control Board - Colorado River Basin, Metropolitan Water District of Southern California, U.S. Department of the Interior, U.S. Bureau of Land Management, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, U.S. Geological Survey, and the U.S. Bureau of Indian Affairs. DTSC also consults regularly with the surrounding Native American communities, including the Fort Mojave, Chemehuevi, and Colorado River Indian Tribes, and has

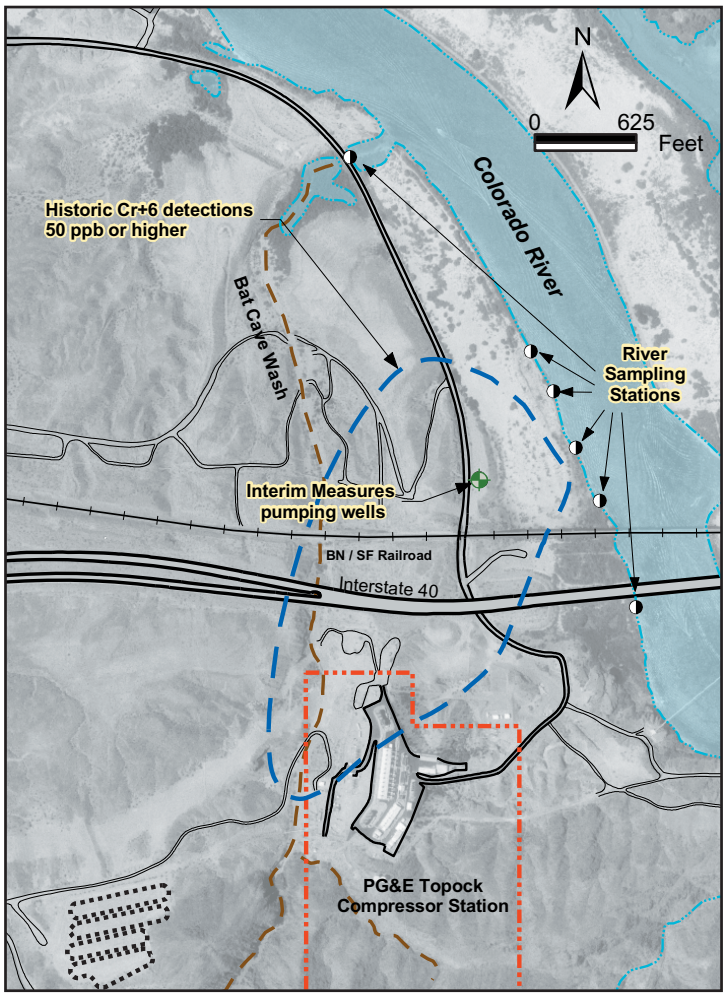
* *Words in* **bold** *appear in the Glossary of Terms on the back page.*

been working to keep other members of the public and elected officials apprised of project status.

Interim Measures

Interim Measures are urgent actions taken to clean up the site while the long-term remedy is being evaluated. DTSC required Interim Measures to accelerate removal of chromium contamination and to protect the Colorado River. Planning and implementation of the Interim Measures is being closely coordinated with the U.S. Bureau of Land Management, which acts as trustee of the federal land where the pumping occurs. Based on the need for immediate action, DTSC issued a Notice of Exemption (NOE) under the **California Environmental Quality Act** (CEQA).

As part of the Interim Measures, PG&E is currently pumping contaminated groundwater 24 hours a day, 16 gallons per minute, for a total removal of approximately 23,000 gallons per day. Water pumped from the wells is being temporarily stored in steel holding tanks, and then transferred into trucks for transport to a licensed waste treatment facility in Los Angeles. Approximately six trucks per day are hauling water from the site.



Area of historic maximum hexavalent chromium detections (50 ppb or higher) in the area associated with the discharge

Multiple safeguards are in place to ensure that contaminated groundwater is safely contained during the removal process. The entire area where contaminated water is handled is underlain with durable, watertight liners and surrounded by protective **berms**. The site is also secured with fencing and manned on a 24-hour basis. Emergency response procedures are in place, including trained spill response personnel who are on call 24 hours per day. PG&E provides DTSC with a progress report on the Interim Measures every two weeks.

Two high-capacity groundwater extraction wells have recently been completed near the site of the present pumping. It is anticipated that pumping activity will switch over to these high-capacity extraction wells in early May 2004. The Interim Measures include provisions for the installation of additional extraction wells, if necessary, to draw the chromium plume in the floodplain toward the extraction wells and away from the Colorado River. In addition, a treatment plant is currently being planned to reduce or eliminate the need for trucking water off site. PG&E is currently evaluating options for disposal and/or re-use of the treated water.

Why Interim Measures? Has the Colorado River been Affected?

Water from the Colorado River has been sampled quarterly since 1997, and monthly since November 2003. To date, Cr+6 has not been detected in any of these samples. Likewise, bottom sediments from different locations along the river have been sampled and no Cr+6 has been detected. These data indicate that the chromium plume has not affected the Colorado River to any significant and measurable degree.

The current groundwater pumping is targeted at the most contaminated part of the plume, located approximately 600 feet from the river, where concentrations as high as 13,000 ppb of Cr+6 have been measured. It is believed that plume migration occurred mostly between 1951 and 1968 when wastewater was actively discharged from the Station, at the rate of about six to ten million gallons per year. This active discharge provided the main driving force that pushed the plume to its present position. Current data suggests that the plume is moving very slowly, at the rate of one to three feet per year.

At present, there are 35 wells monitoring the plume

including 12 monitoring wells in the floodplain area adjacent to the river. Seven of these wells were installed in 2003 to better monitor the edge of the plume closest to the river. Nine of these floodplain wells have never detected Cr+6. Of the three wells that detected Cr+6, the one closest to the river has exceeded the California drinking water standard of 50 ppb on two occasions, with a concentration as high as 111 ppb. These affected floodplain wells, plus a few others, are currently sampled on a weekly basis.

Based on the chromium detections from these floodplain wells, DTSC required Interim Measures in the form of groundwater pumping to prevent any potential impact to the Colorado River. While Cr+6 has never been detected in the Colorado River, pumping is intended to induce groundwater flow in the flood plain area away from the river to prevent any possibility of the chromium plume reaching the river. Also, the Interim Measures will gather additional technical data which will be used in designing the final cleanup system.

Where is the Topock Compressor Station?

PG&E's Topock Compressor Station is located in eastern San Bernardino County, about 15 miles southeast of Needles, along the Colorado River. The nearest communities are Moabi Regional Park, California (one mile northwest of the Station); Topock, Arizona (one-half mile east-northeast across the Colorado River); and Golden Shores, Arizona (eight miles north). Three Indian reservations are located within 35 miles along the Colorado River: the Fort Mojave Indian Reservation 20 miles upstream; the Chemehuevi Indian Reservation 25 miles downstream; and the Colorado River Indian Reservation 35 miles downstream.

History of Chromium Use at the Topock Compressor Station

PG&E Topock Compressor Station compresses natural gas before transporting it through pipelines to central and northern California. Between 1951 and 1985, PG&E used Cr+6 as an anti-corrosion agent in its cooling towers. From 1951 to 1964, untreated wastewater from the cooling towers was discharged into **percolation** beds in Bat Cave Wash, a normally dry wash next to the Station. Beginning in 1964, PG&E treated the wastewater to remove Cr+6. The treated wastewater was discharged into Bat Cave Wash until 1968, and subsequently into an on-site injection well. Over time, PG&E installed a series of lined evaporation ponds for wastewater disposal. In 1985, PG&E stopped using the chromium-based additive and switched to a phosphate-based solution. In 1996, PG&E entered into a Corrective Action Consent Agreement with DTSC to investigate and clean up the Cr+6 contamination at the Station.

What is Chromium and Why Should I be Concerned about it?

Chromium is a naturally occurring metal found in rocks, soil, and the tissue of animals and plants. It is present in the environment most commonly in two different forms: hexavalent chromium (Cr+6) and trivalent chromium (Cr+3). Cr+6 is the toxic variety; it is considered a human carcinogen when inhaled. It is also highly soluble, and therefore easily transported in groundwater. Cr+3, on the other hand, is considered an essential nutrient and relatively harmless. It is insoluble and tends to bind to the soil; thus it does not travel readily in the environment. Cr+6 is stable only under certain chemical conditions and may convert into Cr+3. However, Cr+3 does not convert as readily to Cr+6.

The California drinking water standard, which is a legal mandate based on health and other considerations, is currently set at 50 ppb of total chromium (which includes both Cr+6 and Cr+3). There is currently no separate drinking water standard for Cr+6.

Am I Affected by the Contaminated Groundwater?

As stated previously, Cr+6 has not been detected in the Colorado River, which is a major source of drinking water. The groundwater containing Cr+6 is in an isolated area and is not used for drinking or other purposes. Cr+6 is no longer used at the Station, and health and safety procedures are in place to ensure that workers at the Station do not come in contact with chromium-contaminated soil or groundwater. *(continued on back page)*

Interim Measures equipment, including water storage tanks

(continued from previous page)

What's Next?

Interim Measures at the site will continue until the **Final Remedy** is in place. Additional groundwater extraction wells will be installed and a wastewater treatment system will be constructed on site. Groundwater and river water sampling will continue on a regular basis.

The results of the Interim Measures, groundwater monitoring, and supplemental field studies will be incorporated in the evaluation of the Final Remedy and preparation of a **Corrective Measures Study** to select the long-term remedy for the site.

DTSC also has directed PG&E to evaluate the effectiveness of a **subsurface containment barrier**, including a "slurry wall." A subsurface containment barrier, when designed and installed properly, can be used in combination with ongoing groundwater extraction to prevent the contamination from impacting the river. Other long-term alternatives being evaluated include **in-situ treatment**, which converts the Cr+6 to Cr+3 under the ground to speed up the remediation of the site. These and other alternatives will be evaluated for effectiveness in protecting the environment, reliability, technical feasibility, cost effectiveness, community acceptance, and other factors. The Final Remedy may include pumping and treatment of groundwater in combination with these alternatives. Before the Final Remedy is selected, the public will have an opportunity to review and provide comments on the proposed Final Remedy. Additionally, a public hearing will be held.

Glossary of Terms

Berms – A curb, ledge, wall, or mound made of various materials, used to prevent the spread of contaminants.

California Environmental Quality Act (CEQA) A law mandating environmental impact review of governmental action. It requires that public agencies study the significant environmental effects of proposed activities and that the public be informed and allowed to comment on project decisions.

Corrective Measures Study (CMS) – A study conducted by the facility owner/operator to identify and evaluate alternative remedies (i.e., cleanup options) to address contaminant releases at a site.

Final Remedy – The final cleanup action proposed for dealing with contaminants at a site.

Groundwater – Water beneath the earth's surface that flows through soil and rock openings, and often serves as a primary source of drinking water.

Hexavalent chromium (Cr+6) – Hexavalent chromium is a form of chromium, a metal commonly found in soil, plants, and animals. Also used in industrial products and processes, hexavalent chromium is a known human carcinogen when inhaled (i.e., through breathing).

In-situ treatment – Technology that treats contaminants in place within the soil or in groundwater. It typically involves injection of a material such as air, gases, chemical or biological reagents or solid material (e.g., molasses or lactose) to chemically alter the contaminant, or to encourage bacteria in the soil to aid in the treatment.

Interim Measures – Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

Parts per billion – A unit of measure used to describe levels or concentrations of contamination. One part per billion is the equivalent of one drop of contaminant in one billion drops of water.

Percolation – The downward flow or filtering of water or other liquids through subsurface rock or soil layers, usually continuing to groundwater.

Plume – A body of contaminated groundwater flowing from a specific source.

Subsurface containment barrier – Barriers used to contain or control the flow of contaminated groundwater or subsurface liquids. They are constructed by digging a trench around a contaminated area and filling the trench with a material that tends not to allow water to pass through it.

We want to hear from you!

DTSC welcomes your feedback. There are several ways to contact us.

For any questions or comments please contact:

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Project reports, fact sheets, and other project documents can be found in the Information Repositories listed below:

Department of Toxic Substances Control
5796 Corporate Ave., Cypress, CA
Julie Johnson: 714-484-5337

Needles Library
1111 Bailey Ave., Needles, CA
Barbara Degidio: 760-326-9255

Chemehuevi Indian Reservation
2000 Chemehuevi Trail, Havasu Lake, CA
Dave Todd: 760-858-1140

Golden Shores/Topock Library Station
13136 Golden Shores Parkway, Topock, AZ
Avis McKinnon: 928-768-2235

Lake Havasu City Library
1787 McCulloch Blvd., Lake Havasu City, AZ
Sharon Lane: 928-453-0718

Colorado River Tribes Public Library
2nd Ave and Mohave Rd., Parker, AZ
Amelia Flores: 928-669-1285

Parker Public Library
1001 Navajo Ave., Parker, AZ
Jana Ponce: 928-669-2622

Comment and Mailing List Form for PG&E's Topock Compressor Station

If you would like to be added to or taken off the distribution list for mail related to the site, or to submit questions or comments, please fill in this form and return to DTSC. Please address all mailings to Derrick Alatorre, Department of Toxic Substances Control, External Affairs/Public Participation, 5796 Corporate Avenue, Cypress, CA 90630.

Name: _____

Address: _____

City/State/Zip: _____

Phone/Email: _____

Affiliation (if any): _____

Comments/Questions: _____

_____

_____

_____

_____

DTSC mailings are solely for the purpose of keeping persons informed of DTSC activities. Mailing lists are not routinely released to outside parties. However, they are considered public records and, if requested, may be subject to release.

California Environmental Protection Agency
Department of Toxic Substances Control

ENVIRONMENTAL INVESTIGATION RESULTS

Pacific Gas and Electric Company
Topock Gas Compressor Station
15 Miles Southeast of Needles, California

Update to Fact Sheet #1 *September 1999*

INTRODUCTION

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), is the lead agency overseeing an investigation at Pacific Gas and Electric Company's Topock Gas Compressor Station site in eastern San Bernardino County. Results of the environmental investigation to date indicate that there is no immediate threat to human health or the environment, and that contamination has not impacted the Colorado River. Therefore, DTSC has determined that the normal corrective action process can proceed without implementing Interim Measures at the site.

The objective of the investigation is to characterize the nature and extent of certain hazardous substances at the site. This fact sheet serves as an update to DTSC's Fact Sheet #1 dated March 1998. The update provides a brief overview and information on recent site investigations, fieldwork completed, results to date, opportunities for public involvement, and information on repository locations where additional information can be obtained. Detailed information relating to the regulatory requirements, the summary of the corrective action process, and history of activities at the Topock Gas Compressor Station can be obtained by reviewing Fact Sheet #1, which can be obtained in any of the five repositories listed on page 5.

OVERVIEW

The Topock Gas Compressor Station is located in eastern San Bernardino County, about 15 miles southeast of Needles and south of Freeway I-40 (see Figure 1). The facility, which began operation in 1951, compresses natural gas for transportation through pipelines to Pacific Gas and Electric Company's service territory in Central and Northern California. As natural gas is compressed, its temperature increases and the compressed gas is cooled with water in two cooling towers before it is transported through the pipelines.

From 1951 to 1985, the company used a corrosion inhibitor containing hexavalent chromium to prevent corrosion of the cooling tower equipment. From 1951 to the mid-1960s, the untreated wastewater containing hexavalent chromium was discharged into the Bat Cave Wash area (see Figure 2), a normally dry stream bed that drains into the Colorado River. In the mid- to late-1960s, Pacific Gas and Electric Company began to treat the wastewater to convert hexavalent chromium to a non-hazardous form of chromium known as trivalent chromium. In the early 1970s, the company discharged the treated wastewater to an injection well near the Bat Cave Wash and later began storing the wastewater exclusively in lined evaporation ponds.

CORRECTIVE ACTION PROCESS

A corrective action process is designed to evaluate the nature and extent of releases of hazardous substances at a site. The process also identifies, develops and implements appropriate corrective measures, if required, to protect public health and the environment. As part of the corrective action process, Pacific Gas and Electric Company developed a Work Plan outlining the specifics of the planned facility investigation. DTSC reviewed and approved the Work Plan before the investigation began.

SAMPLING FIELDWORK COMPLETED

Currently, there are 38 existing monitoring wells at the site, including 11 pre-existing wells, 7 monitoring wells installed during the initial site investigation, and 20 additional wells installed since March of 1998 (see Figure 2). When Fact Sheet #1 was issued in March 1998, the first phase of the sampling fieldwork was being finished. Since that time, additional phases of fieldwork were performed at the site. Prior to performing this additional work, Work Plan amendments describing all proposed

additional investigations were approved by DTSC and submitted to key regulatory agencies and also placed in the designated public information repositories for the site.

The additional fieldwork included the following activities:

- A total of 20 additional monitoring wells were installed and sampled to further characterize the horizontal and vertical extent of hexavalent chromium in groundwater.
- All existing wells have been tested and will continue to be sampled.
- Water samples were taken at multiple locations and depths in the Colorado River.
- As part of the quality control process, duplicate groundwater and surface water samples were sent to a second laboratory for independent analysis. During two sampling events, the DTSC collected its own samples and completed independent analyses at the DTSC laboratory.
- Additional soil samples were collected and analyzed at and near the compressor station. At an area north of the compressor station, soils were sampled and a small amount of construction debris that contained asbestos was removed.
- Air sampling was performed during excavation activities at and near the compressor station.

RESULTS TO DATE

The results of the investigation completed to date indicate that:

- The detected levels of hexavalent chromium in groundwater and soils do not present an immediate threat to human health or the environment.
- In most of the locations, the samples have been non-detect or below the drinking water standard of 0.05 parts per million. The highest level of hexavalent chromium detected in the groundwater was 13 parts per million in one well near the station property. This groundwater is not being used for drinking or any other purpose.
- Hexavalent chromium was not detected in the three monitoring wells installed along the bank of the Colorado River.
- Hexavalent chromium has not been detected in the 36 water samples of the Colorado River collected on different occasions from nine separate locations, and at different water depths.
- Tests to date indicate the groundwater is not reaching the Colorado River.
- Hexavalent chromium in the soil is present in localized areas at or near the compressor station, and does not present an immediate threat to human health and the environment.
- Hexavalent chromium has not been detected in the air based on air samples taken during soil excavation activities.

NEXT COURSE OF ACTION

- DTSC has determined that the normal corrective action process can proceed without implementing Interim Measures at the site.
- In the coming months Pacific Gas and Electric Company will prepare a comprehensive site characterization report, to be submitted to DTSC. Upon review and approval of the site characterization report, DTSC will issue another fact sheet.
- If corrective measures are necessary, the next step in the process will be to conduct a Corrective Measures Study in which various alternatives for clean up will be evaluated. Possible clean-up alternatives might include pumping the groundwater and treating it at the surface; treating the groundwater in place; or a combination of the two approaches.
- Alternatives will be evaluated for effectiveness in protecting the environment, reliability, technical feasibility, cost, community acceptance and other factors. A public notice will be mailed to the public seeking community input before DTSC approves the final clean-up alternative.

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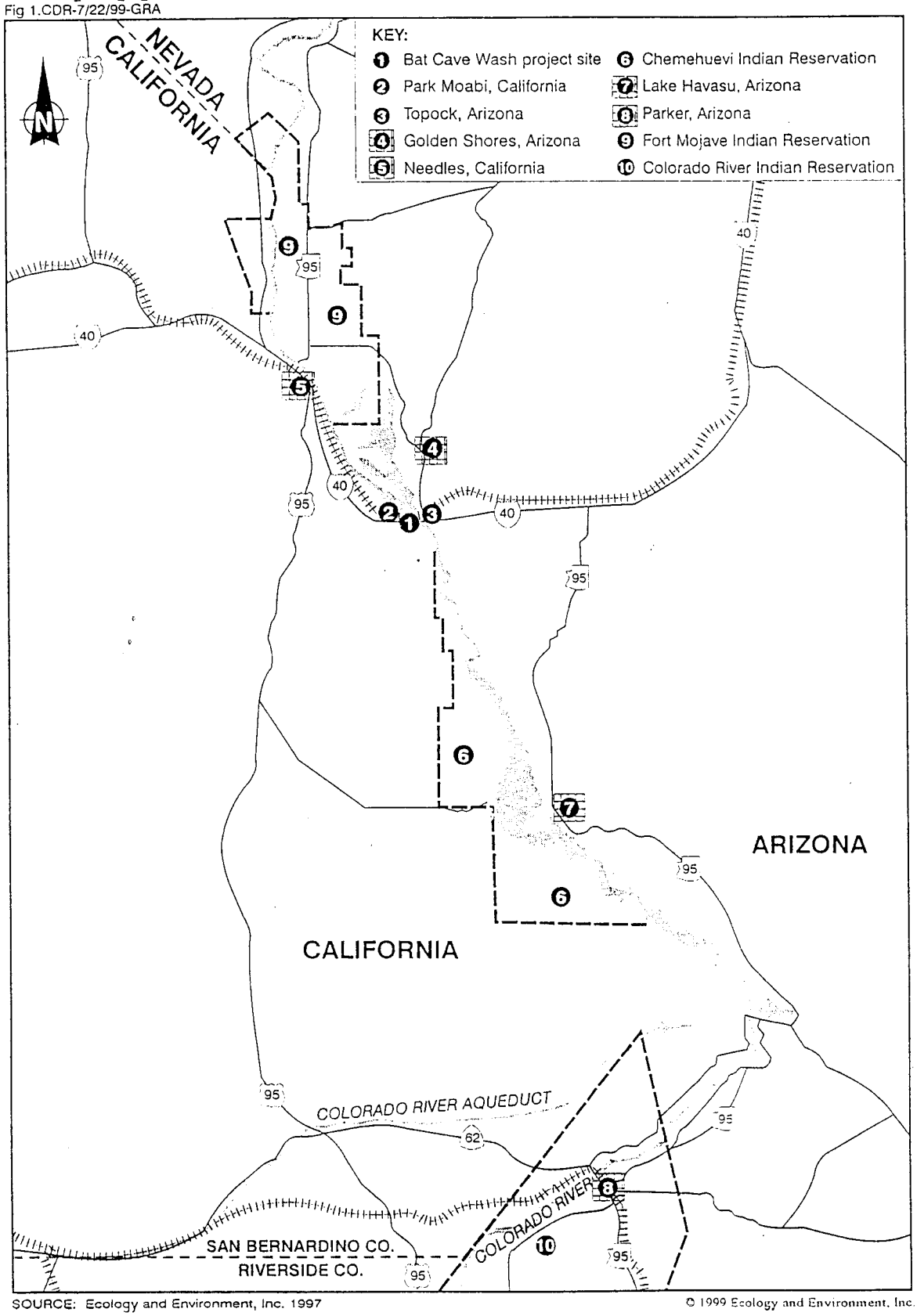
Fig 1.CDR-7/22/99-GRA



SOURCE: Ecology and Environment, Inc. 1997

SCALE
0 20 40 Miles

Figure 1 REGIONAL LOCATION AND SURROUNDING COMMUNITIES

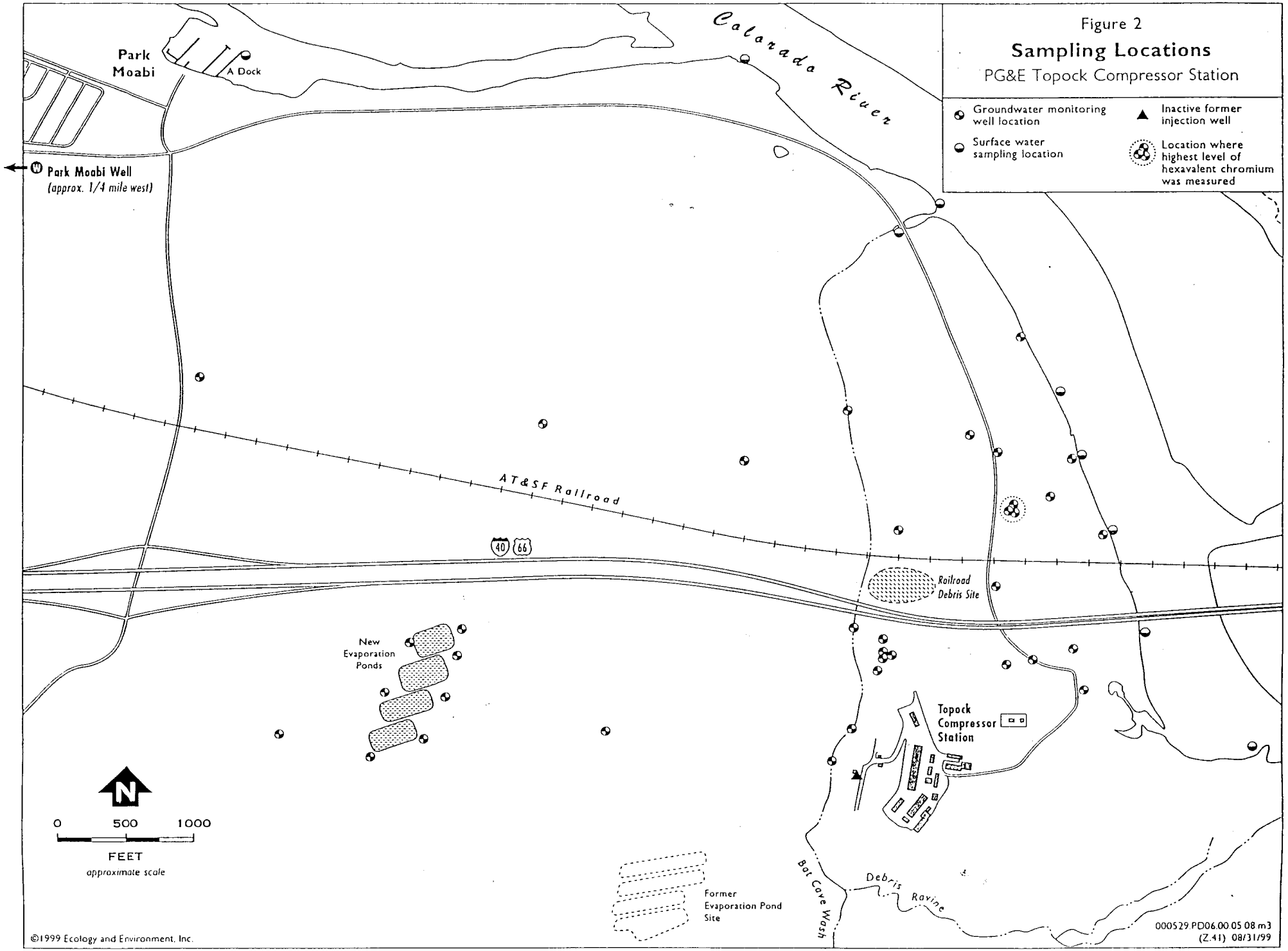


Figure 2
Sampling Locations
PG&E Topock Compressor Station
Groundwater monitoring well location
Surface water sampling location
Inactive former injection well
Location where highest level of hexavalent chromium was measured
Park Moabi
A Dock
Colorado River
Park Moabi Well
(approx. 1/4 mile west)
AT&SF Railroad
40
66
Railroad Debris Site
New Evaporation Ponds
Topock Compressor Station
N
0
500
1000
FEET
approximate scale
Former Evaporation Pond Site
Bat Cave Wash
Debris Ravine
©1999 Ecology and Environment, Inc.
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(Z.41) 08/31/99

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

DTSC has solicited public input for the project and invites continued public involvement. A Public Participation Plan has been prepared and can be found at any one of the five repositories. DTSC will continue to provide updates to the public through fact sheets and/or letters as needed. If the community expresses greater interest in the project investigation process DTSC will conduct public meetings. If during the course of the investigation DTSC determines that immediate action is required to protect human health and the environment the public will be notified.

FOR ADDITIONAL INFORMATION

If you have questions concerning this project or would like additional information about the Pacific Gas and Electric Company's Topock Compressor Station site, please call the contacts listed below or visit and refer to the documents available at one of the 5 information repositories. Tayseer Mahmoud, DTSC Project Manager at (714) 484-5418, or Martin Prisco, DTSC Public Participation Specialist at (818) 551-2875. The Project Manager for Pacific Gas and Electric Company is Melvin Wong. The project contact at Pacific Gas and Electric Company is Linda Quinones-Vaughan, Public Affairs at (661) 321-4407.

INFORMATION REPOSITORIES

Department of Toxic Substances Control
5796 Corporate Ave, Cypress, CA 90630
Contact: Ms. Julie Johnson, (714) 484-5337
8am - 5pm, Mon - Fri

Golden Shores / Topock Library Station
13136 Golden Shores Pkwy, Topock, AZ 86436
Contact: Ms. Tina O'Hara, (520) 768-2235
2pm - 7pm, Mon; 8am - 1pm, Tues & Thurs

Chemehuevi Valley Indian Reservation
1980 Palo Verde Drive, Havasu Lake, CA 92363
Contact: Mr. Ed White, (760) 858-1116
7:30am - 4pm, Mon - Fri

Lake Havasu City Library
1787 McCulloch Blvd, Lake Havasu City, AZ 86403
Contact: Ms. Sharon Lane, (520) 453-0718
9am - 5pm, Mon, Wed, Fri & Sat; 9am - 8pm Tues & Thurs

Needles Library, 1111 Bailey Avenue, Needles, CA 92363
Contact: Ms. Barbara Degidio, (760) 326-9255
10am - 6pm, Mon - Tues; 10am - 5pm Thurs & Sat; 12pm - 5pm, Fri

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
ATTN MARTIN PRISCO
1011 N GRANDVIEW AVENUE
GLENDALE CA 91201

California Environmental Protection Agency
Department of Toxic Substances Control

Fact Sheet

The Public's Role During the Permit Process

May 1998

The Department of Toxic Substances Control (DTSC) encourages public involvement in its permitting process. This fact sheet is designed to provide information and guidance on how community members can become involved, and most effectively provide input.

I. Who Needs a Hazardous Waste Facility Permit?

Under California and federal law, anyone who stores, treats or disposes of hazardous waste as described in the Hazardous Waste Control Law (Health and Safety Code, Division 20, Chapter 6.5) must obtain a permit or a grant of authorization from the Department of Toxic Substances Control (DTSC). Please Note: Health and Safety Code (HSC) section 25143.2 relating to recycling activities.

II. What is RCRA?

Resource Conservation and Recovery Act (RCRA). Federal statute which regulates facilities that treat, store or dispose of hazardous waste. All RCRA hazardous wastes are identified in Part 261 of Title 40 of the Code of Federal Regulations and appendices.

III. What is non-RCRA Hazardous Waste?

All hazardous waste regulated in the State, other than RCRA hazardous waste.

IV. What is Tiered Permitting?

California has a five-tier permitting program which matches the statutory/regulatory requirements imposed upon each category of hazardous waste facilities to the degree of risk posed by them. The five permitting tiers, in descending order of regulatory oversight, are:

(1) The Full Permit Tier - Includes all facilities requiring a RCRA permit, plus selected non-RCRA activities pursuant to Title 22 California Code of Regulations (22 CCR).

(2) The Standardized Permit Tier - A facility that manages waste not regulated under RCRA, but regulated as a hazardous waste by the State of California. These "off-site" facilities (facilities which do not generate the "California-only" waste but accept waste from other generators) include, but are not limited to recyclers, oil transfer stations, and precious metals recyclers. For more detailed information on Standardized Permits see DTSC's Fact Sheet on the Standardized Permit Tier and HSC section 25201.6.

(3) The Permit by Rule Tier - A California-only (non-RCRA) onsite (wastes that are generated at the facility where they are treated) treatment permit for specific waste streams and treatment processes, such as concentrated metal-bearing wastes, concentrated acids or alkalies, wastes posing multiple hazards, and silver recovery. For more detailed information see DTSC's Tiered Permitting Fact Sheet 1772D, and 22 CCR sections 67450.1 through 67450.13.

(4) The Conditional Authorization Tier - A California-only (non-RCRA) onsite treatment authorization for specific waste streams such as metal-bearing rinse waters, and mostly single-hazard wastes, some neutralization, and oil/water separation. For more detailed information see DTSC's Tiered Permitting Fact Sheet 1772C and HSC section 25200.3.

(5) The Conditional Exemption Tier - A California-only (non-RCRA) onsite treatment authorization for small-quantity treatment including oil/water separation, container rinsing or destruction, gravity settling, and some neutralization. For more detailed information see DTSC's Tiered Permitting Fact Sheets 1772A, 1772B and HSC section 25201.5.

Please Note: The three lower tiers (onsite hazardous waste notifications), do not require any formal permit issuance and there is no public participation involved. For more information please contact DTSC's Headquarters Unified Program Section at (916) 324-2423.

V. Preapplication Public Meeting and Notice

An informal preapplication public meeting is required for all new applicants who apply for a RCRA permit. In addition, current applicants who apply to renew their RCRA permits, where the

renewal application contains significant changes in the facility's operation (equal to a class 3 Permit Modification), must also hold an informal preapplication meeting. At least 30 days prior to the preapplication public meeting, the applicant is required to advertise the meeting in the newspaper, through a broadcast announcement (e.g., by radio or television), and on a sign posted at or near the property. The meeting provides a chance for the community to interact with and provide input to a facility owner or operator before the owner or operator submits the permit application. In addition, soon after receipt of the application, DTSC must publish a public notice and notify appropriate State and local agencies that the application has been received. The notice must contain the name and telephone number of the applicant's contact; the name and telephone number of the DTSC contact and a mailing address for that contact person; an address to which community members can write to be placed on the mailing list; location of where copies of the application can be viewed and copied; a brief description of the facility and proposed operation, including the address or a map of the facility location on the front page of the notice; and the date the application was submitted.

VI. Permitting Process for Full and Standardized Permit Applications

The permitting process begins when an application is received by DTSC which then makes a determination if the application is administratively complete. Once this is done, DTSC evaluates the proposal for compliance with applicable technical standards, and for potential environmental impacts (see following section). During this phase, DTSC staff conducts a community assessment, which is a process that allows DTSC to evaluate the potential level of community interest as well as the information needs of the public. If there appears to be a high level of community interest, a more formal community assessment may be conducted. There are several methods of assessing community interest. These include:

- Community survey
- Community interviews
- File search

A survey is usually sent to those who live near or may be interested in the facility. It contains a questionnaire which allows DTSC to determine issues, such as level of knowledge about the facility, informational requirements, and languages used within the community.

Community interviews involve asking many of the same questions, but within a one-on-one or small-group meeting with community members.

A file search is conducted to determine if letters or telephone calls concerning the facility have been received by any public agency, the existence of newspaper articles, or the existence of other written documentation of public interest.

A public participation plan, which usually utilizes all of the above assessment methods, is developed for projects where DTSC determines that there will be ongoing high interest from the community.

During the initial phase of the process, DTSC may determine there is sufficient interest in the project and may hold a community meeting, issue a fact sheet, set up an information repository where documents and other pertinent materials are available for public review, or conduct other outreach activities. A mailing list is usually developed during this phase.

Once DTSC is satisfied that the application is complete, it prepares and issues a draft permit decision that is then circulated for public comment. This decision (to either accept or deny the permit) is public noticed in a newspaper or newspapers of general circulation, and on an appropriate radio station within the community. If a language other than English is necessary, DTSC will have the public notice placed in a newspaper written in that language (if one exists), and provide for translation of the fact sheet which is sent to a mailing list of all interested parties.

The public notice and fact sheet will announce the beginning of a 45-day public comment period, and the location where key documents pertaining to the draft permit decision may be reviewed by the public. A public hearing may be held during the 45-day period if there is community interest. DTSC may couple the hearing with a less formal community meeting where the public may ask questions of DTSC staff. At the hearing, the public can provide verbal or written comments pertaining to the proposed permit decision. Written comments are also accepted during the comment period. All comments are recorded by DTSC and responded to in a "Response to Comments" document, which is issued when the final permit decision is made. A copy of the response to comments is placed in the information repository.

After the close of the public comment period, DTSC issues a final permit decision accompanied by a written response to all comments received. The applicant and the public have 30 days to appeal DTSC's decision.

Throughout the permitting process, DTSC staff members are available to answer the community's questions. Facts sheets and public notices will provide you with the names and telephone numbers of DTSC contacts.

VII. The CEQA Process

One of the laws that must be complied with during the permit process is the California Environmental Quality Act (CEQA).

Under this law, DTSC must disclose and consider the environmental implications of its decisions, and avoid or reduce the significant environmental impacts if any are identified.

The environmental analysis required by CEQA begins when the lead agency (the agency with the most regulatory authority in the decision-making process) conducts an "initial study". If the initial study concludes that any effects of the project, either individually or cumulatively, may cause a significant effect on the environment, an Environmental Impact Report (EIR) is prepared. If the initial study concludes that no aspects of the project present a significant effect on the environment, a draft Negative Declaration is issued. Prior to the development of an EIR, the lead agency usually conducts a public "scoping session" to help it determine issues which may have an environmental impact.

A public notice for either a draft Negative Declaration or a draft EIR, is usually circulated by DTSC at the same time DTSC public notices its draft permit decision. This allows the public to comment on both documents at the same time. Similarly, a hearing for the EIR and the draft permit decision is held concurrently. A draft Negative Declaration may be the subject of a public hearing if there is public interest, and this hearing is usually conducted concurrently with the hearing on the draft permit decision. The comment period for these CEQA documents is 45 days.

For more information about the CEQA process, please contact DTSC's Planning and Environmental Analysis Section at (916) 322-8693.

VIII. Advantages of Community Involvement Activities

Public participation ensures there is two-way communication between the public and DTSC. It also ensures that public concern and input are considered in the final decision. Some of the key methods of participating, and their advantages, are:

- **Community Meeting**

A semi-formal meeting where community members share information and express their concern and needs, and ask questions pertaining to a proposed or existing hazardous waste facility. Also, these meetings can provide opportunities for DTSC staff and community members to get to know one another.

- **Workshops**

Workshops are less formal gatherings to assist the public to better understand complex or technical project-specific issues. These discussions are usually led by DTSC project staff and/or individuals from other regulatory agencies with technical expertise in specific areas. A key difference between a workshop and a community meeting is the workshop's emphasis on one-on-one interaction.

- **Open Houses**

An informal gathering, usually held over several hours convenient to most community members, where individuals can "drop in" at any time, and obtain information through one-on-one dicussions with DTSC staff. Maps and other graphics pertaining to the permit decision are sometimes displayed around the room for easy viewing.

- **Public Hearing**

A formal gathering where the public may submit statements and data concerning a draft permit decision.

IX. Appeal of Permit Decisions

Once a final permit decision is issued by DTSC, any person who filed comments on the draft permit or participated in the public hearing for the permit has 30 days to petition DTSC to review any condition of the permit decision. In addition, any person who did not file comments or did not participate in the public hearing on the draft permit, may petition DTSC for review of the permit decision. However, the petition for review is limited by law to changes made to the draft permit that are reflected in the final permit decision. (22 CCR section 66271.18).

Within a reasonable time following the filing of the petition for review, DTSC must issue an order either granting or denying the petition for review. If the petition for review is granted, DTSC will issue a public notice to the project mailing list and set forth a briefing schedule for the appeal. If the petition for review is denied, DTSC will send the notice to deny only to the person(s) requesting the review.

X. How Can DTSC Help Community Members with Hazardous Waste Facility Permitting Questions?

The following resources are available to assist the public regarding the hazardous waste facility permitting process:

- Permit Assistance Centers: In order to locate the nearest Permit Assistance Center, please contact 1-800-468-1786.
- DTSC Field Offices: See next page for telephone numbers and locations.
- DTSC's Internet Home Page which displays Hazardous

Waste Management Program notices and documents. Access at http://www.calepa.ca.gov/dtsc.htm.

- Cal/EPA Environmental Recycling Hotline at 1-800-CLEANUP (1-800-253-2687).

- U.S. Environmental Protection Agency, RCRA Hotline at 1-800-424-9346.

XI. What Other Sources of Information are Available?

- Guidance Documents "Permit Writer Instructions for Storage and Treatment Facilities" and "Permit Writer Instructions for Closure of Storage and Treatment Facilities," DTSC. Copies can be obtained from DTSC's Headquarters Hazardous Waste Management Program at (916) 327-4493.

- California Environmental Quality Act, Statutes and Guidelines, DTSC. More information can be obtained from DTSC's Headquarters Office of Planning and Environmental Analysis at (916) 324-8550.

- DTSC Corrective Action Orientation Manual. Copies can be obtained from DTSC's Headquarters Hazardous Waste Management Program. For more information please contact (916) 324-2431.

- DTSC Public Participation Policy and Procedures Manual Users. Copies can be obtained from DTSC's Headquarters, External Affairs, Public Participation. For more information please contact (916) 324-8295.

- DTSC Onsite Tiered Permitting Flowcharts, Notification Forms, and Fact Sheets. Copies of above documents can be obtained from DTSC's State Regulatory Program Division. For more information please contact (916) 324-2423.

- California Hazardous Waste Control Law, Health and Safety Code, Division 20, Chapter 6.5, section 25100 et seq. Copies can be obtained from the Department of General Services. For more information please contact (916) 574-2200.

- California Hazardous Waste Control Regulations, Title 22, California Code of Regulations, Division 4.5, section 66260.1 et seq. Copies can be obtained from Barclays Law Publishers. For more information please contact (800) 888-3600.

- Federal Resource Conservation and Recovery Act (RCRA) Regulations, Title 40, Code of Federal Regulations, Parts 260 through 270. Copies can be obtained at the U.S. Government Printing Office, Washington, D.C.

Where to Contact DTSC

Headquarters Office

Department of Toxic Substances Control
400 P Street
P.O. Box 806
Sacramento, CA 95812-0806
(916) 322-0349

NORTHERN CALIFORNIA REGION

Sacramento Office

Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, CA 95827
(916) 255-3545

Clovis Office

Department of Toxic Substances Control
1515 Tollhouse Road
Clovis, CA 93611
(209) 297-3901

Berkeley Office

Department of Toxic Substances Control
700 Heinz Avenue, Bldg. F, Suite 200
Berkeley, CA 94710
(510) 540-2122

SOUTHERN CALIFORNIA REGION

Glendale Office

Department of Toxic Substances Control
1011 N. Grandview Avenue
Glendale, CA 91201
(818) 551-2800

Cypress Office

Department of Toxic Substances Control
5796 Corporate Ave
Cypress, CA 90630
(714) 484-5300

California Environmental Protection Agency
Department of Toxic Substances Control

HAZARDOUS WASTE INVESTIGATION

Pacific Gas and Electric Company
Topock Gas Compressor Station
15 Miles Southeast of Needles, California

Fact Sheet #1 *March 1998*

INTRODUCTION

The California Environmental Protection Agency, *Department of Toxic Substances Control (DTSC)*, is the lead agency overseeing a *hazardous waste* investigation at *Pacific Gas and Electric Company's (PG&E)* Topock Gas Compressor Station site in eastern San Bernardino County (see Figure 1). The objective of the investigation is to characterize the nature and extent of certain hazardous substances at the site and facility (see Figure 2).

This fact sheet provides information on investigation activities and future activities at the site. The fact sheet also includes a brief facility description, information about past site investigations, regulatory requirements, a summary of the corrective action process, a description of current sampling activities, and identification of possible future activities. Additional information about waste management activities and site/groundwater investigations at the Topock site is available at the local *information repositories* or by contacting DTSC staff.

REGULATORY REQUIREMENTS FOR INVESTIGATION

The *Resources Conservation and Recovery Act (RCRA)* corrective action process is designed to evaluate the nature and extent of releases of hazardous substances at a site. The process also identifies, develops and implements appropriate *corrective measures* to protect public health and the environment.

An agency may become involved in not only investigating the permitted facility, but the entire site. The DTSC has the legal authority to require environmental assessment and investigation of other locations at the site.

(Hazardous substances and key words are italicized in this text and are defined in the glossary.)

FACILITY DESCRIPTION

The Topock Gas Compressor Station is located in eastern San Bernardino County, about 15 miles southeast of Needles and south of Freeway I-40. The facility occupies about 100 acres. The compressor station is located near the Havasu National Wildlife Refuge, a portion of which is located along the Colorado River. The nearest communities are two mobile home parks: Topock, Arizona, located about one-half mile east-northeast of the facility, and Park Moabi, California, located about one mile northwest of the facility. A third community known as Golden Shores, Arizona, is located eight miles north. Within 35 miles of the facility are the Fort Mojave Indian Reservation; the Chemehuevi Indian Reservation; and the Colorado River Indian Reservation.

The facility, which began operation in 1951, compresses natural gas for transportation through pipelines to PG&E's service territory in Central and Northern California. As natural gas is compressed, its temperature increases and the compressed gas is cooled in two cooling towers before it is transported through the pipelines.

CHROMIUM-BASED WASTEWATER DISCHARGES LED TO CONTAMINATION

From 1951 to 1985, PG&E added a *chromium*-based substance to the water in the cooling towers to prevent corrosion of the cooling tower equipment. During the 1950s and 1960s, untreated cooling tower wastewater containing *hexavalent chromium* was discharged into the Bat Cave Wash area (see Figure 2), which is normally a dry streambed that feeds into the Colorado River.

In the mid- to late-1960s, PG&E began treating the cooling tower wastewater to convert hexavalent chromium to *trivalent chromium.* In the early 1970s, PG&E discharged treated wastewater to an injection well near the Bat Cave Wash and later stored wastewater exclusively in single-lined

evaporation ponds, which held and contained the wastewater until it evaporated. These evaporation ponds have been closed and are no longer in use.

PG&E switched to a more environmentally safe *phosphate* additive in 1985, and built four new evaporation ponds, featuring double-lined bottoms, for holding phosphate-based wastewater. These new ponds are under the jurisdiction of the Colorado River Basin Regional Water Quality Control Board at (760) 776-8945.

PG&E also began working with state regulatory authorities at this time to close all regulated hazardous waste management units at the site.

PREVIOUS SOIL AND GROUNDWATER INVESTIGATIONS AND CLEANUPS

In 1987, an RFA was prepared for the Topock site as part of the corrective action process. With respect to wastewater discharges at the site, the RFA concluded that from 1951 to 1969 approximately 6 million gallons per year of untreated cooling tower wastewater containing hexavalent chromium-based corrosion inhibitors were discharged into the Bat Cave Wash area (see Figure 2).

Additional investigations and cleanup activities were conducted at the Site between 1987 and 1995. One study included shallow soil sampling in the Bat Cave Wash in the vicinity of the previous wastewater discharge area. Chromium concentrations were found to be very low at these shallow depths and did not pose a significant threat to the environment. Additional samples will be taken at greater depths in the wash during the RFI investigation. Another activity conducted during 1993-1994 included the cleanup and closure of the four original evaporation ponds and the removal of sludge and contaminated soil. Although groundwater beneath the ponds was found not to be contaminated, additional groundwater monitoring was initiated at other locations onsite in the late 1980s and will continue for the foreseeable future. The results of these and additional groundwater investigations required by the RFI are expected in late 1998.

CORRECTIVE ACTION AT THE TOPOCK SITE

In 1996, PG&E and DTSC entered into an agreement to conduct an investigation at the Topock site based on the corrective action process of the Resource Conservation and Recovery Act (RCRA).

CORRECTIVE ACTION PROCESS

RCRA Facility Assessment (RFA) - The first step in the corrective action process, an investigation to determine whether or not potential hazardous substances or other constituents of concern exist in soils or groundwater at or near a facility. A lead agency, such as the DTSC, gathers information about potential chemical releases relative to chemical usage, storage and treatment at the site. This may involve a visual site inspection, file review and initial sampling or other investigations. The agency prepares and issues an RFA Report, which indicates whether further investigation needs to be undertaken.

RCRA Facility Investigation (RFI) - The owner – in this case, PG&E – develops an RFI Workplan outlining the specifics of the planned investigation. The investigation may include both soil, surface water and groundwater. DTSC reviews and approves the RFI Workplan before the investigation begins. After the investigation begins, an RFI Report is prepared, summarizing field work results. DTSC oversees field work, reviews and approves the RFI report, and involves the public by issuing fact sheets and conducting briefings and public meetings, if there is interest in the work.

Interim Measures - Action is taken if there is an immediate threat to human health or the environment or if interim action will facilitate addressing the site. Such measures can happen at any time during the corrective action process. Prior to implementing interim measures, an Interim Measures Workplan must be prepared and approved by DTSC. The public has the opportunity to provide input on Interim Measures and is kept informed of these activities.

Corrective Measures Study - Remedial or cleanup options for the site are evaluated and a remedial plan is proposed if necessary. DTSC reviews the study, receives public input on the proposed remedy selection, and selects options for implementation.

Corrective Measures Implementation - A plan for the design and construction of the corrective measures is reviewed and approved by DTSC. DTSC oversees construction and monitoring activities. The public is kept informed of this activity.

PG&E submitted to DTSC: (1) a report summary of activities to date at the Bat Cave Wash and surrounding area, and (2) a workplan outlining planned investigative activities. At this time, PG&E also began working with DTSC on assessing community interest and public participation requirements. As part of this agreement, PG&E is conducting a facility investigation known as an RFI. (See box, Corrective Action Process.)

The RFI, which began in April 1997, involved the following: soil sampling and analysis in the Bat Cave Wash area and other areas; installation of groundwater monitoring wells; groundwater sampling and analysis; and surface water sampling. Below is a summary of activities to date in each of these areas:

- Soil Sampling and Analysis: Collected 140 soil samples at depths ranging from 1 to 200 feet below grade and analyzed for chromium and other heavy metals.
- Groundwater Monitoring Wells: Installed 7 wells to depths of up to 200 feet below grade.
- Groundwater Sampling and Analysis: Collected 55 groundwater samples and analyzed them for chromium and other heavy metals.
- Surface Water Samples: Collected 11 surface water samples and analyzed them for chromium and other heavy metals.

Results of the initial round of sampling were submitted in December 1997 to the DTSC for review. Additional field work will take place starting in March 1998. Following analysis of the results and DTSC approval, an RFI report describing the investigation results will be prepared. A fact sheet summarizing the RFI report will be mailed to those on the site mailing list and provided to the local information repositories. A public meeting may be held if there is community interest in the findings.

FUTURE ACTIVITIES

PG&E will take appropriate corrective measures at the Topock site based upon the findings of the RFI and DTSC requirements. If corrective action is appropriate, PG&E will submit a Corrective Measures Study (CMS) to propose remedial or cleanup options for the site. DTSC will review the study, receive public comment on the proposed remedial selection, and select options for implementation. PG&E will implement the plan and issue a report for DTSC review and approval.

The project is expected to continue over the next two years.

COMPLIANCE HISTORY

Federal and state regulations of the Topock Compressor Station began in the early 1970s, when PG&E was required to comply with various hazardous waste management regulations at the Topock site. Based upon DTSC records, PG&E has a cooperative compliance history and is currently in compliance with hazardous waste regulations at the Topock site.

ENVIRONMENTAL REVIEW

The California Environmental Quality Act requires that government agencies evaluate a project's potential for significant environmental impacts.

If remediation is required at the Topock Gas Compressor Station, an initial study will be prepared to evaluate whether the remediation would pose any potential for significant environmental impacts. This environmental review is also subject to public input.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

DTSC has solicited public input for the PG&E Topock project, and invites continued public involvement. A *Public Participation Plan* that will include a summary of public concerns and involvement needs is expected to be completed by early 1998.

DTSC will conduct public meetings, if there is community interest in the project investigation process.

FOR ADDITIONAL INFORMATION

If you have questions concerning this project or would like additional information about the PG&E Topock Compressor Station site, please call the contacts listed below or visit and refer to the documents available at one of the information repositories. Eduardo Vallesteros, DTSC Project Manager at (818) 551-2176, or Martin Prisco, DTSC Public Participation Specialist at (818) 551-2875. The Project Manager for PG&E is Melvin Wong. The project contact at PG&E is Linda Quinones-Vaughan, PG&E Public Affairs at (805) 321-4407.

GLOSSARY

Chromium: A naturally occurring element found in rocks, animals, plants, soil and volcanic dust and gases. It is present in the environment in several different forms, most commonly trivalent chromium and hexavalent chromium (see below).

Corrective measures: Specific activities designed to clean up contamination at a site resulting from present and past hazardous waste handling practices.

Corrective Measures Study (CMS): A study performed if the DTSC determines that a release poses a potential threat to human health and/or the environment.

Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency charged with the responsibility for overseeing the investigation and remediation of hazardous waste sites and regulatory hazardous waste management companies.

Evaporation ponds: Surface impoundments constructed to evaporate and therefore reduce wastewater.

Hazardous waste: Waste substances that can pose a substantial or potential hazard to human health or the environment when improperly managed. A hazardous waste possesses at least one of these four characteristics (or appears on special U.S. EPA lists): ignitability, corrosivity, reactivity, or toxicity.

Hexavalent chromium: A compound used in various industrial processes and is considered carcinogenic and toxic in relatively small concentrations. Some of the uses of hexavalent chromium compounds include chrome plating, corrosion inhibitors, and other industrial processes. The type of chromium used at natural gas compressor stations was soluble hexavalent chromium, which kept the interior of cooling equipment clear of scales and other residues.

Information Repositories: Information repositories are established at appropriate locations to allow open and convenient public access to all site-related documents approved by the DTSC for public disclosure.

Pacific Gas and Electric Company (PG&E): A subsidiary of PG&E Corporation, PG&E is an investor-owned electric and gas utility serving more than 13 million people in Northern and Central California. As part of its operations, PG&E transports gas supplies from the Southwest and Canada through a system of pipelines and compressor stations to PG&E's distribution and storage systems.

Phosphate: A chemical compound containing phosphorous and oxygen most commonly used in detergent and fertilizer. Also used as water treatment for corrosion control.

Public Participation Plan: A plan to formally document community concerns regarding a site or facility, and to identify specific activities that will be implemented to ensure the community is involved in the DTSC decision-making process.

Resource Conservation and Recovery Act (RCRA): A 1976 amendment to the first federal solid waste legislation, the Solid Waste Disposal Act of 1965. In RCRA, Congress established initial directives and guidelines for the U.S. Environmental Protection Agency to regulate and manage hazardous waste.

Trivalent chromium: Non-cancerous semi-gray heavy metal. Considered an essential human nutrient in trace amounts.

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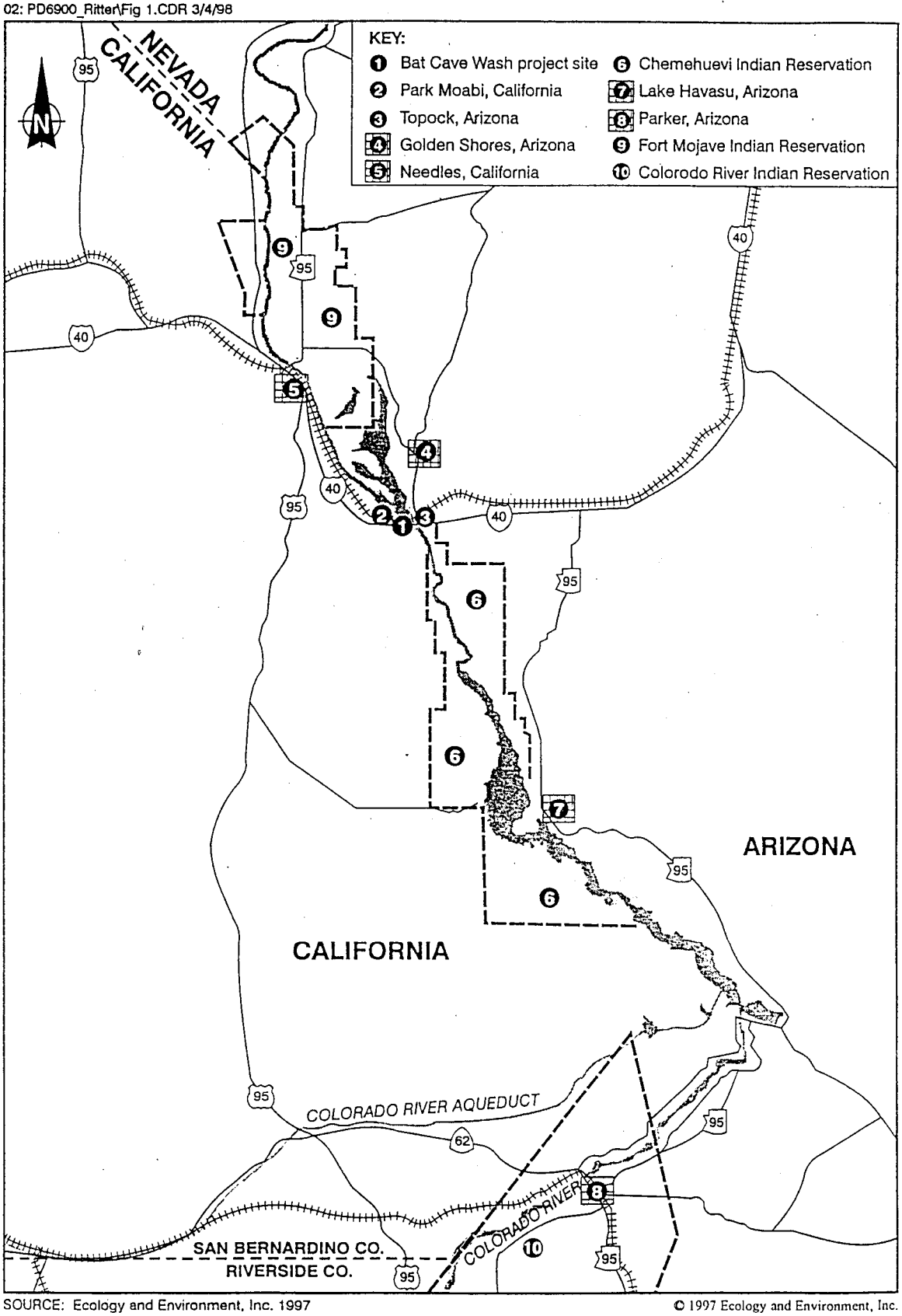

SOURCE: Ecology and Environment, Inc. 1997

SCALE

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Figure 1 REGIONAL LOCATION AND SURROUNDING COMMUNITIES

Appendix F
Schedule of Activities for RCRA

APPENDIX F

Schedule of Activities for RCRA

Communication and outreach activities will be performed according to the requirements set out by the Resource Conservation and Recovery Act (RCRA) for corrective action. The table below was excerpted from Chapter 4 of California Department of Toxic Substances Control's (DTSC) Public Participation Manual (October 2001), and summarizes some of the public participation requirements, or activities, that correspond with RCRA corrective action milestones.

Corrective Action Process	Corresponding Public Participation Activities
RCRA Facility Assessment (RFA): A detailed, preliminary site assessment of a treatment, storage, and disposal facility that may be required to undergo some form of corrective action under RCRA.	• Update or complete Community Profile • Public availability of RFA • Update mailing list • Mail fact sheet (and place on DTSC Web site) • Initiate Public Participation Plan • Public meeting • Add RFA to repositories
RCRA Facility Investigation (RFI): An investigation in which the owner of a site (PG&E in this case), under the direction of DTSC, investigates the nature and extent of potential contamination and prepares an RFI report to summarize results. DTSC oversees fieldwork, reviews and approves the RFI report, and involves the public through fact sheets and public meetings.	• Develop a fact sheet summarizing RFI • Add RFI to repositories • Public notice in newspaper (and place on DTSC Web site) • Public meeting/open house/comment (if necessary) • Public Participation Plan
Interim Measures: Urgent cleanup actions taken to protect public health and the environment while long-term solutions are being developed. DTSC required Interim Measures to accelerate removal of chromium contamination and protect the Colorado River.	• Fact sheet • Public notice/hearing/open house (if necessary) • 30-day comment period (if necessary) • Place documents in the repositories • Respond to comments (if necessary)
Corrective Measure Study: A study conducted by the facility owner/operator to identify and evaluate alternative remedies (i.e., cleanup options) to address contaminant releases at a site.	• Public notice in newspaper • Fact sheet • Public hearing/meeting/open house (if necessary) • Update repositories
Remedy Selection: After a preferred remedy is tentatively selected, DTSC solicits public review and comment. After considering and responding to public comment, DTSC may adopt the remedy, adopt the remedy with changes, or reconsider other alternatives.	• Public notice in the newspaper • Fact sheet • Public hearing • 45-day review and comment period • Update repositories • Respond to comments • Notification of final decision
Corrective Measures Implementation **Requirements:** Description of the nature of work, the dates, hours of work, and any impacts on surrounding neighborhoods.	• Public meeting/notice (if necessary) • Place remedial design plans in repositories • Fact sheet
Remedy Completion	• Public review/comment • Prior to completion, hold a 45-day comment period

Appendix G
Glossary of Terms

APPENDIX G

Glossary of Terms

Aquifer: An underground geological formation, or group of formations, containing groundwater that can supply wells and springs. Geologists on this project performed well pumping tests to assess the physical characteristics of the aquifer and movement of groundwater near the Topock Compressor Station.

Blowdown: A process of cooling water that is periodically removed from the operating circuit because it contains too much salt generated from repeated evaporation of the cooling water.

California Department of Toxic Substances Control (DTSC): A department within the California Environmental Protection Agency (Cal/EPA) that oversees the investigation and remediation of hazardous waste sites.

California Environmental Quality Act (CEQA): A law mandating environmental impact review of governmental action. This law requires that public agencies study the significant environmental effects of proposed activities and that the public be informed and allowed to comment on project decisions.

Corrective Action Consent Agreement (CACA): A voluntary agreement between a lead agency and responsible party in which the responsible party commits to investigate the nature and extent of contamination at and surrounding a site governed by RCRA, and to take corrective action.

Corrective Action Process: A process designed to evaluate the nature and extent of releases of a hazardous substance and implement appropriate measures to protect public health and the environment.

Corrective Measures Study (CMS): A study conducted by the facility owner/operator to identify and evaluate alternative remedies (i.e., cleanup options) to address contaminant releases at a site.

Chromium: A naturally occurring metal found in rocks, soil, and the tissue of plants and animals. Chromium is present in the environment most commonly in two different forms: hexavalent chromium (Cr[VI] or Cr6) and trivalent chromium (Cr[III] or Cr3). Hexavalent chromium is considered a human carcinogen when inhaled at high concentrations.

Final Remedy: The final cleanup action proposed for dealing with contaminants at a site.

Groundwater: Water beneath the earth's surface that flows through soil and rock openings.

Hydraulic Control: The control of the movement of groundwater.

Information Repository: A designated location that provides public access to site-related documents as required by the DTSC.

Interim Measures: Cleanup actions taken to protect public health and the environment while long-term solutions are being developed.

Lead agency: A public agency that has the principal responsibility for ordering and overseeing site investigation and cleanup.

Mohave: Used when describing the Arizona desert or agencies.

Mojave: Used when describing the Tribe or California desert.

Natural attenuation: Any combination of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater.

Notice of Exemption: The environmental document that is prepared for projects or actions that meet specific criteria for exemption from the requirements of CEQA. Examples of such actions include those taken to restore property damaged in a disaster area and those designed to prevent an emergency.

pH: A measure of the acidity or alkalinity of a solution, numerically equal to 7 for neutral solutions, increasing with increasing alkalinity and decreasing with increasing acidity. The commonly used pH scale ranges from 0 to 14.

Plume: A body of contaminated groundwater flowing from a specific source.

Community Outreach Plan (Plan): A plan that documents community concerns about a site and identifies specific actions to respond to them. The Plan outlines the preferred ways to involve the community in the DTSC decision making process.

RCRA Facility Investigation (RFI): An investigation in which the owner of a site (Pacific Gas and Electric Company, in this case), under the direction of DTSC, investigates the nature and extent of potential contamination and prepares an RFI Report to summarize results. DTSC oversees fieldwork, reviews and approves the RFI report, and involves the public through fact sheets and public meetings.

Resource Conservation and Recovery Act (RCRA): A federal statute for safely managing and disposing of waste generated nationwide.

Remedial Plan: A plan that describes a specific program to address contaminants at a site.

Remediation: Cleanup, which may include control, containment, treatment, excavation, and/or disposal.

Responsible party: An individual or corporate entity considered legally liable for contamination found at a property and, therefore, responsible for cleanup of the site.

Statement of Basis: A milestone document in the RCRA process that describes the basis for a lead agency's proposed remedy and cleanup standards. The Statement of Basis is issued by the agency after the alternative remedies have been evaluated and the Corrective Measures Study is complete.