

- **Board of Directors**  
**Water Quality and Operations Committee**

May 8, 2007 Board Meeting

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7-4

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**Subject**

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Adopt Chromium 6 Action Plan

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**Description**

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Chromium 6 has been detected in a groundwater aquifer on the site of a Pacific Gas and Electric (PG&E) gas compressor station located along the Colorado River south of Needles in San Bernardino County across from the town of Topock, Arizona. Monitoring wells near this site show a plume of contaminated groundwater with high levels of chromium 6. The edge of the plume is currently believed to be under the river. It is anticipated that PG&E will complete a Corrective Measures Study by the end of 2007. The public comment period for the final remedy will be available sometime in 2008 with construction of long-term treatment facilities likely to commence in 2011.

Hexavalent chromium (chromium 6) is a drinking water contaminant stemming from industrial and manufacturing activities in or adjacent to water supplies. Chromium 6 is currently regulated under the 50 parts-per-billion (ppb) maximum contaminant level (MCL) for total chromium. Health concerns raised by exposure to chromium 6 prompted California lawmakers to call for a drinking water standard or MCL for chromium 6. In 1999, the California Office of Environmental Health Hazard Assessment (OEHHA) evaluated the existing toxicological data and determined that chromium 6 may cause cancer by ingestion and identified a drinking water health protective level of 0.2 ppb. A public health goal for chromium 6 is not yet available, so the California Department of Health Services cannot proceed with final development of a MCL.

At a meeting of its Water Quality and Operations Committee in March 2007, the Committee moved to implement several measures identified by staff to expedite clean-up measures of chromium 6 near the Topock site. Staff outlined several elements of an action plan including: (1) Development of a Joint Metropolitan/PG&E Technical Task Force; (2) Evaluation of Interim and Long-Term Treatment Alternatives; (3) Development of a Revised Chromium 6 Monitoring Program; (4) Initiate Public and Political Outreach; (5) Develop a Stakeholder Group to Solicit Regulatory Support for Protection of Beneficial Use; and (6) Evaluate Legal Options. These measures are discussed in detail in [Attachment 1](#).

This action authorizes implementation of the Chromium 6 Action Plan.

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**Policy**

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Policy Principle on Source Water Quality Protection, M.I. 42820, February 10, 1998

Policy Principle on Watershed Management, M.I. 43964, April 11, 2000

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**California Environmental Quality Act (CEQA)**

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CEQA determination for Options #1 and #2:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action consists of basic data collection and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (Class 6, Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #3:

None required

**Board Options**

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**Option #1**

Adopt the CEQA determination and the Chromium 6 Action Plan.

**Fiscal Impact:** None

**Option #2**

Adopt the CEQA determination and the Chromium 6 Action Plan with revisions.

**Fiscal Impact:** None

**Option #3**

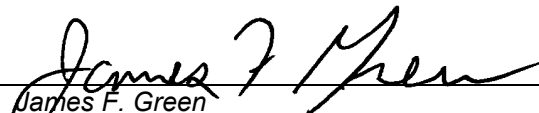
Take no action

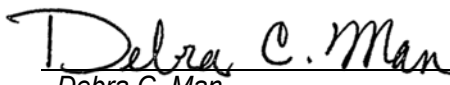
**Fiscal Impact:** None

**Staff Recommendation**

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Option #1

  
James F. Green  
for Eddie A. Rigdon  
Manager, Water System Operations  
4/18/2007  
Date

  
Debra C. Man  
for Jeffrey Kightlinger  
General Manager  
4/19/2007  
Date

**Attachment 1 – Chromium 6 Action Plan**

BLA #5412

## CHROMIUM 6 ACTION PLAN

### Summary

An action plan (Plan) has been developed to define Metropolitan's position and response to the remediation efforts by Pacific Gas and Electric (PG&E) at its gas compressor station located near Topock, Arizona. The Plan addresses the current interim and long-term treatment strategies proposed by PG&E to remediate chromium 6 contamination at the Topock site. Additional plume delineation, river monitoring and hydrogeological characterization are required to assist in developing an effective long-term remediation strategy. A stakeholder group should be developed to strengthen public outreach efforts to advocate protection of the river and selection of the most appropriate, final remedy for the site clean up. Metropolitan along with the stakeholders will seek to engage the Colorado River Water Quality Control Board to ensure that beneficial uses of the river are considered in the final remediation strategy.

### Background

The source of the groundwater contamination is from the industrial discharge from PG&E's gas compressor station located on the California side across from the town of Topock, Arizona. Chromium 6 was used as a corrosion inhibitor and more than 100 million gallons of untreated wastewater containing chromium 6 was discharged from 1951 to 1969 into Bat Cave Wash that seeped into the groundwater aquifer. In 1969, PG&E began treating the wastewater to convert chromium 6 to chromium 3 and discharged around 30 million gallons of treated wastewater to an injection well from 1970 to 1973. Approximately 90 million gallons of wastewater containing chromium 6 was discharged into unlined evaporation ponds near the Bat Cave Wash from 1973 to 1989. Monitoring wells show the plume has spread toward the river with a peak concentration of 13,000 parts-per-billion (ppb).

PG&E has recently indicated that the plume may have moved under the river. PG&E has signed a consent agreement with the California Department of Toxic Substance Control (DTSC) for remediation of the site. DTSC has been assigned the lead agency for the clean up and has required PG&E to complete a facility investigation. This investigation includes a site history, groundwater monitoring, and final remedy for clean up. In order to determine the final clean-up technology, PG&E is conducting a Corrective Measures Study. This study will ultimately determine the technology for the final remedy. PG&E is currently testing *in-situ* biological treatment for potential use as the final remedy.

It is anticipated that PG&E will complete the Corrective Measures Study by the end of 2007. The public comment period for the final remedy should be available sometime in 2008. Construction of long-term treatment facilities may commence in 2011.

The following sections describe the Plan's major components and, where applicable, specify anticipated implementation/completion dates.

### Development of a Joint Metropolitan/PG&E Technical Task Force

To date much of Metropolitan's interactions with PG&E have been through the Consultative Workgroup (stakeholder workgroup assembled and managed by DTSC). Metropolitan has met with PG&E staff and their consultants previously to discuss technical issues associated with assessment of chromium 6 plume migration and remediation strategies. It is proposed that Metropolitan establish regular and direct meetings with PG&E to consistently provide input on various technical issues.

#### Item

- Implement routine meetings with PG&E staff

#### Status

- Schedule next meeting by May 2007

### Evaluation of Interim and Long-Term Treatment Alternatives

PG&E has installed an interim treatment to stabilize the chromium 6 and prevent movement of the groundwater gradient towards the river. This treatment is currently pumping water from several extraction wells to a treatment facility. The treatment facility removes the chromium 6 and the treated water is then pumped into injection wells back into the aquifer at a location up gradient from the plume. Metropolitan believes that the interim measures need to be expedited to achieve the clean-up objectives, and the pump capacity and treatment may need to be expanded to stop the flow towards the river.

PG&E is currently testing *in-situ* biological treatment for the final clean up. This system involves injecting a nutrient into the aquifer to stimulate the reduction of chromium 6 to chromium 3. The chromium 3 would then precipitate out into the surrounding sediment and would be removed from the water column. Metropolitan is concerned about the long-term adequacy of this treatment. Chromium 3 could re-dissolve and the total chromium standard would still have to be met. In addition, if soluble chromium 3 is present in the source water, it could be oxidized back to chromium 6 at Metropolitan's treatment plants.

Metropolitan recommends that the pumping and treatment capacities be increased immediately. If the levels of chromium 6 at the river are not reduced significantly after the expanded pumping and treatment, then Metropolitan will pursue with PG&E the installation of a subsurface physical barrier wall to block the flow of the groundwater towards the river. This barrier would need to be installed in conjunction with the selected groundwater clean-up technology.

<u>Item</u>	<u>Status</u>
<ul style="list-style-type: none"> <li>▪ Review current and proposed treatment strategies</li> <li>▪ Evaluate and develop expanded interim pumping/treatment and discuss implementation with PG&amp;E</li> <li>▪ Determine technical and environmental feasibility of constructing a subsurface barrier</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing</li> <li>▪ June 2007</li> <li>▪ December 2007</li> </ul>

### Development of a Revised Chromium 6 Monitoring Program

PG&E has installed a number of monitoring wells and conducted hydrogeology studies to characterize the plume delineation. Recently, PG&E has stated that they believe the plume has traveled under the river to the Arizona side. Several monitoring wells on the Arizona side are planned. In addition, a slant well is being installed to extract the groundwater below the riverbed to monitor for chromium 6. Metropolitan believes additional wells are needed to fully characterize the plume. Metropolitan would also like additional hydrogeology studies to be conducted to fully characterize the plume, geochemistry, and to be utilized for the final remedy. Additional monitoring of strategic river and sediment sites is necessary to assess whether or not the chromium 6 migration has entered the river.

<u>Item</u>	<u>Status</u>
<ul style="list-style-type: none"> <li>▪ Review existing monitoring program and conduct additional river and sediment monitoring</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement additional monitoring by May 2007</li> </ul>

### **Initiate Public and Political Outreach**

It is necessary to communicate with legislators, representatives of the state of Arizona, and representatives of interested Indian tribes to seek a mutually acceptable site clean-up option.

<u>Item</u>	<u>Status</u>
<ul style="list-style-type: none"> <li>▪ Contact representatives of the state of Arizona</li> <li>▪ Contact legislators</li> <li>▪ Address cultural history of local Native American Tribes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implement contacts by June 2007</li> </ul>

### **Develop a Stakeholder Group to Solicit Regulatory Support for Protection of Beneficial Use**

Metropolitan recently presented an update to the Colorado River Board to seek stakeholder support from the Colorado River users, including Coachella Valley Water District and Imperial Irrigation District. This stakeholder group should attend the DTSC consultative workgroup meetings and contact the regional Water Quality Control Board (WQCB) to help advocate for the beneficial use of the river. Water agencies (e.g., Association of California Water Agencies and California/Nevada American Water Works Association) may also be contacted for additional support. The State Water Resources Control Board will be kept apprised of the clean-up efforts. The U. S. Environmental Protection Agency and the Department of Interior may also need to be engaged in the clean-up selection process.

<u>Item</u>	<u>Status</u>
<ul style="list-style-type: none"> <li>▪ Develop coalition and request action and support for protection of beneficial use from WQCB</li> </ul>	<ul style="list-style-type: none"> <li>▪ Request will be made in May 2007</li> </ul>

### **Evaluate Legal Options**

The Legal Department has been investigating legal options related to the Topock situation. The Department will keep the Board and management apprised of its findings and recommendations.

<u>Item</u>	<u>Status</u>
<ul style="list-style-type: none"> <li>▪ Evaluate legal options</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing</li> </ul>