

- Water System Operations Group Manager's Update

## Summary

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Following is a summary of Water System Operations Group activities for the period following the August 2004 Board Meeting

## Attachments

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None

## Detailed Report

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### Security Update

Johnson Controls, Inc. (JCI) continued rough installation of conduits and cables for the security cameras and access control devices at Eagle Rock, Weymouth, Live Oak Reservoir, Puddingstone Channel Spillway, San Dimas PCS, Carbon Creek PCS, and Coyote Creek PCS. JCI submitted a test plan for factory acceptance. Metropolitan and JCI continued coordination of IT requirements for the electronic security system, and Metropolitan provided two domain controllers to JCI to be configured by JCI and used in the factory acceptance test. In addition, work continues with Lawrence Livermore National Laboratory on the draft water quality chemical analytical response protocol and a real-time operating system model to detect contaminants.

### Water Quality Update

Metropolitan has complied with all drinking water quality standards during this reporting period.

#### *Trihalomethane (THM) Levels*

THM samples were collected from the five treatment plants and in the distribution system on a weekly basis. The four-week THM levels (parts per billion - ppb) and State project water (SPW) blends for the most recent four-week period, ending the week of September 6, 2004, were:

	<u>THM Levels</u>		
	<b>4-week Average</b>	<b>4-week High</b>	<b>Percent SPW Blends</b>
Mills	60 ppb	71 ppb	100%
Jensen	58 ppb	63 ppb	100%
Diemer	50 ppb	53 ppb	60%
Skinner	45 ppb	46 ppb	38%
Weymouth	48 ppb	51 ppb	58%

THM levels in Metropolitan's treated water have been higher this summer due to higher levels of total organic carbon (TOC) and bromide levels in SPW. The TOC levels at the Mills influent have decreased to a current 4-week average of 3 parts per million (ppm). Jensen influent TOC has remained at a 4-week average of 3.1 ppm. The increased THM levels from the Mills plant are due to the switch from chloramines to free chlorine at the request of the member agencies in Mills distribution system for five weeks. Mills returned to chloramination on September 7, 2004. Distribution system THM levels in parts of Orange County and the central pool were as high as 66 ppb. The target SPW blend at Diemer and Weymouth plants was 70 percent for the week of September 20, 2004.

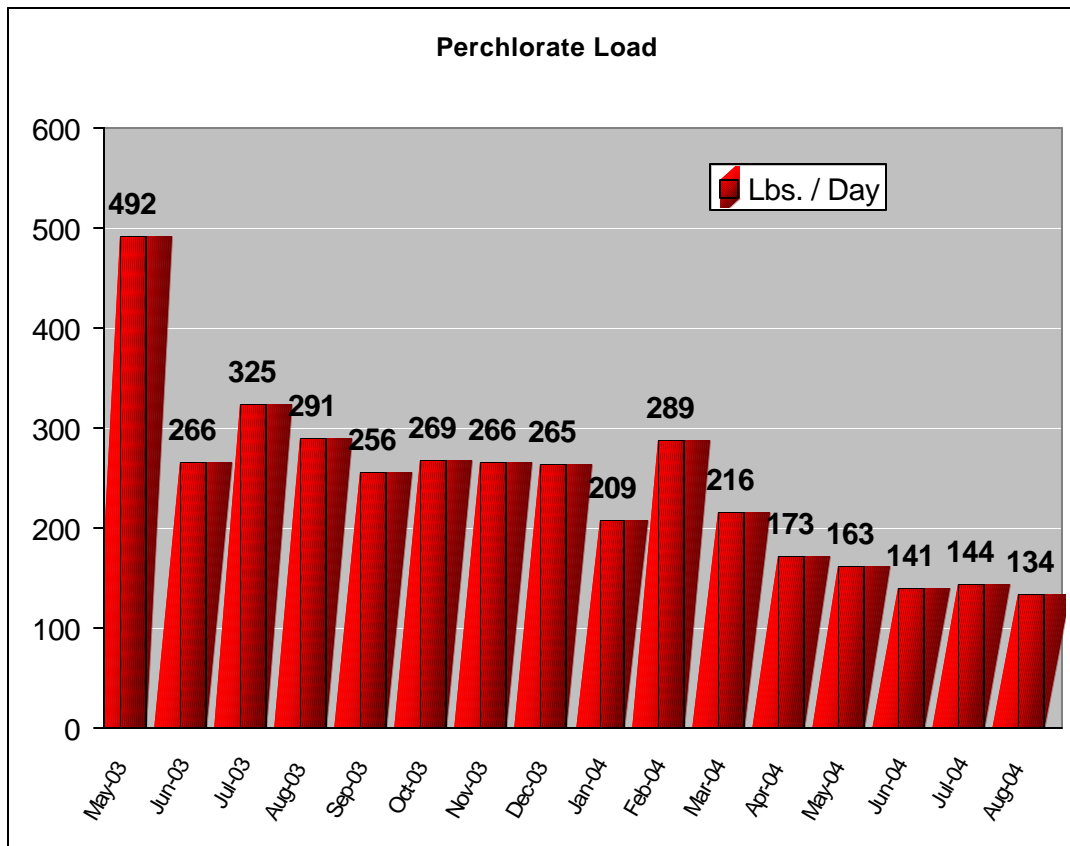
#### *Perchlorate*

Perchlorate samples were collected from 34 locations within Metropolitan's system in September 2004. Results so far showed that perchlorate was not detected above the California Department of Health Services'

(CDHS) detection limit for purposes of reporting (4 ppb) in the Colorado River aqueduct monitoring locations. The most recent six-month running averages (April - September 2004) for the Weymouth, Diemer, and Skinner plants were also less than 4 ppb. Currently, there is no regulatory standard for perchlorate, and the setting of a final maximum contaminant level (MCL) is not expected for at least a year.

Perchlorate clean-up efforts in Henderson, Nevada continue. Based on our weekly monitoring data and the real-time flow data provided by the Nevada Department of Environmental Protection (NDEP), the average loading at North Shore Road for August 2004 was calculated to be 134 lbs/day. The average load measured for August 2004 falls within the 95 percent confidence level for the predicted perchlorate loads.

Perchlorate loads measured at North Shore Road are presented in the figure below:



Metropolitan staff participated in a tour of Kerr McGee's new 1,000 gallons per minute (gpm) biological treatment plant on August 26, 2004. A quarterly update on the Perchlorate Action Plan was given at the Water Planning, Quality, and Resources Committee on September 13, 2004.

*Chromium 6*

Metropolitan continues to participate in the Department of Toxic Substance Control's (DTSC) Consultative Workgroup, in order to ensure that Metropolitan's interests are represented and protected against potential contamination emanating from the Pacific Gas and Electric (PG&E) Topock Gas Compressor Station site along the Colorado River. In earlier updates, it was indicated that groundwater extraction began on March 8, 2004, at the Topock site at a rate of 20 gallons per minute. On June 30, 2004, DTSC granted PG&E conditional approval to begin extraction of additional groundwater to protect the Colorado River. Discussions are currently taking place to increase current pumping efforts by the end of this year, to a maximum of 135 gpm. It is planned that the extracted groundwater will be treated by an on-site treatment system, and be either: (1) trucked to an off-site facility; (2) disposed into PG&E's existing evaporation ponds; (3) injected back into the local aquifer; (4) discharged into the Colorado River; or, (5) a combination of the options.

Metropolitan has prepared a comment letter to the California Regional Water Quality Control Board, Region 7, which states that Metropolitan is opposed to direct discharge to the Colorado River.

Monthly sampling of the Colorado River near the PG&E site continues. Chromium 6 was not detected (<0.03 ppb) in the samples collected in September. Currently, there is no drinking water standard for chromium 6. The CDHS MCL for total chromium is set at 50 ppb. The California Office of Environmental Health Hazard Assessment (OEHHA) is working on a public health goal, which will be used by CDHS to set an MCL for chromium 6 in the upcoming year.

#### *Taste-and-Odor*

Taste-and-odor (T&O) problems have been widespread and severe in some areas in the last two months. Lake Skinner was treated for a planktonic methylisoborneol (MIB) and geosmin event on August 25. The Skinner plant had been on an 80 percent lake bypass at one time to alleviate the problem, but has returned to 100 percent lake water. Prior to going on lake bypass, member agencies that received Skinner water received several consumer complaints. This was a long running event that is now under control, with concentrations of 5 parts per trillion (ppt) MIB and 2 ppt geosmin leaving the plant.

The East Branch of the California Aqueduct was successfully treated on July 16 for MIB and geosmin producing benthic blue-green algae. The planktonic geosmin event at Castaic Lake was successfully treated on September 2, and had no effect on the Jensen Plant.

Lake Perris currently has high levels of MIB (>100 ppt in some areas) produced by benthic algae. Currently, the lake is used for only emergencies such as when the Perris Power Plant shuts down for a few hours. Treatment of benthic algae has long been limited in Lake Perris due to fisheries issues, but modifications to reduce this limitation are being explored.

The Jones Track Levee break in the Bay Delta created a very large shallow lake that produced MIB at >1,000 ppt. While the water was being pumped off the island, the MIB laden water moved to the Banks pumping plant and into the SWP. Water agencies in the upper end of the aqueduct experienced a significant number of consumer complaints.

Las Virgenes MWD (LVMWD) has been experiencing significant T&O problems in Las Virgenes Reservoir that have resulted in complaints. LVMWD's treatment of the lake with copper treatment was unsuccessful. MWD responded to a request for technical assistance with the problem. Discussions with them indicated that they probably had a benthic T&O event, not a planktonic problem (i.e., the majority of the T&O producing algae were probably growing on the bottom of the reservoir). MWD Water Quality divers explored the reservoir on Tuesday confirming that conclusion. Treating benthic algae with copper sulfate could result in the release of large amounts of MIB when the cells are killed. A recommendation was made to change tier depths to a level with lower concentrations of MIB.

Currently, T&O are acceptable everywhere in the system except Lake Perris.

#### *Total Dissolved Solids (TDS) Levels*

The September 2003 through August 2004 twelve-month flow-weighted average TDS levels for the Diemer, Skinner, and Weymouth filtration plants were 421, 498, 432 ppm, respectively.

### **Conveyance & Distribution Update**

#### *Shutdowns*

In late August during a routine inspection, leakage was noted in an underground vault located on the Diamond Valley Lake (DVL) Wadsworth Pump House Conduit. This 12-foot diameter pipeline conveys water from the portal of the pressure tunnel (leading from the inlet/outlet tower) to the manifold connected to the 12-pump/generation units. This conduit is needed for the pumping of water into DVL and the generation of energy upon its release. Water could still be withdrawn from the reservoir, however, through the pressure-control sleeve valves in the north wing of Wadsworth. The leakage was entering the vault around a link seal in the wall where the pipeline enters the vault, and the seal was visibly deformed. Immediate steps were taken by WSO and CRG staff to assess the possible cause for the leak and to check the integrity of the facilities. Initial thoughts were that the cause could be: (1) settlement of the pipeline; (2) hydrostatic uplifting of the

vault structure; or, (3) simply failure of the link seal. Facilitated by a 3-day shutdown of the pressure tunnel and pump house conduit the week of September 13, 2004, Engineering Services collected survey and other data in order to identify the cause of the increased leakage. Preliminary findings indicate that the pipeline and vault are not moving and are presently in the positions in which they were constructed. The most likely cause of the increased leakage into the vault appears to be a failure of the link seal in the vault wall. Repairs to the seal will be undertaken. Evaluation of the field data collected during the shutdown continues, and a concluding report will be forthcoming.

### Water System Update

As of September 19, 2004, total SWP in-basin deliveries for the current calendar year (CY) were 1,311,058 acre-feet (AF). These deliveries include 1,232,547 AF on the East and West Branches, 73,124 AF from the San Bernardino Valley Municipal Water District/Inland Feeder interconnection and 5,386 AF from San Gabriel Valley Municipal Water District. Of the 1,209,160 AF received at the end of August, approximately 726,000 AF has been from this year's SWP allocation, which is currently set at 1.3 million acre-feet (MAF) for Metropolitan. The remaining deliveries include 2003 Carryover, Turn-Back Pool, Article 21, Article 12(e), Article 14(b), and other SWP sources.

Through September 19, 2004, CRA net deliveries were 497,000 AF, which is 92 percent of the approved net diversion target of 541, 485 AF.

Reservoir levels are indicators of water supply conditions for the SWP, Colorado River and Metropolitan. The following storage levels for key reservoirs reflect monthly data as of September 19, 2004:

<b>Metropolitan Reservoirs</b>	<b>Storage to Date</b>	<b>Percent of Capacity</b>
Diamond Valley Lake (DVL)	528,900 AF	66%
Lake Mathews	153,900 AF	85%
Lake Skinner	37,500 AF	85%
<b>State Water Project Reservoirs</b>		
Lake Oroville	1.78 MAF	51%
San Luis Reservoir Total	0.60 MAF	30%
San Luis State Share	0.47 MAF	44%
<b>Colorado River Reservoirs</b>		
Lake Powell	9.2 MAF	38%
Lake Mead	14.0 MAF	51%
<b>SDCWA Reservoirs</b>		
24-Reservoir Total	201,100 AF	34%

As of September 19, 2004, Hayfield Basin has received only 17 AF of deliveries in 2004 due to CRA shortages, and no significant deliveries are anticipated for the remainder of the CY. Total CY 2003 deliveries to the Hayfield Groundwater Basin were 6,700 AF, and overall total deliveries to the basin remain at 74,000 AF. Currently the San Gabriel Valley Groundwater Basin key well elevation is 198 feet above sea level, which is 38 feet below the previous ten-year average of 236 feet, and only 2 feet above the historic low of 196 feet.

#### *Sales and Deliveries*

Final water sales for August 2004 were 242,600 AF, which set a new high-sales record for the month of August. This amount is 4,400 AF, or 2 percent greater than the budgeted amount of 238,200 AF. The previous record for water sales occurred in August 2003, and the final sales for that month was 241,647 AF. This data for August 2003 is only for treated and untreated water deliveries by occur period.

#### *Precipitation*

The Colorado River system is in its fifth consecutive year of below-normal precipitation and is 84 percent of

normal for the end of the 2004 water year (October 2003 through September 2004). The 2004 water-year runoff into Lake Powell is estimated to be only 50 percent of normal.

As of September 19, 2004, there has been no rainfall at the Los Angeles Civic Center, City of San Diego airport and City of Riverside airport for the past 155 days. For the current water year through September 19, 2004, total precipitation for three southern California cities and the Eight Station Index (a measure of precipitation in the SWP's watershed) is:

<b>Weather Station</b>	<b>Precipitation</b>	<b>Percent of Normal</b>
Los Angeles Civic Center	9.25 inches	61%
San Diego Airport	5.20 inches	55%
Riverside Airport	6.22 inches	63%
Eight Station Index	46.25 inches	94%

### **Power Update**

During August and the first half of September, temperatures generally continued the trend of below normal levels that have been experienced this summer. California did experience several brief heat waves during this time that resulted in new records for energy use in the state. On September 8, California set the latest record for peak demand at 45,597 Megawatts (MW). This was the seventh record this year. Prior to 2004, the record peak demand stood at 43,609 MW, set in July 1999. The California ISO did not experience any state-wide energy shortages, although some areas did experience problems due to local equipment failures. DWR was requested to reduce their pumping load for three hours on August 11 during one of the heat waves. This was the only curtailment and did not impact deliveries. Metropolitan did not receive any requests to curtail its pumping load.

Natural gas spot and future prices dropped in August on low demand and high storage levels. This helped to drop electricity prices to a 6-month low. Natural gas prices have continued dropping in September causing electricity prices to drop further.

During August, Metropolitan received 23,016 Megawatt-hours (MWh) of its previously banked CRA energy with Southern California Edison and banked 14,169 MWh with DWR to be used before December 31, 2004. Metropolitan also sold 42,711 MWh of excess CRA energy to DWR for use on the SWP. The average DWR sale price was \$48.16/MWh for total revenue of approximately \$2.1 million.

During August, Metropolitan sold 7,080 MWh from DVL power plant to DWR at \$50.76/MWh for total revenue of \$360,000. Metropolitan also received a \$63,079 bonus from the California Energy Commission for DVL generation in July 2004. In August, the other 15 small hydroelectric power plants generated 38,481 MWh for total revenue of about \$2.0 million.