

## • Water System Operations September 2005 Activity Report

### Summary

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Following is a summary of Water System Operations Group activities for the period following the September 2005 Board Meeting

### Detailed Report

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#### Security Update

Security improvements are proceeding according to schedule and within budget. Johnson Controls, Inc. (JCI) continued installation of conduits, cables, and hardware for the security network at Union Station and Diamond Valley Lake (DVL). Installation work at all other project sites has been completed. JCI submitted the final acceptance plan for Eagle Rock, Union Station, and DVL central station sites, including Metropolitan's requirements. Eagle Rock, Union Station and DVL sites will undergo command center testing at the end of the project when all sites are connected and command center testing is feasible. Staff identified some technical anomalies with the programming of the video system servers and brought this to JCI's attention for priority resolution. JCI has scheduled specific testing at Eagle Rock to demonstrate their resolution of the video programming issue. No additional sites were accepted during this period and site acceptance will resume after the successful completion of the scheduled video-programming test by JCI. Metropolitan and JCI worked on finalizing a maintenance agreement for the security system, which will take effect at the end of a one-year warranty period for the entire system.

#### Water Quality and Treatment Update

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

##### *Disinfection By-Products and DBP Precursors*

Trihalomethane (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 October 10, 2005 were:

	<u>THM Levels</u>		Percent SPW Blends
	4-week Average	4-week High	
Mills	16 ppb	16 ppb	100%
Jensen	13 ppb	14 ppb	100%
Diemer	35 ppb	38 ppb	50%
Skinner	54 ppb	57 ppb	39%
Weymouth	35 ppb	37 ppb	65%

The total organic carbon (TOC) four-week average at the Mills influent has decreased to 3.0 parts per million (ppm) in September, down from 3.3 ppm reported in August. Jensen influent TOC four-week average has remained at 3.5 ppm in September.

On September 6, 2005, the Jensen plant began operation with biologically active filtration by changing to filter effluent chlorination. The biologically active filtration and ozone process have further improved THM levels in portions of the central pool area of Metropolitan's distribution system. THM levels have been reduced by approximately 75 percent since the July 2005 on-line date for ozone.

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Diemer and Weymouth plants remain on delayed chlorination. Distribution system THM levels in parts of Orange County and the central pool were as high as 48 ppb, and the 4-week average ranged from 13 to 42 ppb. The low levels of THMs in the central pool are due to the Jensen plant. The Skinner distribution system sites have ranged from 42 to 57 ppb for the 4-week period ending October 10, 2005. The Skinner SPW blend was 29 percent as of October 10. The Skinner plant is currently on 75 percent by-pass with water from the San Diego canal due to high copper levels in Lake Skinner caused by successive treatments with copper sulfate for taste-and-odor control.

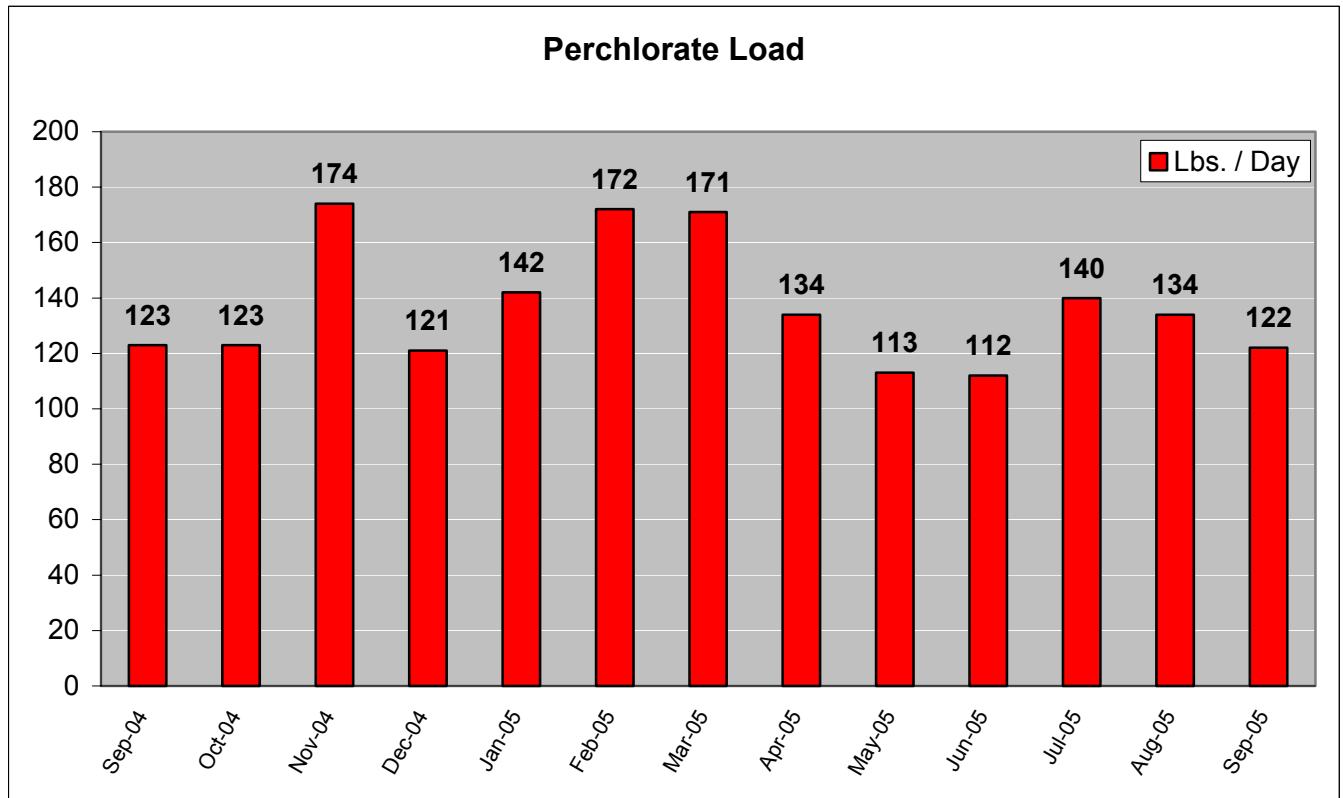
### *Perchlorate*

Since January 2005, perchlorate levels in the Colorado River source water locations (Lake Havasu at Intake, San Jacinto Tunnel West Portal, and Lake Mathews) have ranged from non-detect (<2 ppb) to 3.4 ppb. For the month of September, perchlorate was detected at 2.3 ppb at the Lake Havasu intake and 2.1 ppb at the San Jacinto Tunnel West Portal. No other source waters, treatment plant effluents, or distribution system locations have perchlorate detections above the minimum reporting level (MRL) of 2 ppb.

Currently, there is no regulatory standard for perchlorate. California Department of Health Services (CDHS) plans to establish a maximum contaminant level (MCL) this year, based on the Office of Environmental Health Hazard Assessment (OEHHA) public health goal (PHG) of 6 ppb.

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 September 2005 was calculated to be 122 lbs/day.

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



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### *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.

Chromium 6 concentrations in monitoring well MW 34-100 (located approximately 50 - 65 feet from the river) have continuously increased since April 2005 and ranged from 452 to 675 ppb from April 4 through September 20, 2005. As a result of these findings, the DTSC has directed Pacific Gas and Electric (PG&E) to install an additional extraction well [PE-1] that is located 150 - 165 feet from the river. This new extraction well was completed but is not yet operating, pending approval of permits by mid-to-late 2006. PG&E has commenced (as of July 31, 2005) the operation of an on-site treatment plant to treat water at a flow rate of 90 gallons per minute (gpm) from the existing extraction well [TW-2]. Following treatment, the water will be injected underground on-site. Monthly sampling of the Colorado River near the PG&E site continues. Chromium 6 was not detected (<0.03 ppb) in any of 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 OEHHA is working on a PHG that will be used by CDHS to set an MCL for chromium 6 in the upcoming year.

### *Taste-and-Odor (T&O)*

Lake Skinner experienced a severe taste-and-odor event in August and September due to the occurrence of the attached (benthic) algae *Oscillatoria splendida* and *O. curviceps*, and suspended (planktonic) algae *Anabaena* and *Planktothrix perornata*. A total of four copper sulfate treatments were necessary to control the taste-and-odor producing algae. The lake was by-passed during the event. As of September 28, the methylisoborneol (MIB) levels decreased to acceptable levels and the raw water pipelines were removed from the lake by-pass. The treatment plant is currently on 75 percent lake by-pass because of the levels of copper in the lake. The lake by-pass will be reduced as copper levels in the lake continue to decrease.

MIB producing blue-green algae occurred in Lake Perris. Several species of algae were involved in the Perris taste-and-odor event and was caused by both benthic and planktonic algae. The principal attached benthic species was *O. curviceps* and the principal planktonic species was *Synechococcus*. The Department of Water Resources conducted a copper sulfate treatment on October 17, 2005. The drawdown of Lake Perris was suspended on October 10 because of the high levels of MIB. The lake is currently being evaluated for additional treatments. The lake drawdown will recommence when the MIB levels decrease to an acceptable level.

The East Branch of the California Aqueduct continues to have growth of blue-green algae that is producing both MIB and geosmin. Metropolitan is continuing to monitor.

There are no other taste-and-odor problems in our source waters or finished waters.

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

The October 2004 through September 2005 twelve-month flow-weighted average TDS levels for the Diemer, Skinner, and Weymouth plants were 467, 500, 447 ppm, respectively. These levels meet Metropolitan's water quality objectives for TDS.

### *Fluoridation*

Final design for fluoridation is nearly complete for all five plants and construction will be completed by December 2006. Water Quality staff is preparing informational material for member agencies and the public, required permit amendment application forms, and the Fluoridation Plan required by CDHS. Meetings with the Member Agency Fluoridation Policy Workgroup and the in-house Fluoride Task Force are ongoing. A meeting with CDHS is scheduled for November 3, 2005 to discuss communication plans, fluoridation design, permitting and timing requirements. The CDHS has approved the conceptual design and will confirm approval in writing. The permit amendment application form was submitted and approval is pending completion of implementation milestones.

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## Conveyance & Distribution Update

At the OC-88 service connection, contractor work continues on installation and testing of control system components. This work is scheduled for completion in October. Preparations are underway for upcoming shutdowns, the first of which will occur on the West Valley Feeder No. 1 to replace the section of pipeline that leaked in August 2004, due to the movement of an adjacent man-made slope. This portion of the pipeline is used by the Los Angeles Department of Water and Power under a lease agreement and per the terms of the lease, they will share in the cost of this repair. Other shutdowns in October-November are the Orange County Feeder to accommodate manhole construction due to widening of the Garden Grove (22) Freeway, and the Box Spring Feeder to assist Department of Water Resources (DWR) to install rollout sections on the Santa Ana Valley Pipeline.

## Water System Update

As of October 23, 2005, total State Water Project (SWP) in-basin deliveries for the calendar year (CY) were 1,220,800 acre-feet (AF). These deliveries include 1,088,000 AF on the East and West Branches and 132,800 AF through the San Bernardino Valley Municipal Water District/Inland Feeder Interconnection. All SWP deliveries to-date are from CY 2004 carryover accounts, Article 21 and Table A.

The Bureau of Reclamation increased Metropolitan's Colorado River net diversion for CY 2005 from 743 thousand acre-feet (TAF) to approximately 825 TAF on October 14, 2005. Through October 23, 2005, CY Colorado River Aqueduct (CRA) deliveries were 704 TAF, or 85 percent of the current approved diversion target of 825 TAF.

Reservoir levels are indicators of water supply conditions of the SWP, CRA and Metropolitan's service area. The following storage levels for key reservoirs reflect monthly data as of October 23, 2005:

<u>Metropolitan Reservoirs</u>	<u>Storage To-Date</u>	<u>Percent of Capacity</u>
Diamond Valley Lake	773,300 AF	97%
Lake Mathews	152,500 AF	84%
Lake Skinner	42,500 AF	97%
State Water Project Reservoirs		
Lake Oroville	2.78 MAF	79%
San Luis Reservoir Total	1.42 MAF	70%
San Luis State Share	0.98 MAF	92%
Colorado River Reservoirs		
Lake Powell	12.0 MAF	49%
Lake Mead	15.1 MAF	55%
SDCWA Reservoirs		
24-Reservoir Total	364,600 AF	61%

As of October 23, 2005, the San Gabriel Valley Groundwater Basin key well elevation was 241 feet above sea level, which is nine feet below the level that imported-water spreading is allowed.

### *Sales and Deliveries*

The official final water sales for September 2005 were 218 TAF. This amount is 31 TAF, or 17 percent more than the budgeted amount of 187 TAF for the month. The current sales projection for October 2005 is 230 TAF, which is 48 TAF more than the budgeted amount for October of this year.

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### *Precipitation*

With only 23 days into the 2006 water year (October 1, 2005 through September 30, 2006), above-normal precipitation has already occurred in Southern California. For the current water year through October 23, 2005, total precipitation for four southern California cities and the Eight Station Index (a measure of precipitation in the SWP's watershed) is:

<u>Weather Station</u>	<u>Precipitation</u>	<u>Percent of Normal</u>
Los Angeles Civic Center	1.35 inches	492%
Santa Ana (John Wayne Airport)	0.46 inches	177%
San Diego Airport	0.46 inches	141%
Riverside Airport	1.27 inches	552%
Eight Station Index	0.02 inches	10%

The Colorado River Basin experienced five consecutive years of extreme drought during water years 2000 through 2004. Unregulated inflow into Lake Powell during this five-year period was only 50 percent of normal. These years of low inflow resulted in significant drawdown of the Colorado River reservoirs. However, improved hydrologic conditions were observed in water year 2005 which eased the five-year drought.

For water year 2006, the National Weather Service's Colorado Basin River Forecast Center has developed a most probable Lake Powell inflow scenario, which is 11.4 million acre-feet, or 95 percent of average. As of October 23, 2005, precipitation was 99 percent of normal, and the projected unregulated inflow into Lake Powell is 105 percent of normal.

### **Power Update**

During September, Metropolitan provided 6,450 Megawatt-hours (MWh) of exchange energy to DWR during on-peak hours and received 26,505 MWh of exchange energy from DWR during off-peak hours. This coordinated effort provided a more balanced energy profile and resulted in reduced pumping costs for DWR and Metropolitan. The DWR exchange energy account will be cleared by December 31, 2005. Metropolitan also received 23,970 MWh of exchange energy from Southern California Edison Company (SCE). The SCE exchange energy account has been cleared as of September 30, 2005.

In September, Metropolitan sold 1,738 MWh of DVL generations to DWR at an average rate of \$80.37/MWh for total revenue of \$139,686. During September, the other 15 hydroelectric power plants generated about 44,006 MWh for total revenues of about \$2.6 million.

In September, Metropolitan did not receive any requests from SCE to curtail Gene and Intake pumps. DWR was asked to reduce pumping load by 200 Megawatts on six different days for a total of 24 hours as provided under their Demand Response Program with the California Independent System Operator.

In October, Metropolitan was notified it would receive a \$415,000 energy saving incentive payment from SCE. The payment was for the modifications to the OC-88 pumping station that will reduce energy consumption by approximately 43 percent. This payment, when combined with an earlier conservation award, will bring the total compensation received from SCE to nearly \$500,000. Metropolitan energy conservation efforts at OC-88 were also highlighted in a "Flex Your Power" advertisement in the October 23, 2005 edition of the Orange County Register.