

• Water System Operations Group Manager's Update

Summary

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

Attachments

None

Detailed Report

Security Update

As part of Metropolitan's Security Systems Improvements Program, Johnson Controls, Inc. (JCI) initiated rough installation of the access control hardware at the first two sites, Eagle Rock and Weymouth. Metropolitan and JCI continued coordination of information technology requirements for the electronic security system, and JCI is finalizing the factory acceptance test plan. In addition, for the water quality contaminant instrumentation development project, and in conjunction with Lawrence Livermore National Laboratory, we are working 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 August 9, 2004, were:

	<u>THM Levels</u>		
	4-week Average	4-week High	Percent SPW Blends
Mills	55 ppb	82 ppb	100%
Jensen	64 ppb	67 ppb	100%
Diemer	62 ppb	67 ppb	70%
Skinner	53 ppb	55 ppb	37%
Weymouth	55 ppb	57 ppb	50%

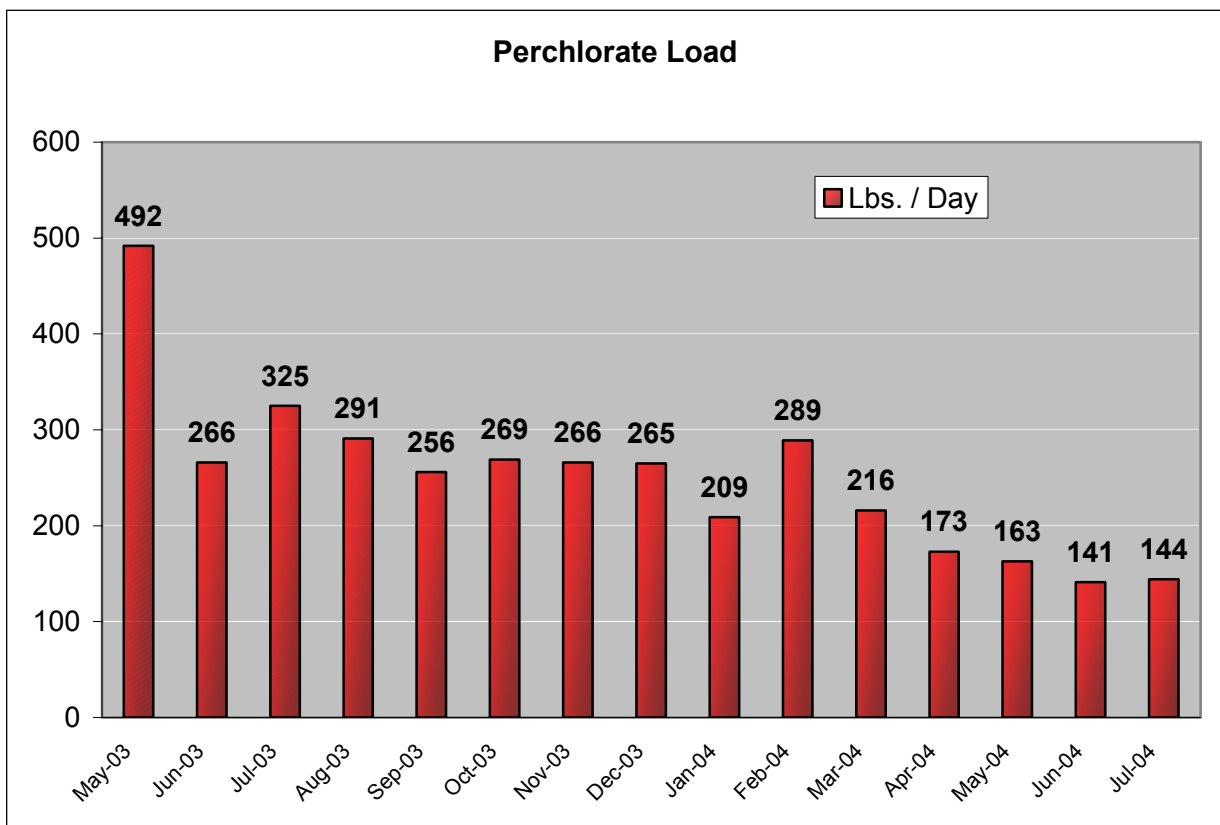
THM levels in Metropolitan's treated water have been higher this summer due to higher levels of total organic carbon (TOC) and bromide levels in SPW. The TOC levels at the Mills influent have decreased to a current 4-week average of 3.1 parts per million (ppm). Jensen influent TOC is continuing to increase slightly and is 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. Mills will return to chloramination on September 7, 2004. Distribution system THM levels in parts of Orange County and the central pool were as high as 77 ppb and 75 ppb, respectively. Several operational changes have been implemented to help reduce the THM concentrations in the distribution system. These changes include: (1) optimization of chlorine application at Diemer, Weymouth, and Jensen to reduce formation of THMs; (2) lowering elevation at Garvey Reservoir to reduce detention time; and; (3) increasing alum dosage at Jensen to enhance removal of THM precursors. The target SPW blend at Diemer and Weymouth plants was 60 and 55 percent, respectively, for the week of August 16, 2004.

Perchlorate

Perchlorate samples were collected from 34 locations within Metropolitan's system in August 2004. Perchlorate was not detected above the California Department of Health Services' (CDHS) detection limit for purposes of reporting (4 ppb) in any monitoring location. The most recent six-month running averages (March - August 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 July 2004 was calculated to be 144 lbs/day. The average load measured for July 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 will participate in a tour of Kerr McGee's new 1,000 gallons per minute (gpm) biological treatment plant on August 26, 2004. The biological treatment plant has been in operation since April 2004, and is replacing the ion exchange units.

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 this fall, to a maximum of 135 gpm. Metropolitan's Board authorized the sale of Metropolitan property located near the PG&E Topock site to

PG&E. PG&E plans to use the parcel for installation of a treatment facility that would allow for the extraction of additional groundwater.

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 August. 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

There is currently a taste-and-odor event in Lake Skinner with algae producing both methylisoborneol (MIB) and geosmin to 8 and 64 parts per trillion (ppt), respectively. Copper sulfate treatment was conducted on August 25, 2004. The Skinner treatment plant has switched to partial by-pass from the lake to minimize the effects of the MIB and geosmin. Levels of MIB and geosmin in the Skinner plant effluent (since August 8) have ranged from 4 to 9 ppt and 3 to 21 ppt, respectively.

There are taste-and-odor producing algae growing in the California Aqueduct, especially in the East Branch of the State Water Project (SWP). DWR treated the aqueduct with copper sulfate on Friday, July 16; however, while production was slowed, it continued and eventually reached 21 ppt MIB and 25 ppt geosmin in the past week. Levels of MIB and geosmin from Silverwood Lake are about 10 ppt for both compounds at this time.

In Live Oak Reservoir, attached algae produced MIB to as high as 35 ppt between August 8 and 15. This production caused elevated MIB levels at the Diemer plant of 6 to 12 ppt from August 9 through 14. The water level in the reservoir was lowered and the algae treated with hypochlorite on August 15 and 16. Assessment of the effectiveness of the treatment continues.

Another geosmin producing algae has begun to bloom in Castaic Lake. Levels as high as 96 ppt were observed at the inlet of the lake. Currently, no geosmin has been detected leaving the lake; however, levels of geosmin at the outlet tower at a depth of 45 meters were measured at 10 ppt. Metropolitan is working with DWR to schedule treatment of the lake with copper sulfate on Thursday, September 2, 2004.

The levels of taste and odor compounds in other source waters and treatment plants are at background levels.

Total Dissolved Solids (TDS) Levels

The August 2003 through July 2004 twelve-month flow-weighted average TDS levels for the Diemer, Skinner, and Weymouth filtration plants were 421, 499, and 427 ppm, respectively.

Water Treatment Update

Skinner Plant / Tualota Creek Discharge

On Wednesday, August 18, 2004, the Skinner treatment plant operating staff discovered that sludge-laden water from the plant had been inadvertently discharged into Tualota Creek that crosses through the plant site. Early investigations revealed that a restriction in the sludge line to the new sludge thickeners had caused a backup and overflow into an unused earthen sludge lagoon; and this lagoon overflows into Tualota Creek. Approximately 30,000 to 45,000 gallons of non-hazardous water exceeded the standards for both color and total suspended solids that can be discharged into the dry creek and was contained within District property. Notifications were made to the appropriate regulatory agencies including the Riverside County Department of Environmental Health, the California Department of Fish and Game, and the San Diego Regional Water Quality Control Board. The discharge was contained within Metropolitan's property, but approximately 1,000 linear yards of the creek bed were affected. With the approval of the regulatory agencies, the clean-up process began immediately using contract services and is expected to be complete by September 2, 2004. Changes to the sludge line overflow structure have been made to preclude this from reoccurring.

Conveyance & Distribution Update

Shutdowns

During the week of August 9, 2004, a citizen informed Metropolitan that the ground around one of our access structures on the West Valley Feeder No. 1 in the Northridge area appeared to be wet. Due to an increasing rate of flow from this area of the pipeline, it was shutdown and dewatered from August 21 through 27. Subsequent investigations revealed that two sections of concrete-encased prestressed concrete cylinder pipe were cracked. The cause is still the subject of investigation, but the leakage has been stopped by the installation of temporary internal bands and rubber seals. Engineering is now designing a section of new steel pipeline to bypass the leaking area, and also to replace an adjacent section that was repaired following the 1994 Northridge earthquake. That relocation is tentatively planned for construction in the spring of 2005. While Metropolitan owns this pipeline, it is currently leased to the Los Angeles Department of Water and Power under an agreement that has been in effect since 1977. During this shutdown, Los Angeles was able to utilize an emergency Metropolitan service connection to maintain service to its customers.

Internal repairs to the Orange County Feeder, at the intersection of Bristol Street and Sunflower Boulevard in Costa Mesa, were completed in July 2004. It appears that the leak was due to a hit by a horizontal drilling operation conducted by a third-party contractor, which damaged the pipeline’s coating and eventually corroded through the steel cylinder. Staff is concerned that there may be additional damage to the external coating in the same area. We are working with the city to obtain approval for an excavation, external inspection, and repair (if needed) of the pipeline. Once this approval is obtained, the inspection will be scheduled. Assuming no major damage is found, the pipeline will not need to be shut down for this work.

Operations and Maintenance Update

Maximo Upgrade

The Maximo software and database has been upgraded to version 5.2. Problems during rollout affecting system stability have been resolved and the system is now operating satisfactorily. Maintenance Planning Unit staff is continuing development of data and reporting standardization and improved business practices to ensure effective maintenance planning.

Water System Update

As of August 23, 2004, total SWP in-basin deliveries for the current calendar year (CY) were 1,171,034 acre-feet (AF). These deliveries include 1,098,508 AF on the East and West Branches, 67,259 AF from the San Bernardino Valley Municipal Water District/Inland Feeder interconnection and 5,266 AF from San Gabriel Valley Municipal Water District. Of the 1,171,034 AF received, approximately 710,000 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 August 23, 2004, CRA net deliveries were 467,000 AF, which is 86 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 August 23, 2004:

Metropolitan Reservoirs	Storage to Date	Percent of Capacity
Diamond Valley Lake (DVL)	561,900 AF	70%
Lake Mathews	150,200 AF	83%
Lake Skinner	39,500 AF	90%
State Water Project Reservoirs		
Lake Oroville	1.95 MAF	55%
San Luis Reservoir Total	0.45 MAF	22%
San Luis State Share	0.37 MAF	35%

Colorado River Reservoirs

Lake Powell	9.5 MAF	39%
Lake Mead	14.0 MAF	51%

SDCWA Reservoirs

24-Reservoir Total	213,200 AF	35%
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As of August 23, 2004, Hayfield Basin has received only 17 AF of deliveries in this 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 200 feet above sea level, which is 36 feet below the previous ten-year average of 236 feet, and only 4 feet above the historic low of 196 feet.

Sales and Deliveries

Final water sales for July 2004 were 249,200 AF. This amount is 12,800 AF, or 5 percent greater than the budgeted amount of 236,400 AF.

Precipitation

The Colorado River system is in its fifth consecutive year of below-normal precipitation and is 83 percent of normal, based on the first 11 months of the 2004 water year (October 2003 through September 2004). Last month, Lake Mead reached its lowest historic 40-year storage at 13.9 MAF. The 2004 water-year runoff into Lake Powell is estimated to be only 52 percent of normal.

As of August 23, 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 129 days. For the current water year through August 23, 2004, total precipitation for three southern California cities and the Eight Station Index (a measure of precipitation in the SWP's watershed) is:

Weather Station	Precipitation	Percent of Normal
Los Angeles Civic Center	9.25 inches	62%
San Diego Airport	5.20 inches	56%
Riverside Airport	6.22 inches	64%
Eight Station Index	45.87 inches	93%

Power Update

Despite higher temperatures and energy demands in July, the California Independent System Operator (CAISO) did not experience any major, system-wide energy shortages. However, both DWR and Metropolitan were requested to curtail pumping several times for local problems. DWR was requested by the CAISO to reduce its pumping load by up to 74 mega watts (MW) for a maximum of 1.5 hours on July 4, July 25 and July 26 due to local power supply concerns. DWR was also requested to reduce 400 MW of pump load for three hours on July 22 as part of the California Power Authority's Demand Relief Program.

On July 20, CAISO experienced a temporary resource shortage for a few hours due to transmission line and generation losses caused by wildfires. Per CAISO request, Metropolitan curtailed its Intake and Gene pumping operations for about 3 hours to mitigate the CAISO emergency condition. This pumping interruption did not affect Metropolitan's water delivery capabilities.

Natural gas spot and future prices stayed high throughout July and pushed electricity prices to a recent record high. Temperatures and energy demands dropped in August causing a drop in spot and future prices for both natural gas and electricity even though oil prices continued to increase.

During July, Metropolitan received 33,976 Megawatt-hours (MWh) of its previously banked energy with Southern California Edison and banked 36,079 MWh with DWR to be used before December 31, 2004. Metropolitan also sold 46,235 MWh of excess power to DWR for use on the SWP. The average DWR sale

price was \$52.91/MWh for total revenue of approximately \$2.4 million. During July, Metropolitan sold 5,686 MWh from DVL at \$58.13/MWh to DWR for total revenue of \$330,507, plus \$56,875 bonus received from California Energy Commission for DVL generation in June 2004. The other 15 small hydroelectric power plants generated 40,798 MWh for total revenue of about \$2.1 million.