

**SPECIAL MEETING OF THE WATER RESOURCES COMMITTEE
OF THE BOARD OF DIRECTORS
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BOULEVARD, LAKEWOOD, CALIFORNIA 90712
12:00 P.M. FRIDAY, APRIL 10, 2009**

AGENDA

EACH ITEM ON THE AGENDA, NO MATTER HOW DESCRIBED, SHALL BE DEEMED TO INCLUDE ANY APPROPRIATE MOTION, WHETHER TO ADOPT A MINUTE MOTION, RESOLUTION, PAYMENT OF ANY BILL, APPROVAL OF ANY MATTER OR ACTION, OR ANY OTHER ACTION. ITEMS LISTED AS "FOR INFORMATION" MAY ALSO BE THE SUBJECT OF ANY "ACTION" TAKEN BY THE BOARD OR A COMMITTEE AT THE SAME MEETING.

- 1. DETERMINATION OF A QUORUM**
- 2. PUBLIC COMMENT**
- 3. CONTINUED DISCUSSION ON THE 2009 ENGINEERING SURVEY AND REPORT AND REPLENISHMENT WATER PURCHASING SCENARIOS**
Staff Recommendation: For information.
- 4. PERFORMANCE ASSESSMENT OF RECHARGE OPERATIONS RECEIVING DIFFERENT BLENDS OF TERTIARY/REVERSE OSMOSIS WATERS**
Staff Recommendation: That the Water Resources Committee recommends to the Board to enter into an Agreement with the Colorado School of Mines for a research project titled "Performance Assessment of Surface Spreading Operations Receiving Different Blends of Tertiary/RO Treated Waters" for an amount not to exceed \$40,000.
- 5. DIRECTORS REPORTS, INQUIRIES, REVIEW OF DIRECTIONS TO STAFF**
- 6. ADJOURNMENT**

Posted by Abigail C. Andom, Deputy Secretary, and April 7, 2009.

In compliance with the Americans with Disabilities Act (ADA), if special assistance is needed to participate in the Board meeting, please contact Deputy Secretary Abigail Andom at (562) 921-5521 for assistance to enable the District to make reasonable accommodations.

All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 4040 Paramount Boulevard, Lakewood, California 90712.

Agendas and minutes are available at the District's website, www.wrd.org.



MEMORANDUM

ITEM NO. 3

<i>Prepared by:</i>	Ted Johnson
<i>Reviewed by:</i>	Robb Whitaker
<i>Approved by:</i>	Robb Whitaker

DATE: APRIL 10, 2009

TO: WATER RESOURCES COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: CONTINUED DISCUSSION ON THE 2009 ENGINEERING SURVEY AND REPORT AND REPLENISHMENT WATER PURCHASING SCENARIOS

SUMMARY

At the April 1, 2009 Water Resources Committee meeting, April 2, 2009 Finance Committee Meeting, and April 3, 2009 Board Meeting with the opening of the Public Hearing on the 2009/2010 Replenishment Assessment, Staff and Directors discussed the potential costs for replenishment water in the ensuing year and the likely availability of this water from MWD.

Directors and Staff are working on various scenarios on imported spreading water availability and seasonal rates versus Tier 1 untreated rates. They are also evaluating the District's In-Lieu Program in light of that water source likely not being available in the ensuing year, and whether or not it should be budgeted for and if not the impacts this would have on increased pumping and barrier demands, if any.

These discussions are leading towards the Board's determination of the amount and cost of replenishment water for the ensuing year, which will factor into the overall FY 2009/10 budget that leads to the adoption of the Replenishment Assessment. A Budget Workshop will be held at the April 17 Board meeting to fully discuss the expenses and income to the district and to present the findings by the committees. It is currently anticipated that the Replenishment Assessment will be established by the Board at its May 1, 2009 meeting, although per the Water Code they could extend this to no later than the second Tuesday in May (May 12, 2009 this year).

FISCAL IMPACT

None at this time.

STAFF RECOMMENDATION

For information.



MEMORANDUM

ITEM NO. 4

<i>Prepared by:</i>	Ted Johnson
<i>Reviewed by:</i>	Robb Whitaker
<i>Approved by:</i>	Robb Whitaker

DATE: APRIL 10, 2009

TO: WATER RESOURCES COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: PERFORMANCE ASSESSMENT OF RECHARGE OPERATIONS RECEIVING DIFFERENT BLENDS OF TERTIARY / REVERSE OSMOSIS WATERS

SUMMARY

This is a research project between WRD and the Colorado School of Mines to assist us in planning for the Groundwater Reliability and Improvement Program (GRIP), which proposes to mix highly treated tertiary recycled water at the spreading grounds with advanced treated reverse osmosis (RO) water to increase the reliability of groundwater using local sources. The Colorado School of Mines is a highly regarded state university located in Golden, Colorado that specializes in the geosciences. The main researcher for this project is Dr. Jorg Drewes, an internationally recognized leader in the field of recycled water reuse for groundwater recharge and the effectiveness of soil aquifer treatment (SAT) to further purify the recharge water.

Surface spreading operations utilizing recycled water in California are currently limited regarding the total volume of recycled water that can be recharged at a given site. California's Department of Public Health (CDPH) has proposed draft regulations in which total organic carbon (TOC) has been selected as a measure of system performance and surrogate parameter for the absence of unregulated trace organic chemicals.

For surface spreading operations such as the Montebello Forebay, the current draft regulations consider that the TOC concentration in the recycled water should not exceed 0.5 mg/L divided by the approved recycled water contribution (RWC). For a RWC of 35 percent, for example, this approach limits the TOC concentration in the recycled water to 1.4 mg/L. For natural treatment processes such as soil-aquifer treatment (SAT) this represents a very low limit and a tertiary effluent quality might not be sufficient to either meet this TOC concentration or operate at a RWC above 35%. The GRIP project could reach a RWC of 50%, and therefore the TOC will need to be 1.0 mg/L or less according to the CDPH draft regulations. It will require a mix of tertiary water and RO water to meet this concentration.

For entities interested in further increasing their RWC such as through the GRIP project, advanced water treatment such as reverse osmosis (RO) might be required. RO membrane treatment can achieve TOC concentrations of less than 0.5 mg/L using a secondary or tertiary treated effluent as feed water. Thus, blending tertiary effluent with RO permeate either prior to spreading or in the aquifer can be a viable strategy to increase the RWC beyond 35% without exceeding the TOC/RWC requirements set forward by CDPH.

This research project is designed to explore the effects of different blend ratios of tertiary and RO treated water on the quality of the underlying groundwater through controlled laboratory-scale experiments. This study will characterize the changes of organic matter during spreading operation by applying different blend ratios of tertiary and RO treated effluents and examine the performance of SAT regarding the removal of indicator trace organic compounds under recharge conditions using different feed water qualities. For example, blends of 25% tertiary to 75% RO will be mixed and then run through soil columns to assess removal performance, as well as blends of 50/50, 75/25, and 100% RO.

The objectives of the research project are to:

- (1)** Determine the efficiency of SAT regarding the removal of TOC and trace organic indicator chemicals under controlled laboratory conditions while receiving different blends of tertiary and RO treated effluents.
- (2)** Assess the affect of different recycled water blends (tertiary vs. RO treated) on dissolution of soil organic matter of spreading operations.
- (3)** Recommend a spreading operation procedure using a blend of tertiary and RO treated recycled water that results in maximum SAT performance and minimal soil organic carbon dissolution for the Montebello Forebay Surface Spreading operation.

Colorado School of Mines, and in particular Dr. Jorg Drews, were selected by WRD to perform this research project due to their unique experience with recycled water recharge, soil aquifer treatment, emerging chemicals of concern, credibility in the scientific arena, and because they already have set up in their laboratory soil columns that have active biocommunities established for immediate use on this research project.

WRD's procurement policy allows the District to enter into sole-source contracts with other public entities without having to go through the formal advertising requirements that other contracts are required to go through. For example, the District has entered into agreements with UCLA, UCSB, USC, USGS, LADPW, DTSC, and other public agencies previously to perform the purposes and activities of the District. The Colorado School of Mines is a non-profit university and qualifies as a public agency.

FISCAL IMPACT

This is a budgeted item for the current fiscal year under Project 004 for the Colorado School of Mines for a total of \$40,000.

STAFF RECOMMENDATION

That the Water Resources Committee recommends to the Board to enter into an Agreement with the Colorado School of Mines for a research project titled "Performance Assessment of Surface Spreading Operations Receiving Different Blends of Tertiary/RO Treated Waters" for an amount not to exceed \$40,000.