



**WEST BASIN MUNICIPAL WATER DISTRICT**  
17140 S. Avalon Blvd., Suite 210  
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**AGENDA NO. 17**

**OCTOBER 16, 2008 – Water Resources**  
Smith (Chair), Little  
**OCTOBER 27, 2008 – Board Meeting**  
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Submitted by: Paul Shoenberger  
Approved by: Rich Nagel

## ACTION CALENDAR

### OCEAN-WATER DESALINATION PROGRAM

#### SUMMARY:

##### **Pilot Plant**

West Basin's pilot testing consists of three (3) phases of research. Phase A evaluated microfiltration pretreatment and reverse osmosis performance on pre-condenser influent source water. Phase B evaluated ultra-filtration pretreatment and various ocean-water reverse osmosis membranes on post-condenser effluent. Upon completion of the recent Phase B testing, the pilot plant was reconfigured during the months of June through August to install new process equipment for the next and last phase of research. This final Phase C of research includes evaluation of a high-rate granular media filter for solids reduction in the prescreening process, addition of a fluid backwash system on the Arkal disc filter prescreening system to assess cleaning effectiveness, evaluation of the Pall microfiltration system, and establishment of finished water quality parameters through use of a second pass reverse osmosis system and post-stabilization re-mineralization process. Results from this research will be used to optimize the demonstration and full-scale design and operations protocol. This phase of research is scheduled to run through May 2009.

Initiation and completion of the Phase C research uses two Pall microfiltration systems operating in parallel. The current lease with Pall Corporation for the units expires in November 2008. The ongoing research protocol requires that the lease be extended an additional six months to complete the final phase of piloting research. While the study was originally scoped to be completed by this November, the piloting reconfiguration work was delayed for approximately five (5) months due to West Basin's financial constraints experienced during the 3rd and 4th quarters of Fiscal Year 2007-08. West Basin's financial constraints delayed proceeding with the pilot reconfiguration and implementation of the Pall units and initiating the "Scope of Work" within the originally proposed timeframe.

The lease amount for the two (2) units for the additional six (6) months is \$114,000. West Basin did evaluate the possibility of installing alternate pretreatment equipment, but it was determined that this was not a feasible solution as there is no available piloting equipment that could be acquired in a timely manner, the cost and timing of installing new equipment would be inefficient, and West Basin's existing permit discharge waiver would expire before acquisition, installation, and testing could occur. This lease amount for the six-month extension was negotiated with the vendor. The vendor has been proactively working with West Basin to accommodate its schedule as these units were originally scheduled to be placed at another piloting location. Therefore, it is recommended that the Board consider authorizing the General Manager to approve \$114,000 for a six-month agreement to extend the use of these units.

### **Proposition 50 – Red Tide/Storm Water Monitoring**

West Basin received a grant of \$496,000 from the Department of Water Resources under the Prop 50 Program to conduct monitoring of algal toxins and biomass production and storm water influences on source water that would be extracted for use in a full-scale ocean-water desalination facility. West Basin has made substantial progress in moving forward with the Prop 50 Red Tide "Scope of Work". (SOW) The SOW consists of:

- 1) An assessment and categorization of potential biotoxins that would be expected to occur along the coastal waters of the Western United States;
- 2) A membrane challenge test at a bench scale level on the most prominent and lethal biotoxins that a full-scale ocean-water desalination facility could be subjected to;
- 3) Monitoring and testing at West Basin's pilot plant facility of the proposed biotoxins; and
- 4) Development and installation of real-time buoy sensor installation to monitor biomass production and function as a potential sentinel in the formations of harmful algal blooms and associated biotoxins.

Task 1 is approximately 60% complete while Task 2 is currently ongoing with the seeding of the biotoxin challenge testing. Task 3 is ongoing and continuously monitors for selected biotoxins throughout the duration of the piloting project. Task 4 is progressing nicely with the buoy sensors having been ordered and field installation scheduled for mid-December.

A supporting part of this Prop 50 SOW consists of monitoring for storm water influences that result from storm events that discharge contaminated runoff into the coastal waters adjacent to the intakes of the sites where a full-scale ocean-water desalination facility would be sited. The Department of Public Health has expressed a concern about the influences of these potential contaminants that are flushed out to the ocean during storm events. Part of West Basin's success in procuring this Prop 50 grant consisted of studying these effects. This program will evaluate one (1) first flush event (the first stormwater event of the year) and three (3) subsequent rain events to determine the various levels of contamination in the source water and to determine the effectiveness of the membrane treatment system at removing these contaminants. Each stormwater event will be monitored for seven (7) days and sampling will occur on 12-hour intervals to test for a diverse suite of organics, metals, nutrients, and pathogens at four different locations.

The cost to facilitate the Prop 50 stormwater scope is \$303,483. This amount is part of the original Prop 50 budget of \$1,245,000. West Basin will be reimbursed a total of \$496,000 under this Prop 50 grant. This SOW will be facilitated by MWH as part of the temporary ocean-water desalination demonstration project. MWH was competitively selected to perform the design, construction management, and operations of the Ocean-Water Desalination Demonstration Project and management of the Prop 50 grants. Therefore, it is recommended that the Board consider authorizing the General Manager to amend MWH's contract for and additional \$303,483 to perform the stormwater portion of work.

## **Ocean-Water Desalination Demonstration Project**

West Basin will be releasing the Draft Environmental Impact Report (EIR) for public review this month for the Ocean-Water Desalination Demonstration Project that will be implemented at the SEA Lab Facility. In preparation of the Draft EIR release and permit application process, West Basin met with the regulatory stakeholders to provide an update on the project and get input on any potential issues raised by the regulators that would need to be considered for inclusion into the EIR. Meetings were held with the Los Angeles Regional Water Quality Control Board, U.S. Army Corps of Engineers, and the California Coastal Commission staff. Each regulatory agency provided useful feedback in which they identified key issues that they encouraged West Basin to address in the EIR. The regulatory agencies appeared supportive of the project and indicated they would assist West Basin in working through the permitting process in an expeditious manner.

Staff will be meeting with key environmental and community stakeholder groups during the Draft EIR public review period. Staff will also be meeting with the City of Redondo Beach planning staff to update them on the status of the project within the next month.

### STRATEGIC BUSINESS PLAN IMPLEMENTATION:

Goal 1, Reliability – Maintain a level of local water reliability that supports the regional economy, our community and customer agency needs.

Goal 7, Infrastructure – Manage infrastructure to ensure reliability, manage risk, and maximize the useful life of facilities.

### COMMITMENT STATEMENT:

Water Reliability – West Basin is committed to innovative planning and investments to provide water supply reliability and drought protection.

### FISCAL IMPACTS:

Funds for these projects are included in the Fiscal Year 2008-09 Ocean-Water Desalination Capital Budget.

### ENVIRONMENTAL COMPLIANCE:

Not applicable.

### COMMITTEE STATUS:

This item was reviewed by the Water Resources Committee on October 16, 2008 and recommended for approval at the October 27, 2008 Board meeting.

RECOMMENDED MOTION:

That the Board authorizes the General Manager to:

1. Enter into a contract with Pall Corporation for an amount of \$114,000 to lease two (2) microfiltration units to be used at the ocean-water desalination pilot plant; and
2. Amend MWH's Agreement No. W1780 for an additional amount of \$303,483 for a total contract amount not-to-exceed \$3,937,626 to perform Proposition 50 stormwater monitoring and reporting work.

LIST OF EXHIBITS:

None.