

**WEST BASIN MUNICIPAL WATER DISTRICT****JULY 12, 2007 – Water Resources**  
Little (No Quorum)**JULY 23, 2007 – Board Meeting**

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Approved by: Richard Nagel

## INFORMATION CALENDAR

EXXON-MOBIL MICROFILTRATION UNITSSUMMARY:

The microfiltration elements at the Exxon-Mobil Boilerfeed Plant were replaced in January and February 2005. In late 2006, United Water Services' staff noticed that the microfilters were fouling more rapidly than normal and had to be chemically cleaned more often. This reduced the capacity of the microfiltration units and the ability to meet peak Exxon-Mobil demand. Siemens, the microfilter manufacturer, was contacted to evaluate the system and make adjustments to the microfilters as necessary to ensure proper backwashing and cleaning. Siemens also autopsied one of the elements. The results of the autopsy showed that the main foulant was iron with traces of oil. The iron foulant was from higher iron levels in the Title 22 water feeding the satellite facilities due to new Phase IV processes. Additional work is ongoing at the main plant in El Segundo to decrease the levels of iron in the Title 22 water. Siemens also conducted cleaning trials on individual membranes to try to restore the capacity of the membranes and to see if another cleaning regime would be more effective at cleaning the microfilters.

As the tests were being conducted, the microfiltration elements continued to foul. Cleanings were being required too frequently. Attempts to restore the Exxon-Mobil elements were unsuccessful. The Exxon-Mobil elements were eventually replaced with salvaged elements from the Phase III microfilters.

As a result of the system evaluation and cleaning trials, Siemens recommended dual cleanings (a low pH cleaning followed by a high pH cleaning) that they believe will be more effective at cleaning the elements. It has been implemented at the Exxon-Mobil and Carson plants using existing equipment, but additional cleaning equipment will need to be added in the near future to make it more efficient.

United Water Services has refurbished the Phase III elements by fixing membrane leaks where possible. However, the pressure decay tests used as an advanced warning to leakage in the system are still not as good as desired. Separation Process Inc. and United Water Services both recommend changing out the microfiltration elements in the near future. Staff is in the process of contacting Siemens for pricing for replacement elements. The elements are proprietary and Siemens is the only source for the elements.

The membranes were warranted against defects in material or workmanship. However, the elements did not fail due to a defect in material or workmanship and are therefore not covered under the warranty. The elements had to be replaced because of severe fouling caused by the higher iron levels in the Title 22 recycled water and could not be adequately restored with chemical cleanings.

FISCAL IMPACTS:

Funds are available in the Facility Replacement Fund. Exxon-Mobil is assessed a monthly Operations & Maintenance charge that includes costs to replace membranes.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was not reviewed by the Water Resources Committee on July 12, 2007 due to a lack of quorum. Director Little suggested that this item be agendaized for discussion at the July 23, 2007 Board meeting.

RECOMMENDED MOTION:

This item is for information only.

EXHIBITS:

None.

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