

**WBMWD**  
**Operations Scorecard**  
October 2008

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## Summary

### Customer Service

October-08

Contact	Chevron Shakim	Chevron Omar	Mobil / Exxon Urvinee	Mobil / Exxon Dan	BP Dennis	BP Ryan
How would you rate the cooling tower water quality on a scale of 1 - 5?	0	4	3	3	2	5
How would you rate the boiler feed water quality on a scale of 1 - 5?	0	4	2	4	5	5
How would you rate our ability to deliver the desired flows ?	0		4	4	2	3
How would you rate WBMWD's communications?	0	4	4	5	5	3
How is our responsiveness to your needs?	0	4	3	5	4	5

# MEMBRANE CONDITION ASSESSMENT SUMMARIES

**Table 2 – WRP Membrane Condition Summary**

ECLWRF REVERSE OSMOSIS

Total Net Production Requirement = 21 mgd

**1. Trains 1-3**

Trains 1 - 3 Production Requirement (MGD)	9.0	
<i>Weighting Factor</i>	42.9%	
Train	Capacity	Water Quality
	Average Score (0-2 range)	Average Score (0-1 range)
Train 1	2.0	1.0
Train 2	2.0	1.0
Train 3	2.0	1.0
Cumulative Scores	6.0	3.0
Trains 1 - 3 Scores	100.0%	100.0%
<b>Combined Trains 1 - 3 Score (%)</b>	<b>100.0%</b>	
Combined Score - Weighted (%)	42.9%	

**2. Trains 4-5**

Trains 4 - 5 Production Requirement (MGD)	4.6	
<i>Weighting Factor</i>	21.9%	
Train	Capacity	Water Quality
	Average Score (0-2 range)	Average Score (0-1 range)
Train 4	1.7	1.0
Train 5	1.7	1.0
Cumulative Scores	3.3	2.0
Trains 4 - 5 Scores	83.5%	100.0%
<b>Combined Trains 4 - 5 Score (%)</b>	<b>91.8%</b>	
Combined Score - Weighted (%)	20.1%	

**3. Trains 6-8**

Trains 6 - 8 Production Requirement (MGD)	3.9	
<i>Weighting Factor</i>	18.6%	
Train	Capacity	Water Quality
	Average Score (0-2 range)	Average Score (0-1 range)
Train 6	2.0	0.3
Train 7	2.0	0.7
Train 8	2.0	0.3
Cumulative Scores	6.0	1.3
Trains 6 - 8 Scores	100.0%	42.3%
<b>Combined Trains 6 - 8 Score (%)</b>	<b>71.2%</b>	
Combined Score - Weighted (%)	13.2%	

**4. Train 9**

Train 9 Production Requirement (MGD)	3.5	
<i>Weighting Factor</i>	16.7%	
Train	Capacity	Water Quality
	Average Score (0-2 range)	Average Score (0-1 range)
Train 9	2.0	1.0
Cumulative Scores	2.0	1.0
Train 9 Scores	100.0%	100.0%
<b>Combined Train 9 Score (%)</b>	<b>100.0%</b>	
Combined Score - Weighted (%)	16.7%	

**TOTAL WEIGHTED WRP RO  
SCORE =**

**92.8%**

## ECLWRF MICROFILTRATION

Total Net Production Requirement = 21.2 mgd

### 1. Phase 2

Phase 2 Net Production Requirement (MGD)	2.8	
Individual Unit Instantaneous Flow (gpm)	474	
<i>Weighting Factor</i>	13.2%	
Unit	Capacity	Water Quality
	Average Score (0-1 range)	Average Score (0-1 range)
CMF #1	1.0	1.0
CMF #2	0.0	1.0
CMF #3	0.0	1.0
CMF #4	0.0	1.0
CMF #5	0.0	1.0
Cumulative Scores	1.0	5.0
Phase 2 Score	20.0%	100.0%
<b>Combined Phase 2 Scores (%)</b>	<b>60.0%</b>	
Combined Score - Weighted (%)	7.9%	

### 2. Phase 3

Phase 3 Net Production Requirement (MGD)	5.6	
Individual Unit Instantaneous Flow (gpm)	474	
<i>Weighting Factor</i>	26.4%	
Unit	Capacity	Water Quality
	Average Score (0-1 range)	Average Score (0-1 range)
CMF #7	1.0	1.0
CMF #8	1.0	1.0
CMF #9	1.0	1.0
CMF #10	1.0	1.0
CMF #11	1.0	1.0
CMF #13	1.0	1.0
CMF #14	1.0	1.0
CMF #15	1.0	1.0
CMF #16	1.0	1.0
CMF #17	1.0	1.0
Cumulative Scores	10.0	10.0
Phase 3 Scores (%)	100.0%	100.0%
<b>Combined Phase 3 Score (%)</b>	<b>100.0%</b>	
Combined Score - Weighted (%)	26.4%	

### 3. Phase 4

Phase 4 Net Production Requirement (MGD)	12.8	
Individual Unit Instantaneous Flow (gpm)	1783	
<i>Weighting Factor</i>	60.4%	
Unit	Capacity	Water Quality
	Average Score (0-1 range)	Average Score (0-1 range)
CMF-S #19	1.0	1.0
CMF-S #20	1.0	1.0
CMF-S #21	1.0	1.0
CMF-S #22	0.7	1.0
CMF-S #23	1.0	1.0
CMF-S #24	1.0	1.0
Cumulative Scores	5.7	6.0
Phase 4 Score	94.5%	100.0%
<b>Combined Phase 4 Scores (%)</b>	<b>97.3%</b>	
Combined Score - Weighted (%)	58.7%	

**TOTAL WEIGHTED WRP MF  
SCORE =**

**93.1%**

**Table 3 – Mobil Membrane Condition Summary**  
**MICROFILTRATION**

Net Production Requirement (MGD)	3.8	
Individual Unit Instantaneous Flow (gpm)	518	
Unit	<b>CAPACITY</b>	<b>WATER QUALITY</b>
	Average Score (0-1 range)	Average Score (0-1 range)
CMF #1	1.0	1.0
CMF #2	0.0	1.0
CMF #3	1.0	1.0
CMF #4	1.0	1.0
CMF #5	1.0	1.0
CMF #6	1.0	1.0
Cumulative Scores	5.0	6.0
Mobil MF Scores (%)	83.3%	100.0%
<b>Combined Mobil MF Score (%)</b>	<b>91.7%</b>	

**REVERSE OSMOSIS**

Net Production Requirement (MGD)	3.2	
Individual Train Production Requirement (gpm)	550	
Train	<b>CAPACITY</b>	<b>WATER QUALITY</b>
	Average Score (0-2 range)	Average Score (0-1 range)
RO Train #1	2.0	0.0
RO Train #2	2.0	1.0
RO Train #3	2.0	0.0
RO Train #4	2.0	0.0
Cumulative Scores	8.0	1.0
Mobil RO Scores (%)	100.0%	25.0%
<b>Combined Mobil RO Score (%)</b>	<b>62.5%</b>	

**Table 4 – Carson Membrane Condition Summary**  
**MICROFILTRATION**

Net Production Requirement (MGD)	5.9	
Individual Unit Instantaneous Flow (gpm)	512	
Unit	<b>CAPACITY</b>	<b>WATER QUALITY</b>
	Average Score (0-1 range)	Average Score (0-1 range)
CMF #1	1.0	1.0
CMF #2	1.0	1.0
CMF #3	1.0	1.0
CMF #4	1.0	1.0
CMF #5	0.0	1.0
CMF #6	1.0	1.0
CMF #7	1.0	1.0
CMF #8	1.0	1.0
CMF #9	1.0	1.0
Cumulative Scores	8.0	9.0
Carson MF Scores (%)	88.9%	100.0%
<b>Combined Carson MF Score (%)</b>	<b>94.4%</b>	

**REVERSE OSMOSIS**

Net Production Requirement (MGD)	5	
Individual Train Production Requirement (gpm)	1160	
Train	<b>CAPACITY</b>	<b>WATER QUALITY</b>
	Average Score (0-2 range)	Average Score (0-1 range)
RO Train #1	1.0	1.0
RO Train #2	1.3	1.0
RO Train #3	1.0	1.0
RO Train #4	1.3	1.0
Cumulative Scores	4.7	4.0
Carson RO Scores (%)	58.3%	100.0%
<b>Combined Carson RO Score (%)</b>	<b>79.1%</b>	

**Barrier Flow**

?

**Operations Staff**

N/A

# Customer Service Survey

October-08

Contact	Chevron Shakim	Chevron Omar	Mobil / Exxon Urvinee	Mobil / Exxon Dan	BP Dennis	BP Ryan
How would you rate the cooling tower water quality on a scale of 1 - 5?	0	4	3	3	2	5
How would you rate the boiler feed water quality on a scale of 1 - 5?	0	4	2	4	5	5
How would you rate our ability to deliver the desired flows ?	0		4	4	2	3
How would you rate WBMWD's communications?	0	4	4	5	5	3
How is our responsiveness to your needs?	0	4	3	5	4	5

## How would you rate the cooling tower water quality on a scale of 1 - 5?

Denis Kurt / BP – The issue is still the iron. With the high iron content we are forced to reduce the amount of recycle water we use. We could and would like to take more Nitrified water in the cooling tower and have approached both united water and west basin personnel with this offer. The only obstacle is getting the iron level below 0.2 ppm.

Ryan Miller / Nalco for BP –No Comment

Urvinee Solaski / Exxon - Although, conductivity specs are being met, it is increasing. Thus, it affects our chemical usage significantly.

Dan Harbs / GE for Exxon – The increasing conductivity of the cooling tower make-up is affecting the performance of the cooling systems. While I am aware that this is not something that can be controlled, it does have an economic impact

Shakim / Chevron – No Comment

Omar Menchavez / Nalco for Chevron - Control of Iron and Chlorine residual has been consistent

**How would you rate the boiler feed water quality on a scale of 1 - 5?**

Denis Kurt / BP – No issues with RO quality

Ryan Miller / Nalco for BP –No Comment

Urvinee Solaski / Exxon - Currently, not just one, some specs are not being met by the company. That affects our blowdown cycle, chemical usage, amount of make up water etc.

Dan Harbs / GE for Exxon – No Issue

Shakim / Chevron - No Comment

Omar Menchavez / Nalco for Chevron - Generally good, there are isolated cases where we saw some pH fluctuations

**How would you rate our ability to deliver the desired flows?**

Denis Kurt / BP – Over the quarter we have still been plagued with temporary outages or curtailments. These impair our ability to optimize the use of nitrified water as we have to makeup with well or potable water and this changes the tower chemistry.

Ryan Miller / Nalco for BP – There have been a number of times over the last month that we have had to reduce demand at the request of west basin. The reduction in demand is inline with our communication policy which is a positive but the frequency of such events seems to have increased

Urvinee Solaski / Exxon – No Comment

Dan Harbs / GE for Exxon – No Issue

Shakim / Chevron - No Comment

Omar Menchavez / Nalco for Chevron – No Comment

**How would you rate WBMWD's communications?**

Denis Kurt / BP – Although we have had reliability issues, the communication has been outstanding. We NEED to know when there is a problem so we can begin curtailment immediately and maximize our collective response time. Lack of immediate and honest communication threatens the operation of the whole refinery.

Ryan Miller / Nalco for BP – While response and communication to plant wide outages has been good, communication of smaller events (minor maintenance etc) that decrease production rates has been insufficient. Generally we have found out about reduced production after the fact when WB is asking us to decrease our demand (this and question 3 go hand in hand)

Urvinee Solaski / Exxon – No Comment

Dan Harbs / GE for Exxon – Ralph Valencia has been great about communicating issues or changes

Shakim / Chevron - No Comment