

**Stockton Deep Water Ship Channel (DWSC)
Demonstration Dissolved Oxygen Aeration Facility
June 2010 Monthly Report**

This report includes monthly plots for the Stockton Deep Water Ship Channel (DWSC) Demonstration Dissolved Oxygen (DO) Aeration Facility remote monitoring stations (Navigation Aid (NA) 40, 42, 43 and 48), handheld instrument data, California Data Exchange Center (CDEC) Rough and Ready Island (RRI) station data, and CDEC San Joaquin River at Garwood Bridge (SJG) station data for the month of June 2010. All reported data is provisional and subject to change.

Summary:

The Aeration Facility began operational testing on June 23rd. Oxygenated water was discharged to the DWSC with dissolved oxygen levels in the upper 30 mg/L to study system efficiency.

The average monthly DO levels at all monitoring stations for June were above the California Regional Water Quality Control Board (RWQCB) San Joaquin River Basin Plan minimum water quality objective for DO of 5.0 mg/L from December 1st through August 31st. June's monthly average DO concentrations ranged from approximately 7.08 mg/L at NA40 to 7.61 mg/L at NA48.

It should be noted that data for NA40 (June 16th - June 23rd) and NA43 (June 10th - June 16th) is missing due to faulty DO probes. The faulty DO probes at NA40 and NA43 were replaced and calibrated. Minimum 15-minute DO concentrations recorded for all monitoring stations except NA40 and NA43 were above the 5.0 mg/L minimum water quality objective (see Table1).

The monthly average remote monitoring station DO concentrations were within -0.18 to 0.35 mg/L of the RRI station data. There is no substantial difference between the DO measurements recorded with the handheld instrument and the remote stations. The monthly average handheld measured DO (at 12 foot depth) and the remote monitoring stations DO values were within -0.34 to -0.20 mg/L of each other.

The average monthly water temperature increased 7.7° Fahrenheit (°F) from 63.8°F last month in May to 71.5°F in June.

The June monthly average SJG flow was 1,206 cubic feet per second (cfs). The monthly average flow decreased 638 cfs from the May monthly average flow of 1,844 cfs.

Figures 1, 2, 3, and 4, and Tables 1 and 2 below present a summary of monthly data, and illustrates the discussion topics above.

Figure 1

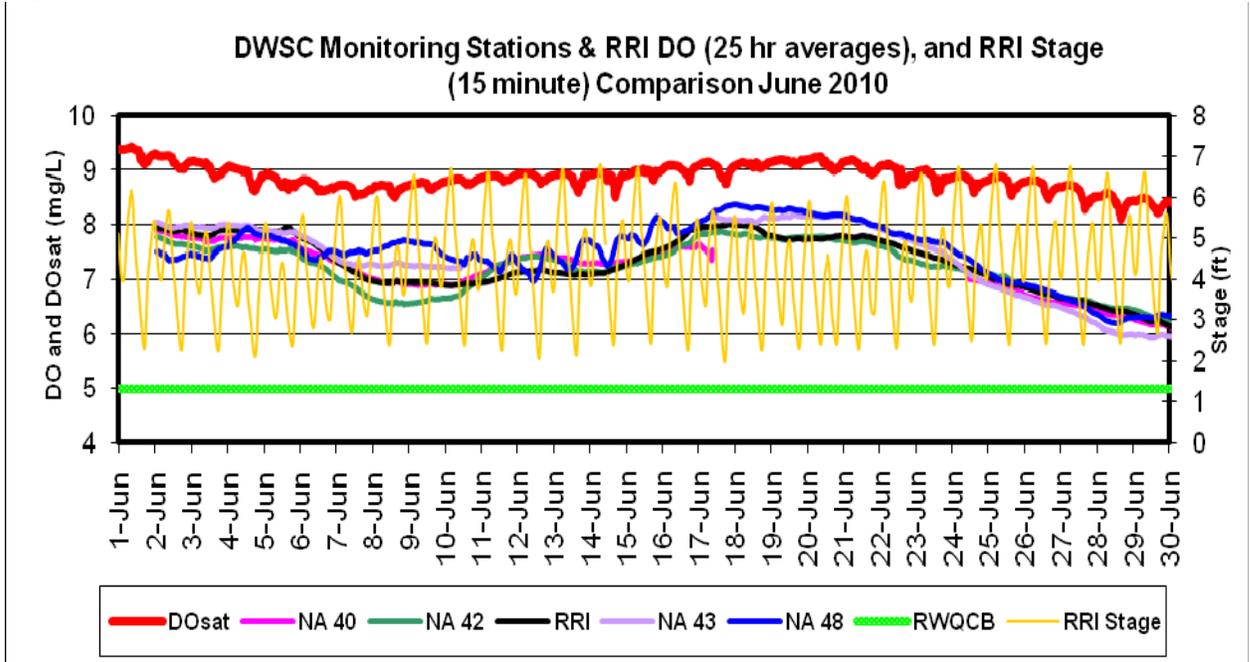


Figure 2

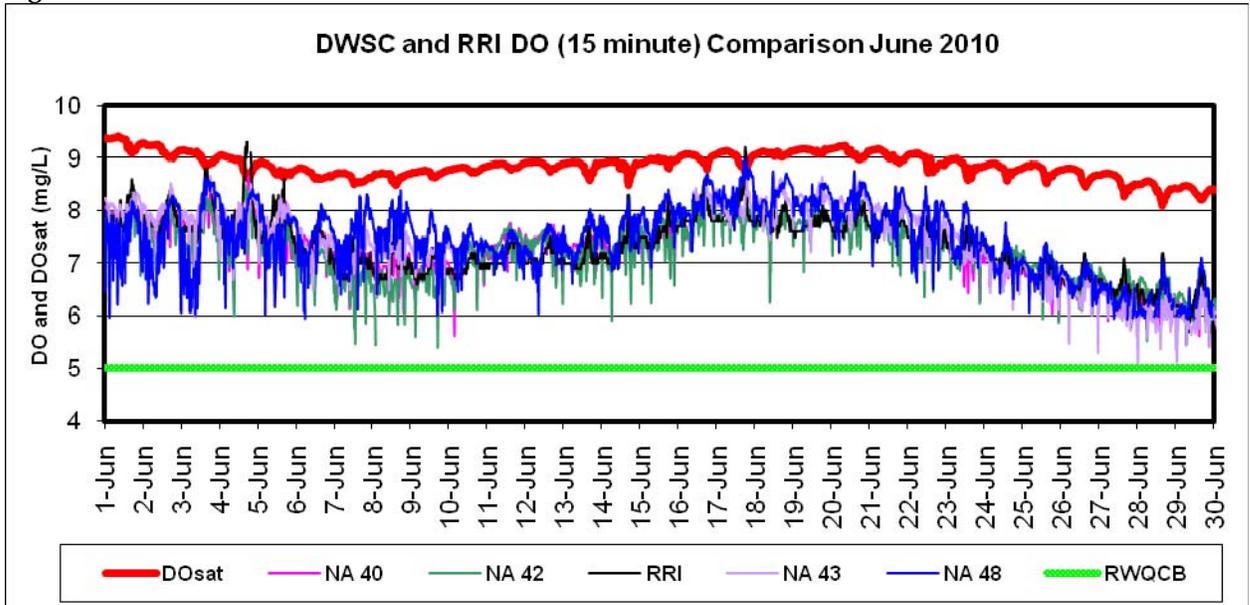


Figure 3

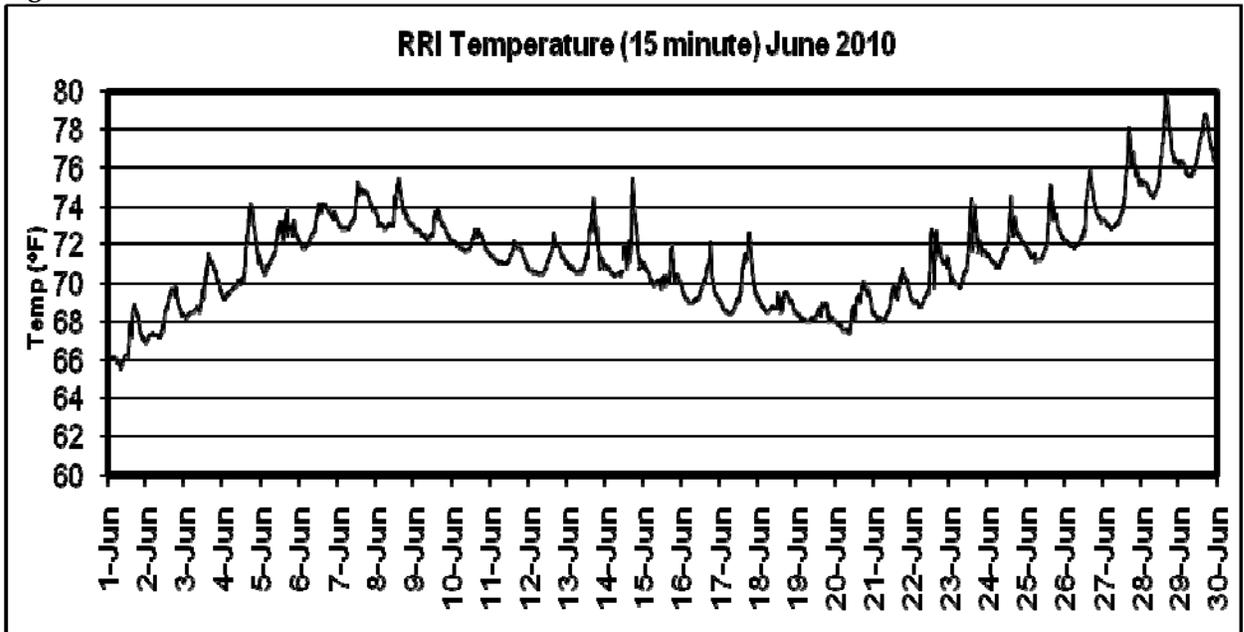


Figure 4

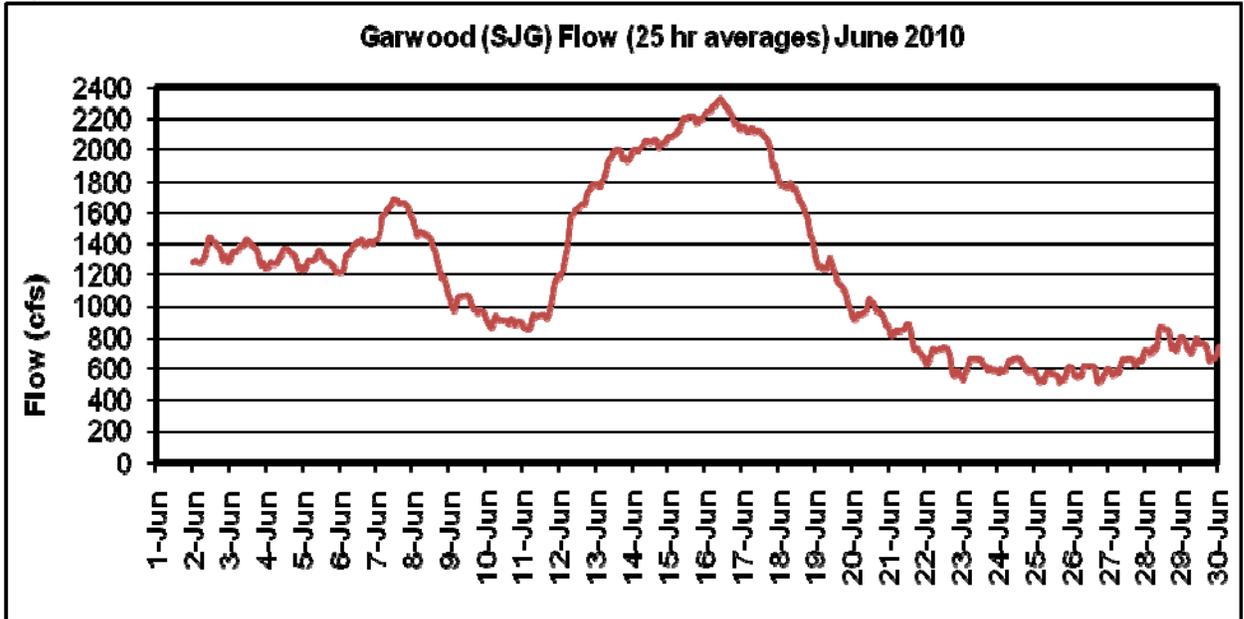


Table 1

YSI Remote Stations and RRI DO ¹ (mg/L) & Temp ¹ (°F)						
Jun-2010						
	RRI ² DO (mg/L)	NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)	RRI Temp (°F)
Monthly DO & Temp Averages	7.27	7.08	7.18	7.33	7.61	71.5
NA Stations and RRI Monthly Average Difference		-0.18	-0.09	0.06	0.35	
Monthly Min DO	5.50	4.81	5.35	4.34	5.94	
Monthly Max DO	9.30	8.64	8.51	8.66	8.97	
Monthly DO STDEV	0.61	0.59	0.57	0.80	0.47	
Monthly DO Median	7.30	7.14	7.26	7.46	7.59	

¹Z-Score outlier test was applied to remove anomalous recorded values.

²RRI DO data is from 3 foot depth. NA DO data is from 12 foot depth except NA48. NA48 DO data is from 9 foot depth starting June 24th, 2010.

Table 2

Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison					
Jun-2010					
		NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)
Handheld Monthly ³ Averages		7.38	7.52	7.61	7.81
NA Stations and Handheld Monthly Average Difference		-0.29	-0.34	-0.28	-0.20

³Handheld monthly averages are based on the average weekly readings for the month

Additional Aeration Facility Associated Information:

DWSC Aeration Facility Operation

The Aeration Facility was briefly operated without oxygen for a routine monthly system inspection on June 17th.

The Aeration Facility was operated with oxygen on June 23rd for operational testing to study system efficiency.

DWSC Water Quality Stations Maintenance/Calibration

The North Central Region (NCR) Water Quality Evaluation Section serviced the four remote monitoring stations (NA40, 42, 43, and 48) in the DWSC on June 3rd, 10th, 16th, and 23rd.

Head of Old River Barrier Status

The Non Physical Barrier that was installed on May 15th was removed on June 16th.

Port of Stockton Dredging Activity

None

San Joaquin River Flow Changes

None

Port of Stockton Dock 19/20 Ship Activity

Days	Arrival	Departure
3	06/03/10	06/05/10

Please provide your feedback concerning our observations as well as your independent observations.