

**Stockton Deep Water Ship Channel (DWSC)
Demonstration Dissolved Oxygen Aeration Facility
April 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 April 2010. All reported data is provisional and subject to change.

Summary:

The Aeration Facility has not been operated for testing and evaluation since October 26th, 2009. The average monthly DO levels at all monitoring stations for April 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. The monthly average DO concentrations ranged from approximately 8.42 mg/L at NA48 to 7.87 mg/L at RRI for April. It should be noted that data for NA42 (April 1st - April 4th and April 10th - April 15th) and NA40 (April 26th - April 30th) is missing due to faulty DO probes. The faulty DO probes at NA40 and NA42 were replaced and calibrated. Minimum 15-minute DO concentrations recorded for all monitoring stations were above the 5.0 mg/L minimum water quality objective (see Table1).

The monthly average remote monitoring station DO concentrations were within 0.09 to 0.55 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 -0.28 to 0.42 mg/L of each other.

The average monthly water temperature increased 3.3 degrees Fahrenheit (°F) from 58.6°F to 61.9°F compared to March.

The April monthly average SJG flow was 1,585 cubic feet per second (cfs). The monthly average flow increased 633 cfs from the March monthly average flow of 952 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

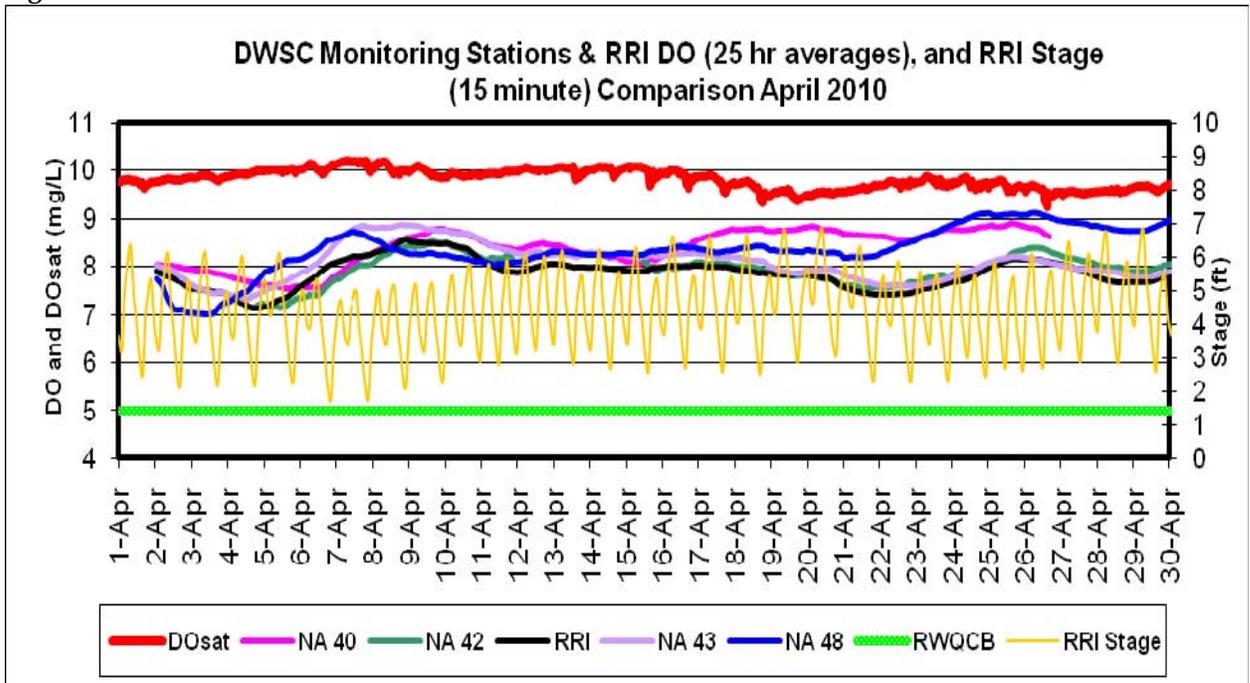


Figure 2

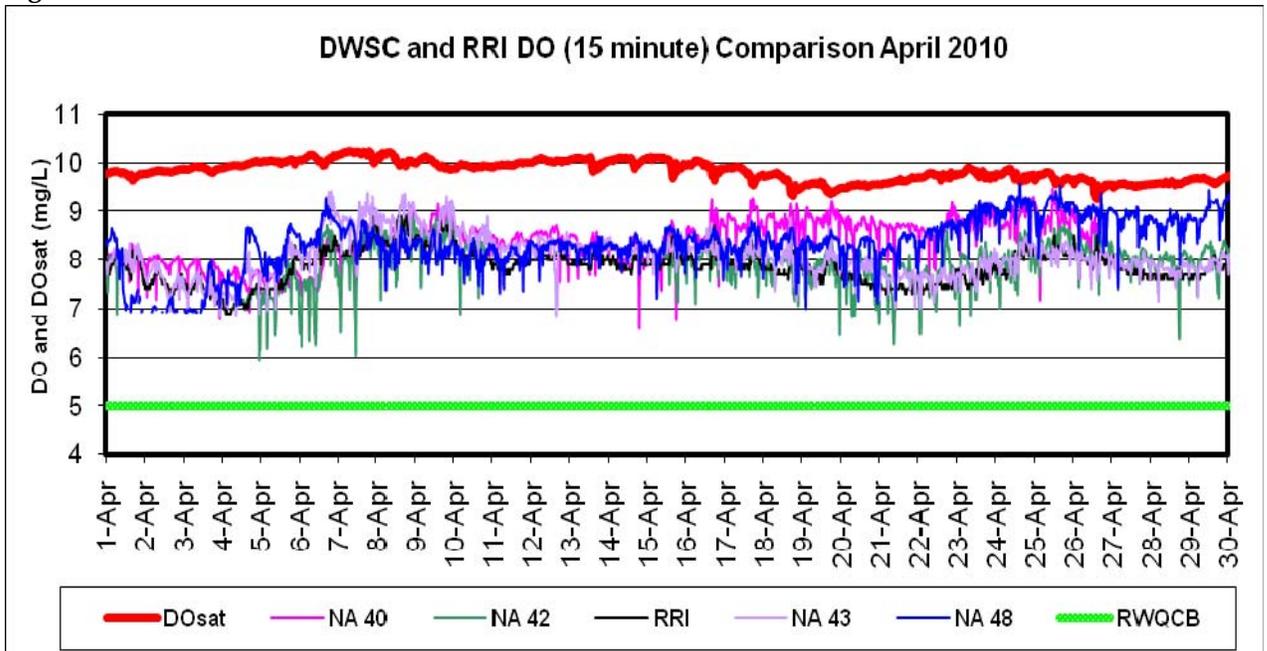


Figure 3

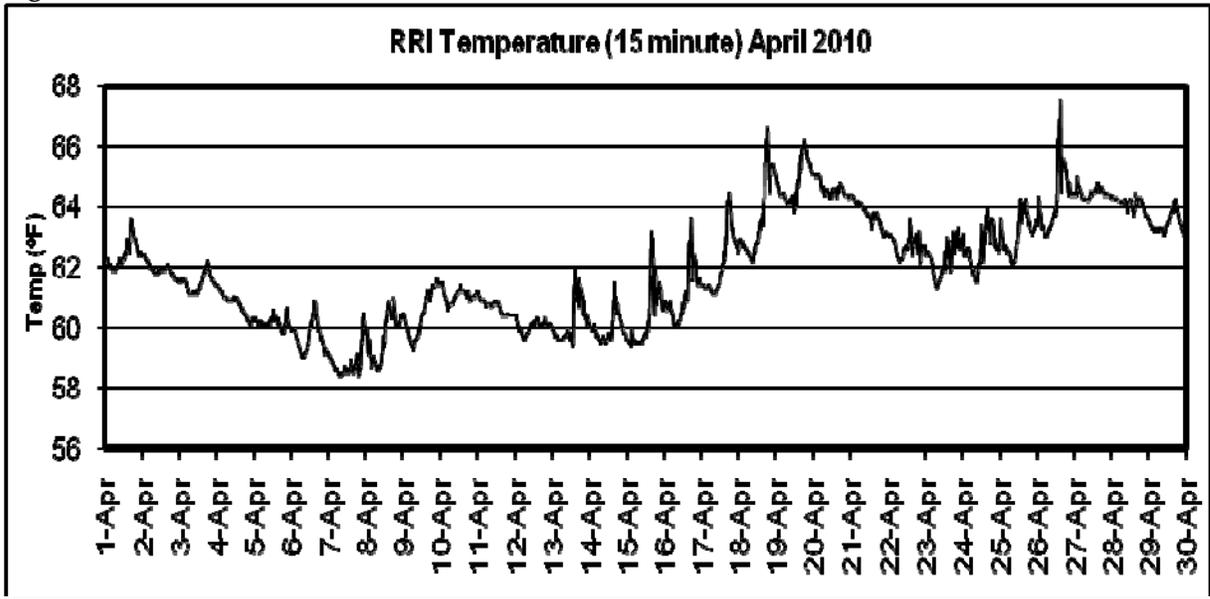


Figure 4

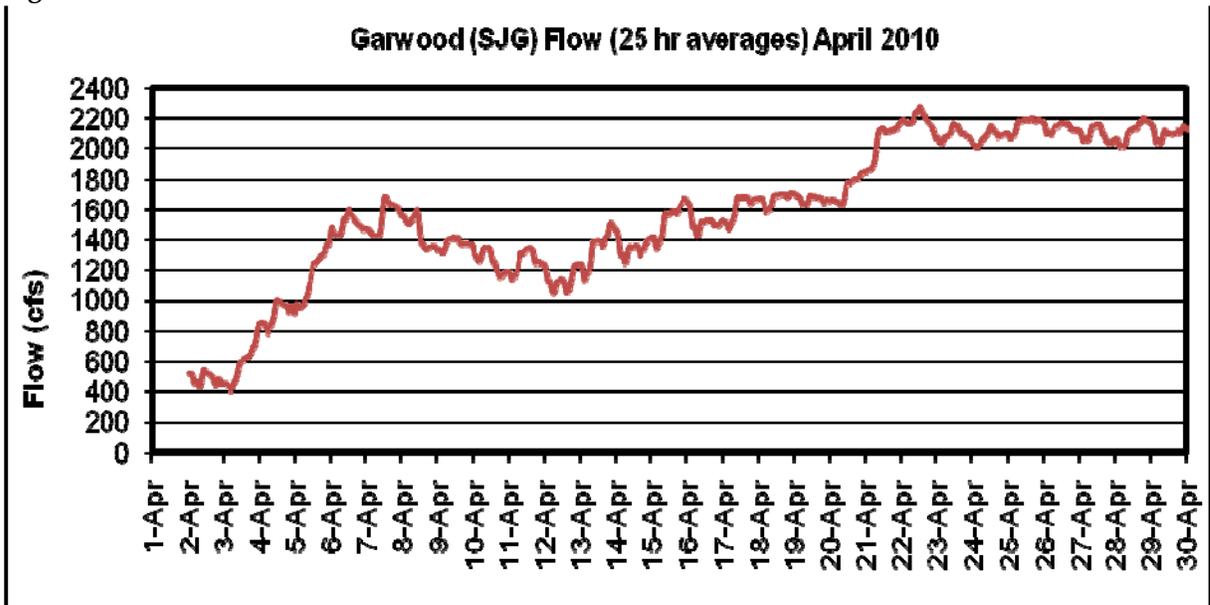


Table 1

YSI Remote Stations and RRI DO ¹ (mg/L) & Temp ¹ (°F)						
Apr-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	7.87	8.39	7.97	8.08	8.42	61.9
NA Stations and RRI Monthly Average Difference		0.52	0.09	0.21	0.55	
Monthly Min DO	6.90	6.60	5.96	6.83	6.94	
Monthly Max DO	8.90	9.45	9.01	9.41	9.84	
Monthly DO STDEV	0.34	0.45	0.44	0.42	0.53	
Monthly DO Median	7.90	8.49	8.03	8.08	8.40	

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 April 24th, 2010.

Table 2

Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison					
Apr-2010					
		NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)
Handheld Monthly³ Averages		8.23	8.25	8.14	8.00
NA Stations and Handheld Monthly Average Difference		0.17	-0.28	-0.05	0.42

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 April 27th.

Head of Old River Barrier Status

Installation of the Non-Physical Barrier (NPB) at the Head of Old River confluence with the San Joaquin River was completed on April 15th.

Port of Stockton Dredging Activity

None

San Joaquin River Flow Changes

The Vernalis Adaptive Management Plan (VAMP) flow started on April 25th. Bureau of Reclamation began increasing releases at New Melones Dam to the Stanislaus River from 200 to 1,350 cfs .The higher releases in the river will fluctuate from April until end of May.

Port of Stockton Dock 19/20 Ship Activity

Days	Arrival	Departure
4	04/13/10	04/16/10

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