

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

**Summary:**

The Aeration Facility has been off since September 14<sup>th</sup>, 2010. The average monthly DO levels at all monitoring stations for October were above the California Regional Water Quality Control Board (RWQCB) San Joaquin River Basin Plan minimum water quality objective for DO of 6.0 mg/L from September 1<sup>st</sup> through November 30<sup>th</sup>. Monthly average DO concentrations for October ranged from 6.44 mg/L at RRI to 7.09 mg/L at NA48. Data from October 6<sup>th</sup> through October 7<sup>th</sup> is missing for NA40 due to sonde maintenance.

Minimum 15-minute DO concentrations recorded for all monitoring stations were below the 6.0 mg/L minimum water quality objective (see Table 1). The monthly average remote monitoring station DO concentrations were within 0.26 to 0.65 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 -0.31 to 0.01 mg/L of each other.

The average monthly water temperature decreased 4.9° Fahrenheit (°F) from 74.0°F last month in September to 69.1°F in October.

The October monthly average SJG flow was 606 cubic feet per second (cfs). The monthly average flow increased 106 cfs from the September monthly average flow of 500 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

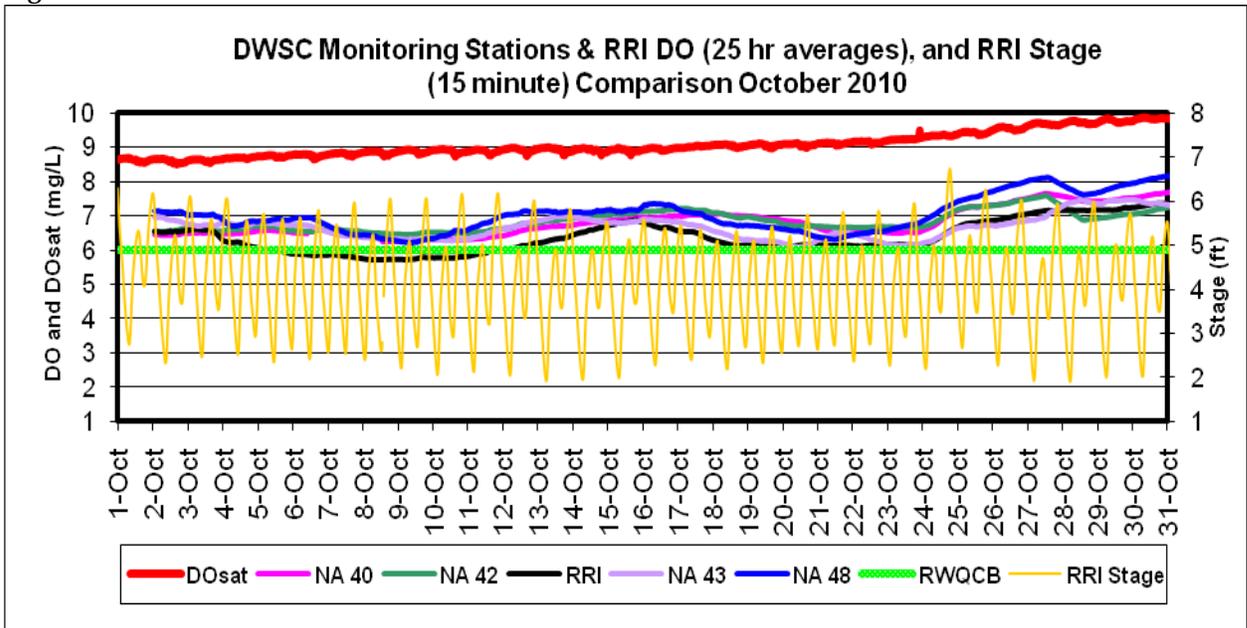


Figure 2

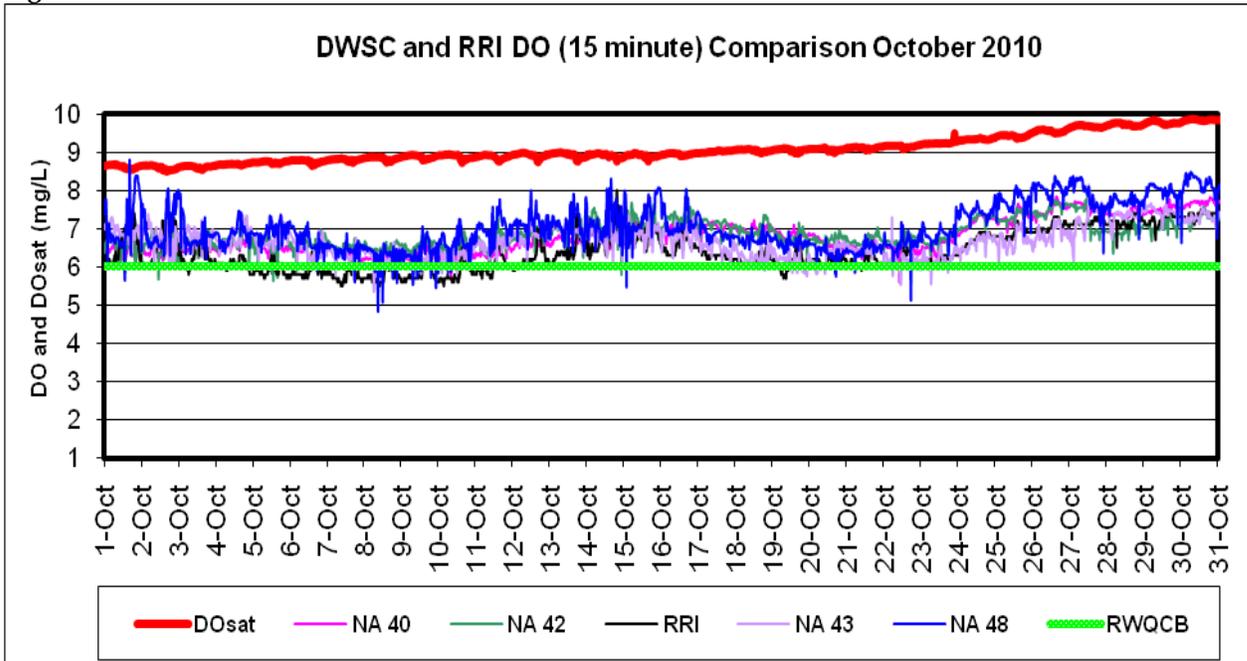


Figure 3

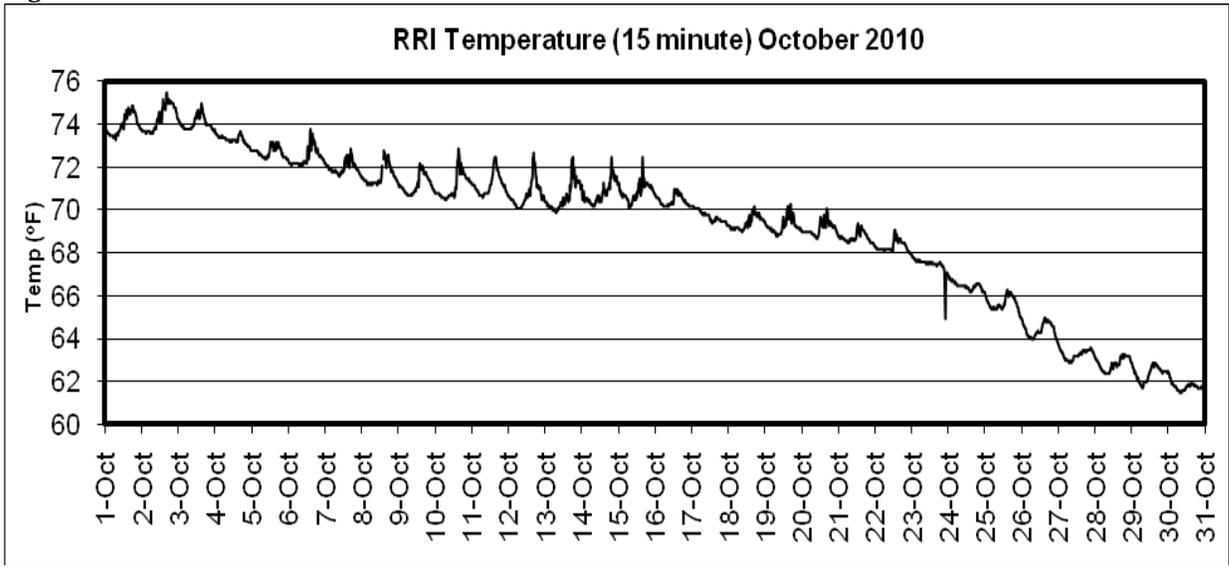


Figure 4

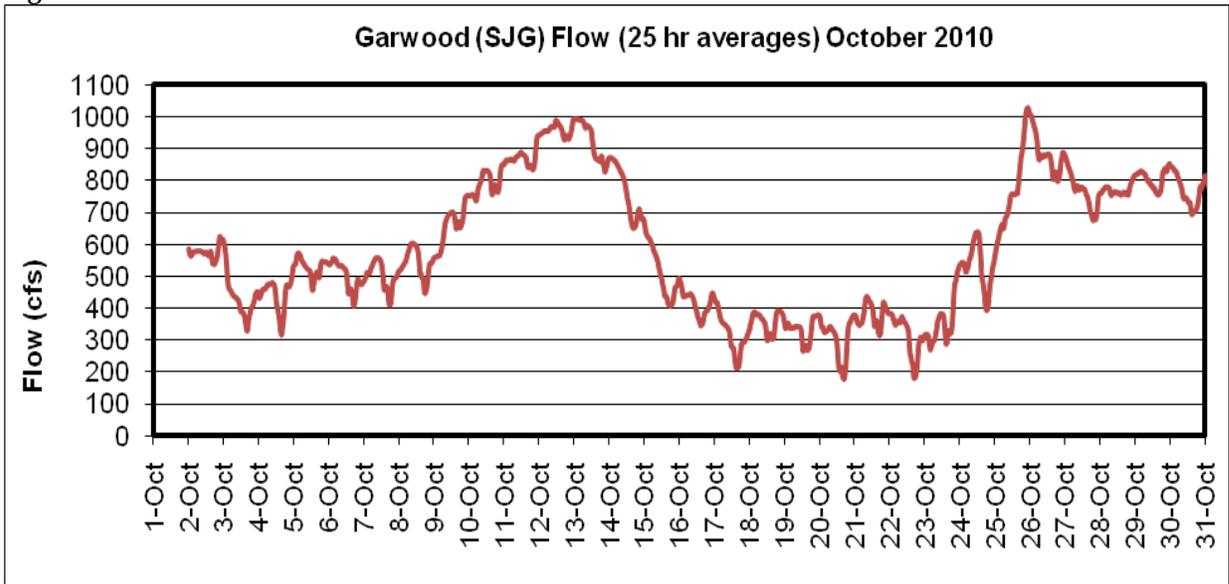


Table 1

YSI Remote Stations and RRI DO <sup>1</sup> (mg/L) & Temp <sup>1</sup> (°F)						
Oct-2010						
	RRI <sup>2</sup> 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	6.44	6.85	6.88	6.70	7.09	69.1
NA Stations and RRI Monthly Average Difference		0.41	0.44	0.26	0.65	
Monthly Min DO	5.50	5.62	5.64	5.37	4.84	
Monthly Max DO	8.00	8.12	7.91	8.13	8.76	
Monthly DO STDEV	0.54	0.46	0.34	0.42	0.63	
Monthly DO Median	6.30	6.75	6.83	6.67	6.92	

<sup>1</sup>Z-Score outlier test was applied to remove anomalous recorded values.

<sup>2</sup>RRI 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 October 24<sup>th</sup>, 2010.

Table 2

Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison					
Oct-2010					
		NA40 DO (mg/L)	NA42 DO (mg/L)	NA43 DO (mg/L)	NA48 DO (mg/L)
Handheld Monthly <sup>3</sup> Averages		6.84	7.02	7.01	7.22
NA Stations and Handheld Monthly Average Difference		0.01	-0.15	-0.31	-0.13

<sup>3</sup>Handheld monthly averages are based on the average weekly readings for the month

**Additional Aeration Facility Associated Information:**

**DWSC Aeration Facility Operation**

Off

**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 October 6<sup>th</sup>, 12<sup>th</sup>, 20<sup>th</sup>, and 27<sup>th</sup>.

Data is missing from October 6<sup>th</sup> to 7<sup>th</sup> at NA40 due to required pipe casing replacement.

**Head of Old River Barrier Status**

Not installed

**Port of Stockton Dredging Activity**

None

**San Joaquin River Flow Changes**

None

**Port of Stockton Dock 19/20 Ship Activity**

Total Days	Arrival	Departure
6	10/15/10	10/20/10

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