**Stockton Deep Water Ship Channel (DWSC)**
**Demonstration Dissolved Oxygen Aeration Facility**
**January 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 January 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 January 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 8.93 mg/L at NA43 to 9.24 mg/L at NA40 for January. It should be noted that data for NA43 is missing from January 14th to January 22nd due to a faulty DO Probe. Minimum 15-minute DO concentrations recorded, for all monitoring stations were above the 5.0 mg/L minimum water quality objective (see Table1).

Data recorded in January shows no sign of noticeable instrumentation drift. The monthly average remote monitoring station DO concentrations were within -0.03 to 0.28 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 -0.11 to 0.34 mg/L of each other.

The average monthly water temperature decreased 0.7 degrees Fahrenheit (°F) from 50.4°F to 49.7°F compared to December.

The January monthly average SJG flow was 841 cubic feet per second (cfs). The monthly average flow increased 312 cfs from the December monthly average flow of 529 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**

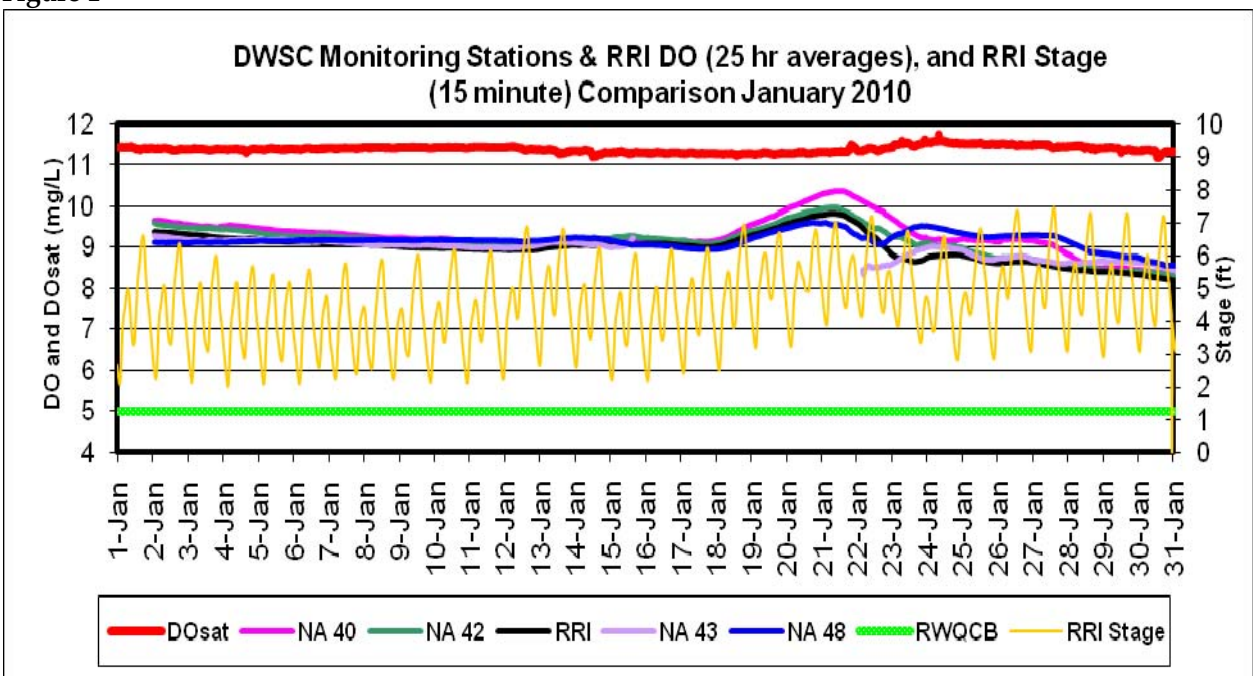


**Figure 2**

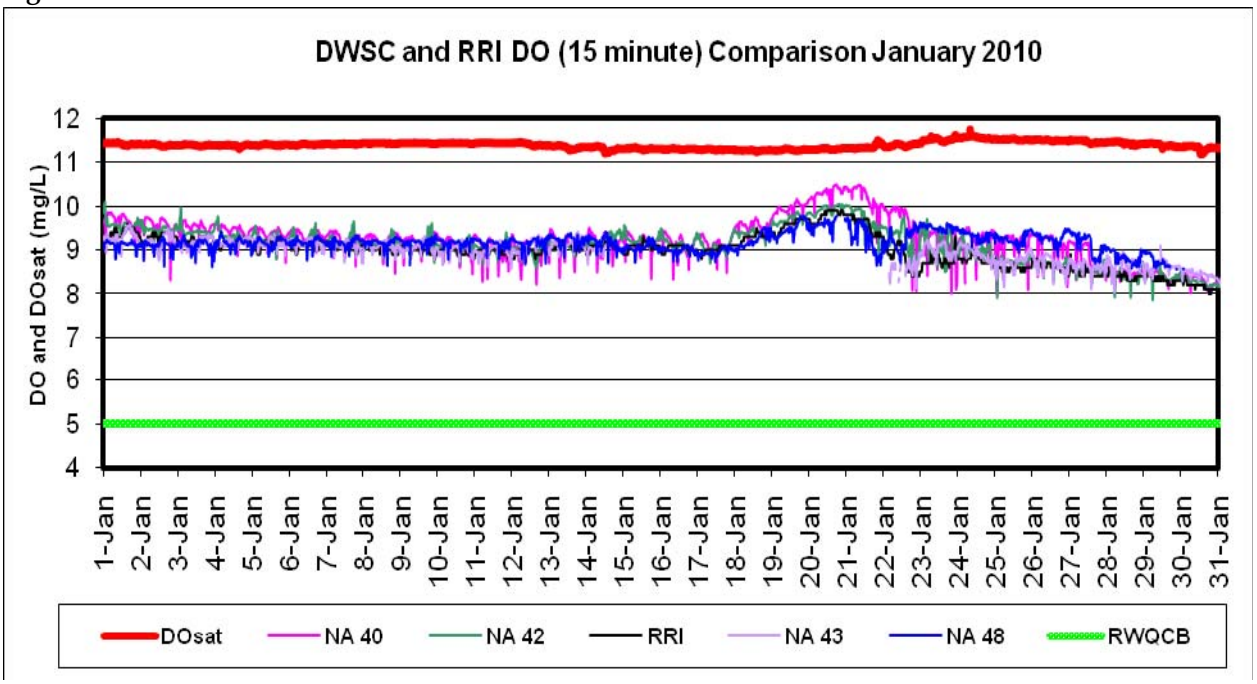

**Figure 3**

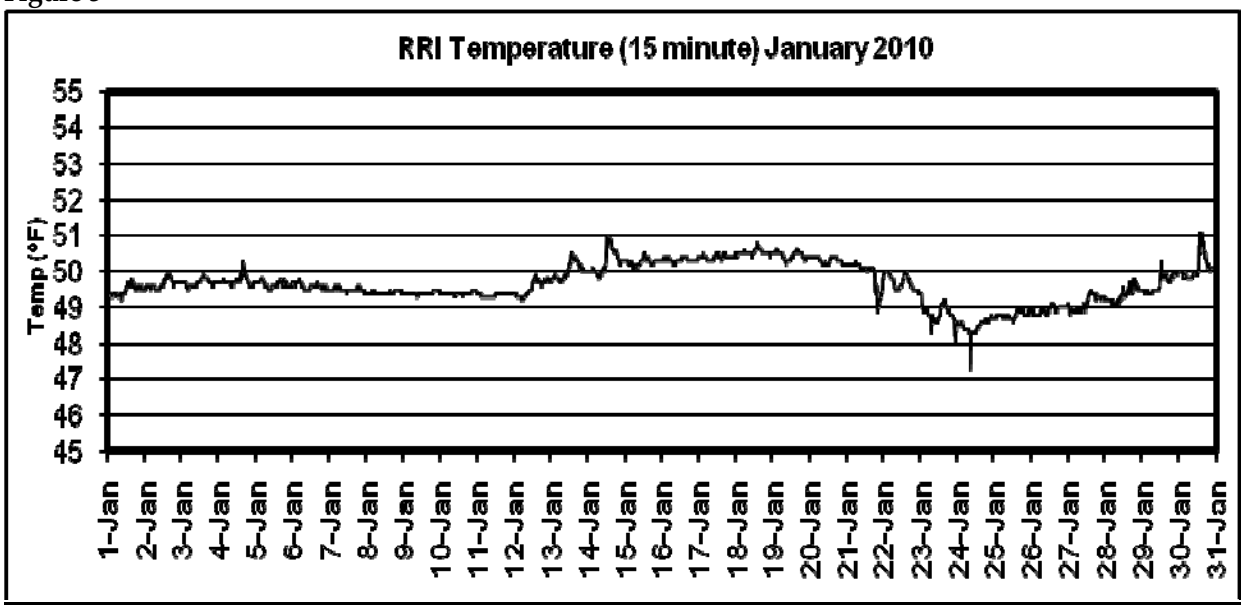


**Figure 4**

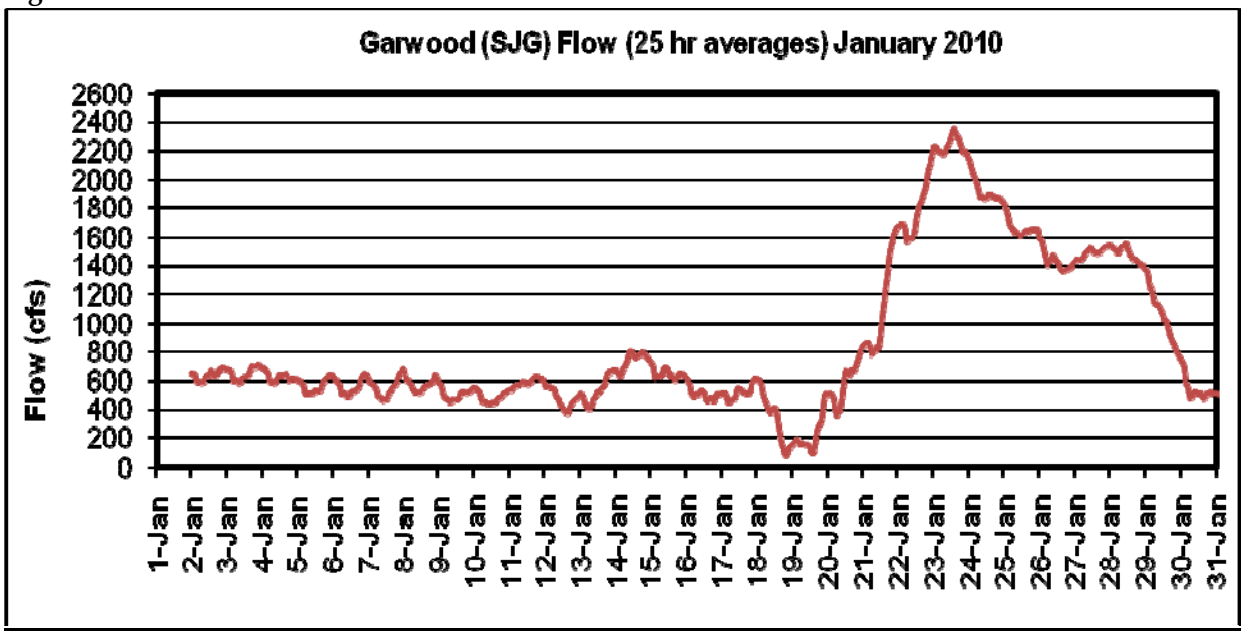

Table 1

| YSI Remote Stations and RRI DO[1] (mg/L) & Temp[1] (°F) | | | | | | |
|---|---|---|---|---|---|---|
| Jan-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 | 8.96 | 9.24 | 9.09 | 8.93 | 9.18 | 49.7 |
| NA Stations and RRI Monthly Average Difference | | 0.28 | 0.13 | -0.03 | 0.22 | |
| Monthly Min DO | 8.00 | 8.03 | 7.86 | 7.95 | 8.55 | |
| Monthly Max DO | 9.90 | 10.51 | 10.09 | 9.58 | 9.78 | |
| Monthly DO STDEV | 0.40 | 0.51 | 0.44 | 0.30 | 0.21 | |
| Monthly DO Median | 9.00 | 9.28 | 9.14 | 9.01 | 9.18 | |

[1]Z-Score outlier test was applied to remove anomalous recorded values.
[2]RRI DO data is from 3 foot depth. NA DO data is from 12 foot depth.

Table 2

| Handheld DO Measurements @ 12 ft Depth and YSI DO Measurements Comparison | | | | | |
|---|---|---|---|---|---|
| Jan-2010 | | | | | |
| | | NA40 DO (mg/L) | NA42 DO (mg/L) | NA43 DO (mg/L) | NA48 DO (mg/L) |
| Handheld Monthly[3] Averages | | 8.91 | 8.92 | 9.04 | 9.08 |
| NA Stations and Handheld Monthly Average Difference | | 0.34 | 0.17 | -0.11 | 0.10 |

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

**Additional Aeration Facility Associated Information:**

**DWSC Aeration Facility Operation**
None

**Head of Old River Barrier Status**
N/A

**Port of Stockton Dredging Activity**
None

**San Joaquin River Flow Changes**
The average monthly flow at SJG increased from approximately 600 cfs up to 2200 cfs during the second half of the month due to increased precipitation.

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

| Days | Arrival | Departure |
|---|---|---|
| 2 | 01/30/10 | 01/31/10 |

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