**Tracy Research Technical Report Abstract**

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Craft, D., M. Del Hoyo, R. Housewright, and J. Fields. 2008. *Semi-Continuous Water Quality Measurements at the Tracy Fish Collection Facility: 7-Year Summary*. Volume 37. U.S. Bureau of Reclamation, Mid-Pacific Region and Denver Technical Service Center. 107 pp.

Water quality variables temperature, hydrogen-ion concentration (pH), dissolved oxygen, conductivity, oxidation reduction potential, and turbidity were measured at 30-minute intervals using calibrated recording multiprobes installed in the intake channel of the Bureau of Reclamation’s Tracy Fish Collection Facility (TFCF), located near Tracy, California, in the southern region of the Sacramento-San Joaquin River Delta. This report summarizes validated data from April 1, 2000 through February 15, 2007. The water quality data were archived in a relational data base that combined water quality with data for meteorology, hydrology, tides, export pumping at a nearby Federal pumping plant, fish salvage, and temporary barrier installation and removal schedules. Median values and ranges for this period of record were 17.4 degrees Celsius (5.41 to 29.0 °C) for temperature, 366 microSiemens per centimeter (119 to 1,220 μS/cm) for conductivity, 7.46 milligrams per liter (0.10 to 12.5 mg/L) for dissolved oxygen, 339 millivolts (100 to 575 mV) for redox potential, 7.70 (6.28 to 8.65) for pH, and 13.2 Nephelometric turbidity units (0.10 to >200 NTU) for turbidity. Dissolved oxygen was below the critical value of 5 mg/L (50 percent saturation) for Chinook salmon 2.6 percent of the time (65 out of 2,512 days), usually during the summer. Besides regional climate, runoff hydrology, and daily tidal fluctuations, the most significant influence on water quality appears to be the status of nearby temporary channel barriers and the operation of the Delta Cross Channel gates near Walnut Grove, California. When temporary barriers are installed and the Cross Channel gates are open from April through October, daily variations and maximum conductivity are much lower than when higher conductivity water from the San Joaquin River flows relatively unimpeded to the TFCF.