

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**August 2007**

November 8, 2007

### **Preliminary Results**

A cooperative effort of:

U.S. Bureau of Reclamation  
Central Valley Regional Water Quality Control Board  
U.S. Fish and Wildlife Service  
California Department of Fish and Game  
San Luis & Delta-Mendota Water Authority  
U.S. Environmental Protection Agency  
U.S. Geological Survey

compiled by San Francisco Estuary Institute





GRASSLAND BYPASS PROJECT  
MONTHLY DATA REPORT

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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>SLDMWA</b>	<b>SLDMWA</b>
<b>UNITS</b>	<b>cfs</b>	<b>µS/cm</b>
Aug-01-2007	21	3,930
Aug-02-2007	17	3,710
Aug-03-2007	16	3,770
Aug-04-2007	18	3,970
Aug-05-2007	15	4,240
Aug-06-2007	15	4,280
Aug-07-2007	15	4,250
Aug-08-2007	15	4,270
Aug-09-2007	15	4,250
Aug-10-2007	16	4,380
Aug-11-2007	22	4,310
Aug-12-2007	21	4,160
Aug-13-2007	17	4,260
Aug-14-2007	18	3,850
Aug-15-2007	20	3,760
Aug-16-2007	18	3,680
Aug-17-2007	21	3,360
Aug-18-2007	20	3,190
Aug-19-2007	16	3,320
Aug-20-2007	15	3,640
Aug-21-2007	13	3,960
Aug-22-2007	13	4,110
Aug-23-2007	15	3,560
Aug-24-2007	12	4,310
Aug-25-2007	10	4,320
Aug-26-2007	10	4,140
Aug-27-2007	9	4,030
Aug-28-2007	10	4,180
Aug-29-2007	12	4,120
Aug-30-2007	12	4,210
Aug-31-2007	12	3,920
Mean	15.5	3,980

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), August 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	SLDMWA*	SLDMWA	CVRWQCB	SLDMWA	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Aug-01-2007	20	28.3	5.4	3,510	22.4	2.5
Aug-02-2007	17	28.1	5.8	3,820	26.6	2.5
Aug-03-2007	26	28.3	5.9	3,890	25.4	3.6
Aug-04-2007	21	28.3	6.3	3,960	28.8	3.3
Aug-05-2007	16	27.3	6.4	4,170	30.2	2.6
Aug-06-2007	15	26.2	6.1	4,090	28.0	2.2
Aug-07-2007	22	25.6	5.7	3,800	24.2	2.8
Aug-08-2007	22	25.8	6.4	4,050	25.3	3.0
Aug-09-2007	15	25.9	5.2	3,470	22.0	1.8
Aug-10-2007	15	26.3	6.1	3,670	26.4	2.2
Aug-11-2007	15	26.2	6.5	3,640	27.5	2.2
Aug-12-2007	19	25.5	6.8	3,880	25.4	2.6
Aug-13-2007	21	25.4	7.3	4,200	28.7	3.2
Aug-14-2007	17	25.7	7.5	4,080	28.2	2.6
Aug-15-2007	17	26.1	7.5	4,160	27.7	2.5
Aug-16-2007	20	25.9	7.2	4,090	28.5	3.1
Aug-17-2007	21	25.6	7.3	4,130	26.5	3.1
Aug-18-2007	20	25.3	7.2	4,070	31.2	3.4
Aug-19-2007	19	25.3	7.1	4,080	29.5	3.1
Aug-20-2007	18	25.7	6.7	3,900	25.8	2.4
Aug-21-2007	15	26.9	6.4	3,800	23.3	1.9
Aug-22-2007	14	27.8	6.1	3,610	21.8	1.6
Aug-23-2007	12	28.2	6.4	3,710	21.4	1.3
Aug-24-2007	14	28.3	6.7	3,736	20.6	1.5
Aug-25-2007	12	28.0	6.2	3,452	19.3	1.3
Aug-26-2007	10	27.4	5.6	3,538	21.5	1.2
Aug-27-2007	10	27.4	5.7	3,466	22.6	1.2
Aug-28-2007	9	27.4	P	3,688	22.6	1.1
Aug-29-2007	10	28.3	5.6	4,048	22.5	1.2
Aug-30-2007	11	29.2	6.2	3,961	26.3	1.6
Aug-31-2007	12	29.0	6.5	4,490	27.2	1.8
Mean	16	26.9	6.4	3,880	25.4	2.3
Total Acre-feet	1,000					
Total (lbs)						70

Load Limitation for August 2007 (lbs)	195
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Se and B concentrations for Aug 24-31, 2007 were used from Summers Engineering, Inc.

♦To improve the accuracy of flow measurements, Reclamation and the San Luis & Delta-Mendota Water Authority, with technical assistance from the USGS, are measuring flow at the San Luis Drain Outlet. The Outlet is located two miles from Station B. Discharge is measured as stage over a sharp-crested weir, identical to Station A. This is a simpler and more accurate method that will not be altered by sediment accumulation. Water quality data are still collected at the old Site B.

Figure 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

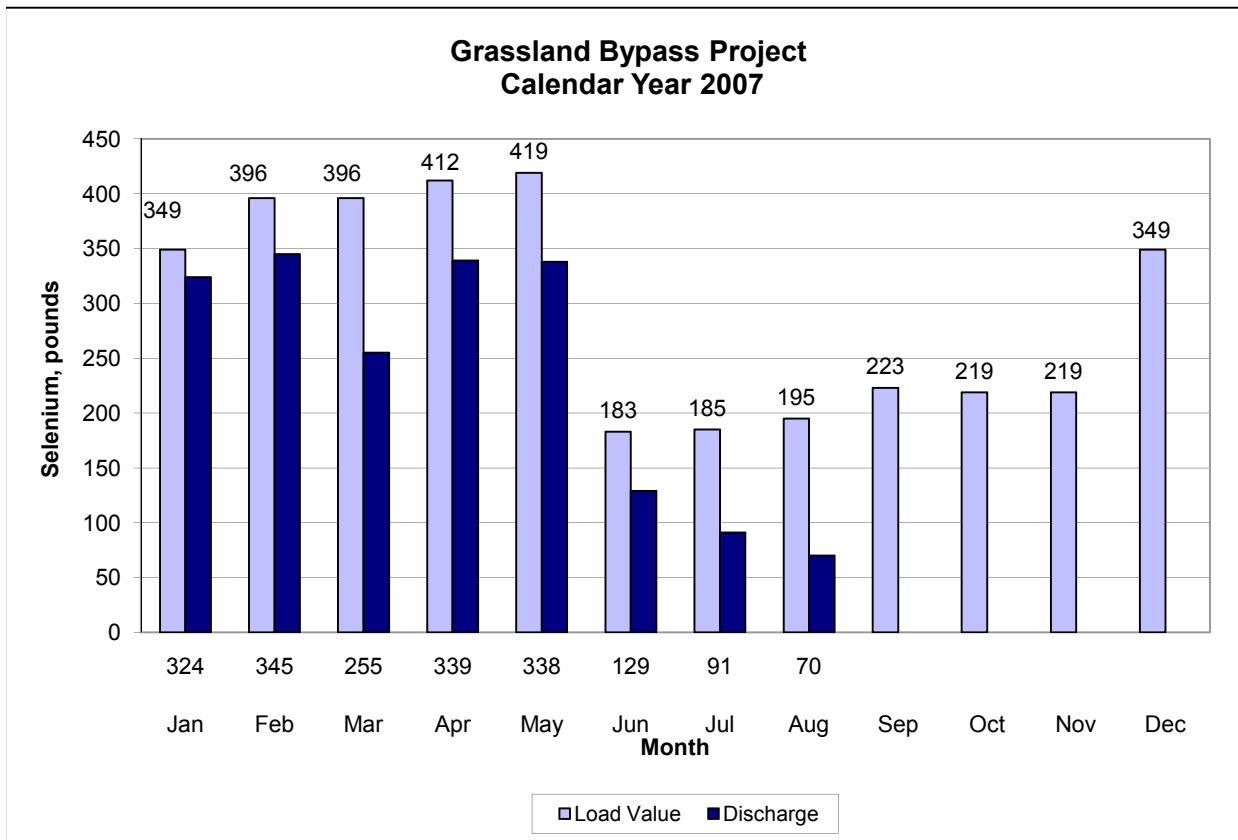


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>usgs</b>	<b>usgs</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>µS/cm</b>
Aug-01-2007	25	27.4	2,650
Aug-02-2007	21	27.4	2,790
Aug-03-2007	26	27.5	3,180
Aug-04-2007	23	27.5	3,250
Aug-05-2007	14	26.3	3,880
Aug-06-2007	13	25.4	4,110
Aug-07-2007	19	24.8	3,890
Aug-08-2007	21	25.1	3,590
Aug-09-2007	16	25.2	3,620
Aug-10-2007	15	25.7	3,320
Aug-11-2007	14	25.4	3,570
Aug-12-2007	17	24.9	3,830
Aug-13-2007	20	24.9	3,920
Aug-14-2007	18	25.2	4,130
Aug-15-2007	18	25.4	4,080
Aug-16-2007	20	25.3	4,050
Aug-17-2007	25	24.9	4,120
Aug-18-2007	38	24.6	3,090
Aug-19-2007	42	24.5	2,360
Aug-20-2007	38	25.6	2,240
Aug-21-2007	32	26.8	2,160
Aug-22-2007	22	27.6	2,540
Aug-23-2007	13	27.8	2,820
Aug-24-2007	19	27.5	2,520
Aug-25-2007	18	27.1	2,540
Aug-26-2007	13	26.7	2,890
Aug-27-2007	14	26.8	2,700
Aug-28-2007	17	27.0	2,130
Aug-29-2007	17	28.0	2,370
Aug-30-2007	16	28.0	3,280
Aug-31-2007	15	28.2	3,860
Mean	21	26.3	3,210

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	<b>usgs</b>	<b>usgs</b>	<b>usgs</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>µS/cm</b>
Aug-01-2007	76	27.1	1,110
Aug-02-2007	70	27.1	1,220
Aug-03-2007	77	27.4	1,280
Aug-04-2007	84	27.2	1,290
Aug-05-2007	104	25.8	1,190
Aug-06-2007	115	23.7	1,130
Aug-07-2007	130	23.4	1,070
Aug-08-2007	129	23.8	1,090
Aug-09-2007	123	24.5	1,070
Aug-10-2007	100	25.4	1,170
Aug-11-2007	93	25.1	1,240
Aug-12-2007	92	24.2	1,280
Aug-13-2007	100	24.3	1,210
Aug-14-2007	100	24.8	1,120
Aug-15-2007	95	25.3	1,150
Aug-16-2007	98	24.8	1,180
Aug-17-2007	83	24.3	1,160
Aug-18-2007	85	24.3	1,200
Aug-19-2007	81	24.2	1,200
Aug-20-2007	92	25.3	1,220
Aug-21-2007	87	26.8	1,200
Aug-22-2007	86	27.5	1,230
Aug-23-2007	78	27.5	1,250
Aug-24-2007	84	26.8	1,250
Aug-25-2007	80	26.5	1,220
Aug-26-2007	69	26.2	1,230
Aug-27-2007	72	26.4	1,330
Aug-28-2007	86	26.9	1,190
Aug-29-2007	68	28.4	1,240
Aug-30-2007	49	28.5	1,370
Aug-31-2007	41	28.2	1,430
Mean	88	25.9	1,210



Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2007.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	CVRWQCB	CVRWQCB
UNITS	cfs	°C	µS/cm	µg/L
Aug-01-2007	402	27.0	1,100	1.0
Aug-02-2007	387	26.8	1,190	1.6
Aug-03-2007	384	26.8	1,160	1.3
Aug-04-2007	402	27.0	1,140	1.3
Aug-05-2007	405	26.2	1,190	1.8
Aug-06-2007	401	24.8	1,170	1.4
Aug-07-2007	402	23.8	1,140	1.2
Aug-08-2007	433	23.9	1,110	1.3
Aug-09-2007	438	24.5	1,110	1.7
Aug-10-2007	368	24.9	1,130	1.4
Aug-11-2007	359	24.7	1,210	1.3
Aug-12-2007	384	23.7	1,180	1.2
Aug-13-2007	370	23.6	1,180	1.2
Aug-14-2007	349	24.1	1,230	1.5
Aug-15-2007	355	24.5	1,150	1.4
Aug-16-2007	352	24.3	1,190	1.5
Aug-17-2007	361	23.7	1,240	P
Aug-18-2007	354	23.7	1,300	P
Aug-19-2007	384	23.6	1290 e	P
Aug-20-2007	436	24.8	1,150	P
Aug-21-2007	450	26.2	1,090	P
Aug-22-2007	411	27.0	1,090	P
Aug-23-2007	428	27.4	1,090	P
Aug-24-2007	411	26.8	1,070	P
Aug-25-2007	375	26.2	1,160	P
Aug-26-2007	352	25.7	1,140	P
Aug-27-2007	367	25.7	1,090	P
Aug-28-2007	364	26.2	NA	P
Aug-29-2007	392	27.3	1,110	P
Aug-30-2007	383	27.7	1,040	P
Aug-31-2007	340	27.6	1,203	P
Mean	390	25.5	1,150	1.4

Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Total Suspended Solids	.	.	.
DATA SOURCE	SLDMWA	.	.	CVRWQCB	CVRWQCB	.	.	.
UNITS	cfs	.	.	µS/cm	mg/L	.	.	.
Jun-06-2007	23	.	.	4,180	77	.	.	.
Jun-13-2007	23	.	.	3,960	50	.	.	.
Jun-20-2007	27	.	.	4,180	95	.	.	.
Jun-27-2007	23	.	.	3,970	54	.	.	.
Jul-03-2007	26	.	.	3,770	45	.	.	.
Jul-11-2007	21	.	.	3,810	19	.	.	.
Jul-18-2007	27	.	.	3,150	14	.	.	.
Jul-25-2007	*	.	.	3,720	11	.	.	.
Aug-01-2007	21	.	.	3,680	34	.	.	.
Aug-08-2007	15	.	.	4,030	9	.	.	.
Aug-15-2007	20	.	.	3,740	11	.	.	.
Aug-22-2007	13	.	.	4,730	18	.	.	.
Aug-29-2007	12	.	.	4,290	10	.	.	.

\* Submerged Weir Conditions from SLD shutoff study.

The discharge from San Luis Drain was reduced to as close to 0 cfs as possible for the period of July 23 through July 27 to attempt to monitor the impact of San Luis Drain Discharge on the San Joaquin River System. During this period, discharge into the San Luis Drain was stored between the checks within the drain and the water surface was allowed to rise. This resulted in a submerged weir at Site A, and flow data for this period is unavailable. This study was performed by the Dissolved Oxygen Upstream Study Program.

Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	.	Selenium (total)	.	Boron
DATA SOURCE	SLDMWA	.	.	CVRWQCB	.	CVRWQCB	.	CVRWQCB
UNITS	cfs	.	.	µS/cm	.	µg/L	.	mg/L
Jun-05-2007	25	.	.	4,060	.	33.7	.	6.4
Jun-12-2007	21	.	.	4,180	.	36.4	.	6.3
Jun-19-2007	25	.	.	3,920	.	32.6	.	5.7
Jun-26-2007	22	.	.	3,930	.	31.3	.	6.8
Jul-02-2007	22	.	.	3,890	.	30.2	.	6.3
Jul-09-2007	22	.	.	3,900	.	31.2	.	6.4
Jul-17-2007	27	.	.	3,340	.	22.7	.	5.3
Jul-24-2007	*	.	.	3,550	.	24.6	.	6.2
Jul-31-2007	16	.	.	3,940	.	28.8	.	5.9
Aug-07-2007	15	.	.	3,800	.	26.0	.	5.5
Aug-14-2007	18	.	.	4,040	.	28.2	.	6.7
Aug-21-2007	13	.	.	3,710	.	26.4	.	5.5
Aug-28-2007	10	.	.	4,350	.	P	.	7.3

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), taken from grab samples.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
Jun-07-2007	24	20.8	8.5	4,060	33	30.8	6.5
Jun-13-2007	21	24.2	8.2	4,170	28	33.1	6.3
Jun-21-2007	25	24.4	9.0	3,930	60	30.4	6.3
Jun-28-2007	21	23.9	8.9	3,740	43	29.2	6.8
Jul-05-2007	27	28.0	9.1	4,100	31	31.4	6.3
Jul-12-2007	22	24.1	9.0	3,370	35	24.6	5.3
Jul-19-2007	25	24.6	8.1	3,210	36	22.3	5.2
Jul-26-2007	2	25.7	8.4	3,180	22	19.4	5.7
Aug-02-2007	17	26.6	7.7	3,770	14	26.1	5.9
Aug-09-2007	15	24.2	8.2	3,470	27	21.9	5.1
Aug-16-2007	20	25.6	8.9	4,190	19	29.4	7.0
Aug-23-2007	12	27.0	8.4	3,820	18	21.5	6.6
Aug-30-2007	11	27.5	7.8	3,760	15	P	5.8

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	.	Selenium (total)	Boron
DATA SOURCE	calculated **	CVRWQCB	CVRWQCB	CVRWQCB	.	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	.	µg/L	mg/L
Jun-07-2007	13	19.0	8.4	2,080	.	0.6	1.6
Jun-13-2007	13	26.9	8.3	1,780	.	0.9	1.4
Jun-21-2007	1	22.0	8.2	2,680	.	<0.4	1.9
Jun-28-2007	0	22.4	8.4	2,860	.	0.6	2.3
Jul-05-2007	-5	26.7	7.4	3,440	.	<0.4	2.7
Jul-12-2007	6	25.1	8.2	1,350	.	0.8	1.2
Jul-19-2007	26	24.3	8.6	1,110	.	1.0	1.1
Jul-26-2007	16	26.2	8.4	1,490	.	0.9	1.6
Aug-02-2007	4	24.8	7.9	1,210	.	1.3	1.3
Aug-09-2007	1	25.5	8.3	1,110	.	0.9	1.5
Aug-16-2007	0	24.7	7.2	2,260	.	0.7	2.1
Aug-23-2007	1	27.2	8.5	1,350	.	0.8	1.0
Aug-30-2007	5	25.9	8.8	1,210	.	P	0.9

\*\* Calculated flow value. Flow at Station C = flow at Station D - flow at Station B.

Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Jun-07-2007	37	19.5	8.4	3,430	17.8	4.4
Jun-13-2007	34	25.9	8.3	3,240	18.6	4.2
Jun-21-2007	26	24.1	8.7	4,110	28.1	5.7
Jun-28-2007	21	23.9	8.8	3,870	26.5	6.5
Jul-05-2007	22	28.1	8.6	3,550	24.1	5.5
Jul-12-2007	28	24.1	8.5	2,750	16.0	3.8
Jul-19-2007	51	23.9	8.4	2,330	11.8	3.4
Jul-26-2007	18	23.6	8.2	2,270	2.4	2.2
Aug-02-2007	21	25.4	7.8	2,720	14.2	4.0
Aug-09-2007	16	24.3	8.2	3,590	17.7	5.2
Aug-16-2007	20	25.1	8.7	3,850	24.0	6.5
Aug-23-2007	13	26.0	8.1	2,780	12.1	4.0
Aug-30-2007	16	26.6	8.2	2,900	P	4.3

Table 10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER		pH	Specific Conductance	Turbidity	Selenium	Boron
DATA SOURCE		USBR	USBR	USBR	USBR	USBR
UNITS		.	µS/cm	NTU	µg/L	mg/L
Jun-06-2007	.	8.5	3,780	25	19.3	5.5
Jun-12-2007	.	9.2	4,090	27	22.3	6.4
Jun-20-2007	.	8.8	4,240	29	26.2	6.6
Jun-26-2007	.	8.9	4,140	33	24.8	6.8
Jul-03-2007	.	8.9	4,440	31	29.6	8.0
Jul-10-2007	.	8.3	2,650	44	13.5	4.4
Jul-17-2007	.	8.8	2,140	46	10.0	3.5
Jul-24-2007	.	8.5	1,660	73	2.6	1.9
Aug-03-2007	.	8.1	3,120	30	16.3	5.0
Aug-07-2007	.	8.2	4,040	13	20.9	6.8
Aug-14-2007	.	8.7	4,100	26	23.7	7.5
Aug-22-2007	.	8.6	2,600	30	11.6	3.9
Aug-28-2007	.	8.6	2,270	35	9.1	3.1

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Jun-07-2007	170	18.5	7.7	1,030	0.8	0.4
Jun-13-2007	113	23.3	7.9	1,300	0.7	0.5
Jun-21-2007	92	22.6	7.6	643	0.7	0.5
Jun-28-2007	126	22.7	7.8	1,100	1.0	0.5
Jul-05-2007	151	28.4	7.3	956	0.6	0.3
Jul-12-2007	157	22.7	7.8	673	0.6	0.4
Jul-19-2007	120	22.6	7.5	1,170	0.5	0.5
Jul-26-2007	111	23.8	7.8	1,150	0.6	0.5
Aug-02-2007	70	24.8	7.7	1,220	0.6	0.5
Aug-09-2007	123	21.8	7.9	914	0.6	0.3
Aug-16-2007	98	24.8	7.2	898	0.4	0.4
Aug-23-2007	78	24.7	7.4	1,170	0.5	0.4
Aug-30-2007	49	25.9	7.9	1,270	P	0.5

Table 12. Weekly water quality monitoring at Station J (Camp 13 Ditch).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SJDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2007	35	.	.	578	0.9	0.3
Jun-13-2007	15	.	.	666	1.0	0.4
Jun-20-2007	15	.	.	684	1.0	0.4
Jun-27-2007	15	.	.	484	0.9	0.3
Jul-03-2007	15	.	.	474	1.0	0.3
Jul-11-2007	15	.	.	523	0.9	0.4
Jul-18-2007	15	.	.	501	0.8	0.4
Jul-25-2007	15	.	.	402	0.5	0.2
Aug-01-2007	NA	.	.	408	0.8	0.2
Aug-08-2007	15	.	.	482	0.9	0.3
Aug-15-2007	45	.	.	537	0.7	0.3
Aug-22-2007	45	.	.	560	0.7	0.2
Aug-29-2007	45	.	.	566	P	0.3

Table 13. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2007	45	.	.	572	1.0	0.3
Jun-13-2007	10	.	.	642	1.2	0.4
Jun-20-2007	10	.	.	593	1.2	0.3
Jun-27-2007	20	.	.	454	1.1	0.3
Jul-03-2007	20	.	.	453	1.3	0.3
Jul-11-2007	20	.	.	473	0.8	0.2
Jul-18-2007	10	.	.	355	0.8	0.2
Jul-25-2007	10	.	.	529	0.8	0.3
Aug-01-2007	NA	.	.	433	1.3	0.2
Aug-08-2007	10	.	.	502	0.8	0.2
Aug-15-2007	10	.	.	539	0.7	0.2
Aug-22-2007	20	.	.	586	0.8	0.2
Aug-29-2007	30	.	.	546	P	0.3

Table 14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2007	NA	.	.	1,140	1.9	1.1
Jun-13-2007	NA	.	.	1,700	2.3	1.6
Jun-20-2007	NA	.	.	1,490	1.7	1.5
Jun-27-2007	NA	.	.	1,240	1.6	1.3
Jul-03-2007	NA	.	.	1,020	1.3	1.4
Jul-11-2007	NA	.	.	958	1.2	1.2
Jul-18-2007	NA	.	.	941	1.1	1.2
Jul-25-2007	NA	.	.	725	0.8	0.6
Aug-01-2007	NA	.	.	1,010	1.6	1.1
Aug-08-2007	NA	.	.	1,000	1.1	1.0
Aug-15-2007	NA	.	.	1,190	1.2	1.2
Aug-22-2007	NA	.	.	660	0.9	0.3
Aug-29-2007	NA	.	.	984	P	0.7

Table 15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-06-2007	43	.	.	878	1.4	0.9
Jun-13-2007	43	.	.	1,210	1.3	1.2
Jun-20-2007	45	.	.	1,400	1.6	1.6
Jun-27-2007	43	.	.	1,040	1.5	1.3
Jul-03-2007	38	.	.	1,000	1.3	1.5
Jul-11-2007	45	.	.	799	1.0	1.0
Jul-18-2007	48	.	.	952	1.0	1.3
Jul-25-2007	43	.	.	954	1.1	1.6
Aug-01-2007	NA	.	.	857	1.4	1.0
Aug-08-2007	55	.	.	965	1.3	1.1
Aug-15-2007	55	.	.	832	0.8	0.9
Aug-22-2007	73	.	.	725	1.0	0.5
Aug-29-2007	65	.	.	679	P	0.3

Table 16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	.	.	µS/cm	µg/L	mg/L
Jun-06-2007	.	.	.	551	0.8	0.3
Jun-13-2007	.	.	.	553	1.2	0.3
Jun-20-2007	.	.	.	548	0.9	0.3
Jun-27-2007	.	.	.	464	0.9	0.3
Jul-03-2007	.	.	.	480	1.1	0.3
Jul-11-2007	.	.	.	395	0.8	0.2
Jul-18-2007	.	.	.	655	1.0	0.4
Jul-25-2007	.	.	.	442	0.7	0.2
Aug-01-2007	.	.	.	517	0.9	0.2
Aug-08-2007	.	.	.	483	0.9	0.2
Aug-15-2007	.	.	.	517	0.8	0.3
Aug-22-2007	.	.	.	569	0.7	0.2
Aug-29-2007	.	.	.	603	P	0.2

Table 17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Jun-07-2007	190	19.7	7.8	1,170	0.7	0.4
Jun-13-2007	139	25.3	8.1	1,550	0.7	0.5
Jun-21-2007	126	24.1	7.7	1,490	0.6	0.5
Jun-28-2007	178	24.1	7.8	1,250	0.8	0.4
Jul-05-2007	168	27.2	8.2	1,060	0.6	0.4
Jul-12-2007	167	24.0	7.8	1,060	0.6	0.4
Jul-19-2007	139	23.1	7.4	1,220	0.5	0.4
Jul-26-2007	132	25.9	7.9	1,200	0.6	0.5
Aug-02-2007	110	24.9	8.2	1,010	0.5	0.4
Aug-09-2007	154	24.3	7.6	746	0.6	0.3
Aug-16-2007	117	23.4	8.3	1,190	<0.4	0.5
Aug-23-2007	103	26.7	7.4	1,320	0.5	0.5
Aug-30-2007	86	27.3	7.0	1,290	P	0.4

Table 18. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	.	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	.	.	.	µS/cm	µg/L	mg/L
Jun-12-2007	.	.	.	NA	3.1	1.3
Jun-19-2007	.	.	.	NA	4.8	1.5
Jun-26-2007	.	.	.	NA	3.8	1.2
Jul-10-2007	.	.	.	NA	3.0	1.1
Jul-17-2007	.	.	.	NA	4.1	1.3
Aug-07-2007	.	.	.	NA	2.3	1.2
Aug-14-2007	.	.	.	NA	2.8	1.4
Aug-21-2007	.	.	.	NA	2.6	1.3
Aug-28-2007	.	.	.	NA	1.6	1.1



Table 19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 27 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>pH</b>	<b>Specific Conductance</b>	<b>Selenium (total)</b>	<b>Boron</b>
<b>DATA SOURCE</b>	<b>USGS</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>	<b>CVRWQCB</b>
<b>UNITS</b>	<b>cfs</b>	<b>°C</b>	<b>.</b>	<b>µS/cm</b>	<b>µg/L</b>	<b>mg/L</b>
Jun-07-2007	609	20.2	8.1	1,130	1.7	0.7
Jun-13-2007	1110	20.8	8.1	480	0.9	0.3
Jun-21-2007	666	23.1	8.3	947	1.3	0.5
Jun-28-2007	501	23.9	8.3	1,280	1.9	0.7
Jul-05-2007	445	26.1	8.4	1,370	1.9	0.8
Jul-12-2007	474	23.9	8.1	1,090	1.6	0.6
Jul-19-2007	499	23.6	8.1	1,110	1.7	0.8
Jul-26-2007	432	25.3	8.3	1,090	0.6	0.5
Aug-02-2007	387	25.0	8.0	1,230	1.9	0.8
Aug-09-2007	438	24.4	7.8	1,060	1.6	0.7
Aug-16-2007	352	22.7	8.1	1,220	1.4	0.8
Aug-23-2007	428	26.4	7.6	1,040	1.1	0.5
Aug-30-2007	383	26.5	7.6	1,030	P	0.5

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2006 to August 2007. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	%	%	%	%	%	%
Sep-2006	98	95	98	98	100	98
Oct-2006	95	85	85	90	98	100
Nov-2007	95	98	85	100	100	98
Dec-2007	98	100	85*	93	98	98
Jan-2007	100	100	90	93	98	100
Feb-2007	98	90	95	88	98	100
Mar-2007	98	80*	95	93	98	98
Apr-2007	100	98	100	95	95	100
May-2007	95	95	98	95	100	95
Jun-2007	98	93	90	90	93	90
Jul-2007	100	98	98	100	100	100
Aug-2007	93	100	100	95	93	100

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2006 to August 2007. Each value is the mean of 4 replicates with 10 fish in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	mg	mg	mg	mg	mg	mg
Sep-2006	0.31	0.39	0.41	0.35	0.33	0.34
Oct-2006	0.39	0.36	0.36	0.35	0.40	0.40
Nov-2007	0.30	0.28*	0.30	0.33	0.33	0.32
Dec-2007	0.35	0.40	0.41	0.45	0.32	0.31
Jan-2007	0.30	0.35	0.37	0.34	0.31	0.31
Feb-2007	0.45	0.41	0.43	0.33	0.37	0.38
Mar-2007	0.36	0.26*	0.36	0.33	0.32	0.31
Apr-2007	0.38	0.33	0.31	0.32	0.34	0.33
May-2007	0.41	0.43	0.40	0.36	0.45	0.41
Jun-2007	0.36	0.33	0.33	0.31	0.31	0.33
Jul-2007	0.36	0.32	0.26*	0.36	0.36	0.33
Aug-2007	0.30	0.29	0.32	0.33	0.27	0.26

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2006 to August 2007. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	%	%	%	%	%	%
Sep-2006	100	80	100	100	100	90
Oct-2006	70	80	100	80	90	80
Nov-2007	90	100	100	90	90	100
Dec-2007	90	70	100	90	100	90
Jan-2007	90	90	80	90	90	80
Feb-2007	100	80	90	90	100	90
Mar-2007	100	80	90	100	80	100
Apr-2007	100	90	90	100	90	100
May-2007	90	0*	90	90	100	100
Jun-2007	60*	100	80	100	100	100
Jul-2007	80	80	80	90	80	100
Aug-2007	100	70	90	90	80	100

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2006 to August 2007. Each value is the mean of 10 replicates with 1 animal in each replicate.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female
Sep-2006	25.9	20.1	23.8	26.9	27.6	23.6
Oct-2006	25.9	27.4	30.1	26.3	26.9	19.6
Nov-2007	36.6	49.6	47.0	47.9	38.3	46.2
Dec-2007	28.4	22.5	29.6	31.5	27.8	22.3
Jan-2007	20.5	27.3	23.2	26.0	28.5	21.4
Feb-2007	31.7	32.9	39.4	31.6	28.6	30.5
Mar-2007	35.2	27.1	32.9	28.2*	36.8	30.2
Apr-2007	22.7	21.1	29.0	21.2	21.1	26.2
May-2007	38.4	16.0*	33.0	33.3	36.5	30.0
Jun-2007	18.3*	34.9	34.9	32.6	28.2	27.2
Jul-2007	43.1	32.5	34.6	20.9	20.8	36.3
Aug-2007	29.8	26.3	40.7	33.9	25.9	26.3

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2006 to August 2007. Each value is the mean of 4 replicates.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL	10 <sup>5</sup> cells/mL
Sep-2006	4.1*	20.7	21.7	22.6	17.7	12.9
Oct-2006	21.4	27.8	30.4	23.4	12.5	20.3
Nov-2007	17.6	26.2	23.3	24.7	17.7	17.5
Dec-2007	13.4	13.9	12.8	5.4*	7.5	17.2
Jan-2007	8.9	20.3	18.5	21.0	11.4	16.9
Feb-2007	7.9*	22.9	17.9	31.8	13.4	15.7
Mar-2007	12.0	11.0	8.8*	9.2*	12.4	14.3
Apr-2007	4.7*	19.0	8.8	5.2*	10.0	14.9
May-2007	12.2	15.8	2.8*	10.0*	14.2	14.9
Jun-2007	12.3	15.3	13.6	14.5	11.2	16.0
Jul-2007	10.4	15.4	11.2	15.5	9.4	13.4
Aug-2007	12.0	15.9	12.6	13.7	9.9	13.7

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2007 to August 2007.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal
DATA SOURCE	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR	SLDMWA/USBR
UNITS	µg/L	µg/L	µg/L	µg/L	µg/L
Jun-04-2007	37	0.7	24	0.9	<0.4
Jun-06-2007	28	0.5	18	0.7	<0.4
Jun-08-2007	34	0.8	14	0.8	<0.4
Jul-16-2007	29	0.8	16	0.4	<0.4
Jul-18-2007	24	0.8	10	<0.4	<0.4
Jul-20-2007	23	0.8	12	<0.4	<0.4
Aug-13-2007	27	<0.4	21	<0.4	<0.4
Aug-15-2007	27	0.5	23	<0.4	<0.4
Aug-17-2007	24	0.6	25	<0.4	<0.4

**Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2007 to August 2007.**

See Table 27 for explanation of footnotes and agency abbreviations.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	mg/L	mg/L	mg/L	mg/L	mg/L
Jun-04-2007	25	119	117	73	6
Jun-06-2007	49	15	81	199	5
Jun-08-2007	45	53	36	65	12
Jul-16-2007	26	114	98	205	37
Jul-18-2007	38	93	98	148	33
Jul-20-2007	40	157	88	212	30
Aug-16-2007	7	8	27	94	18
Aug-18-2007	21	5	23	76	24
Aug-20-2007	19	17	32	115	18

Table 27. Explanations of footnotes and agency abbreviations.

Footnote	Explanation
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
SLDMWA	San Luis & Delta-Mendota Water Authority
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
e	Estimated value
.	Not applicable
<	Less than MDL. If needed in calculation, use 1/2 MDL
NA	Not analyzed - operator error, data will not be available in the future
NP	Not Provided. Data may be available in the future.
NT	Not tested
P	Pending, data not available at this time but will be available in the future
*	Significantly reduced from Delta Mendota Canal (p<0.05)
**	Sample re-analyzed and result confirmed.
L	Result may be biased low. Sample was not preserved in the field
†	DMC water failed to meet the survival (>80%) acceptability criteria.
††	Data from records of the Grassland Water District. Data is not subjected to the criteria documented in the Compliance Monitoring Program for the Use and Operation of the Grassland Bypass Project (1996) nor the Quality Assurance Project Plan for the GBP.
†††	DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.
††††	DMC water failed to meet minimum growth (10 <sup>6</sup> cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
‡‡	Fungal growth observed on test organisms.
‡‡‡	Failed cell density requirement of 1E6 cells.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.
❖	Based on definitive bioassay, NOEC is 50 percent
D	Sample was dechlorinated