

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

August 2008

November 25, 2008

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





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MONTHLY DATA REPORT

LIST OF TABLES FOR MONTHLY REPORT**Continuous Monitoring**

1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2008.
- 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), August 2008.
- 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.
3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2008.
4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2008.
5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2008.

Weekly Monitoring

- 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.
- 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.
7. Weekly water quality monitoring at Station B (discharge from San Luis Drain).
8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharge).
9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharge).
10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).
11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).
12. Weekly water quality monitoring at Station J (Camp 13 Ditch).
13. Weekly water quality monitoring at Station K (Agatha Canal).
14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).
15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).
16. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).
17. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).
18. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).
19. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

Monthly Monitoring

20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2007 to August 2008.
21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2007 to August 2008.
22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2007 to August 2008.
23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2007 to August 2008.
24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2007 to August 2008.
25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2008 to August 2008.
26. Summary of total suspended solids concentrations in grab water samples collected from June 2008 to August 2008.
27. Explanations of footnotes and agency abbreviations.

Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), August 2008.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Aug-01-2008	20	3,740
Aug-02-2008	17	3,780
Aug-03-2008	13	4,210
Aug-04-2008	12	4,080
Aug-05-2008	14	3,840
Aug-06-2008	16	3,510
Aug-07-2008	16	3,320
Aug-08-2008	15	3,360
Aug-09-2008	13	3,040
Aug-10-2008	12	2,960
Aug-11-2008	11	3,150
Aug-12-2008	10	3,260
Aug-13-2008	12	2,740
Aug-14-2008	12	2,770
Aug-15-2008	14	2,840
Aug-16-2008	14	3,270
Aug-17-2008	10	3,460
Aug-18-2008	11	3,960
Aug-19-2008	8	3,640
Aug-20-2008	10	3,610
Aug-21-2008	11	3,560
Aug-22-2008	11	3,660
Aug-23-2008	12	4,190
Aug-24-2008	12	4,030
Aug-25-2008	11	3,970
Aug-26-2008	11	4,060
Aug-27-2008	11	3,800
Aug-28-2008	12	3,340
Aug-29-2008	14	3,260
Aug-30-2008	13	3,100
Aug-31-2008	20	2,760
Mean	12.9	3,490

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), August 2008.

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-01-2008	16	27.1	7.3	4,100	28.1	2.4
Aug-02-2008	19	27.1	7.7	4,650	32.3	3.2
Aug-03-2008	17	26.9	7.3	4,710	35.4	3.2
Aug-04-2008	12	26.7	7.6	5,060	34.3	2.2
Aug-05-2008	11	26.5	7.7	5,180	36.8	2.2
Aug-06-2008	12	27.1	6.8	5,120	28.1	1.8
Aug-07-2008	14	27.3	6.9	4,340	29.0	2.2
Aug-08-2008	14	27.2	7.2	4,110	25.6	1.9
Aug-09-2008	14	26.9	6.4	3,970	21.0	1.6
Aug-10-2008	12	26.6	8.0	3,930	31.0	2.0
Aug-11-2008	11	26.5	7.8	4,780	27.6	1.6
Aug-12-2008	10	27.1	7.6	4,610	26.3	1.4
Aug-13-2008	9	27.8	7.7	4,570	23.0	1.2
Aug-14-2008	10	28.8	6.9	4,390	20.5	1.1
Aug-15-2008	11	28.7	7.1	4,090	20.5	1.2
Aug-16-2008	11	28.7	6.3	3,970	17.6	1.1
Aug-17-2008	12	28.3	6.3	3,800	18.8	1.2
Aug-18-2008	9	27.7	5.4	3,790	17.4	0.9
Aug-19-2008	9	26.9	4.8	3,440	17.1	0.8
Aug-20-2008	8	26.3	5.2	3,300	17.5	0.7
Aug-21-2008	8	27.2	5.4	3,400	17.9	0.7
Aug-22-2008	9	27.3	5.0	3,570	16.6	0.8
Aug-23-2008	9	27.4	4.4	3,310	15.1	0.7
Aug-24-2008	10	27.7	4.5	3,020	14.6	0.8
Aug-25-2008	11	27.9	5.4	3,120	13.6	0.8
Aug-26-2008	10	27.0	5.8	3,480	17.0	0.9
Aug-27-2008	10	26.8	6.0	3,800	21.8	1.1
Aug-28-2008	10	27.4	6.1	4,180	23.7	1.3
Aug-29-2008	10	27.0	6.2	3,480	18.3	1.0
Aug-30-2008	11	27.6	5.9	4,200	22.0	1.4
Aug-31-2008	11	26.7	6.1	4,100	24.9	1.5
Mean	11	27.3	6.4	4,050	23.0	1.4
Total Acre-feet	690					
Total (lbs)						45

Load Limitation for August 2008 (lbs)	180
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◆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.

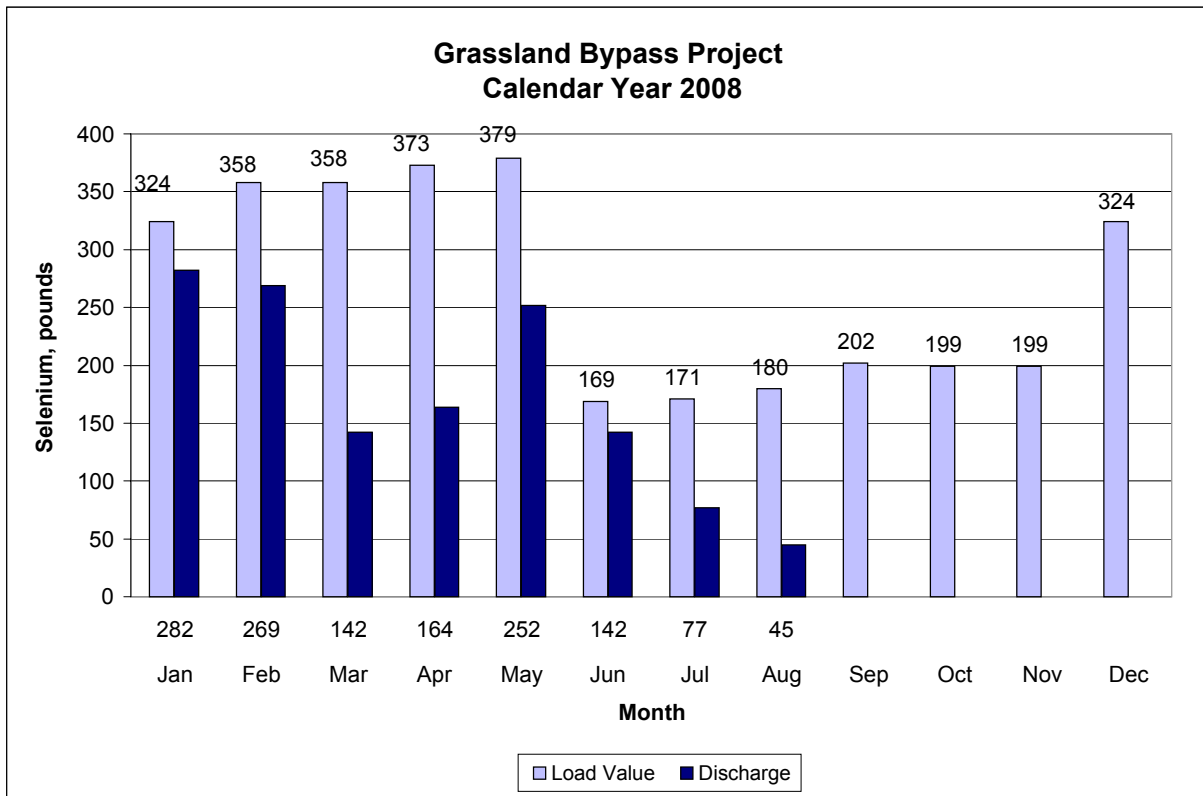


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), August 2008.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-2008	19	25.9	3,620
Aug-02-2008	21	26.3	3,990
Aug-03-2008	21	26.3	3,930
Aug-04-2008	14	25.9	4,690
Aug-05-2008	14	25.7	4,860
Aug-06-2008	15	26.3	4,950
Aug-07-2008	18	26.6	4,170
Aug-08-2008	17	26.4	3,900
Aug-09-2008	17	26.1	3,770
Aug-10-2008	15	25.9	3,720
Aug-11-2008	13	26.3	4,580
Aug-12-2008	12	26.7	4,450
Aug-13-2008	11	27.4	4,430
Aug-14-2008	13	28.1	4,300
Aug-15-2008	14	28.0	4,030
Aug-16-2008	14	28.1	3,840
Aug-17-2008	21	27.6	2,700
Aug-18-2008	15	26.6	2,860
Aug-19-2008	11	25.8	3,230
Aug-20-2008	10	25.6	3,140
Aug-21-2008	10	26.6	3,240
Aug-22-2008	11	26.6	3,380
Aug-23-2008	11	26.8	3,200
Aug-24-2008	12	26.9	2,930
Aug-25-2008	12	27.0	2,980
Aug-26-2008	11	26.0	3,290
Aug-27-2008	11	26.1	3,490
Aug-28-2008	18	26.3	2,720
Aug-29-2008	15	27.1	3,220
Aug-30-2008	16	27.1	3,160
Aug-31-2008	17	25.3	2,790
Mean	14	26.6	3,660

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), August 2008.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Aug-01-2008	91	25.3	1,200
Aug-02-2008	103	25.6	1,180
Aug-03-2008	118	25.9	1,040
Aug-04-2008	91	25.6	1,090
Aug-05-2008	90	25.7	1,150
Aug-06-2008	82	25.8	1,080
Aug-07-2008	85	26.2	1,100
Aug-08-2008	88	26.0	1,050
Aug-09-2008	81	25.2	1,040
Aug-10-2008	71	25.1	1,150
Aug-11-2008	82	25.9	1,130
Aug-12-2008	92	26.7	1,090
Aug-13-2008	80	27.4	1,110
Aug-14-2008	61	28.0	1,180
Aug-15-2008	63	27.6	1,230
Aug-16-2008	80	27.4	1,170
Aug-17-2008	87	26.2	1,130
Aug-18-2008	78	25.4	1,160
Aug-19-2008	57	24.5	1,210
Aug-20-2008	56	24.8	1,290
Aug-21-2008	49	26.5	1,330
Aug-22-2008	51	26.3	1,390
Aug-23-2008	65	26.3	1,360
Aug-24-2008	63	26.3	1,340
Aug-25-2008	64	26.4	1,290
Aug-26-2008	55	25.5	1,300
Aug-27-2008	41	25.9	1,400
Aug-28-2008	42	26.5	1,490
Aug-29-2008	62	27.1	1,350
Aug-30-2008	60	27.4	1,340
Aug-31-2008	47	24.5	1,370
Mean	72	26.1	1,220

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), August 2008.

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-01-2008	358	25.1	1,030	0.9
Aug-02-2008	354	25.5	1,140	0.9
Aug-03-2008	366	25.6	1,140	1.4
Aug-04-2008	384	25.2	1,120	1.5
Aug-05-2008	363	25.0	1,010	1.1
Aug-06-2008	330	25.0	1,040	1.0
Aug-07-2008	310	25.2	1,100	1.1
Aug-08-2008	355	24.7	1,190	1.2
Aug-09-2008	419	24.5	940	0.9
Aug-10-2008	421	24.5	900	0.8
Aug-11-2008	429	24.9	890	0.8
Aug-12-2008	412	25.6	900	0.6
Aug-13-2008	445	26.1	880	0.7
Aug-14-2008	403	27.0	880	0.9
Aug-15-2008	392	26.9	930	0.7
Aug-16-2008	396	27.1	920	0.7
Aug-17-2008	426	26.4	910	0.7
Aug-18-2008	468	25.6	890	0.7
Aug-19-2008	448	24.6	840	0.8
Aug-20-2008	425	24.4	840	0.5
Aug-21-2008	407	25.6	860	0.6
Aug-22-2008	395	25.4	880	0.5
Aug-23-2008	410	25.5	870	0.5
Aug-24-2008	440 e	25.6	880	0.5
Aug-25-2008	430	25.9	860	0.7
Aug-26-2008	435	25.0	880	0.5
Aug-27-2008	421	25.1	860	0.6
Aug-28-2008	394	25.6	870	0.5
Aug-29-2008	382	26.4	990	P
Aug-30-2008	390	26.5	1,040	P
Aug-31-2008	443	24.7	970	P
Mean	402	25.5	950	0.8

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-04-2008	26	.	.	4,090	110	.	.	.
Jun-11-2008	16	.	.	4,200	58	.	.	.
Jun-18-2008	20	.	.	4,380	180	.	.	.
Jun-25-2008	17	.	.	3,830	230	.	.	.
Jul-02-2008	23	.	.	3,920	190	.	.	.
Jul-09-2008	18	.	.	3,850	218	.	.	.
Jul-16-2008	15	.	.	4,120	180	.	.	.
Jul-23-2008	21	.	.	3,510	175	.	.	.
Jul-30-2008	13	.	.	4,760	154	.	.	.
Aug-06-2008	16	.	.	3,690	171	.	.	.
Aug-13-2008	12	.	.	3,100	183	.	.	.
Aug-20-2008	10	.	.	3,800	166	.	.	.
Aug-27-2008	11	.	.	4,210	197	.	.	.

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-03-2008	27	.	.	4,570	.	52.4	.	8.6
Jun-10-2008	20	.	.	4,250	.	40.5	.	P
Jun-17-2008	23	.	.	4,060	.	37.4	.	7.8
Jun-24-2008	15	.	.	4,270	.	34.6	.	P
Jul-01-2008	19	.	.	3,990	.	31.7	.	P
Jul-08-2008	18	.	.	4,080	.	34.0	.	6.9
Jul-15-2008	13	.	.	3,770	.	25.6	.	P
Jul-22-2008	21	.	.	4,030	.	28.9	.	7.1
Jul-29-2008	13	.	.	4,360	.	37.8	.	8.0
Aug-05-2008	14	.	.	4,150	.	26.8	.	6.6
Aug-12-2008	10	.	.	3,300	.	19.4	.	4.9
Aug-19-2008	8	.	.	3,530	.	21.8	.	6.2
Aug-26-2008	11	.	.	4,110	.	30.9	.	6.3

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-05-2008	26	19.7	8.4	4,810	63	58.1	8.8
Jun-12-2008	19	19.4	9.1	4,100	76	40.0	P
Jun-19-2008	20	23.3	8.1	3,790	51	28.8	6.6
Jun-26-2008	18	24.5	8.6	4,360	37	24.7	P
Jul-02-2008	19	25.1	8.5	3,820	81	24.6	P
Jul-10-2008	19	28.4	7.5	3,890	21	20.3	6.9
Jul-17-2008	18	25.7	7.1	3,570	34	16.5	6.0
Jul-24-2008	18	24.5	8.0	4,040	20	19.0	P
Jul-31-2008	16	25.3	7.6	4,080	18	27.9	P
Aug-07-2008	14	25.6	8.2	4,940	24	32.3	7.3
Aug-14-2008	10	26.9	7.9	3,920	25	19.7	6.3
Aug-21-2008	8	25.5	8.2	3,500	14	18.0	5.5
Aug-28-2008	10	25.2	7.3	4,300	28	25.8	6.4

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-05-2008	17	19.0	8.0	1,690	.	0.7	1.7
Jun-12-2008	7	19.2	8.2	2,280	.	0.5	P
Jun-19-2008	3	20.9	8.0	2,540	.	0.6	2.2
Jun-26-2008	-1	22.9	8.0	3,990	.	<0.4	P
Jul-02-2008	-1	24.9	8.2	3,430	.	<0.4	P
Jul-10-2008	0	26.0	8.0	3,440	.	<0.4	2.5
Jul-17-2008	-2	23.1	7.8	2,490	.	0.5	2.0
Jul-24-2008	0	21.7	8.4	2,670	.	0.6	P
Jul-31-2008	1	23.0	8.2	1,060	.	1.3	P
Aug-07-2008	4	22.9	8.2	4,010	.	0.7	3.5
Aug-14-2008	3	25.1	8.4	3,970	.	<0.4	3.0
Aug-21-2008	2	26.3	7.5	1,910	.	0.7	1.7
Aug-28-2008	8	24.0	8.5	1,050	.	1.0	0.8

++ 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-05-2008	43	19.2	8.4	3,810	34.2	5.9
Jun-12-2008	26	18.7	8.6	3,580	25.2	P
Jun-19-2008	23	22.0	8.2	3,920	24.9	6.1
Jun-26-2008	17	24.2	8.5	4,240	18.3	P
Jul-02-2008	18	25.2	8.7	4,050	23.2	P
Jul-10-2008	19	28.3	7.8	3,500	27.4	6.9
Jul-17-2008	16	25.3	8.2	3,420	15.2	5.5
Jul-24-2008	18	24.3	8.3	3,390	12.6	P
Jul-31-2008	17	23.7	8.1	2,940	19.3	P
Aug-07-2008	18	24.6	8.1	3,900	21.2	6.3
Aug-14-2008	13	16.5	8.4	4,390	20.2	6.7
Aug-21-2008	10	26.7	8.3	3,230	14.0	4.8
Aug-28-2008	18	24.1	6.2	2,460	11.6	3.8

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-04-2008	.	8.6	3,480	19	22.2	5.1
Jun-09-2008	.	8.8	2,540	21	14.0	3.4
Jun-17-2008	.	8.3	4,190	19	28.1	6.2
Jun-24-2008	.	8.7	4,690	18	18.2	6.1
Jul-01-2008	.	8.8	4,020	33	19.2	5.7
Jul-09-2008	.	8.8	4,340	33	27.7	7.1
Jul-18-2008	.	8.3	3,920	27	12.8	6.3
Jul-23-2008	.	8.8	3,650	32	10.5	6.7
Jul-29-2008	.	8.5	3,710	16	16.2	6.4
Aug-06-2008	.	8.5	5,110	16	32.2	8.8
Aug-11-2008	.	8.8	4,760	14	28.2	7.6
Aug-19-2008	.	8.4	3,350	13	14.6	5.2
Aug-25-2008	.	8.3	3,140	12	13.2	4.6

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-05-2008	114	18.4	7.9	1,380	0.5	0.6
Jun-12-2008	92	19.0	7.8	1,190	0.5	P
Jun-19-2008	70	20.8	7.7	1,460	0.5	0.6
Jun-26-2008	102	21.9	7.8	1,190	0.6	P
Jul-02-2008	106	23.0	8.0	1,420	<0.4	P
Jul-10-2008	110	26.6	7.4	1,030	0.5	0.5
Jul-17-2008	108	23.4	7.7	1,127	0.4	0.5
Jul-24-2008	96	23.0	7.6	1,230	0.5	P
Jul-31-2008	84	23.1	7.6	1,280	0.5	P
Aug-07-2008	85	23.7	7.6	1,100	0.4	0.4
Aug-14-2008	61	24.9	7.6	1,190	<0.4	0.5
Aug-21-2008	49	26.3	7.9	1,320	<0.4	0.5
Aug-28-2008	42	23.0	7.7	1,360	<0.4	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	SLDMWA ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-04-2008	25	.	.	630	1.1	0.3
Jun-11-2008	25	.	.	710	0.8	P
Jun-18-2008	11	.	.	640	0.7	0.3
Jun-25-2008	11	.	.	690	0.7	P
Jul-02-2008	11	.	.	640	0.9	P
Jul-09-2008	11	.	.	480	0.8	0.3
Jul-16-2008	11	.	.	420	0.7	P
Jul-23-2008	11	.	.	540	1.2	0.4
Jul-30-2008	11	.	.	460	0.8	0.2
Aug-06-2008	11	.	.	500	0.6	0.2
Aug-13-2008	21	.	.	580	0.8	0.3
Aug-20-2008	21	.	.	610	0.4	0.3
Aug-27-2008	50	.	.	630	0.7	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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-04-2008	60	.	.	580	1.0	0.4
Jun-11-2008	30	.	.	750	1.7	P
Jun-18-2008	13	.	.	880	1.8	0.8
Jun-25-2008	13	.	.	810	1.7	P
Jul-02-2008	13	.	.	840	1.6	P
Jul-09-2008	13	.	.	660	1.3	0.6
Jul-16-2008	13	.	.	500	1.1	P
Jul-23-2008	13	.	.	430	1.0	0.3
Jul-30-2008	13	.	.	500	0.9	0.3
Aug-06-2008	0	.	.	540	1.3	0.3
Aug-13-2008	0	.	.	1,090	1.7	1.6
Aug-20-2008	0	.	.	680	1.6	0.5
Aug-27-2008	0	.	.	1,960	5.5	2.7

Note: The peak in selenium is caused by no flow conditions at this site.

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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-04-2008	NA	.	.	750	1.0	0.5
Jun-11-2008	NA	.	.	830	1.2	P
Jun-18-2008	NA	.	.	1,290	1.3	1.9
Jun-25-2008	NA	.	.	1,160	1.3	P
Jul-02-2008	NA	.	.	1,370	1.3	P
Jul-09-2008	NA	.	.	1,100	0.6	1.5
Jul-16-2008	NA	.	.	980	1.4	P
Jul-23-2008	NA	.	.	1,000	1.4	1.6
Jul-30-2008	NA	.	.	960	1.2	1.4
Aug-06-2008	NA	.	.	1,130	1.2	1.8
Aug-13-2008	NA	.	.	2,920	3.6	3.3
Aug-20-2008	NA	.	.	1,210	0.8	1.0
Aug-27-2008	NA	.	.	1,100	1.1	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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Jun-04-2008	NA	.	.	960	1.0	0.9
Jun-11-2008	NA	.	.	1,130	1.5	P
Jun-18-2008	NA	.	.	1,220	1.3	1.8
Jun-25-2008	NA	.	.	1,550	2.0	P
Jul-02-2008	NA	.	.	1,330	1.4	P
Jul-09-2008	NA	.	.	1,140	1.1	1.6
Jul-16-2008	NA	.	.	990	1.2	P
Jul-23-2008	NA	.	.	1,010	1.4	1.6
Jul-30-2008	NA	.	.	960	1.3	1.5
Aug-06-2008	NA	.	.	1,200	1.2	1.9
Aug-13-2008	NA	.	.	1,020	0.9	1.3
Aug-20-2008	NA	.	.	1,040	1.2	1.2
Aug-27-2008	NA	.	.	760	0.8	0.5

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-04-2008	.	.	.	590	1.0	0.3
Jun-11-2008	.	.	.	610	0.6	P
Jun-18-2008	.	.	.	630	0.7	0.3
Jun-25-2008	.	.	.	640	0.7	P
Jul-02-2008	.	.	.	620	0.7	P
Jul-09-2008	.	.	.	460	NA	0.3
Jul-16-2008	.	.	.	430	0.5	P
Jul-23-2008	.	.	.	430	1.0	0.2
Jul-30-2008	.	.	.	460	0.7	0.2
Aug-06-2008	.	.	.	470	0.6	0.2
Aug-13-2008	.	.	.	520	0.4	0.3
Aug-20-2008	.	.	.	590	0.5	0.2
Aug-27-2008	.	.	.	610	0.5	0.3

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-05-2008	133	19.5	7.9	1,510	0.5	0.6
Jun-12-2008	99	20.0	7.9	1,930	0.4	P
Jun-19-2008	77	22.4	7.2	1,930	0.4	0.7
Jun-26-2008	120	23.7	7.9	1,400	0.5	P
Jul-02-2008	108	23.2	7.9	1,310	<0.4	P
Jul-10-2008	135	27.9	7.5	1,310	<0.4	0.4
Jul-17-2008	118	24.6	7.1	1,250	<0.4	0.5
Jul-24-2008	94	24.0	7.8	1,390	<0.4	P
Jul-31-2008	86	23.9	7.5	1,440	0.5	P
Aug-07-2008	96	24.2	7.9	1,190	<0.4	0.4
Aug-14-2008	83	26.2	7.9	1,110	<0.4	0.4
Aug-21-2008	59	24.4	8.0	1,440	<0.4	0.6
Aug-28-2008	47	24.3	7.5	1,540	<0.4	0.6

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-03-2008	.	.	.	2,560	12.0	2.1
Jun-10-2008	.	.	.	2,180	0.7	3.0
Jun-17-2008	.	.	.	2,410	5.4	1.8
Jun-24-2008	.	.	.	1,730	1.5	1.0
Jul-01-2008	.	.	.	1,940	2.4	1.3
Jul-08-2008	.	.	.	1,820	2.8	1.2
Jul-15-2008	.	.	.	1,940	3.9	1.6
Jul-22-2008	.	.	.	1,920	2.1	1.3
Jul-29-2008	.	.	.	1,750	2.2	1.2
Aug-06-2008	.	.	.	745	1.7	0.6
Aug-12-2008	.	.	.	1,740	2.1	1.0
Aug-19-2008	.	.	.	1,580	1.5	0.9
Aug-26-2008	.	.	.	1,750	1.6	0.9

Indicates questionable data

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.

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-05-2008	488	20.2	8.2	1,330	2.8	0.9
Jun-12-2008	379	20.0	8.1	1,500	1.9	P
Jun-19-2008	318	22.0	7.8	1,580	2.6	1.0
Jun-26-2008	302	23.3	8.2	1,480	1.4	P
Jul-02-2008	286	22.5	8.2	1,460	1.4	P
Jul-10-2008	264	26.7	8.2	1,420	1.9	0.8
Jul-17-2008	309	24.3	7.9	1,210	1.4	0.7
Jul-24-2008	261	23.3	8.1	1,330	1.0	P
Jul-31-2008	427	23.8	7.9	870	1.0	P
Aug-07-2008	310	23.9	7.9	1,110	1.1	0.5
Aug-14-2008	403	25.7	7.8	900	0.7	0.4
Aug-21-2008	407	24.1	7.9	900	0.5	0.4
Aug-28-2008	394	24.0	8.0	950	0.6	0.4

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from September 2007 to August 2008. 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-2007	93	90	88	93	93	100
Oct-2008	88	98	93	95	98	100
Nov-2008	95	95	100	100	100	98
Dec-2008	93	93	98	98	95	95
Jan-2008	100	100	95	98	100	100
Feb-2008	100	95	100	95	98	100
Mar-2008	93	95	100	100	73	100
Apr-2008	98	100	100	100	95	98
May-2008	98	95	98	95	98	100
Jun-2008	98	95	100	93	100	98
Jul-2008	90	98	100	90	100	95
Aug-2008	98	93	95	98	100	100

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from September 2007 to August 2008. 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-2007	0.26	0.24	0.25	0.26	0.27	0.25
Oct-2008	0.32	0.36	0.34	0.41	0.36	0.34
Nov-2008	0.32*	0.32*	0.35	0.33	0.36	0.33
Dec-2008	0.31	0.33	0.32	0.32	0.32	0.32
Jan-2008	0.40	0.40	0.41	0.41	0.37	0.35
Feb-2008	0.46	0.43	0.41	0.41	0.38	0.33
Mar-2008	0.33	0.33	0.37	0.38	0.22	0.29
Apr-2008	0.31	0.39	0.31	0.24*	0.30	0.27
May-2008	0.31	0.31	0.29*	0.31	0.34	0.32
Jun-2008	0.31	0.33	0.36	0.31	0.31	0.31
Jul-2008	0.32	0.34	0.30	0.26	0.29	0.25
Aug-2008	0.36	0.33	0.37	0.33	0.34	0.32

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from September 2007 to August 2008. 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-2007	100	100	100	100	100	80
Oct-2008	90	80	100	90	90	80
Nov-2008	100	100	100	100	100	100
Dec-2008	90	100	100	100	100	80
Jan-2008	70	100	90	100	100	90
Feb-2008	100	90	80	90	100	100
Mar-2008	100	100	90	100	100	90
Apr-2008	100	100	80	100	90	90
May-2008	80	70	80	100	90	90
Jun-2008	100	100	100	90	90	90
Jul-2008	100	80	100	100	90	100
Aug-2008	100	70	70	100	100	100

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from September 2007 to August 2008. 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-2007	19.2*	32.0	31.0	23.8	29.3	19.6
Oct-2008	35.8	31.1	34.4	27.5	24.3	26.2
Nov-2008	49.9	44.0	46.9	41.6	42.5	40.3
Dec-2008	32.2	24.4	32.2	28.7	30.7	23.0
Jan-2008	36.4	47.8	41.5	40.3	48.8	45.2
Feb-2008	35.6	33.6	33.4	35.8	27.7	28.3
Mar-2008	27.4	29.0	29.5	26.2	30.1	19.6
Apr-2008	31.4	31.1	27.5	24.8	33.6	25.8
May-2008	22.2	19.6	23.5	33.1	25.7	28.8
Jun-2008	23.4	21.0	29.3	23.6	26.6	26.0
Jul-2008	19.1	22.4	23.8	18.4	21.4	24.3
Aug-2008	26.5	15.3*	23.3	30.2	24.1	29.5

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from September 2007 to August 2008. 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 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL	10 ⁵ cells/mL
Sep-2007	11.8	8.9	11.5	13.5	9.2††††	3.8†††† ‡
Oct-2008	12.0	13.9	14.1	14.8	10.8	13.8 ‡
Nov-2008	9.7*	17.3	21.4	19.1	13.2	15.1
Dec-2008	11.7	19.3	17.7	18.3	13.2	14.1
Jan-2008	15.8	16.3	22.6	19.9	16.3	16.1
Feb-2008	6.2	13.9	12.1	12.8	7.7††††	12.3
Mar-2008	18.1	14.2*	22.2	11.2*	20.5	24.9
Apr-2008	13.3*	16.7	22.4	11.9*	17.2	18.3
May-2008	17.1	30.5	22.3	14.2*	21.6	19.8
Jun-2008	15.9*	20.9	8.6*	22.7	20.5	20.1
Jul-2008	22.1	27.7	22.7	26.1	21.5	12.6
Aug-2008	16.8*	23.3	18.2*	19.5	20.9	20.8

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, June 2008 to August 2008.

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-02-2008	65	0.6	45	0.5	<0.4
Jun-04-2008	46	0.7	20	0.5	<0.4
Jun-06-2008	62	0.6	38	0.6	<0.4
Jun-09-2008	35	0.9	14	0.5	0.5
Jul-14-2008	20	<0.4	21	<0.4	<0.4
Jul-16-2008	19	0.7	15	0.4	<0.4
Jul-18-2008	14	0.4	13	<0.4	<0.4
Aug-11-2008	25	0.5	28	<0.4	<0.4
Aug-13-2008	22	<0.4	23	<0.4	<0.4
Aug-15-2008	20	0.4	18	<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 2008 to August 2008.

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-02-2008	34	41	58	50	8
Jun-04-2008	66	32	36	87	13
Jun-06-2008	75	110	93	177	13
Jun-09-2008	41	63	75	91	10
Jul-14-2008	40	6	26	114	43
Jul-16-2008	28	36	21	143	52
Jul-18-2008	80	10	34	126	45
Aug-11-2008	20	7	25	94	12
Aug-13-2008	21	8	18	88	19
Aug-15-2008	34	3	24	149	16

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 ⁶ 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