

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

October 2008

February 19, 2009

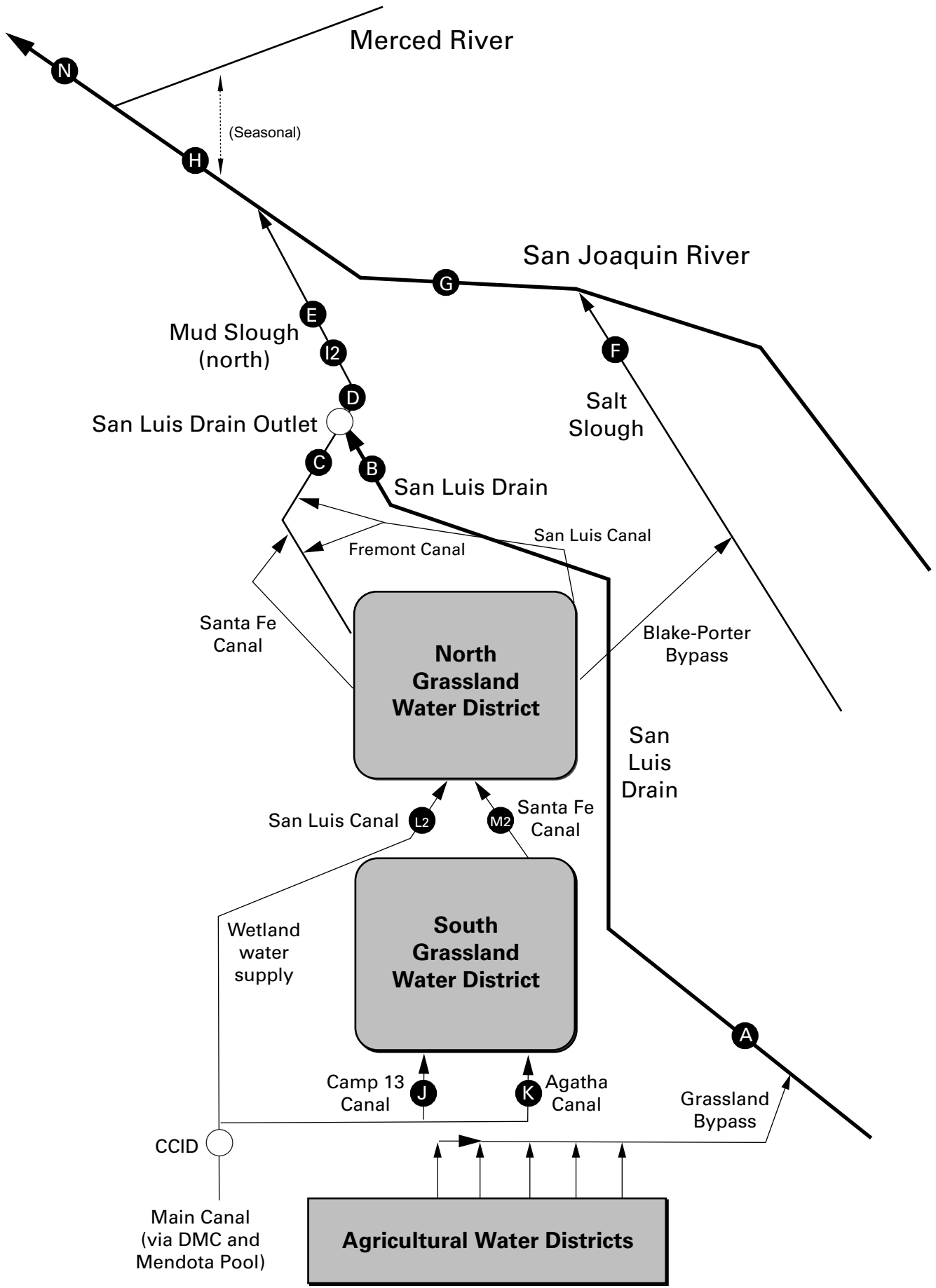
Preliminary Results

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

1. Continuous water monitoring at Station A (inflow to San Luis Drain), October 2008.
- 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), October 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), October 2008.
4. Continuous water monitoring at Station F (Salt Slough at Highway 165), October 2008.
5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), October 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 November 2007 to October 2008.
21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from November 2007 to October 2008.
22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from November 2007 to October 2008.
23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from November 2007 to October 2008.
24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from November 2007 to October 2008.
25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, August 2008 to October 2008.
26. Summary of total suspended solids concentrations in grab water samples collected from August 2008 to October 2008.
27. Explanations of footnotes and agency abbreviations.

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Oct-01-2008	13	3,620
Oct-02-2008	15	2,580
Oct-03-2008	14	2,610
Oct-04-2008	14	2,800
Oct-05-2008	14	2,760
Oct-06-2008	13	2,950
Oct-07-2008	13	3,300
Oct-08-2008	12	3,560
Oct-09-2008	11	3,840
Oct-10-2008	13	4,020
Oct-11-2008	11	4,210
Oct-12-2008	10	4,440
Oct-13-2008	9	4,410
Oct-14-2008	9	4,490
Oct-15-2008	8	4,480
Oct-16-2008	8	4,470
Oct-17-2008	8	4,450
Oct-18-2008	8	4,380
Oct-19-2008	8	4,270
Oct-20-2008	9	4,160
Oct-21-2008	8	4,100
Oct-22-2008	10	3,740
Oct-23-2008	11	3,720
Oct-24-2008	10	3,770
Oct-25-2008	10	3,940
Oct-26-2008	9	3,880
Oct-27-2008	11	3,940
Oct-28-2008	6	3,480
Oct-29-2008	7	3,380
Oct-30-2008	11	3,270
Oct-31-2008	10	3,160
Mean	10	3,750

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), October 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
Oct-01-2008	14	24.7	5.6	3,420	10.5	0.8
Oct-02-2008	16	24.8	6.4	3,410	10.6	0.9
Oct-03-2008	19	23.8	6.5	3,520	11.0	1.1
Oct-04-2008	19	22.8	6.9	3,650	10.8	1.1
Oct-05-2008	19	22.2	6.7	3,860	10.8	1.1
Oct-06-2008	20	22.1	6.5	3,710	11.8	1.3
Oct-07-2008	19	22.3	4.9	3,380	9.3	1.0
Oct-08-2008	18	22.7	3.9	2,720	8.0	0.8
Oct-09-2008	16	20.8	4.0	2,790	10.0	0.9
Oct-10-2008	16	16.0	4.6	2,960	12.3	1.0
Oct-11-2008	18	13.4	4.2	3,020	12.5	1.2
Oct-12-2008	19	13.2	4.8	2,970	14.2	1.4
Oct-13-2008	17	13.8	4.5	3,310	15.2	1.4
Oct-14-2008	16	14.9	5.2	3,340	17.1	1.5
Oct-15-2008	15	16.3	5.3	3,460	19.6	1.6
Oct-16-2008	15	17.6	5.4	3,680	25.5	2.1
Oct-17-2008	15	17.9	P	3,730	22.7	1.8
Oct-18-2008	15	19.2	P	3,720	22.4	1.8
Oct-19-2008	15	19.4	P	3,780	22.7	1.8
Oct-20-2008	15	19.1	P	3,750	20.9	1.7
Oct-21-2008	15	19.0	P	3,780	20.1	1.7
Oct-22-2008	16	18.5	P	3,750	20.2	1.8
Oct-23-2008	17	18.8	P	3,750	21.3	2.0
Oct-24-2008	18	19.0	P	3,740	20.5	2.0
Oct-25-2008	17	18.9	P	3,710	22.2	2.0
Oct-26-2008	16	18.9	P	3,700	21.7	1.9
Oct-27-2008	16	19.0	P	3,660	21.1	1.8
Oct-28-2008	18	19.0	P	3,610	19.4	1.9
Oct-29-2008	15	19.3	P	3,500	19.8	1.6
Oct-30-2008	14	18.7	P	3,480	19.5	1.5
Oct-31-2008	18	17.9	P	3,430	17.9	1.7
Mean	17	19.2	5.3	3,490	16.8	1.5
Total Acre-feet	1,020					
Total (lbs)						46

Load Limitation for October 2008 (lbs)	199
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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.

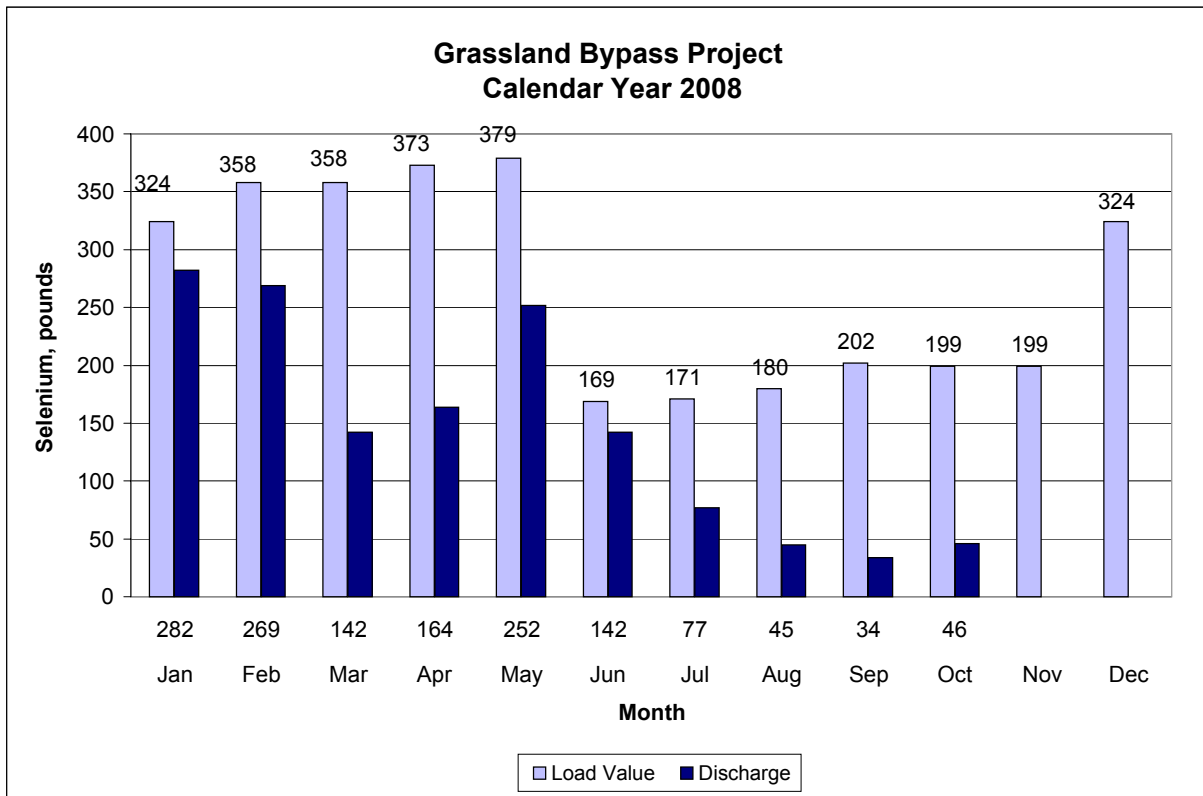


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), October 2008.

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
Oct-01-2008	42	23.8	1,800
Oct-02-2008	45	23.5	1,830
Oct-03-2008	45	22.3	2,060
Oct-04-2008	49	21.3	2,060
Oct-05-2008	64	20.7	1,880
Oct-06-2008	67	20.9	1,850
Oct-07-2008	65	21.2	1,780
Oct-08-2008	66	21.4	1,580
Oct-09-2008	82	19.6	1,430
Oct-10-2008	102	15.1	1,330
Oct-11-2008	121	12.8	1,330
Oct-12-2008	124	12.8	1,330
Oct-13-2008	142	13.9	1,340
Oct-14-2008	129	15.2	1,360
Oct-15-2008	91	16.3	1,590
Oct-16-2008	78	17.5	1,700
Oct-17-2008	86	18.0	1,670
Oct-18-2008	104	18.9	1,550
Oct-19-2008	152	18.7	1,380
Oct-20-2008	217	18.3	1,220
Oct-21-2008	205	17.8	1,330
Oct-22-2008	158	17.8	1,490
Oct-23-2008	146	18.2	1,560
Oct-24-2008	140	18.5	1,610
Oct-25-2008	135	18.5	1,620
Oct-26-2008	123	18.5	1,660
Oct-27-2008	113	18.4	1,690
Oct-28-2008	112	18.5	1,740
Oct-29-2008	106	18.5	1,700
Oct-30-2008	94	17.8	1,750
Oct-31-2008	92	17.1	1,880
Mean	106	18.4	1,620

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), October 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
Oct-01-2008	48	23.7	1,450
Oct-02-2008	54	23.1	1,520
Oct-03-2008	49	21.5	1,490
Oct-04-2008	48	20.8	1,550
Oct-05-2008	46	20.2	1,590
Oct-06-2008	44	20.4	1,630
Oct-07-2008	36	20.8	1,650
Oct-08-2008	40	20.9	1,660
Oct-09-2008	38	18.3	1,640
Oct-10-2008	34	13.7	1,660
Oct-11-2008	31	12.1	1,370
Oct-12-2008	31	12.7	1,620
Oct-13-2008	34	14.1	1,780
Oct-14-2008	38	15.4	1,730
Oct-15-2008	39	16.3	1,730
Oct-16-2008	40	17.2	1,690
Oct-17-2008	39	17.6	1,740
Oct-18-2008	38	18.5	1,780
Oct-19-2008	41	18.2	1,790
Oct-20-2008	49	17.5	1,730
Oct-21-2008	56	17.1	1,640
Oct-22-2008	49	17.2	1,730
Oct-23-2008	49	17.6	1,770
Oct-24-2008	56	17.7	1,750
Oct-25-2008	54	17.8	1,740
Oct-26-2008	56	17.6	1,820
Oct-27-2008	59	17.3	1,870
Oct-28-2008	73	17.6	1,710
Oct-29-2008	77	17.5	1,660
Oct-30-2008	74	16.7	1,680
Oct-31-2008	80	16.4	1,680
Mean	48	17.9	1,670

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), October 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
Oct-01-2008	265	23.5	1,170	0.7
Oct-02-2008	244	23.4	1,180	0.8
Oct-03-2008	260	22.0	1,210	1.3
Oct-04-2008	318	21.3	1,030	1.1
Oct-05-2008	341	20.6	950	0.7
Oct-06-2008	384	20.8	920	1.0
Oct-07-2008	405	20.8	870	0.8
Oct-08-2008	429	20.7	870	0.5
Oct-09-2008	466	19.2	780	0.5
Oct-10-2008	455	15.5	810	0.5
Oct-11-2008	494	13.7	730	0.5
Oct-12-2008	478	13.7	740	0.5
Oct-13-2008	470	14.5	730	0.5
Oct-14-2008	462	15.2	770	0.6
Oct-15-2008	456	15.8	830	0.8
Oct-16-2008	440	16.5	870	0.7
Oct-17-2008	418	17.1	950	0.7
Oct-18-2008	393	18.0	940	0.9
Oct-19-2008	427	18.0	890	0.9
Oct-20-2008	445	17.5	820	0.8
Oct-21-2008	461	17.1	810	0.8
Oct-22-2008	492	17.0	790	0.8
Oct-23-2008	494	17.3	810	0.7
Oct-24-2008	501 e	17.3	840	0.8
Oct-25-2008	506	17.1	860	0.8
Oct-26-2008	491	17.1	920	0.6
Oct-27-2008	472	17.0	950	0.8
Oct-28-2008	472	17.2	930	0.9
Oct-29-2008	468	17.1	930	0.9
Oct-30-2008	468	16.7	950	1.2
Oct-31-2008	476	16.5	950	0.7
Mean	431	17.9	900	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	.	.	.
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	.	.	.
Sep-03-2008	17	.	.	3,660	105	.	.	.
Sep-10-2008	10	.	.	4,390	80	.	.	.
Sep-17-2008	4	.	.	5,920	32	.	.	.
Sep-24-2008	8	.	.	3,980	127	.	.	.
Oct-01-2008	13	.	.	4,220	176	.	.	.
Oct-08-2008	12	.	.	3,890	144	.	.	.
Oct-15-2008	8	.	.	4,870	NA	.	.	.
Oct-22-2008	10	.	.	4,460	99	.	.	.
Oct-29-2008	7	.	.	3,760	38	.	.	.

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
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
Sep-02-2008	22	.	.	3,040	.	19.6	.	4.9
Sep-09-2008	10	.	.	3,650	.	22.2	.	5.1
Sep-16-2008	5	.	.	5,200	.	33.3	.	11.0
Sep-23-2008	9	.	.	4,340	.	26.2	.	8.2
Sep-30-2008	10	.	.	4,260	.	20.1	.	8.4
Oct-07-2008	13	.	.	3,160	.	17.9	.	5.5
Oct-14-2008	9	.	.	4,550	.	42.1	.	7.7
Oct-21-2008	8	.	.	4,750	.	49.9	.	7.6
Oct-28-2008	6	.	.	4,070	.	29.8	.	P

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
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
Sep-04-2008	17	23.0	8.8	3,430	42	20.1	4.9
Sep-11-2008	9	22.8	8.4	2,930	25	12.2	4.8
Sep-18-2008	7	21.7	8.0	3,690	28	17.5	5.4
Sep-25-2008	12	22.1	8.1	4,710	33	22.5	9.4
Oct-02-2008	16	22.8	7.7	3,530	49	11.2	5.7
Oct-09-2008	16	20.5	7.8	2,680	36	8.1	3.7
Oct-16-2008	15	15.7	7.1	3,900	34	27.0	5.5
Oct-23-2008	17	17.8	8.2	3,680	37	22.7	5.0
Oct-30-2008	14	17.9	8.1	3,430	56	19.0	P

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
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
Sep-04-2008	0	22.8	8.5	1,110	.	<0.4	0.7
Sep-11-2008	4	19.9	8.2	970	.	<0.4	0.5
Sep-18-2008	4	18.6	8.1	1,280	.	0.6	0.8
Sep-25-2008	11	20.6	7.1	1,170	.	2.5	0.8
Oct-02-2008	29	22.0	7.6	1,040	.	<0.4	0.6
Oct-09-2008	66	19.1	7.7	1,010	.	<0.4	0.6
Oct-16-2008	63	16.0	7.7	1,170	.	<0.4	0.6
Oct-23-2008	129	16.8	7.7	1,160	.	0.6	0.7
Oct-30-2008	80	17.0	7.8	1,380	.	<0.4	P

++ 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
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
Sep-04-2008	17	22.8	8.6	3,400	21.1	5.4
Sep-11-2008	13	21.5	8.1	2,170	7.6	2.9
Sep-18-2008	11	19.8	8.1	2,630	9.1	3.2
Sep-25-2008	23	21.1	7.7	2,750	9.5	4.6
Oct-02-2008	45	22.3	7.6	1,760	3.2	2.1
Oct-09-2008	82	19.6	7.6	1,380	1.8	1.2
Oct-16-2008	78	15.9	7.7	1,660	3.7	1.5
Oct-23-2008	146	16.9	7.6	1,560	3.3	1.3
Oct-30-2008	94	17.5	7.7	1,720	3.2	P

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
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
Sep-03-2008	.	8.3	4,180	13	24.8	6.8
Sep-08-2008	.	7.9	1,760	17	6.7	2.4
Sep-18-2008	.	8.8	2,580	11	8.7	3.6
Sep-22-2008	.	8.3	2,969	13	10.6	5.6
Sep-30-2008	.	7.9	1,745	14	3.1	2.1
Oct-07-2008	.	7.8	1,912	17	3.0	2.3
Oct-15-2008	.	7.7	1,700	16	3.8	1.8
Oct-23-2008	.	7.8	1,622	19	3.2	1.5
Oct-30-2008	.	8.0	1,770	13	3.1	1.6

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
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
Sep-04-2008	32	21.0	7.9	1,590	<0.4	0.6
Sep-11-2008	41	20.1	7.9	1,230	<0.4	0.5
Sep-18-2008	33	18.1	8.1	1,480	0.6	0.6
Sep-25-2008	57	21.0	7.3	1,290	<0.4	0.6
Oct-02-2008	54	21.1	7.8	1,580	<0.4	0.7
Oct-09-2008	38	17.6	7.9	1,610	<0.4	0.7
Oct-16-2008	40	14.2	7.7	1,650	<0.4	0.7
Oct-23-2008	49	16.1	7.8	1,740	<0.4	0.8
Oct-30-2008	74	15.9	7.8	1,530	<0.4	P

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
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
Sep-03-2008	70	.	.	710	0.7	0.4
Sep-10-2008	70	.	.	660	0.5	0.2
Sep-17-2008	130	.	.	630	0.8	0.3
Sep-24-2008	180	.	.	700	0.5	0.2
Oct-01-2008	215	.	.	640	0.6	0.2
Oct-08-2008	105	.	.	580	<0.4	0.2
Oct-15-2008	80	.	.	580	<0.4	0.2
Oct-22-2008	80	.	.	590	0.5	0.2
Oct-29-2008	70	.	.	550	0.7	P

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
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
Sep-03-2008	80	.	.	760	1.0	0.5
Sep-10-2008	90	.	.	700	0.7	0.3
Sep-17-2008	150	.	.	620	0.7	0.2
Sep-24-2008	150	.	.	690	0.6	0.2
Oct-01-2008	150	.	.	670	0.7	0.3
Oct-08-2008	150	.	.	580	0.6	0.2
Oct-15-2008	70	.	.	570	<0.4	0.2
Oct-22-2008	35	.	.	550	<0.4	0.2
Oct-29-2008	35	.	.	560	0.7	P

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
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
Sep-03-2008	NA	.	.	880	0.7	0.5
Sep-10-2008	NA	.	.	890	0.6	0.3
Sep-17-2008	NA	.	.	800	0.7	0.3
Sep-24-2008	NA	.	.	760	1.0	0.2
Oct-01-2008	NA	.	.	700	0.6	0.3
Oct-08-2008	NA	.	.	640	0.5	0.2
Oct-15-2008	NA	.	.	680	0.5	0.3
Oct-22-2008	NA	.	.	690	0.5	0.3
Oct-29-2008	NA	.	.	660	0.6	P

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
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
Sep-03-2008	NA	.	.	760	0.6	0.4
Sep-10-2008	NA	.	.	820	0.8	0.4
Sep-17-2008	NA	.	.	800	0.9	0.4
Sep-24-2008	NA	.	.	830	0.5	0.4
Oct-01-2008	NA	.	.	820	0.5	0.4
Oct-08-2008	NA	.	.	840	0.6	0.5
Oct-15-2008	NA	.	.	830	0.4	0.5
Oct-22-2008	NA	.	.	840	0.5	0.5
Oct-29-2008	NA	.	.	870	0.5	P

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
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
Sep-03-2008	.	.	.	690	0.7	0.3
Sep-10-2008	.	.	.	630	0.6	0.2
Sep-17-2008	.	.	.	620	0.6	0.2
Sep-24-2008	.	.	.	700	<0.4	0.2
Oct-01-2008	.	.	.	640	0.4	0.2
Oct-08-2008	.	.	.	570	0.4	0.2
Oct-15-2008	.	.	.	650	<0.4	0.3
Oct-22-2008	.	.	.	530	0.5	0.2
Oct-29-2008	.	.	.	570	0.7	P

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
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
Sep-04-2008	38	23.2	8.0	2,400	<0.4	0.7
Sep-11-2008	45	21.4	7.8	1,590	<0.4	0.5
Sep-18-2008	33	20.4	7.1	2,120	<0.4	0.7
Sep-25-2008	58	20.5	7.8	1,270	<0.4	0.6
Oct-02-2008	51	22.0	7.9	1,990	<0.4	0.8
Oct-09-2008	41	18.1	7.2	2,170	<0.4	0.9
Oct-16-2008	40	15.3	7.2	2,190	<0.4	0.9
Oct-23-2008	45	15.2	7.8	2,070	<0.4	0.8
Oct-30-2008	56	16.1	7.8	1,740	<0.4	P

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
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
Sep-09-2008	.	.	.	2,280	3.3	1.5
Sep-16-2008	.	.	.	2,050	0.9	1.2
Sep-24-2008	.	.	.	729	0.5	0.2
Sep-30-2008	.	.	.	1,910	1.3	1.5
Oct-07-2008	.	.	.	1,750	1.7	1.3
Oct-14-2008	.	.	.	1,880	1.5	1.1
Oct-21-2008	.	.	.	1,560	1.9	0.9
Oct-28-2008	.	.	.	1,930	1.6	1.3

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
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
Sep-04-2008	419	23.0	8.1	990	1.2	0.5
Sep-11-2008	415	22.1	7.8	890	<0.4	0.3
Sep-18-2008	238	19.8	7.2	1,300	0.8	0.5
Sep-25-2008	280	20.7	7.8	1,100	0.7	0.7
Oct-02-2008	244	22.1	8.0	1,210	0.9	0.7
Oct-09-2008	466	18.9	8.0	790	0.5	0.4
Oct-16-2008	440	15.5	7.7	930	0.8	0.5
Oct-23-2008	494	16.3	7.7	840	1.2	0.5
Oct-30-2008	468	16.6	8.0	950	0.7	P

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from November 2007 to October 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	%	%	%	%	%	%
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
Sep-2009	90	95	93	98	95	98
Oct-2009	100	98	95	100	93	98

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from November 2007 to October 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
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
Sep-2009	0.30	0.36	0.30	0.33	0.33	0.28
Oct-2009	0.43	0.44	0.38	0.41	0.37	0.38

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from November 2007 to October 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	%	%	%	%	%	%
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
Sep-2009	90	90	100	90	100	100
Oct-2009	90	100	90	90	100	100

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from November 2007 to October 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
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
Sep-2009	27.3	24.9	36.6	22.3	27.3	23.8
Oct-2009	24.4	28.2	25.6	22.3	24.9	26.3

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from October 2007 to September 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
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
Sep-2009	24.7	18.2*	10.0*	17.5*	26.5	17.1
Oct-2009	25.8	33.9	30.6	30.7	24.3	22.5

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, August 2008 to October 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
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
Sep-08-2008	11	<0.4	6.8	<0.4	<0.4
Sep-10-2008	11	<0.4	7.0	<0.4	<0.4
Sep-12-2008	13	<0.4	5.2	<0.4	<0.4
Oct-06-2008	11	<0.4	3.3	<0.4	<0.4
Oct-08-2008	8	<0.4	2.8	<0.4	<0.4
Oct-10-2008	11	<0.4	2.0	<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, August 2008 to October 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
Aug-11-2008	20	7	25	94	12
Aug-13-2008	21	8	18	88	19
Aug-15-2008	34	3	24	149	16
Sep-08-2008	18	17	16	38	11
Sep-10-2008	11	8	16	59	10
Sep-12-2008	17	59	64	53	9
Oct-06-2008	32	16	14	34	10
Oct-08-2008	35	11	20	33	10
Oct-10-2008	54	50	19	24	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