

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**January 2008**

May 6, 2008

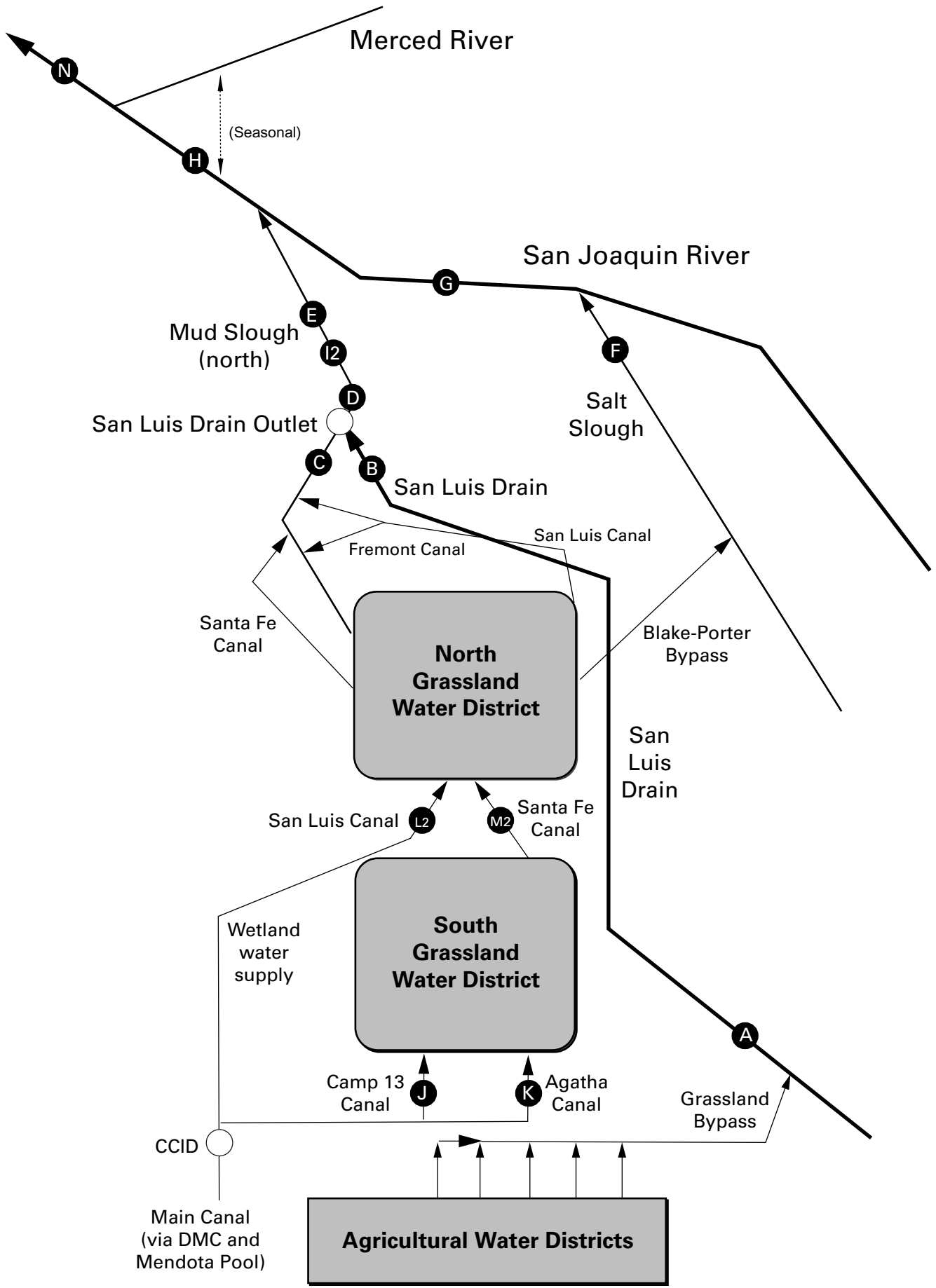
### **Preliminary Results**

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





## GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

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

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>
Jan-01-2008	14	4,990
Jan-02-2008	15	4,970
Jan-03-2008	19	4,970
Jan-04-2008	21	5,070
Jan-05-2008	15	5,050
Jan-06-2008	11	4,610
Jan-07-2008	12	4,370
Jan-08-2008	18	4,560
Jan-09-2008	17	5,000
Jan-10-2008	16	4,990
Jan-11-2008	16	4,940
Jan-12-2008	16	4,890
Jan-13-2008	16	4,820
Jan-14-2008	20	4,990
Jan-15-2008	20	4,890
Jan-16-2008	20	4,910
Jan-17-2008	21	4,750
Jan-18-2008	20	4,750
Jan-19-2008	20	4,830
Jan-20-2008	21	4,660
Jan-21-2008	20	4,640
Jan-22-2008	23	4,680
Jan-23-2008	27	4,500
Jan-24-2008	43	4,050
Jan-25-2008	39	3,950
Jan-26-2008	16	4,320
Jan-27-2008	14	4,250
Jan-28-2008	14	4,470
Jan-29-2008	24	4,690
Jan-30-2008	28	4,820
Jan-31-2008	26	4,880
Mean	20.1	4,720

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), January 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
Jan-01-2008	21	7.6	P	4,390	66.3	7.5
Jan-02-2008	21	7.4	P	4,570	70.4	7.9
Jan-03-2008	22	7.9	P	4,460	67.1	7.8
Jan-04-2008	29	9.0	P	4,300	64.4	10.2
Jan-05-2008	30	9.4	P	4,330	65.5	10.6
Jan-06-2008	25	9.4	P	4,390	64.6	8.6
Jan-07-2008	20	9.7	P	4,390	67.1	7.2
Jan-08-2008	20	9.4	P	4,510	65.8	7.1
Jan-09-2008	23	9.4	P	4,550	66.9	8.5
Jan-10-2008	23	10.0	P	4,720	66.2	8.3
Jan-11-2008	22	10.5	P	4,540	50.5	6.1
Jan-12-2008	22	11.1	P	4,180	38.2	4.5
Jan-13-2008	21	11.5	P	4,140	49.5	5.7
Jan-14-2008	22	11.3	P	4,600	72.6	8.8
Jan-15-2008	25	10.8	P	4,710	73.9	10.0
Jan-16-2008	25	9.8	P	4,710	72.8	9.8
Jan-17-2008	25	9.3	P	4,770	72.8	9.9
Jan-18-2008	25	9.2	P	4,780	77.0	10.5
Jan-19-2008	25	9.2	P	4,990	76.7	10.4
Jan-20-2008	25	9.3	P	4,800	70.9	9.6
Jan-21-2008	27	9.2	P	4,830	76.7	11.1
Jan-22-2008	30	9.5	P	4,580	66.2	10.6
Jan-23-2008	33	9.1	P	4,510	66.9	11.8
Jan-24-2008	40	8.4	P	4,500	68.2	14.6
Jan-25-2008	53	8.4	P	4,410	62.8	17.8
Jan-26-2008	44	9.6	P	4,330	67.1	16.0
Jan-27-2008	28	10.4	P	4,030	64.2	9.6
Jan-28-2008	23	10.6	P	3,870	53.2	6.5
Jan-29-2008	23	10.1	P	3,970	47.4	5.9
Jan-30-2008	32	10.4	P	4,060	35.9	6.2
Jan-31-2008	35	10.3	P	4,080	18.2	3.5
Mean	27	9.6	P	4,450	62.8	9.1
Total Acre-feet	1,660					
Total (lbs)						282

Load Limitation for January 2008 (lbs)	374
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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.

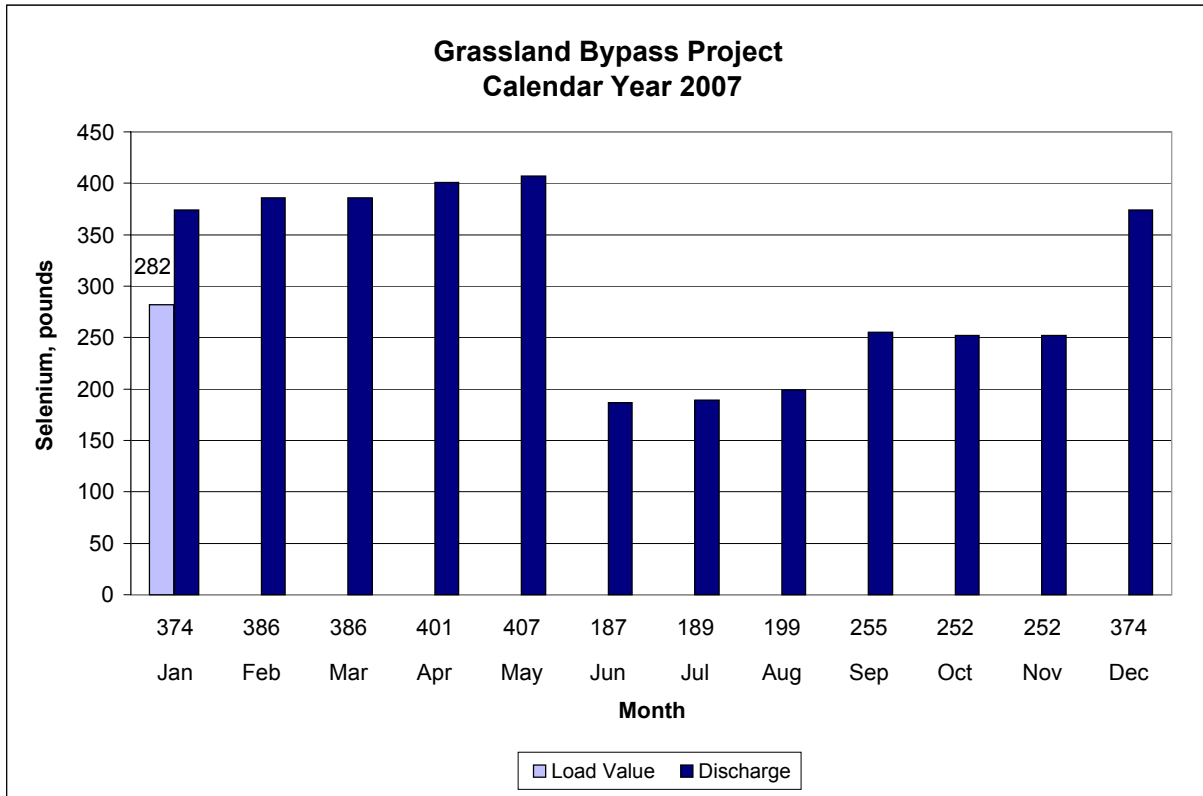


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), January 2008.

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>
Jan-01-2008	101	7.3	2,660
Jan-02-2008	100	7.0	2,710
Jan-03-2008	102	7.7	2,670
Jan-04-2008	128	8.9	2,590
Jan-05-2008	196	9.0	2,230
Jan-06-2008	220	9.1	2,120
Jan-07-2008	204	9.4	2,080
Jan-08-2008	186	8.8	2,190
Jan-09-2008	178	8.8	2,320
Jan-10-2008	167	9.6	2,400
Jan-11-2008	161	10.1	2,380
Jan-12-2008	155	10.9	2,360
Jan-13-2008	150	11.5	2,400
Jan-14-2008	165	10.9	2,440
Jan-15-2008	159	10.0	2,410
Jan-16-2008	154	8.8	2,290
Jan-17-2008	148	8.4	2,370
Jan-18-2008	143	8.6	2,390
Jan-19-2008	141	8.8	2,410
Jan-20-2008	140	9.1	2,370
Jan-21-2008	138	9.0	2,490
Jan-22-2008	140	9.3	2,510
Jan-23-2008	164	8.7	2,420
Jan-24-2008	219	7.8	2,210
Jan-25-2008	246	7.8	2,240
Jan-26-2008	233	9.5	2,310
Jan-27-2008	219	10.5	2,110
Jan-28-2008	212	10.5	2,040
Jan-29-2008	200	9.7	2,040
Jan-30-2008	195	9.7	2,130
Jan-31-2008	185	9.7	2,110
Mean	169	9.2	2,340

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

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>
Jan-01-2008	96	8.2	1,990
Jan-02-2008	97	7.8	1,970
Jan-03-2008	100	8.7	1,940
Jan-04-2008	130	9.8	1,740
Jan-05-2008	182	9.7	1,550
Jan-06-2008	227	9.7	1,470
Jan-07-2008	244	9.9	1,440
Jan-08-2008	232	9.2	1,500
Jan-09-2008	205	9.2	1,590
Jan-10-2008	175	10.2	1,660
Jan-11-2008	153	10.8	1,690
Jan-12-2008	141	11.6	1,710
Jan-13-2008	131	11.9	1,750
Jan-14-2008	122	11.0	1,780
Jan-15-2008	116	10.4	1,820
Jan-16-2008	113	9.3	1,820
Jan-17-2008	110	9.0	1,830
Jan-18-2008	111	9.1	1,810
Jan-19-2008	113	9.2	1,820
Jan-20-2008	109	9.4	1,900
Jan-21-2008	103	9.6	1,960
Jan-22-2008	108	10.0	1,920
Jan-23-2008	123	9.6	1,840
Jan-24-2008	169	8.5	1,580
Jan-25-2008	237	8.2	1,340
Jan-26-2008	295	9.3	1,290
Jan-27-2008	282	10.4	1,290
Jan-28-2008	255	10.7	1,330
Jan-29-2008	268	9.9	1,340
Jan-30-2008	301	9.5	1,330
Jan-31-2008	277	9.6	1,400
Mean	172	9.7	1,660



Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), January 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
Jan-01-2008	732	8.0	1,260	2.3
Jan-02-2008	697	7.7	1,300	2.3
Jan-03-2008	674	8.1	1,340	2.3
Jan-04-2008	827	9.0	1,250	2.3
Jan-05-2008	1,130	9.1	960	1.9
Jan-06-2008	1,300	9.1	950	1.9
Jan-07-2008	1,600	9.2	810	1.4
Jan-08-2008	1,600	8.7	860	1.2
Jan-09-2008	1,480	8.6	850	1.2
Jan-10-2008	1,310	9.2	940	1.4
Jan-11-2008	1,170	9.7	1,040	1.7
Jan-12-2008	1,060	10.4	1,070	1.6
Jan-13-2008	969	11.1	1,140	1.4
Jan-14-2008	917	10.7	1,170	1.2
Jan-15-2008	872	10.2	1,200	1.5
Jan-16-2008	834	9.1	1,270	2.4
Jan-17-2008	800	8.7	1,320	2.7
Jan-18-2008	803	8.6	1,360	2.5
Jan-19-2008	792	8.8	1,370	2.9
Jan-20-2008	814	8.9	1,380	3.5
Jan-21-2008	792	8.9	1,520	3.0
Jan-22-2008	801	9.3	1,400	3.0
Jan-23-2008	827	9.2	1,470	2.9
Jan-24-2008	1,130	8.6	1,420	2.6
Jan-25-2008	2,430	7.9	690	1.5
Jan-26-2008	3,320	8.1	480	1.2
Jan-27-2008	2,980	9.2	510	1.6
Jan-28-2008	2,890	9.6	640	1.5
Jan-29-2008	2,790	9.4	650	1.1
Jan-30-2008	2,710	9.1	530	2.6
Jan-31-2008	2,530	8.8	550	0.9
Mean	1,410	9.1	1,050	2.0

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	.	.	.
Nov-07-2007	11	.	.	5,160	20	.	.	.
Nov-14-2007	8	.	.	4,150	19	.	.	.
Nov-20-2007	8	.	.	4,640	32	.	.	.
Nov-28-2007	9	.	.	4,830	12	.	.	.
Dec-05-2007	8	.	.	4,850	36	.	.	.
Dec-12-2007	14	.	.	4,650	11	.	.	.
Dec-19-2007	22	.	.	3,930	140	.	.	.
Dec-26-2007	18	.	.	4,460	80	.	.	.
Jan-02-2008	15	.	.	4,940	13	.	.	.
Jan-09-2008	17	.	.	5,090	88	.	.	.
Jan-16-2008	20	.	.	4,990	39	.	.	.
Jan-23-2008	27	.	.	4,380	180	.	.	.
Jan-30-2008	28	.	.	4,860	170	.	.	.

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
Nov-06-2007	10	.	.	4,930	.	45.5	.	10.0
Nov-13-2007	9	.	.	4,530	.	60.6	.	7.8
Nov-19-2007	8	.	.	4,460	.	44.6	.	7.7
Nov-26-2007	13	.	.	4,970	.	77.9	.	8.0
Dec-04-2007	8	.	.	4,800	.	59.1	.	P
Dec-11-2007	14	.	.	4,570	.	80.0	.	P
Dec-18-2007	23	.	.	3,970	.	70.6	.	P
Dec-25-2007	15	.	.	4,310	.	79.1	.	P
Jan-01-2008	14	.	.	4,890	.	96.8	.	P
Jan-08-2008	18	.	.	4,870	.	79.9	.	P
Jan-15-2008	20	.	.	5,040	.	94.1	.	P
Jan-22-2008	23	.	.	4,700	.	85.7	.	P
Jan-29-2008	24	.	.	4,410	.	49.6	.	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
Nov-01-2007	15	16.8	7.0	3,660	39	14.7	5.8
Nov-08-2007	18	16.2	6.8	3,770	36	20.6	5.8
Nov-15-2007	18	15.9	8.2	4,490	34	61.3	7.7
Nov-20-2007	16	15.3	7.7	3,780	52	37.0	5.8
Nov-29-2007	18	10.1	8.0	4,370	37	58.4	6.7
Dec-06-2007	18	11.7	6.6	4,090	24	38.1	P
Dec-13-2007	21	8.1	7.4	3,970	20	46.1	P
Dec-20-2007	29	10.3	7.0	2,810	23	38.3	P
Dec-27-2007	24	5.8	7.4	3,760	NA	54.8	P
Jan-03-2008	22	7.7	7.4	4,230	17	65.8	P
Jan-10-2008	23	9.7	7.6	4,450	28	60.2	P
Jan-17-2008	25	8.6	8.2	4,540	20	72.1	P
Jan-24-2008	40	8.1	8.0	4,290	22	68.9	P
Jan-31-2008	35	9.9	8.1	3,830	27	17.6	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
Nov-01-2007	109	16.0	7.5	1,230	.	<0.4	0.9
Nov-08-2007	104	15.4	7.5	1,310	.	<0.4	1.0
Nov-15-2007	112	15.3	7.8	1,360	.	0.6	1.0
Nov-20-2007	118	15.0	7.7	1,380	.	<0.4	1.1
Nov-29-2007	99	9.6	7.9	1,450	.	<0.4	1.1
Dec-06-2007	104	11.6	7.4	1,540	.	<0.4	P
Dec-13-2007	107	7.0	7.8	1,600	.	<0.4	P
Dec-20-2007	113	11.1	7.4	1,680	.	<0.4	P
Dec-27-2007	87	5.3	7.3	1,780	.	<0.4	P
Jan-03-2008	80	7.4	7.9	1,920	.	<0.4	P
Jan-10-2008	144	9.3	7.8	1,720	.	<0.4	P
Jan-17-2008	123	7.2	7.9	1,940	.	<0.4	P
Jan-24-2008	179	7.5	7.4	1,980	.	0.5	P
Jan-31-2008	150	9.6	8.0	1,800	.	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
Nov-01-2007	124	16.3	7.4	1,590	1.9	1.5
Nov-08-2007	122	15.6	7.3	1,720	3.4	1.6
Nov-15-2007	130	15.3	7.8	1,900	9.3	2.1
Nov-20-2007	134	15.1	7.7	1,740	5.0	1.7
Nov-29-2007	127	9.7	7.9	1,930	4.5	1.8
Dec-06-2007	122	11.7	7.4	1,970	4.9	P
Dec-13-2007	128	7.2	7.7	2,050	7.6	P
Dec-20-2007	138	11.0	7.2	1,810	5.9	P
Dec-27-2007	111	5.4	7.2	2,340	13.0	P
Jan-03-2008	102	7.3	7.4	2,440	12.1	P
Jan-10-2008	167	9.3	7.8	2,160	9.4	P
Jan-17-2008	148	7.5	7.9	2,440	13.2	P
Jan-24-2008	219	7.6	7.9	2,190	12.0	P
Jan-31-2008	185	9.6	8.0	2,270	4.0	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
Nov-02-2007	.	7.6	1,680	18	2.2	1.6
Nov-09-2007	.	7.7	1,890	20	3.3	1.9
Nov-21-2007	.	7.8	1,830	22	4.6	1.8
Nov-27-2007	.	8.1	2,040	16	4.5	2.1
Dec-11-2007	.	7.8	2,140	12	5.3	2.2
Jan-04-2008	.	7.4	2,640	13	11.7	2.6
Jan-17-2008	.	8.3	2,610	14	12.2	2.6
Jan-29-2008	.	7.5	2,160	28	5.9	2.0

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
Nov-01-2007	149	15.5	7.7	1,200	0.6	0.6
Nov-08-2007	113	14.6	7.7	1,450	<0.4	0.8
Nov-15-2007	107	14.5	7.8	1,740	0.5	0.9
Nov-20-2007	104	14.1	7.8	1,580	0.5	0.9
Nov-29-2007	119	9.4	7.8	1,420	0.4	0.8
Dec-06-2007	113	11.8	7.5	1,710	<0.4	P
Dec-13-2007	138	7.3	7.8	1,640	<0.4	P
Dec-20-2007	120	11.4	7.9	1,720	0.4	P
Dec-27-2007	109	6.2	7.3	1,780	0.5	P
Jan-03-2008	100	8.7	7.3	1,920	0.6	P
Jan-10-2008	175	9.8	7.7	1,720	0.6	P
Jan-17-2008	110	8.0	7.7	1,810	<0.4	P
Jan-24-2008	169	8.4	7.5	1,650	0.5	P
Jan-31-2008	277	9.6	7.8	1,630	0.7	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
Nov-07-2007	35	.	.	610	0.7	0.3
Nov-14-2007	35	.	.	560	0.5	0.3
Nov-20-2007	35	.	.	570	0.9	0.3
Nov-28-2007	20	.	.	640	0.9	0.3
Dec-05-2007	20	.	.	650	0.9	P
Dec-12-2007	20	.	.	580	1.1	P
Dec-19-2007	10	.	.	590	1.3	P
Dec-26-2007	10	.	.	640	1.3	P
Jan-02-2008	10	.	.	750	1.6	P
Jan-09-2008	10	.	.	1,810	1.2	P
Jan-16-2008	10	.	.	930	2.2	P
Jan-23-2008	10	.	.	860	1.0	P
Jan-30-2008	10	.	.	760	1.9	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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-07-2007	75	.	.	560	0.9	0.3
Nov-14-2007	75	.	.	610	0.8	0.3
Nov-20-2007	75	.	.	570	0.8	0.3
Nov-28-2007	75	.	.	730	1.4	0.5
Dec-05-2007	75	.	.	530	1.0	P
Dec-12-2007	75	.	.	590	1.1	P
Dec-19-2007	65	.	.	640	1.4	P
Dec-26-2007	65	.	.	640	1.1	P
Jan-02-2008	65	.	.	730	1.4	P
Jan-09-2008	40	.	.	750	1.6	P
Jan-16-2008	60	.	.	960	2.3	P
Jan-23-2008	60	.	.	690	1.1	P
Jan-30-2008	60	.	.	850	2.1	P

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
Nov-07-2007	30	.	.	750	0.8	0.5
Nov-14-2007	20	.	.	770	0.6	0.6
Nov-20-2007	0	.	.	1,160	1.2	1.3
Nov-28-2007	0	.	.	1,310	0.9	1.7
Dec-05-2007	0	.	.	1,330	0.9	P
Dec-12-2007	0	.	.	930	0.6	P
Dec-19-2007	0	.	.	1,100	1.3	P
Dec-26-2007	0	.	.	1,370	1.2	P
Jan-02-2008	0	.	.	1,440	0.8	P
Jan-09-2008	0	.	.	630	0.4	P
Jan-16-2008	0	.	.	1,450	1.1	P
Jan-23-2008	0	.	.	190	<0.4	P
Jan-30-2008	0	.	.	1,010	1.0	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 <sup>††</sup>	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-07-2007	NA	.	.	1,130	0.8	1.1
Nov-14-2007	NA	.	.	1,100	0.5	1.1
Nov-20-2007	NA	.	.	1,120	0.7	1.1
Nov-28-2007	NA	.	.	1,100	0.5	1.1
Dec-05-2007	NA	.	.	1,190	0.6	P
Dec-12-2007	NA	.	.	1,110	0.5	P
Dec-19-2007	NA	.	.	1,140	0.8	P
Dec-26-2007	NA	.	.	1,200	0.8	P
Jan-02-2008	NA	.	.	1,400	0.7	P
Jan-09-2008	NA	.	.	1,600	0.5	P
Jan-16-2008	NA	.	.	1,570	0.8	P
Jan-23-2008	NA	.	.	1,470	0.8	P
Jan-30-2008	NA	.	.	1,580	0.9	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
Nov-07-2007	.	.	.	530	0.5	0.2
Nov-14-2007	.	.	.	600	0.8	0.2
Nov-20-2007	.	.	.	580	0.8	0.3
Nov-28-2007	.	.	.	560	0.8	0.2
Dec-05-2007	.	.	.	700	1.0	P
Dec-12-2007	.	.	.	600	1.0	P
Dec-19-2007	.	.	.	670	1.5	P
Dec-26-2007	.	.	.	780	1.4	P
Jan-02-2008	.	.	.	620	1.2	P
Jan-09-2008	.	.	.	710	1.0	P
Jan-16-2008	.	.	.	830	2.0	P
Jan-23-2008	.	.	.	670	0.9	P
Jan-30-2008	.	.	.	790	2.0	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
Nov-01-2007	166	15.3	6.8	1,380	<0.4	0.7
Nov-08-2007	137	15.0	6.6	1,650	0.4	0.8
Nov-15-2007	136	15.0	7.5	1,580	<0.4	0.9
Nov-20-2007	130	14.1	7.8	1,850	0.5	0.9
Nov-29-2007	146	9.7	8.0	1,610	<0.4	0.8
Dec-06-2007	127	11.3	6.7	1,940	<0.4	P
Dec-13-2007	169	7.1	7.0	1,880	<0.4	P
Dec-20-2007	142	11.2	7.0	2,010	0.5	P
Dec-27-2007	140	5.4	7.6	2,020	0.5	P
Jan-03-2008	125	7.1	7.8	2,200	0.4	P
Jan-10-2008	365	9.0	8.1	1,160	0.5	P
Jan-17-2008	158	7.7	6.9	1,830	2.0	P
Jan-24-2008	221	8.1	7.8	1,880	<0.4	P
Jan-31-2008	1,540	8.6	7.8	560	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
Nov-06-2007	.	.	.	NA	86.1	1.2
Nov-13-2007	.	.	.	NA	1.9	1.4
Nov-27-2007	.	.	.	NA	2.7	1.3
Dec-04-2007	.	.	.	NA	3.0	1.3
Dec-11-2007	.	.	.	NA	1.7	1.3
Jan-08-2008	.	.	.	NA	0.8	0.3
Jan-15-2008	.	.	.	NA	4.0	1.4
Jan-22-2008	.	.	.	835	1.6	0.4

This value is outside the historic range of selenium measurements for this site (n=104, max = 15.1 ug/L, median = 3.5 ug/L). Sample could not be reanalyzed by the laboratory. There was no corresponding spike at any other sites. There were no controlled releases from the Newman Wasteway to the river in November 2008.



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>
Nov-01-2007	1,340	15.5	7.4	480	<0.4	0.3
Nov-08-2007	1320	14.7	7.3	510	0.5	0.3
Nov-15-2007	845	15.0	8.0	900	1.3	0.6
Nov-20-2007	822	14.5	7.7	920	1.3	0.6
Nov-29-2007	802	10.2	8.0	950	1.0	0.6
Dec-06-2007	803	11.7	7.0	980	1.0	P
Dec-13-2007	926	7.8	7.3	990	1.6	P
Dec-20-2007	877	11.4	7.3	1,120	2.9	P
Dec-27-2007	813	6.8	7.8	1,130	2.1	P
Jan-03-2008	805	7.8	7.9	1,350	2.4	P
Jan-10-2008	936	9.1	7.8	970	1.7	P
Jan-17-2008	835	8.3	7.1	1,370	2.6	P
Jan-24-2008	863	8.5	7.9	1,350	2.5	P
Jan-31-2008	758	8.6	7.7	590	0.9	P

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from February 2007 to January 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	%	%	%	%	%	%
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
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

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from February 2007 to January 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
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
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

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from February 2007 to January 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	%	%	%	%	%	%
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
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

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from February 2007 to January 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
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
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

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from February 2007 to January 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 <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
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
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

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, November 2007 to January 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
Nov-05-2007	29	<0.4	3.5	<0.4	<0.4
Nov-07-2007	23	<0.4	3.5	<0.4	<0.4
Nov-09-2007	19	<0.4	3.4	0.7	<0.4
Nov-12-2007	26	<0.4	3.1	0.4	<0.4
Dec-03-2007	48	<0.4	6.9	<0.4	<0.4
Dec-05-2007	37	<0.4	4.1	<0.4	<0.4
Dec-07-2007	35	<0.4	5.5	<0.4	<0.4
Jan-14-2008	74	<0.4	9.7	<0.4	<0.4
Jan-16-2008	75	<0.4	12	0.5	0.9**
Jan-18-2008	72	<0.4	14	0.4	0.6

**Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, November 2007 to January 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
Nov-05-2007	25	33	32	61	3
Nov-07-2007	20	32	29	72	5
Nov-09-2007	34	45	57	94	7
Nov-12-2007	28	24	26	38	1
Dec-03-2007	24	13	18	22	7
Dec-05-2007	23	23	22	65	5
Dec-07-2007	30	28	30	73	21
Jan-14-2008	16	43	41	28	22
Jan-16-2008	40	26	25	35	31
Jan-18-2008	26	25	27	40	19

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