

# GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

**July 2006**

November 3, 2006

### 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), July 2006.**

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>
Jul-01-2006	46	4,610
Jul-02-2006	47	4,430
Jul-03-2006	45	4,390
Jul-04-2006	44	4,470
Jul-05-2006	43	4,510
Jul-06-2006	46	4,310
Jul-07-2006	43	4,460
Jul-08-2006	43	4,560
Jul-09-2006	47	4,610
Jul-10-2006	46	4,290
Jul-11-2006	40	4,460
Jul-12-2006	38	4,910
Jul-13-2006	34	4,790
Jul-14-2006	32	4,760
Jul-15-2006	34	4,380
Jul-16-2006	34	4,590
Jul-17-2006	38	4,770
Jul-18-2006	37	4,730
Jul-19-2006	38	4,980
Jul-20-2006	41	4,660
Jul-21-2006	39	4,350
Jul-22-2006	39	4,060
Jul-23-2006	39	3,800
Jul-24-2006	39	4,240
Jul-25-2006	40	4,570
Jul-26-2006	38	4,480
Jul-27-2006	38	4,920
Jul-28-2006	38	4,600
Jul-29-2006	34	4,820
Jul-30-2006	33	4,840
Jul-31-2006	37	4,580
Mean	40	4,550

**Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), July 2006.**

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
Jul-01-2006	44	27.8	8.4	4,860	48.9	11.5
Jul-02-2006	46	28.2	8.5	4,920	50.8	12.6
Jul-03-2006	47	27.8	7.8	4,640	48.3	12.2
Jul-04-2006	45	27.5	8.0	4,600	47.5	11.6
Jul-05-2006	43	27.3	7.8	4,530	47.3	11.1
Jul-06-2006	43	26.7	7.6	4,320	43.2	10.1
Jul-07-2006	46	26.3	7.5	4,430	44.1	11.0
Jul-08-2006	45	27.0	7.2	4,370	44.1	10.6
Jul-09-2006	44	28.1	7.0	4,160	41.8	9.9
Jul-10-2006	47	28.9	6.8	4,120	41.7	10.6
Jul-11-2006	46	28.5	7.4	4,380	43.0	10.6
Jul-12-2006	40	27.6	7.4	4,520	47.6	10.2
Jul-13-2006	38	27.7	6.9	4,240	45.1	9.3
Jul-14-2006	35	28.5	7.3	4,220	39.1	7.3
Jul-15-2006	32	28.4	7.8	4,500	41.8	7.2
Jul-16-2006	33	28.5	8.2	4,830	48.3	8.7
Jul-17-2006	34	29.2	8.4	4,760	48.0	8.9
Jul-18-2006	37	29.8	8.9	4,900	46.8	9.4
Jul-19-2006	38	30.3	8.8	5,090	50.6	10.2
Jul-20-2006	38	30.0	8.6	4,860	49.2	10.2
Jul-21-2006	41	30.6	7.7	4,480	46.3	10.2
Jul-22-2006	40	31.9	8.0	4,660	46.0	9.9
Jul-23-2006	39	32.8	7.9	4,670	45.7	9.7
Jul-24-2006	40	33.1	7.6	4,340	42.5	9.1
Jul-25-2006	40	33.3	7.2	4,290	41.0	8.8
Jul-26-2006	40	32.9	7.3	4,140	39.2	8.4
Jul-27-2006	38	31.7	7.1	4,200	37.8	7.7
Jul-28-2006	37	30.5	7.5	4,400	40.2	8.0
Jul-29-2006	38	29.4	7.4	4,450	40.2	8.3
Jul-30-2006	34	28.5	7.5	4,540	37.7	7.0
Jul-31-2006	34	27.9	8.0	4,830	45.2	8.2
Mean	40	29.3	7.7	4,520	44.5	9.6
Total Acre-feet	2,460					
Total (lbs)						298

<b>Load Limitation for July 2006 (lbs)</b>	<b>356</b>
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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.

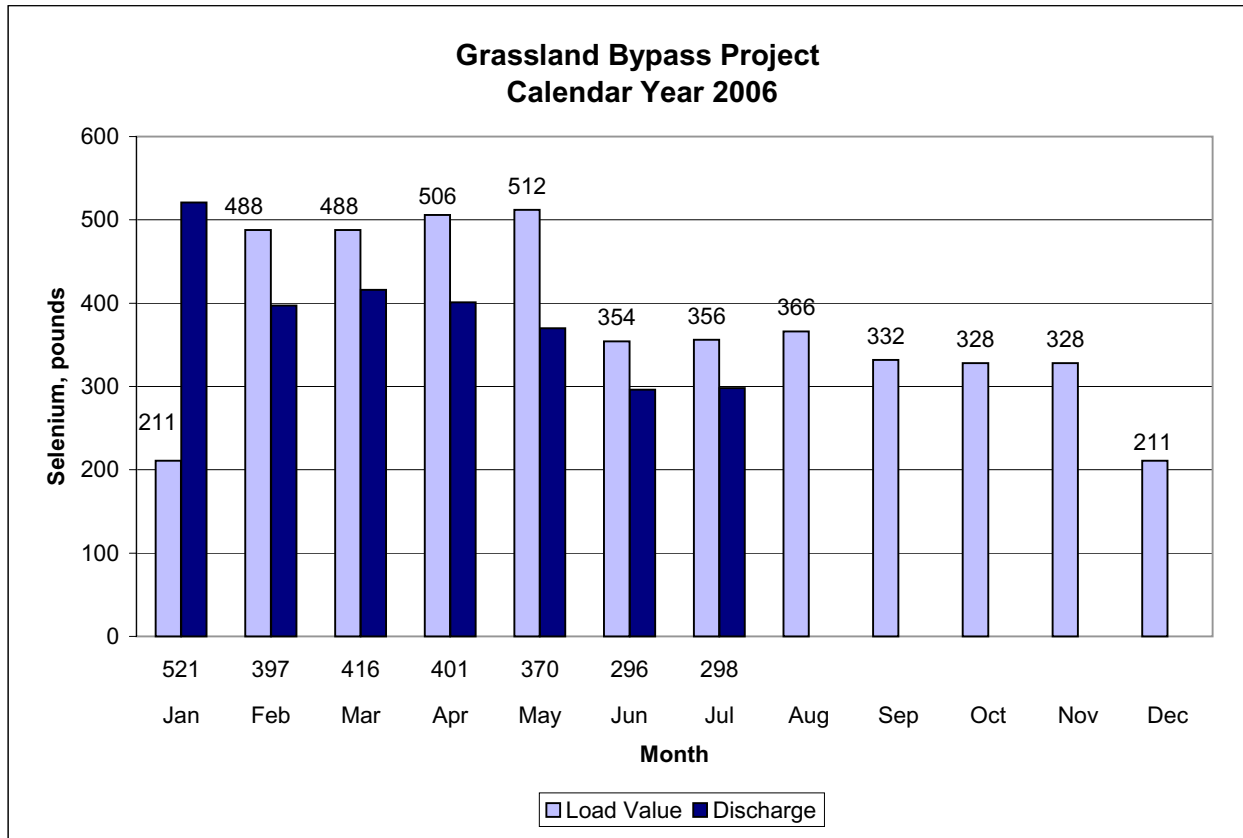


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), July 2006.

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
Jul-01-2006	109	27.0	2,770
Jul-02-2006	101	27.4	2,920
Jul-03-2006	99	27.0	2,810
Jul-04-2006	98	26.7	2,700
Jul-05-2006	93	26.4	2,670
Jul-06-2006	79	25.8	2,910
Jul-07-2006	78	25.7	3,190
Jul-08-2006	82	26.6	2,860
Jul-09-2006	90	27.8	2,460
Jul-10-2006	98	28.4	2,350
Jul-11-2006	91	27.7	2,630
Jul-12-2006	78	26.5	2,740
Jul-13-2006	75	27.1	2,540
Jul-14-2006	80	27.9	2,180
Jul-15-2006	89	27.6	2,000
Jul-16-2006	99	27.9	2,090
Jul-17-2006	107	28.4	2,010
Jul-18-2006	107	29.2	2,110
Jul-19-2006	116	29.5	2,050
Jul-20-2006	122	29.3	2,040
Jul-21-2006	97	30.1	2,450
Jul-22-2006	94	31.4	2,460
Jul-23-2006	88	32.3	2,580
Jul-24-2006	86	32.5	2,500
Jul-25-2006	95	32.5	2,380
Jul-26-2006	95	31.7	2,360
Jul-27-2006	90	30.6	2,290
Jul-28-2006	94	29.3	2,350
Jul-29-2006	110	28.3	2,170
Jul-30-2006	115	27.5	1,910
Jul-31-2006	121	26.8	1,980
Mean	96	28.5	2,430

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), July 2006.

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
Jul-01-2006	189	26.4	894
Jul-02-2006	174	26.6	845
Jul-03-2006	162	26.5	817
Jul-04-2006	175	26.2	813
Jul-05-2006	190	25.7	777
Jul-06-2006	198	25.0	818
Jul-07-2006	193	24.8	808
Jul-08-2006	186	26.3	843
Jul-09-2006	187	27.8	820
Jul-10-2006	197	28.2	805
Jul-11-2006	191	27.3	812
Jul-12-2006	168	25.9	898
Jul-13-2006	175	26.1	900
Jul-14-2006	198	27.5	812
Jul-15-2006	201	27.4	812
Jul-16-2006	198	27.5	852
Jul-17-2006	211	28.0	879
Jul-18-2006	227	28.4	861
Jul-19-2006	205	28.9	907
Jul-20-2006	187	28.7	959
Jul-21-2006	183	29.6	1,010
Jul-22-2006	188	30.9	994
Jul-23-2006	207	32.1	906
Jul-24-2006	231	32.0	849
Jul-25-2006	226	31.8	759
Jul-26-2006	193	31.0	793
Jul-27-2006	186	29.7	782
Jul-28-2006	193	28.2	763
Jul-29-2006	206	27.3	757
Jul-30-2006	215	26.5	740
Jul-31-2006	229	26.0	735
Mean	196	27.9	840



Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), July 2006.

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
Jul-01-2006	6,210	24.1	198	0.4
Jul-02-2006	4,960	24.5	286	0.6
Jul-03-2006	4,050	24.4	341	0.9
Jul-04-2006	3,650	24.3	352	0.9
Jul-05-2006	3,610	23.9	309	0.8
Jul-06-2006	3,610	23.8	280	0.7
Jul-07-2006	3,560	23.6	272	0.7
Jul-08-2006	3,170	24.2	352	0.8
Jul-09-2006	2,370	25.2	499	1.0
Jul-10-2006	1,840	25.9	713	1.4
Jul-11-2006	1,600	25.5	829	1.5
Jul-12-2006	1,620	24.5	887	1.6
Jul-13-2006	1,610	24.6	778	1.4
Jul-14-2006	1,570	25.2	799	1.4
Jul-15-2006	1,540	25.1	778	1.4
Jul-16-2006	1,510	25.2	776	1.2
Jul-17-2006	1,510	25.6	733	1.2
Jul-18-2006	1,460	26.3	755	1.5
Jul-19-2006	1,420	26.8	755	1.3
Jul-20-2006	1,340	26.7	787	1.5
Jul-21-2006	1,340	27.0	871	1.9
Jul-22-2006	1,310	28.0	863	1.8
Jul-23-2006	1,170	29.2	921	1.8
Jul-24-2006	1,100	29.7	1,060	1.9
Jul-25-2006	1,190	30.1	1,020	2.3
Jul-26-2006	1,250	29.8	824	1.5
Jul-27-2006	1,240	28.3	809	1.6
Jul-28-2006	1,240	27.0	785	1.4
Jul-29-2006	1,250	26.2	781	1.4
Jul-30-2006	1,290	25.6	772	1.5
Jul-31-2006	1,340	24.9	715	1.3
Mean	2,130	26.0	670	1.3

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	.	.	.
May-03-2006	34	.	.	5,700	130	.	.	.
May-10-2006	37	.	.	4,940	130	.	.	.
May-17-2006	26	.	.	5,230	150	.	.	.
May-24-2006	39	.	.	4,420	170	.	.	.
May-31-2006	30	.	.	4,810	100	.	.	.
Jun-07-2006	39	.	.	4,640	110	.	.	.
Jun-14-2006	50	.	.	4,340	160	.	.	.
Jun-21-2006	41	.	.	4,070	220	.	.	.
Jun-28-2006	40	.	.	4,740	150	.	.	.
Jul-05-2006	43	.	.	4,200	160	.	.	.
Jul-12-2006	38	.	.	4,880	120	.	.	.
Jul-19-2006	38	.	.	4,690	130	.	.	.
Jul-26-2006	38	.	.	3,940	320	.	.	.

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
May-02-2006	32	.	.	5,760	.	96.4	.	9.2
May-09-2006	35	.	.	4,970	.	79.0	.	6.9
May-16-2006	26	.	.	4,230	.	47.8	.	7.7
May-23-2006	48	.	.	4,510	.	48.1	.	7.9
May-30-2006	30	.	.	4,650	.	54.2	.	8.0
Jun-06-2006	37	.	.	4,810	.	56.4	.	8.0
Jun-13-2006	52	.	.	4,210	.	42.2	.	6.8
Jun-20-2006	44	.	.	4,030	.	34.8	.	6.9
Jun-27-2006	41	.	.	4,680	.	43.0	.	9.3
Jul-04-2006	44	.	.	4,480	.	43.0	.	7.5
Jul-11-2006	40	.	.	4,290	.	43.3	.	7.1
Jul-18-2006	37	.	.	4,700	.	48.4	.	8.1
Jul-25-2006	40	.	.	4,330	.	41.6	.	7.2

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
May-04-2006	35	20.7	8.8	5,630	72	93.0	8.2
May-11-2006	38	22.7	8.1	4,310	49	64.7	6.3
May-18-2006	27	25.9	8.4	3,480	36	33.7	6.2
May-25-2006	41	21.6	8.0	3,980	58	41.6	6.5
Jun-01-2006	31	23.0	8.7	4,690	60	53.4	7.7
Jun-08-2006	39	24.7	8.7	4,750	41	50.5	7.6
Jun-15-2006	50	22.4	8.3	4,280	57	45.0	6.8
Jun-22-2006	41	24.6	8.5	3,740	41	30.7	7.6
Jun-29-2006	40	26.4	8.3	4,830	35	42.4	9.6
Jul-06-2006	43	24.7	8.4	4,060	58	37.8	6.0
Jul-13-2006	38	25.7	8.1	4,260	48	44.6	7.8
Jul-20-2006	38	28.2	8.6	4,830	50	49.4	8.1
Jul-27-2006	38	29.9	8.1	4,330	24	38.8	7.3

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
May-04-2006	75	18.9	8.1	797	.	0.6	0.8
May-11-2006	63	22.7	7.9	892	.	0.5	0.8
May-18-2006	67	24.9	7.8	916	.	0.6	0.9
May-25-2006	134	20.7	7.7	657	.	0.7	0.8
Jun-01-2006	86	22.2	8.0	706	.	0.6	0.7
Jun-08-2006	81	23.0	7.8	1,100	.	0.4	1.1
Jun-15-2006	57	21.5	7.9	898	.	0.5	1.0
Jun-22-2006	42	24.0	8.3	1,230	.	0.7	1.3
Jun-29-2006	54	25.2	8.3	868	.	0.6	1.2
Jul-06-2006	36	22.9	8.1	1,500	.	0.9	1.2
Jul-13-2006	37	NA	NA	NA	.	1.2	1.3
Jul-20-2006	84	27.6	8.4	997	.	0.9	1.3
Jul-27-2006	52	27.7	8.0	956	.	1.2	1.2

\*\* 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
May-04-2006	110	19.6	8.3	2,120	17.3	2.5
May-11-2006	101	22.6	8.4	2,260	16.4	2.3
May-18-2006	94	25.7	8.2	2,210	9.0	2.3
May-25-2006	175	21.0	8.0	1,600	10.7	2.2
Jun-01-2006	117	22.3	8.0	1,590	11.4	1.8
Jun-08-2006	120	24.9	8.4	2,730	23.8	4.9
Jun-15-2006	107	22.0	8.3	2,380	17.8	3.5
Jun-22-2006	83	24.2	8.4	2,670	15.6	4.7
Jun-29-2006	94	26.2	8.3	2,820	13.7	4.0
Jul-06-2006	79	23.8	8.4	3,000	22.0	4.3
Jul-13-2006	75	25.5	8.3	3,050	24.2	5.4
Jul-20-2006	122	27.7	8.5	2,350	16.4	3.5
Jul-27-2006	90	28.7	8.1	2,470	17.0	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
May-01-2006	.	8.5	2,640	24	29.2	3.9
May-11-2006	.	8.7	2,570	24	27.2	4.0
May-15-2006	.	8.6	2,550	24	26.3	3.8
May-25-2006	.	8.4	1,610	39	10.4	2.2
Jun-01-2006	.	8.3	1,720	41	11.2	2.0
Jun-06-2006	.	8.7	2,420	45	18.8	3.5
Jun-12-2006	.	8.6	2,460	41	19.6	3.7
Jun-19-2006	.	9.0	3,390	76	22.0	5.3
Jun-26-2006	.	8.7	2,040	47	13.0	3.3
Jul-10-2006	.	8.6	2,660	49	19.6	4.7
Jul-18-2006	.	8.8	NA	48	21.4	5.3
Jul-24-2006	.	8.0	2,750	50	20.1	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
May-04-2006	334	19.2	7.5	1,020	0.5	0.7
May-11-2006	328	21.9	7.2	665	<0.4	0.3
May-18-2006	262	24.7	7.3	827	0.4	0.4
May-25-2006	324	21.1	7.0	750	0.5	0.5
Jun-01-2006	234	22.2	7.4	836	0.6	0.4
Jun-08-2006	226	22.8	7.4	741	<0.4	0.4
Jun-15-2006	185	21.5	7.5	797	0.5	0.4
Jun-22-2006	187	24.0	7.4	897	<0.4	0.4
Jun-29-2006	209	25.1	7.5	850	<0.4	0.5
Jul-06-2006	198	23.5	7.5	871	0.5	0.4
Jul-13-2006	175	24.2	7.7	921	0.7	0.5
Jul-20-2006	187	27.0	7.6	1,030	0.6	0.6
Jul-27-2006	186	28.1	7.7	924	0.7	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
May-03-2006	5	.	.	108	0.4	0.1
May-10-2006	50	.	.	105	0.5	0.1
May-17-2006	65	.	.	107	0.5	<0.1
May-24-2006	65	.	.	106	0.5	0.1
May-31-2006	40	.	.	108	0.5	0.1
Jun-07-2006	30	.	.	106	0.6	0.3
Jun-14-2006	15	.	.	226	0.4	0.4
Jun-21-2006	15	.	.	104	<0.4	0.1
Jun-28-2006	15	.	.	112	<0.4	0.1
Jul-05-2006	15	.	.	NA	0.9	0.3
Jul-12-2006	15	.	.	347	0.9	0.3
Jul-19-2006	15	.	.	526	1.1	0.5
Jul-26-2006	15	.	.	334	0.9	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
May-03-2006	0	.	.	81	0.5	<0.1
May-10-2006	50	.	.	100	<0.4	0.1
May-17-2006	75	.	.	100	0.4	<0.1
May-24-2006	75	.	.	82	<0.4	<0.1
May-31-2006	50	.	.	82	0.6	<0.1
Jun-07-2006	70	.	.	84	<0.4	0.2
Jun-14-2006	45	.	.	54	<0.4	0.1
Jun-21-2006	45	.	.	50	<0.4	<0.1
Jun-28-2006	45	.	.	57	<0.4	<0.1
Jul-05-2006	45	.	.	NA	0.4	0.1
Jul-12-2006	45	.	.	267	0.9	0.2
Jul-19-2006	45	.	.	383	0.8	0.3
Jul-26-2006	45	.	.	292	0.7	0.2

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
May-03-2006	0	.	.	124	<0.4	0.1
May-10-2006	20	.	.	105	<0.4	<0.1
May-17-2006	20	.	.	281	0.6	0.2
May-24-2006	20	.	.	188	0.5	0.1
May-31-2006	20	.	.	217	0.5	0.2
Jun-07-2006	95	.	.	132	<0.4	0.2
Jun-14-2006	20	.	.	470	0.8	0.5
Jun-21-2006	0	.	.	1,050	1.7	1.0
Jun-28-2006	0	.	.	1,230	1.6	1.3
Jul-05-2006	0	.	.	1,450	2.3	1.4
Jul-12-2006	0	.	.	644	1.3	1.1
Jul-19-2006	0	.	.	1,250	1.2	1.0
Jul-26-2006	15	.	.	1,740	2.3	1.9

**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
May-03-2006	108	.	.	532	0.8	0.7
May-10-2006	103	.	.	507	0.7	0.6
May-17-2006	107	.	.	363	0.6	0.4
May-24-2006	110	.	.	421	0.5	0.6
May-31-2006	94	.	.	537	0.8	0.6
Jun-07-2006	NA	.	.	484	0.8	0.8
Jun-14-2006	NA	.	.	418	0.7	0.7
Jun-21-2006	NA	.	.	571	0.9	0.9
Jun-28-2006	NA	.	.	566	0.7	1.2
Jul-05-2006	NA	.	.	629	1.3	1.2
Jul-12-2006	NA	.	.	632	1.3	1.2
Jul-19-2006	NA	.	.	703	1.5	1.6
Jul-26-2006	NA	.	.	672	1.2	0.9

**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
May-03-2006	.	.	.	66	0.5	<0.1
May-10-2006	.	.	.	70	<0.4	<0.1
May-17-2006	.	.	.	76	<0.4	<0.1
May-24-2006	.	.	.	86	<0.4	<0.1
May-31-2006	.	.	.	89	0.6	<0.1
Jun-07-2006	.	.	.	85	0.4	0.1
Jun-14-2006	.	.	.	73	<0.4	0.1
Jun-21-2006	.	.	.	58	<0.4	<0.1
Jun-28-2006	.	.	.	87	<0.4	0.1
Jul-05-2006	.	.	.	158	1.3	0.2
Jul-12-2006	.	.	.	250	1.1	0.2
Jul-19-2006	.	.	.	234	0.7	0.2
Jul-26-2006	.	.	.	272	0.7	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
May-04-2006	10,300	18.8	NA	84	NA	NA
May-11-2006	9,660	20.9	NA	72	NA	NA
May-18-2006	8,220	23.2	NA	72	NA	NA
May-25-2006	11,200	20.3	NA	64	NA	NA
Jun-01-2006	7,400	21.4	NA	62	NA	NA
Jun-08-2006	7,930	22.5	NA	54	NA	NA
Jun-15-2006	7,050	20.9	NA	53	NA	NA
Jun-22-2006	4,060	24.0	7.3	100	<0.4	<0.1
Jun-29-2006	5,340	24.0	NA	101	NA	NA
Jul-06-2006	2,380	23.7	7.3	112	<0.4	<0.1
Jul-13-2006	463	25.6	7.3	1,090	0.5	0.4
Jul-20-2006	363	27.8	7.3	1,270	0.4	0.5
Jul-27-2006	341	29.3	7.6	1,090	0.6	0.4

**Note:**

Site G was flooded and water from the Mud Slough (north) overflow was comingling with water from the San Joaquin River.

Site G is intended to represent the San Joaquin River upstream of inflows from Mud Slough (north).

However, due to the flooding, it was impossible to collect representative samples in April and May.

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
May-02-2006	.	.	.	NA	<0.4	<0.1
May-09-2006	.	.	.	NA	<0.4	0.1
May-16-2006	.	.	.	NA	<0.4	0.1
May-23-2006	.	.	.	NA	0.4	0.5
Jun-06-2006	.	.	.	NA	<0.4	0.0
Jun-13-2006	.	.	.	NA	<0.4	0.1
Jun-27-2006	.	.	.	NA	<0.4	0.1
Jul-18-2006	.	.	.	NA	3.6	1.1
Jul-25-2006	.	.	.	NA	4.1	1.2



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
May-04-2006	15,400	19.4	7.4	149	0.5	0.1
May-11-2006	14100	20.1	7.2	135	<0.4	0.2
May-18-2006	13,300	22.3	7.1	124	<0.4	0.1
May-25-2006	14,600	19.6	7.3	113	<0.4	<0.1
Jun-01-2006	11,000	21.2	7.9	140	0.9	0.1
Jun-08-2006	10,200	22.7	7.5	113	<0.4	0.1
Jun-15-2006	10,200	20.3	7.7	121	<0.4	0.1
Jun-22-2006	6,500	21.9	7.5	166	<0.4	0.1
Jun-29-2006	7,880	23.9	7.4	131	<0.4	0.1
Jul-06-2006	3,610	23.4	7.3	272	0.6	0.2
Jul-13-2006	1,610	24.2	7.7	783	1.4	0.5
Jul-20-2006	1,340	26.1	7.9	810	1.5	0.5
Jul-27-2006	1,240	27.6	7.9	802	1.6	0.5

**Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from August 2005 to July 2006. 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	%	%	%	%	%	%
Aug-2005	93	95	95	95	100	98
Sep-2005	100	100	100	98	93	95
Oct-2005	90	93	98	100	90	100
Nov-2006	98	95	90	98	95	98
Dec-2006	95	28*	55*	63	95	98
Jan-2006	100	95	95	100	73	100
Feb-2006	98	95	98	100	100	100
Mar-2006	93	95	98	90	98	95
Apr-2006	90	95	98	100	95	100
May-2006	95	100	98	100	88	100
Jun-2006	93	100	98	98	98	100
Jul-2006	83	98	100	100	95	95

**Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from August 2005 to July 2006. 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
Aug-2005	0.52	0.56	0.60	0.51	0.48	0.42
Sep-2005	0.54	0.04	0.45	0.45	0.42	0.38
Oct-2005	0.38	0.41	0.41	0.36	0.39	0.40
Nov-2006	0.31	0.32	0.30	0.29	0.31	0.31
Dec-2006	0.36	0.12*	0.23	0.25	0.33	0.31
Jan-2006	0.47	0.43	0.46	0.43	0.35	0.36
Feb-2006	0.39	0.39	0.42	0.42	0.31	0.28
Mar-2006	0.49	0.45	0.45	0.45	0.46	0.40
Apr-2006	0.31	0.38	0.36	0.36	0.29	0.28
May-2006	0.38	0.43	0.39	0.58	0.34	0.33
Jun-2006	0.45*	0.41*	0.46*	0.49	0.54	0.41
Jul-2006	0.34	0.36	0.38	0.56	0.36	0.35

**Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from August 2005 to July 2006. 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	%	%	%	%	%	%
Aug-2005	100	100	100	80	80	70†
Sep-2005	90	90	100	80	20†	30†
Oct-2005	30*	80	78	100	90	80
Nov-2006	80	80	100	90	100	100
Dec-2006	100	80	70	70	80	100
Jan-2006	90	90	80	80	80	100
Feb-2006	100	100	100	100	100	50†
Mar-2006	100	90	80	80	80	100
Apr-2006	80	90	100	90	100	100
May-2006	100	90	100	100	100	100
Jun-2006	90	90	100	90	90	80
Jul-2006	80	100	80	90	80	100

**Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from August 2005 to July 2006. 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
Aug-2005	29.3	36.1	32.5	29.4	22.1	21.0
Sep-2005	11.4	11.0	12.0	10.8	5.3†††	7.8†††
Oct-2005	11.7*	28.3	23.9	25.7	24.5	22.6
Nov-2006	17.8	16.1	16.7	15.7	16.9	17.0
Dec-2006	19.0	17.4	14.9	13.4	19.8	22.4
Jan-2006	32.2	29.6	33.1	24.7	25.3	26.6
Feb-2006	30.7	34.8	34.9	30.8	32.0	13.2
Mar-2006	39.0	33.0	28.2	28.8	31.5	33.9
Apr-2006	43.6	42.7	43.5	39.9	32.7	37.4
May-2006	49.2	28.1	27.3	26.4	22.9	18.2
Jun-2006	26.2	25.9	29.9	26.7	20.9	19.1
Jul-2006	35.8	42.3	42.1	35.4	32.7	29.3

**Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from August 2005 to July 2006. 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
Aug-2005	6.1*	21.0	7.3*	22.9	16.7	18.2
Sep-2005	21.5	23.1	25.0	28.3	21.6	22.4
Oct-2005	18.3	14.8	17.1	17.4	9.1	17.5
Nov-2006	17.7	22.3	22.8	19.0	15.6	18.1
Dec-2006	13.8*	26.9	37.2	21.1	22.1	23.4
Jan-2006	8.9*	27.5	29.5	24.3	22.5	25.5
Feb-2006	8.3*	12.6	5.9*	1.7*	12.8	23.8
Mar-2006	17.4	24.2	25.0	24.0	15.4	23.9
Apr-2006	9.9	21.5	18.8	18.6	12.7	19.7
May-2006	20.6	11.5*	15.9	13.6	15.4	16.4
Jun-2006	12.0	9.7	10.0	10.2	11.3	16.0
Jul-2006	19.0	14.4	22.5	17.9	9.5	14.0

**Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, May 2006 to July 2006.**

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
May-08-2006	75	0.4	13	0.4	<0.4
May-10-2006	67	0.5	9.4	<0.4	<0.4
May-12-2006	65	0.4	15	<0.4	<0.4
Jun-05-2006	55	0.7	9.0	0.5	<0.4
Jun-07-2006	55	0.6	9.6	0.4	0.5
Jun-09-2006	52	0.8	10	0.5	0.7
Jul-17-2006	45	1.0	16	0.5	0.4
Jul-19-2006	51	1.1	17	0.4	<0.4
Jul-21-2006	43	1.0	23	0.5	<0.4

**Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, May 2006 to July 2006.**

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
May-08-2006	61	94	68	70	8
May-10-2006	60	68	58	88	13
May-12-2006	52	88	85	110	7
Jun-05-2006	42	127	105	158	13
Jun-07-2006	33	102	53	166	20
Jun-09-2006	68	137	57	273	26
Jul-17-2006	13	NA	100	172	52
Jul-19-2006	22	232	115	159	72
Jul-21-2006	45	154	138	169	36

**Table 27. Explanations of footnotes and agency abbreviations.**

<b>Footnote</b>	<b>Explanation</b>
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.
†	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