

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

December 2005

April 7, 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





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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), December 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Dec-01-2005	17	4,870
Dec-02-2005	17	4,780
Dec-03-2005	16	4,850
Dec-04-2005	17	5,100
Dec-05-2005	16	5,090
Dec-06-2005	15	5,070
Dec-07-2005	17	4,990
Dec-08-2005	16	4,940
Dec-09-2005	11	5,230
Dec-10-2005	21	3,270
Dec-11-2005	19	2,300
Dec-12-2005	16	3,360
Dec-13-2005	14	3,520
Dec-14-2005	15	3,550
Dec-15-2005	17	2,980
Dec-16-2005	17	3,150
Dec-17-2005	15	3,540
Dec-18-2005	13	3,790
Dec-19-2005	13	3,920
Dec-20-2005	11	4,140
Dec-21-2005	10	4,440
Dec-22-2005	10	4,620
Dec-23-2005	12	4,740
Dec-24-2005	19	4,480
Dec-25-2005	20	4,330
Dec-26-2005	20	4,530
Dec-27-2005	20	4,570
Dec-28-2005	20	4,520
Dec-29-2005	21	4,480
Dec-30-2005	24	4,480
Dec-31-2005	24	4,340
Mean	17	4,260

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), December 2005.

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*	USGS	CVRWQCB	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Dec-01-2005	22	12.1	NA	4,610	58.2	6.7
Dec-02-2005	24	12.3	7.6	4,600	55.8	7.2
Dec-03-2005	25	11.1	7.4	4,490	55.5	7.6
Dec-04-2005	25	10.1	6.9	4,210	40.3	5.4
Dec-05-2005	25	10.0	6.9	4,200	29.3	4.0
Dec-06-2005	25	9.8	7.6	4,400	42.2	5.6
Dec-07-2005	24	9.8	7.9	4,400	53.3	7.0
Dec-08-2005	25	10.4	7.3	4,400	50.1	6.7
Dec-09-2005	24	10.5	8.0	4,530	48.7	6.4
Dec-10-2005	21	10.4	8.0	4,530	48.4	5.5
Dec-11-2005	27	10.5	8.0	4,520	49.5	7.2
Dec-12-2005	28	10.6	7.7	4,490	53.6	8.0
Dec-13-2005	25	10.4	7.9	4,460	52.2	6.9
Dec-14-2005	23	10.0	8.4	4,490	39.7	4.9
Dec-15-2005	23	9.8	6.8	3,700	31.8	3.9
Dec-16-2005	25	9.5	4.6	3,040	21.8	3.0
Dec-17-2005	25	9.5	5.2	3,290	22.5	3.0
Dec-18-2005	25	9.5	5.4	3,400	22.4	3.1
Dec-19-2005	23	11.7	5.7	3,450	22.6	2.8
Dec-20-2005	22	11.9	5.0	3,120	20.4	2.4
Dec-21-2005	21	12.0	4.8	3,060	19.8	2.3
Dec-22-2005	25	11.3	5.2	3,210	19.8	2.6
Dec-23-2005	21	12.8	5.6	3,430	21.2	2.4
Dec-24-2005	21	13.3	5.6	3,610	20.7	2.3
Dec-25-2005	21	14.1	6.1	3,710	21.3	2.4
Dec-26-2005	26	14.4	6.1	3,800	21.4	3.0
Dec-27-2005	31	14.5	6.7	4,050	23.0	3.8
Dec-28-2005	30	14.3	7.1	4,280	33.0	5.4
Dec-29-2005	29	14.0	6.9	4,270	45.6	7.1
Dec-30-2005	28	13.0	7.2	4,300	53.6	8.0
Dec-31-2005	30	12.6	7.0	4,390	56.8	9.2
Mean	25	11.5	6.7	4,010	37.2	5.0
Total Acre-feet	1,520					
Total (lbs)						156

Load Limitation for December 2005 (lbs)	211
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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.

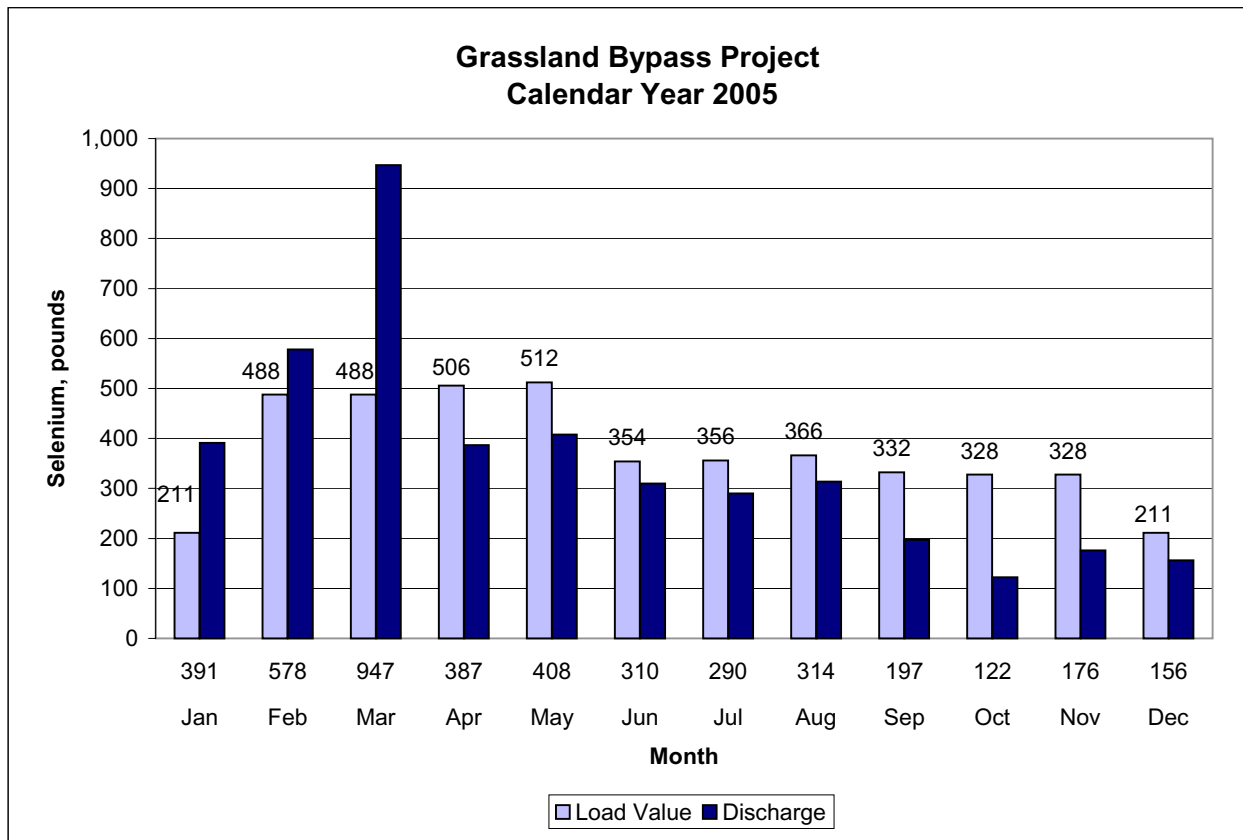


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), December 2005.

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
Dec-01-2005	196	12.1	1,750
Dec-02-2005	214	12.2	1,750
Dec-03-2005	223	10.6	1,720
Dec-04-2005	221	9.2	1,700
Dec-05-2005	218	8.8	1,700
Dec-06-2005	202	8.7	1,780
Dec-07-2005	192	8.9	1,830
Dec-08-2005	187	10.1	1,860
Dec-09-2005	185	10.4	1,870
Dec-10-2005	180	10.0	1,840
Dec-11-2005	181	10.1	1,950
Dec-12-2005	183	10.3	1,960
Dec-13-2005	181	10.0	1,920
Dec-14-2005	181	9.3	1,880
Dec-15-2005	182	8.9	1,860
Dec-16-2005	186	8.6	1,730
Dec-17-2005	186	8.8	1,770
Dec-18-2005	206	10.0	1,760
Dec-19-2005	235	11.6	1,670
Dec-20-2005	248	11.8	1,610
Dec-21-2005	259	11.7	1,570
Dec-22-2005	254	12.6	1,610
Dec-23-2005	250	13.1	1,640
Dec-24-2005	241	13.9	1,690
Dec-25-2005	237	13.9	1,770
Dec-26-2005	260	13.8	1,780
Dec-27-2005	271	13.4	1,770
Dec-28-2005	270	13.1	1,820
Dec-29-2005	276	12.0	1,820
Dec-30-2005	266	11.6	1,870
Dec-31-2005	270	12.2	1,950
Mean	221	11.0	1,780

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), December 2005.

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
Dec-01-2005	233	11.9	1,300
Dec-02-2005	241	12.3	1,300
Dec-03-2005	260	10.9	1,270
Dec-04-2005	250	9.7	1,350
Dec-05-2005	244	9.1	1,320
Dec-06-2005	249	8.7	1,320
Dec-07-2005	240	8.7	1,390
Dec-08-2005	238	9.8	1,420
Dec-09-2005	229	10.2	1,500
Dec-10-2005	214	10.0	1,540
Dec-11-2005	199	9.9	1,610
Dec-12-2005	185	10.0	1,650
Dec-13-2005	163	10.0	1,760
Dec-14-2005	153	9.5	1,800
Dec-15-2005	142	9.5	1,870
Dec-16-2005	126	9.8	1,930
Dec-17-2005	117	10.2	2,060
Dec-18-2005	122	11.1	2,040
Dec-19-2005	144	12.5	1,860
Dec-20-2005	160	12.2	1,680
Dec-21-2005	159	12.1	1,710
Dec-22-2005	159	12.9	1,740
Dec-23-2005	166	13.4	1,740
Dec-24-2005	173	14.2	1,790
Dec-25-2005	171	14.1	1,790
Dec-26-2005	179	14.0	1,770
Dec-27-2005	202	13.5	1,660
Dec-28-2005	216	13.2	1,640
Dec-29-2005	218	12.1	1,660
Dec-30-2005	216	11.8	1,650
Dec-31-2005	223	12.2	1,650
Mean	193	11.3	1,640

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), December 2005.

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
Dec-01-2005	785	12.0	1,160	1.7
Dec-02-2005	827	12.3	1,160	1.7
Dec-03-2005	883	11.0	1,100	1.5
Dec-04-2005	924	9.7	1,090	1.6
Dec-05-2005	979	9.2	1,010	1.5
Dec-06-2005	964	8.9	1,010	0.9
Dec-07-2005	959	8.8	1,020	0.9
Dec-08-2005	946	9.7	1,040	1.5
Dec-09-2005	940	10.3	1,080	1.6
Dec-10-2005	909	10.2	1,090	1.7
Dec-11-2005	887	10.3	1,130	1.6
Dec-12-2005	874	10.4	1,180	1.5
Dec-13-2005	875	10.0	1,170	1.8
Dec-14-2005	841	9.5	1,200	1.7
Dec-15-2005	824	9.2	1,230	1.7
Dec-16-2005	807	9.2	1,220	1.4
Dec-17-2005	794	9.3	1,240	1.1
Dec-18-2005	821	10.1	1,230	1.0
Dec-19-2005	854	11.3	1,230	1.0
Dec-20-2005	947	11.7	1,140	0.9
Dec-21-2005	964	11.6	1,120	1.0
Dec-22-2005	972	12.3	1,120	0.8
Dec-23-2005	1,010	13.0	1,110	0.7
Dec-24-2005	1,080	13.5	1,050	0.6
Dec-25-2005	1,320	13.5	911	0.6
Dec-26-2005	1,660	13.3	699	0.6
Dec-27-2005	1,890	12.9	629	0.5
Dec-28-2005	2,270	12.7	562	0.4
Dec-29-2005	2,770	12.0	469	<0.4
Dec-30-2005	3,010	11.7	438	0.4
Dec-31-2005	3,250	11.9	417	0.5
Mean	1,220	11.0	1,010	1.1

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	.	.	.
Oct-05-2005	14	.	.	6,140	18	.	.	.
Oct-12-2005	9	.	.	5,200	12	.	.	.
Oct-19-2005	15	.	.	4,690	71	.	.	.
Oct-26-2005	14	.	.	5,630	78	.	.	.
Nov-02-2005	13	.	.	5,160	50	.	.	.
Nov-09-2005	14	.	.	6,110	59	.	.	.
Nov-16-2005	13	.	.	5,240	43	.	.	.
Nov-22-2005	17	.	.	5,090	54	.	.	.
Nov-30-2005	11	.	.	4,930	35	.	.	.
Dec-07-2005	17	.	.	5,130	51	.	.	.
Dec-14-2005	15	.	.	3,670	26	.	.	.
Dec-21-2005	10	.	.	4,700	20	.	.	.

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
Oct-04-2005	13	.	.	5,760	.	62.0	.	11.0
Oct-11-2005	9	.	.	5,410	.	59.2	.	9.7
Oct-18-2005	15	.	.	4,560	.	46.4	.	7.5
Oct-25-2005	13	.	.	5,440	.	75.2	.	9.3
Nov-01-2005	12	.	.	5,580	.	86.2	.	9.6
Nov-08-2005	14	.	.	5,390	.	86.6	.	10.0
Nov-15-2005	14	.	.	5,030	.	68.2	.	7.7
Nov-21-2005	20	.	.	4,960	.	71.2	.	8.3
Nov-28-2005	16	.	.	5,160	.	84.5	.	8.2
Dec-06-2005	15	.	.	5,140	.	76.2	.	7.5
Dec-13-2005	14	.	.	4,070	.	48.2	.	6.5
Dec-20-2005	11	.	.	3,700	.	38.2	.	5.7
Dec-27-2005	20	.	.	4,710	.	61.6	.	8.3

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
Oct-06-2005	19	17.9	8.0	4,640	44	37.0	6.9
Oct-13-2005	18	19.2	7.1	4,760	46	41.7	8.3
Oct-20-2005	22	18.0	8.4	3,650	53	25.1	5.3
Oct-27-2005	21	18.3	8.1	4,220	41	37.2	6.1
Nov-03-2005	20	15.7	8.3	4,640	51	52.3	6.8
Nov-10-2005	21	15.1	7.6	4,460	37	49.0	6.9
Nov-17-2005	21	14.8	7.8	4,220	30	31.8	5.7
Nov-22-2005	27	14.0	7.9	4,430	32	43.4	6.8
Dec-01-2005	22	11.3	8.1	4,710	35	57.3	7.0
Dec-08-2005	25	9.7	8.0	4,350	36	49.8	5.9
Dec-15-2005	23	9.4	7.8	3,880	17	27.1	4.9
Dec-22-2005	25	12.2	7.9	3,230	P	20.8	4.5
Dec-29-2005	29	12.4	7.9	4,310	39	46.6	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
Oct-06-2005	-1	17.0	7.8	771	.	<0.4	0.6
Oct-13-2005	35	18.5	7.9	808	.	<0.4	0.6
Oct-20-2005	172	18.2	7.7	864	.	<0.4	0.6
Oct-27-2005	32	17.2	7.5	1,020	.	<0.4	0.8
Nov-03-2005	156	14.8	7.6	1,030	.	<0.4	0.7
Nov-10-2005	134	14.7	7.7	1,190	.	0.5	0.9
Nov-17-2005	151	14.4	7.8	1,210	.	<0.4	0.8
Nov-22-2005	153	13.5	6.9	1,240	.	0.4	0.9
Dec-01-2005	174	11.8	7.8	1,310	.	<0.4	1.0
Dec-08-2005	162	9.6	7.9	1,380	.	<0.4	1.1
Dec-15-2005	159	8.6	7.9	1,430	.	<0.4	P
Dec-22-2005	229	12.3	7.7	1,410	.	<0.4	1.0
Dec-29-2005	257	11.5	7.7	1,460	.	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
Oct-06-2005	98	17.1	7.7	1,550	7.1	1.8
Oct-13-2005	152	18.5	7.9	1,370	5.8	1.6
Oct-20-2005	194	18.1	7.6	1,260	3.6	1.3
Oct-27-2005	181	17.3	7.3	1,430	4.0	1.4
Nov-03-2005	176	14.9	7.6	1,540	7.2	1.5
Nov-10-2005	155	14.8	7.6	1,710	6.9	1.7
Nov-17-2005	172	14.3	7.7	1,620	3.6	1.4
Nov-22-2005	180	13.6	7.4	1,770	6.4	1.7
Dec-01-2005	196	11.7	7.9	1,740	6.4	1.6
Dec-08-2005	187	9.6	7.9	1,850	6.8	1.6
Dec-15-2005	182	8.8	7.8	1,900	4.8	1.9
Dec-22-2005	254	12.2	7.8	1,590	2.9	1.3
Dec-29-2005	276	11.6	7.8	1,800	4.2	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
Oct-04-2005	.	7.8	1,980	16	8.3	2.4
Oct-12-2005	.	7.5	1,440	18	5.4	1.6
Oct-20-2005	.	7.7	1,360	21	3.7	1.3
Oct-28-2005	.	7.7	1,620	11	5.7	1.6
Nov-01-2005	.	7.7	1,660	13	6.2	1.8
Nov-10-2005	.	7.8	1,970	12	5.9	2.0
Nov-17-2005	.	7.5	1,760	12	3.3	1.8
Nov-22-2005	.	7.8	1,940	15	5.9	2.0
Dec-01-2005	.	7.8	1,810	13	6.4	1.8
Dec-06-2005	.	7.9	1,830	6	3.9	1.8
Dec-15-2005	.	7.8	2,010	8	4.9	2.0
Dec-22-2005	.	7.7	1,770	10	2.4	1.5

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
Oct-06-2005	87	16.1	6.5	1,070	<0.4	0.6
Oct-13-2005	118	18.0	7.4	1,150	<0.4	0.6
Oct-20-2005	135	17.1	7.8	1,010	<0.4	0.6
Oct-27-2005	180	16.9	7.4	1,060	0.5	0.7
Nov-03-2005	163	14.5	7.6	1,210	0.4	0.6
Nov-10-2005	150	14.6	7.7	1,280	0.6	0.7
Nov-17-2005	185	13.3	7.8	1,180	<0.4	0.5
Nov-22-2005	185	12.1	7.7	1,090	0.4	0.7
Dec-01-2005	233	11.5	7.6	1,210	0.5	0.7
Dec-08-2005	238	9.4	7.7	1,330	0.5	0.7
Dec-15-2005	142	9.3	7.7	1,750	<0.4	1.0
Dec-22-2005	159	12.6	7.7	1,640	0.4	1.1
Dec-29-2005	218	11.7	7.7	1,620	0.5	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	SJDMWA ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Oct-05-2005	200	.	.	368	<0.4	0.2
Oct-12-2005	200	.	.	387	<0.4	0.2
Oct-19-2005	200	.	.	386	2.3	0.2
Oct-26-2005	200	.	.	442	0.5	0.2
Nov-02-2005	30	.	.	466	0.8	0.3
Nov-09-2005	30	.	.	461	0.7	0.3
Nov-16-2005	30	.	.	511	0.7	0.2
Nov-22-2005	30	.	.	622	0.5	0.3
Nov-30-2005	30	.	.	699	0.8	0.3
Dec-07-2005	20	.	.	601	<0.4	0.2
Dec-14-2005	20	.	.	690	<0.4	0.3
Dec-21-2005	20	.	.	646	0.4	0.3
Dec-28-2005	20	.	.	NA	NA	NA

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
Oct-05-2005	220	.	.	363	0.5	0.2
Oct-12-2005	205	.	.	398	0.5	0.2
Oct-19-2005	120	.	.	399	0.5	0.2
Oct-26-2005	80	.	.	457	0.5	0.3
Nov-02-2005	80	.	.	438	0.6	0.2
Nov-09-2005	60	.	.	437	0.7	0.3
Nov-16-2005	70	.	.	486	0.7	0.2
Nov-22-2005	70	.	.	621	0.6	0.3
Nov-30-2005	70	.	.	636	0.7	0.2
Dec-07-2005	70	.	.	704	0.5	0.3
Dec-14-2005	70	.	.	579	<0.4	0.2
Dec-21-2005	50	.	.	721	0.6	0.4
Dec-28-2005	50	.	.	NA	NA	NA

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
Oct-05-2005	160	.	.	427	0.7	0.2
Oct-12-2005	135	.	.	389	<0.4	0.2
Oct-19-2005	50	.	.	400	0.5	0.2
Oct-26-2005	0	.	.	500	0.6	0.3
Nov-02-2005	0	.	.	1,300	1.4	1.6
Nov-09-2005	0	.	.	1,150	1.1	1.4
Nov-16-2005	0	.	.	1,020	0.8	0.9
Nov-22-2005	0	.	.	1,130	0.9	0.9
Nov-30-2005	0	.	.	1,430	2.1	1.7
Dec-07-2005	0	.	.	1,190	1.0	1.0
Dec-14-2005	0	.	.	1,160	1.1	1.3
Dec-21-2005	0	.	.	802	0.6	0.8
Dec-28-2005	0	.	.	NA	NA	NA

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
Oct-05-2005	69	.	.	521	0.6	0.3
Oct-12-2005	60	.	.	553	0.5	0.4
Oct-19-2005	60	.	.	635	0.5	0.5
Oct-26-2005	130	.	.	800	0.5	0.7
Nov-02-2005	130	.	.	830	0.6	0.7
Nov-09-2005	92	.	.	921	0.6	0.9
Nov-16-2005	87	.	.	882	0.6	0.7
Nov-22-2005	84	.	.	925	0.6	0.8
Nov-30-2005	99	.	.	974	0.4	0.8
Dec-07-2005	106	.	.	1,130	0.5	0.9
Dec-14-2005	119	.	.	624	<0.4	1.0
Dec-21-2005	107	.	.	1,210	0.7	1.1
Dec-28-2005	128	.	.	NA	NA	NA

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
Oct-05-2005	.	.	.	365	<0.4	0.2
Oct-12-2005	.	.	.	372	0.7	0.2
Oct-19-2005	.	.	.	390	0.5	0.2
Oct-26-2005	.	.	.	409	0.5	0.2
Nov-02-2005	.	.	.	424	0.5	0.2
Nov-09-2005	.	.	.	446	0.8	0.2
Nov-16-2005	.	.	.	548	0.9	0.2
Nov-22-2005	.	.	.	757	0.8	0.3
Nov-30-2005	.	.	.	773	1.5	0.4
Dec-07-2005	.	.	.	588	0.8	0.2
Dec-14-2005	.	.	.	1,810	0.4	0.2
Dec-21-2005	.	.	.	539	0.7	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
Oct-06-2005	162	17.0	7.2	997	<0.4	0.4
Oct-13-2005	162	18.1	7.8	1,150	<0.4	0.5
Oct-20-2005	159	17.6	7.8	1,090	<0.4	0.5
Oct-27-2005	223	17.1	7.2	952	0.4	0.6
Nov-03-2005	232	14.6	7.8	1,100	<0.4	0.5
Nov-10-2005	207	14.6	7.2	1,230	0.4	0.6
Nov-17-2005	229	13.6	7.3	1,150	0.5	0.5
Nov-22-2005	226	11.5	7.7	1,250	<0.4	0.6
Dec-01-2005	263	11.5	7.7	1,220	0.5	0.6
Dec-08-2005	284	9.0	7.7	1,330	0.4	0.7
Dec-15-2005	197	9.0	7.6	1,810	<0.4	P
Dec-22-2005	247	12.4	7.7	1,510	<0.4	0.8
Dec-29-2005	554	12.0	7.5	935	0.5	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
Oct-04-2005	.	.	.	NA	2.6	1.0
Oct-11-2005	.	.	.	NA	2.0	0.8
Oct-18-2005	.	.	.	NA	2.1	1.0
Oct-25-2005	.	.	.	NA	1.3	0.7
Nov-01-2005	.	.	.	NA	2.4	1.0
Nov-08-2005	.	.	.	NA	2.3	1.1
Nov-15-2005	.	.	.	NA	2.8	1.1
Nov-23-2005	.	.	.	NA	3.0	1.2
Nov-29-2005	.	.	.	NA	2.7	1.1
Dec-06-2005	.	.	.	NA	1.6	1.1
Dec-13-2005	.	.	.	NA	2.9	1.3
Dec-20-2005	.	.	.	NA	1.3	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
Oct-06-2005	779	17.6	7.4	870	1.2	0.5
Oct-13-2005	917	18.5	8.1	692	1.0	0.4
Oct-20-2005	1,010	17.9	7.7	706	0.9	0.4
Oct-27-2005	1,010	17.2	7.6	751	0.9	0.5
Nov-03-2005	915	15.0	7.7	910	1.3	0.5
Nov-10-2005	793	14.9	7.5	1,030	1.6	0.6
Nov-17-2005	738	14.2	7.6	1,080	1.3	0.6
Nov-22-2005	751	12.1	7.6	1,130	1.6	0.8
Dec-01-2005	785	11.9	7.8	1,160	1.8	0.7
Dec-08-2005	946	9.4	7.9	1,040	1.6	0.7
Dec-15-2005	824	9.3	7.9	1,230	1.4	P
Dec-22-2005	972	12.3	7.8	1,120	0.7	0.7
Dec-29-2005	2,770	12.2	7.7	440	0.5	P

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from January 2005 to December 2005. 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	%	%	%	%	%	%
Jan-2005	98	85	80	100	100	98
Feb-2005	95	88	98	80	90	98
Mar-2005	88	73	93	83	85	73†
Apr-2005	95	100	95	93	100	90
May-2005	100	98	93	100	83	98
Jun-2005	100	93	98	95	90	95
Jul-2005	98	100	95	98	80	93
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

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from January 2005 to December 2005. 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
Jan-2005	0.62	0.57	0.51	0.61	0.54	0.46
Feb-2005	0.76	0.62	0.69	0.63	0.62	0.54
Mar-2005	0.41	0.38	0.49	0.44	0.46	0.35
Apr-2005	0.42	0.40	0.44	0.42	0.38	0.29
May-2005	0.40	0.46	0.39	0.43	0.29	0.42
Jun-2005	0.51	0.50	0.50	0.50	0.47	0.36
Jul-2005	0.39	0.39	0.35	0.33	0.35	0.39
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

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from January 2005 to December 2005. 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	%	%	%	%	%	%
Jan-2005	100	90	80	100	100	90
Feb-2005	80	100	100	90	100	30†
Mar-2005	80	100	90	100	100	90
Apr-2005	90	90	100	90	90	100
May-2005	90	90	100	100	90	90
Jun-2005	90	90	80	90	80	100
Jul-2005	90	100	80	90	80	90
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

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from January 2005 to December 2005. 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
Jan-2005	41.7	38.8	40.2	45.9	47.6	34.7
Feb-2005	15.2	13.6	17.3	8.5	12.2	4.0
Mar-2005	37.4	38.9	42.4	38.8	31.6	44.0
Apr-2005	26.4	35.9	42.3	37.1	30.4	27.0
May-2005	39.8	38.6	45.5	36.1	34.1	40.9
Jun-2005	41.8	35.1	36.8	42.5	30.7	31.9
Jul-2005	41.8	49.4	43.1	45.5	39.6	34.0
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

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from January 2005 to December 2005. 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
Jan-2005	1.3*	12.7	10.6*	18.0	13.7	16.2
Feb-2005	13.7	17.7	19.5	10.7*	13.1	22.4
Mar-2005	14.9	20.1	19.7	20.7	11.5	16.0
Apr-2005	17.4	25.6	21.1	19.6	19.2	24.5
May-2005	24.0	23.5	24.5	19.7	16.1	30.4
Jun-2005	21.4	17.8	21.2	14.6	16.3	20.6
Jul-2005	10.0*	13.0	7.4*	7.7*	11.9	13.0
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

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, October 2005 to December 2005.

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
Oct-10-2005	40	<0.4	4.5	<0.4	<0.4
Oct-12-2005	41	<0.4	5.1	<0.4	<0.4
Oct-14-2005	35	0.5	4.2	<0.4	<0.4
Nov-14-2005	55	<0.4	6.3	<0.4	<0.4
Nov-16-2005	27	<0.4	3.4	<0.4	<0.4
Nov-18-2005	40	<0.4	4.2	<0.4	<0.4
Dec-05-2005	29	<0.4	3.6	0.4	<0.4
Dec-07-2005	51	<0.4	7.4	<0.4	<0.4
Dec-09-2005	48	<0.4	6.9	<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, October 2005 to December 2005.

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
Oct-10-2005	60	22	34	14	14
Oct-12-2005	40	27	24	66	9
Oct-14-2005	62	23	20	42	7
Nov-14-2005	9	19	29	63	9
Nov-16-2005	33	16	31	71	11
Nov-18-2005	34	39	24	51	9
Dec-05-2005	12	6	12	16	ND
Dec-07-2005	27	9	6	15	4
Dec-09-2005	16	16	13	52	3

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.
†	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