

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

July 2010

December 4, 2010

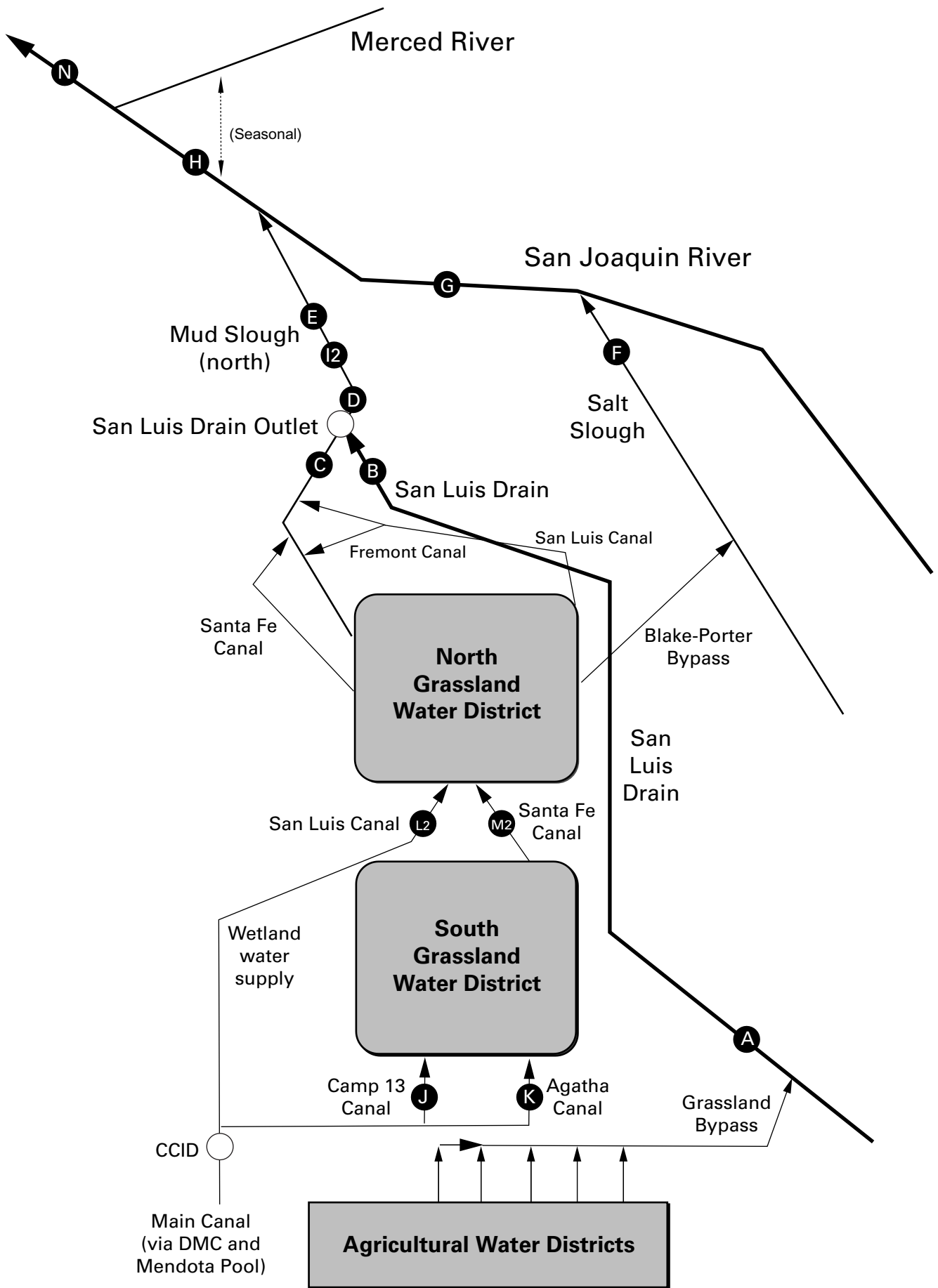
Preliminary Results

A cooperative effort of:

U.S. Bureau of Reclamation
Central Valley Regional Water Quality Control Board
U.S. Fish and Wildlife Service
California Department of Fish and Game
San Luis & Delta-Mendota Water Authority
U.S. Environmental Protection Agency
U.S. Geological Survey

compiled by San Francisco Estuary Institute





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MONTHLY DATA REPORT

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Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), July 2010.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Jul-01-2010	15	5,050
Jul-02-2010	15	5,200
Jul-03-2010	15	5,320
Jul-04-2010	18	5,630
Jul-05-2010	18	5,650
Jul-06-2010	15	5,440
Jul-07-2010	16	5,250
Jul-08-2010	15	5,420
Jul-09-2010	17	4,900
Jul-10-2010	17	4,410
Jul-11-2010	17	4,620
Jul-12-2010	18	4,550
Jul-13-2010	22	4,820
Jul-14-2010	25	4,480
Jul-15-2010	25	4,410
Jul-16-2010	25	4,780
Jul-17-2010	24	4,790
Jul-18-2010	17	4,740
Jul-19-2010	16	5,130
Jul-20-2010	16	4,950
Jul-21-2010	15	4,570
Jul-22-2010	17	4,340
Jul-23-2010	16	4,460
Jul-24-2010	17	5,160
Jul-25-2010	17	5,740
Jul-26-2010	17	5,880
Jul-27-2010	18	5,670
Jul-28-2010	16	5,410
Jul-29-2010	15	5,200
Jul-30-2010	15	5,110
Jul-31-2010	16	4,940
Mean	18	5,010

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), July 2010.

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-01-2010	13	27.5	8.5	4,520	40.9	2.8
Jul-02-2010	12	27.3	8.8	4,500	39.8	2.5
Jul-03-2010	12	27.4	10.0	4,670	41.8	2.6
Jul-04-2010	12	27.0	10.0	4,960	35.8	2.3
Jul-05-2010	14	27.4	9.6	4,950	34.3	2.6
Jul-06-2010	14	27.4	10.0	4,910	33.7	2.5
Jul-07-2010	12	27.2	11.0	5,100	33.9	2.2
Jul-08-2010	12	27.4	12.0	5,360	36.1	2.4
Jul-09-2010	11	27.2	12.0	5,590	38.1	2.3
Jul-10-2010	13	28.0	12.0	5,550	43.0	3.0
Jul-11-2010	14	29.1	13.0	5,870	47.4	3.5
Jul-12-2010	14	29.0	13.0	6,040	43.4	3.2
Jul-13-2010	14	28.9	12.0	5,930	40.1	3.1
Jul-14-2010	19	28.9	12.0	5,730	41.1	4.2
Jul-15-2010	23	29.6	10.0	5,210	32.1	4.0
Jul-16-2010	23	30.1	9.9	4,800	28.9	3.5
Jul-17-2010	22	30.2	10.0	4,830	34.9	4.2
Jul-18-2010	21	30.7	10.0	4,970	41.0	4.7
Jul-19-2010	14	29.8	9.8	4,800	39.8	3.1
Jul-20-2010	12	29.0	9.6	4,930	36.1	2.4
Jul-21-2010	12	28.6	10.0	4,760	36.6	2.3
Jul-22-2010	12	27.9	11.0	5,000	40.3	2.6
Jul-23-2010	13	28.4	11.0	5,260	55.4	3.9
Jul-24-2010	13	28.7	10.0	5,030	44.8	3.2
Jul-25-2010	13	28.6	11.0	4,920	40.7	2.9
Jul-26-2010	13	28.3	12.0	5,330	37.4	2.6
Jul-27-2010	13	27.7	11.0	5,230	35.1	2.6
Jul-28-2010	14	27.5	9.7	4,800	30.3	2.3
Jul-29-2010	13	26.8	9.3	4,590	31.3	2.1
Jul-30-2010	12	26.8	9.8	4,710	36.4	2.3
Jul-31-2010	11	26.8	11.0	5,220	53.2	3.3
Mean	14	28.2	10.6	5,100	38.8	3.0
Total Acre-feet	870					
Total (lbs)						91

Load Limitation for July 2010 (lbs)	214
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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.

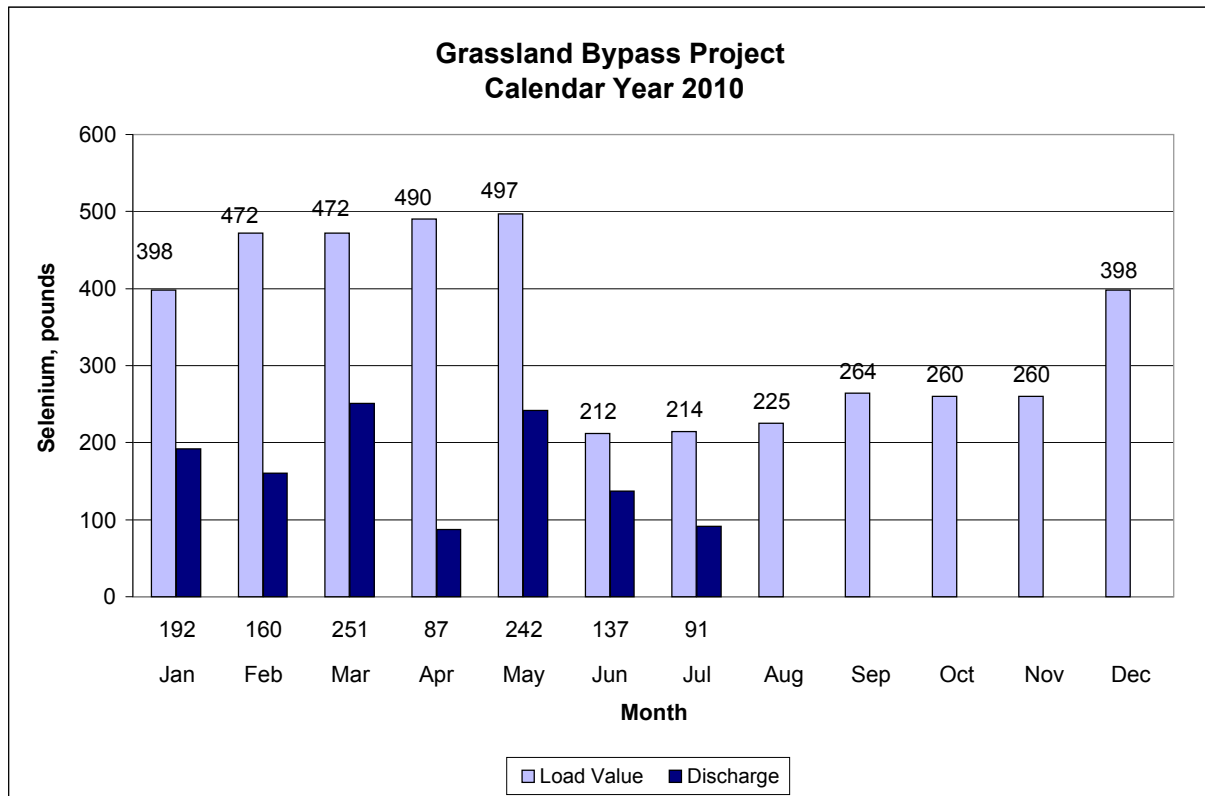


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), July 2010.

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-01-2010	33	26.1	NA
Jul-02-2010	34	26.0	NA
Jul-03-2010	38	25.3	NA
Jul-04-2010	38	25.6	NA
Jul-05-2010	35	26.2	NA
Jul-06-2010	36	26.3	NA
Jul-07-2010	33	26.1	NA
Jul-08-2010	30	26.3	NA
Jul-09-2010	24	26.5	NA
Jul-10-2010	22	27.0	NA
Jul-11-2010	25	27.5	NA
Jul-12-2010	25	27.8	NA
Jul-13-2010	29	27.4	NA
Jul-14-2010	31	27.4	NA
Jul-15-2010	34	27.8	NA
Jul-16-2010	33	28.6	NA
Jul-17-2010	27	28.9	NA
Jul-18-2010	25	29.0	NA
Jul-19-2010	27	28.1	NA
Jul-20-2010	28	27.7	NA
Jul-21-2010	25	27.3	NA
Jul-22-2010	22	26.8	3,690
Jul-23-2010	23	27.0	3,790
Jul-24-2010	24	27.3	3,590
Jul-25-2010	26	27.2	3,250
Jul-26-2010	39	27.2	2,680
Jul-27-2010	30	26.5	2,960
Jul-28-2010	27	25.9	3,180
Jul-29-2010	23	25.4	3,410
Jul-30-2010	20	25.5	3,960
Jul-31-2010	19	25.7	4,670
Mean	29	27.0	3,310

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), July 2010.

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-01-2010	141	24.7	1,230
Jul-02-2010	132	24.0	1,190
Jul-03-2010	131	23.9	1,140
Jul-04-2010	131	24.6	1,190
Jul-05-2010	142	25.3	1,120
Jul-06-2010	163	25.4	970
Jul-07-2010	156	24.8	1,030
Jul-08-2010	145	24.9	1,100
Jul-09-2010	141	25.3	1,120
Jul-10-2010	138	26.1	1,110
Jul-11-2010	142	26.5	1,130
Jul-12-2010	149	26.3	992
Jul-13-2010	149	25.7	995
Jul-14-2010	145	25.8	1,060
Jul-15-2010	132	26.6	1,100
Jul-16-2010	122	27.6	1,150
Jul-17-2010	125	28.1	1,120
Jul-18-2010	123	27.9	1,090
Jul-19-2010	133	27.3	1,070
Jul-20-2010	145	26.7	983
Jul-21-2010	150	25.9	940
Jul-22-2010	134	25.1	940
Jul-23-2010	131	25.4	905
Jul-24-2010	131	26.0	891
Jul-25-2010	141	26.3	880
Jul-26-2010	139	25.7	869
Jul-27-2010	143	24.6	866
Jul-28-2010	151	24.0	853
Jul-29-2010	150	24.0	864
Jul-30-2010	144	24.6	913
Jul-31-2010	137	24.9	936
Mean	139	25.7	1,040

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), July 2010.

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-01-2010	638	25.2	1,060	1.2
Jul-02-2010	652	24.9	1,070	1.6
Jul-03-2010	641	24.7	1,110	1.7
Jul-04-2010	698	24.7	1,000	0.9
Jul-05-2010	675	25.3	950	0.9
Jul-06-2010	606	25.6	1,050	1.0
Jul-07-2010	642	25.3	1,030	1.0
Jul-08-2010	606	25.6	950	0.9
Jul-09-2010	563	26.0	1,010	0.9
Jul-10-2010	565	26.5	1,060	1.0
Jul-11-2010	574	26.8	1,010	0.8
Jul-12-2010	543	26.7	1,060	1.0
Jul-13-2010	513	26.6	1,080	1.4
Jul-14-2010	488	26.7	1,190	1.6
Jul-15-2010	518	26.9	1,110	1.5
Jul-16-2010	495	27.8	1,160	1.7
Jul-17-2010	539	27.8	1,060	1.5
Jul-18-2010	533	27.5	1,100	1.4
Jul-19-2010	521	26.9	1,150	1.5
Jul-20-2010	496	26.8	1,190	1.9
Jul-21-2010	499	26.5	1,130	1.7
Jul-22-2010	504	25.7	1,080	1.4
Jul-23-2010	507	25.9	1,040	1.3
Jul-24-2010	477	26.2	1,120	1.3
Jul-25-2010	524	26.2	1,160	1.5
Jul-26-2010	539	25.8	930	1.6
Jul-27-2010	540	25.5	990	1.7
Jul-28-2010	546	24.8	900	1.2
Jul-29-2010	506	24.5	930	1.2
Jul-30-2010	473	24.9	1,000	1.4
Jul-31-2010	474	25.2	980	1.1
Mean	559	26.1	1,060	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-02-2010	14	.	.	4,600	170	.	.	.
May-09-2010	24	.	.	4,590	149	.	.	.
May-16-2010	40	.	.	4,420	163	.	.	.
May-23-2010	35	.	.	4,150	95	.	.	.
Jun-01-2010	23	.	.	4,610	103	.	.	.
Jun-07-2010	21	.	.	5,130	70	.	.	.
Jun-14-2010	21	.	.	3,850	112	.	.	.
Jun-21-2010	27	.	.	3,510	116	.	.	.
Jun-28-2010	25	.	.	4,940	133	.	.	.
Jul-06-2010	15	.	.	5,650	84	.	.	.
Jul-12-2010	18	.	.	4,380	73	.	.	.
Jul-19-2010	16	.	.	4,910	88	.	.	.
Jul-26-2010	17	.	.	5,980	73	.	.	.

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-02-2010	14	.	.	4,300	.	47.3	.	8.9
May-09-2010	24	.	.	4,940	.	54.2	.	8.2
May-16-2010	40	.	.	3,800	.	57.1	.	7.7
May-23-2010	35	.	.	4,110	.	51.9	.	7.5
Jun-05-2010	22	.	.	5,100	.	54.4	.	9.3
Jun-13-2010	22	.	.	3,970	.	47.7	.	9.4
Jun-20-2010	25	.	.	3,500	.	32.3	.	6.6
Jun-27-2010	31	.	.	4,780	.	35.8	.	7.8
Jul-04-2010	18	.	.	5,840	.	41.4	.	11.0
Jul-11-2010	17	.	.	4,730	.	39.4	.	10.0
Jul-18-2010	17	.	.	5,030	.	45.7	.	9.8
Jul-25-2010	17	.	.	5,810	.	42.4	.	9.6

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	SLDMWA	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
May-04-2010	16	19.2	7.6	4,260	45	52.2	7.8
May-11-2010	22	16.3	8.0	4,620	70	58.5	8.2
May-18-2010	37	19.7	8.6	4,100	45	55.0	7.2
May-25-2010	29	17.5	8.5	4,950	47	57.0	9.8
Jun-01-2010	26	23.6	8.6	4,330	40	48.3	8.1
Jun-08-2010	18	25.3	8.9	4,820	48	51.3	9.7
Jun-15-2010	19	24.5	9.0	5,330	36	45.2	11.0
Jun-22-2010	26	22.3	7.9	3,480	98	28.7	6.1
Jun-29-2010	22	26.6	7.2	3,980	77	25.3	7.2
Jul-06-2010	14	26.0	9.0	5,180	72	33.7	10.0
Jul-13-2010	14	25.8	8.6	5,530	45	37.5	12.0
Jul-20-2010	12	26.6	7.8	4,560	49	34.2	9.2
Jul-27-2010	13	25.1	8.4	4,920	57	36.2	10.0

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-04-2010	20	17.7	7.6	3,500	.	0.4	3.5
May-11-2010	18	17.0	7.9	2,730	.	0.7	2.9
May-18-2010	14	17.9	7.9	2,410	.	0.5	3.4
May-25-2010	15	18.2	8.0	2,350	.	<0.4	2.3
Jun-01-2010	39	22.5	7.5	1,640	.	<0.4	1.8
Jun-08-2010	37	23.5	7.7	1,480	.	0.7	1.7
Jun-15-2010	36	22.2	7.6	1,770	.	0.5	1.9
Jun-22-2010	38	23.3	7.7	990	.	0.8	1.7
Jun-29-2010	30	25.4	7.6	1,550	.	1.1	1.8
Jul-06-2010	20	24.1	8.0	1,210	.	0.6	1.9
Jul-13-2010	15	24.5	8.1	1,410	.	1.0	2.2
Jul-20-2010	16	24.9	7.8	1,190	.	1.1	2.3
Jul-27-2010	17	23.7	8.2	1,240	.	1.7	1.4

** 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-04-2010	36	18.1	7.6	4,220	32.4	6.5
May-11-2010	40	16.2	8.2	2,250	34.9	6.3
May-18-2010	51	19.5	8.3	4,160	45.3	6.7
May-25-2010	44	17.8	8.3	4,260	44.5	6.6
Jun-01-2010	65	22.4	8.2	3,020	22.6	4.7
Jun-08-2010	55	23.8	8.1	2,850	16.9	4.3
Jun-15-2010	55	22.6	8.2	3,250	20.8	5.2
Jun-22-2010	64	22.2	8.0	2,590	14.4	3.8
Jun-29-2010	52	26.7	7.5	2,860	12.6	4.6
Jul-06-2010	36	24.4	8.6	3,550	16.6	6.0
Jul-13-2010	29	24.8	8.3	3,920	20.4	7.8
Jul-20-2010	28	25.1	7.4	3,210	18.7	5.9
Jul-27-2010	30	24.3	8.3	3,290	18.2	5.8

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-07-2010	.	8.4	5,050	43	36.4	7.0
May-11-2010	.	8.3	4,200	44	31.2	5.9
May-18-2010	.	8.4	4,240	38	37.3	5.8
Jun-02-2010	.	7.8	2,900	NA	15.9	3.5
Jun-10-2010	.	7.4	3,140	40	15.2	3.9
Jun-15-2010	.	8.5	3,440	30	20.3	5.0
Jun-24-2010	.	7.7	3,130	NA	15.1	4.3
Jun-29-2010	.	8.7	2,970	68	12.2	4.3
Jul-07-2010	.	8.9	3,690	44	15.2	5.6
Jul-22-2010	.	8.5	3,990	26	21.7	6.2
Jul-27-2010	.	8.7	3,370	68	18.2	5.7

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-04-2010	134	18.6	7.5	1,480	0.5	0.8
May-11-2010	144	14.8	7.9	1,120	<0.4	0.6
May-18-2010	142	18.0	8.0	1,080	0.9	0.5
May-25-2010	129	16.6	7.5	1,160	0.4	0.6
Jun-01-2010	151	23.2	7.3	1,150	<0.4	0.5
Jun-08-2010	131	23.0	5.7	1,070	0.4	0.5
Jun-15-2010	186	22.6	7.4	900	0.4	0.4
Jun-22-2010	180	20.9	6.6	1,040	0.5	0.4
Jun-29-2010	162	25.3	6.8	900	0.9	0.5
Jul-06-2010	163	24.8	7.0	930	0.4	0.5
Jul-13-2010	149	23.8	7.4	950	0.4	0.5
Jul-20-2010	145	24.2	6.7	950	0.6	0.5
Jul-27-2010	143	22.4	7.6	820	0.6	0.4

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
May-03-2010	25	.	.	330	0.8	0.2
May-10-2010	40	.	.	310	0.5	0.2
May-17-2010	60	.	.	720	1.6	0.4
May-24-2010	25	.	.	260	0.5	0.1
Jun-01-2010	NA	.	.	310	0.9	0.2
Jun-07-2010	25	.	.	400	0.6	0.2
Jun-14-2010	40	.	.	390	0.7	0.2
Jun-21-2010	60	.	.	370	0.8	0.3
Jun-28-2010	25	.	.	440	0.9	0.3
Jul-06-2010	10	.	.	330	0.7	0.2
Jul-12-2010	0	.	.	410	0.5	0.3
Jul-19-2010	0	.	.	320	0.5	0.2
Jul-26-2010	0	.	.	470	0.7	0.2

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
May-03-2010	15	.	.	2,010	1.9	3.2
May-10-2010	55	.	.	290	1.0	0.3
May-17-2010	55	.	.	380	1.8	0.3
May-24-2010	75	.	.	260	0.8	0.2
Jun-01-2010	NA	.	.	280	1.0	0.3
Jun-07-2010	15	.	.	370	0.6	0.2
Jun-14-2010	55	.	.	380	0.8	0.2
Jun-21-2010	55	.	.	380	0.8	0.3
Jun-28-2010	75	.	.	400	1.0	0.3
Jul-06-2010	10	.	.	420	0.7	0.3
Jul-12-2010	0	.	.	300	0.5	0.2
Jul-19-2010	0	.	.	450	1.2	0.4
Jul-26-2010	0	.	.	860	1.6	1.5

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
May-03-2010	NA	.	.	2,670	3.2	4.0
May-10-2010	NA	.	.	1,310	2.2	1.6
May-17-2010	NA	.	.	850	1.2	0.7
May-24-2010	NA	.	.	620	0.9	0.5
Jun-01-2010	NA	.	.	450	0.9	0.3
Jun-07-2010	NA	.	.	680	2.2	0.7
Jun-14-2010	NA	.	.	1,230	1.4	1.2
Jun-21-2010	NA	.	.	1,500	1.6	1.5
Jun-28-2010	NA	.	.	1,560	2.4	1.8
Jul-06-2010	NA	.	.	960	0.9	1.9
Jul-12-2010	NA	.	.	1,140	1.6	2.1
Jul-19-2010	NA	.	.	510	0.9	0.4
Jul-26-2010	NA	.	.	560	0.9	0.4

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
May-03-2010	NA	.	.	1,630	0.9	2.4
May-10-2010	NA	.	.	810	1.2	1.2
May-17-2010	NA	.	.	550	1.2	0.5
May-24-2010	NA	.	.	640	0.7	0.8
Jun-01-2010	NA	.	.	720	0.9	0.9
Jun-07-2010	NA	.	.	570	0.7	0.7
Jun-14-2010	NA	.	.	630	0.9	0.8
Jun-21-2010	NA	.	.	860	1.0	1.4
Jun-28-2010	NA	.	.	880	1.4	1.5
Jul-06-2010	NA	.	.	880	0.8	1.6
Jul-12-2010	NA	.	.	900	1.1	1.9
Jul-19-2010	NA	.	.	1,040	1.2	2.2
Jul-26-2010	NA	.	.	880	1.1	1.7

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-03-2010	.	.	.	940	2.6	0.8
May-10-2010	.	.	.	320	0.4	0.2
May-17-2010	.	.	.	280	0.9	0.2
May-24-2010	.	.	.	200	0.7	0.1
Jun-01-2010	.	.	.	290	0.9	0.2
Jun-07-2010	.	.	.	390	0.6	0.3
Jun-14-2010	.	.	.	650	0.6	0.3
Jun-21-2010	.	.	.	370	0.8	0.3
Jun-28-2010	.	.	.	360	1.1	0.3
Jul-06-2010	.	.	.	320	0.7	0.3
Jul-12-2010	.	.	.	320	0.4	0.2
Jul-19-2010	.	.	.	310	0.6	0.2
Jul-26-2010	.	.	.	320	0.8	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-04-2010	926	19.2	7.4	560	1.4	0.3
May-11-2010	842	17.4	7.3	530	0.7	0.3
May-18-2010	468	20.2	7.9	570	<0.4	0.3
May-25-2010	464	18.7	7.7	770	<0.4	0.3
Jun-01-2010	856	22.0	7.8	520	<0.4	0.2
Jun-08-2010	559	25.5	7.8	590	0.4	0.3
Jun-15-2010	547	23.9	7.5	600	0.4	0.3
Jun-22-2010	319	23.1	7.5	970	0.5	0.4
Jun-29-2010	287	28.0	7.7	750	0.6	0.4
Jul-06-2010	266	24.5	7.7	1,060	<0.4	0.4
Jul-13-2010	265	25.7	7.7	890	<0.4	0.4
Jul-20-2010	203	25.8	7.0	1,060	0.5	0.5
Jul-27-2010	251	24.9	7.2	780	0.6	0.3

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-12-2010	.	.	.	863	1.9	0.5
May-19-2010	.	.	.	1,370	0.9	2.7
May-26-2010	.	.	.	1,050	1.9	0.7
Jun-02-2010	.	.	.	818	2.0	0.6
Jun-09-2010	.	.	.	919	1.9	0.6
Jun-16-2010	.	.	.	1,030	1.7	0.7
Jun-23-2010	.	.	.	1,180	0.8	0.6
Jun-30-2010	.	.	.	1,410	2.0	0.9
Jul-07-2010	.	.	.	1,360	1.7	0.9
Jul-14-2010	.	.	.	1,400	2.2	1.1
Jul-21-2010	.	.	.	1,050	1.5	0.7
Jul-28-2010	.	.	.	1,280	2.4	1.0

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-04-2010	1,550	19.2	7.3	610	0.9	0.4
May-11-2010	1610	16.7	7.4	540	1.0	0.4
May-18-2010	1,260	18.8	7.8	700	2.0	0.5
May-25-2010	1,180	18.1	7.8	750	1.6	0.5
Jun-01-2010	1,500	21.5	7.8	600	1.6	0.4
Jun-08-2010	1,550	23.3	7.9	530	0.9	0.3
Jun-15-2010	1,150	23.5	7.7	730	1.2	0.5
Jun-22-2010	889	23.2	7.9	820	1.3	0.5
Jun-29-2010	761	26.7	7.8	900	1.7	0.6
Jul-06-2010	606	23.9	7.8	1,090	1.0	0.6
Jul-13-2010	513	25.0	8.0	1,130	1.4	0.8
Jul-20-2010	496	25.2	7.6	1,220	1.8	0.9
Jul-27-2010	540	24.1	7.6	1,000	1.9	0.7

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from August 2009 to June 2010. 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-2009	98	98	88	93	100	100
Sep-2009	100	98	98	100	100	98
Oct-2009	100	100	95	95	95	100
Nov-2009	100	93	90	83	95	100
Dec-2009	98	88	93	98	100	98
Jan-2010	98	95	98	100	98	100
Feb-2010	98	100	95	95	100	90
Mar-2010	98	95	95	100	98	100
Apr-2010	95	98	100	100	100	98
May-2010	95	93	98	85	90	95
Jun-2010	100	100	100	98	95	98
Jul-2010	95	98	100	100	100	93

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from August 2009 to June 2010. 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-2009	0.42	0.40	0.41	0.38	0.43	0.52
Sep-2009	0.43	0.41	0.42	0.45	0.39	0.43
Oct-2009	0.51	0.52	0.49	0.50	0.41	0.44
Nov-2009	0.38	0.40	0.37	0.38	0.36	0.43
Dec-2009	0.50	0.48	0.52	0.49	0.46	0.47
Jan-2010	0.43	0.49	0.50	0.48	0.49	0.41
Feb-2010	0.47	0.53	0.49	0.52	0.49	0.51
Mar-2010	0.41	0.48	0.48	0.46	0.40	0.45
Apr-2010	0.53	0.48	0.53	0.50	0.43	0.48
May-2010	0.35	0.34	0.36	0.39	0.37	0.37
Jun-2010	0.37	0.34	0.35	0.35	0.37	0.38
Jul-2010	0.35*	0.37	0.39	0.37	0.41	0.41

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from August 2009 to June 2010. 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-2009	100	100	100	100	100	100
Sep-2009	100	100	80	90	100	100
Oct-2009	80	90	100	90	90	100
Nov-2009	90	80	90	90	70†	70†
Dec-2009	90	90	90	100	100	80
Jan-2010	100	90	90	100	90	100
Feb-2010	90	90	90	100	100	90
Mar-2010	90	100	90	80	90	90
Apr-2010	70	90	90	80	40†	80
May-2010	80	70	100	100	90	80
Jun-2010	100	100	100	90	90	100
Jul-2010	90	100	90	90	100	100

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from August 2009 to July 2010. 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-2009	42.6	40.9	38.5	37.8	30.6	24.7
Sep-2009	34.8	43.3	26.8	25.1	28.7	22.7
Oct-2009	36.7	32.8	42.2	33.5	31.1	28.8
Nov-2009	38.5	21.3	29.1	21.8	16.4	18.6
Dec-2009	30.2	30.7	35.4	35.2	39.7	30.9
Jan-2010	39.7	32.3	44.1	30.7	34.4	33.8
Feb-2010	22.9	22.1	26.2	25.7	23.1	25.4
Mar-2010	23.6	28.4	23.3	19.5	25.0	16.6
Apr-2010	34.8	41.4	39.2	24.1	20.1	28.5
May-2010	30.6	45.4	39.3	42.9	33.8	19.4
Jun-2010	23.0	27.2	29.5	24.2	23.1	21.4
Jul-2010	43.6	48.8	46.3	46.6	38.7	38.6

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from August 2009 to July 2010. 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
Aug-2009	21.7	26.4	24.6	26.6	22.0	23.0
Sep-2009	31.6	32.6	25.6	28.9	27.6	22.3
Oct-2009	35.3	30.5	32.2	26.8	20.4	19.2
Nov-2009	20.6*	39.0	35.8	33.5	26.2	28.1
Dec-2009	6.8*	28.5	21.7	26.7	20.9	24.1
Jan-2010	0.2*	27.5	1.4*	28.9	20.8	19.8
Feb-2010	19.1*	36.0	31.7	29.9	28.7	23.1
Mar-2010	17.6	28.4	27.8	27.4	19.5	15.5
Apr-2010	5.2*	22.2	25.1	33.2	26.3	24.7
May-2010	12.8	23.5	23.2	26.4	15.0	11.3
Jun-2010	17.7	29.6	24.8	33.0	22.7	22.0
Jul-2010	17.6	25.3	18.8	19.7	17.6	16.1

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, May 2010 to July 2010.

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-03-2010	52	<0.4	26	<0.4	<0.4
May-05-2010	57	0.4	33	0.4	<0.4
May-07-2010	40	<0.4	38	0.4	0.6
Jun-14-2010	55	0.5	23	0.4	<0.4
Jun-16-2010	45	0.5	22	<0.4	<0.4
Jun-18-2010	31	0.4	17	<0.4	<0.4
Jul-12-2010	39	0.5	32	0.4	<0.4
Jul-14-2010	41	0.9	24	0.4	0.4
Jul-16-2010	31	1.1	19	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, May 2010 to July 2010.

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-03-2010	50	59	77	50	16
May-05-2010	47	37	87	65	13
May-07-2010	52	24	60	48	9
Jun-14-2010	39	44	49	43	24
Jun-16-2010	79	62	100	48	27
Jun-18-2010	93	52	90	126	35
Jul-12-2010	44	81	61	78	26
Jul-14-2010	52	71	74	95	12
Jul-16-2010	68	108	88	147	29

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