

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

June 2010

December 4, 2010

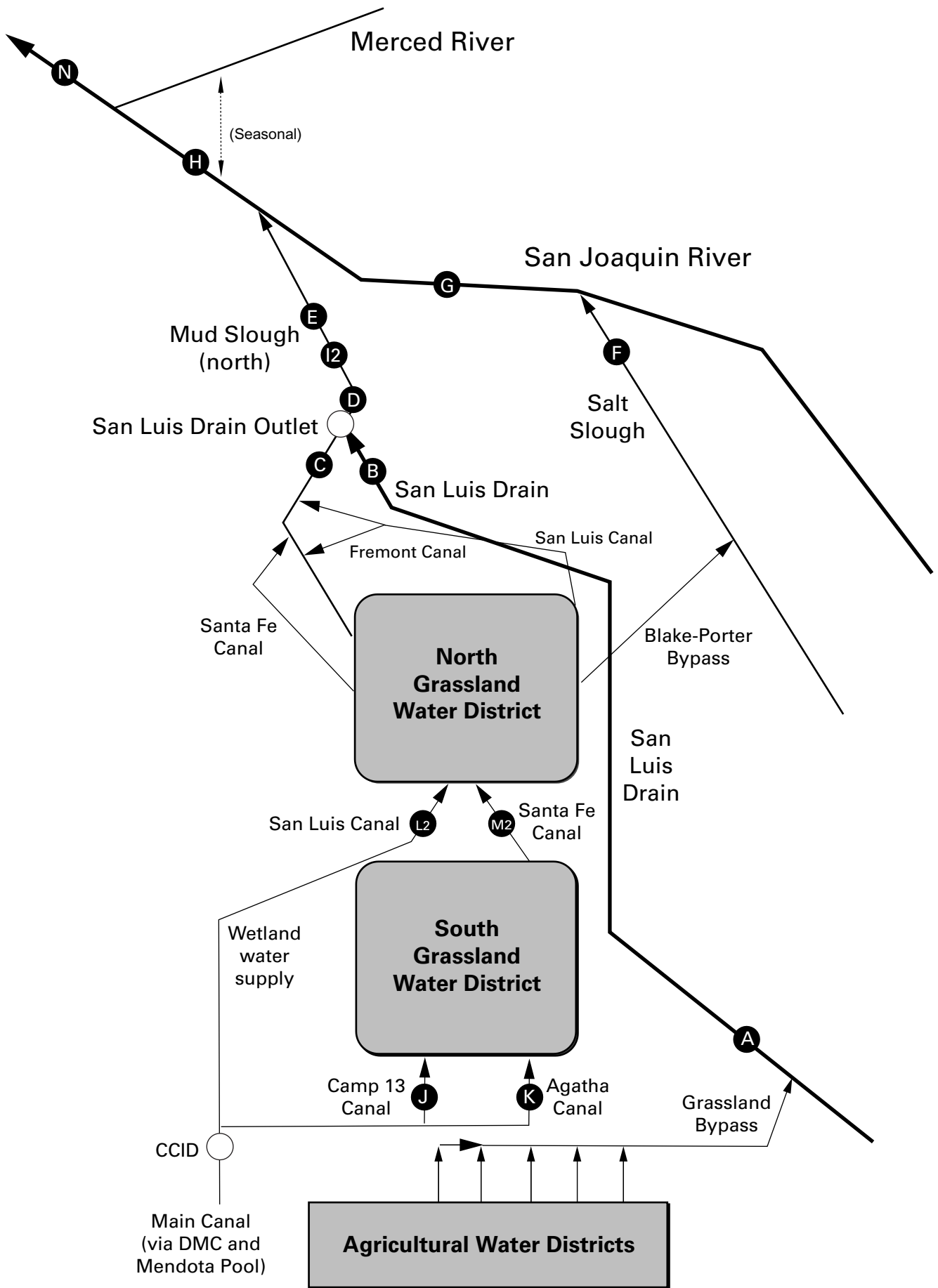
Preliminary Results

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), June 2010.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Jun-01-2010	23	4,466
Jun-02-2010	21	4,562
Jun-03-2010	21	4,465
Jun-04-2010	22	4,479
Jun-05-2010	22	4,256
Jun-06-2010	21	4,791
Jun-07-2010	21	5,109
Jun-08-2010	16	5,231
Jun-09-2010	17	5,105
Jun-10-2010	16	4,795
Jun-11-2010	16	4,705
Jun-12-2010	14	4,777
Jun-13-2010	22	4,129
Jun-14-2010	21	3,637
Jun-15-2010	24	3,684
Jun-16-2010	25	3,615
Jun-17-2010	25	3,553
Jun-18-2010	23	3,391
Jun-19-2010	28	3,279
Jun-20-2010	25	3,452
Jun-21-2010	27	3,369
Jun-22-2010	30	3,999
Jun-23-2010	19	3,709
Jun-24-2010	18	4,010
Jun-25-2010	22	3,953
Jun-26-2010	32	4,386
Jun-27-2010	31	4,267
Jun-28-2010	25	4,459
Jun-29-2010	19	4,786
Jun-30-2010	16	4,820
.	.	.
Mean	22	4,190

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), June 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
Jun-01-2010	26	24.4	8.3	4,580	52.9	7.5
Jun-02-2010	22	24.8	7.8	4,370	49.4	5.8
Jun-03-2010	19	25.5	8.0	4,310	47.3	4.8
Jun-04-2010	18	26.1	8.7	4,560	49.8	4.9
Jun-05-2010	19	26.9	8.0	4,430	49.0	5.1
Jun-06-2010	20	27.5	8.9	4,500	51.8	5.6
Jun-07-2010	19	27.3	8.8	4,650	51.6	5.4
Jun-08-2010	18	28.3	9.2	4,770	50.8	5.0
Jun-09-2010	14	27.4	9.5	4,730	49.4	3.7
Jun-10-2010	13	25.0	8.8	4,780	45.7	3.2
Jun-11-2010	12	21.8	8.7	4,640	49.1	3.2
Jun-12-2010	14	21.1	9.9	4,790	64.3	4.8
Jun-13-2010	13	23.1	10.0	5,280	62.9	4.5
Jun-14-2010	19	25.2	10.0	5,500	59.8	6.3
Jun-15-2010	19	26.1	10.0	5,620	50.0	5.1
Jun-16-2010	21	24.7	10.0	5,190	46.2	5.3
Jun-17-2010	26	23.3	9.4	5,020	42.2	5.8
Jun-18-2010	23	25.0	8.3	4,330	33.2	4.2
Jun-19-2010	21	25.4	7.4	3,980	32.6	3.7
Jun-20-2010	25	24.1	7.2	3,930	30.3	4.2
Jun-21-2010	24	23.7	6.9	3,750	32.3	4.2
Jun-22-2010	26	24.0	6.3	3,840	26.0	3.6
Jun-23-2010	28	26.1	6.6	3,550	27.5	4.1
Jun-24-2010	17	26.3	7.2	3,480	31.0	2.8
Jun-25-2010	14	26.8	7.0	3,720	28.5	2.2
Jun-26-2010	20	27.5	6.9	3,490	25.8	2.8
Jun-27-2010	30	28.5	8.3	4,070	42.7	6.8
Jun-28-2010	29	29.2	7.8	4,080	28.1	4.4
Jun-29-2010	22	29.3	7.7	4,060	28.8	3.5
Jun-30-2010	16	28.5	9.0	4,560	45.8	3.9
.
Mean	20	25.8	8.4	4,420	42.8	4.6
Total Acre-feet	1,210					
Total (lbs)						137

Load Limitation for June 2010 (lbs)	212
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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.

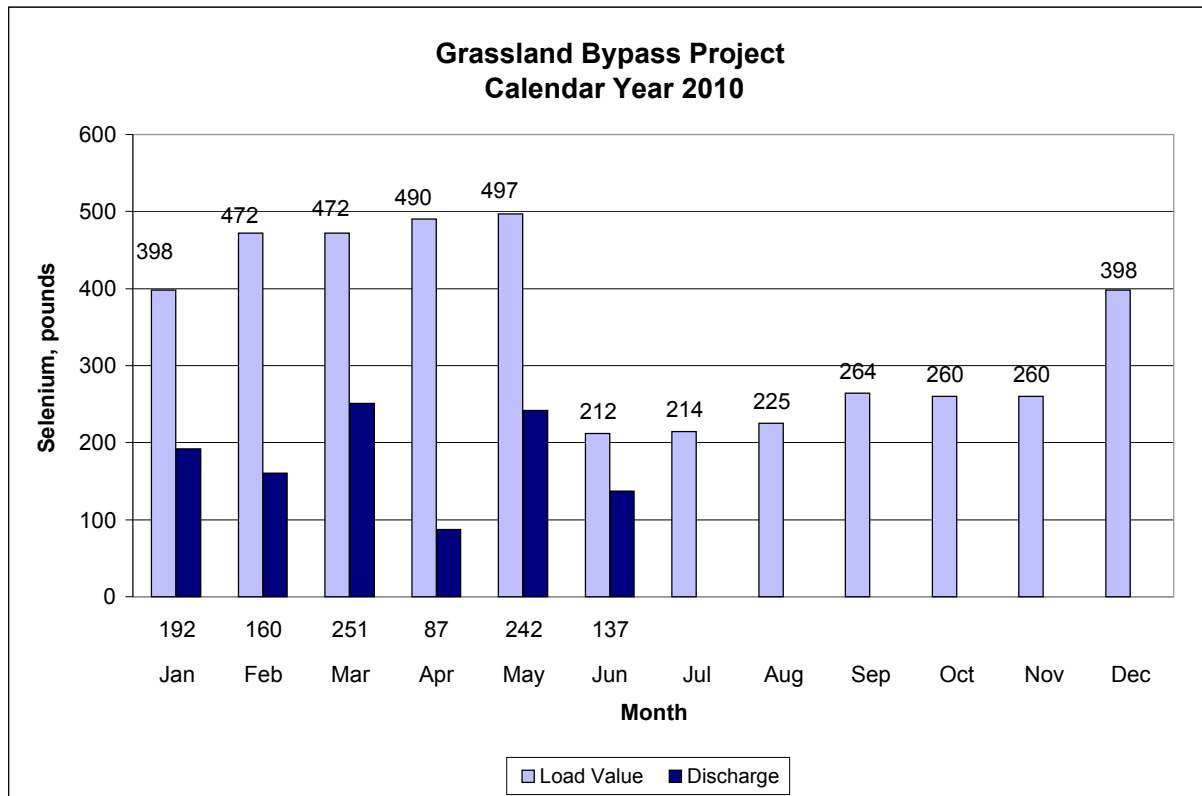


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), June 2010.

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
Jun-01-2010	65	23.6	2,770
Jun-02-2010	63	23.8	2,530
Jun-03-2010	53	24.5	2,660
Jun-04-2010	52	25.2	2,810
Jun-05-2010	52	25.9	2,910
Jun-06-2010	51	26.2	3,020
Jun-07-2010	51	26.0	3,160
Jun-08-2010	55	25.6	2,920
Jun-09-2010	46	24.9	2,890
Jun-10-2010	45	22.9	2,710
Jun-11-2010	49	20.9	2,690
Jun-12-2010	57	21.1	2,680
Jun-13-2010	55	23.4	2,910
Jun-14-2010	57	25.2	3,320
Jun-15-2010	55	25.4	3,740
Jun-16-2010	51	23.1	4,090
Jun-17-2010	53	23.0	NA
Jun-18-2010	65	23.7	NA
Jun-19-2010	63	22.7	NA
Jun-20-2010	76	22.7	NA
Jun-21-2010	69	23.0	NA
Jun-22-2010	64	24.3	NA
Jun-23-2010	56	25.7	NA
Jun-24-2010	39	25.5	NA
Jun-25-2010	37	25.9	NA
Jun-26-2010	46	26.5	NA
Jun-27-2010	57	27.5	NA
Jun-28-2010	59	28.3	NA
Jun-29-2010	52	27.8	NA
Jun-30-2010	41	27.1	NA
Mean	55	24.5	2,990

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), June 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
Jun-01-2010	151	22.9	1,150
Jun-02-2010	147	23.1	1,150
Jun-03-2010	132	24.0	1,220
Jun-04-2010	125	24.8	1,190
Jun-05-2010	123	25.5	1,230
Jun-06-2010	118	25.8	1,320
Jun-07-2010	129	25.5	1,060
Jun-08-2010	131	24.9	1,130
Jun-09-2010	129	23.9	1,130
Jun-10-2010	118	22.3	1,130
Jun-11-2010	119	20.8	1,160
Jun-12-2010	140	20.8	993
Jun-13-2010	159	22.5	953
Jun-14-2010	175	24.1	860
Jun-15-2010	186	24.3	830
Jun-16-2010	171	22.4	965
Jun-17-2010	145	21.9	1,090
Jun-18-2010	137	22.3	1,160
Jun-19-2010	142	21.2	1,160
Jun-20-2010	149	20.8	1,140
Jun-21-2010	169	21.5	1,070
Jun-22-2010	180	23.1	1,060
Jun-23-2010	178	24.7	1,110
Jun-24-2010	168	24.9	1,200
Jun-25-2010	164	24.9	1,110
Jun-26-2010	156	24.6	1,060
Jun-27-2010	154	25.8	1,060
Jun-28-2010	157	27.3	1,080
Jun-29-2010	162	27.1	1,060
Jun-30-2010	156	26.1	1,160
.	.	.	.
Mean	148	23.6	1,100

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), June 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
Jun-01-2010	1,500	22.4	N/A	N/A
Jun-02-2010	1,480	23.1	570	1.2
Jun-03-2010	1,480	23.7	550	1.1
Jun-04-2010	1,420	24.3	560	1.1
Jun-05-2010	1,370	24.9	590	0.9
Jun-06-2010	1,280	25.4	630	1.0
Jun-07-2010	1,360	25.2	620	1.4
Jun-08-2010	1,550	24.0	530	1.0
Jun-09-2010	1,530	23.2	500	1.0
Jun-10-2010	1,540	22.2	500	0.8
Jun-11-2010	1,500	20.9	500	0.7
Jun-12-2010	1,540	20.7	480	0.7
Jun-13-2010	1,420	22.1	530	1.3
Jun-14-2010	1,260	23.8	590	1.1
Jun-15-2010	1,150	24.6	680	1.1
Jun-16-2010	1,080	24.0	760	1.6
Jun-17-2010	1,010	23.3	800	1.5
Jun-18-2010	932	23.7	910	1.7
Jun-19-2010	904	23.1	940	1.7
Jun-20-2010	885	22.7	850	1.3
Jun-21-2010	893	22.9	870	1.3
Jun-22-2010	889	23.9	860	1.3
Jun-23-2010	835	25.0	870	1.2
Jun-24-2010	783	24.8	940	1.5
Jun-25-2010	712	24.6	970	1.3
Jun-26-2010	691	25.3	1,070	1.2
Jun-27-2010	727	26.3	940	1.0
Jun-28-2010	781	27.3	910	1.2
Jun-29-2010	761	27.2	910	1.7
Jun-30-2010	702	26.1	990	1.1
Mean	1,161	23.8	720	1.2

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	.	.	.
Apr-05-2010	16	.	.	5,360	17	.	.	.
Apr-12-2010	9	.	.	5,140	14	.	.	.
Apr-19-2010	13	.	.	5,240	44	.	.	.
Apr-26-2010	34	.	.	4,630	62	.	.	.
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	.	.	.

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
Apr-05-2010	16	.	.	5,200	.	50.7	.	9.2
Apr-12-2010	9	.	.	5,150	.	40.1	.	8.4
Apr-19-2010	13	.	.	5,350	.	37.2	.	9.3
Apr-26-2010	34	.	.	4,900	.	38.8	.	8.8
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

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
Apr-06-2010	16	13.7	7.8	3,750	47	17.0	6.6
Apr-13-2010	10	13.7	7.8	4,540	48	34.0	7.3
Apr-20-2010	13	19.4	8.0	4,670	72	25.0	7.9
Apr-27-2010	31	20.7	8.2	4,270	55	34.4	7.3
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

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
Apr-06-2010	96	13.2	8.1	2,240	.	0.6	2.0
Apr-13-2010	66	13.8	8.1	2,460	.	<0.4	2.2
Apr-20-2010	30	15.4	8.0	3,280	.	0.5	2.8
Apr-27-2010	24	18.1	7.9	2,920	.	0.6	2.5
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

** 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
Apr-06-2010	112	13.3	8.0	2,590	3.7	2.8
Apr-13-2010	76	13.7	8.0	3,110	6.5	3.1
Apr-20-2010	43	17.6	7.7	4,320	10.4	5.1
Apr-27-2010	55	19.2	7.9	3,940	19.9	5.3
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

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
Apr-06-2010	.	8.4	2,860	53	3.7	3.1
Apr-13-2010	.	7.9	2,880	42	6.4	3.6
Apr-28-2010	.	8.4	3,870	37	19.8	6.3
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

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
Apr-06-2010	214	12.6	6.8	1,470	0.6	0.7
Apr-13-2010	198	13.2	7.5	1,570	<0.4	0.7
Apr-20-2010	176	17.9	6.9	1,530	0.4	0.7
Apr-27-2010	NA	19.4	6.6	1,680	0.8	0.8
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

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
Apr-05-2010	5	.	.	530	1.0	0.3
Apr-12-2010	0	.	.	660	1.0	0.4
Apr-19-2010	10	.	.	560	0.6	0.3
Apr-26-2010	0	.	.	340	0.9	0.2
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	45	.	.	310	0.9	0.2
Jun-07-2010	65	.	.	400	0.6	0.2
Jun-14-2010	40	.	.	390	0.7	0.2
Jun-21-2010	15	.	.	370	0.8	0.3
Jun-28-2010	20	.	.	440	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 ^{††}	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Apr-05-2010	0	.	.	2,160	1.7	4.5
Apr-12-2010	20	.	.	650	1.0	0.6
Apr-19-2010	0	.	.	880	1.0	0.9
Apr-26-2010	0	.	.	1,920	3.3	2.6
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	60	.	.	280	1.0	0.3
Jun-07-2010	75	.	.	370	0.6	0.2
Jun-14-2010	30	.	.	380	0.8	0.2
Jun-21-2010	30	.	.	380	0.8	0.3
Jun-28-2010	30	.	.	400	1.0	0.3

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
Apr-05-2010	NA	.	.	300	0.4	0.3
Apr-12-2010	NA	.	.	440	<0.4	0.4
Apr-19-2010	NA	.	.	2,030	1.8	2.6
Apr-26-2010	NA	.	.	2,170	1.9	2.7
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

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
Apr-05-2010	NA	.	.	810	0.6	0.9
Apr-12-2010	NA	.	.	1,460	1.1	1.5
Apr-19-2010	NA	.	.	1,740	0.8	2.0
Apr-26-2010	NA	.	.	1,570	0.8	1.9
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

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
Apr-05-2010	.	.	.	710	1.0	0.4
Apr-12-2010	.	.	.	610	1.0	0.4
Apr-19-2010	.	.	.	530	0.5	0.3
Apr-26-2010	.	.	.	160	<0.4	<0.1
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

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
Apr-06-2010	884	13.6	7.3	810	0.6	0.4
Apr-13-2010	1,040	14.2	7.4	650	0.5	0.3
Apr-20-2010	1,030	19.2	7.9	620	<0.4	0.3
Apr-27-2010	1,110	20.5	7.3	580	0.4	0.3
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 e	23.1	7.5	970	0.5	0.4
Jun-29-2010	287	28.0	7.7	750	0.6	0.4

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
Apr-14-2010	.	.	.	916	0.83	0.5
Apr-21-2010	.	.	.	927	0.7	0.5
Apr-24-2010	.	.	.	1,040	1.92	0.6
May-05-2010	.	.	.	1,030	1.7	0.6
May-12-2010	.	.	.	863	1.9	0.5
May-19-2010	.	.	.	1,370	0.9	2.7
May-26-2010	.	.	.	1,050	1.88	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

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
Apr-06-2010	1,380	14.0	7.4	980	0.9	0.6
Apr-13-2010	1520	14.8	7.6	840	0.8	0.5
Apr-20-2010	1,600	19.1	7.8	760	0.6	0.4
Apr-27-2010	2,440	19.0	7.5	500	0.6	0.3
May-04-2010	1,550	19.2	7.3	610	0.9	0.4
May-11-2010	1,610	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

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from July 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	%	%	%	%	%	%
Jul-2009	95	98	93	98	98	100
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

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from July 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
Jul-2009	0.46	0.49	0.50	0.52	0.44	0.47
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

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from July 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	%	%	%	%	%	%
Jul-2009	90	70	100	100	90	90
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

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from July 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	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female	neonates per female
Jul-2009	34.2	21.6	38.5	32.1	26.4	22.4
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

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from July 2009 to June 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
Jul-2009	22.5	28.4	28.2	26.8	22.9	19.7
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

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, April 2010 to June 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
Apr-05-2010	20	0.5	4.7	0.5	0.7
Apr-07-2010	35	0.4	3.9	0.5	0.4
Apr-09-2010	43	0.4	10	0.4	0.6
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

Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, April 2010 to June 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
Apr-05-2010	39	64	83	20	8
Apr-07-2010	77	82	60	20	10
Apr-09-2010	105	155	119	25	21
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

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