

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

February 2010

July 19, 2010

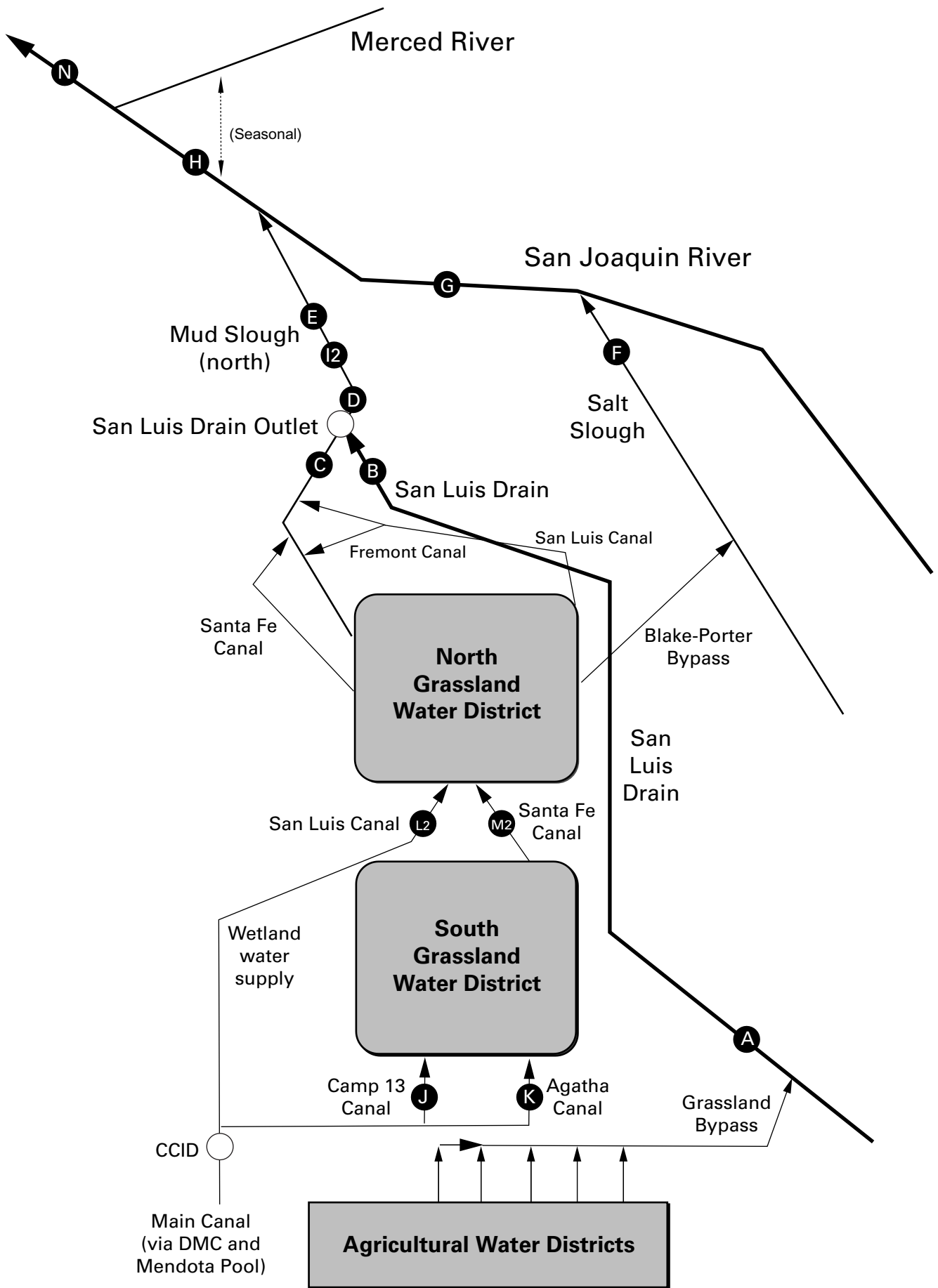
Preliminary Results

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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Monthly Monitoring

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Feb-01-2010	15	4,290
Feb-02-2010	17	4,090
Feb-03-2010	13	4,090
Feb-04-2010	11	4,360
Feb-05-2010	12	4,290
Feb-06-2010	16	4,010
Feb-07-2010	23	3,560
Feb-08-2010	19	3,850
Feb-09-2010	20	3,800
Feb-10-2010	20	4,060
Feb-11-2010	21	4,130
Feb-12-2010	21	4,140
Feb-13-2010	25	4,140
Feb-14-2010	24	4,010
Feb-15-2010	21	4,090
Feb-16-2010	18	4,340
Feb-17-2010	21	4,290
Feb-18-2010	22	4,400
Feb-19-2010	25	4,330
Feb-20-2010	28	4,230
Feb-21-2010	29	4,200
Feb-22-2010	28	4,320
Feb-23-2010	30	4,210
Feb-24-2010	44	3,870
Feb-25-2010	56	3,700
Feb-26-2010	33	3,870
Feb-27-2010	30	3,920
Feb-28-2010	30	4,280
Mean	24	4,100

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), February 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
Feb-01-2010	21	13.0	8.0	4,030	21.0	2.4
Feb-02-2010	20	13.1	8.1	4,320	17.9	1.9
Feb-03-2010	21	13.1	8.1	4,250	21.9	2.5
Feb-04-2010	18	13.3	9.4	4,800	27.4	2.7
Feb-05-2010	17	13.3	9.0	5,020	23.9	2.2
Feb-06-2010	17	13.2	8.6	4,820	23.7	2.2
Feb-07-2010	21	12.9	8.5	4,610	24.1	2.7
Feb-08-2010	27	13.5	7.8	4,450	23.2	3.4
Feb-09-2010	26	13.8	7.9	4,400	25.8	3.6
Feb-10-2010	25	13.2	7.6	4,570	28.5	3.8
Feb-11-2010	25	13.5	6.8	4,320	25.5	3.5
Feb-12-2010	26	13.9	7.2	4,130	26.7	3.7
Feb-13-2010	25	14.3	6.9	4,320	30.7	4.1
Feb-14-2010	28	14.8	7.3	4,280	26.9	4.0
Feb-15-2010	28	15.3	8.2	4,680	32.1	4.9
Feb-16-2010	26	15.8	8.4	4,760	38.1	5.3
Feb-17-2010	22	16.0	8.8	4,790	39.1	4.7
Feb-18-2010	25	16.5	8.3	4,780	45.7	6.2
Feb-19-2010	26	16.6	7.8	4,680	39.6	5.5
Feb-20-2010	29	16.1	7.9	4,770	39.3	6.1
Feb-21-2010	32	15.0	8.1	4,920	39.8	6.9
Feb-22-2010	33	14.3	8.4	5,000	50.6	9.0
Feb-23-2010	34	13.4	8.4	5,050	49.3	9.1
Feb-24-2010	39	12.6	8.3	4,900	43.3	9.0
Feb-25-2010	51	13.4	8.3	4,930	46.6	12.8
Feb-26-2010	59	13.6	8.3	4,930	53.3	17.0
Feb-27-2010	40	14.2	8.6	4,550	49.3	10.7
Feb-28-2010	36	14.3	8.7	4,760	52.2	10.1
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Mean	28	14.1	8.1	4,640	34.5	5.7
Total Acre-feet	1,580					
Total (lbs)						160

Load Limitation for February 2010 (lbs)	472
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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.

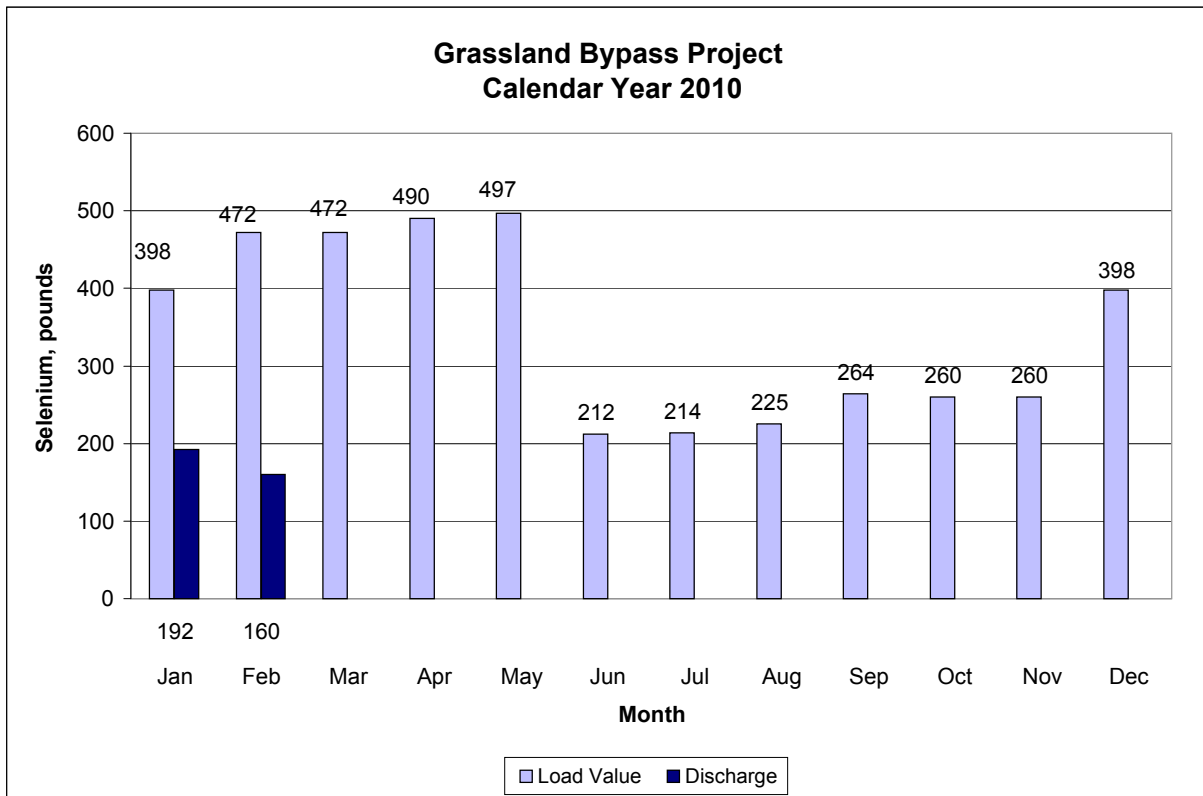


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), February 2010.

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
Feb-01-2010	133	12.8	2,500
Feb-02-2010	120	12.9	2,630
Feb-03-2010	103	13.0	2,330
Feb-04-2010	84	12.9	NA
Feb-05-2010	84	13.1	3,120
Feb-06-2010	97	12.8	2,830
Feb-07-2010	111	12.5	2,700
Feb-08-2010	120	13.2	2,680
Feb-09-2010	124	13.4	2,700
Feb-10-2010	129	13.0	2,660
Feb-11-2010	129	13.4	2,640
Feb-12-2010	121	13.7	2,690
Feb-13-2010	116	14.4	2,750
Feb-14-2010	116	14.9	2,820
Feb-15-2010	116	15.3	2,890
Feb-16-2010	113	15.8	2,870
Feb-17-2010	106	16.2	2,860
Feb-18-2010	104	16.4	2,950
Feb-19-2010	93	16.2	3,120
Feb-20-2010	98	15.6	3,110
Feb-21-2010	108	14.2	3,140
Feb-22-2010	e118	NA	NA
Feb-23-2010	e125	NA	NA
Feb-24-2010	e132	NA	NA
Feb-25-2010	150	13.3	3,050
Feb-26-2010	167	13.7	3,060
Feb-27-2010	167	14.1	2,710
Feb-28-2010	155	14.4	2,830
Mean	119	14.0	2,820

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), February 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
Feb-01-2010	113	12.3	2,280
Feb-02-2010	100	12.7	2,380
Feb-03-2010	89	13.1	2,520
Feb-04-2010	86	13.0	2,490
Feb-05-2010	86	13.4	2,460
Feb-06-2010	88	13.1	2,360
Feb-07-2010	100	12.8	2,170
Feb-08-2010	120	13.1	1,990
Feb-09-2010	133	13.2	1,880
Feb-10-2010	135	12.9	1,970
Feb-11-2010	147	13.0	1,890
Feb-12-2010	148	13.2	1,880
Feb-13-2010	141	13.7	1,940
Feb-14-2010	144	14.2	1,860
Feb-15-2010	151	14.4	1,770
Feb-16-2010	157	14.7	1,710
Feb-17-2010	151	15.1	1,800
Feb-18-2010	146	15.3	1,840
Feb-19-2010	155	15.2	1,750
Feb-20-2010	167	14.8	1,710
Feb-21-2010	175	13.9	1,710
Feb-22-2010	168	13.4	1,810
Feb-23-2010	172	12.6	1,740
Feb-24-2010	198	12.0	1,630
Feb-25-2010	229	12.5	1,560
Feb-26-2010	276	12.9	1,560
Feb-27-2010	323	13.2	1,620
Feb-28-2010	355	13.5	1,570
Mean	159	13.5	1,920

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), February 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
Feb-01-2010	915	11.8	1,340	1.1
Feb-02-2010	855	12.2	1,420	1.0
Feb-03-2010	798	12.4	1,460	0.9
Feb-04-2010	760	12.5	1,550	0.9
Feb-05-2010	736	12.6	1,620	0.9
Feb-06-2010	717	12.8	1,660	1.0
Feb-07-2010	735	12.5	1,620	0.9
Feb-08-2010	779	12.9	1,630	0.8
Feb-09-2010	956	13.1	1,320	1.0
Feb-10-2010	986	12.5	1,270	0.9
Feb-11-2010	1,050	12.8	1,190	1.1
Feb-12-2010	1,180	12.9	1,010	0.9
Feb-13-2010	1,160	13.5	1,020	1.1
Feb-14-2010	1,040	13.7	1,180	1.2
Feb-15-2010	946	14.2	1,290	1.2
Feb-16-2010	888	14.7	1,380	1.3
Feb-17-2010	843	15.1	1,450	1.5
Feb-18-2010	803	15.4	1,490	1.4
Feb-19-2010	760	15.5	1,580	1.6
Feb-20-2010	723	15.3	1,670	1.7
Feb-21-2010	732	14.4	1,630	2.0
Feb-22-2010	754	13.8	1,590	1.9
Feb-23-2010	760	13.1	1,620	2.2
Feb-24-2010	818	12.5	1,570	2.5
Feb-25-2010	949	13.0	1,530	2.3
Feb-26-2010	1,150	13.3	1,320	2.3
Feb-27-2010	1,420	13.3	1,180	2.4
Feb-28-2010	1,730	13.3	1,010	1.9
Mean	927	13.4	1,410	1.4

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	.	.	.
Dec-07-2009	17	.	.	4,990	117	.	.	.
Dec-14-2009	23	.	.	4,660	210	.	.	.
Dec-21-2009	16	.	.	5,030	73	.	.	.
Dec-28-2009	18	.	.	5,490	162	.	.	.
Jan-04-2010	16	.	.	5,110	165	.	.	.
Jan-11-2010	15	.	.	5,060	84	.	.	.
Jan-19-2010	26	.	.	4,930	290	.	.	.
Jan-25-2010	13	.	.	4,720	40	.	.	.
Feb-01-2010	15	.	.	5,060	70	.	.	.
Feb-08-2010	19	.	.	4,550	174	.	.	.
Feb-16-2010	18	.	.	5,250	77	.	.	.
Feb-22-2010	28	.	.	5,170	110	.	.	.

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
Dec-06-2009	12	.	.	4,920	.	48.1	.	8.2
Dec-13-2009	26	.	.	4,940	.	50.0	.	8.6
Dec-20-2009	16	.	.	5,010	.	45.8	.	9.0
Dec-27-2009	19	.	.	5,140	.	60.8	.	9.0
Jan-03-2010	16	.	.	5,130	.	68.7	.	9.2
Jan-10-2010	16	.	.	5,040	.	65.3	.	8.4
Jan-17-2010	19	.	.	4,980	.	66.0	.	8.4
Jan-24-2010	15	.	.	4,830	.	43.0	.	9.7
Jan-31-2010	16	.	.	4,810	.	28.2	.	9.9
Feb-07-2010	23	.	.	4,870	.	32.7	.	9.6
Feb-14-2010	24	.	.	4,900	.	41.4	.	8.5
Feb-21-2010	29	.	.	5,160	.	49.5	.	8.6

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
Dec-01-2009	19	9.6	7.7	3,840	24	26.7	5.5
Dec-08-2009	21	6.2	7.5	4,210	20	33.6	7.1
Dec-15-2009	27	10.6	7.3	4,370	37	38.2	7.1
Dec-22-2009	18	10.3	7.7	4,400	31	37.4	7.3
Dec-29-2009	22	8.6	6.6	4,580	35	58.2	7.5
Jan-05-2010	21	10.5	7.3	4,310	32	37.1	7.4
Jan-12-2010	21	9.1	7.1	4,560	31	29.5	7.3
Jan-19-2010	32	9.9	7.2	4,120	59	48.3	6.5
Jan-26-2010	20	9.8	7.6	4,700	35	50.6	8.6
Feb-02-2010	20	12.4	8.2	3,910	41	16.7	7.2
Feb-09-2010	26	13.0	8.4	4,380	49	26.4	8.3
Feb-16-2010	26	15.0	8.4	4,770	55	39.5	8.2
Feb-23-2010	34	13.1	7.7	4,760	70	46.7	7.8

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
Dec-01-2009	50	9.0	7.9	1,630	.	<0.4	1.6
Dec-08-2009	71	5.8	7.9	2,020	.	<0.4	1.5
Dec-15-2009	163	10.5	7.8	1,770	.	<0.4	1.3
Dec-22-2009	98	9.7	7.8	1,890	.	0.5	1.5
Dec-29-2009	73	9.2	7.0	2,160	.	<0.4	1.6
Jan-05-2010	66	10.2	7.6	2,420	.	0.5	1.8
Jan-12-2010	63	9.7	7.4	2,380	.	<0.4	1.7
Jan-19-2010	195	9.9	7.0	1,740	.	<0.4	1.4
Jan-26-2010	210	10.1	7.9	1,890	.	0.5	1.6
Feb-02-2010	100	12.1	7.9	2,350	.	0.5	1.8
Feb-09-2010	98	12.6	7.8	2,250	.	<0.4	1.8
Feb-16-2010	87	14.9	7.8	2,140	.	0.5	1.9
Feb-23-2010	e91	12.4	7.4	2,510	.	0.5	2.0

** 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
Dec-01-2009	69	9.4	7.8	2,800	8.6	2.7
Dec-08-2009	92	5.9	7.8	2,460	6.9	2.5
Dec-15-2009	190	10.5	7.8	2,110	5.8	2.1
Dec-22-2009	116	9.9	7.8	2,420	6.7	2.6
Dec-29-2009	95	9.1	6.7	2,950	12.9	3.2
Jan-05-2010	87	10.4	7.5	2,900	9.0	3.3
Jan-12-2010	84	9.5	7.2	2,960	6.2	3.1
Jan-19-2010	227	9.9	7.2	2,160	8.2	2.3
Jan-26-2010	230	9.9	7.8	2,150	5.8	2.2
Feb-02-2010	120	12.2	7.9	2,700	3.4	2.8
Feb-09-2010	124	13.0	7.9	2,680	4.7	3.1
Feb-16-2010	113	14.8	7.9	2,850	8.9	3.3
Feb-23-2010	e125	12.8	7.6	3,460	17.5	4.2

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
Dec-01-2009	.	8.4	2,880	16	7.8	3.1
Dec-08-2009	.	NA	2,490	14	7.7	2.7
Dec-15-2009	.	8.4	2,160	13	6.6	2.4
Dec-21-2009	.	7.8	2,420	NA	6.4	2.5
Jan-05-2010	.	7.9	3,050	17	8.9	3.3
Jan-12-2010	.	8.1	3,070	12	12.7	3.3
Jan-28-2010	.	7.4	2,390	27	5.2	2.6
Feb-02-2010	.	8.4	2,590	46	3.5	3.2
Feb-12-2010	.	8.1	2,760	NA	5.6	3.2
Feb-17-2010	.	8.1	2,990	41	8.2	3.2

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
Dec-01-2009	110	8.8	7.6	1,660	<0.4	0.8
Dec-08-2009	71	6.1	7.2	1,840	<0.4	0.9
Dec-15-2009	122	10.4	7.4	1,520	<0.4	1.0
Dec-22-2009	85	10.2	7.5	1,880	0.6	1.2
Dec-29-2009	55	10.0	6.8	2,170	<0.4	1.1
Jan-05-2010	51	10.9	7.7	2,340	<0.4	1.2
Jan-12-2010	62	10.3	7.4	2,020	0.6	1.1
Jan-19-2010	114	8.7	6.8	1,740	0.5	1.0
Jan-26-2010	216	9.8	7.2	1,790	0.5	1.3
Feb-02-2010	100	11.8	7.5	2,140	<0.4	1.3
Feb-09-2010	133	12.8	7.6	1,810	0.4	1.0
Feb-16-2010	157	13.8	7.6	1,720	0.9	0.8
Feb-23-2010	172	12.6	7.3	1,740	0.7	0.7

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
Dec-07-2009	5	.	.	660	0.7	0.3
Dec-14-2009	5	.	.	600	0.6	0.3
Dec-21-2009	5	.	.	620	<0.4	0.2
Dec-28-2009	5	.	.	730	2.2	0.4
Jan-04-2010	5	.	.	910	0.5	0.5
Jan-11-2010	5	.	.	810	0.4	0.3
Jan-19-2010	5	.	.	960	0.9	0.5
Jan-25-2010	5	.	.	1,010	3.2	0.7
Feb-01-2010	30	.	.	740	0.5	0.4
Feb-08-2010	20	.	.	770	1.2	0.4
Feb-16-2010	20	.	.	820	2.7	1.6
Feb-22-2010	20	.	.	750	2.1	0.4

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
Dec-07-2009	30	.	.	620	1.3	0.4
Dec-14-2009	30	.	.	730	0.4	0.5
Dec-21-2009	30	.	.	740	0.6	0.5
Dec-28-2009	30	.	.	700	0.5	0.3
Jan-04-2010	50	.	.	720	0.7	0.4
Jan-11-2010	50	.	.	840	0.5	0.4
Jan-19-2010	18	.	.	780	1.8	0.6
Jan-25-2010	18	.	.	940	2.1	0.8
Feb-01-2010	18	.	.	940	1.2	0.8
Feb-08-2010	33	.	.	990	3.5	0.7
Feb-16-2010	24	.	.	790	1.6	0.5
Feb-22-2010	24	.	.	730	1.8	0.5

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
Dec-07-2009	NA	.	.	1,550	1.1	2.2
Dec-14-2009	NA	.	.	560	<0.4	0.3
Dec-21-2009	NA	.	.	1,260	0.6	1.2
Dec-28-2009	NA	.	.	670	0.6	0.6
Jan-04-2010	NA	.	.	790	0.5	0.5
Jan-11-2010	NA	.	.	760	<0.4	0.3
Jan-19-2010	NA	.	.	900	0.7	0.5
Jan-25-2010	NA	.	.	670	<0.4	0.8
Feb-01-2010	NA	.	.	1,190	0.5	1.4
Feb-08-2010	NA	.	.	920	1.1	0.6
Feb-16-2010	NA	.	.	1,550	1.1	0.4
Feb-22-2010	NA	.	.	790	2.2	0.5

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
Dec-07-2009	NA	.	.	1,300	0.7	1.5
Dec-14-2009	NA	.	.	1,030	0.5	0.7
Dec-21-2009	NA	.	.	1,400	0.5	1.5
Dec-28-2009	NA	.	.	1,540	0.5	1.5
Jan-04-2010	NA	.	.	1,470	0.7	1.6
Jan-11-2010	NA	.	.	1,500	0.4	1.3
Jan-19-2010	NA	.	.	1,230	0.7	1.0
Jan-25-2010	NA	.	.	1,620	0.7	1.9
Feb-01-2010	NA	.	.	1,900	0.4	2.3
Feb-08-2010	NA	.	.	1,400	1.2	1.3
Feb-16-2010	NA	.	.	1,550	1.3	1.6
Feb-22-2010	NA	.	.	1,410	1.3	1.2

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
Dec-07-2009	.	.	.	660	0.5	0.3
Dec-14-2009	.	.	.	720	<0.4	0.3
Dec-21-2009	.	.	.	680	0.8	0.4
Dec-28-2009	.	.	.	630	0.4	0.4
Jan-04-2010	.	.	.	700	1.4	0.4
Jan-11-2010	.	.	.	740	1.8	0.4
Jan-19-2010	.	.	.	790	1.5	0.5
Jan-25-2010	.	.	.	780	1.4	0.6
Feb-01-2010	.	.	.	840	1.0	0.4
Feb-08-2010	.	.	.	970	5.2	0.7
Feb-16-2010	.	.	.	780	1.6	0.5
Feb-22-2010	.	.	.	730	1.8	0.7

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
Dec-01-2009	210	8.9	7.4	1,460	<0.4	0.6
Dec-08-2009	115	5.9	7.9	2,040	<0.4	0.9
Dec-15-2009	185	10.0	7.3	1,490	<0.4	0.8
Dec-22-2009	133	9.9	7.1	1,960	<0.4	1.0
Dec-29-2009	81	9.5	6.9	2,390	<0.4	0.8
Jan-05-2010	84	10.4	6.9	2,400	<0.4	1.0
Jan-12-2010	87	9.9	7.6	2,410	0.4	1.0
Jan-19-2010	132	10.1	7.8	2,120	<0.4	1.1
Jan-26-2010	1,250	9.1	7.8	640	0.7	0.4
Feb-02-2010	288	11.9	7.5	1,730	<0.4	0.8
Feb-09-2010	389	12.7	7.8	1,340	0.5	0.5
Feb-16-2010	387	13.6	7.7	1,340	0.6	0.6
Feb-23-2010	315	12.9	7.4	1,780	0.5	0.7

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
Dec-02-2009	.	.	.	1,640	10.2	1.9
Dec-09-2009	.	.	.	1,630	16.6	1.4
Dec-22-2009	.	.	.	1,740	17.5	1.5
Jan-12-2010	.	.	.	2,230	14.0	2.7
Jan-20-2010	.	.	.	2,230	52.0	2.5
Feb-03-2010	.	.	.	1,260	<0.4	1.2
Feb-16-2010	.	.	.	1,430	0.6	1.4
Feb-23-2010	.	.	.	1,520	<0.4	1.5

Outside of normal range.

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
Dec-01-2009	517	9.4	7.7	1,280	1.2	0.8
Dec-08-2009	489	6.5	8.0	1,360	1.8	0.8
Dec-15-2009	664	10.1	7.8	1,300	2.0	1.0
Dec-22-2009	576	10.0	7.8	1,420	1.8	1.0
Dec-29-2009	477	9.4	7.2	1,570	2.0	1.0
Jan-05-2010	449	10.3	7.2	1,620	2.5	1.1
Jan-12-2010	444	9.8	7.5	1,600	2.8	1.0
Jan-19-2010	668	10.5	7.8	1,550	2.6	1.1
Jan-26-2010	2,280	9.4	7.7	790	0.9	0.6
Feb-02-2010	855	11.9	7.8	1,390	0.9	1.0
Feb-09-2010	956	12.8	7.8	1,270	0.9	0.8
Feb-16-2010	888	13.8	7.8	1,390	1.3	0.9
Feb-23-2010	760	13.2	7.6	1,620	2.3	1.1

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 2009 to February 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	%	%	%	%	%	%
Mar-2009	98	100	100	100	98	95
Apr-2009	100	93	95	95	73	98
May-2009	98	98	98	100	93	95
Jun-2009	95	95	95	93	93	95
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

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 2009 to February 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
Mar-2009	0.50	0.50	0.45	0.50	0.44	0.44
Apr-2009	0.33	0.43	0.35	0.40	0.30	0.38
May-2009	0.48	0.41	0.41	0.42	0.42	0.42
Jun-2009	0.42	0.40	0.46	0.44	0.43	0.45
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

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 2009 to February 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	%	%	%	%	%	%
Mar-2009	100	100	100	100	90	90
Apr-2009	100	100	80	90	90	100
May-2009	80	100	90	100	100	100
Jun-2009	100	0*	30*	90	100	100
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

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 2009 to February 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
Mar-2009	43.9	34.5	41.2	35.6	37.5	27.2
Apr-2009	45.4	52.3	23.1	30.2	30.2	31.6
May-2009	22.1	31.8	36.3	29.3	29.9	23.6
Jun-2009	42.9	4.8*	13.6*	35.9	28.2	28.6
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

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 2009 to February 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
Mar-2009	12.9*	32.9	31.3	34.0	27.4	29.9
Apr-2009	20.9*	22.2	27.0	24.3	25.0	19.3
May-2009	21.6	33.2	25.2	11.4*	21.4	22.8
Jun-2009	19.8	20.2	24.4	21.7	20.1	17.0
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

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, December 2009 to February 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
Dec-14-2009	42	<0.4	6.4	<0.4	<0.4
Dec-16-2009	42	<0.4	7.0	<0.4	<0.4
Dec-18-2009	38	<0.4	6.4	<0.4	<0.4
Jan-11-2010	54	<0.4	13	0.8	0.5
Jan-13-2010	52	<0.4	13	0.8	0.8
Jan-15-2010	51	<0.4	12	0.6	0.8
Feb-22-2010	23	>0.4	6.0	<0.4	<0.4
Feb-24-2010	45	>0.4	15	0.6	0.6
Feb-26-2010	51	0.5	19	0.7	0.7

Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, December 2009 to February 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
Dec-14-2009	29	32	43	28	1
Dec-16-2009	29	28	36	37	2
Dec-18-2009	26	22	34	3	<1
Jan-11-2010	31	11	21	15	3
Jan-13-2010	26	45	48	50	4
Jan-15-2010	33	22	38	27	3
Feb-22-2010	104	58	75	34	17
Feb-24-2010	80	30	58	40	14
Feb-26-2010	93	63	90	33	15

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