

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

July 2002

October 01, 2002

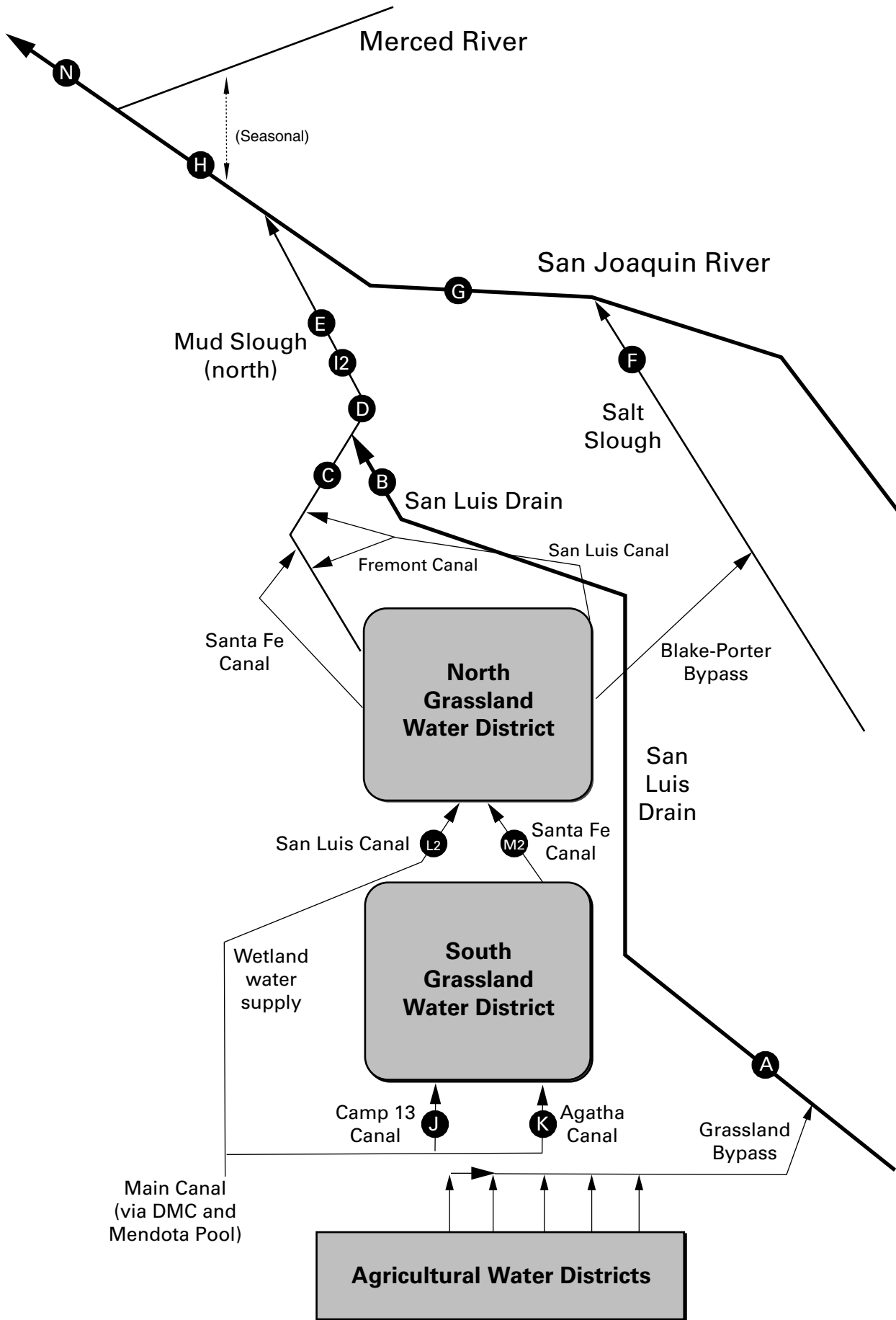
Preliminary Results

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 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Jul-01-2002	52	4,020
Jul-02-2002	63	4,160
Jul-03-2002	59	4,020
Jul-04-2002	58	4,080
Jul-05-2002	59	4,170
Jul-06-2002	58	4,230
Jul-07-2002	60	4,220
Jul-08-2002	58	4,320
Jul-09-2002	54	4,140
Jul-10-2002	58	3,960
Jul-11-2002	56	3,910
Jul-12-2002	51	4,010
Jul-13-2002	54	4,000
Jul-14-2002	56	4,090
Jul-15-2002	54	4,160
Jul-16-2002	53	4,130
Jul-17-2002	54	3,940
Jul-18-2002	54	3,860
Jul-19-2002	54	3,790
Jul-20-2002	56	3,780
Jul-21-2002	55	3,760
Jul-22-2002	52	3,890
Jul-23-2002	49	3,860
Jul-24-2002	46	3,560
Jul-25-2002	44	3,440
Jul-26-2002	49	3,440
Jul-27-2002	44	3,420
Jul-28-2002	41	3,610
Jul-29-2002	41	3,770
Jul-30-2002	42	3,830
Jul-31-2002	46	3,790
Mean	53	3,910

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), July 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USGS	USGS	CVRWQCB	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Jul-01-2002	46	27.4	P	4,120	41.8	10.4
Jul-02-2002	52	28.3	P	4,010	37.2	10.4
Jul-03-2002	63	28.0	P	4,370	49.3	16.8
Jul-04-2002	58	27.2	P	4,440	49.5	15.5
Jul-05-2002	58	26.3	P	4,440	54.1	16.9
Jul-06-2002	58	26.0	P	4,390	50.1	15.7
Jul-07-2002	58	25.9	P	4,350	48.5	15.2
Jul-08-2002	60	25.4	P	4,510	54.7	17.7
Jul-09-2002	58	26.3	P	4,540	53.6	16.8
Jul-10-2002	55	27.6	P	4,540	47.2	14.0
Jul-11-2002	58	28.2	P	4,490	51.5	16.1
Jul-12-2002	55	28.3	P	4,330	43.1	12.8
Jul-13-2002	52	28.5	P	4,080	37.1	10.4
Jul-14-2002	53	28.8	P	3,960	39.8	11.4
Jul-15-2002	55	28.4	P	4,100	40.0	11.9
Jul-16-2002	55	27.4	P	4,120	41.9	12.4
Jul-17-2002	54	26.7	P	4,270	45.3	13.2
Jul-18-2002	54	26.4	P	4,180	42.0	12.2
Jul-19-2002	54	26.2	P	4,520	46.1	13.4
Jul-20-2002	55	26.7	P	4,270	37.8	11.2
Jul-21-2002	56	26.6	P	4,150	36.0	10.9
Jul-22-2002	56	26.1	P	4,010	34.0	10.3
Jul-23-2002	53	26.0	P	3,930	33.7	9.6
Jul-24-2002	51	25.8	P	3,920	33.9	9.3
Jul-25-2002	47	25.9	P	3,850	30.8	7.8
Jul-26-2002	46	26.0	P	3,970	32.8	8.1
Jul-27-2002	50	26.5	P	3,900	33.1	8.9
Jul-28-2002	45	26.4	P	3,570	28.7	7.0
Jul-29-2002	43	26.0	P	3,560	27.5	6.4
Jul-30-2002	43	26.0	P	3,510	27.2	6.3
Jul-31-2002	44	26.2	P	3,460	24.1	5.7
Mean	53	26.8	P	4,120	40.4	
Total Acre-feet	3,260				Total (lbs)	365

Load Limitation for July 2002	(lbs)	429
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Figure 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

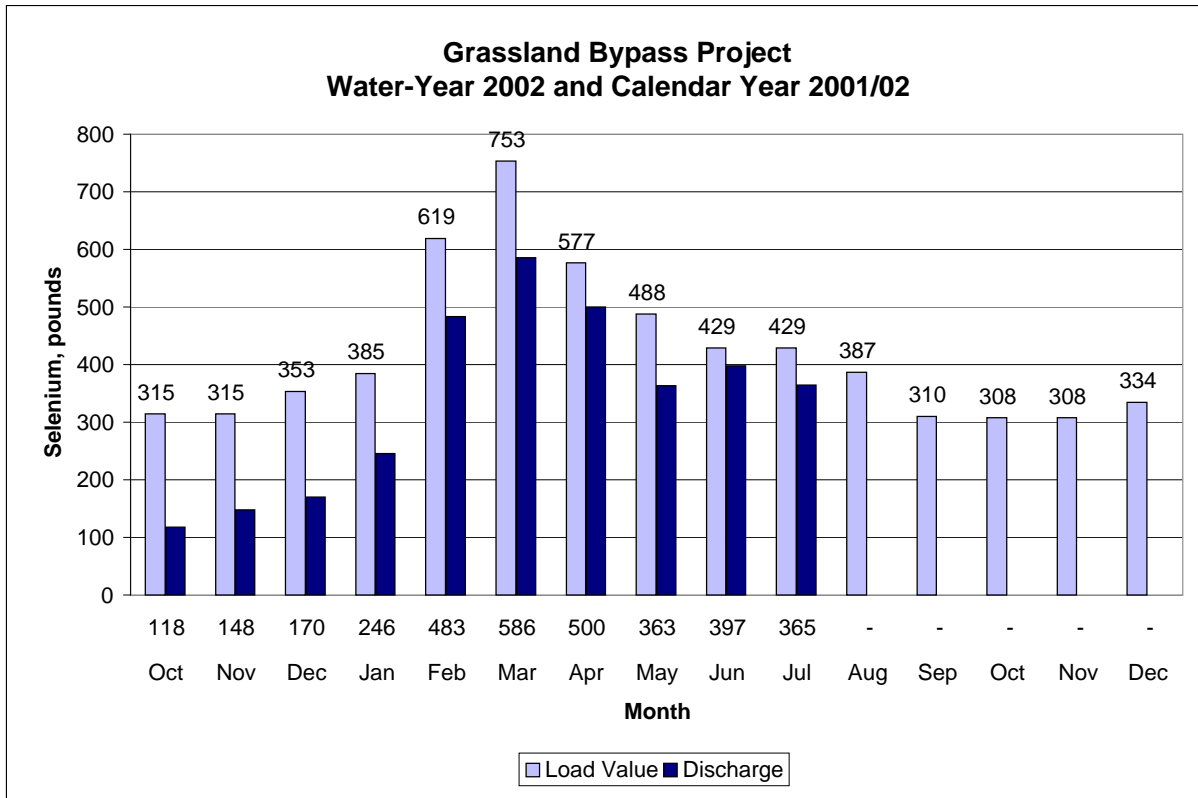


Table 2b. Monthly selenium discharges from the terminus of the San Luis Drain into Mud Slough compared to load values.

PARAMETER	Discharge	Load Value
UNITS	lbs	lbs
Oct	118	315
Nov	148	315
Dec	170	353
Jan	246	385
Feb	483	619
Mar	586	753
Apr	500	577
May	363	488
Jun	397	429
Jul	365	429
Aug	-	387
Sep	-	310
Oct	-	308
Nov	-	308
Dec	-	334

**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), July 2002.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jul-01-2002	52	27.6	3,710
Jul-02-2002	53	28.2	3,790
Jul-03-2002	65	27.9	4,030
Jul-04-2002	74	27.2	3,540
Jul-05-2002	76	26.6	3,340
Jul-06-2002	93	26.3	3,040
Jul-07-2002	98	26.2	2,910
Jul-08-2002	97	25.6	3,080
Jul-09-2002	88	26.5	3,260
Jul-10-2002	71	27.7	3,530
Jul-11-2002	65	28.3	3,820
Jul-12-2002	55	28.4	3,900
Jul-13-2002	52	28.5	3,620
Jul-14-2002	53	28.6	3,590
Jul-15-2002	54	28.2	3,740
Jul-16-2002	54	27.3	3,820
Jul-17-2002	52	26.8	3,930
Jul-18-2002	58	26.6	3,760
Jul-19-2002	68	26.4	3,410
Jul-20-2002	84	26.8	2,930
Jul-21-2002	95	26.8	2,620
Jul-22-2002	97	26.1	2,580
Jul-23-2002	109	25.9	2,340
Jul-24-2002	101	25.8	2,380
Jul-25-2002	83	25.8	2,560
Jul-26-2002	79	25.7	2,650
Jul-27-2002	81	26.4	2,760
Jul-28-2002	66	26.4	2,770
Jul-29-2002	74	25.8	2,410
Jul-30-2002	74	25.9	2,520
Jul-31-2002	65	26.3	2,520
Mean	74	26.9	3,190

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), July 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jul-01-2002	156	NA	1,110
Jul-02-2002	144	NA	1,150
Jul-03-2002	137	NA	1,190
Jul-04-2002	135	NA	1,260
Jul-05-2002	156	NA	1,180
Jul-06-2002	181	NA	1,110
Jul-07-2002	170	NA	1,090
Jul-08-2002	155	NA	1,120
Jul-09-2002	148	NA	1,090
Jul-10-2002	143	NA	1,100
Jul-11-2002	122	NA	1,250
Jul-12-2002	107	NA	1,300
Jul-13-2002	123	NA	1,180
Jul-14-2002	133	NA	1,080
Jul-15-2002	145	NA	NA
Jul-16-2002	133	25.9	1,300
Jul-17-2002	129	25.8	1,250
Jul-18-2002	135	26.0	1,130
Jul-19-2002	154	26.0	1,020
Jul-20-2002	153	26.8	981
Jul-21-2002	159	26.2	950
Jul-22-2002	164	25.2	884
Jul-23-2002	178	25.3	871
Jul-24-2002	171	25.5	892
Jul-25-2002	152	25.5	972
Jul-26-2002	141	25.4	957
Jul-27-2002	150	25.8	975
Jul-28-2002	166	25.4	902
Jul-29-2002	186	24.8	812
Jul-30-2002	212	25.2	724
Jul-31-2002	197	25.8	744
Mean	153	25.7	1,050

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), July 2002.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	CVRWOCB	CVRWOCB
UNITS	cfs	°C	µS/cm	µg/L
Jul-01-2002	487	28.2	1,330	4.3
Jul-02-2002	459	28.8	1,300	4.2
Jul-03-2002	428	27.8	1,420	3.9
Jul-04-2002	426	26.5	1,510	5.0
Jul-05-2002	406	26.3	1,610	6.5
Jul-06-2002	428	26.6	1,590	5.8
Jul-07-2002	457	26.8	1,460	6.5
Jul-08-2002	456	25.7	1,350	5.3
Jul-09-2002	442	26.7	1,420	5.5
Jul-10-2002	409	28.0	1,460	5.9
Jul-11-2002	372	28.7	1,490	6.2
Jul-12-2002	374	28.5	1,620	6.3
Jul-13-2002	310	28.1	1,750	6.8
Jul-14-2002	376	27.7	1,710	5.7
Jul-15-2002	365	26.7	1,590	4.9
Jul-16-2002	357	25.6	1,490	4.9
Jul-17-2002	315	25.6	1,620	5.6
Jul-18-2002	349	25.6	1,580	5.0
Jul-19-2002	339	26.1	1,600	5.4
Jul-20-2002	395	26.9	1,540	5.4
Jul-21-2002	397	26.7	1,420	5.3
Jul-22-2002	388	26.0	1,410	4.0
Jul-23-2002	395	25.7	1,410	4.2
Jul-24-2002	424	25.6	1,320	3.8
Jul-25-2002	430	25.4	1,230	3.4
Jul-26-2002	435	25.2	1,340	3.6
Jul-27-2002	435	25.8	1,310	3.3
Jul-28-2002	445	25.7	1,360	3.4
Jul-29-2002	445	25.1	1,360	3.4
Jul-30-2002	437	25.4	1,320	3.1
Jul-31-2002	442	25.9	1,210	2.9
Mean	407	26.6	1,460	4.8

Table 6a. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from grab samples.

See Table 26 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-01-2002	42	.	.	4,800	130	.	.	.
May-08-2002	35	.	.	4,990	P	.	.	.
May-15-2002	34	.	.	5,090	110	.	.	.
May-22-2002	54	.	.	3,680	310	.	.	.
May-29-2002	55	.	.	4,120	220	.	.	.
Jun-05-2002	45	.	.	4,500	NA	.	.	.
Jun-12-2002	50	.	.	4,720	300	.	.	.
Jun-19-2002	68	.	.	4,210	270	.	.	.
Jun-26-2002	53	.	.	4,320	230	.	.	.
Jul-03-2002	59	.	.	4,030	240	.	.	.
Jul-10-2002	58	.	.	4,220	120	.	.	.
Jul-17-2002	54	.	.	4,080	P	.	.	.
Jul-24-2002	46	.	.	3,730	130	.	.	.
Jul-31-2002	46	.	.	3,920	100	.	.	.

Table 6b. Weekly water quality monitoring at Station A (inflow to San Luis Drain), taken from composite samples.

See Table 26 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-07-2002	33	.	.	4,900	.	57.7	.	7.4
May-14-2002	34	.	.	5,070	.	58.3	.	8.2
May-21-2002	56	.	.	NA	.	40.9	.	6.7
May-30-2002	62	.	.	NA	.	37.9	.	6.9
Jun-04-2002	50	.	.	4,470	.	41.8	.	7.4
Jun-11-2002	52	.	.	4,530	.	41.4	.	7.4
Jun-18-2002	69	.	.	4,460	.	46.7	.	8.0
Jun-26-2002	53	.	.	4,260	.	45.0	.	7.2
Jul-08-2002	58	.	.	4,240	.	43.8	.	P
Jul-10-2002	58	.	.	4,370	.	44.4	.	P
Jul-16-2002	53	.	.	4,300	.	42.4	.	P
Jul-23-2002	49	.	.	3,980	.	33.2	.	P
Jul-30-2002	42	.	.	3,830	.	28.0	.	P

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), taken from grab samples.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	.	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	.	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/L	µg/L	.	mg/L
May-02-2002	43	17.1	8.4	4,960	70	69.8	.	7.2
May-09-2002	35	19.6	8.5	4,920	32	62.8	.	7.4
May-16-2002	36	21.5	8.5	5,100	31	55.1	.	7.9
May-23-2002	57	18.0	8.4	3,860	72	42.5	.	6.4
May-30-2002	57	27.2	8.2	4,060	P	34.1	.	P
Jun-06-2002	48	24.9	8.3	4,500	P	37.0	.	7.6
Jun-13-2002	51	24.1	8.2	4,460	38	45.2	.	7.6
Jun-20-2002	66	25.1	8.5	4,010	54	44.8	.	6.8
Jun-27-2002	43	24.7	8.4	4,340	74	54.1	.	7.4
Jul-03-2002	63	26.7	8.1	4,360	53	45.0	.	P
Jul-11-2002	58	27.3	8.7	4,370	P	54.3	.	P
Jul-18-2002	54	24.9	8.6	4,260	49	41.9	.	P
Jul-25-2002	47	24.3	8.4	3,730	P	30.6	.	P

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges).

See Table 26 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-02-2002	6	15.6	8.2	3,050	0.4	2.5
May-09-2002	11	20.5	8.2	1,260	0.6	2.1
May-16-2002	20	21.7	7.1	1,540	0.7	1.2
May-23-2002	28	16.6	8.0	1,660	0.5	1.4
May-30-2002	17	31.4	8.3	2,580	0.5	2.2
Jun-06-2002	14	23.9	8.0	1,590	0.6	1.6
Jun-13-2002	7	25.2	8.3	1,960	<0.4	1.6
Jun-20-2002	36	23.8	8.5	1,190	0.7	0.9
Jun-27-2002	1	24.6	8.2	2,890	<0.4	2.4
Jul-03-2002	2	26.4	8.6	2,440	0.7	P
Jul-11-2002	7	29.8	8.3	1,620	0.7	P
Jul-18-2002	4	25.3	8.3	1,710	0.9	P
Jul-25-2002	36	24.0	7.9	853	1.0	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 26 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-02-2002	49	16.6	8.3	4,770	53.5	6.5
May-09-2002	46	19.6	8.3	4,260	41.3	5.8
May-16-2002	56	20.9	8.3	3,550	32.5	4.8
May-23-2002	85	17.2	8.1	3,380	29.0	5.2
May-30-2002	74	27.3	8.1	3,310	26.5	P
Jun-06-2002	62	24.2	8.1	3,570	25.0	5.8
Jun-13-2002	58	24.5	8.4	4,060	35.7	6.4
Jun-20-2002	102	23.8	8.5	1,400	30.7	4.7
Jun-27-2002	44	25.2	8.6	4,220	46.1	7.3
Jul-03-2002	65	26.8	8.6	4,220	42.9	P
Jul-11-2002	65	27.5	8.6	3,840	42.6	P
Jul-18-2002	58	25.0	8.6	3,920	41.1	P
Jul-25-2002	83	24.2	8.3	2,540	16.6	P

Table 10. Weekly water quality monitoring at Station I2 (Mud Slough backwater downstream of Station D).

See Table 26 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-07-2002	.	8.0	4,180	34.0	26.0	4.6
May-14-2002	.	8.4	3,320	23.0	22.0	4.0
May-21-2002	.	8.5	1,820	24.0	28.8	5.0
May-28-2002	.	8.9	3,930	33.3	21.8	5.2
Jun-04-2002	.	8.7	3,940	13.0	26.4	5.3
Jun-10-2002	.	7.8	4,150	22.4	28.6	6.8
Jun-18-2002	.	NA	NA	NA	30.4	7.3
Jun-25-2002	.	7.9	2,990	26.8	20.2	6.2
Jul-02-2002	.	8.7	2,840	21.3	29.2	6.1
Jul-10-2002	.	9.0	1,930	23.3	24.0	6.0
Jul-16-2002	.	8.8	4,200	18.0	39.6	6.7
Jul-22-2002	.	9.1	3,500	32.5	21.4	5.0
Jul-30-2002	.	8.4	2,910	26.3	15.0	4.4

Table 11. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue).

See Table 26 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-02-2002	139	16.4	8.1	1,560	0.5	0.7
May-09-2002	97	18.3	7.7	1,670	0.5	0.7
May-16-2002	98	20.5	7.7	1,570	0.5	0.7
May-23-2002	181	17.5	7.6	1,130	0.4	0.5
May-30-2002	94	25.9	7.6	1,340	0.6	P
Jun-06-2002	98	24.4	7.7	1,220	0.5	0.5
Jun-13-2002	168	23.1	8.0	1,240	<0.4	0.6
Jun-20-2002	135	24.7	7.7	1,240	0.7	0.5
Jun-27-2002	174	23.5	7.7	1,020	0.5	0.5
Jul-03-2002	137	24.9	8.2	1,110	0.7	P
Jul-11-2002	122	27.4	7.7	1,340	0.6	P
Jul-18-2002	135	23.8	7.6	1,100	0.7	P
Jul-25-2002	152	23.4	7.6	960	0.5	P

Table 12. Weekly water quality monitoring at Station J (Camp 13 Ditch).

See Table 26 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-01-2002	35	.	.	569	1.0	0.3
May-08-2002	10	.	.	557	1.3	0.3
May-15-2002	10	.	.	537	1.2	0.4
May-22-2002	10	.	.	641	1.2	0.4
May-29-2002	0	.	.	656	1.3	0.4
Jun-05-2002	0	.	.	844	1.3	P
Jun-12-2002	10	.	.	672	1.7	0.5
Jun-19-2002	0	.	.	768	1.7	0.7
Jun-26-2002	0	.	.	667	1.1	0.6
Jul-03-2002	5	.	.	428	1.3	P
Jul-10-2002	5	.	.	384	1.1	P
Jul-17-2002	5	.	.	435	1.1	P
Jul-24-2002	5	.	.	442	0.9	P
Jul-31-2002	10	.	.	505	1.0	P

Table 13. Weekly water quality monitoring at Station K (Agatha Canal).

See Table 26 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-01-2002	65	.	.	524	0.8	0.2
May-08-2002	80	.	.	511	1.1	0.2
May-15-2002	80	.	.	536	0.8	0.2
May-22-2002	60	.	.	576	0.8	0.3
May-29-2002	30	.	.	572	0.9	0.3
Jun-05-2002	30	.	.	646	1.0	P
Jun-12-2002	20	.	.	626	1.2	0.3
Jun-19-2002	20	.	.	496	1.0	0.2
Jun-26-2002	20	.	.	470	0.8	0.3
Jul-03-2002	20	.	.	362	1.0	P
Jul-10-2002	0	.	.	415	0.9	P
Jul-17-2002	10	.	.	486	1.0	P
Jul-24-2002	20	.	.	397	0.6	P
Jul-17-2002	10	.	.	487	1.1	P

Table 14. Weekly water quality monitoring at Station L2 (San Luis Canal at splits).

See Table 26 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-01-2002	40	.	.	649	1.1	0.4
May-08-2002	10	.	.	861	1.3	0.7
May-15-2002	50	.	.	584	1.1	0.3
May-22-2002	30	.	.	697	1.1	0.5
May-29-2002	0	.	.	1,360	1.3	1.6
Jun-05-2002	30	.	.	707	1.0	P
Jun-12-2002	85	.	.	646	0.8	0.4
Jun-19-2002	70	.	.	674	1.2	0.5
Jun-26-2002	50	.	.	604	1.0	0.4
Jul-03-2002	50	.	.	619	1.2	P
Jul-10-2002	0	.	.	844	1.3	P
Jul-17-2002	60	.	.	577	1.0	P
Jul-24-2002	0	.	.	892	1.3	P
Jul-31-2002	0	.	.	1,330	2.0	P

Table 15. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir).

See Table 26 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-01-2002	74	.	.	1,340	1.1	1.9
May-08-2002	90	.	.	1,130	1.1	0.8
May-15-2002	57	.	.	785	1.2	0.5
May-22-2002	65	.	.	1,030	1.1	1.1
May-29-2002	72	.	.	1,280	1.2	1.8
Jun-05-2002	40	.	.	1,480	1.6	P
Jun-12-2002	13	.	.	1,260	0.7	1.5
Jun-19-2002	46	.	.	929	1.2	0.9
Jun-26-2002	36	.	.	1,300	1.2	1.5
Jul-03-2002	41	.	.	930	1.5	P
Jul-10-2002	56	.	.	1,300	1.5	P
Jul-17-2002	21	.	.	1,340	1.8	P
Jul-24-2002	86	.	.	917	1.1	P
Jul-31-2002	53	.	.	1,140	1.2	P

Table 16. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 26 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-02-2002	156	17.2	7.3	2,000	<0.4	0.7
May-09-2002	128	NA	NA	NA	NA	NA
May-16-2002	109	20.6	7.8	2,330	<0.4	0.7
May-23-2002	193	16.9	7.6	1,240	0.5	0.5
May-30-2002	125	26.3	7.8	1,950	0.4	0.7
Jun-06-2002	150	24.7	7.9	1,420	0.5	0.5
Jun-13-2002	169	23.3	7.2	1,350	<0.4	0.6
Jun-20-2002	127	25.0	7.9	1,460	0.6	0.6
Jun-27-2002	196	24.2	7.7	1,110	0.5	0.5
Jul-03-2002	156	25.1	7.9	1,150	0.7	P
Jul-11-2002	140	27.2	7.9	1,300	0.6	P
Jul-18-2002	143	23.5	7.8	1,260	0.7	P
Jul-25-2002	186	23.9	7.8	1,100	0.5	P

Table 17. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 26 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-07-2002	.	.	.	2,080	5.3	1.2
May-16-2002	.	.	.	2,840	10.1	2.0
May-21-2002	.	.	.	1,960	7.9	1.5
May-28-2002	.	.	.	2,010	6.5	1.5
Jun-05-2002	.	.	.	1,900	6.5	1.4
Jun-11-2002	.	.	.	2,740	11.3	2.4
Jun-18-2002	.	.	.	2,470	12.8	2.1
Jun-25-2002	.	.	.	1,780	9.4	1.4
Jul-01-2002	.	.	.	1,800	8.1	1.5
Jul-09-2002	.	.	.	2,000	10.3	1.7
Jul-16-2002	.	.	.	2,040	9.4	1.9
Jul-23-2002	.	.	.	1,610	6.1	1.5
Jul-30-2002	.	.	.	1,340	1.2	3.8

Table 18. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing).

See Table 26 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-02-2002	1,090	16.1	7.9	752	2.9	0.5
May-09-2002	1330	NA	NA	NA	NA	NA
May-16-2002	775	NA	NA	1,040	2.1	0.7
May-23-2002	628	18.0	7.6	1,160	3.8	1.0
May-30-2002	557	24.8	7.9	1,330	3.4	1.0
Jun-06-2002	522	24.9	7.9	1,290	3.1	1.1
Jun-13-2002	459	22.6	7.8	1,470	3.4	1.3
Jun-20-2002	466	24.1	7.5	1,480	5.3	1.3
Jun-27-2002	501	25.2	8.2	1,320	4.9	1.2
Jul-03-2002	428	24.7	8.1	1,430	4.1	P
Jul-11-2002	372	26.7	8.1	1,550	5.7	P
Jul-18-2002	349	23.9	8.2	1,440	4.6	P
Jul-25-2002	430	23.8	8.0	1,220	3.5	P

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from August 2001 to July 2002. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 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-2001	95	95	98	95	98	98
Sep-2001	98	100	90	100	100	98
Oct-2001	100	98	100	100	100	100
Nov-2001	98	83ε	60*	88	100	100
Dec-2001	98	55*	68*	90	98	100
Jan-2002	83	95	98	100	100	98
Feb-2002	93	90	93	95	93	100
Mar-2002	98	90	98	80	88	98
Apr-2002	93	93	85	95	95	98
May-2002	98	95	95	90	85	88
Jun-2002	98	100	100	95	95	100
Jul-2002	100	95	98	93	90	100

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from August 2001 to July 2002. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 26 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-2001	0.43	0.44	0.35	0.38	0.36	0.36
Sep-2001	0.43	0.43	0.44	0.42	0.34	0.36
Oct-2001	0.63	0.71	0.78	0.65	0.66	0.58
Nov-2001	0.70	0.49	0.49	0.59	0.67	0.52
Dec-2001	0.48	0.34*	0.41	0.55	0.47	0.50
Jan-2002	0.39	0.41	0.44	0.51	0.44	0.40
Feb-2002	0.55	0.47	0.58	0.55	0.52	0.42
Mar-2002	0.40	0.47	0.50	0.41	0.43	0.48
Apr-2002	0.64	0.63	0.50	0.63	0.55	0.58
May-2002	0.63	0.70	0.62	0.65	0.61	0.56
Jun-2002	0.38	0.43	0.41	0.42	0.31	0.50
Jul-2002	0.31	0.33	0.34	0.35	0.31	0.34

Table 21. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from August 2001 to July 2002. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 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-2001	50*	100	30*	100	90	90
Sep-2001	80	100	90	100	90	80
Oct-2001	90	100	90	90	70*†	90
Nov-2001	100	89	90	100	80	90
Dec-2001	90	100	90	90	100	100
Jan-2002	100	90	80	100	100	67†
Feb-2002	100	80	90	90	100	100
Mar-2002	90	100	100	100	90	100
Apr-2002	100	90	100	90	100	100
May-2002	80	100	80	100	89	30†
Jun-2002	100	90	90	90	100	90
Jul-2002	90	100	100	100	100	100

Table 22. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from August 2001 to July 2002. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 26 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-2001	11.7*	42.9	15.5*	52.5	27.1	36.3
Sep-2001	27.7	31.5	32.5	31.5	25.6	20.7
Oct-2001	39.5	39.1	29.8	35.3	21.1	31.7
Nov-2001	27.4	28.2	34.2	33.4	25.4	29.6
Dec-2001	41.3	45.9	43.3	42.4	45.1	36.7
Jan-2002	29.4	29.3	23.6	30.5	30.1	11.9
Feb-2002	42.8(*)	37.7	42.0	40.6	47.4	32.4
Mar-2002	47.2	47.7	49.8	45.8	54.5	50.2
Apr-2002	56.2	43.4	59.8	49.3	49.5	47.3
May-2002	26.4	36.5	30.7	37.2	27.9	2.9†
Jun-2002	40.0	36.1	43.1	24.3*	45.3	28.6
Jul-2002	28.3	29.7	34.6	29.6	33.1	29.1

(*) Although reproduction values were less at Stations C, D, and F, they were not statistically different from the DMC water. This was due to the increased survival rate at Station B.

Table 23. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from August 2001 to July 2002. Each value is the mean of 4 replicates.

See Table 26 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-2001	10.4*	12.4	3.0*	15.6	13.8	10.0
Sep-2001	6.5*	13.0	11.3	12.3	10.8	9.6
Oct-2001	9.1	10.7	11.3	11.4	10.3	9.3
Nov-2001	6.0*	11.1	11.0	10.0	9.2 †††	6.4 †††
Dec-2001	7.5*	9.4	9.6	9.3	8.9 †††	9.1 †††
Jan-2002	6.3*†††	19.2	17.4	24.7	15.1	10.1
Feb-2002	8.7*	17.3	14.9*	12.7*	18.2	12.6
Mar-2002	8.7*	14.2*	12.9*	18.3	17.8	13.5
Apr-2002	1.44*	7.0	4.4*	6.6	5.8	33.0
May-2002	4.8 ‡	7.9	6.1	6.3	7.1 †††	3.8 ‡
Jun-2002	3.7*	9.5	7.7*	6.8*	11.7	10.2
Jul-2002	6.0	10.2	10.3	10.5	6.8	8.7

Table 24. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, May 2002 to July 2002.

See Table 26 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-20-2002	52	0.7	38	0.5	<0.4
May-22-2002	34	0.6	25	0.5	<0.4
May-24-2002	46	0.8	27	0.5	<0.4
Jun-24-2002	48	0.9	29	0.5	<0.4
Jun-26-2002	48	0.8	38	0.7	<0.4
Jun-28-2002	52	0.5	50	0.7	0.5
Jul-22-2002	30	0.5	22	0.5	0.5
Jul-24-2002	32	0.8	17	0.4	<0.4
Jul-26-2002	32	0.9	20	<0.4	<0.4

Table 25. Summary of total suspended solids concentrations in grab water samples collected from May 2002 to July 2002.

See Table 26 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-20-2002	42	52	48	139	2
May-22-2002	47	79	84	138	4
May-24-2002	43	55	54	148	8
Jun-24-2002	52	36	46	119	72
Jun-26-2002	69	81	82	168	62
Jun-28-2002	57	34	47	159	43
Jul-22-2002	44	172	139	181	37
Jul-24-2002	55	167	147	210	39
Jul-26-2002	91	254	NA	153	58

Table 26. 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

ε EPA Station C split sample results significantly different. See Table 19.

LOCATION	Station B	Station C	Station D	Station F	Delta Mendota Canal	Laboratory Control
DATA SOURCE	EPA	EPA	EPA	EPA	EPA	EPA
UNITS	%	%	%	%	%	%
Nov-2001	100	58	64	90	100	100