

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

February 1998

July 13, 1998

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), February 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow
DATA SOURCE	USBR
UNITS	cfs
Feb-01-1998	32.7
Feb-02-1998	72.8
Feb-03-1998	114.2
Feb-04-1998	122.1
Feb-05-1998	131.6
Feb-06-1998	124.7
Feb-07-1998	124.7
Feb-08-1998	120.5
Feb-09-1998	131.0
Feb-10-1998	133.5
Feb-11-1998	126.3
Feb-12-1998	135.3
Feb-13-1998	138.4
Feb-14-1998	133.8
Feb-15-1998	137.6
Feb-16-1998	131.9
Feb-17-1998	121.3
Feb-18-1998	121.8
Feb-19-1998	134.5
Feb-20-1998	139.6
Feb-21-1998	133.5
Feb-22-1998	126.3
Feb-23-1998	124.5
Feb-24-1998	134.2
Feb-25-1998	124.1
Feb-26-1998	130.3
Feb-27-1998	120.4
Feb-28-1998	123.4
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Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), February 1998.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USBR	USBR	CVRWQCB	CVRWQCB	Computed
UNITS	cfs	°C	µS/cm	µg/l	lbs
Feb-01-1998	32.2	11.3	5,660	92.1	16.0
Feb-02-1998	57.5	11.5	5,570	76.6	23.8
Feb-03-1998	101.7	11.9	4,420	59.5	32.6
Feb-04-1998	119.6	11.9	4,370	57.1	36.8
Feb-05-1998	137.8	12.1	3,420	37.0	27.5
Feb-06-1998	133.3	11.5	2,430	24.8	17.8
Feb-07-1998	132.0	11.2	3,170	37.2	26.5
Feb-08-1998	127.6	10.9	3,350	45.8	31.5
Feb-09-1998	129.2	11.3	3,320	44.8	31.2
Feb-10-1998	134.2	11.2	2,900	37.0	26.8
Feb-11-1998	135.3	11.6	3,000	35.0	25.5
Feb-12-1998	133.6	12.0	3,280	43.0	31.0
Feb-13-1998	145.3	12.6	3,390	50.7	39.7
Feb-14-1998	144.7	12.8	3,540	52.4	40.9
Feb-15-1998	135.9	13.0	3,540	52.2	38.3
Feb-16-1998	139.6	12.3	3,610	54.3	40.9
Feb-17-1998	135.7	12.0	3,150	45.4	33.2
Feb-18-1998	126.9	12.3	3,660	54.9	37.6
Feb-19-1998	127.8	12.7	3,830	56.0	38.6
Feb-20-1998	137.4	12.7	3,920	58.8	43.6
Feb-21-1998	142.4	12.1	3,800	56.9	43.7
Feb-22-1998	136.4	12.0	3,240	47.8	35.2
Feb-23-1998	130.8	12.5	3,640	61.4	43.3
Feb-24-1998	129.1	12.5	3,700	62.6	43.6
Feb-25-1998	135.0	13.1	3,870	59.6	43.4
Feb-26-1998	127.9	13.6	3,840	56.4	38.9
Feb-27-1998	132.4	14.5	3,500	54.2	38.7
Feb-28-1998	124.1	15.5	3,890	57.0	38.2
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Mean	125.9	12.3	3,679	52.5	
Total					965

Load Limitation for February 1998 (lbs)	866
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**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), February 1998.**

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
Feb-01-1998	383	10.3	1,860
Feb-02-1998	488	10.1	1,600
Feb-03-1998	698	10.8	1,390
Feb-04-1998	794	10.4	1,160
Feb-05-1998	866	10.6	890
Feb-06-1998	927	10.3	770
Feb-07-1998	992	9.7	820
Feb-08-1998	1,040	9.3	840
Feb-09-1998	1,060	9.9	830
Feb-10-1998	1,050	9.9	890
Feb-11-1998	1,040	10.3	1,150
Feb-12-1998	1,030	10.6	1,230
Feb-13-1998	1,030	11.3	1,250
Feb-14-1998	1,040	11.7	1,250
Feb-15-1998	1,040	11.4	1,170
Feb-16-1998	1,040	10.2	1,120
Feb-17-1998	1,040	9.9	990
Feb-18-1998	1,020	11.0	1,010
Feb-19-1998	1,010	11.3	1,040
Feb-20-1998	1,010	10.4	1,040
Feb-21-1998	1,010	10.1	1,000
Feb-22-1998	1,020	10.6	880
Feb-23-1998	1,030	11.0	880
Feb-24-1998	1,050	10.9	1,140
Feb-25-1998	1,040	11.6	1,230
Feb-26-1998	1,030	12.4	1,140
Feb-27-1998	1,000	13.2	1,120
Feb-28-1998	958	14.2	1,060
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Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), February 1998.

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
Feb-01-1998	161	10.8	1,950
Feb-02-1998	183	10.9	1,890
Feb-03-1998	367	11.4	1,600
Feb-04-1998	632	11.1	1,450
Feb-05-1998	646	11.1	1,500
Feb-06-1998	628	10.9	1,750
Feb-07-1998	608	10.4	1,910
Feb-08-1998	639	9.9	1,960
Feb-09-1998	661	10.2	1,840
Feb-10-1998	709	10.3	1,780
Feb-11-1998	713	10.6	1,840
Feb-12-1998	687	11.0	2,000
Feb-13-1998	667	11.7	2,050
Feb-14-1998	673	12.2	2,020
Feb-15-1998	690	12.1	1,990
Feb-16-1998	737	11.1	1,790
Feb-17-1998	765	10.4	1,830
Feb-18-1998	728	11.0	1,960
Feb-19-1998	664	11.7	2,050
Feb-20-1998	635	11.3	2,020
Feb-21-1998	627	10.6	1,850
Feb-22-1998	634	10.9	1,890
Feb-23-1998	639	11.4	1,900
Feb-24-1998	668	11.5	1,970
Feb-25-1998	694	12.1	2,010
Feb-26-1998	728	12.9	2,070
Feb-27-1998	736	13.7	2,060
Feb-28-1998	705	14.4	2,130
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Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), February 1998.

See Table 26 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-01-1998	4,460	10.9	414	1.12
Feb-02-1998	5,320	10.7	478	1.16
Feb-03-1998	7,670	11.2	446	1.75
Feb-04-1998	9,770	11.1	378	1.17
Feb-05-1998	10,700	11.1	323	0.90
Feb-06-1998	12,000	P	374	1.18
Feb-07-1998	15,700	P	352	0.97
Feb-08-1998	20,400	10.2	339	1.02
Feb-09-1998	22,500	10.2	354	1.51
Feb-10-1998	23,800	10.5	364	1.08
Feb-11-1998	24,200	10.7	357	0.96
Feb-12-1998	23,600	11.0	356	1.05
Feb-13-1998	22,900	11.3	366	1.12
Feb-14-1998	22,200	11.9	374	1.07
Feb-15-1998	21,800	11.8	388	1.08
Feb-16-1998	20,600	11.3	420	1.08
Feb-17-1998	21,500	10.6	424	1.12
Feb-18-1998	20,900	10.9	402	1.06
Feb-19-1998	19,700	11.4	410	1.00
Feb-20-1998	19,500	11.0	425	1.23
Feb-21-1998	18,600	10.8	438	1.18
Feb-22-1998	18,900	10.7	468	1.36
Feb-23-1998	18,900	11.1	450	1.23
Feb-24-1998	19,400	11.3	434	1.11
Feb-25-1998	19,700	11.6	424	1.14
Feb-26-1998	20,100	12.3	436	1.26
Feb-27-1998	20,100	13.0	417	1.36
Feb-28-1998	19,200	13.5	426	1.33
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Table 6. Weekly water quality monitoring at Station A (inflow to San Luis Drain), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Dec-03-1997	17.2	NA	NA	4,470	61	54.2	54.5	P
Dec-10-1997	25.9	NA	NA	4,630	28	59.3	57.2	P
Dec-17-1997	7.7	NP	NP	5,520	P	60.6	64.3	P
Dec-23-1997	9.0	NA	NA	5,800	P	87.1	84.2	P
Dec-30-1997	7.2	NP	NP	6,190	45	92.5	91.7	P
Jan-07-1998	15.1	NA	NA	5,840	42	118.0	118.0	P
Jan-14-1998	22.9	NA	NA	4,110	NA	68.6	67.9	P
Jan-21-1998	20.0	NA	NA	5,800	P	82.5	81.7	P
Jan-28-1998	20.5	NA	NA	6,100	79	78.2	77.4	P
Feb-04-1998	122.1	NA	NA	2,040	260	19.2	18.4	P
Feb-11-1998	126.3	NA	NA	3,450	P	47.4	45.9	P
Feb-18-1998	121.8	NA	NA	3,880	240	61.2	58.4	P
Feb-25-1998	124.1	NA	NA	3,420	230	53.4	50.8	P

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	mg/l
Dec-05-1997	34.6	13.2	8.1	4,530	33	34.0	33.9	P
Dec-11-1997	36.3	9.9	7.4	4,250	38	48.9	49.0	P
Dec-18-1997	11.9	12.7	7.6	4,680	P	48.9	51.8	P
Dec-26-1997	15.2	7.7	8.1	5,040	P	56.8	56.8	P
Jan-02-1998	16.6	12.7	8.3	5,360	28	73.0	73.0	P
Jan-08-1998	13.7	12.1	8.1	5,300	11	80.1	80.1	P
Jan-15-1998	28.9	11.6	7.5	5,080	34	98.9	100.0	P
Jan-22-1998	23.0	11.0	8.2	4,760	17	73.5	73.2	P
Jan-29-1998	24.9	12.7	7.9	5,300	28	74.4	75.4	P
Feb-05-1998	137.8	10.6	7.2	2,950	110	35.5	33.4	P
Feb-11-1998	135.3	13.3	7.7**	3,030	P	37.0	36.6	P
Feb-19-1998	127.8	13.3	7.9	3,900	79	55.0	54.4	P
Feb-26-1998	127.9	13.3	7.9	3,390	240	39.0	42.6	P

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER		Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE		CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS		°C		µS/cm	µg/l	mg/l
Dec-05-1997	.	12.7	8.6	1,430	0.8	P
Dec-11-1997	.	9.3	7.9	1,424	0.4	P
Dec-18-1997	.	12.1	7.8	1,642	0.5	P
Dec-26-1997	.	7.7	7.5	1,849	0.5	P
Jan-02-1998	.	12.7	7.6	2,210	0.4	P
Jan-08-1998	.	12.1	8.2	2,070	0.4	P
Jan-15-1998	.	12.1	7.3	1,432	0.8	P
Jan-22-1998	.	11.0	8.1	934	0.5	P
Jan-29-1998	.	13.8	7.7	1,420	0.6	P
Feb-05-1998	.	12.2	7.8	753	0.7	P
Feb-11-1998	.	NA	NA	NA	NA	NA
Feb-19-1998	.	13.3	7.7	823	1.0	P
Feb-26-1998	.	13.9	7.8	838	1.1	P

Table 9. Weekly water quality monitoring at Station D (Mud Slough North downstream of drainage discharges), 1997-98.

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
Dec-05-1997	230	13.2	8.4	2,030	6.1	P
Dec-11-1997	265	9.3	7.8	1,970	9.1	P
Dec-18-1997	181	11.6	7.8	1,889	3.2	P
Dec-26-1997	125	8.2	8.0	2,430	9.0	P
Jan-02-1998	102	13.2	7.5	2,970	13.1	P
Jan-08-1998	121	12.1	8.3	2,610	12.1	P
Jan-15-1998	406	11.0	7.5	1,733	8.1	P
Jan-22-1998	637	11.0	8.1	1,103	3.1	P
Jan-29-1998	318	13.8	7.8	1,790	6.6	P
Feb-05-1998	866	12.2	7.8	1,190	6.4	P
Feb-11-1998	1040	NA	7.4**	1,096	5.7	NA
Feb-19-1998	1010	13.3	7.7	1,266	8.0	P
Feb-26-1998	1030	13.3	7.8	1,335	8.7	P

Table 10. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue), 1997-98.

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
Dec-05-1997	136	13.2	7.1	1,940	0.8	P
Dec-11-1997	164	8.8	7.8	2,060	0.7	P
Dec-18-1997	123	12.1	7.4	2,260	1.3	P
Dec-26-1997	82	7.7	7.8	2,470	2.0	P
Jan-02-1998	72	13.2	7.6	2,730	0.7	P
Jan-08-1998	71	13.2	8.0	2,650	0.7	P
Jan-15-1998	175	12.1	7.2	2,370	1.6	P
Jan-22-1998	307	11.0	7.8	2,320	1.0	P
Jan-29-1998	100	13.2	7.6	2,180	0.9	P
Feb-05-1998	646	12.8	7.4	1,370	2.2	P
Feb-11-1998	713	12.2	7.4**	1,746	4.3	P
Feb-19-1998	664	12.2	7.5	1,985	4.5	P
Feb-26-1998	728	15.0	7.5	2,000	5.1	P

Table 11. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	.	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Dec-05-1997	.	12.7	8.3	1,115	1.1	P
Dec-11-1997	.	8.8	8.0	1,433	1.1	P
Dec-18-1997	.	11.6	7.6	2,140	1.3	P
Dec-26-1997	.	7.1	7.4	2,480	1.3	P
Jan-02-1998	.	12.1	7.3	2,730	1.2	P
Jan-08-1998	.	12.7	7.9	2,830	0.8	P
Jan-15-1998	.	11.0	7.2	281	0.5	P
Jan-22-1998	.	11.0	7.7	533	0.6	P
Jan-29-1998	.	12.7	7.5	1,437	0.7	P
Feb-05-1998	.	13.9	7.5	260	0.4	P
Feb-11-1998	.	12.2	7.3**	207	0.6	P
Feb-19-1998	.	12.2	7.2	246	0.4	P
Feb-26-1998	.	14.4	7.0	204	0.5	P

Table 12. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	.	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Dec-05-1997	.	13.2	8.2	1,391	1.7	P
Dec-11-1997	.	8.2	7.9	1,573	3.4	P
Dec-18-1997	.	11.0	7.6	2,020	2.0	P
Dec-26-1997	.	8.8	7.8	2,450	3.7	P
Jan-02-1998	.	12.1	7.3	2,710	3.3	P
Jan-08-1998	.	12.1	8.0	2,460	5.1	P
Jan-15-1998	.	11.0	7.1	669	2.0	P
Jan-22-1998	.	11.0	7.7	692	1.0	P
Jan-28-1998	.	13.2	7.8	1,622	2.4	P
Feb-05-1998	.	12.2	7.4	669	2.0	P
Feb-11-1998	.	P	P	778	1.9	P
Feb-19-1998	.	12.2	7.5	917	3.0	P
Feb-26-1998	.	14.4	7.6	918	2.8	P

Table 13. Weekly water quality monitoring at Station J (Camp 13 Ditch), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Dec-03-1997	5	NA	NA	1,219	8.4	P
Dec-10-1997	7	NA	NA	1,468	5.2	P
Dec-17-1997	2	NP	NP	2,890	8.9	P
Dec-23-1997	2	NA	NA	6,530	1.6	P
Dec-30-1997	10	NP	NP	1,078	0.8	P
Jan-07-1998	10	NA	NA	1,106	1.0	P
Jan-14-1998	1	NA	NA	1,142	1.2	P
Jan-21-1998	1	NA	NA	2,050	1.7	P
Jan-28-1998	1	NA	NA	6,610	1.6	P
Feb-04-1998	4	NA	NA	1,423	2.8	P
Feb-11-1998	14	NA	NA	2,420	4.0	P
Feb-18-1998	12	NA	NA	2,370	3.3	P
Feb-25-1998	7	NA	NA	2,250	1.8	P

Table 14. Weekly water quality monitoring at Station K (Agatha Canal), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Dec-03-1997	20	NA	NA	631	1.9	P
Dec-10-1997	16	NA	NA	664	0.9	P
Dec-17-1997	8	NP	NP	765	1.5	P
Dec-23-1997	5	NA	NA	948	0.9	P
Dec-30-1997	18	NP	NP	1,079	5.9	P
Jan-07-1998	7	NA	NA	830	0.7	P
Jan-14-1998	1	NA	NA	1,037	1.2	P
Jan-21-1998	1	NA	NA	1,660	1.6	P
Jan-28-1998	1	NA	NA	2,270	1.5	P
Feb-04-1998	65	NA	NA	2,450	27.0	P
Feb-11-1998	65	NA	NA	2,940	39.2	P
Feb-18-1998	80	NA	NA	3,030	36.4	P
Feb-25-1998	65	NA	NA	3,370	40.4	P

Table 15. Weekly water quality monitoring at Station L (San Luis Canal at Henry Miller Road), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Dec-03-1997	47	NA	NA	1,220	7.2	P
Dec-10-1997	76	NA	NA	1,700	2.0	P
Dec-17-1997	66	NP	NP	1,884	1.3	P
Dec-23-1997	16	NA	NA	2,170	1.4	P
Dec-30-1997	13	NP	NP	2,320	1.1	P
Jan-07-1998	53	NA	NA	1,201	1.0	P
Jan-14-1998	78	NA	NA	1,014	1.8	P
Jan-21-1998	105	NA	NA	1,718	1.4	P
Jan-28-1998	61	NA	NA	1,520	1.5	P
Feb-04-1998	110	NA	NA	1,553	5.1	P
Feb-11-1998	121	NA	NA	2,260	8.3	P
Feb-18-1998	158	NA	NA	2,190	8.9	P
Feb-25-1998	150	NA	NA	2,310	10.5	P

Table 16. Weekly water quality monitoring at Station M (Santa Fe Canal at Henry Miller Road), 1997-98.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ^{††}	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Dec-03-1997	27	NA	NA	1,345	2.9	P
Dec-10-1997	17	NA	NA	1,710	1.2	P
Dec-17-1997	29	NP	NP	1,858	1.1	P
Dec-23-1997	7	NA	NA	2,130	1.4	P
Dec-30-1997	0	NP	NP	2,410	1.3	P
Jan-07-1998	24	NA	NA	1,570	1.0	P
Jan-14-1998	47	NA	NA	1,812	1.4	P
Jan-21-1998	0	NA	NA	5,550	0.9	P
Jan-28-1998	16	NA	NA	2,020	1.3	P
Feb-04-1998	2	NA	NA	1,226	7.3	P
Feb-11-1998	6	NA	NA	2,350	13.0	P
Feb-18-1998	8	NA	NA	2,400	11.6	P
Feb-25-1998	17	NA	NA	2,020	8.0	P

Table 17. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing), 1997-98.

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
Dec-05-1997	1,110	13.2	8.4	1,119	1.4	P
Dec-11-1997	1,190	NA	7.8	1,241	2.7	P
Dec-18-1997	862	11.0	7.6	1,507	1.6	P
Dec-26-1997	621	9.3	7.8	1,664	1.6	P
Jan-02-1998	546	54.0	7.5	1,696	1.5	P
Jan-08-1998	651	54.0	7.9	1,573	3.1	P
Jan-15-1998	2,290	52.0	7.3	616	1.6	P
Jan-22-1998	4,330	52.0	7.7	542	0.9	P
Jan-28-1998	2,130	56.0	7.7	961	1.4	P
Feb-04-1998	9,770	12.8	7.3	382	1.0	P
Feb-11-1998	24,200	12.2	7.0**	335	0.8	P
Feb-19-1998	19,700	12.2	7.5	399	0.8	P
Feb-26-1998	20,100	15.0	7.7	431	1.1	P

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 1997 to February 1998. 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	%	%	%	%	%	%
March-97	95	98	98	93	98	95
April-97	95	100	95	98	88	83
May-97	95	100	95	100	93	100
June-97	93	98	95	93	90	90
July-97	100	93	98	98	100	98
August-97	88	85	95	78	83	98
September-97	98	90	93	85	83	90
October-97	88	88	85	60*	95	98
November-97	85	75*	88	88	98	98
December-97	90	50*	58*	83	88	85
January-98	100	40*	50*	90	90	95
February-98	93	43*	73*	80*	93	93

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 1997 to February 1998. 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
March-97	0.99	0.96	1.01	0.90	0.81	0.81
April-97	1.11	1.02	1.06	1.15	1.05	0.83
May-97	0.85	0.91	0.95	0.89	0.88	0.80
June-97	0.66	0.69	0.71	0.72	0.68	0.73
July-97	0.97	0.80*	0.95	0.91	0.92	0.89
August-97	0.69	0.56	0.73	0.60	0.59	0.77
September-97	0.60	0.46	0.53	0.50	0.42	0.48
October-97	0.48*	0.44*	0.40*	0.34*	0.58	0.50
November-97	0.55*	0.57*	0.72	0.65*	0.76	0.71
December-97	0.60	0.38*	0.52	0.63	0.63	0.57
January-98	0.65	0.26*	0.30*	0.58	0.54	0.57
February-98	0.74	0.35*	0.53*	0.56*	0.70	0.59

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 1997 to February 1998. 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	%	%	%	%	%	%
March-97	100	90	90	80	100	50
April-97	80	90	100	90	90	50
May-97	90	90	90	80	90	30
June-97	90	100	70	100	80	90
July-97	90	90	100	100	100	90
August-97	90	100	100	100	80	90
September-97	90	100	100	100	100	80
October-97	80	90	100	90	100	90
November-97	100	80	100	100	100	0
December-97	100	100	90	80	100	80
January-98	80	90	100	100	100	0
February-98	80	80	100	90	50 [†]	0

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 1997 to February 1998. 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
March-97	22.8	16.6	15.3	9.7	8.9	5.5
April-97	23.6	24.4	24.6	16.3	12.9	10.0
May-97	30.6	33.8	34.0	21.6	17.2	20.0
June-97	50.9	58.8	41.1	50.2	29.6	31.6
July-97	35.6	28.1	33.2	27.7	19.1	17.1
August-97	55.8	55.4	53.1	54.1	40.7	44.3
September-97	33.0*	31.2*	45.8	47.1	39.7	23.2
October-97	42.2	37.9	41.7	34.8	34.9	32.0
November-97	37.3	28.6	34.0	30.0	22.0	21.5 ⁽³⁾
December-97	46.0	44.5	41.2	32.7*	43.6	21.1
January-98	13.7*	21.8	18.5*	14.5*	27.4	0.0
February-98 ⁽²⁾	67.0	70.5	69.9	61.3	39.3 [†]	0.0

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 1997 to February 1998. 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
March-97	11.0*	13.8	11.7*	6.0*	20.0	21.6
April-97	19.7*	35.4*	46.5	30.8*	78.5	62.9
May-97	22.4	12.6*	18.6*	16.8*	26.3	17.2
June-97	42.0*	55.6	44.6	44.4	54.2	57.9
July-97	41.9	72.5	47.6	66.6	45.1	60.2
August-97	56.2	61.6	43.0	52.6	47.5	59.9
September-97	21.5*	29.5	25.4	30.9	32.2	44.4
October-97	3.0*	42.3	47.4	43.9	50.4	50.3
November-97	23.8	19.6	23.8	29.0	15.8	31.3
December-97	14.8	14.2	24.2	19.2	6.3	25.0
January-98	1.04*	11.9	14.5	6.8	9.1	9.1
February-98	4.2*	7.9	10.9	11.8	8.3	17.1

Table 23. Summary of selenium concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, November 1997 to February 1998.

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
Nov-04-1997	63	<2	18	<2	<2
Nov-06-1997	60	<2	10	<2	<2
Nov-08-1997	65	<2	12	<2	<2
Dec-02-1997	32	<2	4	<2	<2
Dec-04-1997	32	<2	3	<2	<2
Dec-06-1997	27	<2	6	<2	<2
Jan-20-1998	75	<2	4	<2	<2
Jan-22-1998	92	<2	3	<2	<2
Jan-24-1998	64	<2	3	<2	<2
Feb-17-1998	47	<2	7	5	<2
Feb-19-1998	56	<2	8	5	<2
Feb-21-1998	63	<2	9	4	<2

Table 24. Summary of sulfate concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, November 1997 to February 1998.

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
Nov-04-1997	1,730	173	545	205	41
Nov-06-1997	1,720	170	543	192	29
Nov-08-1997	1,800	179	528	202	28
Dec-02-1997	1,390	167	317	277	35
Dec-04-1997	1,440	166	299	297	57
Dec-06-1997	990	164	305	294	46
Jan-20-1998	1,560	138	208	421	71
Jan-22-1998	1,600	110	161	399	52
Jan-24-1998	1,490	121	181	428	40
Feb-17-1998	976	107	238	346	69
Feb-19-1998	1,000	119	230	406	61
Feb-21-1998	1,270	111	268	349	79

Table 25. Summary of quarterly in situ bioassay results from December 1995 to August 1997.

Results are the number of live fathead minnows (*Pimephales promelas*) per number of fish recovered at the end of the 7 day deployment at each station (initial count of 80 used at each station).

See Table 26 for explanation of footnotes and agency abbreviations.

LOCATION	Windmill (4 day old larvae)	Station B (4 day old larvae)	Station D (4 day old larvae)	Station D (14 day old larvae)	Station F (4 day old larvae)	Station F (14 day old larvae)
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA	SLDMWA
UNITS	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count	# alive/total count
December-1995 ⁽⁴⁾	NT	NT	NT	NT	NT	NT
March-1996 ⁽⁵⁾	80/80	NT	NT	44/44	NT	70/70
August-1996 ⁽⁶⁾	NT	NT	13/19	22/29	28/40	20/49
November-1996 ⁽⁷⁾	46/62	63/68	0/2	.	16/36	.
February-1997 ⁽⁸⁾	NT	3/13	0/0	.	0/11	.
May-1997	64/66	0/0	0/24	.	5/9	.
August-1997 ⁽⁹⁾	NT	38/38	27/31	.	0/8	.

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
.	Not applicable
<	less than
e	estimated value
P	pending, data not available at this time but will be available in the future
NA	not analyzed - operator error, data will not be available in the future
NP	data not provided - future unknown
NT	not tested
(2)	Increased reproduction for the February 1998 sampling period is due to increased nutrients added to the test water.
(3)	There were no surviving <i>D. magna</i> at test completion. Value represents reproduction that occurred prior to mortality.
(4)	In situ cages could not be deployed due to wet weather conditions.
(5)	Baseline results for 3/96 are for 14-day old larvae. There was no survival for the 24-hour old larvae.
(6)	Windmill station was dry due to water drainage. Use of plastic screened beakers for Station F during 8/96 with use of 4-day old larvae resulted in 0/39. Apparent cause of mortality was elevated temperature and sediment which was found in all cages and beakers.
(7)	Heavy silt accumulation was noted in Sites D and F cages and light silt accumulation was observed in both the Windmill site and Site B.
(8)	Moderate silt accumulation was noted in Sites B and F cages and light silt accumulation was observed in Site D.
(9)	No test deployment was done at the Windmill Site due to extreme conditions (stagnant & pH>9.0). Site B replicate A was retrieved with no cork and replicate C lost its cork during retrieval. There were no surviving fish for a growth determination for Sit
*	Significantly reduced from Delta Mendota Canal (p<0.05)
**	possible calibration problem
†	DMC water failed to meet the survival (> 80%) and the 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 (1997 draft).