

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

December 1999

February 29, 2000

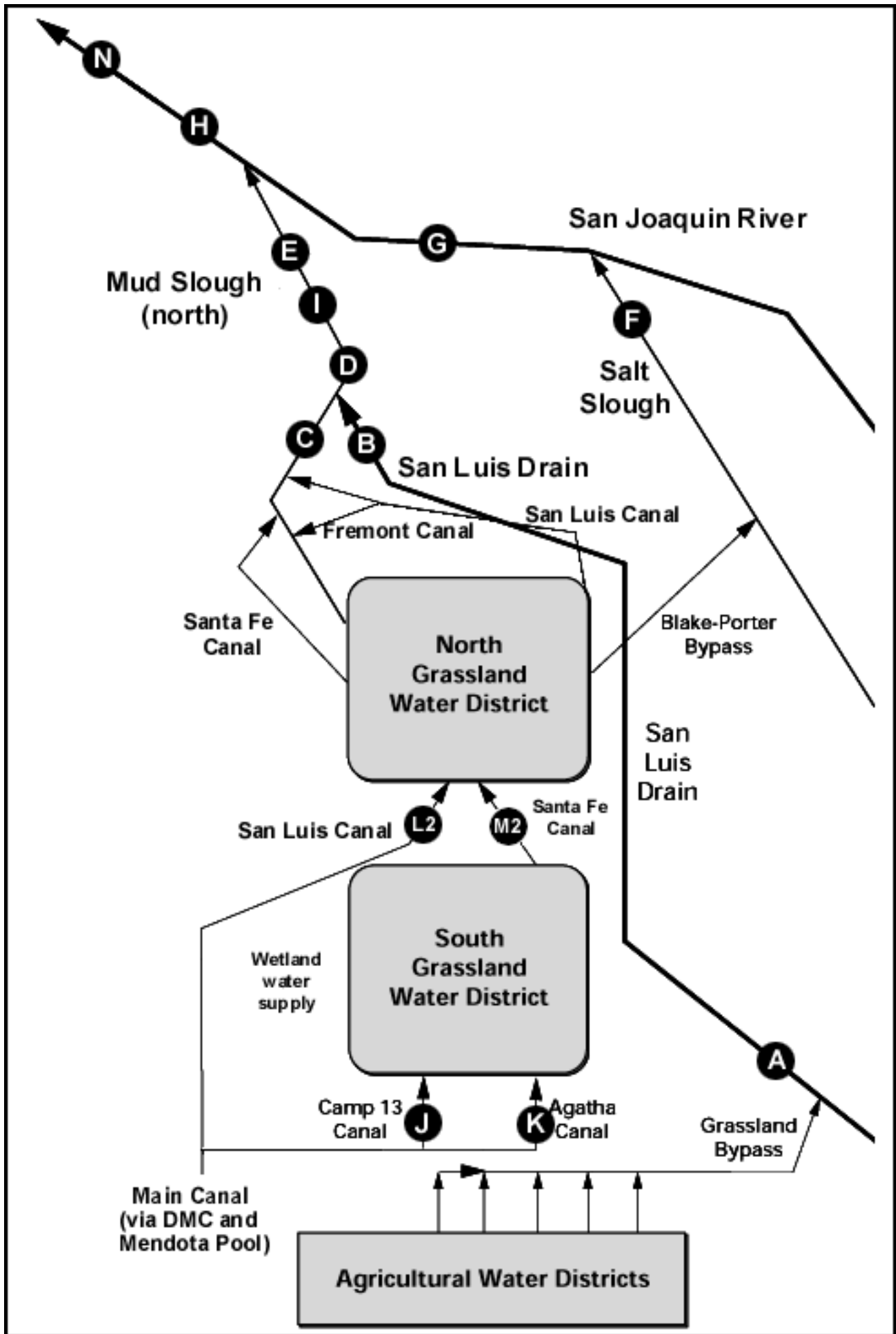
Preliminary Results

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), December 1999.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow
DATA SOURCE	SLDMWA
UNITS	cfs
Dec-01-1999	22
Dec-02-1999	22
Dec-03-1999	25
Dec-04-1999	20
Dec-05-1999	17
Dec-06-1999	19
Dec-07-1999	17
Dec-08-1999	15
Dec-09-1999	17
Dec-10-1999	18
Dec-11-1999	17
Dec-12-1999	17
Dec-13-1999	17
Dec-14-1999	16
Dec-15-1999	14
Dec-16-1999	16
Dec-17-1999	17
Dec-18-1999	16
Dec-19-1999	16
Dec-20-1999	15
Dec-21-1999	16
Dec-22-1999	16
Dec-23-1999	15
Dec-24-1999	13
Dec-25-1999	13
Dec-26-1999	13
Dec-27-1999	14
Dec-28-1999	17
Dec-29-1999	15
Dec-30-1999	15
Dec-31-1999	15
Mean	16

Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), December 1999.

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
Dec-01-1999	26	12.3	7.3	4,320	38.2	5.4
Dec-02-1999	27	11.7	6.8	3,990	37.4	5.4
Dec-03-1999	27	10.3	6.7	4,160	50.5	7.4
Dec-04-1999	30	9.8	6.9	4,270	54.5	8.8
Dec-05-1999	26	9.9	7.0	4,240	52.5	7.4
Dec-06-1999	24	9.9	6.6	4,070	49.1	6.4
Dec-07-1999	24	10.3	6.7	4,150	49.8	6.4
Dec-08-1999	23	9.9	7.0	4,470	66.9	8.3
Dec-09-1999	22	9.6	7.1	4,540	71.3	8.5
Dec-10-1999	23	9.3	6.5	4,100	54.2	6.7
Dec-11-1999	24	8.7	5.9	3,850	48.3	6.3
Dec-12-1999	23	8.8	6.5	4,150	51.6	6.4
Dec-13-1999	22	9.3	6.9	4,340	59.7	7.1
Dec-14-1999	22	8.5	7.3	4,520	59.9	7.1
Dec-15-1999	22	8.3	7.0	4,320	45.2	5.4
Dec-16-1999	21	8.1	7.0	4,350	54.8	6.2
Dec-17-1999	22	8.1	6.9	4,660	74.3	8.8
Dec-18-1999	22	8.3	6.7	4,620	63.7	7.6
Dec-19-1999	22	8.3	7.1	4,790	69.9	8.3
Dec-20-1999	22	8.4	7.0	4,800	81.5	9.7
Dec-21-1999	21	8.5	6.4	4,490	62.5	7.1
Dec-22-1999	21	8.6	6.8	4,620	63.0	7.1
Dec-23-1999	21	8.6	7.0	4,880	75.9	8.6
Dec-24-1999	21	8.6	7.0	4,990	82.3	9.3
Dec-25-1999	19	8.5	6.8	4,910	74.0	7.6
Dec-26-1999	19	8.4	7.0	4,860	77.8	8.0
Dec-27-1999	20	8.4	7.2	4,990	80.6	8.7
Dec-28-1999	22	8.7	7.2	4,850	76.0	9.0
Dec-29-1999	24	8.8	7.5	4,870	73.1	9.5
Dec-30-1999	22	8.8	7.6	4,890	74.8	8.9
Dec-31-1999	22	9.1	7.4	4,930	73.4	8.7
Mean	23	9.1	6.9	4,520	62.8	
Total						236

Load Limitation for December 1999 (lbs)	389
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**Table 3. Continuous water monitoring at Station D
(Mud Slough North downstream of drainage discharges), December 1999.**

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
Dec-01-1999	126	10.3	NP
Dec-02-1999	126	10.8	1,940
Dec-03-1999	121	9.2	2,010
Dec-04-1999	123	8.8	2,080
Dec-05-1999	119	9.3	2,040
Dec-06-1999	118	9.6	2,010
Dec-07-1999	118	10.1	2,010
Dec-08-1999	116	9.3	2,040
Dec-09-1999	116	9.1	2,080
Dec-10-1999	117	8.8	2,070
Dec-11-1999	117	8.0	2,020
Dec-12-1999	119	8.4	2,030
Dec-13-1999	119	9.0	2,050
Dec-14-1999	117	7.7	2,130
Dec-15-1999	114	7.7	2,160
Dec-16-1999	112	8.0	2,150
Dec-17-1999	117	8.2	2,170
Dec-18-1999	119	8.5	2,160
Dec-19-1999	120	8.6	2,180
Dec-20-1999	120	8.7	2,180
Dec-21-1999	121	8.8	2,150
Dec-22-1999	124	8.8	2,090
Dec-23-1999	124	8.7	2,140
Dec-24-1999	121	8.8	2,190
Dec-25-1999	119	8.7	2,190
Dec-26-1999	120	8.5	2,200
Dec-27-1999	121	8.5	2,200
Dec-28-1999	124	8.8	2,170
Dec-29-1999	129	8.8	2,220
Dec-30-1999	132	8.8	2,150
Dec-31-1999	149	9.2	2,050

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), December 1999.

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
Dec-01-1999	142	12.5	1,680
Dec-02-1999	135	11.7	1,670
Dec-03-1999	133	10.2	1,590
Dec-04-1999	122	9.6	1,670
Dec-05-1999	114	10.0	1,720
Dec-06-1999	107	10.3	1,710
Dec-07-1999	117	10.8	1,730
Dec-08-1999	121	9.9	1,660
Dec-09-1999	117	9.8	1,690
Dec-10-1999	107	9.6	1,740
Dec-11-1999	103	9.1	1,790
Dec-12-1999	102	9.3	1,790
Dec-13-1999	101	9.8	1,790
Dec-14-1999	99	8.7	1,810
Dec-15-1999	98	8.6	1,810
Dec-16-1999	96	8.7	1,850
Dec-17-1999	98	8.8	1,830
Dec-18-1999	94	9.2	1,900
Dec-19-1999	96	9.3	1,860
Dec-20-1999	97	9.3	1,780
Dec-21-1999	88	9.2	1,880
Dec-22-1999	87	9.4	1,980
Dec-23-1999	83	9.3	2,020
Dec-24-1999	81	9.3	2,130
Dec-25-1999	81	9.1	2,170
Dec-26-1999	75	9.0	2,210
Dec-27-1999	73	9.1	2,250
Dec-28-1999	70	9.5	2,260
Dec-29-1999	73	9.4	2,280
Dec-30-1999	82	9.2	2,250
Dec-31-1999	101	9.6	2,000

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), December 1999.

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
Dec-01-1999	772	12.5	1,210	2.5
Dec-02-1999	748	11.7	1,240	1.7
Dec-03-1999	733	10.5	1,240	1.7
Dec-04-1999	747	9.7	1,240	1.5
Dec-05-1999	758	9.9	1,240	1.9
Dec-06-1999	738	10.2	1,280	1.9
Dec-07-1999	713	10.6	1,300	1.6
Dec-08-1999	699	10.0	1,310	1.8
Dec-09-1999	686	9.8	1,310	1.9
Dec-10-1999	670	9.6	1,300	2.3
Dec-11-1999	663	9.0	1,310	2.5
Dec-12-1999	655	8.9	1,330	2.3
Dec-13-1999	654	9.4	1,320	1.9
Dec-14-1999	643	8.8	1,340	2.1
Dec-15-1999	633	8.3	1,340	2.3
Dec-16-1999	630	8.2	1,370	2.5
Dec-17-1999	604	8.4	1,350	1.9
Dec-18-1999	598	8.8	1,390	2.1
Dec-19-1999	595	8.9	1,400	2.9
Dec-20-1999	631	9.0	1,410	2.4
Dec-21-1999	626	8.9	1,350	2.9
Dec-22-1999	594	9.0	1,410	2.7
Dec-23-1999	582	8.8	1,430	2.4
Dec-24-1999	587	8.7	1,430	2.2
Dec-25-1999	586	8.5	1,450	2.5
Dec-26-1999	586	8.5	1,460	2.7
Dec-27-1999	577	8.4	1,460	2.4
Dec-28-1999	577	8.4	1,490	3.9
Dec-29-1999	581	8.5	1,500	2.6
Dec-30-1999	623	8.4	1,510	2.6
Dec-31-1999	662	8.8	1,470	2.5

Table 6. Weekly water quality monitoring at Station A (inflow to San Luis Drain), 1999.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved)	Boron
DATA SOURCE	SLDMWA	.	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	mg/L	µg/L	µg/L	mg/L
Oct-06-1999	27	.	.	5,760	82	48.6	49.0	10
Oct-13-1999	18	.	.	4,720	90	54.6	51.4	7.2
Oct-20-1999	13	.	.	5,610	62	84.3	80.8	8.3
Oct-27-1999	14	.	.	5,510	57	71.4	68.3	8.1
Nov-03-1999	24	.	.	4,900	72	62.2	61.1	7.7
Nov-11-1999	22	.	.	4,140	73	49.3	50.9	6.7
Nov-17-1999	21	.	.	5,080	74	59.2	57.5	8.7
Nov-22-1999	17	.	.	4,650	27	50.0	49.0	7.4
Dec-01-1999	22	.	.	4,290	61	54.6	55.2	7.0
Dec-08-1999	15	.	.	4,530	21	47.2	46.9	7.4
Dec-15-1999	14	.	.	5,170	13	95.5	95.1	7.3
Dec-20-1999	15	.	.	5,290	18	98.7	96.3	8.1
Dec-27-1999	14	.	.	5,260	19	103	P	8.2

Table 7. Weekly water quality monitoring at Station B (discharge from San Luis Drain), 1999.

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	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/L	µg/L	µg/L	mg/L
Oct-07-1999	37	20.1	7.4	3,990	74	27.1	26.4	6.2
Oct-14-1999	32	21.6	7.8	4,730	49	25.7	25.8	8.1
Oct-21-1999	26	18.8	7.8	4,470	46	29.0	29.6	6.8
Oct-28-1999	28	18.8	8.0	4,580	58	33.5	34.2	6.5
Nov-04-1999	22	20.2	7.7	4,710	46	34.3	33.4	7.1
Nov-11-1999	30	16.4	NA	4,030	45	34.6	35.0	6.4
Nov-18-1999	29	16.8	7.9	4,260	46	32.9	32.4	7.1
Nov-23-1999	25	12.0	7.9	4,540	36	39.8	39.2	7.4
Dec-02-1999	27	13.5	7.9	4,060	54	40.9	40.1	6.8
Dec-09-1999	22	9.1	7.9	4,540	50	67.1	65.3	7.1
Dec-16-1999	21	8.6	7.6	4,410	50	51.7	51.8	6.8
Dec-21-1999	21	9.7	7.4	4,400	48	49.1	54.4	7.0
Dec-28-1999	22	9.2	6.9	4,880	53	74.2	78.5	7.1

Table 8. Weekly water quality monitoring at Station C (Mud Slough North upstream of drainage discharges), 1999.

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
Oct-07-1999	139	20.2	7.9	788	0.4	0.5
Oct-14-1999	155	20.9	7.4	832	0.4	0.6
Oct-21-1999	198	18.9	7.8	842	<0.4	0.6
Oct-28-1999	154	18.9	7.6	961	<0.4	0.7
Nov-04-1999	151	19.3	8.1	1,060	0.5	0.8
Nov-11-1999	139	16.1	NA	1,080	<0.4	0.8
Nov-18-1999	133	15.7	7.7	1,210	0.6	1.0
Nov-23-1999	117	11.4	7.8	1,300	<0.4	1.0
Dec-02-1999	99	11.7	7.6	1,410	<0.4	1.1
Dec-09-1999	94	8.4	7.7	1,600	<0.4	1.2
Dec-16-1999	91	9.2	7.8	1,640	<0.4	1.2
Dec-21-1999	100	10.4	7.9	1,620	<0.4	1.3
Dec-28-1999	102	9.8	7.9	1,670	<0.4	1.2

++ 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), 1999.

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
Oct-07-1999	176	20.6	8.1	1,660	8.1	2.0
Oct-14-1999	187	20.9	7.4	1,550	4.6	1.9
Oct-21-1999	224	18.8	7.8	1,320	3.7	1.4
Oct-28-1999	182	18.8	7.7	1,530	4.3	1.5
Nov-04-1999	173	18.5	8.0	1,480	4.3	1.5
Nov-11-1999	169	16.4	NA	1,680	7.0	1.8
Nov-18-1999	162	16.4	7.8	1,780	6.5	2.1
Nov-23-1999	142	11.5	7.4	1,870	5.1	2.0
Dec-02-1999	126	11.5	7.8	2,010	6.6	2.3
Dec-09-1999	116	8.7	7.9	2,220	10.7	2.3
Dec-16-1999	112	9.6	7.9	2,250	9.2	2.2
Dec-21-1999	121	10.0	7.8	2,250	13.3	2.4
Dec-28-1999	124	9.6	7.8	2,320	13.5	2.3

Table 10. Weekly water quality monitoring at Station F (Salt Slough at Lander Avenue), 1999.

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
Oct-07-1999	174	18.8	8.4	1,030	0.8	0.5
Oct-14-1999	146	19.8	7.8	1,180	0.8	0.6
Oct-21-1999	187	16.2	8.1	1,100	0.8	0.6
Oct-28-1999	165	17.8	7.7	1,320	0.4	0.7
Nov-04-1999	164	25.7	7.9	1,350	0.8	0.7
Nov-11-1999	245	14.9	NA	1,190	1.0	0.7
Nov-18-1999	142	15.0	7.7	1,470	0.8	0.9
Nov-23-1999	132	10.3	7.6	1,460	0.5	0.8
Dec-02-1999	135	10.9	7.6	1,600	0.6	0.9
Dec-09-1999	117	9.5	7.7	1,730	0.9	1.0
Dec-16-1999	96	7.7	7.6	1,840	1.1	1.0
Dec-21-1999	88	9.8	7.7	2,000	0.8	1.1
Dec-28-1999	70	8.2	7.7	2,330	0.5	1.2

Table 11. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford), 1999.

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
Oct-07-1999	.	18.3	7.7	1,050	0.7	0.5
Oct-14-1999	.	19.2	7.9	1,300	0.7	0.7
Oct-21-1999	.	15.8	8.0	1,180	0.7	0.6
Oct-28-1999	.	17.8	7.9	1,370	0.5	0.6
Nov-04-1999	.	17.6	7.3	1,500	0.7	0.8
Nov-11-1999	.	14.3	NA	1,200	1.0	0.7
Nov-18-1999	.	14.4	7.8	1,610	0.7	0.9
Nov-23-1999	.	9.8	7.7	1,660	0.4	0.8
Dec-02-1999	.	10.6	7.7	1,710	0.6	0.9
Dec-09-1999	.	10.3	7.6	1,790	0.9	0.9
Dec-16-1999	.	6.9	7.7	1,960	0.7	1.0
Dec-21-1999	.	8.6	7.2	2,090	0.9	1.0
Dec-28-1999	.	7.2	7.1	2,560	0.4	1.1

Table 12. Weekly water quality monitoring at Station H (San Joaquin River at Hills Ferry), 1999.

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
Oct-07-1999	.	18.4	7.7	1,380	3.9	1.2
Oct-14-1999	.	22.0	7.6	1,530	2.7	1.3
Oct-21-1999	.	19.1	7.7	1,280	1.9	1.0
Oct-28-1999	.	18.1	7.8	1,420	2.5	1.0
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.	Data no longer collected regularly for this station. Contact CVRWQCB for details.					
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Table 13. Weekly water quality monitoring at Station J (Camp 13 Ditch), 1999.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA ¹¹	.	.	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Oct-06-1999	220	.	.	640	1.2	0.4
Oct-13-1999	75	.	.	505	1.1	0.2
Oct-20-1999	25	.	.	501	0.6	0.2
Oct-27-1999	25	.	.	499	1.3	0.3
Nov-03-1999	25	.	.	605	1.6	0.4
Nov-11-1999	25	.	.	626	1.8	0.4
Nov-17-1999	15	.	.	556	1.3	0.3
Nov-22-1999	15	.	.	669	1.2	0.4
Dec-01-1999	15	.	.	515	<0.4	0.2
Dec-08-1999	0	.	.	2,360	2.2	3.5
Dec-15-1999	15	.	.	640	0.5	0.2
Dec-20-1999	15	.	.	725	0.6	0.3
Dec-27-1999	21	.	.	816	0.9	0.3

Table 14. Weekly water quality monitoring at Station K (Agatha Canal), 1999.

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
Oct-06-1999	200	.	.	416	0.6	0.2
Oct-13-1999	60	.	.	504	1.0	0.2
Oct-20-1999	20	.	.	575	0.9	0.4
Oct-27-1999	20	.	.	539	1.2	0.3
Nov-03-1999	20	.	.	572	1.3	0.3
Nov-11-1999	20	.	.	627	1.8	0.4
Nov-17-1999	10	.	.	551	1.2	0.3
Nov-22-1999	10	.	.	640	1.1	0.4
Dec-01-1999	10	.	.	576	0.6	0.3
Dec-08-1999	0	.	.	802	0.5	0.7
Dec-15-1999	15	.	.	1,330	0.7	1.5
Dec-20-1999	35	.	.	715	1.0	0.4
Dec-27-1999	45	.	.	874	1.0	0.5

Table 15. Weekly water quality monitoring at Station L2 (San Luis Canal at splits), 1999.

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
Oct-06-1999	140	.	.	554	0.9	0.3
Oct-13-1999	80	.	.	530	0.9	0.3
Oct-20-1999	80	.	.	536	1.1	0.3
Oct-27-1999	70	.	.	589	0.9	0.4
Nov-03-1999	70	.	.	711	1.5	NA
Nov-11-1999	10	.	.	715	1.1	0.5
Nov-17-1999	10	.	.	884	1.6	0.7
Nov-22-1999	10	.	.	1,070	1.6	1.0
Dec-01-1999	40	.	.	872	0.8	0.7
Dec-08-1999	40	.	.	829	1.3	0.7
Dec-15-1999	55	.	.	798	1.8	0.6
Dec-20-1999	60	.	.	690	0.5	0.3
Dec-27-1999	65	.	.	898	0.8	0.4

Table 16. Weekly water quality monitoring at Station M2 (Santa Fe Canal at weir), 1999.

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
Oct-06-1999	108	.	.	630	1.3	0.4
Oct-13-1999	143	.	.	742	0.8	0.7
Oct-20-1999	115	.	.	947	0.9	1.0
Oct-27-1999	65	.	.	997	0.8	1.1
Nov-03-1999	59	.	.	906	0.8	0.8
Nov-11-1999	113	.	.	969	0.7	0.9
Nov-17-1999	101	.	.	1,160	0.9	1.3
Nov-22-1999	104	.	.	1,200	0.8	1.3
Dec-01-1999	80	.	.	1,140	0.7	1.2
Dec-08-1999	15	.	.	1,700	1.3	1.9
Dec-15-1999	0	.	.	2,380	1.1	2.7
Dec-20-1999	29	.	.	2,120	0.8	2.4
Dec-27-1999	43	.	.	1,820	0.9	1.9

Table 17. Weekly water quality monitoring at Station N (San Joaquin River at Crow's Landing), 1999.

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
Oct-07-1999	673	18.5	7.3	1,070	2.3	0.8
Oct-14-1999	618	22.0	7.6	1,270	2.1	0.9
Oct-21-1999	1180	18.6	7.9	607	0.8	0.4
Oct-28-1999	954	17.3	7.7	888	1.2	0.6
Nov-04-1999	914	19.2	7.1	961	1.6	0.7
Nov-11-1999	932	17.0	7.3	1,010	1.7	0.7
Nov-18-1999	873	14.0	7.9	1,150	2.0	0.8
Nov-23-1999	729	10.0	7.6	1,220	1.4	0.8
Dec-02-1999	748	12.0	7.6	1,260	1.7	0.9
Dec-09-1999	686	9.2	7.9	1,290	1.7	0.8
Dec-16-1999	630	7.1	7.7	1,370	2.3	0.9
Dec-21-1999	626	8.6	7.7	1,420	2.6	0.9
Dec-28-1999	577	7.4	7.8	1,510	3.0	0.9

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from January 1999 to December 1999. 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	%	%	%	%	%	%
January-99	100	88	60*	43*	80	100
February-99	98	65	90	78	48 †	83
March-99	75	58	88	85	65 †	100
April-99	93	88	100	83	73 †	100
May-99	98	90	93	88	50 †	98
June-99	98	93	100	98	70 †	100
July-99	93	100	90	93	98	100
August-99	93	100	89	68	98	100
September-99	95	85	93	53	93	98
October-99	100	98	90	70*	98	100
November-99	98	38*	60*	50*	87	95
December-99	100	73*	73*	70*	100	100

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from January 1999 to December 1999. 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
January-99	0.72	0.62	0.38	0.23*	0.49	0.69
February-99	0.64	0.43	0.50	0.47	0.30	0.50
March-99	0.45	0.37	0.55	0.54	0.38	0.56
April-99	0.66	0.61	0.78	0.57	0.48	0.72
May-99	0.78	0.76	0.74	0.61	0.39	0.71
June-99	0.67	0.68	0.72	0.67	0.43	0.72
July-99	0.72	0.77	0.69	0.67	0.68	0.63
August-99	0.60	0.70	0.54	0.44*	0.65	0.63
September-99	0.65	0.49	0.54	0.35	0.59	0.58
October-99	0.70	0.62	0.58	0.51	0.63	0.65
November-99	0.58	0.20*	0.35*	0.29*	0.51	0.52
December-99	0.67	0.47*	0.49	0.50*	0.68	0.61

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from January 1999 to December 1999. 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	%	%	%	%	%	%
January-99	100	100	100	100	100	100
February-99	100	100	90	90	80	90
March-99	100	90	90	100	80	90
April-99	90	100	100	100	100	100
May-99	100	90	90	100	100	100
June-99	100	80	90	100	90	90
July-99	90	100	80	90	50 †	90
August-99	100	100	100	100	90	80
September-99	100	100	100	80	100	80
October-99	100	100	100	100	100	80
November-99	100	100	100	100	90	100
December-99	90	100	100	100	90	90

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from January 1999 to December 1999. 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
January-99	33.0	28.7	31.2	22.9	14.9	48.0
February-99	25.4	24.0	31.7	21.1	23.8	20.3
March-99	65.4	69.6	70.9	57.4	45.1	52.7
April-99	17.1	24.4	20.6	21.6	19.9	13.8
May-99	31.6	36.0	33.8	37.4	30.8	39.2
June-99	23.8	24.0	21.2	18.5	8.6 †††	10.3
July-99	31.1	35.9	32.6	27.2	12.8	15.7
August-99	19.9	23.2	24.3	19.9	11.4	12.3
September-99	29.2	37.7	36.1	28.4	17.9	14.6
October-99	31.7	25.7	28.4	22.2	22.8	16.8
November-99	16.2	11.7	10.1	14.8	5.3	7.3
December-99	34.9	32.0	43.0	37.7	31.2	40.9

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from January 1999 to December 1999. 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
January-99	13.0*	20.6	20.7	19.2*	24.4	25.6
February-99	16.0*	33.5	24.1*	15.7*	31.5	27.1
March-99	14.5	11.8*	15.5	17.6	17.1	22.9
April-99	17.6	14.4*	15.8	23.0	19.6	22.6 ‡
May-99	12.0	13.3	11.8	8.5	11.5 ‡	14.7 ‡
June-99	9.3	10.1	9.4	11.1	7.4 ††††	11.6
July-99	9.1	10.5	9.9	11.2	7.5 ††††	11.9
August-99	9.2*	10.0	10.2	11.9	13.3 ‡	14.9 ‡
September-99	9.8	11.1	10.8	10.2	14.1	23.5
October-99	9.8	10.7	9.0*	11.4	11.8	12.7
November-99	9.9*	12.8	11.4*	12.9	14.3	15.3
December-99	12.0*	22.7	20.9	20.4	18.8	23.4

Table 23. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, October to December 1999.

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
Oct-11-1999	30	0.8	8.1	0.9	0.7
Oct-13-1999	29	0.5	6.4	0.8	<0.4
Oct-15-1999	24	0.5	3.0	1.0	<0.4
Nov-08-1999	55	0.4	8.1	1.0	0.5
Nov-10-1999	58	0.5	7.5	1.1	<0.4
Nov-12-1999	36	0.6	5.4	1.0	<0.4
Dec-13-1999	54	0.8	9.0	1.0	0.5
Dec-15-1999	40	0.7	9.7	0.9	0.6
Dec-17-1999	72	<0.4	10.0	0.9	0.7

Table 24. Summary of sulfate concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, October to December 1999.

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	mg/L	mg/L	mg/L	mg/L	mg/L
Oct-11-1999	1,460	69	382	176	58
Oct-12-1999	1,560	69	342	172	20
Oct-15-1999	1,400	70	285	147	19
Nov-08-1999	1,370	107	345	172	61
Nov-10-1999	1,130	111	324	164	23
Nov-12-1999	1,230	108	272	170	22
Dec-13-1999	1,380	203	395	278	64
Dec-15-1999	1,350	222	461	274	30
Dec-17-1999	1,490	216	436	287	80

Table 25. Summary of total suspended solids concentrations in grab water samples collected from October to December 1999.

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
Oct-11-1999	21	31	46	106	22
Oct-13-1999	41	37	39	92	12
Oct-15-1999	61	30	45	139	30
Nov-08-1999	56	27	26	126	15
Nov-10-1999	35	14	21	48	11
Nov-12-1999	42	35	29	45	6
Dec-13-1999	43	35	19	41	19
Dec-15-1999	31	11	15	23	<1
Dec-17-1999	40	14	18	27	<1

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 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
(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 Stations D and F cages and light silt accumulation was observed in both the Windmill Station and Station B.
(8)	Moderate silt accumulation was noted in Stations B and F cages and light silt accumulation was observed in Station D.
(9)	No test deployment was done at the Windmill Station due to extreme conditions (stagnant & pH>9.0). At Station 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 Station F cages.
*	Significantly reduced from Delta Mendota Canal ($p < 0.05$)
†	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 (1997 draft).
†††	DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria.
††††	DMC water failed to meet minimum growth (10^5 cell/mL) acceptability criteria.
‡	Control value exceeds suggested maximum variance (20%) acceptability criteria.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.