GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

February 2005

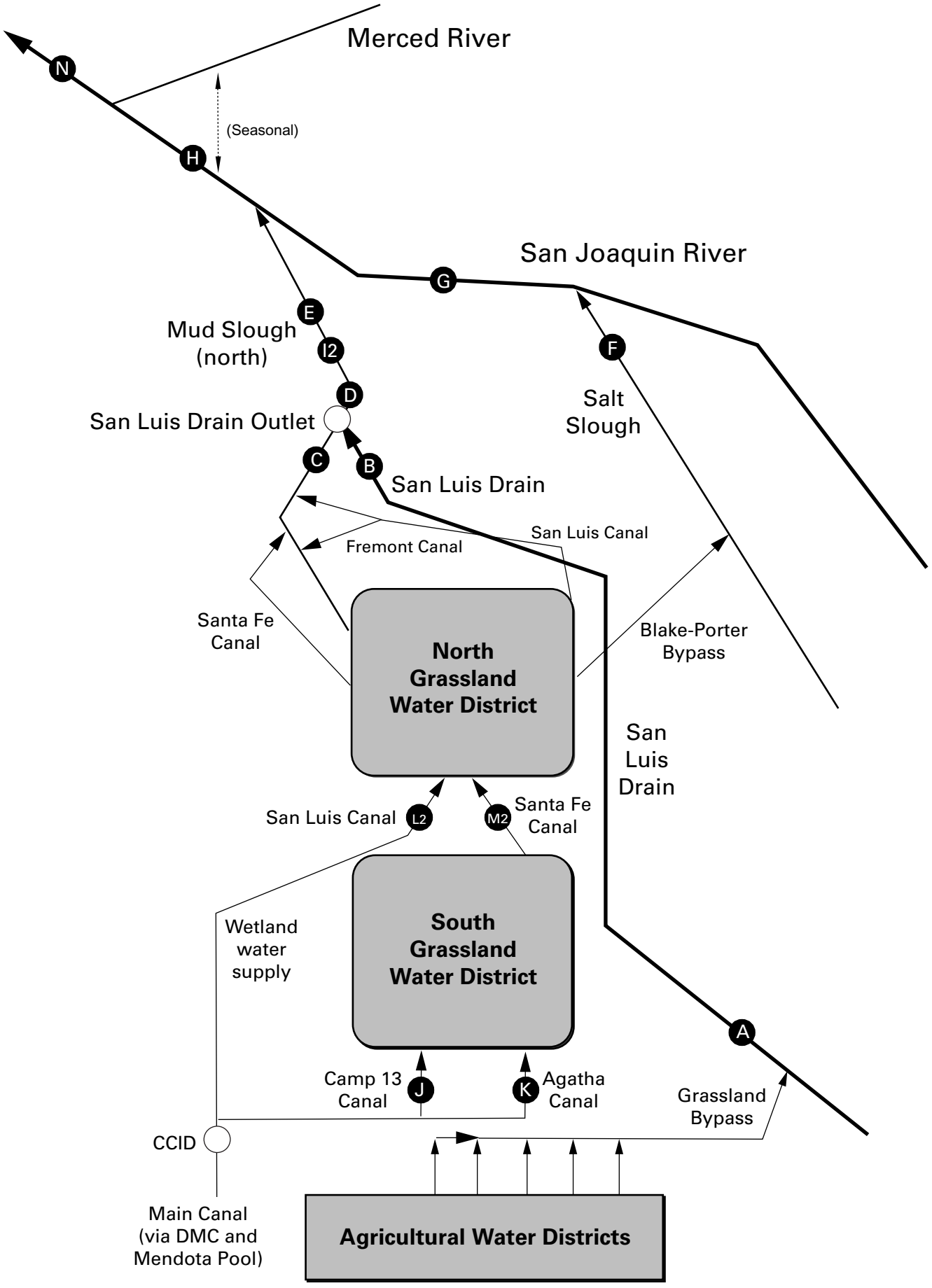
August 1, 2005

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


Merced River
N
(Seasonal)
H
San Joaquin River
G
E
Mud Slough
(north)
I2
F
D
San Luis Drain Outlet
Salt
Slough
C
B
San Luis Drain
San Luis Canal
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Santa Fe
Canal
North
Grassland
Water District
Blake-Porter
Bypass
San
Luis
Drain
San Luis Canal
L2
M2
Santa Fe
Canal
Wetland
water
supply
South
Grassland
Water District
A
Camp 13
Canal
J
K
Agatha
Canal
Grassland
Bypass
CCID
Main Canal
(via DMC and
Mendota Pool)
Agricultural Water Districts

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

LIST OF TABLES FOR MONTHLY REPORT

Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), February 2005.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Specific Conductance
DATA SOURCE	SLDMWA	SLDMWA
UNITS	cfs	µS/cm
Feb-01-2005	49	4,750
Feb-02-2005	46	4,740
Feb-03-2005	45	4,780
Feb-04-2005	45	4,730
Feb-05-2005	44	4,830
Feb-06-2005	42	4,930
Feb-07-2005	40	5,100
Feb-08-2005	42	5,020
Feb-09-2005	44	4,700
Feb-10-2005	45	4,840
Feb-11-2005	46	4,810
Feb-12-2005	46	4,870
Feb-13-2005	47	4,930
Feb-14-2005	47	4,930
Feb-15-2005	56	4,580
Feb-16-2005	120	3,190
Feb-17-2005	132	3,290
Feb-18-2005	84	3,890
Feb-19-2005	76	3,700
Feb-20-2005	58	4,170
Feb-21-2005	61	4,620
Feb-22-2005	75	4,650
Feb-23-2005	78	4,930
Feb-24-2005	78	5,070
Feb-25-2005	77	4,960
Feb-26-2005	78	4,980
Feb-27-2005	78	4,890
Feb-28-2005	76	5,090
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Mean	63	4,640

Table 2a. Continuous water monitoring at Station B (discharge from San Luis Drain), February 2005.

See Table 27 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
Feb-01-2005	54	11.8	7.4	4,300	53.4	15.6
Feb-02-2005	53	11.8	7.1	4,430	55.0	15.7
Feb-03-2005	51	12.0	7.6	4,610	59.0	16.2
Feb-04-2005	50	12.3	7.8	4,610	61.0	16.4
Feb-05-2005	50	12.8	7.5	4,580	58.8	15.9
Feb-06-2005	49	13.2	7.7	4,680	58.1	15.4
Feb-07-2005	46	13.3	7.8	4,510	57.4	14.2
Feb-08-2005	45	13.6	8.4	4,700	59.4	14.4
Feb-09-2005	47	13.8	8.1	4,670	62.4	15.8
Feb-10-2005	49	13.9	8.5	4,850	64.6	17.1
Feb-11-2005	50	14.1	P	4,970	69.0	18.6
Feb-12-2005	51	14.4	P	4,610	60.2	16.6
Feb-13-2005	51	14.8	P	4,710	62.4	17.2
Feb-14-2005	51	15.1	P	4,720	61.9	17.0
Feb-15-2005	55	14.9	P	4,680	65.2	19.3
Feb-16-2005	71	14.6	P	4,620	65.6	25.1
Feb-17-2005	123	14.6	P	4,460	60.2	39.9
Feb-18-2005	123	14.6	P	3,020	34.6	23.0
Feb-19-2005	94	14.5	P	3,150	35.4	17.9
Feb-20-2005	79	14.5	P	3,790	44.8	19.1
Feb-21-2005	63	14.6	P	3,610	42.4	14.4
Feb-22-2005	67	14.8	P	3,760	37.4	13.5
Feb-23-2005	78	15.5	P	4,260	49.8	21.0
Feb-24-2005	80	15.8	P	4,600	68.8	29.7
Feb-25-2005	80	15.7	8.7	4,970	74.5	32.1
Feb-26-2005	79	15.8	9.2	5,110	76.0	32.4
Feb-27-2005	78	15.9	9.3	5,070	76.7	32.3
Feb-28-2005	79	16.3	9.1	5,030	75.1	32.0
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Mean	66	14.3	8.2	4,470	58.9	20.6
Total Acre-feet	**3,660**					
Total (lbs)						**578**

Load Limitation for February 2005 (lbs)	**488**

Table 2b. Continuous water monitoring at San Luis Drain Outlet, February 2005.
Note: This is unofficial data reported for comparison with Station B.

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Selenium (total) *	Selenium (total) Load
DATA SOURCE	USGS	CVRWQCB	Computed
UNITS	cfs	µg/L	lbs
Feb-01-2005	54	53.4	15.6
Feb-02-2005	53	55.0	15.7
Feb-03-2005	52	59.0	16.5
Feb-04-2005	50	61.0	16.4
Feb-05-2005	50	58.8	15.9
Feb-06-2005	49	58.1	15.4
Feb-07-2005	46	57.4	14.2
Feb-08-2005	45	59.4	14.4
Feb-09-2005	46	62.4	15.5
Feb-10-2005	48	64.6	16.7
Feb-11-2005	49	69.0	18.2
Feb-12-2005	51	60.2	16.6
Feb-13-2005	51	62.4	17.2
Feb-14-2005	51	61.9	17.0
Feb-15-2005	55	65.2	19.3
Feb-16-2005	71	65.6	25.1
Feb-17-2005	122	60.2	39.6
Feb-18-2005	126	34.6	23.5
Feb-19-2005	97	35.4	18.5
Feb-20-2005	83	44.8	20.1
Feb-21-2005	67	42.4	15.3
Feb-22-2005	68	37.4	13.7
Feb-23-2005	81	49.8	21.8
Feb-24-2005	82	68.8	30.4
Feb-25-2005	83	74.5	33.4
Feb-26-2005	82	76.0	33.6
Feb-27-2005	82	76.7	33.9
Feb-28-2005	82	75.1	33.2
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Mean	67	58.9	21.0
Total Acre-feet	**3,720**		
Total (lbs)			**587**

*Selenium (total) concentrations from Site B (San Luis Drain)

The US Geological Survey determines flow at Station B through continuous measurements of stage that is rated for a known cross-section. These flow data, listed in Table 2a, are verified with frequent current meter measurements.

Monitoring and Reporting Program No. 5-101-234 states:

"Samples representative of the discharge shall be collected from the San Luis Drain at the footbridge between Gun Club Road and the terminus (Site B)."

Accurate flow measurements are necessary to determine compliance with selenium load limits specified in Waste Discharge Requirement Order No. 5-101-234.

The accumulation of sediments, as documented in the 2001 Annual Report, have caused irregularities in flow measurements at Station B, resulting in "shifts" in the relationship between stage and discharge.

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 will be 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.

This change is subject to approval by the California Regional Water Quality Board and modification of the Waste Discharge Requirement Order and Monitoring and Reporting Program. It is anticipated that flow will be measured solely at the Outlet works for determination of GBP flow discharge.

Unofficial flow data for the Outlet works are presented in Table 2b for comparison and are not used to determine compliance with the Waste Discharge Requirement Order.

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

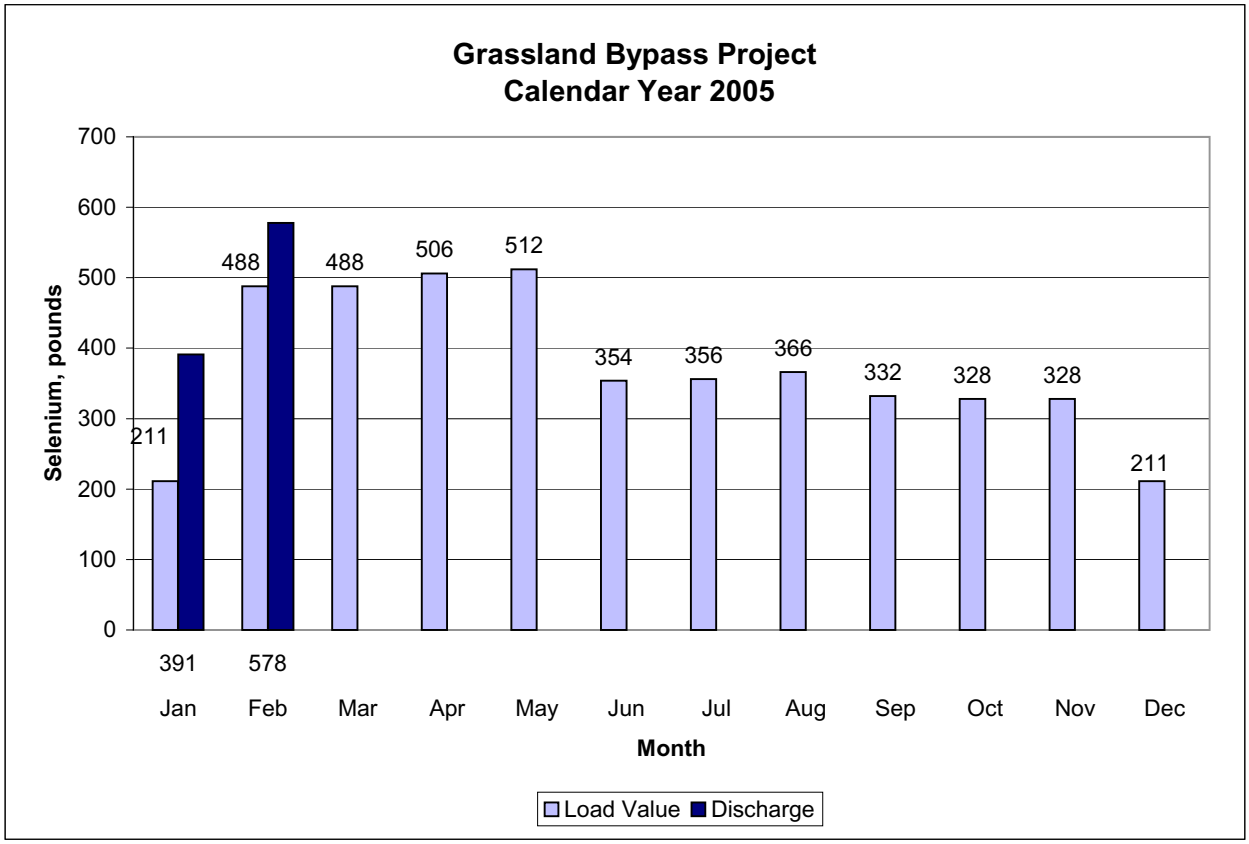

Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), February 2005.

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-01-2005	206	11.6	2,650
Feb-02-2005	194	11.6	2,830
Feb-03-2005	178	11.8	2,960
Feb-04-2005	164	12.0	3,000
Feb-05-2005	163	12.8	3,010
Feb-06-2005	163	13.3	2,930
Feb-07-2005	170	13.3	2,810
Feb-08-2005	178	13.5	2,800
Feb-09-2005	170	13.5	2,880
Feb-10-2005	170	13.6	3,000
Feb-11-2005	168	13.9	2,970
Feb-12-2005	165	14.6	2,800
Feb-13-2005	158	14.9	3,030
Feb-14-2005	157	15.2	3,080
Feb-15-2005	180	14.4	2,990
Feb-16-2005	315	14.1	2,430
Feb-17-2005	397	14.4	2,670
Feb-18-2005	553	14.2	1,850
Feb-19-2005	614	13.5	1,710
Feb-20-2005	617	13.5	1,820
Feb-21-2005	583	13.8	1,780
Feb-22-2005	560	14.0	1,840
Feb-23-2005	528	14.8	1,970
Feb-24-2005	531	14.8	2,100
Feb-25-2005	518	14.6	2,210
Feb-26-2005	488	14.8	2,300
Feb-27-2005	460	15.2	2,330
Feb-28-2005	470	15.5	2,260
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Mean	329	13.8	2,540

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), February 2005.

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-01-2005	210	11.5	2,150
Feb-02-2005	195	11.6	2,100
Feb-03-2005	190	11.6	2,050
Feb-04-2005	181	11.8	2,050
Feb-05-2005	176	12.6	1,950
Feb-06-2005	176	13.0	1,870
Feb-07-2005	173	13.2	1,840
Feb-08-2005	172	13.5	1,840
Feb-09-2005	173	13.2	1,810
Feb-10-2005	142	13.3	1,950
Feb-11-2005	147	13.6	1,850
Feb-12-2005	180	14.2	1,690
Feb-13-2005	186	14.4	1,670
Feb-14-2005	185	14.8	1,700
Feb-15-2005	211	14.4	1,590
Feb-16-2005	288	13.9	1,470
Feb-17-2005	394	14.1	1,410
Feb-18-2005	494	14.3	1,390
Feb-19-2005	560	13.9	1,420
Feb-20-2005	622	13.8	1,480
Feb-21-2005	644	14.2	1,570
Feb-22-2005	622	14.3	1,630
Feb-23-2005	592	14.8	1,610
Feb-24-2005	564	15.1	1,560
Feb-25-2005	533	15.0	1,410
Feb-26-2005	498	15.0	1,280
Feb-27-2005	466	15.2	1,210
Feb-28-2005	444	15.6	1,250
.	.	.	.
.	.	.	.
.	.	.	.
Mean	336	13.8	1,670

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), February 2005.

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-01-2005	2,720	10.6	839	1.5
Feb-02-2005	2,520	10.8	962	1.7
Feb-03-2005	2,170	11.0	1,040	1.5
Feb-04-2005	1,940	11.1	1,120	1.9
Feb-05-2005	1,770	11.7	1,200	2.3
Feb-06-2005	1,700	12.4	1,240	2.4
Feb-07-2005	1,630	12.9	1,260	2.3
Feb-08-2005	1,570	13.1	1,310	2.2
Feb-09-2005	1,500	12.9	1,360	2.1
Feb-10-2005	1,470	12.9	1,380	2.3
Feb-11-2005	1,410	13.3	1,420	2.5
Feb-12-2005	1,360	13.8	1,470	2.9
Feb-13-2005	1,320	14.1	1,490	2.9
Feb-14-2005	1,280	14.5	1,450	3.1
Feb-15-2005	1,270	14.4	1,550	3.6
Feb-16-2005	2,040	13.5	1,210	2.4
Feb-17-2005	2,260	14.0	1,080	2.1
Feb-18-2005	2,950	14.1	793	2.0
Feb-19-2005	3,560	13.8	778	1.8
Feb-20-2005	4,410	13.4	716	1.1
Feb-21-2005	4,800	13.7	666	1.3
Feb-22-2005	4,660	14.0	747	1.4
Feb-23-2005	4,230	14.6	833	1.5
Feb-24-2005	3,850	14.8	914	1.4
Feb-25-2005	3,510	14.7	987	1.9
Feb-26-2005	3,160	14.8	1,090	2.2
Feb-27-2005	2,850	15.1	1,170	2.5
Feb-28-2005	2,630	15.4	1,240	2.9
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
Mean	2,520	13.4	1,120	2.1

PRELIMINARY RESULTS

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-01-2004	16	.	.	5,330	P	.	.	.
Dec-08-2004	21	.	.	4,940	120	.	.	.
Dec-15-2004	18	.	.	5,100	46	.	.	.
Dec-22-2004	19	.	.	4,900	23	.	.	.
Dec-29-2004	33	.	.	4,460	190	.	.	.
Jan-05-2005	24	.	.	4,880	68	.	.	.
Jan-12-2005	53	.	.	4,440	150	.	.	.
Jan-19-2005	32	.	.	4,860	89	.	.	.
Jan-26-2005	42	.	.	4,570	170	.	.	.
Feb-02-2005	46	.	.	4,670	130	.	.	.
Feb-09-2005	44	.	.	4,720	140	.	.	.
Feb-16-2005	120	.	.	3,320	340	.	.	.
Feb-23-2005	78	.	.	5,030	160	.	.	.

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-07-2004	19	.	.	5,090	.	61.4	.	9.1
Dec-14-2004	18	.	.	4,770	.	53.0	.	8.5
Dec-21-2004	19	.	.	4,950	.	51.0	.	8.5
Dec-28-2004	26	.	.	4,710	.	58.3	.	7.8
Jan-04-2005	27	.	.	4,500	.	55.7	.	8.5
Jan-11-2005	64	.	.	4,400	.	47.8	.	8.4
Jan-18-2005	34	.	.	4,860	.	56.0	.	8.6
Jan-25-2005	38	.	.	4,880	.	69.2	.	8.9
Feb-01-2005	49	.	.	4,590	.	63.5	.	8.7
Feb-08-2005	42	.	.	4,930	.	67.0	.	P
Feb-15-2005	56	.	.	4,800	.	67.7	.	8.5
Feb-22-2005	75	.	.	4,130	.	P	.	7.1

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	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	mg/L	µg/L	mg/L
Dec-02-2004	22	7.6	8.0	4,390	P	32.0	7.4
Dec-09-2004	27	10.3	8.0	4,400	40	41.8	7.4
Dec-16-2004	25	11.7	7.4	4,170	P	34.8	7.4
Dec-22-2004	25	9.1	8.0	4,610	35	39.0	7.4
Dec-29-2004	34	9.2	7.6	4,070	38	33.3	6.4
Jan-06-2005	34	10.1	7.3	4,150	63	39.0	6.8
Jan-13-2005	58	10.1	7.6	3,390	90	35.0	5.6
Jan-20-2005	39	9.3	7.5	4,860	P	55.6	8.1
Jan-27-2005	47	10.9	7.9	4,690	P	62.0	8.8
Feb-03-2005	51	11.7	8.1	4,710	66	65.2	8.5
Feb-10-2005	49	13.2	7.9	4,950	62	66.0	9.0
Feb-17-2005	123	14.6	7.4	4,570	83	62.8	7.8
Feb-24-2005	80	15.3	7.8	4,620	50	P	7.5

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-02-2004	96	7.4	8.0	1,580	.	<0.4	1.2
Dec-09-2004	132	10.6	8.0	1,370	.	<0.4	1.1
Dec-16-2004	133	10.9	7.8	1,440	.	0.5	1.2
Dec-22-2004	134	8.6	7.9	1,480	.	0.4	1.1
Dec-29-2004	220	9.5	7.8	1,390	.	<0.4	1.0
Jan-06-2005	275	9.5	7.7	1,430	.	<0.4	1.2
Jan-13-2005	370	9.0	7.8	1,280	.	0.4	1.1
Jan-20-2005	234	9.0	7.7	1,280	.	0.5	1.1
Jan-27-2005	146	10.7	7.9	1,950	.	0.5	1.4
Feb-03-2005	127	10.8	7.8	1,930	.	0.6	1.7
Feb-10-2005	121	12.3	7.9	2,110	.	<0.4	2.0
Feb-17-2005	274	14.0	7.8	1,660	.	0.7	1.6
Feb-24-2005	451	14.1	7.9	1,360	.	P	1.4

++ 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-02-2004	118	7.4	8.0	2,280	7.2	2.3
Dec-09-2004	159	10.6	8.0	1,960	6.6	2.0
Dec-16-2004	158	11.0	7.7	1,970	6.2	2.2
Dec-22-2004	159	8.6	8.0	2,040	5.9	2.2
Dec-29-2004	254	9.4	7.8	1,800	4.7	1.7
Jan-06-2005	309	9.6	7.6	1,740	5.3	1.8
Jan-13-2005	428	9.2	7.8	1,610	5.5	1.7
Jan-20-2005	273	9.1	7.6	1,840	7.5	2.0
Jan-27-2005	193	10.7	7.9	2,740	15.9	3.8
Feb-03-2005	178	10.7	7.7	2,800	16.4	3.7
Feb-10-2005	170	12.6	7.9	2,990	18.4	3.9
Feb-17-2005	397	14.2	7.7	2,700	21.4	3.7
Feb-24-2005	531	14.3	7.8	1,980	P	2.4

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-02-2004	.	8.0	2,620	8	7.2	2.4
Dec-06-2004	.	7.8	2,260	9	8.4	2.3
Dec-16-2004	.	7.6	2,070	10	5.7	2.0
Dec-21-2004	.	7.6	2,070	9	5.5	2.0
Dec-30-2004	.	7.8	1,850	12	5.1	1.8
Jan-06-2005	.	7.7	1,800	13	3.8	1.7
Jan-11-2005	.	8.1	2,080	26	8.1	2.4
Jan-19-2005	.	8.1	1,910	39	7.3	2.2
Jan-25-2005	.	7.6	3,040	41	14.8	3.4
Feb-01-2005	.	8.1	2,790	30	14.6	3.3
Feb-09-2005	.	8.1	3,110	28	17.0	3.6
Feb-15-2005	.	7.8	3,190	35	20.1	3.7
Feb-23-2005	.	8.0	1,930	43	7.7	2.3

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

See Table 27 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Dec-02-2004	129	7.2	7.9	1,590	0.5	1.0
Dec-09-2004	129	11.2	7.9	1,660	0.5	1.0
Dec-16-2004	120	11.1	7.8	1,770	<0.4	1.2
Dec-22-2004	109	9.1	7.7	1,750	<0.4	1.2
Dec-29-2004	146	10.1	7.7	1,720	<0.4	1.2
Jan-06-2005	299	9.7	7.8	1,500	0.4	1.2
Jan-13-2005	418	9.4	7.7	1,590	0.7	1.2
Jan-20-2005	243	9.4	7.4	2,040	0.5	1.1
Jan-27-2005	139	11.6	7.6	2,340	<0.4	0.8
Feb-03-2005	190	10.9	7.6	2,060	0.5	1.1
Feb-10-2005	142	12.1	7.7	2,040	0.4	1.2
Feb-17-2005	394	14.0	7.6	1,350	0.9	1.0
Feb-24-2005	564	14.5	7.6	1,670	P	1.4

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-01-2004	35	.	.	666	1.2	0.4
Dec-08-2004	35	.	.	913	0.5	0.8
Dec-15-2004	35	.	.	675	0.5	0.4
Dec-22-2004	35	.	.	567	0.7	0.2
Dec-29-2004	35	.	.	931	0.4	0.8
Jan-05-2005	20	.	.	841	0.6	0.5
Jan-12-2005	10	.	.	1,230	0.8	1.5
Jan-19-2005	20	.	.	986	3.1	0.7
Jan-26-2005	20	.	.	739	1.7	0.5
Feb-02-2005	20	.	.	683	1.5	0.6
Feb-09-2005	20	.	.	801	1.4	P
Feb-16-2005	20	.	.	816	1.7	0.6
Feb-23-2005	20	.	.	945	P	0.9

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-01-2004	45	.	.	714	1.2	0.4
Dec-08-2004	45	.	.	752	1.2	0.4
Dec-15-2004	45	.	.	746	0.8	0.4
Dec-22-2004	45	.	.	624	0.6	0.3
Dec-29-2004	45	.	.	724	<0.4	0.3
Jan-05-2005	35	.	.	683	<0.4	0.3
Jan-12-2005	15	.	.	739	2.1	0.4
Jan-19-2005	10	.	.	1,510	1.7	1.6
Jan-26-2005	10	.	.	668	1.1	0.4
Feb-02-2005	20	.	.	641	1.3	0.5
Feb-09-2005	30	.	.	665	1.4	P
Feb-16-2005	37	.	.	823	1.5	0.7
Feb-23-2005	2	.	.	4,820	P	9.3

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-01-2004	30	.	.	687	1.1	0.4
Dec-08-2004	30	.	.	574	1.0	0.3
Dec-15-2004	30	.	.	906	0.8	0.6
Dec-22-2004	30	.	.	660	0.7	0.4
Dec-29-2004	30	.	.	656	<0.4	0.3
Jan-05-2005	30	.	.	791	0.6	0.5
Jan-12-2005	45	.	.	864	2.0	0.7
Jan-19-2005	5	.	.	2,210	2.4	2.1
Jan-26-2005	60	.	.	1,090	1.4	0.8
Feb-02-2005	4	.	.	1,430	2.0	1.7
Feb-09-2005	40	.	.	981	1.3	P
Feb-16-2005	65	.	.	483	0.6	0.4
Feb-23-2005	0	.	.	1,930	P	2.3

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-01-2004	96	.	.	1,110	0.6	0.9
Dec-08-2004	90	.	.	1,280	0.7	1.3
Dec-15-2004	77	.	.	1,240	0.7	1.3
Dec-22-2004	140	.	.	1,260	0.6	1.2
Dec-29-2004	184	.	.	1,220	0.4	1.2
Jan-05-2005	188	.	.	1,250	0.5	1.2
Jan-12-2005	138	.	.	1,490	1.2	1.6
Jan-19-2005	102	.	.	1,510	0.9	1.4
Jan-26-2005	80	.	.	1,820	0.8	2.3
Feb-02-2005	130	.	.	2,040	0.9	2.4
Feb-09-2005	92	.	.	1,750	1.1	P
Feb-16-2005	117	.	.	1,610	1.2	2.0
Feb-23-2005	145	.	.	1,910	P	2.6

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-01-2004	.	.	.	646	1.4	0.3
Dec-08-2004	.	.	.	518	0.9	0.2
Dec-15-2004	.	.	.	724	1.2	0.4
Dec-22-2004	.	.	.	720	1.3	0.6
Dec-29-2004	.	.	.	780	0.8	0.7
Jan-05-2005	.	.	.	948	1.2	1.0
Jan-12-2005	.	.	.	737	1.8	0.4
Jan-19-2005	.	.	.	829	2.0	0.4
Jan-26-2005	.	.	.	453	1.2	0.3
Feb-02-2005	.	.	.	483	1.6	0.3
Feb-09-2005	.	.	.	592	1.5	P
Feb-16-2005	.	.	.	825	1.8	0.6
Feb-23-2005	.	.	.	831	P	0.6

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-02-2004	170	7.3	7.6	1,750	0.7	1.0
Dec-09-2004	177	10.8	7.9	1,740	<0.4	1.0
Dec-16-2004	324	11.0	7.4	1,110	0.6	0.7
Dec-22-2004	201	9.1	7.9	1,610	0.6	1.0
Dec-29-2004	221	9.5	7.8	1,850	<0.4	1.1
Jan-06-2005	2350	8.6	7.5	344	<0.4	0.2
Jan-13-2005	3700	9.3	7.6	179	<0.4	0.1
Jan-20-2005	1910	8.5	7.2	579	<0.4	0.3
Jan-27-2005	763	10.9	7.3	1,170	<0.4	0.3
Feb-03-2005	1,090	10.9	7.2	954	<0.4	0.4
Feb-10-2005	585	12.6	7.7	1,410	<0.4	0.5
Feb-17-2005	1,240	14.1	7.5	762	<0.4	0.3
Feb-24-2005	2,160	14.7	7.1	853	P	0.6

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-08-2004	.	.	.	1,190	<0.4	0.3
Dec-14-2004	.	.	.	1,300	2.2	0.9
Dec-21-2004	.	.	.	1,810	2.0	1.2
Dec-28-2004	.	.	.	961	0.4	0.3
Jan-04-2005	.	.	.	196	0.4	0.1
Jan-11-2005	.	.	.	128	NA	0.1
Jan-25-2005	.	.	.	495	0.4	0.1
Feb-01-2005	.	.	.	370	<0.4	0.0
Feb-08-2005	.	.	.	547	<0.4	0.0
Feb-15-2005	.	.	.	NA	<0.4	0.1
Feb-23-2005	.	.	.	NA	0.4	0.0

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-02-2004	685	8.0	7.8	1,310	1.2	0.9
Dec-09-2004	749	11.1	7.7	1,270	1.8	0.9
Dec-16-2004	913	11.5	7.7	1,060	1.5	0.7
Dec-22-2004	770	8.9	7.9	1,330	1.4	0.9
Dec-29-2004	844	9.5	7.8	1,340	1.3	1.0
Jan-06-2005	3,370	9.3	7.5	450	0.6	0.4
Jan-13-2005	6,090	9.5	7.4	399	0.7	0.3
Jan-20-2005	3,100	8.7	7.5	719	1.3	0.5
Jan-27-2005	1,640	11.0	7.6	1,230	2.1	0.6
Feb-03-2005	2,170	10.7	7.5	1,060	1.7	0.8
Feb-10-2005	1,470	12.5	7.8	1,370	2.3	0.9
Feb-17-2005	2,260	14.1	7.7	1,140	2.3	0.8
Feb-24-2005	3,850	14.9	7.4	926	P	0.7

Table 20. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from March 2004 to February 2005. 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-2004	100	90	53*	85	100	100
Apr-2004	100	100	95	95	90	98
May-2004	100	100	100	100	100	100
Jun-2004	98	93	98	100	88	95
Jul-2004	100	90	93	88	98	98
Aug-2004	98	98	100	95	85	100
Sep-2004	98	93	95	100	93	95
Oct-2004	100	95	98	95	98	98
Nov-2004	95	98	58*	88	98	98
Dec-2004	100	68*	75*	98	98	100
Jan-2005	98	85	80	100	100	98
Feb-2005	95	88	98	80	90	98

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from March 2004 to February 2005. 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-2004	0.44	0.39*	0.32*	0.42	0.48	0.46
Apr-2004	0.59	0.57	0.63	0.54	0.56	0.60
May-2004	0.49	0.55	0.53	0.57	0.43	0.49
Jun-2004	0.42	0.42	0.40	0.45	0.36	0.40
Jul-2004	0.55	0.50	0.51	0.54	0.51	0.48
Aug-2004	0.60	0.62	0.62	0.64	0.55	0.59
Sep-2004	0.71	0.60	0.75	0.74	0.62	0.51
Oct-2004	0.69	0.67	0.71	0.71	0.66	0.58
Nov-2004	0.58	0.62	0.41*	0.62	0.62	0.71
Dec-2004	0.58	0.47	0.53	0.66	0.54	0.48
Jan-2005	0.62	0.57	0.51	0.61	0.54	0.46
Feb-2005	0.76	0.62	0.69	0.63	0.62	0.54

Table 22. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from March 2004 to February 2005. 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-2004	100	100	90	100	100	100
Apr-2004	100	100	90	90	90	100
May-2004	90	100	90	80	90	90
Jun-2004	90	100	100	90	90	100
Jul-2004	100	100	80	90	90	90
Aug-2004	100	88	88	100	90	100
Sep-2004	80	100	90	100	100	90
Oct-2004	100	100	80	100	100	100
Nov-2004	80	70	90	80	100	80
Dec-2004	100	100	90	90	80	100
Jan-2005	100	90	80	100	100	90
Feb-2005	80	100	100	90	100	30†

Table 23. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from March 2004 to February 2005. 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-2004	59.7	55.3	58.8	58.6	58.4	51.6
Apr-2004	35.5	34.3	35.9	34.6	21.7	15.7
May-2004	32.4	29.6	37.5	34.9	30.7	24.7
Jun-2004	25.8	29.8	25.6	16.7	19.0	30.0
Jul-2004	51.3	32.4	48.5	36.2	38.8	34.9
Aug-2004	41.9	41.8	46.1	37.4	32.0	33.9
Sep-2004	49.8	48.0	40.4	38.7	41.8	44.3
Oct-2004	48.1	39.8	29.2*	36.6	47.0	32.1
Nov-2004	37.0	28.3	44.6	41.8	35.9	27.0
Dec-2004	30.8	30.8	32.8	34.4	26.6	31.1
Jan-2005	41.7	38.8	40.2	45.9	47.6	34.7
Feb-2005	15.2	13.6	17.3	8.5	12.2	4.0

Table 24. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from March 2004 to February 2005. 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-2004	24.0*	39.2	27.5	33.1	29.9	29.3
Apr-2004	19.9	31.6	20.0	25.5	19.5	26.5
May-2004	19.3*	29.5	25.1	25.1	24.5	14.5
Jun-2004	12.1	25.2	18.1	21.5	15.4	22.4
Jul-2004	3.6*	13.1	16.3	17.5	12.5	10.1
Aug-2004	14.8	17.7	14.2	16.9	12.2	17.6
Sep-2004	12.4*	13.4*	15.6	16.3	16.2	14.6
Oct-2004	14.5	22.1	17.7	5.9*	16.6	16.8
Nov-2004	18.5	21.1	20.4	22.0	16.5	17.6
Dec-2004	0.9*	10.4	12.2	23.4	3.5	15.6
Jan-2005	1.3*	12.7	10.6*	18.0	13.7	16.2
Feb-2005	13.7	17.7	19.5	10.7*	13.1	22.4

Table 25. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, December 2004 to February 2005.

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-06-2004	44	<0.4	6.7	0.5	<0.4
Dec-08-2004	40	0.4	7.5	0.5	<0.4
Dec-10-2004	42	<0.4	6.3	0.5	0.9
Jan-03-2005	44	0.6	4.5	0.6	0.4
Jan-05-2005	42	<0.4	4.8	0.5	<0.4
Jan-07-2005	38	<0.4	4.4	1.1	0.5
Feb-14-2005	63	0.5	20	0.8	<0.4
Feb-16-2005	67	0.6	16	0.8	0.5
Feb-18-2005	32	0.6	8.0	0.8	1.1

Table 26. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, December 2004 to February 2005.

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-06-2004	38	15	18	35	8
Dec-08-2004	77	23	28	55	3
Dec-10-2004	56	18	37	48	4
Jan-03-2005	37	56	87	38	8
Jan-05-2005	92	68	69	31	8
Jan-07-2005	179	92	109	63	13
Feb-14-2005	1,086	58	75	76	33
Feb-16-2005	82	64	70	91	26
Feb-18-2005	155	182	256	50	32

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.
†	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 (10^6cell/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.
v	Based on definitive bioassay, NOEC is 50 percent
D	Sample was dechlorinated