

**GRASSLAND BYPASS PROJECT**

**MONTHLY DATA REPORT**

**February 1997**

April 24, 1997

**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**

## GRASSLAND BYPASS PROJECT

## MONTHLY DATA REPORT

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**Table 1. Continuous water monitoring at Station A (inflow to San Luis Drain), February 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>
<b>DATA SOURCE</b>	<b>USBR</b>
<b>UNITS</b>	<b>cfs</b>
Feb-01-1997	76.9
Feb-02-1997	70.6
Feb-03-1997	79.2
Feb-04-1997	38.0
Feb-05-1997	87.0
Feb-06-1997	92.4
Feb-07-1997	92.7
Feb-08-1997	94.5
Feb-09-1997	88.2
Feb-10-1997	84.9
Feb-11-1997	81.0
Feb-12-1997	82.9
Feb-13-1997	84.0
Feb-14-1997	84.1
Feb-15-1997	85.5
Feb-16-1997	88.7
Feb-17-1997	88.2
Feb-18-1997	85.2
Feb-19-1997	88.6
Feb-20-1997	87.7
Feb-21-1997	86.0
Feb-22-1997	70.0
Feb-23-1997	61.5
Feb-24-1997	64.1
Feb-25-1997	59.7
Feb-26-1997	53.5
Feb-27-1997	60.7
Feb-28-1997	80.3

**Table 2. Continuous water monitoring at Station B (discharge from San Luis Drain), February 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	USBR	USBR	USBR	CVRWOCB	Computed
UNITS	cfs	°C	µS/cm	µg/l	lbs
Feb-01-1997	80.1	14.1	4,153	45.8	19.8
Feb-02-1997	75.9	14.1	4,354	47.4	19.4
Feb-03-1997	65.9	14.2	4,472	58.2	20.7
Feb-04-1997	64.7	14.3	4,451	65.8	23.0
Feb-05-1997	49.9	14.0	4,549	62.3	16.8
Feb-06-1997	81.1	13.3	4,748	65.9	28.8
Feb-07-1997	87.2	12.3	4,891	72.8	34.2
Feb-08-1997	87.6	13.8	5,103	91.2	43.1
Feb-09-1997	89.7	13.4	5,061	90.5	43.8
Feb-10-1997	84.3	13.7	4,898	86.2	39.2
Feb-11-1997	80.2	13.8	4,915	79.1	34.2
Feb-12-1997	76.5	13.6	5,020	87.8	36.2
Feb-13-1997	81.3	12.4	5,173	81.8	35.9
Feb-14-1997	81.2	12.7	5,164	89.5	39.2
Feb-15-1997	83.4	13.1	5,013	86.0	38.7
Feb-16-1997	81.7	13.3	4,958	86.0	37.9
Feb-17-1997	82.4	14.0	4,896	85.3	37.9
Feb-18-1997	83.6	13.0	5,064	80.9	36.5
Feb-19-1997	81.5	13.7	5,140	81.0	35.6
Feb-20-1997	83.3	13.7	5,125	83.7	37.6
Feb-21-1997	83.8	13.5	5,104	84.4	38.1
Feb-22-1997	80.5	13.9	5,002	78.3	34.0
Feb-23-1997	67.0	13.3	4,879	78.4	28.3
Feb-24-1997	58.7	11.9	4,926	84.0	26.6
Feb-25-1997	61.4	11.7	4,809	71.1	23.5
Feb-26-1997	56.4	12.5	4,856	74.8	22.8
Feb-27-1997	52.3	13.0	4,528	70.0	19.7
Feb-28-1997	62.4	12.1	4,597	77.4	26.0
Mean	75.1	13.3	4,852	76.6	
<b>Total</b>					<b>878</b>

<b>Load Limitation for February 1997 (lbs)</b>	<b>866</b>
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**Table 3. Continuous water monitoring at Station D  
(Mud Slough North downstream of drainage discharges), February 1997.**

See Table 26 for explanation of footnotes and agency abbreviations.

<b>PARAMETER</b>	<b>Flow</b>	<b>Temperature</b>	<b>Specific Conductance</b>
<b>DATA SOURCE</b>	usgs	usgs	usgs
<b>UNITS</b>	cfs	°C	µS/cm
Feb-01-1997	676	12.7	1,220
Feb-02-1997	666	12.9	1,250
Feb-03-1997	655	12.9	1,250
Feb-04-1997	651	12.9	1,210
Feb-05-1997	639	12.6	1,170
Feb-06-1997	607	12.5	1,540
Feb-07-1997	560	13.2	1,900
Feb-08-1997	518	13.3	2,080
Feb-09-1997	466	12.6	2,150
Feb-10-1997	430	13.0	2,100
Feb-11-1997	395	13.3	2,120
Feb-12-1997	375	13.3	2,190
Feb-13-1997	357	11.3	2,390
Feb-14-1997	310	12.2	2,670
Feb-15-1997	290	13.0	2,730
Feb-16-1997	272	13.5	2,830
Feb-17-1997	264	14.1	2,920
Feb-18-1997	258	12.6	2,960
Feb-19-1997	223	13.5	2,960
Feb-20-1997	208	13.7	3,100
Feb-21-1997	182	13.1	3,350
Feb-22-1997	190	13.8	3,370
Feb-23-1997	203	13.1	3,170
Feb-24-1997	199	11.3	3,020
Feb-25-1997	173	11.3	3,150
Feb-26-1997	168	12.5	3,320
Feb-27-1997	170	13.4	3,130
Feb-28-1997	192	12.0	2,740

**Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), February 1997.**

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-01-1997	526	13.1	2,100
Feb-02-1997	501	13.3	1,980
Feb-03-1997	482	13.3	1,940
Feb-04-1997	466	13.2	1,940
Feb-05-1997	457	13.0	1,950
Feb-06-1997	412	12.8	2,090
Feb-07-1997	388	12.9	1,880
Feb-08-1997	358	13.2	1,780
Feb-09-1997	323	12.8	1,660
Feb-10-1997	310	12.8	1,530
Feb-11-1997	302	12.9	1,490
Feb-12-1997	299	13.0	1,550
Feb-13-1997	297	11.8	1,580
Feb-14-1997	274	12.0	1,630
Feb-15-1997	272	12.6	1,620
Feb-16-1997	265	13.0	1,620
Feb-17-1997	270	13.6	1,530
Feb-18-1997	274	12.5	1,550
Feb-19-1997	265	13.0	1,570
Feb-20-1997	256	13.2	1,380
Feb-21-1997	e250	12.6	1,320
Feb-22-1997	e260	12.7	1,200
Feb-23-1997	e270	12.5	1,150
Feb-24-1997	e284	11.3	1,120
Feb-25-1997	e298	11.0	1,080
Feb-26-1997	e311	11.9	1,100
Feb-27-1997	e315	12.6	1,050
Feb-28-1997	e329	11.7	1,050

**Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow's Landing), February 1997.**

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-01-1997	e33200	11.4	NA	NA
Feb-02-1997	e32400	11.5	NA	NA
Feb-03-1997	e31600	11.5	NA	NA
Feb-04-1997	e30900	11.4	NA	NA
Feb-05-1997	e30200	NP	NA	NA
Feb-06-1997	e29000	NP	NA	NA
Feb-07-1997	e27600	11.5	190	0.4
Feb-08-1997	25900	11.6	218	0.1
Feb-09-1997	24900	11.3	292	0.2
Feb-10-1997	23900	11.2	314	0.3
Feb-11-1997	23200	11.3	306	0.3
Feb-12-1997	e22200	11.5	290	0.4
Feb-13-1997	e21100	10.8	264	0.2
Feb-14-1997	e20500	10.7	277	0.4
Feb-15-1997	20200	11.1	250	0.4
Feb-16-1997	19900	11.2	211	0.5
Feb-17-1997	19500	11.7	204	0.5
Feb-18-1997	19100	11.3	206	0.5
Feb-19-1997	19000	11.4	206	0.5
Feb-20-1997	18200	11.5	204	0.5
Feb-21-1997	17800	11.4	213	0.4
Feb-22-1997	17300	11.7	213	0.4
Feb-23-1997	16700	11.4	224	0.5
Feb-24-1997	15800	10.6	238	0.5
Feb-25-1997	14600	10.4	269	0.5
Feb-26-1997	13400	10.8	306	0.5
Feb-27-1997	12600	11.4	346	0.5
Feb-28-1997	11900	11.0	285	0.4

Table 6. Weekly water quality monitoring at Station A (inflow to San Luis Drain), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved) L	Selenium (dissolved) F	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	µg/l	mg/l
Jan-09-1997	50.4	9.9	8.0	4,710	90	78.7	76.6	72.4	P
Jan-21-1997	71.0	16.0	8.0	4,870	180	88.2	84.8	NP	P
Feb-04-1997	38.0	16.6	8.0	5,140	71	72.0	70.2	70.5	P
Feb-11-1997	81.0	14.9	7.9	5,360	58	97.5	94.2	96.6	P
Feb-18-1997	85.2	12.7	7.9	5,140	41	80.3	89.4	78.6	P
Feb-28-1997	80.3	12.1	8.0	5,330	NA	90.3	NA	86.4	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Total Suspended Solids	Selenium (total)	Selenium (dissolved) L	Selenium (dissolved) F	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	mg/l	µg/l	µg/l	µg/l	mg/l
Jan-09-1997	59.1	13.2	7.9	3,830	12	33.3	34.2	32.4	P
Jan-21-1997	64.8	12.1	7.9	4,530	33	57.0	56.4	NP	P
Feb-04-1997	64.7	16.6	7.6	4,510	27	63.6	61.8	61.8	P
Feb-11-1997	80.2	14.3	7.8	5,110	33	78.4	78.4	78.4	P
Feb-18-1997	83.6	12.1	8.1	5,150	34	79.7	76.5	83.2	P
Feb-28-1997	62.4	9.9	8.3	4,770	NA	77.6	NA	73.4	P

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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	.	°C		µS/cm	µg/l	mg/l
Jan-09-1997	.	12.1	7.5	921	0.2	P
Jan-21-1997	.	11.6	7.6	1,070	0.4	P
Feb-04-1997	.	16.6	7.5	875	0.5	P
Feb-11-1997	.	13.2	7.2	1,430	0.7	P
Feb-18-1997	.	11.0	7.6	1,730	0.7	P
Feb-28-1997	.	9.9	7.6	2,040	1.0	P



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

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jan-09-1997	573	12.1	7.7	1,284	5.0	P
Jan-21-1997	444	11.6	7.7	1,620	9.2	P
Feb-04-1997	651	16.6	7.5	1,310	7.4	P
Feb-11-1997	395	12.7	7.8	2,250	16.8	P
Feb-18-1997	258	11.0	7.8	3,140	33.2	P
Feb-28-1997	192	10.4	8.1	3,350	32.4	P

Table 10. Weekly water quality monitoring at Station F (Salt Slough at Highway 165), 1997.

See Table 26 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USBR	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB	CVRWQCB
UNITS	cfs	°C		µS/cm	µg/l	mg/l
Jan-09-1997	479	11.0	8.0	1,203	1.0	P
Jan-24-1997	414	11.0	7.0	1,609	1.0	P
Feb-07-1997	388	13.8	7.4	1,933	3.4	P
Feb-13-1997	297	12.1	7.8	1,668	0.7	P
Feb-21-1997	P	13.2	7.3	1,310	0.5	P
Feb-26-1997	P	11.6	7.4	1,110	0.6	P

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

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
Jan-09-1997	.	12.1	7.8	106	0.1	P
Jan-24-1997	.	10.4	7.1	102	0.2	P
Feb-07-1997	.	12.1	7.2	100	0.2	P
Feb-13-1997	.	11.0	7.7	92	0.1	P
Feb-21-1997	.	12.1	7.4	85	0.1	P
Feb-26-1997	.	12.1	7.8	128	0.2	P

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

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
Jan-09-1997	NA	NA	NA	NA	P
Jan-24-1997	11.0	7.6	548	1.1	P
Feb-07-1997	11.1	7.7	79	0.1	P
Feb-13-1997	13.2	8.2	76	0.2	P
Feb-21-1997	14.3	7.6	506	1.6	P
Feb-26-1997	12.1	7.7	473	1.4	P

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

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
Jan-09-1997	9.9	8.5	224	NA	P
Jan-21-1997	NA	NA	178	NA	P
Jan-27-1997	NA	NA	1,985	19.2	P
Feb-04-1997	14.3	7.6	1,600	23.4	P
Feb-12-1997	NA	NA	467	0.5	P
Feb-18-1997	13.2	7.9	172	0.3	P
Feb-27-1997	NA	NA	158	0.5	P

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

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
Jan-09-1997	11.0	8.0	305	NA	P
Jan-21-1997	13.2	8.1	231	NA	P
Feb-04-1997	13.2	6.1	4,240	61.2	P
Feb-12-1997	NA	NA	295	0.5	P
Feb-18-1997	12.7	8.4	193	NA	P
Feb-21-1997	NA	NA	323	1.5	P

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

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
January 1997	no data	no data	no data	no data	no data
Feb-04-1997	15.4	7.9	1,287	6.2	P
Feb-11-1997	14.9	7.2	1,240	1.1	P
Feb-18-1997	12.7	7.7	1,700	1.0	P
Feb-28-1997	11.0	8.2	1,300	1.6	P

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

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
January 1997	no data	no data	no data	no data	no data
Feb-04-1997	14.3	8.3	544	2.3	P
Feb-11-1997	14.3	7.9	339	0.8	P
Feb-18-1997	12.7	7.5	1,750	1.4	P
Feb-28-1997	12.1	8.3	1,760	2.3	P

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

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
Jan-09-1997	P	NA	NA	NA	NA	P
Jan-14-1997	P	NP	NP	NP	0.3	P
Jan-22-1997	P	NP	NP	NP	0.3	P
Jan-24-1997	P	10.4	7.6	154	NP	P
Jan-30-1997	P	NP	NP	128	0.2	P
Feb-07-1997	P	11.7	7.1	190	0.1	P
Feb-13-1997	P	11.6	7.6	279	0.2	P
Feb-21-1997	P	12.7	7.9	351	0.6	P
Feb-26-1997	P	12.1	7.3	312	0.6	P

Table 18. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from December 1995 to February 1997. 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	%	%	%	%	%	%
December-95	NT	83	95	93	90	93
March-96	NT	93	95	93	95	96
August-96	NT	98	93	96	90	100
October-96	68	83	88	88	93	98
November-96	98	98	95	85	95	93
December-96	98	50*	78*	93	98	100
January-97	95	92	83	90	88	95
February-97	95	90*	95	90	100	48

Table 19. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from December 1995 to February 1997. 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
December-95	NT	0.32	0.27	0.32	0.32	0.32
March-96	NT	0.43	0.44	0.44	0.47	0.48
August-96	NT	0.56	0.45	0.44	0.50	0.47
October-96	0.56	0.56	0.53*	0.59	0.60	0.59
November-96	0.53	0.57	0.63	0.53	0.55	0.59
December-96	0.71	0.71	0.83	0.65	0.68	0.58
January-97	0.74	0.80	0.80	0.83	0.65	0.71
February-97	0.69*	0.79	0.77	0.92	0.76	0.31

Table 20. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from December 1995 to February 1997. 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	%	%	%	%	%	%
December-95	NT	100	100	100	100	100
March-96	NT	90	90	100	100	100
August-96	NT	100	100	100	100	100
October-96	90	100	100	100	100	70
November-96	100	90	90	100	100	100
December-96	100	80	80	100	100	100
January-97	100	90	100	100	100	100
February-97	100	100	100	100	100	100

Table 21. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from December 1995 to February 1997. 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
December-95 <sup>(1)</sup>	NT	21.5	18.5	18.4	19.8	15.5
March-96	NT	18.8	23.9	18.2	20.1	20.8
August-96	NT	27.0	32.8	27.4	27.8	26.4
October-96	16.8	20.2	17.9	13.1	12.9	16.0
November-96	30.6	21.8	21.9	22.4	21.5	15.9
December-96	23.2	14.0	17.2	17.8	16.8	14.8
January-97	15.2	15.4	15.3	15.6	13.6	10.9
February-97	25.1	23.0	22.8	20.1	18.0	22.7

Table 22. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from December 1995 to February 1997. 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 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml	10 <sup>5</sup> cells/ml
December-95	NT	22.0	12.0	11.0	12.0	11.0
March-96	NT	9.4*	11.3	14.7	11.9	10.7
August-96	NT	6.2*	5.6*	13.8	16.8	14.7
October-96 <sup>(2)</sup>	4.3	12.3	11.3	8.5	3.5	36.6
November-96 <sup>(3)</sup>	16.6	56.1	48.9	33.5	39.7	91.1
December-96	0.5*	5.9	0.5*	4.2	3.4	18.9
January-97	11.0	9.3	12.5	11.6	8.0	8.2
February-97	10.6	5.5*	8.2*	13.7	19.8	22.2

**Table 23. Summary of selenium concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, December 1995 to February 1997.**

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
Dec-11-1995	NT	1	1	12	<1
Dec-12-1995	NT	<1	<1	14	<1
Dec-15-1995	NT	<1	<1	12	<1
Mar-18-1996	NT	<1	<1	17	<1
Mar-21-1996	NT	<1	<1	16	<1
Mar-23-1996	NT	<1	<1	18	<1
Mar-27-1996	NT	1	<1	19	<1
Aug-06-1996	NT	3	2	13	<1
Aug-08-1996	NT	<1	1	13	<1
Aug-10-1996	NT	2	2	11	<1
Aug-13-1996	NT	NT	NT	NT	NT
Oct-08-1996	65	<1	20	1	<1
Oct-10-1996	62	<1	16	1	<1
Oct-12-1996	72	<1	19	<1	<1
Nov-12-1996	59	<1	7	<1	<1
Nov-14-1996	75	<1	9	<1	<1
Nov-16-1996	69	<1	11	<1	<1
Nov-19-1996	94	<1	12	<1	<1
Dec-10-1996	36	<1	5	<1	<1
Dec-12-1996	54	<1	8	<1	<1
Dec-14-1996	51	<1	5	2	<1
Jan-07-1997	37	<2	3	<2	<2
Jan-09-1997	45	<2	4	<2	<2
Jan-11-1997	48	<2	5	<2	<2
Feb-04-1997	58	<2	6	5	<2
Feb-06-1997	66	<2	8	6	<2
Feb-08-1997	89	<2	15	<2	<2

Table 24. Summary of sulfate concentrations in grab water samples collected at study sites for use in laboratory toxicity tests, December 1995 to February 1997.

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
Dec-11-1995	NT	NT	NT	NT	NT
Dec-12-1995	NT	NT	NT	NT	NT
Dec-15-1995	NT	NT	NT	NT	NT
Mar-18-1996	NT	320	320	520	55
Mar-21-1996	NT	330	360	490	52
Mar-23-1996	NT	350	370	530	52
Mar-27-1996	NT	350	330	550	51
Aug-06-1996	NT	220	270	410	55
Aug-08-1996	NT	680	450	390	20
Aug-10-1996	NT	260	370	370	48
Aug-13-1996	NT	NT	NT	NT	NT
Oct-08-1996	1,400	89	480	140	32
Oct-10-1996	1,400	89	480	140	31
Oct-12-1996	1,600	85	540	150	26
Nov-12-1996	1,200	124	311	227	66
Nov-14-1996	1,380	120	336	231	26
Nov-18-1996	1,420	138	465	214	25
Dec-10-1996	1,590	138	330	284	33
Dec-12-1996	1,540	124	351	255	33
Dec-14-1996	1,330	133	269	288	33
Jan-07-1997	766	105	170	347	29
Jan-09-1997	1,210	107	229	172	27
Jan-11-1997	1,210	115	224	199	20
Feb-04-1997	1,310	104	241	389	49
Feb-06-1997	1,420	135	315	410	50
Feb-08-1997	1,660	200	450	351	59

Table 25. Summary of quarterly in situ bioassay results from December 1995 to February 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-95 <sup>(4)</sup>	NT	NT	NT	NT	NT	NT
March-96 <sup>(5)</sup>	80/80	NT	NT	44/44	NT	70/70
August-96 <sup>(6)</sup>	NT	NT	13/19	22/29	28/40	20/49
November-1996 <sup>(7)</sup>	46/62	63/68	0/2	.	16/36	.
February-1997 <sup>(8)</sup>	NT	3/13	0/0	.	0/11	.

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
F	Sample filtered in the field
L	Sample filtered in the lab
<	less than
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
(1)	This test used <i>Ceriodaphnia dubia</i> in water with high hardness. Results were compared to hard water and moderately hard water for definitive bioassays. All treatment means were significantly different from the laboratory control (hard water) for definitive tests.
(2)	Selenate added
(3)	Lab Control was significantly different from DMC, Site B, and Site F samples. (There was no significant difference for site samples versus DMC water.)
(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.
*	Significantly reduced from Delta Mendota Canal (p<0.05)