

GRASSLAND BYPASS PROJECT

MONTHLY DATA REPORT

January 2012

August 2, 2012

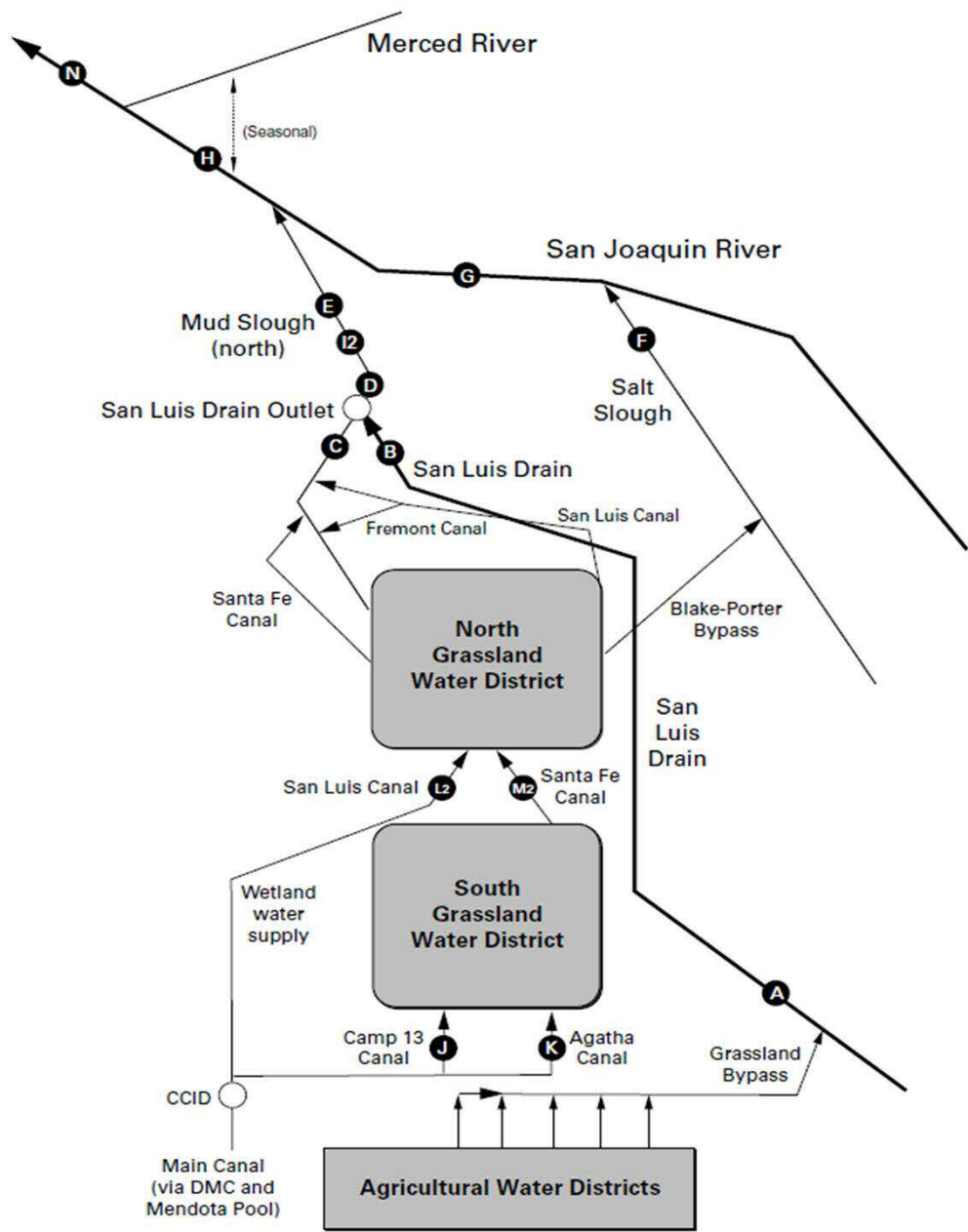
Preliminary Results

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), January 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance	Salt Load
DATA SOURCE	SLDMWA	SLDMWA	SLDMWA	Computed
UNITS	cfs	°C	µS/cm	tons
Jan-01-2012	13	8.8	5,790	152
Jan-02-2012	10	8.3	5,670	116
Jan-03-2012	12	8.9	5,670	135
Jan-04-2012	10	8.8	5,470	114
Jan-05-2012	11	9.2	5,440	119
Jan-06-2012	9	9.3	5,360	93
Jan-07-2012	7	8.9	5,360	80
Jan-08-2012	7	8.0	5,490	80
Jan-09-2012	8	8.1	5,440	88
Jan-10-2012	9	8.2	5,200	94
Jan-11-2012	9	8.2	5,080	89
Jan-12-2012	9	8.1	5,070	91
Jan-13-2012	12	7.9	5,050	116
Jan-14-2012	12	7.8	4,990	117
Jan-15-2012	13	8.1	4,910	124
Jan-16-2012	10	6.6	5,090	107
Jan-17-2012	9	5.2	5,080	91
Jan-18-2012	7	5.3	4,960	74
Jan-19-2012	2	4.2	4,960	17
Jan-20-2012	2	7.2	5,200	25
Jan-21-2012	10	10.7	4,870	96
Jan-22-2012	12	9.0	4,930	123
Jan-23-2012	16	10.5	4,300	135
Jan-24-2012	11	11.4	4,290	94
Jan-25-2012	12	10.9	4,470	110
Jan-26-2012	9	11.8	4,550	86
Jan-27-2012	11	12.6	4,570	98
Jan-28-2012	7	10.7	4,830	66
Jan-29-2012	7	10.6	4,710	67
Jan-30-2012	7	11.0	4,780	71
Jan-31-2012	8	12.6	5,080	76
Mean	9	8.9	5,050	2,944
Total Acre-feet	580			
Salinity Load Value (Dry Year, January)				7,280

Table 2a. Continuous water monitoring at Stations B and B2 (San Luis Drain Terminus), January 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	San Luis Drain Outlet Flow	Temperature	Boron	Specific Conductance	Selenium (total)	Selenium (total) Load
DATA SOURCE	SLDMWA*	SLDMWA	USBR	SLDMWA	USBR	Computed
UNITS	cfs	°C	mg/L	µS/cm	µg/L	lbs
Jan-01-2012	19	6.8	7.5	2,700	26.0	2.6
Jan-02-2012	18	6.8	7.3	2,640	28.0	2.7
Jan-03-2012	15	8.9	7.3	2,750	25.0	2.1
Jan-04-2012	16	8.1	8.6	3,000	32.0	2.8
Jan-05-2012	16	10.1	8.6	3,260	41.0	3.5
Jan-06-2012	16	8.7	8.4	3,110	34.0	3.0
Jan-07-2012	14	9.9	7.9	2,940	32.0	2.4
Jan-08-2012	14	8.5	6.8	2,860	26.0	1.9
Jan-09-2012	13	8.2	7.3	2,730	30.0	2.1
Jan-10-2012	13	7.5	7.0	2,790	29.0	2.1
Jan-11-2012	15	8.3	6.8	2,630	28.0	2.2
Jan-12-2012	14	7.4	6.8	2,640	28.0	2.2
Jan-13-2012	14	7.9	6.4	2,550	22.0	1.7
Jan-14-2012	16	7.3	6.4	2,450	17.0	1.5
Jan-15-2012	17	8.2	6.4	2,490	14.0	1.3
Jan-16-2012	17	5.0	6.8	2,530	14.0	1.3
Jan-17-2012	17	3.9	6.4	2,480	14.0	1.2
Jan-18-2012	15	4.6	7.2	2,460	14.0	1.1
Jan-19-2012	14	3.9	7.2	2,540	15.0	1.1
Jan-20-2012	11	9.9	6.7	2,530	17.0	1.1
Jan-21-2012	11	11.7	NA	2,550	NA	NA
Jan-22-2012	16	7.7	6.7	2,540	22.0	1.9
Jan-23-2012	19	10.4	6.5	2,490	21.0	2.2
Jan-24-2012	21	9.4	5.6	2,450	21.0	2.4
Jan-25-2012	18	9.7	4.5 U	2,290	12.0	1.2
Jan-26-2012	15	12.5	6.5	2,690	18.0	1.5
Jan-27-2012	17	9.7	6.8	2,850	22.0	2.0
Jan-28-2012	15	12.5	7.5	2,690	25.0	2.0
Jan-29-2012	14	9.5	7.4	2,850	24.0	1.8
Jan-30-2012	13	11.4	6.9	2,770	23.0	1.7
Jan-31-2012	13	10.5	8.1	2,790	19.0	1.3
Mean	15	8.6	7.1	2,680	23.1	1.9
Total Acre-feet	950					
Total (lbs)						58

Load Limitation for January 2012 (lbs)	319
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◆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 is 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. Water quality data are still collected at the old Site B.

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

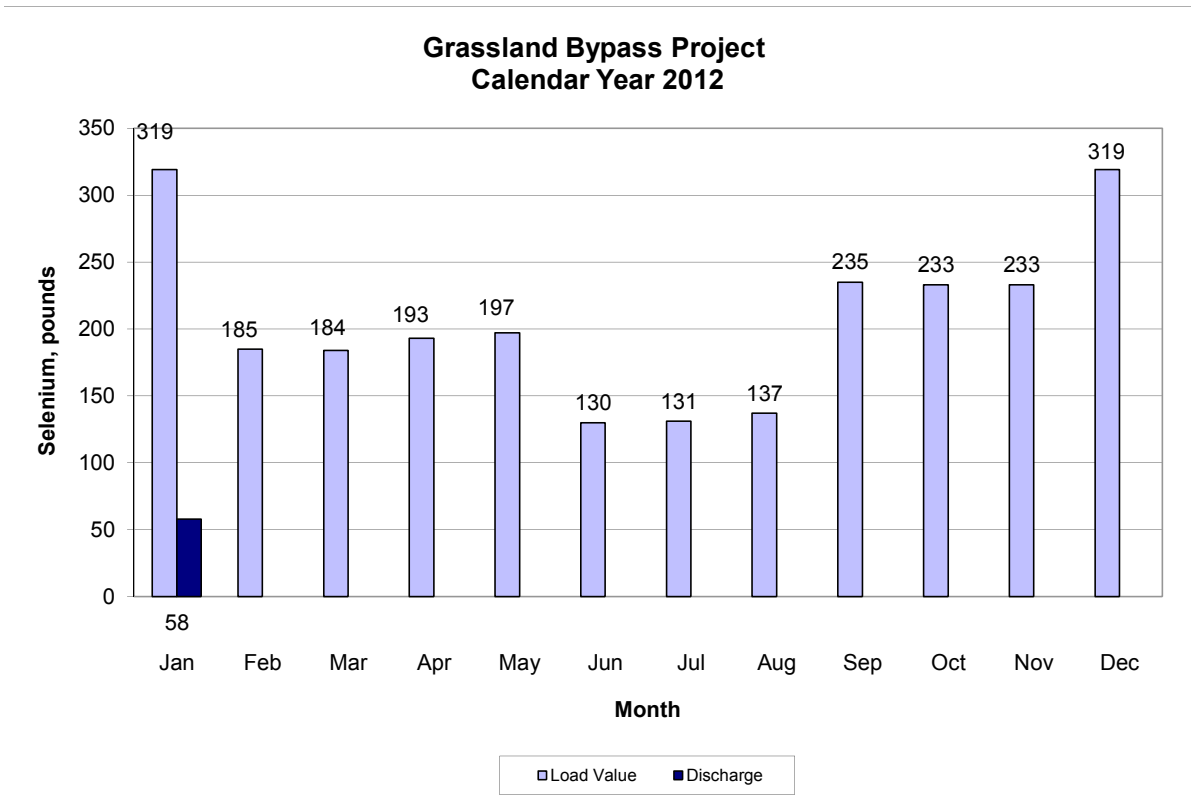


Table 3. Continuous water monitoring at Station D (Mud Slough North downstream of drainage discharges), January 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jan-01-2012	129	9.5	2,040
Jan-02-2012	128	9.3	2,020
Jan-03-2012	126	9.6	2,010
Jan-04-2012	126	9.9	2,100
Jan-05-2012	128	10.2	2,120
Jan-06-2012	123	10.4	2,180
Jan-07-2012	123	10.3	2,100
Jan-08-2012	123	9.8	2,050
Jan-09-2012	124	9.8	2,030
Jan-10-2012	127	9.8	2,020
Jan-11-2012	130	9.8	1,990
Jan-12-2012	130	9.7	1,990
Jan-13-2012	127	9.6	2,000
Jan-14-2012	124	9.6	2,050
Jan-15-2012	124	9.7	2,070
Jan-16-2012	122	8.6	2,120
Jan-17-2012	118	7.5	2,120
Jan-18-2012	111	7.5	2,150
Jan-19-2012	109	7.1	2,170
Jan-20-2012	112	8.2	2,070
Jan-21-2012	122	9.9	2,020
Jan-22-2012	134	9.5	2,040
Jan-23-2012	145	10.1	2,050
Jan-24-2012	145	10.6	2,070
Jan-25-2012	152	11.1	1,940
Jan-26-2012	136	12.3	2,060
Jan-27-2012	128	12.7	2,160
Jan-28-2012	117	11.9	2,320
Jan-29-2012	111	11.9	2,320
Jan-30-2012	107	12.4	2,330
Jan-31-2012	110	12.7	2,290
Mean	125	10.0	2,100

Table 4. Continuous water monitoring at Station F (Salt Slough at Highway 165), January 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Specific Conductance
DATA SOURCE	usgs	usgs	usgs
UNITS	cfs	°C	µS/cm
Jan-01-2012	52	10.2	2,080
Jan-02-2012	53	9.9	2,060
Jan-03-2012	53	10.1	2,030
Jan-04-2012	52	10.2	2,070
Jan-05-2012	51	10.5	2,100
Jan-06-2012	51	10.6	2,100
Jan-07-2012	50	10.4	2,120
Jan-08-2012	48	10.2	2,130
Jan-09-2012	50	10.1	2,140
Jan-10-2012	52	9.9	2,130
Jan-11-2012	53	9.9	2,170
Jan-12-2012	52	9.7	2,160
Jan-13-2012	55	9.6	2,130
Jan-14-2012	59	9.4	1,980
Jan-15-2012	60	9.2	1,810
Jan-16-2012	61	8.6	1,820
Jan-17-2012	67	7.8	1,850
Jan-18-2012	60	7.5	1,880
Jan-19-2012	57	7.3	1,900
Jan-20-2012	57	8.5	1,920
Jan-21-2012	59	10.2	1,900
Jan-22-2012	70	10.1	1,880
Jan-23-2012	84	10.3	1,690
Jan-24-2012	87	10.7	1,640
Jan-25-2012	87	11.1	1,590
Jan-26-2012	88	11.8	1,560
Jan-27-2012	102	12.4	1,490
Jan-28-2012	102	11.8	1,520
Jan-29-2012	102	11.5	1,560
Jan-30-2012	125	11.6	1,440
Jan-31-2012	131	11.9	1,390
Mean	69	10.1	1,880

Table 5. Continuous water monitoring at Station N (San Joaquin River at Crow s Landing), January 2012.

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Boron	Specific Conductance	Selenium (total)
DATA SOURCE	USGS	USGS	USBR	USGS	USBR
UNITS	cfs	°C	mg/L	µS/cm	µg/L
Jan-01-2012	656	9.6	0.8	1,300	0.8
Jan-02-2012	638	9.5	0.8	1,360	0.8
Jan-03-2012	615	9.7	0.8	1,390	1.0
Jan-04-2012	597	10.1	0.8	1,400	0.8
Jan-05-2012	590	10.3	0.8	1,410	0.8
Jan-06-2012	578	10.4	0.8	1,430	1.1
Jan-07-2012	567	10.4	0.8	1,500	1.4
Jan-08-2012	580	10.0	0.8	1,530	1.3
Jan-09-2012	576	9.9	0.8	1,490	1.0
Jan-10-2012	555	9.7	0.8	1,500	1.0
Jan-11-2012	536	9.7	0.8	1,550	1.0
Jan-12-2012	534	9.6	0.8	1,570	1.1
Jan-13-2012	511	9.5	0.9	1,570	1.0
Jan-14-2012	506	9.5	0.8	1,610	1.0
Jan-15-2012	533	9.5	0.9	1,610	0.9
Jan-16-2012	546	9.2	0.8	1,530	0.8
Jan-17-2012	510	8.0	0.8	1,560	0.8
Jan-18-2012	507	7.9	0.9	1,610	0.7
Jan-19-2012	508	7.6	0.9	1,590	0.8
Jan-20-2012	527	8.3	0.8	1,550	0.6
Jan-21-2012	614	9.7	0.7	1,430	0.6
Jan-22-2012	675	9.9	0.7	1,350	0.4
Jan-23-2012	725	10.0	0.7	1,300	0.5
Jan-24-2012	686	10.5	0.7	1,380	0.8
Jan-25-2012	669	11.2	0.8	1,430	1.0
Jan-26-2012	652	12.1	0.8	1,410	0.9
Jan-27-2012	650	12.7	0.7	1,430	0.7
Jan-28-2012	623	12.0	0.8	1,440	0.9
Jan-29-2012	620	11.7	0.8	1,450	0.9
Jan-30-2012	590	12.1	0.8	1,510	1.0
Jan-31-2012	616	12.4	0.8	1,500	0.8
Mean	590	10.1	0.8	1,470	0.9

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Total Suspended Solids	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	Panoche DD	USBR	USBR	USBR
UNITS	cfs	mg/L	$\mu\text{S/cm}$	$\mu\text{g/L}$	mg/L
Nov-07-2011	8	53	5,290	39	9.3
Nov-14-2011	8	NA	5,620	35	9.6
Nov-15-2011	9	<10	NA	NA	NA
Nov-21-2011	17	76	5,600	29	9.7
Nov-28-2011	11	51	5,880	36	12.0
Dec-05-2011	10	<10	5,930	44	11.0
Dec-12-2011	21	88	6,360	45	13.0
Dec-19-2011	12	<10	5,910	45	11.0
Dec-26-2011	14	NA	5,950	45	12.0
Dec-27-2011	10	12	NA	NA	NA
Jan-02-2012	10	20	5,260	33	8.7
Jan-09-2012	8	<10	5,110	26	8.7
Jan-16-2012	10	11	5,250	33	9.2
Jan-23-2012	16	36	5,500	28	9.8
Jan-30-2012	7	20	4,390	20	6.3

Note: Weekly results for specific conductance, selenium, and boron from composite of seven daily samples.

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Total Suspended Solids	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	Panoche DD	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	mg/L	°C	.	µS/cm	µg/L	mg/L
Nov-03-2011	10	66	14.4	8.2	4,120	13	9.1
Nov-10-2011	22	43	11.2	8.0	3,430	9.4	5.2
Nov-15-2011	15	18	13.2	7.7	4,390	32	6.6
Nov-22-2011	23	73	12.0	7.6	4,120	20	6.4
Dec-01-2011	12	17	9.3	7.9	4,580	24	7.3
Dec-08-2011	18	21	7.8	7.7	4,670	21	9.2
Dec-13-2011	26	20	9.6	6.9	5,190	35	9.1
Dec-20-2011	17	18	7.8	8.2	4,620	25	7.9
Dec-29-2011	14	22	8.5	7.6	4,670	30	7.8
Jan-05-2012	16	15	10.0	7.5	4,840	38	8.7
Jan-12-2012	14	18	9.7	7.8	4,180	27	6.5
Jan-17-2012	17	18	7.9	7.7	4,060	14	6.7
Jan-24-2012	21	31	10.5	7.6	3,710	22	5.2
Jan-31-2012	13	11	13.2	7.9	4,420	17	7.5

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow		Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	calculated **		USBR	USBR	USBR	USBR	USBR
UNITS	cfs		°C	.	µS/cm	µg/L	mg/L
Nov-03-2011	128	.	14.3	8.4	996	< 0.4	0.9
Nov-10-2011	133	.	11.4	8.1	1,060	< 0.4	0.8
Nov-15-2011	158	.	12.5	8.0	1,080	< 0.4	0.8
Nov-22-2011	150	.	11.2	8.1	1,120	< 0.4	0.8
Dec-01-2011	122	.	9.8	8.1	1,340	< 0.4	1.0
Dec-08-2011	95	.	7.0	8.2	1,510	< 0.4	1.1
Dec-13-2011	87	.	8.6	7.9	1,550	< 0.4	1.2
Dec-20-2011	113	.	7.2	8.2	1,440	< 0.4	1.0
Dec-29-2011	104	.	8.3	8.0	1,600	< 0.4	1.2
Jan-05-2012	112	.	9.0	8.1	1,600	0.5	1.2
Jan-12-2012	116	.	8.7	8.2	1,700	< 0.4	1.2
Jan-17-2012	101	.	7.6	8.2	1,750	0.4	1.3
Jan-24-2012	124	.	11.1	8.1	1,750	< 0.4	1.4
Jan-31-2012	97	.	12.9	8.2	1,900	0.7	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 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	Turbidity	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	NTU	.	µS/cm	µg/L	mg/L
Nov-03-2011	138	14.9	24.3	7.8	1,250	1.0	1.3
Nov-10-2011	155	11.5	17.6	8.1	1,380	1.2	1.4
Nov-15-2011	173	12.5	20.7	8.0	1,410	2.9	1.3
Nov-22-2011	173	11.3	17.3	7.9	1,560	2.6	1.4
Dec-01-2011	134	9.5	27.9	8.1	1,680	1.5	1.5
Dec-08-2011	113	7.6	13.4	7.9	2,120	3.9	2.3
Dec-13-2011	113	8.6	12.2	7.9	2,420	6.9	3.0
Dec-20-2011	130	7.3	11.9	8.0	2,010	4.3	2.0
Dec-29-2011	118	8.5	10.3	8.0	2,080	3.8	2.0
Jan-05-2012	128	9.7	15.7	7.9	2,110	5.1	2.1
Jan-12-2012	130	9.0	15.5	7.9	2,030	3.2	1.8
Jan-17-2012	118	7.8	13.7	8.1	2,150	2.1	2.0
Jan-24-2012	145	11.1	19.5	8.0	2,130	3.2	2.0
Jan-31-2012	110	13.0	25.6	7.9	2,270	2.9	2.0

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER		Temperature	Turbidity	pH	Specific Conductance	Selenium	Boron
DATA SOURCE		USBR	USBR	USBR	USBR	USBR	USBR
UNITS		°C	NTU	.	µS/cm	µg/L	mg/L
Nov-03-2011	.	14.5	23	7.8	1,310	1.1	1.3
Nov-10-2011	.	11.5	16	8.0	1,450	1.3	1.4
Nov-15-2011	.	12.9	20	7.9	1,500	2.7	1.4
Nov-22-2011	.	11.4	16	8.2	1,630	2.7	1.4
Dec-01-2011	.	9.9	26	8.1	1,830	1.6	1.6
Dec-08-2011	.	7.5	16	7.9	2,200	3.7	2.2
Dec-13-2011	.	9.1	10	7.7	2,640	6.6	3.1
Dec-20-2011	.	7.1	10	7.9	2,100	4.5	2.1
Dec-29-2011	.	8.6	25	7.9	2,170	3.9	2.1
Jan-05-2012	.	9.4	13	7.9	2,200	5.0	2.2
Jan-12-2012	.	9.2	12	7.9	2,190	3.3	1.8
Jan-17-2012	.	8.4	18	7.9	2,340	2.1	2.0
Jan-24-2012	.	14.4	32	7.9	2,340	3.1	2.1
Jan-31-2012	.	13.6	61	7.9	2,850	2.9	2.2

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Nov-03-2011	222	14.0	7.3	851	0.5	0.6
Nov-10-2011	224	10.4	8.0	900	0.4	0.6
Nov-15-2011	256	12.1	7.8	890	< 0.4	0.5
Nov-22-2011	188	NA	NA	NA	NA	NA
Dec-01-2011	e92	NA	NA	NA	NA	NA
Dec-08-2011	69	NA	NA	NA	NA	NA
Dec-13-2011	63	NA	NA	NA	NA	NA
Dec-20-2011	50	NA	NA	NA	NA	NA
Dec-29-2011	53	NA	NA	NA	NA	NA
Jan-05-2012	51	NA	NA	NA	NA	NA
Jan-12-2012	52	NA	NA	NA	NA	NA
Jan-17-2012	67	NA	NA	NA	NA	NA
Jan-24-2012	87	NA	NA	NA	NA	NA
Jan-31-2012	131	NA	NA	NA	NA	NA

Site inaccessible due to construction, no grab sample taken starting November 22, 2011 through January 31, 2012.

Table 12. Weekly water quality monitoring at Station G (San Joaquin River at Fremont Ford).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	.	µS/cm	µg/L	mg/L
Nov-03-2011	288	14.3	7.9	846	0.4	0.5
Nov-10-2011	411	10.8	8.1	716	< 0.4	0.3
Nov-15-2011	425	11.8	8.1	866	0.4	0.4
Nov-22-2011	439	11.0	8.0	908	< 0.4	0.5
Dec-01-2011	227	10.7	8.0	1,680	< 0.4	0.7
Dec-08-2011	171	7.1	7.9	2,040	< 0.4	0.8
Dec-13-2011	152	8.6	7.9	2,130	< 0.4	0.8
Dec-20-2011	NA	7.4	7.9	2,280	< 0.4	0.7
Dec-29-2011	97	8.0	7.9	2,530	< 0.4	0.9
Jan-05-2012	83	9.1	7.9	2,570	0.7	0.9
Jan-12-2012	82	9.0	8.0	2,640	< 0.4	1.0
Jan-17-2012	100	7.9	7.9	2,190	< 0.4	0.8
Jan-24-2012	156	10.3	8.0	1,700	0.6	0.7
Jan-31-2012	168	12.0	8.0	1,600	0.6	0.6

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-07-2011	40	.	.	399	1	0.2
Nov-14-2011	40	.	.	374	0.4	0.1
Nov-21-2011	10	.	.	323	0.5	0.2
Dec-05-2011	30	.	.	344	< 0.4	0.2
Dec-12-2011	30	.	.	518	0.5	0.2
Dec-19-2011	30	.	.	463	< 0.4	0.2
Dec-27-2011	30	.	.	736	0.9	0.5
Jan-03-2012	30	.	.	666	0.5	0.3
Jan-09-2012	30	.	.	708	0.4	0.3
Jan-17-2012	30	.	.	677	0.5	0.2
Jan-23-2012	30	.	.	706	0.9	0.4 U
Jan-30-2012	30	.	.	783	1.2	0.3

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-07-2011	80	.	.	313	0.6	0.2
Nov-14-2011	80	.	.	368	0.4	0.2
Nov-21-2011	0	.	.	325	0.5	0.2
Nov-28-2011	0	.	.	618	< 0.4	0.8 U
Dec-05-2011	50	.	.	449	0.9	0.3
Dec-12-2011	50	.	.	421	0.9	0.3
Dec-19-2011	50	.	.	547	2.9	0.4
Dec-27-2011	50	.	.	522	1.8	0.3
Jan-03-2012	50	.	.	589	1.3 U	0.3
Jan-09-2012	70	.	.	665	0.7	0.3
Jan-17-2012	70	.	.	671	0.4	0.2
Jan-23-2012	70	.	.	711	0.7	0.3
Jan-30-2012	55	.	.	750	1.0	0.3

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-07-2011	NA	.	.	726	0.8	0.6
Nov-14-2011	NA	.	.	532	0.7	0.4
Nov-21-2011	NA	.	.	738	0.5	0.8
Nov-28-2011	NA	.	.	669	0.6	0.5
Dec-05-2011	NA	.	.	1,280	1.1	1.3
Dec-12-2011	NA	.	.	1,330	1.2	1.5
Dec-19-2011	NA	.	.	1,630	2.0	1.7
Dec-27-2011	NA	.	.	1,390	1.1	1.4
Jan-03-2012	NA	.	.	1,280	1.1	1.3 U
Jan-09-2012	NA	.	.	777	0.5	0.4
Jan-17-2012	NA	.	.	1,400	0.8	1.2
Jan-23-2012	NA	.	.	352	<0.4	0.3
Jan-30-2012	NA	.	.	1,640	1.2	1.6 U

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

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	SLDMWA	.	.	Panoche DD	Panoche DD	Panoche DD
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-07-2011	NA	.	.	695	0.7	0.7
Nov-14-2011	NA	.	.	533	0.6	0.4
Nov-21-2011	NA	.	.	849	0.6	0.9
Nov-28-2011	NA	.	.	1,160	0.7	1.3
Dec-05-2011	NA	.	.	1,290	0.8	1.6
Dec-12-2011	NA	.	.	1,190	0.8	1.3
Dec-19-2011	NA	.	.	1,240	0.9	1.3
Dec-27-2011	NA	.	.	1,290	1.1	1.4
Jan-03-2012	NA	.	.	1,200	1.1	1.2
Jan-09-2012	NA	.	.	1,250	0.6	1.2
Jan-17-2012	NA	.	.	1,390	0.6	1.3
Jan-23-2012	NA	.	.	1,220	0.7	1.2
Jan-30-2012	NA	.	.	1,320	1.0	1.2

Table 17. Weekly water quality monitoring at Station H1 (Above Newman WW (previously SJR at Hills Ferry)).

(Collected data intended for use with biological monitoring.)

See Table 28 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
Nov-02-2011	.	.	.	701	0.5	0.4
Nov-09-2011	.	.	.	887	<0.4	0.6
Nov-16-2011	.	.	.	946	0.7	0.6
Nov-23-2011	.	.	.	1,030	0.7	0.7
Nov-30-2011	.	.	.	1,660	1.0	1.0
Dec-07-2011	.	.	.	945	0.5	0.6
Dec-21-2011	.	.	.	2,190	1.7	1.4
Dec-28-2011	.	.	.	2,310	1.8	1.4
Jan-04-2012	.	.	.	2,240	1.8	1.4
Jan-11-2012	.	.	.	2,320	1.6	1.5
Jan-18-2012	.	.	.	2,350	1.2	1.5

Table 18. Weekly water quality monitoring at Station H2 (San Joaquin River at Hills Ferry).

(Collected data intended for use with biological monitoring.)

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	.	.	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	usgs	.	.	SLDMWA	SLDMWA	SLDMWA
UNITS	cfs	.	.	µS/cm	µg/L	mg/L
Nov-02-2011	1,180	.	.	708	0.5	0.4
Nov-09-2011	1,010	.	.	892	<0.4	0.5
Nov-16-2011	1,080	.	.	942	0.6	0.6
Nov-23-2011	1,130	.	.	1,030	0.8	0.7
Nov-30-2011	874	.	.	1,650	0.8	1.0
Dec-07-2011	676	.	.	944	0.5	0.6
Dec-21-2011	688	.	.	2,180	1.6	1.4
Dec-28-2011	654	.	.	2,310	1.7	1.4
Jan-04-2012	652	.	.	1,550	1.0	1.0
Jan-11-2012	606	.	.	2,330	1.6	1.5
Jan-18-2012	566	.	.	2,350	1.2	1.5

Table 19. Weekly water quality monitoring at Station N (San Joaquin River at Crow s Landing).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER	Flow	Temperature	pH	Specific Conductance	Selenium (total)	Boron
DATA SOURCE	USGS	USBR	USBR	USBR	USBR	USBR
UNITS	cfs	°C	°C	°C	µg/L	mg/L
Nov-03-2011	1,220	14.3	7.7	656	< 0.4	0.4
Nov-10-2011	1,030	11.3	8.1	753	0.6	0.4
Nov-15-2011	1,030	12.5	8.0	826	0.6	0.45
Nov-22-2011	1,120	11.0	7.8	781	0.6	0.5
Dec-01-2011	795	10.2	8.0	1,150	0.4	0.6
Dec-08-2011	631	7.9	7.9	1,280	0.7	0.7
Dec-13-2011	624	8.7	7.9	1,320	1.1	0.8
Dec-20-2011	641	7.9	8.1	1,330	1.5	0.9
Dec-29-2011	614	8.1	8.1	1,400	1.0	0.8
Jan-05-2012	590	9.5	8.1	1,380	0.9	0.8
Jan-12-2012	534	9.3	8.1	1,550	1.3	0.8
Jan-17-2012	510	7.8	8.1	1,540	0.7	0.9
Jan-24-2012	686	10.6	8.0	1,350	1.0	0.8
Jan-31-2012	616	12.2	7.8	1,480	0.9	0.8

Table 20. Weekly water quality monitoring at Central California Irrigation District Main Canal at Russell Avenue (MER510).

See Table 28 for explanation of footnotes and agency abbreviations.

PARAMETER				Specific Conductance	Selenium (total)	Boron
DATA SOURCE	.	.	.	USBR	USBR	USBR
UNITS	.	.	.	µS/cm	µg/L	mg/L
Nov-07-2011	.	.	.	401	0.7	0.2
Nov-14-2011	.	.	.	411	0.6	0.2
Nov-21-2011	.	.	.	249	< 0.4	0.1
Nov-28-2011	.	.	.	431	1.1	0.2
Dec-05-2011	.	.	.	381	1.3	0.2
Dec-12-2011	.	.	.	545	1.6	0.4
Dec-19-2011	.	.	.	522	2.5	0.4
Dec-27-2011	.	.	.	491	1.9	0.3
Jan-03-2012	.	.	.	531	2.3 U	0.4
Jan-09-2012	.	.	.	574	2.5 U	0.4
Jan-17-2012	.	.	.	638	2.1 U	0.4
Jan-23-2012	.	.	.	803	0.9	0.4
Jan-30-2012	.	.	.	780	1.0	0.3

Table 21. Summary of fathead minnow (*Pimephales promelas*) larvae survival in 7-day tests using water samples collected from February 2011 to January 2012. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 28 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	%	%	%	%	%	%
Feb-2011	93	95	100	100	93	100
Mar-2011	100	100	98	88	98	100
Apr-2011	93	95	88	60	63	93
May-2011	95	83	95	78	80	95
Jun-2011	95	98	98	93	93	95
Jul-2011	33*	100	95	100	98	90
Aug-2011	90	88	95	93	70	90
Sep-2011	79*	88	90	95	95	95
Oct-2011	90	98	98	100	98	100
Nov-2011	100	93	98	93	100	100
Dec-2011	100	98	98	95	95	98
Jan-2012	85	75	78	80	78	85

Table 22. Summary of fathead minnow (*Pimephales promelas*) larvae growth in 7-day tests using water samples collected from February 2011 to January 2012. Each value is the mean of 4 replicates with 10 fish in each replicate.

See Table 28 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
Feb-2011	0.46	0.34*	0.44	0.42	0.40	0.32
Mar-2011	0.36	0.40	0.37	0.38	0.37	0.35
Apr-2011	0.37	0.40	0.40	0.33	0.22	0.29
May-2011	0.48	0.48	0.50	0.40	0.38	0.43
Jun-2011	0.36	0.34	0.36	0.36	0.33	0.33
Jul-2011	0.06*	0.26	0.25	0.28	0.27	0.26
Aug-2011	0.26	0.25	0.26	0.28	0.25	0.29
Sep-2011	0.28	0.30	0.33	0.34	0.32	0.32
Oct-2011	0.45	0.34	0.41	0.42	0.37	0.38
Nov-2011	0.50	0.47	0.47	0.46	0.48	0.44
Dec-2011	0.42	0.38	0.44	0.39	0.37	0.36
Jan-2012	0.37	0.33	0.33	0.33	0.34	0.35

Table 23. Summary of *Daphnia magna* survival in 7-day tests using water samples collected from February 2011 to January 2012. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 28 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	%	%	%	%	%	%
Feb-2011	90	90	100	90	100	90
Mar-2011	90	80	90	80	80	90
Apr-2011	100	100	80	100	100	100
May-2011	70	80	70	60	10	80
Jun-2011	100	100	100	80	90	90
Jul-2011	90	80	100	90	100	100
Aug-2011	90	90	90	100	90	90
Sep-2011	100	90	70	100	90	90
Oct-2011	90	60	100	90	100	100
Nov-2011	100	100	100	100	100	100
Dec-2011	90	80	80	70	80	90
Jan-2012	90	100	100	90	100	100

Table 24. Summary of *Daphnia magna* reproduction in 7-day tests using water samples collected from February 2011 to January 2012. Each value is the mean of 10 replicates with 1 animal in each replicate.

See Table 28 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
Feb-2011	25.7	26.4	24.4	26.8	25.5	22.1
Mar-2011	53.1	39.1	59.1	41.3	29.8	49.9
Apr-2011	28.6	23.1	25.4	29.9	28.6	29.2
May-2011	44.8	36.6	45.7	24.8	22.9	37.9
Jun-2011	66.0	58.0	62.8	38.9*	50.3	42.2
Jul-2011	31.7	43.8	40.9	21.7	30.5	25.3
Aug-2011	38.1	32.8	40.4	31.4	31.0	34.3
Sep-2011	41.3	33.1	37.2	35.0	28.4	29.6
Oct-2011	26.9	13.2*	29.9	20.8	24.2	27.1
Nov-2011	51.9	46.8	48.1	39.3	44.6	27.0
Dec-2011	24.3	32.1	36.7	24.0	28.0	34.1
Jan-2012	34.1	41.4	35.7	29.2	33.9	28.5

Table 25. Summary of *Selenastrum capricornutum* growth in 4-day tests using water samples collected from February 2011 to January 2012. Each value is the mean of 4 replicates.

See Table 28 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
Feb-2011	20.9*	31.3	30.3	25.4	26.9	27.6
Mar-2011	2.9*	18.0	9.8*	10.3*	21.5	19.6
Apr-2011	22.3	33.6	33.2	30.4	20.5	21.2
May-2011	23.7	27.7	22.9	24.5	10.0	23.6
Jun-2011	20.4	31.2	29.1	32.4	23.8	19.9
Jul-2011	20.8	26.0	18.2	20.3	22.8	19.1
Aug-2011	20.4*	23.5	23.2	24.3	27.4	19.0
Sep-2011	7.1*	24.9	3.3*	29.2	17.8	2.0
Oct-2011	20.1	26.6	33.3	25.9	22.9	18.8
Nov-2011	14.73*	32.5	30.7	26.7	22.2	26.3
Dec-2011	17.4	36.6	36.0	35.6	25.1	2.9
Jan-2012	25.1	33.6	37.5	32.9	27.8	28.5

Table 26. Summary of selenium concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, November 2011 to January 2012.

See Table 28 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-14-2011	23	<0.4	1.9	<0.4	<0.4
Nov-16-2011	30	<0.4	2.8	<0.4	<0.4
Nov-28-2011	25	<0.4	2.4	<0.4	<0.4
Dec-12-2011	29	< 0.4	6.2	< 0.4	< 0.4
Dec-14-2011	27	< 0.4	7.1	< 0.4	< 0.4
Dec-16-2011	42	< 0.4	5.8	< 0.4	< 0.4
Jan-09-2012	31	< 0.4	3.1	< 0.4	< 0.4
Jan-11-2012	28	< 0.4	3.4	< 0.4	< 0.4
Jan-13-2012	21	< 0.4	3.0	< 0.4	< 0.4

Table 27. Summary of total suspended solids concentrations in grab water samples collected at study stations for use in laboratory toxicity tests, November 2011 to January 2012.

See Table 28 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
Nov-14-2011	30	31	31	161	4
Nov-16-2011	43	20	44	169	10
Nov-28-2011	35	33	27	33	9
Dec-12-2011	17	23	19	19	5
Dec-14-2011	39	21	24	30	4
Dec-16-2011	30	23	21	29	5
Jan-09-2012	23	24	31	29	0
Jan-11-2012	27	14	16	27	1
Jan-13-2012	29	27	39	25	2

Table 28. 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.
L	Result may be biased low. Sample was not preserved in the field DMC water failed to meet the survival (>80%) acceptability criteria. Data from records of the Grassland Water District. Data is not subjected to the criteria documented in the Compliance Monitoring Program for the Use and Operation of the Grassland Bypass Project (1996) nor the Quality Assurance Project Plan for the GBP. DMC water failed to meet the reproduction (>10 neonates/adult) acceptability criteria. DMC water failed to meet minimum growth (10 ⁶ cell/mL) acceptability criteria. Control value exceeds suggested maximum variance (20%) acceptability criteria. Fungal growth observed on test organisms. Failed cell density requirement of 1E6 cells.
#	New testing laboratory with reporting limit of 0.4 µg/L as of June 1998.
❖	Based on definitive bioassay, NOEC is 50 percent
D	Sample was dechlorinated
PPD	Panoche Drainage District
U	results are determined to be an outlier at the time of data validation