APPENDIX A

Water Quality Data for Grab Samples: Water Year 1996

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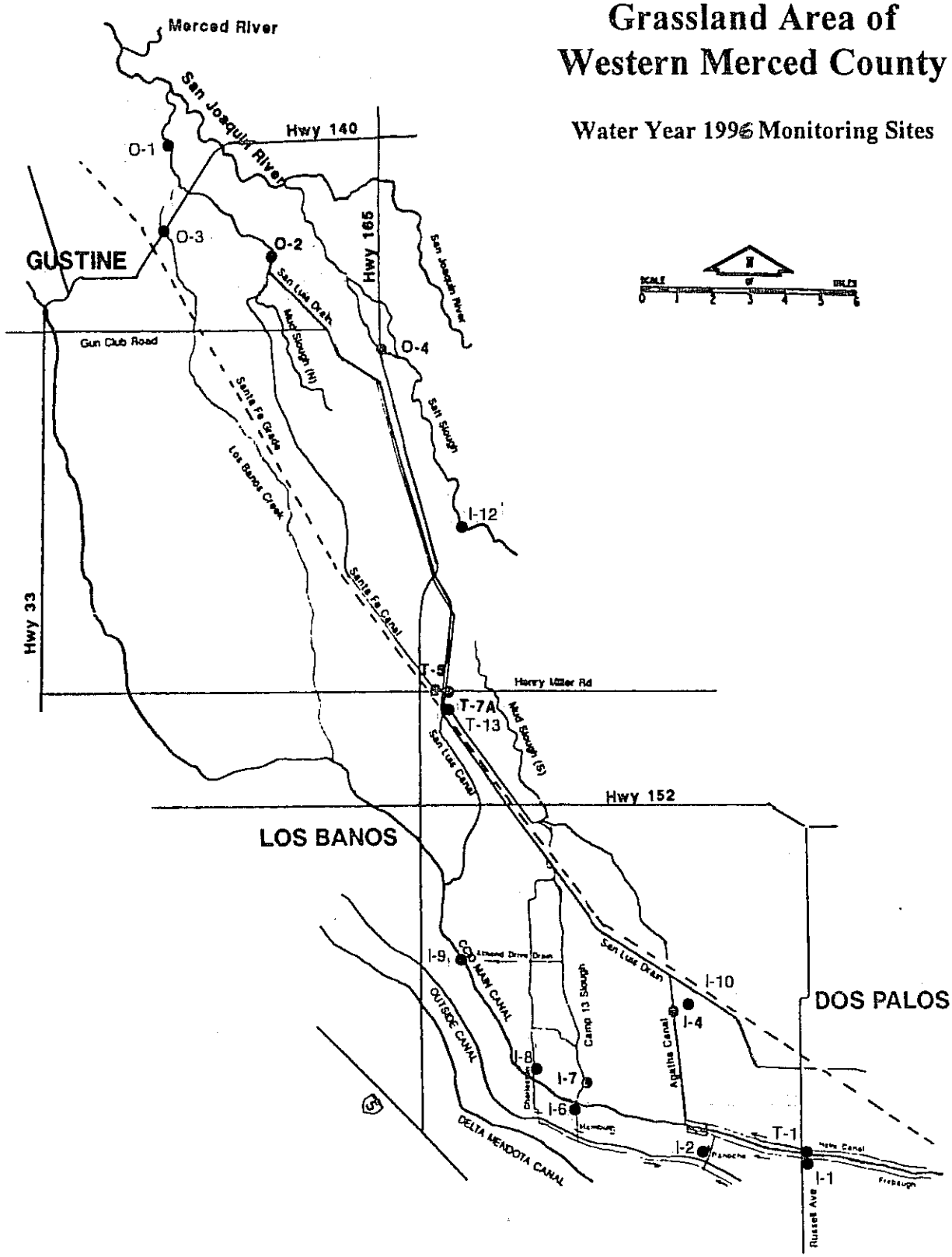
Legend of Abbreviations

EC	Electrical Conductivity
Se	Selenium
Mo	Molybdenum
Cr	Chromium
Cu	Copper
Ni	Nickel
Pb	Lead
Zn	Zinc
B	Boron
Cl	Chlorine
SO4	Sulfate
HDNS	Hardness

Figure A-1

Grassland Area of Western Merced County

Water Year 1996 Monitoring Sites



Main (Firebaugh) Drain at Russel Avenue (MER556)

Location: Latitude: 36°55'27", Longitude 120°39'11". In SW 1/4, SW 1/4, SW 1/4, Sec. 34, T.11S.,R.12E.

East side of Russel Avenue, 2.7 miles south of Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/6/95	815	64	7.6	3950	72.9		4.9					
10/12/95	803	64	7.5	1940	30.0		2.7					
10/18/95	812	64	7.8	2580	37.9		3.5					
10/27/95	1045	NA	8.0	4200	41.0	45	5.3	450	1600	1120	280	103
11/3/95	811	59	7.8	3280	40.2		4.2					
11/9/95	851	60	8.3	2220	27.1		2.9					
11/20/95	806	59	8.0	2410	29.4		3.2					
11/27/95	846	52	7.9	3320	57.8		4.7	290	1200	910	220	88
12/8/95	932	58	8.1	2590	52.2		3.1					
12/18/95	930	NA	8.0	3080	62.0		4.1					
12/22/95	850	48	8.1	3680	80.4		5.1					
12/28/95	1105	50	8.0	2720	52.8		3.4	240	980	NA	170	73
1/4/96	1020	50	8.3	6590	161		9.4					
1/11/96	908	52	8.4	3940	78.0		4.5					
1/18/96	1041	50	8.4	4490	114		5.2					
1/25/96	1029	52	7.9	3660	77.0	31	5.0	350	1200	720	180	67
2/2/96	948	56	7.9	3370	58.0		3.0					
2/9/96	NA	NA	NA	NA	NA		NA					
2/16/96	754	61	7.7	4680	89.6		4.5					
2/23/96	1001	56	7.9	4810	101		5.2	490	1700	950	234	88
3/1/96	926	52	8.1	6120	162		6.8					
3/8/96	910	60	8.3	4570	104		4.8					
3/18/96	1600	70	7.9	5380	138		6.1					
3/21/96	845	66	7.8	5610	146		5.8					
3/28/96	930	62	7.9	3960	108		4.6	450	1400	910	219	87
4/3/96	942	61	6.8	4610	120		5.1					
4/12/96	934	62	7.6	4110	96.6		4.5					
4/19/96	840	60	8.1	3220	74.2		3.8					
4/25/96	1000	66	8.1	3480	75.4	20	4.3	320	1200	770	187	74
5/3/96	828	69	7.7	4400	119		5.6					
5/10/96	910	63	7.9	3050	51.5		2.8					
5/16/96	1030	67	7.6	2560	44.0		2.4					
5/24/96	950	60	7.8	2750	42.8		3.3					
5/30/96	940	68	7.9	2820	50.2		3.2	260	870	650	156	62
6/6/96	1020	74	7.6	2640	35.6		3.3					
6/13/96	852	69	7.8	2220	30.4		2.7					
6/19/96	900	72	7.7	2640	37.7		3.5					
6/27/96	1040	68	7.8	3110	50.7		3.5	280	990	690	170	64
7/2/96	920	80	7.7	3320	60.4		3.7					
7/11/96	815	76	7.6	2870	44.1		3.8					
7/19/96	854	69	7.7	1910	23.0		2.6					
7/25/96	950	79	7.7	1990	27.2	7	2.6	160	620	460	110	46
8/2/96	940	76	8.1	2100	29.4		2.7					
8/8/96	950	74	7.4	1930	28.2		2.4					
8/15/96	830	78	7.7	2040	25.7		2.6					
8/23/96	849	72	7.9	1960	29.8		2.6					
8/28/96	1015	74	7.8	2310	30.2		2.5	200	650	460	100	51
9/5/96	931	68	7.8	2690	48.4		3.7					
9/12/96	1101	67	7.7	2650	44.0		3.5					
9/17/96	940	62	8.2	1940	28.1		2.5					
9/26/96	1120	68	7.7	2930	31.7		2.8	280	900	550	130	55
Count		48	50	50	50	4	50	12	12	11	12	12
Min		48	6.8	1910	23.0	7	2.4	160	620	460	100	46
Max		80	8.4	6590	162	45	9.4	490	1700	1120	280	103
Mean		64	7.8	3310	64.0	26	4.0	314	1109	745	180	72
Geo Mean		63	7.8	3130	54.8	21	3.8	299	1060	716	172	70
Median		64	7.8	3060	51.1	26	3.6	285	1095	720	175	70

Panoche Drain at O'Banion Gauge Station (MER501)

Location: Latitude 36°55'14", Longitude 120°41'43". In SW 1/4, SW 1/4, SW 1/4, Sec. 32, T.11S., R.12E. Located 0.5 miles south of CCID Main Canal, 1.9 miles west of Russel Road. 5.5 miles SW of Dos Palos. 3.4 miles SW of South Dos

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/6/95	910	60	7.7	4390	19.7		7.3					
10/12/95	826	61	7.3	5380	26.2		9.3					
10/18/95	902	64	7.5	4920	80.6		8.2					
10/27/95	1110	NA	8.5	4990	104	13	7.8	680	1600	1180	300	105
11/3/95	847	60	7.9	3790	55.8		6.0					
11/9/95	905	60	8.1	4230	80.6		6.4					
11/20/95	853	58	7.9	3440	61.4		5.1					
11/27/95	858	52	8.0	3700	62.4		5.4	490	1100	1100	280	87
12/8/95	1010	58	7.9	3620	71.7		5.2					
12/18/95	NA	NA	NA	NA	NA		NA					
12/22/95	930	49	8.0	4430	103		8.1					
12/28/95	1121	54	8.7	5200	137		7.3	710	1700	NA	380	110
1/4/96	1040	52	7.7	5020	40.4		7.1					
1/11/96	923	52	8.0	5140	124		7.3					
1/18/96	1155	52	8.1	4450	104		6.4					
1/25/96	1059	52	7.7	4270	85.4	8	6.2	550	1200	950	270	70
2/2/96	1030	58	7.8	3940	62.0		5.0					
2/9/96	NA	NA	NA	NA	NA		NA					
2/16/96	NA	NA	NA	NA	NA		NA					
2/23/96	915	57	7.8	4810	75.4		7.0	600	1400	1100	300	77
3/1/96	1015	54	7.9	4810	89.2		7.6					
3/8/96	925	58	7.9	5250	106		3.8					
3/18/96	1635	73	7.9	3990	80.8		5.5					
3/21/96	900	62	NA	5210	117		8.0					
3/28/96	950	65	7.9	4950	62.6		9.0	730	1600	1200	325	93
4/3/96	950	62	7.2	5130	116		8.0					
4/12/96	1008	60	7.7	5330	86.6		8.4					
4/19/96	910	60	7.8	4890	115		8.6					
4/25/96	1025	66	8.0	5270	121	12	8.8	640	1600	1200	320	100
5/3/96	905	68	7.8	4920	102		9.4					
5/10/96	935	63	7.7	5110	85.6		6.6					
5/16/96	1110	66	7.8	4290	79.2		5.7					
5/24/96	1010	59	7.9	4760	83.5		7.8					
5/30/96	1010	68	7.9	5030	96.7		7.8	610	1500	1200	320	91
6/6/96	1120	80	7.8	4460	64.2		7.1					
6/13/96	907	68	7.8	4500	62.4		7.6					
6/19/96	840	68	7.4	4440	77.5		7.9					
6/27/96	1125	70	7.8	3980	65.8		6.5	470	1100	880	240	69
7/2/96	935	76	7.5	4160	63.0		7.0					
7/11/96	910	73	7.5	4620	66.6		8.0					
7/19/96	902	68	7.5	4340	60.2		6.9					
7/25/96	1035	80	7.8	4480	66.0	15	7.8	510	1300	1010	270	80
8/2/96	1000	74	7.8	4170	68.3		7.2					
8/8/96	1040	76	7.3	4060	61.0		6.2					
8/15/96	850	78	7.5	4080	60.4		6.3					
8/23/96	920	74	7.7	3610	46.0		6.2					
8/28/96	1035	78	7.9	4380	66.2		6.4	450	1200	780	190	74
9/5/96	1009	66	7.7	4150	72.7		7.1					
9/12/96	1110	66	7.7	3800	72.3		6.2					
9/17/96	1010	64	7.9	4050	94.9		7.0					
9/26/96	1130	70	7.8	5210	93.2		7.8	660	1500	950	233	89
	Count	47	47	48	48	4	48	12	12	11	12	12
	Min	49	7.2	3440	19.7	8	3.8	450	1100	780	190	69
	Max	80	8.7	5380	137	15	9.4	730	1700	1200	380	110
	Mean	64	7.8	4520	79.1	12	7.1	592	1400	1050	286	87
	Geo Mean	64	7.8	4490	74.7	12	7.0	584	1385	1040	281	86
	Median	64	7.8	4460	76.5	13	7.1	605	1450	1100	290	88

Agatha Canal at Mallard Road (MER506)

Location: Latitude: 36°56'12", Longitude 120°42'07". In NE 1/4, NW 1/4, SW 1/4, Sec. 7, T.11S., R.11E.
South of Sante Fe Grade at Brito, west of Mallard Road. 4.5 miles west of Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B µg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	1135	NA	7.9	254	0.9	5.5	25	29	60	14	6
11/27/95	924	56	8.3	553	1.4	0.38	69	74	120	28	13
12/28/95	1144	54	8.8	4490	100	6.3	610	1400	NA	350	110
1/25/96	1125	56	7.8	4260	74.9	6.2	550	1200	910	250	71
2/23/96	1055	58	7.9	4730	74.3	6.6	540	1500	1100	295	84
3/28/96	1020	64	8.2	4070	41.7	5.7	580	1300	1000	260	85
4/25/96	1100	68	8.5	200	1.3	0.22	16	25	64	15	6.5
5/30/96	1100	68	8.5	622	5.8	0.50	63	120	140	32	15
6/27/96	1150	74	8.5	518	1.3	0.30	56	73	120	28	12
7/25/96	1056	82	8.6	382	1.4	0.23	38	48	100	24	9.9
8/28/96	1100	72	7.9	2930	35.0	4.1	280	800	550	130	55
9/26/96	1205	72	8.5	324	0.9	0.12	29	29	72	15	8.6
Count		11	12	12	12	12	12	12	11	12	12
Min		54	7.8	200	0.9	0.12	16	25	60	14	6
Max		82	8.8	4730	100	6.6	610	1500	1100	350	110
Mean		66	8.3	1944	28.2	3.0	238	550	385	120	40
Geo Mean		65	8.3	1016	7.0	1.2	110	186	207	59	23
Median		68	8.4	588	3.6	2.3	66	97	120	30	14

Hamburg Drain near Camp 13 Slough (MER504)

Location: Latitude: 36°56'20", Longitude 120°45'26". In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E. 50 feet south of CCID main canal. 9.2 miles S-SE of Los Banos. 6.7 miles W-SW of South Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/6/95	755	64	8.1	479	2.0		0.32					
10/12/95	744	65	7.9	383	2.1		0.32					
10/18/95	753	62	6.8	5450	80.6		6.2					
10/27/95	910	NA	7.9	5500	79.7	7	6.5	870	1700	1800	540	109
11/3/95	753	58	7.1	5120	79.4		6.1					
11/9/95	833	58	7.6	3860	43.9		4.1					
11/20/95	750	59	7.9	3650	40.2		4.4					
11/27/95	810	52	8.1	3490	52.0		3.5	510	1000	1200	350	74
12/8/95	915	58	8.1	3760	36.8		5.0					
12/18/95	845	NA	7.9	4090	27.8		5.7					
12/22/95	825	48	8.1	3760	26.2		4.4					
12/28/95	1037	52	9.6	3360	22.3		3.3	410	1300	NA	470	62
1/4/96	910	47	8.1	3650	29.8		3.6					
1/11/96	843	48	8.1	3920	40.5		3.4					
1/18/96	1003	50	8.5	3480	27.2		3.3					
1/25/96	950	51	7.7	5790	100	7	6.0	880	1800	1700	520	100
2/2/96	825	62	7.4	5650	107		4.4					
2/9/96	945	59	7.7	5000	67.4		5.1					
2/16/96	NA	NA	NA	NA	NA		NA					
2/23/96	851	60	7.8	5960	93.6		5.9	870	1800	1700	530	102
3/1/96	910	59	7.8	6890	129		9.2					
3/8/96	855	52	8.3	3840	36.1		3.5					
3/18/96	1538	77	8.1	5590	96.4		5.9					
3/21/96	820	60	7.8	5540	106		5.2					
3/28/96	845	62	7.8	5480	110		5.4	780	1900	1900	560	120
4/3/96	919	60	6.9	5720	106		5.9					
4/12/96	914	58	6.9	4820	90.4		4.2					
4/19/96	820	59	8.1	3990	71.5		4.4					
4/25/96	915	63	7.5	5100	98.1	5	5.1	640	1700	1600	470	92
5/3/96	758	61	7.1	4620	85.0		5.4					
5/10/96	850	62	7.7	4790	76.2		4.0					
5/16/96	835	65	7.6	4550	66.2		4.3					
5/24/96	930	58	7.9	6040	116		6.8					
5/30/96	905	64	7.6	4580	57.8		5.7	620	1400	1300	390	90
6/6/96	1000	76	7.8	458	3.2		0.3					
6/13/96	835	68	7.9	3190	47.0		3.0					
6/19/96	845	68	7.3	4290	NA		4.7					
6/27/96	930	68	7.6	5530	63.6		7.7	700	1800	2000	620	100
7/2/96	905	72	6.4	5100	62.6		4.0					
7/11/96	800	69	7.2	4005	49.7		5.1					
7/19/96	840	66	6.8	4590	62.3		5.0					
7/25/96	840	74	7.6	3380	38.4	4	4.0	400	990	990	290	64
8/2/96	915	70	7.8	3960	46.4		4.7					
8/8/96	910	70	6.5	3180	38.6		3.4					
8/15/96	810	70	6.9	3330	38.4		4.1					
8/23/96	832	68	7.4	4390	60.6		4.9					
8/28/96	938	74	7.6	4480	48.2		4.6	590	1200	1000	260	88
9/5/96	915	62	6.9	5090	70.6		6.3					
9/12/96	1040	69	7.4	5340	47.8		9.7					
9/17/96	920	62	7.6	4000	33.3		6.2					
9/26/96	1050	72	8.5	446	1.5		0.24	45	59	93	21	10
Count		48	50	50	49	4	50	12	12	11	12	12
Min		47	6.4	383	1.5	4	0.24	45	59	93	21	10
Max		77	9.6	6890	129	7	9.7	880	1900	2000	620	120
Mean		62	7.7	4250	59.5	6	4.7	610	1387	1389	418	84
Geo Mean		62	7.6	3730	44.6	6	3.9	511	1124	1148	341	74
Median		62	7.7	4440	57.8	6	4.7	630	1550	1600	470	91

Camp 13 Slough at Gauge Station (MER505)

Location: Latitude 36°56'21", Longitude 120°45'22". In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E. 150 feet north of CCID Main Canal, 6.4 miles west of Russel Avenue. 9.2 miles SE of Los Banos. 6.7 miles SW of South Dos Palos

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	920	NA	8.3	4510	77.8	6.9	590	1500	1090	280	94
11/27/95	823	51	7.9	3440	57.4	4.8	440	1000	910	240	76
12/28/95	1044	50	8.9	3760	75.0	5.3	430	1300	NA	270	105
1/25/96	957	52	7.9	4660	84.6	6.9	570	1500	1030	270	89
2/23/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/28/96	850	64	8.1	3360	60.1	3.8	420	1100	830	210	75
4/25/96	930	66	7.8	4340	88.8	6.6	NA	NA	1000	260	85
5/30/96	912	68	7.8	3830	51.1	5.7	440	1100	920	240	78
6/27/96	937	69	7.9	4000	55.2	6.1	450	1200	950	250	79
7/25/96	855	80	7.7	3630	48.2	5.9	400	1100	850	220	74
8/28/96	950	76	7.9	1650	15.4	1.4	190	350	350	88	32
9/26/96	1055	70	8.4	338	0.8	0.13	31	35	72	15	8.4
Count		10	11	11	11	11	10	10	10	11	11
Min		50	7.7	338	0.8	0.13	31	35	72	15	8
Max		80	8.9	4660	88.8	6.9	590	1500	1090	280	105
Mean		65	8.1	3411	55.9	4.9	396	1019	800	213	72
Geo Mean		64	8.1	2902	38.3	3.6	323	751	661	175	62
Median		67	7.9	3760	57.4	5.7	435	1100	915	240	78

Charleston Drain at CCID Main Canal (MER502)

Location: Latitude 36°56'59" Longitude 120°46'48". In NE 1/4, SE 1/4, NE 1/4, Sec. 29, T.11S., R.11E.

North Side of CCID Main Canal, 8.7 miles S-SE of Los Banos. 7.9 miles W-SW of South Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	CA mg/L	Mg mg/L
10/6/95	740	62	7.9	949	9.0		0.84					
10/12/95	732	64	7.9	553	4.2		0.48					
10/18/95	740	64	6.6	1160	11.6		1.0					
10/27/95	845	NA	7.6	1250	14.4	2	1.3	160	320	390	97	36
11/3/95	740	58	7.2	2140	26.4		2.2					
11/9/95	821	60	7.6	2180	27.2		2.0					
11/20/95	734	58	7.9	2210	24.8		2.0					
11/27/95	758	52	7.7	2110	25.1		1.9	280	570	680	190	50
12/8/95	850	58	7.4	2330	28.7		2.1					
12/18/95	830	NA	7.8	4800	77.1		4.7					
12/22/95	810	50	7.8	4950	79.2		4.9					
12/28/95	1025	52	8.4	5110	79.4		NA	700	1900	NA	460	99
1/4/96	900	52	7.3	5420	84.7		5.1					
1/11/96	833	52	7.5	5000	69.4		4.3					
1/18/96	951	52	7.7	5160	53.0		5.4					
1/25/96	936	52	7.4	4530	57.2	5	3.9	670	1300	1300	360	83
2/2/96	NA	NA	NA	NA	NA		NA					
2/9/96	935	60	7.4	6370	91.0		4.8					
2/16/96	NA	NA	NA	NA	NA		NA					
2/23/96	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA
3/1/96	NA	NA	NA	NA	NA		NA					
3/8/96	840	58	7.6	4810	72.9		4.0					
3/18/96	1529	71	8.0	5280	92.6		4.4					
3/21/96	805	60	NA	5080	81.6		4.2					
3/28/96	830	62	7.5	4320	69.2		3.6	560	1600	1400	430	90
4/3/96	909	59	6.0	5390	93.7		4.6					
4/12/96	900	58	5.4	5290	84.2		4.2					
4/19/96	755	58	8.1	3340	68.8		3.3					
4/25/96	900	62	6.7	5530	103	6	4.9	730	1800	1700	530	97
5/3/96	750	62	6.1	5300	98.2		5.0					
5/10/96	840	62	7.8	3960	59.8		2.9					
5/16/96	820	64	7.5	4400	60.3		4.4					
5/24/96	915	58	7.5	4890	81.3		4.4					
5/30/96	855	66	7.7	4180	69.2		3.4	470	1400	1200	370	68
6/6/96	945	72	7.2	2230	16.6		2.1					
6/13/96	818	66	7.4	4010	75.2		4.0					
6/19/96	830	70	6.8	3950	63.6		3.7					
6/27/96	920	68	7.5	3940	64.8		3.5	430	1400	1600	520	69
7/2/96	855	76	5.7	3340	46.6		2.6					
7/11/96	750	70	6.5	4300	81.5		4.6					
7/19/96	830	67	6.4	3740	61.3		3.4					
7/25/96	820	74	6.9	2780	43.0	5	2.3	290	890	800	240	48
8/2/96	900	71	7.0	3390	39.0		3.8					
8/8/96	855	70	5.8	2930	43.2		2.6					
8/15/96	800	74	6.0	2670	38.3		2.4					
8/23/96	825	73	7.2	2040	24.8		1.8					
8/28/96	920	71	7.2	2230	22.9		2.1	530	1000	530	130	49
9/5/96	903	64	6.7	2510	31.0		2.8					
9/12/96	1030	64	7.5	3730	47.2		3.8					
9/17/96	905	64	7.0	1860	20.1		1.8					
9/26/96	1040	68	7.9	1597	11.0		1.1	220	350	320	86	26
Count		45	46	47	47	4	46	11	11	10	11	11
Min		50	5.4	553	4.2	2	0.48	160	320	320	86	26
Max		76	8.4	6370	103	6	5.4	730	1900	1700	530	99
Mean		63	7.2	3600	53.8	5	3.2	458	1139	992	310	65
Geo Mean		62	7.2	3220	44.0	4	2.9	412	979	857	259	60
Median		62	7.4	3940	59.8	5	3.5	470	1300	1000	360	68

Almond Drive Drain (MER555)

Location: Latitude 36°59'55", Longitude 120°49'00". In SW 1/4, SW 1/4, SW 1/4, Sec. 6, T.11S., R.11E. North side of Almond Drive, 1.1 miles east of Mercy Springs Drain, 100 feet east of CCID Main Canal. 4.7 miles south of Los Banos

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B µg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	830	NA	8.0	220	0.7	0.10	22	25	55	12	6
11/27/95	740	52	7.6	447							
12/28/95	957	52	8.1	2700							
1/25/96	915	51	7.8	1650	8.4	1.7	210	390	380	74	48
2/23/96	750	52	7.9	1690							
3/28/96	800	64	7.2	1100							
4/25/96	845	63	6.0	885	1.6	0.72	88	150	210	40	26
5/30/96	835	66	7.7	642							
6/27/96	850	68	7.8	965							
7/25/96	800	80	8.0	362	1.3	0.21	37	46	100	22	11
8/28/96	900	70	7.6	2230							
9/26/96	1030	70	8.3	402							
Count		11	12	12	4	4	4	4	4	4	4
Min		51	6.0	220	0.7	0.10	22	25	55	12	6
Max		80	8.3	2700	8.4	1.7	210	390	380	74	48
Mean		63	7.7	1108	3.0	0.68	89	153	186	37	23
Geo Mean		62	7.7	851	1.9	0.40	62	91	145	30	17
Median		64	7.8	925	1.5	0.47	63	98	155	31	19

Rice Drain at Mallard Road (MER509)

Location: Latitude 36°59'22" Longitude 120°42' 14". In NE 1/4, NW 1/4, SW 1/4, Sec. 7, T.11S., R.11E.
South of Sante Fe Grade at Brito, 50 feet west of Mallard Road. 4.5 miles west of Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	1130	NA	7.8	3360	14.5	5.5	340	1100	630	140	68
11/27/95	931	53	7.8	2050							
12/28/95	1151	50	8.4	2540							
1/25/96	1135	52	8.2	6300	28.4	15	650	2300	1100	240	120
2/23/96	1105	57	7.8	4010							
3/28/96	1015	60	7.7	2500							
4/25/96	1050	67	8.4	2500	5.6	5.8	210	820	520	124	51
5/30/96	1105	69	7.7	3450							
6/27/96	1210	70	7.9	3180							
7/25/96	1110	80	7.9	2640	3.4	6.2	240	810	570	140	56
8/28/96	1110	71	7.7	2210							
9/26/96	1200	72	8.3	2430							
Count		11	12	12	4	4	4	4	4	4	4
Min		50	7.7	2050	3.4	5.5	210	810	520	124	51
Max		80	8.4	6300	28.4	15	650	2300	1100	240	120
Mean		64	8.0	3098	13.0	8.1	360	1257.5	705	161	74
Geo Mean		63	8.0	2947	9.4	7.4	325	1139	673	155	69
Median		67	7.9	2590	10.1	6.0	290	960	600	140	62

Salt Slough Ditch at Hereford Road (MER528)

Location: Latitude 37°08'30" Longitude 120°45'17". In NW 1/4, NE 1/4, NW 1/4, Sec. 22, T.9S., R.11E.
3.0 miles north on Hereford Road from Henry Miller Road.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	855	60	7.8	515	0.6	0.20	77	63	130	29	13
11/27/95	1105	54	8.1	735							
12/28/95	1254	54	8.5	1260							
1/25/96	1250	56	7.8	962	1.7	0.34	140	130	210	51	20
2/23/96	1206	58	7.7	898							
3/28/96	1155	66	7.6	741							
4/25/96	1235	70	7.9	1150	0.6	0.27	160	140	290	73	27
5/30/96	1229	70	7.4	642							
6/27/96	1345	74	8.1	951							
7/25/96	1235	84	7.8	708	1.0	0.26	87	76	190	45	18
8/28/96	1220	74	7.8	718							
9/26/96	955	70	8.0	746							
Count		12	12	12	4	4	4	4	4	4	4
Min		54	7.4	515	0.6	0.20	77	63	130	29	13
Max		84	8.5	1260	1.7	0.34	160	140	290	73	27
Mean		66	7.9	836	1.0	0.27	116	102	205	50	20
Geo Mean		65	7.9	811	0.9	0.26	111	97	197	47	19
Median		68	7.8	744	0.8	0.27	114	103	200	48	19

CCID Main at Russel Avenue (MER510)

Location: Latitude 36°55'28", Longitude 120°39'11". In SE 1/4, SE 1/4, SE 1/4, Sec. 33, T.11S., R.12E.
2.7 miles south of Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	1050	NA	8.4	243	1.1	0.12	25	27	62	13	7.2
11/27/95	840	56	8.6	372							
12/28/95	1103	50	7.8	889							
1/25/96	1023	51	8.2	1300	5.2	1.3	110	380	350	96	27
2/23/96	955	59	8.1	558							
3/28/96	930	62	8.4	608							
4/25/96	1000	66	8.8	56	<0.4	<0.05	2	1.8	25	5.1	2.9
5/30/96	930	70	8.1	595							
6/27/96	1005	72	8.5	NA							
7/25/96	920	82	8.3	228	0.7	0.42	21	19	110	26	12
8/28/96	1010	78	8.0	618							
9/26/96	1110	70	8.3	318							
Count		11	12	11	3	3	4	4	4	4	4
Min		50	7.8	56	<0.4	<0.05	2	2	25	5	3
Max		82	8.8	1300	5.2	1.3	110	380	350	96	27
Mean		65	8.3	526	2.3	0.61	40	107	137	35	12
Geo Mean		64	8.3	409	1.6	0.40	18	24	88	20	9
Median		66	8.3	558	1.1	0.42	23	23	86	20	10

Santa Fe Canal at Henry Miller Road (MER519)

Location: Latitude 37°05'59", Longitude 120°49'44". In NE 1/4, NE 1/4, Sec. 1, T.10S., R.10E. 0.3 miles east of Lander Avenue. 3.0 miles north of Gustine.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	755	60	7.6	188	0.6	0.10	20	20	49	10	5.8
11/27/95	1021	56	8.4	487	1.3	0.22	58	64	110	25	12
12/28/95	1220	52	8.9	696	2.7	0.41	86	120	NA	40	16
1/25/96	1200	54	8.4	659	2.4	0.40	75	100	150	36	15
2/23/96	1134	60	8.5	1450	4.7	1.3	180	340	310	73	30
3/28/96	1125	67	8.4	766	4.3	0.64	80	170	130	27	16
4/25/96	1135	70	8.1	456	1.2	0.43	41	73	110	21	14
5/30/96	1155	74	8.8	537	1.2	0.49	54	91	120	25	15
6/27/96	1250	82	8.7	900	2.3	0.77	97	160	220	46	25
7/25/96	1135	84	7.8	988	2.0	0.95	110	160	280	56	33
8/28/96	1138	76	8.0	556	1.5	0.30	58	70	120	24	15
9/26/96	920	69	8.5	421	1.3	0.23	42	50	93	19	11
Count		12	12	12	12	12	12	12	11	12	12
Min		52	7.6	188	0.6	0.10	20	20	49	10	6
Max		84	8.9	1450	4.7	1.3	180	340	310	73	33
Mean		67	8.3	675	2.1	0.52	75	118	154	34	17
Geo Mean		66	8.3	604	1.8	0.42	65	95	136	30	16
Median		68	8.4	608	1.8	0.42	67	96	120	26	15

San Luis Canal at Henry Miller Road (MER532)

Location: Latitude 37 06' 00" Longitude 120 49' 13". In SE 1/4, SW 1/4, SE 1/4, Section 36, T10s, R10E.

The site is 3 miles northeast of Los Banos at the Los Banos Wildlife Refuge.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	815	60	7.5	196	0.8	0.10	20	22	52	11	5.9
11/27/95	1031	56	8.3	507	1.6	0.27	61	69	120	26	13
12/28/95	1227	52	8.4	918	6.6	0.69	140	180	NA	54	19
1/25/96	1220	52	8.0	1120	12.0	0.73	130	230	280	76	22
2/23/96	1142	58	7.9	3560	40.8	4.4	400	1000	750	189	68
3/28/96	1130	66	8.0	790	5.3	0.61	80	190	140	28	17
4/25/96	1150	68	7.9	505	1.5	0.49	NA	NA	110	23	14
5/30/96	1205	70	7.8	660	1.6	0.54	74	100	160	33	18
6/27/96	1305	72	8.4	979	3.0	0.91	100	180	240	48	28
7/25/96	1153	84	7.9	565	1.8	0.50	57	83	160	32	20
8/28/96	1150	74	7.8	568	1.8	0.31	59	72	120	240	150
9/26/96	930	70	8.4	646	1.5	0.25	48	57	100	22	11
Count		12	12	12	12	12	11	11	11	12	12
Min		52	7.5	196	0.8	0.10	20	22	52	11	6
Max		84	8.4	3560	40.8	4.4	400	1000	750	240	150
Mean		65	8.0	918	6.5	0.82	106	198	203	65	32
Geo Mean		65	8.0	720	3.1	0.51	80	120	158	43	21
Median		67	8.0	653	1.8	0.52	74	100	140	33	19

Porter-Blake Bypass (MER548)

Location: Latitude 37°05'58.5", Longitude 120°49'14.5". In NW 1/4, Sec. 1, T.10S., R.10E. 7.5 miles east of the intersection of Henry Milller and Mercy Springs Roads. 2 miles north of Los Banos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	830	60	7.3	1738	26.6	2.3	210	500	370	94	34
11/27/95	1044	58	7.9	2200	23.9	2.8	250	620	600	150	56
12/28/95	1238	52	8.5	2600	33.2	3.6	310	750	NA	150	58
1/25/96	1235	56	7.8	3390	36.2	4.7	420	940	720	180	65
2/23/96	1152	58	7.8	3680	44.8	4.6	410	1100	760	194	68
3/28/96	1140	66	8.1	3300	34.6	4.1	390	970	730	180	71
4/25/96	1205	71	7.5	3800	66.3	5.3	NA	NA	870	228	73
5/30/96	1210	69	8.0	3310	48.5	4.7	390	930	820	220	66
6/27/96	1320	72	7.9	3480	44.9	4.9	370	1000	760	200	64
7/25/96	1215	84	7.8	3010	39.8	5.1	330	920	730	190	62
8/28/96	1200	74	7.9	2890	39.4	3.6	280	770	580	140	56
9/26/96	940	70	8.3	532	2.1	0.32	56	71	110	25	12
Count		12	12	12	12	12	11	11	11	12	12
Min		52	7.3	532	2.1	0.32	56	71	110	25	12
Max		84	8.5	3800	66.3	5.3	420	1100	870	228	73
Mean		66	7.9	2828	36.7	3.8	311	779	641	163	57
Geo Mean		65	7.9	2570	30.2	3.3	280	663	574	145	53
Median		68	7.9	3155	37.8	4.4	330	920	730	180	63

Mud Slough at Newman Gun Club (MER551)

Location: Latitude 37°18"33", Longitude 120°57'18". In NW 1/4, NW 1/4, SW 1/4, Sec. 23, T.7S., R.9E.
1.7 miles north of Santa Fe Grade, 1.2 miles north of Highway 140. 4.2 miles NE of Gustine.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	1430	NA	7.9	758	0.8	0.50	89	110	170	36	20
11/27/95	940	52	8.1	1130	0.7	0.78	150	160	220	41	28
12/28/95	1125	51	8.1	1650	0.8	1.1	230	270	290	52	39
1/25/96	950	46	7.9	1820	0.6	1.2	260	320	340	62	44
2/23/96	1010	47	7.8	1080	0.7	0.70	120	170	230	43	29
3/28/96	1050	62	7.7	1750	1.2	1.7	280	340	380	70	50
4/25/96	1140	66	8.1	3540	1.4	2.2	540	740	570	91	83
5/30/96	1045	72	7.9	1690	2.2	1.0	220	320	290	54	37
6/27/96	1110	70	8.4	3040	1.3	1.5	500	590	530	90	73
7/25/96	1130	85	8.6	2590	1.2	1.7	340	490	530	93	71
8/28/96	1141	78	8.1	2750	1.3	1.7	430	580	560	92	79
9/26/96	1105	70	7.4	5280	15.6	8.4	610	1800	950	200	110
Count		11	12	12	12	12	12	12	12	12	12
Min		46	7.4	758	0.6	0.50	89	110	170	36	20
Max		85	8.6	5280	15.6	8.4	610	1800	950	200	110
Mean		64	8.0	2260	2.3	1.9	314	491	422	77	55
Geo Mean		62	8.0	1970	1.3	1.4	269	369	376	69	49
Median		66	8.0	1780	1.2	1.4	270	330	360	66	47

Mud Slough (north) at San Luis Drain (MER542)

Location: Latitude 37°19'50", Longitude 120°57'03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E. 5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

Date	Time	Temp °F	pH	EC µmhos/cm	Se	Mo	Cr	Cu µg/L	Ni	Pb	Zn	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/6/95	1120	69	8.3	1130	1.2							0.66					
10/12/95	1018	62	7.8	1200	1.1							0.91					
10/18/95	1030	69	7.8	632	1.1							0.45					
10/27/95	1310	NA	7.7	769	0.6	7	2	4	7	<5	<1	0.60	91	100	170	34	20
11/3/95	1045	62	8.1	904	0.9							0.76					
11/9/95	1050	64	7.7	906	0.5							0.69					
11/20/95	1152	64	7.6	1060	0.4							0.81					
11/27/95	1156	54	8.1	1220	0.5							0.92	160	180	380	90	39
12/8/95	1332	60	8.1	1190	0.4							0.85					
12/18/95	1020	NA	8.9	1200	0.6							0.88					
12/22/95	1230	50	7.9	1230	0.8							0.91					
12/28/95	1332	52	8.2	1540	0.7							0.97	220	260	NA	44	33
1/4/96	1230	55	7.9	1930	0.7							1.4					
1/11/96	1114	52	7.9	1980	0.8							1.3					
1/18/96	1320	51	8.1	1710	0.8							1.2					
1/25/96	1345	54	7.8	1690	0.5	6	6	2	10	<5	<1	1.2	240	250	270	52	35
2/2/96	1235	57	8.0	1210	0.7							0.87					
2/9/96	NA	NA	NA	NA	NA							NA					
2/16/96	951	62	7.5	1880	0.5							0.73					
2/23/96	1300	60	7.8	880	<0.4							0.69	91	120	200	37	25
3/1/96	1310	62	8.1	1160	0.5							1.0					
3/8/96	1015	58	8.0	1070	0.6							0.86					
3/18/96	1145	72	8.4	1950	0.7							1.5					
3/21/96	1035	68	8.1	2160	0.7							1.8					
3/28/96	1245	66	8.2	2270	1.0							2.3	330	380	370	62	52
4/3/96	1438	64	7.5	2180	1.4							1.8					
4/12/96	1356	66	7.8	3440	7.1							4.1					
4/19/96	1120	62	8.0	3640	0.8							3.2					
4/25/96	1320	73	8.3	2670	0.9	10	8	7	9	<5	11	1.9	370	490	420	70	60
5/3/96	1216	75	7.7	3820	0.8							3.1					
5/10/96	1100	67	8.1	1510	1.2							0.95					
5/16/96	1250	66	7.9	2560	1.5							1.5					
5/24/96	1145	66	8.1	1420	1.5							1.1					
5/30/96	1335	76	8.1	1310	0.7							0.87	170	250	220	40	28
6/6/96	1300	88	7.8	588	2.0							0.49					
6/13/96	1224	78	8.2	1610	1.1							1.2					
6/19/96	1025	74	7.9	2520	0.7							1.9					
6/27/96	1445	80	8.1	3250	1.2							2.1	440	720	500	81	72
7/2/96	1125	86	7.3	2360	1.8							1.7					
7/11/96	1204	82	7.8	2520	2.1							1.9					
7/19/96	1245	78	8.3	3190	1.3							2.1					
7/25/96	1345	90	8.3	2020	1.4	11	12	6	15	<5	16	1.5	260	390	370	65	51
8/2/96	1200	82	8.2	1650	1.0							1.2					
8/8/96	1235	82	7.9	2900	1.1							1.8					
8/15/96	1045	79	8.0	2460	1.2							1.5					
8/23/96	1200	80	8.1	2250	1.2							1.4					
8/28/96	1320	80	8.3	2110	1.6							1.1	230	350	300	51	43
9/5/96	1306	72	8.1	1040	1.7							0.71					
9/12/96	945	66	7.7	2580	3.4							2.1					
9/17/96	1330	76	8.5	749	1.3							0.58					
9/26/96	830	69	8.2	5530	11.8							8.7	600	1900	890	192	100
Count		48	50	50	49	4	4	4	4	4	4	50	12	12	11	12	12
Min		50	7.3	588	<0.4	6	2	2	7	<5	11	0.45	91	100	170	34	20
Max		90	8.9	5530	11.8	11	12	7	15	<5	16	8.7	600	1900	890	192	100
Mean		68	8.0	1890	1.4	9	7	5	10	<5	7	1.5	267	449	372	68	47
Geo Mean		68	8.0	1680	1.0	8	6	4	10	<5	3	1.2	231	322	335	60	42
Median		67	8.1	1700	1.0	9	7	5	10	<5	6	1.2	235	305	370	57	41

Los Banos Creek at State Highway 140 (MER554)

Location: Latitude 37°16'35", Longitude 120°57'14". In NE 1/4, SW 1/4, SW 1/4, Sec., 35, T.7S., R.9E.
South side of highway 140, 2.9 miles NE of Gustine.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/27/95	1025	58	7.7	1340	0.5	0.60	210	130	250	48	31
11/27/95	903	54	8.0	709							
12/28/95	1045	50	8.0	1460							
1/25/96	756	45	6.7	1450	<0.4	1.0	200	200	260	46	35
2/23/96	914	47	7.6	515							
3/28/96	925	61	6.5	509							
4/25/96	930	62	6.8	3350	0.7	3.0	450	670	600	94	88
5/30/96	1109	73	7.9	850							
6/27/96	1145	71	8.4	1250							
7/25/96	1205	84	8.5	1530	1.2	1.4	180	240	350	64	45
8/28/96	1203	76	8.6	1600							
9/26/96	1020	68	7.5	548							
Count		12	12	12	3	4	4	4	4	4	4
Min		45	6.5	509	<0.4	0.60	180	130	250	46	31
Max		84	8.6	3350	1.2	3.0	450	670	600	94	88
Mean		62	7.7	1259	0.6	1.5	260	310	365	63	50
Geo Mean		61	7.7	1080	0.5	1.3	242	254	342	60	46
Median		61	7.8	1300	0.6	1.2	205	220	305	56	40

Salt Slough at Lander Avenue (State Highway 165) (MER531)

Location: Latitude 37°14'55", Longitude 120°51'04". In NW 1/4, SE 1/4, SE 1/4, Sec. 10, T.8S., R.10E. 13.0 miles north of Los Banos. 5.0 miles south of Highway 140.

Date	Time	Temp °F	pH	EC µmhos/cm	Se	Mo	Cr	Cu	Ni	Pb	Zn	B	Cl	SO4	HDNS	Ca	Mg
					µg/L							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
10/6/95	1210	70	8.2	1010	1.1							0.47					
10/12/95	1040	68	7.8	1070	1.0							0.58					
10/18/95	1125	70	7.1	1300	6.8							1.3					
10/25/96	930	62	7.6	1360	12.4	6	12	6	15	<5	16	1.3	170	310	260	63	26
11/3/95	1241	64	7.9	1590	7.7							1.3					
11/9/95	955	64	8.1	1370	1.9							0.88					
11/20/95	1029	63	7.8	1930	10.6							2.0					
11/27/95	825	54	8.0	1810	10.9							1.7	240	410	380	90	39
12/8/95	1132	60	7.9	1920	12.8							1.8					
12/18/95	1230	NA	7.8	1920	13.1							2.1					
12/22/95	1055	50	7.9	2010	13.4							2.5					
12/28/95	1005	51	7.7	2380	19.3							2.4	330	560	490	115	49
1/4/96	1300	55	7.7	2490	5.2							2.2					
1/11/96	1016	52	7.7	2850	10.0							2.5					
1/18/96	1353	52	7.9	2690	33.3							3.0					
1/25/96	836	46	7.6	2430	19.5	9	NA	NA	NA	NA	NA	2.7	320	590	500	118	49
2/2/96	1320	56	7.8	2010	13.6							NA					
2/9/96	NA	NA	NA	NA	NA							NA					
2/16/96	1030	62	7.6	2580	22.7							2.7					
2/23/96	830	47	6.9	2340	18.6							1.1	300	570	240	59	23
3/1/96	1410	58	7.8	2130	14.5							2.4					
3/8/96	1035	62	7.7	2250	15.8							2.0					
3/18/96	1325	68	7.4	2220	16.9							1.9					
3/21/96	1125	68	NA	2120	17.8							1.9					
3/28/96	950	61	7.4	1720	11.6							1.7	280	430	450	102	45
4/3/96	1455	67	7.6	1920	17.2							1.8					
4/12/96	1146	64	7.8	2170	18.0							1.8					
4/19/96	1140	62	8.0	1840	20.3							2.3					
4/25/96	1030	65	7.7	2850	31.6	9	12	9	11	<5	26	2.7	370	670	580	144	54
5/3/96	1015	72	7.9	3000	33.5							3.5					
5/10/96	1115	66	7.7	2110	19.4							1.9					
5/16/96	1350	70	7.7	2320	23.0							2.0					
5/24/96	1220	64	7.8	2030	18.7							2.1					
5/30/96	1200	70	7.6	2330	22.0							2.6	300	570	520	130	47
6/6/96	1230	80	7.8	2610	27.5							3.1					
6/13/96	1055	75	7.8	2120	18.8							1.9					
6/19/96	1050	75	7.8	2020	20.6							2.3					
6/27/96	1215	68	7.7	2650	25.8							2.7	360	660	510	130	46
7/2/96	1030	83	7.4	2210	20.4							2.5					
7/11/96	1050	77	7.6	2160	19.6							2.7					
7/19/96	1040	74	7.5	2210	19.4							2.6					
7/25/96	1300	84	7.9	2020	17.3	10	15	8	14	<5	26	2.5	220	480	450	110	42
8/2/96	1240	82	7.8	1830	15.6							2.3					
8/8/96	1315	78	8.2	1560	13.4							1.7					
8/15/96	1140	82	8.0	1610	13.0							1.7					
8/23/96	1225	80	7.9	1580	11.4							1.6					
8/28/96	1238	75	8.0	1590	12.5							1.6	190	360	330	75	35
9/5/96	1120	70	7.2	1710	16.4							1.7					
9/12/96	750	68	6.9	1800	14.1							9.3*					
9/17/96	1430	70	8.0	1540	14.4							1.8					
9/26/96	935	68	5.8	1250	3.8							0.75	170	200	230	49	26
Count		49	49	50	50	4	3	3	3	<5	3	48	12	12	12	12	12
Min		46	5.8	1010	1.0	6	12	6	11	<5	16	0.47	170	200	230	49	23
Max		84	8.2	3000	33.5	10	15	9	15	<5	26	3.5	370	670	580	144	54
Mean		66	7.7	2010	16.0	9	13	8	13	<5	23	2.0	271	484	412	99	40
Geo Mean		66	7.7	1960	13.4	8	13	8	13	<5	22	1.9	262	460	393	94	39
Median		68	7.8	2020	16.1	9	12	8	14	<5	26	2.0	290	520	450	106	44

APPENDIX B

Water Quality Data for Grab Samples: Water Year 1997

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* Sampling discontinued in December 1996

† Data only available for November 1996

SLD = San Luis Drain

Legend of Abbreviations

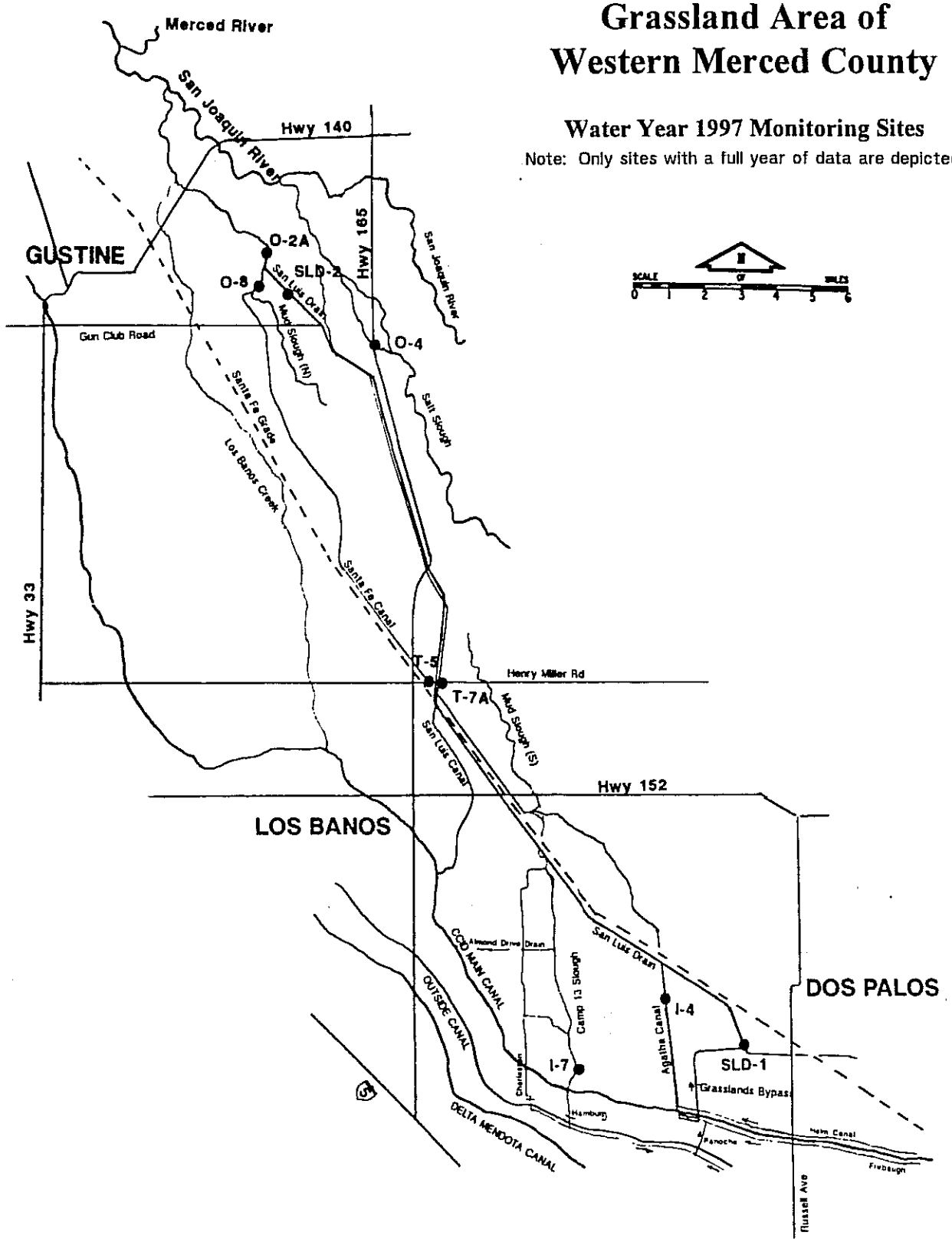
EC	Electrical Conductivity
Se	Selenium
Mo	Molybdenum
Cr	Chromium
Cu	Copper
Ni	Nickel
Pb	Lead
Zn	Zinc
B	Boron
Cl	Chlorine
SO4	Sulfate
HDNS	Hardness

Figure B-1

Grassland Area of Western Merced County

Water Year 1997 Monitoring Sites

Note: Only sites with a full year of data are depicted.



Main (Firebaugh) Drain at Russel Avenue (MER556)

Location: Latitude: 36°55'27", Longitude 120°39'11". In SW 1/4, SW 1/4, SW 1/4, Sec. 34, T.11S.,R.12E. East side of Russel Avenue, 2.7 miles south of Dos Palos.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
10/3/96	1045	68	7.8	4780	95.7	7.7
10/8/96	1150	72	7.4	4150	74.6	7.4
10/18/96	1140	60	7.7	4780	78.8	8.0
10/25/96	1335	61	7.6	3990	45.2	5.8
11/1/96	1400	60	7.9	2430	26.2	3.1
11/8/96	1135	55	7.7	5350	84.4	9.5
11/14/96	1035	58	8.0	3190	47.6	4.7
11/19/96	1110	61	8.0	2190	32.6	2.8
11/26/96	1200	58	7.7	4160	87.8	6.5
12/5/96	1053	NA	7.8	4150	88.2	6.5
12/10/96	1415	58	7.5	3440	73.2	5.2
12/20/96	1035	47	7.8	5130	104	8.3
12/27/96	0830	51	7.6	5870	134	9.5
Count		12	13	13	13	13
Min		47	7.4	2190	26.2	2.8
Max		72	8.0	5870	134	9.5
Mean		59	7.7	4124	74.8	6.5
Geo Mean		59	7.7	3973	68.2	6.1
Median		59	7.7	4150	78.8	6.5

Panoche Drain at O'Banion Gauge Station (MER501)

Location: Latitude 36°55'14", Longitude 120°41'43". In SW 1/4, SW 1/4, SW 1/4, Sec. 32, T.11S., R.12E. Located 0.5 miles south of CCID Main Canal, 1.9 miles west of Russel Road. 5.5 miles SW of Dos Palos. 3.4 miles SW of South Dos

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
10/3/96	1115	68	7.9	5720	120	8.9
10/8/96	1220	74	8.0	4470	66.5	8.5
10/18/96	1155	60	7.9	4900	49.6	8.8
10/25/96	1430	62	8.3	5050	96.6	8.8
11/1/96	1430	68	7.2	4560	62.3	7.6
11/8/96	1230	60	7.8	5150	89.6	8.7
11/14/96	1050	58	7.5	5400	98.0	9.6
11/26/96	1237	60	7.5	4080	27.7	7.0
12/5/96	1131	NA	7.6	4690	32.5	7.8
12/20/96	1155	50	7.9	4870	83.4	7.8
Count		9	10	10	10	10
Min		50	7.2	4080	27.7	7.0
Max		74	8.3	5720	120	9.6
Mean		62	7.7	4890	72.6	8.4
Geo Mean		62	7.7	4870	66.0	8.3
Median		60	7.8	4880	75.0	8.6

Agatha Canal at Mallard Road (MER506)

Location: Latitude: 36°56'12", Longitude 120°42'07". In NE 1/4, NW 1/4, SW 1/4, Sec. 7, T.11S., R.11E.
South of Sante Fe Grade at Brito, west of Mallard Road. 4.5 miles west of Dos Palos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/3/96	1215	70	8.5	481	1.0	0.21					
10/8/96	1315	74	8.7	324	0.7	0.16					
10/18/96	1240	64	7.9	358	0.6	0.16					
10/25/96	1510	59	8.6	412	0.7	0.21					
11/1/96	1238	62	7.7	407	1.0	0.21					
11/8/96	1355	57	6.6	427	0.7	0.20					
11/14/96	1145	59	8.5	445	0.8	0.23					
11/19/96	1030	61	8.5	528	0.9	0.28					
11/26/96	1120	60	8.3	418	1.0	0.21	55*	43*	87	18	10
12/5/96	1243	NA	8.3	601	1.4	0.31					
12/10/96	1430	56	7.8	573	1.3	0.36					
12/20/96	NA	NA	NA	612	1.3	0.39					
12/27/96	1040	54	7.0	704	1.8	0.46					
1/9/97	1103	52	8.0	305	NA	NA					
1/21/97	1400	56	8.1	231	NA	0.39					
2/4/97	0715	56	6.1	4240	NA	NA					
2/18/97	1310	55	8.4	193	NA	NA					
3/5/97	1433	NA	NA	187	0.8	0.18					
3/12/97	1035	NA	NA	NA	0.5	0.11					
3/19/97	1111	NA	NA	235	1.8	0.24					
3/26/97	1140	NA	NA	317	1.0	0.24					
4/2/97	1143	NA	NA	457	3.0	0.31					
4/9/97	1145	NA	NA	661	2.0	0.43					
4/16/97	1240	NA	NA	559	2.6	0.32					
4/23/97	1258	NA	NA	481	1.5	0.26					
5/1/97	1141	NA	NA	520	1.5	0.30					
5/7/97	1240	NA	NA	547	1.1	0.25					
5/14/97	1238	NA	NA	497	1.3	0.25					
5/21/97	1135	NA	NA	486	1.0	0.25					
5/28/97	1240	NA	NA	504	1.1	0.26					
6/4/97	1150	NA	NA	481	1.7	0.27					
6/11/97	1155	NA	NA	476	1.3	0.27					
6/18/97	1151	NA	NA	484	1.2	0.24					
6/25/97	1240	NA	NA	423	1.1	0.20					
7/2/97	1320	NA	NA	436	1.1	0.24					
7/9/97	1240	NA	NA	396	1.0	0.19					
7/16/97	1245	NA	NA	406	1.6	0.22					
7/23/97	1240	NA	NA	419	1.6	0.24					
7/30/97	1245	NA	NA	419	1.2	0.24					
8/6/97	1240	NA	NA	373	1.5	0.27					
8/13/97	1245	NA	NA	354	1.0	0.16					
8/20/97	1240	NA	NA	368	1.5	0.20					
8/27/97	1245	NA	NA	442	2.3	0.26					
9/3/97	1050	NA	NA	553	3.4	0.38					
9/10/97	1240	NA	NA	358	1.8	0.21					
9/17/97	1130	NA	NA	354	1.1	0.17					
9/24/97	956	NA	NA	379	1.0	0.19					
Count		15	16	46	43	44	0	0	1	1	1
Min		52	6.1	187	0.5	0.11			87	18	10
Max		74	8.7	4240	3.4	0.46			87	18	10
Mean		60	7.9	518	1.3	0.25			87	18	10
Geo Mean		59	7.9	441	1.2	0.24			87	18	10
Median		59	8.2	432	1.2	0.24			87	18	10

Hamburg Drain near Camp 13 Slough (MER504)

Location: Latitude: 36°56'20", Longitude 120°45'26". In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E. 50 feet south of CCID main canal. 9.2 miles S-SE of Los Banos. 6.7 miles W-SW of South Dos Palos.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
10/3/96	1015	69	8.5	476	1.3	0.24
10/8/96	1125	81	8.7	598	2.3	0.59
10/18/96	1105	62	8.0	3530	19.8	4.2
10/25/96	1130	59	8.4	3430	19.8	4.2
11/1/96	1505	79	8.2	3450	18.8	3.9
11/8/96	1055	62	8.4	3510	19.8	4.4
11/14/96	1010	59	8.3	3350	18.2	4.2
11/19/96	1237	66	8.3	3410	17.2	4.2
11/26/96	1330	68	8.2	3250	17.6	4.2
12/20/96	0955	46	7.5	3580	18.4	4.2
12/27/96	1700	52	8.0	3610	22.6	4.4
Count		11	11	11	11	11
Min		46	7.5	476	1.3	0.2
Max		81	8.7	3610	22.6	4.4
Mean		64	8.2	2930	16.0	3.5
Geo Mean		63	8.2	2460	12.4	2.7
Median		62	8.3	3430	18.4	4.2

Camp 13 Slough at Gauge Station (MER505)

Location: Latitude 36°56'21", Longitude 120°45'22". In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E. 150 feet north of CCID Main Canal, 6.4 miles west of Russel Avenue. 9.2 miles SE of Los Banos. 6.7 miles SW of South Dos Palos

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/3/96	1020	69	8.3	382	0.8	0.16					
10/8/96	1135	72	8.7	347	0.8	0.18					
10/18/96	1110	64	8.5	360	0.6	0.16					
10/25/96	1145	59	8.7	394	0.8	0.21					
11/1/96	1500	63	9.0	394	0.8	0.17					
11/8/96	1110	56	7.5	491	0.9	0.28					
11/14/96	1020	59	8.7	434	0.7	0.25					
11/19/96	1230	61	8.4	483	0.9	0.28					
11/26/96	1320	61	8.1	445	1.0	2.6	64*	49*	30	9	1.8
12/5/96	NA	NA	NA	NA	NA	NA					
12/10/96	NA	NA	NA	NA	NA	NA					
12/20/96	1005	46	8.4	612	1.4	0.37					
12/27/96	NA	NA	NA	689	1.7	0.40					
1/9/97	0929	50	8.5	224	NA	0.15					
1/21/97	NA	NA	NA	178	NA	NA					
2/4/97	0838	58	7.6	1600	23.4	1.8					
2/18/97	1409	56	7.9	172	NA	NA					
3/5/97	1400	58	6.6	1380	2.0	2.3					
3/12/97	0800	NA	NA	NA	2.8	3.5					
3/19/97	0837	NA	NA	1880	5.2	3.3					
3/26/97	0840	NA	NA	3760	3.7	7.1					
4/2/97	0840	NA	NA	3750	4.7	6.5					
4/9/97	0842	NA	NA	560	1.7	0.33					
4/16/97	0943	NA	NA	1290	2.7	1.6					
4/23/97	0920	NA	NA	480	1.6	0.30					
5/1/97	0927	NA	NA	955	2.6	1.0					
5/7/97	0925	NA	NA	1210	13.5	1.1					
5/14/97	1000	NA	NA	520	1.0	0.30					
5/21/97	0917	NA	NA	496	1.0	0.26					
5/28/97	0920	NA	NA	715	2.5	0.64					
6/4/97	1005	NA	NA	1190	2.3	1.4					
6/11/97	1051	NA	NA	703	1.5	0.69					
6/18/97	1034	NA	NA	519	1.4	0.33					
6/25/97	0953	NA	NA	1390	2.3	1.9					
7/2/97	1042	NA	NA	563	1.1	0.49					
7/9/97	1023	NA	NA	460	1.1	0.33					
7/16/97	1050	NA	NA	614	1.6	0.58					
7/23/97	1030	NA	NA	614	1.2	0.41					
7/30/97	1054	NA	NA	1110	2.2	1.2					
8/6/97	1050	NA	NA	1400	2.2	2.0					
8/13/97	1048	NA	NA	815	3.5	1.0					
8/20/97	1027	NA	NA	352	1.0	0.20					
8/27/97	1032	NA	NA	459	2.3	0.31					
9/3/97	1000	NA	NA	502	3.6	0.35					
9/10/97	1022	NA	NA	496	3.1	0.32					
9/17/97	1015	NA	NA	341	1.2	0.18					
9/24/97	800	NA	NA	439	1.2	0.23					
Count		14	14	44	42	43	0	0	1	1	1
Min		46	6.6	172	0.6	0.15			30	9	1.8
Max		72	9.0	3760	23.4	7.1			30	9	1.8
Mean		59	8.2	822	2.6	1.1			30	9	1.8
Geo Mean		59	8.2	634	1.8	0.58			30	9	1.8
Median		59	8.4	520	1.6	0.37			30	9	1.8

Charleston Drain at CCID Main Canal (MER502)

Location: Latitude 36°56'59" Longitude 120°46'48". In NE 1/4, SE 1/4, NE 1/4, Sec. 29, T.11S., R.11E.
North Side of CCID Main Canal, 8.7 miles S-SE of Los Banos. 7.9 miles W-SW of South Dos Palos.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
10/3/96	1005	68	8.2	979	6.7	0.71
10/8/96	1110	72	7.7	870	7.5	0.83
10/18/96	1050	62	7.1	1650	14.4	1.4
10/25/96	1115	58	7.8	1690	14.2	1.5
11/1/96	1510	63	8.6	1680	14.6	1.4
11/8/96	1045	56	7.5	1790	15.9	1.7
11/14/96	1000	58	8.0	1790	15.8	1.6
11/19/96	1300	62	8.7	1880	16.0	1.7
11/26/96	1345	60	8.4	1900	17.6	1.8
12/20/96	0945	48	7.5	2470	24.1	2.4
Count		10	10	10	10	10
Min		48	7.1	870	6.7	0.7
Max		72	8.7	2470	24.1	2.4
Mean		61	7.9	1670	14.7	1.5
Geo Mean		60	7.9	1600	13.8	1.4
Median		61	7.9	1740	15.2	1.6

Almond Drive Drain (MER555)

Location: Latitude 36°59'55", Longitude 120°49'00". In SW 1/4, SW 1/4, SW 1/4, Sec. 6, T.11S., R.11E.
North side of Almond Drive, 1.1 miles east of Mercy Springs Drain, 100 feet east of CCID Main Canal. 4.7 miles south of Los Banos

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
11/1/96	1530	63	8.7	360	0.6	0.14
11/26/96	1405	62	8.2	436	NA	NA
12/27/96	0758	51	6.8	588	NA	NA

Rice Drain at Mallard Road (MER509)

Location: Latitude 36°59'22" Longitude 120°42' 14". In NE 1/4, NW 1/4, SW 1/4, Sec. 7, T.11S., R.11E.
South of Sante Fe Grade at Brito, 50 feet west of Mallard Road. 4.5 miles west of Dos Palos.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
11/1/96	1230	60	7.3	1550	1.0	3.0
11/26/96	1125	59	7.7	1830	NA	NA
12/27/96	1030	54	7.5	2790	NA	NA

Salt Slough Ditch at Hereford Road (MER528)

Location: Latitude 37°08'30" Longitude 120°45'17". In NW 1/4, NE 1/4, NW 1/4, Sec. 22, T.9S., R.11E.
3.0 miles north on Hereford Road from Henry Miller Road.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
11/1/96	1140	60	7.9	741	0.5	0.20
11/27/96	950	55	7.1	758	NA	NA
12/26/96	1420	48	8.0	1110	NA	NA

CCID Main at Russel Avenue (MER510)

Location: Latitude 36°55'28", Longitude 120°39'11". In SE 1/4, SE 1/4, SE 1/4, Sec. 33, T.11S., R.12E.
2.7 miles south of Dos Palos.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
11/1/96	1405	61	8.4	352	0.7	0.13
11/26/96	1205	60	8.1	431	NA	NA
12/27/96	0835	51	7.8	599	NA	NA

Santa Fe Canal at Henry Miller Road (MER519)

Location: Latitude 37°05'59", Longitude 120°49'44". In NE 1/4, NE 1/4, Sec. 1, T.10S., R.10E. 0.3 miles east of Lander Avenue. 3.0 miles north of Gustine.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
11/1/96	1100	60	8.7	467	1.0	0.25	59	54	110	24	13
11/8/96	0940	54	7.0	482	0.8	0.24					
11/15/96	0937	57	7.3	573	0.9	0.35					
11/22/96	0930	63	6.9	620	1.0	0.41					
11/27/96	845	55	6.5	705	1.2	0.44					
12/6/96	0935	50	6.7	638	1.2	0.35					
12/12/96	1155	58	7.7	455	1.2	0.34					
12/19/96	1305	52	7.6	630	1.3	0.32					
12/26/96	1350	48	7.9	1230	1.5	1.5					
2/4/97	1110	58	8.4	544	2.3	0.49					
2/11/97	1240	58	7.9	339	0.8	0.35					
2/18/97	1200	55	7.5	1750	1.4	2.5					
2/28/97	1030	54	8.4	1760	2.3	2.5					
3/5/97	1530	NA	NA	1870	2.9	2.5					
3/12/97	1115	NA	NA	NA	2.0	1.6					
3/19/97	1145	NA	NA	1400	2.0	2.1					
3/26/97	1255	NA	NA	1870	3.1	2.9					
4/2/97	1326	NA	NA	1570	1.8	2.6					
4/9/97	1256	NA	NA	1480	2.4	1.8					
4/16/97	1320	NA	NA	1720	3.0	1.7					
4/23/97	1336	NA	NA	1130	3.2	1.1					
5/1/97	1310	NA	NA	870	2.6	0.81					
5/7/97	1314	NA	NA	825	2.9	0.66					
5/14/97	1321	NA	NA	861	1.9	0.65					
5/21/97	1335	NA	NA	746	1.6	0.63					
5/28/97	1315	NA	NA	892	2.1	0.86					
6/4/97	1340	NA	NA	1100	2.6	1.0					
6/11/97	1320	NA	NA	1070	2.5	1.1					
6/18/97	1330	NA	NA	968	2.4	1.1					
6/25/97	1325	NA	NA	1060	2.4	1.3					
7/2/97	1410	NA	NA	799	2.2	0.74					
7/9/97	1320	NA	NA	946	2.6	0.98					
7/16/97	1330	NA	NA	841	2.2	0.96					
7/23/97	1340	NA	NA	797	2.1	0.83					
7/30/97	1335	NA	NA	938	2.1	1.1					
8/6/97	1340	NA	NA	976	2.2	1.2					
8/13/97	1330	NA	NA	776	1.9	0.86					
8/20/97	1320	NA	NA	825	2.1	0.71					
8/27/97	1340	NA	NA	682	2.7	0.52					
9/3/97	1330	NA	NA	640	3.5	0.51					
9/10/97	1340	NA	NA	521	3.1	0.38					
9/17/97	1240	NA	NA	642	3.9	0.54					
9/24/97	1025	NA	NA	499	1.3	0.38					
Count		13	13	42	43	43	1	1	1	1	1
Min		48	6.5	339	0.8	0.24	59	54	110	24	13
Max		63	8.7	1870	3.9	2.9	59	54	110	24	13
Mean		56	7.6	941	2.1	1.0	59	54	110	24	13
Geo Mean		55	7.5	859	2.0	0.81	59	54	110	24	13
Median		55	7.6	833	2.1	0.83	59	54	110	24	13

San Luis Canal at Henry Miller Road (MER532)
Location: Latitude 37 06' 00" Longitude 120 49' 13". In SE 1/4, SW 1/4, SE 1/4, Section 36, T10s, R10E.
The site is 3 miles northeast of Los Banos at the Los Banos Wildlife Refuge.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L
11/1/96	1105	60	8.2	828	1.1	0.90
11/8/96	0950	55	7.5	943	1.1	1.1
11/15/96	0945	58	7.4	967	1.0	1.2
11/22/96	0940	63	7.1	910	1.1	1.1
11/27/96	925	56	7.1	1020	1.1	1.2
12/6/96	0950	50	7.0	911	1.1	0.88
12/12/96	1200	57	7.5	868	1.1	1.3
12/19/96	1315	52	7.6	1080	1.2	1.3
12/26/96	1410	NA	NA	NA	NA	NA
2/4/97	1120	60	7.9	1290	6.2	1.5
2/11/97	1250	59	7.2	1240	1.1	1.8
2/18/97	1210	55	7.7	1700	1.0	2.5
2/28/97	1040	52	8.2	1300	1.6	2.0
3/5/97	1520	NA	NA	1590	1.5	2.2
3/12/97	1125	NA	NA	NA	1.1	1.0
3/19/97	1150	NA	NA	1230	2.5	1.6
3/26/97	1115	NA	NA	1840	2.5	3.3
4/2/97	1340	NA	NA	1820	3.6	2.3
4/9/97	1315	NA	NA	1550	2.7	1.8
4/16/97	1307	NA	NA	1110	3.2	0.94
4/23/97	1328	NA	NA	1120	3.3	1.1
5/1/97	1320	NA	NA	860	3.0	0.78
5/7/97	1320	NA	NA	775	2.3	0.57
5/14/97	1315	NA	NA	803	1.6	0.57
5/21/97	1345	NA	NA	908	1.9	0.86
5/28/97	1307	NA	NA	848	1.9	0.69
6/4/97	1350	NA	NA	909	2.6	0.79
6/11/97	1315	NA	NA	798	2.1	0.69
6/18/97	1306	NA	NA	813	2.2	0.80
6/25/97	1315	NA	NA	860	2.1	0.80
7/2/97	1400	NA	NA	698	1.9	0.61
7/9/97	1310	NA	NA	917	2.5	0.87
7/16/97	1321	NA	NA	628	1.8	0.52
7/23/97	1320	NA	NA	762	2.1	0.71
7/30/97	1320	NA	NA	750	1.8	0.75
8/6/97	1330	NA	NA	886	2.0	0.86
8/13/97	1310	NA	NA	619	1.5	0.55
8/20/97	1311	NA	NA	781	2.0	0.73
8/27/97	1330	NA	NA	708	2.7	0.57
9/3/97	1300	NA	NA	605	3.2	0.47
9/10/97	1331	NA	NA	501	3.4	0.38
9/17/97	1150	NA	NA	660	4.3	0.57
9/24/97	1020	NA	NA	507	1.6	0.36
Count		12	12	41	42	42
Min		50	7.0	501	1.0	0.36
Max		63	8.2	1840	6.2	3.3
Mean		56	7.5	973	2.1	1.1
Geo Mean		56	7.5	924	1.9	0.94
Median		57	7.5	886	2.0	0.87

Porter-Blake Bypass (MER548)

Location: Latitude 37°05'58.5", Longitude 120°49'14.5". In NW 1/4, Sec. 1, T.10S., R.10E. 7.5 miles east of the intersection of Henry Milller and Mercy Springs Roads. 2 miles north of Los Banos.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	B mg/L
11/1/96	1120	62	8.00	832	1.0	0.92
11/27/96	910	55	6.86	1050	1.1	1.3

Mud Slough (north) at San Luis Drain (MER542)

Location: Latitude 37°19'50", Longitude 120°57"03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E. 5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/3/96	0840	68	7.0	3490	56.7		4.9					
10/8/96	0950	73	8.0	1890	20.3		2.5					
10/18/96	0835	59	6.0	1680	13.5		2.1					
10/25/96	0930	58	8.0	1540	13.8		1.8					
10/29/96	1135	56	7.4	1880	12.2	11	NA					
11/1/96	0835	59	6.4	1810	NA		2.0	210	390	410	98	39
11/8/96	0830	54	7.6	1510	8.0		1.5					
11/14/96	0815	58	6.5	1590	9.1		1.8					
11/19/96	0915	62	6.5	1710	11.2		2.0					
11/26/96	0830	59	6.5	1430	9.0	8	1.5	180	270	270	59	30
12/5/96	0809	NA	6.5	1860	5.0		2.0					
12/10/96	1145	56	7.3	1500	5.5		1.6					
12/27/96	1158	56	7.4	1150	5.7	3	1.1					
1/9/97	1342	54	7.7	1280	5.0		1.3					
1/21/97	0940	53	7.7	1620	9.2	6	1.8					
2/4/97	1231	62	7.5	1310	7.4		1.5					
2/11/97	0955	55	7.8	2250	16.8		2.9					
2/18/97	0935	52	7.8	3140	33.2		4.3					
2/28/97	0758	51	8.1	3350	32.4	19	4.2					
3/5/97	1710	58	8.5	3770	44.8		5.3					
3/13/97	0810	61	8.2	3560	46.5		5.1					
3/20/97	0800	64	7.9	2980	33.2		3.9					
3/27/97	1425	72	8.3	3640	42.4	17	4.5					
4/3/97	1247	60	8.1	4420	61.9		6.1					
4/10/97	0730	58	7.4	4770	69.1		6.2					
4/17/97	1210	72	8.0	3870	58.6		4.9					
4/24/97	1116	64	8.4	4660	79.6	24	6.5					
5/2/97	0945	64	8.4	4280	52.0		5.9					
5/8/97	0725	67	8.1	4930	63.1		6.8					
5/15/97	1415	83	8.6	3920	58.7		5.3					
5/29/97	0935	76	8.5	2890	32.3	17	4.2					
6/5/97	1113	74	8.3	3810	47.2		5.5					
6/12/97	1110	78	8.5	3730	36.4		6.0					
6/19/97	NA	NA	NA	NA	NA		NA					
6/25/97	1115	76	8.2	3640	41.6	21	5.6					
7/2/97	1300	77	8.4	3990	50.4		6.6					
7/10/97	1144	78	8.3	3310	29.7		5.8					
7/17/97	1140	82	8.4	3730	33.3		6.5					
7/24/97	1148	82	7.9	3510	36.4		6.1					
7/31/97	1245	80	7.2	2550	18.4	16	4.2					
8/7/97	0947	81	8.0	3150	28.6		5.2					
8/14/97	1220	80	7.6	3650	37.5		6.3					
8/21/97	1537	84	7.8	3100	32.9		4.8					
8/27/97	1145	78	6.0	3340	40.6	23	5.3					
9/5/97	0915	80	7.2	3080	23.6		4.7					
9/12/97	0930	73	7.4	2640	20.4		4.1					
9/18/97	1252	78	7.8	1950	8.4		2.7					
9/25/97	1505	84	8.0	2170	8.6	20	3.0					
Count		46	47	47	46	12	46	2	2	2	2	2
Min		51	6.0	1150	5.0	3	1.1	180	270	270	59	30
Max		84	8.6	4930	79.6	24	6.8	210	390	410	98	39
Mean		68	7.7	2870	30.7	15	4.1	195	330	340	79	35
Geo Mean		67	7.6	2660	23.3	13	3.6	194	324	333	76	34
Median		66	7.8	3100	32.4	17	4.4	195	330	340	79	35

Los Banos Creek at State Highway 140 (MER554)

Location: Latitude 37°16'35", Longitude 120°57'14". In NE 1/4, SW 1/4, SW 1/4, Sec., 35, T.7S., R.9E.
South side of highway 140, 2.9 miles NE of Gustine.

Date	Time	Temp F	pH	Lab EC (µmhos/cm)	Se (µg/L)	Boron (mg/L)
10/31/96	1055	58	7.0	725	0.3	0.52
11/27/96	1130	57	7.1	1140	NA	NA
12/26/96	1250	48	7.8	1320	NA	NA

Salt Slough at Lander Avenue (State Highway 165) (MER531)

Location: Latitude 37°14'55", Longitude 120°51'04". In NW 1/4, SE 1/4, SE 1/4, Sec. 10, T.8S., R.10E. 13.0 miles north of Los Banos. 5.0 miles south of Highway 140.

Date	Time	Temp °F	pH	EC µmhos/cm	Se	Mo	Cr	Cu	Ni	Pb	Zn	B	Cl	SO4	HDNS	Ca	Mg
					µg/L							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
10/3/96	0745	67	5.6	1400	1.2							0.70					
10/8/96	1030	72	7.9	1110	1.1							0.55					
10/17/96	1025	65	6.7	1790	0.8							0.80					
10/24/96	0900	59	6.1	1360	0.7							0.66					
10/31/96	0950	57	5.7	1000	1.0	4						0.58	130	130	240	53	25
11/7/96	0740	58	5.3	1280	0.8							0.85					
11/15/96	1005	57	7.5	1420	0.8							0.87					
11/22/96	1010	64	7.4	1320	1.0							0.94					
11/27/96	1040	58	7.1	1320	0.8	4						0.99	190	200	290	65	31
12/6/96	1010	51	7.2	1500	0.9							1.0					
12/12/96	1135	58	6.9	1130	1.1							1.1					
12/19/96	1230	54	7.0	1680	0.7							1.1					
12/26/96	1322	48	7.4	1780	0.8	7						1.1					
1/9/97	1225	52	8.0	1200	1.0							0.85					
1/24/97	1255	52	7.0	1610	1.0	7						1.3	240	290	350	76	39
2/7/97	1420	57	7.4	1930	3.4							1.8					
2/13/97	1310	54	7.8	1670	0.7							1.3					
2/21/97	1010	56	7.3	1310	0.5							0.71					
2/26/97	1250	53	7.4	1110	0.6	7						0.50					
3/5/97	1615	57	7.8	1070	0.5							0.47					
3/12/97	1820	59	7.8	1090	0.6							0.52					
3/20/97	1030	66	8.0	1180	1.4							0.75					
3/27/97	1310	70	7.5	1780	1.1	7						1.3					
4/3/97	1020	60	7.7	2000	1.0							1.1					
4/10/97	0820	58	8.1	1860	1.0							0.81					
4/17/97	1020	70	8.0	1770	1.1							0.75					
4/24/97	1012	62	7.5	1820	1.1	10						0.81	280	250	360	77	41
5/2/97	0800	61	8.2	1670	1.1							0.82					
5/8/97	0821	69	7.9	1700	1.1							0.77					
5/15/97	0905	75	7.9	1670	1.1							0.74					
5/23/97	1200	72	8.2	1360	0.9							0.56					
5/29/97	1050	78	8.4	1200	1.3	6						0.65					
6/5/97	0952	70	6.6	1620	1.2							0.74					
6/12/97	1240	80	8.1	1370	1.1							0.61					
6/19/97	NA	NA	NA	NA	NA							NA					
6/25/97	1010	76	7.8	1350	1.1	9						0.73					
7/2/97	1150	74	7.7	1070	1.1							0.50					
7/10/97	0932	75	7.8	1310	0.9							0.63					
7/17/97	1100	78	8.6	1030	1.0							0.48					
7/24/97	0945	78	8.2	1140	0.9							0.56					
7/31/97	1045	78	8.4	975	1.1	5						0.57	110	120	200		
8/7/97	0834	79	7.3	1130	1.3							0.69					
8/14/97	1135	80	7.8	922	0.8							0.46					
8/21/97	1214	80	7.6	982	0.9							0.40					
8/27/97	1430	80	6.0	1110	1.0	5						0.48					
9/5/97	1050	82	8.1	1190	1.8							0.53					
9/12/97	0815	74	6.7	1200	1.5							0.57					
9/18/97	1039	74	7.0	1050	1.6							0.50					
9/25/97	1600	85	8.0	1380	0.7	9						0.65					
Count		48	48	48	48	12	0	0	0	0	0	48	5	5	5	4	4
Min		48	5.3	922	0.5	4						0.40	110	120	200	53	25
Max		85	8.6	2000	3.4	10						1.8	280	290	360	77	41
Mean		67	7.4	1370	1.0	7						0.77	190	198	288	68	34
Geo Mean		66	7.4	1340	1.0	6						0.73	179	187	281	67	33
Median		67	7.6	1320	1.0	7						0.72	190	200	290	71	35

Mud Slough Upstream of San Luis Drain (MER536)

Location: Latitude 37°19'50", Longitude 120°57"03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E. 5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L
10/3/96	0830	65	6.3	1050	0.7		0.65					
10/8/96	1010	71	8.0	744	0.6		0.56					
10/18/96	0825	58	5.2	967	0.8		0.77					
10/25/96	0955	57	7.8	953	0.5		0.71					
10/29/96	1135	56	7.8	1120	0.5	7	NA	NA	NA	NA	NA	NA
11/1/96	0820	59	5.4	1020	NA		0.77					
11/8/96	0810	54	7.3	1050	0.4		0.76					
11/14/96	0805	58	6.1	1020	0.4		0.75					
11/19/96	0900	62	6.5	1070	0.4		0.81					
11/26/96	0905	59	7.3	1000	0.5	NA	0.79	140	120	180	34	23
12/5/96	0801	NA	5.9	1380	0.5		1.0					
12/10/96	1215	58	7.4	983	0.5		0.75					
12/20/96	0835	46	7.9	950	0.4		0.80					
12/27/96	1150	56	7.4	828	0.5	3	0.67					
1/9/97	1331	54	7.5	921	<0.4		0.72					
1/21/97	0920	53	7.6	1070	0.4	3	0.87	120	140	210	39	27
2/4/97	1219	62	7.5	875	0.5		0.77					
2/11/97	0930	56	7.2	1430	0.7		1.4					
2/18/97	0925	52	7.6	1730	0.7		1.8					
2/28/97	0741	50	7.6	2040	1.0	NA	2.0					
3/5/97	1725	60	8.3	2030	0.8		2.0					
3/13/97	0750	51	7.1	1970	1.0		2.1					
3/20/97	0739	64	6.8	1910	1.0		2.1					
3/27/97	1415	72	8.1	2350	0.9	7	2.4					
4/3/97	1311	66	8.2	2350	1.1		2.6					
4/10/97	0718	54	6.8	2960	1.3		2.9					
4/17/97	1225	72	8.2	1720	1.7		1.5					
4/24/97	1140	62	8.4	2360	1.2	11	2.1	320	490	430	74	59
5/2/97	1010	63	8.2	2430	0.9		2.3					
5/8/97	0711	63	8.4	2470	0.8		2.1					
5/15/97	1435	84	8.5	1430	1.4		1.1					
5/23/97	1040	70	7.9	1080	0.7		0.95					
5/29/97	0950	76	8.3	1130	1.2	5	0.94					
6/5/97	1128	74	8.3	1610	1.6		1.3					
6/12/97	1125	78	8.3	1500	1.5		1.2					
6/19/97	NA	NA	NA	NA	NA		NA					
6/25/97	1105	76	7.9	1460	1.7	7	1.4					
7/2/97	1245	79	8.4	1540	1.0		1.3					
7/10/97	1205	77	8.1	1200	1.4		1.1					
7/17/97	1200	80	8.3	1550	1.3		1.3					
7/24/97	1204	83	8.1	1160	1.5		1.0					
7/31/97	1300	80	8.0	859	1.1	3	0.70	93	120	190		
8/7/97	1002	81	8.3	1130	0.8		0.92					
8/14/97	1210	82	7.3	1160	0.6		0.91					
8/21/97	1556	89	8.2	1220	0.6		0.98					
8/27/97	1135	78	5.8	1260	1.1	5	0.96					
9/5/97	0900	76	7.4	1190	0.6		0.85					
9/12/97	0920	78	7.3	873	0.7		0.62					
9/18/97	1307	79	8.1	881	1.0		0.60					
9/25/97	1455	84	7.6	1050	0.6	10	0.77					
Count		48	49	49	48	10	48	4	4	4	3	3
Min		46	5.2	744	<0.4	3	0.56	93	120	180	34	23
Max		89	8.5	2960	1.7	11	2.9	320	490	430	74	59
Mean		67	7.5	1390	0.8	6	1.2	168	218	253	49	36
Geo Mean		66	7.5	1300	0.8	6	1.1	150	177	236	46	33
Median		65	7.8	1160	0.8	6	0.96	130	130	200	39	27

Inflow at San Luis Drain: check 17 (MER562)

Location: Latitude: 36°57.980', Longitude 120°40.238'. In Sec. 21, T.11S., R.12E. Just west of South Dos Palos.
Slightly downstream of point where the Grasslands Bypass empties into the San Luis Drain.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Diss Se ug/L	TSS mg/L
10/3/96	1200	70	8.1	5210	77.4		7.8				79.1	
10/8/96	1300	78	8.3	4220	75.5		7.7					44
10/18/96	1230	62	7.1	3940	38.6		7.1				37.5	140
10/25/96	1450	58	8.3	4270	51.4		6.7				49.5	
10/29/96	1400	54	8.1	4020	62.0	27	NA				61.6	
11/1/96	1310	62	7.4	3610	NA		5.1					
11/8/96	1330	58	6.8	4250	61.3		7.9				61.1	42
11/14/96	1130	58	8.1	4390	76.8		7.3					51
11/19/96	1100	64	7.7	3460	56.2		5.6				57.0	77
11/26/96	1140	60	7.4	3470	40.6		5.7				39.6	64
12/5/96	1222	NA	7.7	5000	68.4		8.4				69.9	49
12/10/96	1400	58	7.0	4020	NA		NA				56.3	110
12/20/96	1305	48	8.5	4970	80.4		8.3				80.2	56
12/27/96	0945	55	7.8	5130	91.7		8.2				91.9	92
1/9/97	0854	50	8.0	4710	78.7		7.4				76.6	90
1/21/97	1315	61	8.0	4870	88.2	16	7.5				84.8	180
2/4/97	1006	62	8.0	5140	72.0		8.7				70.5	71
2/11/97	1355	59	7.9	5360	97.5		9.0				96.6	58
2/18/97	1245	55	7.9	5140	80.3		8.3				78.6	41
2/28/97	1124	54	8.0	5330	90.3		8.5				86.4	
3/5/97	1435	58	7.5	5100	88.4		8.1				91.1	38
3/12/97	0950	NA	NA	NA	76.6		6.9				77.2	
3/19/97	1050	NA	NA	4420	74.6		6.8				71.1	85
3/26/97	1100	NA	NA	4580	67.0		6.6				61.0	160
4/2/97	1115	NA	NA	5370	93.0		8.1				95.8	120
4/9/97	1115	NA	NA	5600	108		7.6				117	130
4/16/97	1140	NA	NA	5310	104		7.1				104	83
4/23/97	1125	NA	NA	5290	101		8.0				97.6	110
5/1/97	1113	NA	NA	5480	96.8		8.4				96.6	110
5/7/97	1220	NA	NA	4930	73.6		7.3				73.0	62
5/14/97	1130	NA	NA	4380	61.6		6.8				57.6	130
5/21/97	1100	NA	NA	4380	65.0		7.4				63.6	160
5/28/97	1130	NA	NA	4330	58.5		7.0				60.6	45
6/4/97	1055	NA	NA	4780	52.1		7.8				50.6	87
6/11/97	1120	NA	NA	4980	81.0		8.7				78.9	39
6/18/97	1112	NA	NA	4690	67.5		7.8				63.1	170
6/25/97	1141	NA	NA	4850	61.5		8.5				60.5	130
7/2/97	1123	NA	NA	4660	65.8		8.5				64.1	130
7/9/97	1117	NA	NA	4140	40.6		7.7				40.5	150
7/16/97	1123	NA	NA	4220	54.5		7.8				53.0	120
7/23/97	1119	NA	NA	4050	40.5		7.1				43.5	110
7/30/97	1134	NA	NA	3950	45.5		7.3				44.6	170
8/6/97	1130	NA	NA	4130	53.8		7.8				50.4	120
8/13/97	1122	NA	NA	3650	38.4		6.4				39.0	140
8/20/97	1106	NA	NA	3330	30.8		6.4				30.4	160
8/27/97	1110	NA	NA	3990	55.4		6.9				53.7	
9/3/97	0900	NA	NA	4250	52.1		6.6				49.4	65
9/10/97	1130	NA	NA	2620	17.9		4.2				16.6	190
9/17/97	1050	NA	NA	3160	22.8		5.5				21.8	94
9/24/97	945	NA	NA	3460	29.0		6.0				28.0	96
Count		20	21	49	48	2	48	0	0	0	47	43
Min		48	6.8	2620	17.9	16	4.2				16.6	38
Max		78	8.5	5600	108	27	9.0				117	190
Mean		59	7.8	4460	65.9	22	7.3				64.5	100
Geo Mean		59	7.8	4405	61.7	21	7.3				60.0	92
Median		58	7.9	4390	66.4	22	7.5				61.6	96

San Luis Drain @ Terminus (MER535)

Location: Latitude 37°19'50", Longitude 120°57'03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E. 5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

Date	Time	Temp °F	pH	EC µmhos/cm	Se µg/L	Mo µg/L	B mg/L	Cl mg/L	SO4 mg/L	HDNS mg/L	Ca mg/L	Mg mg/L	Diss Se µg/L	TSS mg/L
10/3/96	0915	70	7.9	4340	66.8		6.4						65.8	
10/8/96	0930	74	7.3	4330	62.5		6.9							8
10/18/96	0935	62	6.9	3590	43.0		6.0						41.8	67
10/25/96	0859	58	8.0	4280	79.8		7.2						77.2	NA
10/29/96	1045	54	7.6	4260	54.6	35	NA	460	1200	1000	280	79	54.8	
11/1/96	0915	60	7.4	4010	NA		6.0							
11/8/96	0900	55	8.0	3570	43.2		5.2						42.1	12
11/14/96	0850	58	7.6	4330	58.0		7.5						NA	8
11/19/96	0930	62	7.2	4770	75.8		8.4						75.2	10
11/26/96	0950	60	7.4	3300	58.9	30	5.5	390	1100	860	230	69	56.4	<1
12/5/96	840	NA	7.1	3910	30.1		6.2						31.0	14
12/10/96	1110	56	6.5	4330	38.9		7.3						39.0	25
12/20/96	0945	46	8.1	4200	49.8		7.1						49.0	15
12/27/96	1321	57	7.6	4000	60.8	23	5.9						61.6	22
1/9/97	1505	56	7.9	3830	33.3		5.2						34.2	12
1/21/97	1050	54	7.9	4530	57.0	22	7.0	520	1400	1100	280	92	56.4	33
2/4/97	1315	62	7.6	4510	63.6		7.2						61.8	27
2/11/97	1050	58	7.8	5110	78.4		8.3						78.4	33
2/18/97	1020	54	8.1	5150	79.7		8.1						83.2	34
2/28/97	0905	50	8.3	4770	77.6	27	7.1						73.4	
3/5/97	1700	58	8.3	5210	89.3		8.2						87.1	26
3/13/97	0925	58	7.1	4630	91.8		7.3						84.4	
3/20/97	0925	64	8.4	4280	70.2		6.6						70.4	27
3/27/97	1445	72	8.5	4630	78.9	29	6.5						78.1	45
4/3/97	1050	59	8.1	5130	96.2		7.4						93.7	33
4/10/97	0755	58	7.6	5270	105		7.2						102	37
4/17/97	1055	71	8.2	5460	107		7.8						110	34
4/24/97	1048	65	8.0	5020	95.2	26	7.3	600	1700	1200	320	100	93.6	48
5/2/97	0830	63	8.4	5080	72.6		7.3						73.7	39
5/8/97	0750	67	8.3	5270	80.3		7.7						78.3	29
5/15/97	0940	76	8.5	4670	75.2		6.6						75.7	28
5/23/97	1105	74	8.2	4200	64.2		6.7						64.6	46
5/29/97	0915	78	8.2	4350	62.3	23	7.1						60.9	140
6/5/97	1018	74	8.0	4820	72.8		7.8						70.4	46
6/12/97	1015	76	8.5	4560	54.6		7.9						55.0	27
6/19/97	NA	NA	NA	NA	NA		NA						71.3	23
6/25/97	1135	76	8.3	4690	73.3	26	7.7						73.6	13
7/2/97	1230	76	8.4	4410	59.9		7.8						59.8	30
7/10/97	1118	78	8.3	4030	34.9		7.4						35.0	25
7/17/97	1120	80	8.2	4060	37.0		7.4						37.0	18
7/24/97	1011	81	8.0	4000	41.8		7.1						39.5	17
7/31/97	1200	78	6.3	3940	43.7	25	7.2	420	1300	920			42.4	17
8/7/97	0856	81	7.6	3190	27.9		5.6						27.7	21
8/14/97	1235	80	8.0	3780	42.3		6.8						41.7	18
8/21/97	1430	82	7.2	3240	31.2		5.3						31.0	32
8/27/97	1200	78	7.2	3840	48.9	25	6.4						47.2	17
9/5/97	0930	82	8.1	3190	23.4		5.1						23.3	25
9/12/97	1020	78	7.9	2720	17.0		4.4						16.4	22
9/18/97	1225	78	7.3	2920	17.1		4.8						17.0	22
9/25/97	1535	82	8.0	3390	18.3	35	5.6						18.4	19
Count		48	49	49	48	12	48	5	5	5	4	4	47	44
Min		46	6.3	2720	17.0	22	4.4	390	1100	860	230	69	16.4	8
Max		82	8.5	5460	107	35	8.4	600	1700	1200	320	100	110	140
Mean		67	7.8	4270	59.3	27.167	6.8	478	1340	1016	278	85	58.7	28
Geo Mean		66	7.8	4220	54.0	26.867	6.7	472	1325	1009	276	84	53.4	23
Median		66	8.0	4330	60.4	26	7.1	460	1300	1000	280	86	60.9	25

APPENDIX C

Water Quality Data from Sigma Autosamplers: Water Years 1996 and 1997

Map Index	RWQCB Site I.D.	Site Name	Period of Record	Page
I-1	MER556S	Main (Firebaugh) Drain @ Russell Ave.	10/95-12/96	99
I-2	MER501S	Panoche Drain	10/95-1/97	101
I-4	MER506S	Agatha Canal @ Mallard Road	1/97-3/97	103
I-7	MER505S	Camp 13 Slough	1/97-3/97	104
O-2	MER542S	Mud Slough (N) downstream of San Luis Drain	10/95-3/97	105
O-4	MER531S	Salt Slough @ Lander Avenue	10/95-3/97	107
SLD-2	MER535S	San Luis Drain @ Terminus	9/96-9/97	109

Legend of Abbreviations

EC	Electrical Conductivity
Se	Selenium
B	Boron

Main (Firebaugh) Drain at Russel Avenue (MER556S)

Location: Latitude: 36°55'27", Longitude 120°39'11". In SW 1/4, SW 1/4, SW 1/4, Sec. 34, T.11S.,R.12E.
East side of Russel Avenue, 2.7 miles south of Dos Palos.

AUTOSAMPLER DATA : 4 day composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L
10/4/95	2120	33.7	2.8
10/6/95	2870	50.7	NA
10/10/95	2630	56.4	3.4
10/14/95	2250	36.4	3.0
10/18/95	2060	27.4	2.9
10/22/95	2870	34.5	3.6
10/26/95	2630	29.4	3.5
10/30/95	3670	38.4	4.7
11/3/95	3700	40.3	4.4
11/7/95	3060	42.8	4.2
11/11/95	2320	31.0	3.1
11/15/95	3140	48.0	4.6
11/19/95	3250	30.1	4.2
11/24/95	2640	47.2	3.6
11/28/95	3330	60.4	4.8
12/2/95	2310	38.8	2.8
12/6/95	2550	53.3	2.9
12/8/95	2220	42.6	2.6
12/12/95	2000	31.9	2.1
12/16/95	2200	35.4	2.3
12/20/95	3070	57.8	3.8
12/22/95	3390	65.2	4.4
12/26/95	4080	81.8	5.3
12/30/95	2890	56.4	3.5
1/3/96	5150	108	6.9
1/4/96	NA	NA	NA
1/8/96	3890	NA	NA
1/12/96	4600	83.8	5.7
1/16/96	5520	94.4	7.6
1/18/96	NA	122	NA
1/22/96	4540	112	6.7
1/26/96	3680	87.9	5.2
1/30/96	2870	55.6	3.4
2/2/96	2710	53.4	2.7
2/6/96	3560	63.2	3.4
2/10/96	4870	108	NA
2/14/96	4930	98.2	NA
2/16/96	4760	95.9	4.4
2/20/96	4890	102	NA
2/23/96	4600	101	NA
2/28/96	4820	104	NA
3/1/96	5460	130	NA
3/5/96	NA	NA	NA
3/9/96	NA	NA	NA
3/13/96	NA	NA	NA
3/17/96	NA	NA	NA
3/22/96	5160	136	6.2
3/26/96	4910	130	5.7
3/30/96	4070	108	4.7
4/3/96	4610	121	5.7
4/7/96	4540	119	5.4
4/11/96	4770	120	5.8
4/15/96	4230	104	5.3
4/19/96	2990	61.9	3.4
4/23/96	3710	85.6	3.9
4/27/96	3590	90.8	3.9
5/1/96	4550	122	4.6
5/3/96	4030	94.0	NA
5/7/96	3390	74.3	3.6
5/11/96	3200	64.5	3.3
5/15/96	2920	54.6	3.0
5/16/96	2640	49.5	NA
5/20/96	2640	40.0	2.5
5/24/96	2770	46.2	3.1
5/28/96	2760	48.8	3.0
5/30/96	2610	44.5	3.0
6/3/96	2870	43.6	3.4
6/7/96	2600	35.4	3.2
6/11/96	2910	43.1	3.5
6/15/96	2510	34.6	2.9
6/19/96	2570	34.9	3.0
6/23/96	3250	52.2	3.5
6/27/96	3410	57.4	3.6
7/1/96	3240	55.0	4.3
7/5/96	2870	44.8	4.1
7/9/96	2400	36.2	3.4
7/11/96	2530	35.8	3.7
7/15/96	3350	57.4	3.9
7/19/96	2400	34.2	3.2
7/23/96	2350	32.2	3.3
7/25/96	2330	33.3	3.3
7/29/96	2060	27.8	2.8
8/2/96	1970	29.4	2.5
8/6/96	2040	31.0	2.9
8/8/96	1910	28.6	2.5
8/12/96	1990	27.9	2.7
8/16/96	1960	25.2	2.7
8/20/96	1830	26.0	2.6
8/23/96	1980	30.2	2.7
8/27/96	2270	31.7	3.0
8/31/96	2410	38.2	2.9
9/4/96	2890	51.4	3.8
9/5/96	2850	52.0	NA
9/9/96	2570	41.2	3.3
9/13/96	2730	44.8	3.4
9/17/96	2610	36.7	3.3
9/21/96	2320	33.4	3.0
9/25/96	2740	31.8	3.2
9/29/96	3280	35.0	3.7

	EC µmhos/cm	Se g/L	B mg/L
Count	93	93	82
Min	1830	25.2	2.1
Max	5520	136	7.6
Mean	3185	59.7	3.8
Geo Mean	#NUM!	52.9	3.6
Median	2870	48.8	3.4

Main (Firebaugh) Drain at Russel Avenue (MER556S)

Location: Latitude: 36°55'27", Longitude 120°39'11". In SW 1/4, SW 1/4, SW 1/4, Sec. 34, T.11S.,R.12E.
East side of Russel Avenue, 2.7 miles south of Dos Palos.

AUTOSAMPLER DATA : 4 day composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L
10/3/96	4500	68.0	6.2
10/7/96	4290	71.4	
10/8/96	4490	96.8	
10/12/96	2750	36.3	
10/16/96	3700	56.2	
10/20/96	4530	76.2	
10/24/96	3760	40.9	
10/25/96	4050	40.8	
10/29/96	4490	58.4	
11/2/96	2690	28.8	
11/6/96	4360	64.0	
11/8/96	5210	80.5	
11/12/96	4040	61.0	
11/16/96	3170	51.8	
11/19/96	2290	40.0	
11/23/96	2550	45.4	
11/27/96	3740	70.4	
12/1/96	4740	108.0	
12/5/96	5210	118.0	
12/9/96	3410	72.4	
12/13/96	3670	73.0	
12/17/96	4800	103.0	
12/20/96	5260	109.0	
12/24/96	5420	122.0	
12/26/96	5550	125.0	
Count	25	25	1
Min	2290	28.8	6.2
Max	5550	125.0	6.2
Mean	4107	72.7	6.2
Geo Mean	3996	67.2	6.2
Median	4290	70.4	6.2

Panoche Drain at O'Banion Guage Station (MER501S)

Location: Latitude 36°55'14", Longitude 120°41'43". In SW 1/4, SW 1/4, SW 1/4, Sec. 32, T.11S., R.12E. Located 0.5 miles south of CCID Main Canal, 1.9 miles west of Russel Road. 5.5 miles SW of Dos Palos.

AUTOSAMPLER DATA: 4 DAY COMPOSITE SAMPLES

Date	EC µmhos/cm	Se µg/L	B mg/L
10/2/95	5220	149	7.9
10/6/95	NA	NA	NA
10/10/95	4710	23.4	7.8
10/14/95	5120	25.0	8.5
10/18/95	5100	50.5	8.8
10/22/95	5150	111	8.6
10/26/95	5050	116	8.4
10/30/95	4430	89.2	7.5
11/3/95	3860	69.6	6.3
11/7/95	3950	64.6	7.0
11/11/95	3970	74.7	6.6
11/15/95	3720	55.6	5.9
11/19/95	3480	53.0	5.8
11/24/95	3840	70.6	6.3
11/28/95	3950	74.2	6.0
12/2/95	3910	81.2	6.8
12/6/95	3380	68.1	5.5
12/8/95	3470	71.4	5.6
12/12/95	4220	85.2	5.8
12/16/95	4190	91.2	5.7
12/20/95	4530	105	6.4
12/22/95	4690	108	6.4
12/26/95	5100	124	7.0
12/30/95	5190	134	7.2
1/3/96	4780	40.2	7.0
1/4/96	4980	40.2	6.9
1/8/96	4970	37.6	7.1
1/12/96	5000	102	7.3
1/16/96	5040	120	7.0
1/18/96	4670	106	6.5
1/22/96	4180	95.6	6.1
1/26/96	4140	88.6	6.4
1/30/96	4010	82.8	6.3
2/2/96	3050	53.2	4.4
2/6/96	4380	54.8	5.3
2/10/96	5440	90.8	6.8
2/14/96	5580	96.4	7.0
2/18/96	5410	83.1	7.0
2/22/96	5360	79.1	6.9
2/23/96	4960	75.8	7.2
2/27/96	4650	80.0	6.5
3/1/96	4780	92.3	6.5
3/5/96	4980	114	7.3
3/9/96	5150	109	7.3
3/13/96	4560	103	3.4
3/17/96	4760	88.2	7.0
3/18/96	3810	86.2	NA
3/22/96	4920	100	7.2
3/26/96	5250	91.1	8.7
3/30/96	NA	NA	NA
4/3/96	NA	NA	NA
4/7/96	NA	NA	NA
4/11/96	NA	NA	NA
4/15/96	NA	NA	NA
4/19/96	NA	NA	NA
4/23/96	4910	112	7.5
4/27/96	5000	110	7.8
5/1/96	4700	94.6	6.8
5/3/96	4910	112	7.3
5/7/96	4780	95.0	6.9
5/11/96	4920	89.0	7.1
5/15/96	4880	44.9	6.8
5/16/96	4500	95.0	5.9
5/20/96	4680	81.8	7.3
5/24/96	4630	76.9	7.1
5/28/96	4660	80.8	7.6
5/30/96	4660	75.4	7.7
6/3/96	4520	NA	NA
6/7/96	4830	NA	NA
6/11/96	NA	NA	NA
6/13/96	NA	NA	NA
6/17/96	4550	64.1	6.8
6/21/96	4750	72.4	7.5
6/25/96	4390	61.8	7.0
6/27/96	4640	74.6	7.1
7/1/96	4540	68.1	7.8
7/5/96	4420	68.3	NA
7/9/96	NA	NA	NA
7/11/96	NA	NA	NA
7/15/96	4870	76.0	8.3
7/19/96	4540	63.6	7.4
7/23/96	4430	69.8	7.4
7/25/96	4480	70.4	6.2
7/29/96	4460	72.2	7.4
8/2/96	4260	66.2	7.0
8/6/96	4180	62.6	6.9
8/8/96	4240	69.5	7.3
8/12/96	4250	68.2	7.5
8/16/96	4230	69.0	7.3
8/20/96	4060	62.8	7.0
8/23/96	3860	51.7	6.8
8/27/96	3970	47.6	6.8
8/31/96	4350	77.2	7.3
9/4/96	4170	70.2	7.0
9/5/96	4190	70.7	NA
9/9/96	3830	61.1	6.3
9/13/96	3690	60.0	6.1
9/17/96	4490	78.4	7.5
9/21/96	4370	75.6	7.0
9/25/96	4890	94.9	8.5
9/29/96	5370	112	9.2
Count	90	88	85
Min	3050	23.4	3.4
Max	5580	149	9.2
Mean	4530	79.9	7.0
Geo Mean	4500	76.2	6.9
Median	4560	76.5	7.0

Panoche Drain at O'Banion Gauge Station (MER501)

Location: Latitude 36°55'14", Longitude 120°41'43". In SW 1/4, SW 1/4, SW 1/4, Sec. 32, T.11S., R.12E. Located 0.5 miles south of CCID Main Canal, 1.9 miles west of Russel Road. 5.5 miles SW of Dos Palos.

AUTOSAMPLER DATA : Four day composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L
10/3/96	5320	112.0	9.0
10/7/96	4860	69.0	
10/8/96	4710	66.2	
10/12/96	4940	84.2	
10/16/96	4880	100.6	
10/20/96	4980	70.6	
10/24/96	4870	65.2	
10/25/96	4760	52.6	
10/29/96	5070	88.9	
11/2/96	4560	77.6	
11/6/96	4960	83.1	
11/8/96	5080	89.2	
11/12/96	5160	116.0	
11/16/96	5170	112.0	
11/20/96	4800	100.0	
11/24/96	4340	92.1	
11/26/96	4420	65.5	
11/30/96	4610	37.4	
12/4/96	4910	38.8	
12/5/96	4750	35.0	
12/9/96	4750	35.4	
12/13/96	4390	35.5	
12/17/96	4710	60.4	
12/20/96	5030	91.4	
12/24/96	4330	76.4	
12/28/96	4840	79.0	
1/1/97	4580	79.4	
1/5/97	3830	45.8	
1/9/97	4330	51.0	
Count	29	29	1
Min	3830	35.0	9.0
Max	5320	116.0	9.0
Mean	4757	72.8	9.0
Geo Mean	4746	68.4	9.0
Median	4800	76.4	9.0

Agatha Canal at Mallard Road (MER506S)

Location: Latitude: 36°56'12", Longitude 120°42'07". In NE 1/4, NW 1/4, SW 1/4, Sec. 7, T.11S., R.11E.
South of Sante Fe Grade at Brito, west of Mallard Road. 4.5 miles west of Dos Palos.

AUTOSAMPLER DATA : 12 hour daily composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L	Date	EC µmhos/cm	Se µg/L	B mg/L
1/9/97			0.41	2/22/97	246		
1/10/97	275			2/23/97	225	1.0	
1/11/97	264			2/24/97	208		
1/12/97	286			2/25/97	211		
1/13/97	312			2/26/97	204		
1/14/97	257			2/27/97	205		
1/15/97	258			2/28/97	194		
1/16/97	259			3/1/97	196		
1/17/97	244			3/2/97	199		
1/18/97	243			3/3/97	203	1.3	
1/19/97	236			3/4/97	195		
1/20/97	230			3/5/97	195		
1/21/97	227			35495	187		
1/22/97	244			3/7/97	161		
1/23/97	262			3/8/97	156	0.7	
1/24/97	260			3/9/97	154		
1/25/97	285			3/10/97	148		
1/26/97	308			3/11/97	149		
1/27/97	342			3/12/97	145		
2/5/97	809	6.8	1.0	3/13/97	157	0.7	
2/6/97	235			3/14/97	148		
2/7/97	119			3/15/97	148		
2/8/97	116			3/16/97	138		
2/9/97	125			3/17/97	232		
2/10/97	182			3/18/97	244		
2/11/97	235			3/19/97	235		
2/12/97	255	0.5	0.70	3/20/97	215		
2/13/97	246			3/21/97	178		
2/14/97	229			3/22/97	173	0.8	
2/15/97	221			3/23/97	196		
2/16/97	205			3/24/97	275		
2/17/97	198			3/25/97	308	1.6	
2/18/97	202						
2/19/97	168						
2/20/97	158						
2/21/97	323	1.5	0.37				

Count	67	9	4
Min	116	0.5	0.37
Max	809	6.8	1.0
Mean	225	1.7	0.62
Geo Mean	214	1.2	0.57
Median	215	1.0	0.56

Camp 13 Slough at Gauge Station (MER505S)

Location: Latitude 36°56'21", Longitude 120°45'22". In SE 1/4, SE 1/4, SW 1/4, Sec. 27, T.11S., R.11E. 150 feet north of CCID Main Canal, 6.4 miles west of Russel Avenue. 9.2 miles SE of Los Banos. 6.7 miles SW of S. Dos Palos

AUTOSAMPLER DATA : 12 hour daily composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L
1/10/97	125		
1/11/97	150		
1/12/97	209		
1/13/97	147		
1/14/97	128		
1/15/97	140		
1/16/97	122		
1/17/97	142		
1/18/97	145		
1/19/97	144		
1/20/97	148		
1/21/97	161		
1/22/97	176		
1/23/97	226		
1/24/97	269		
1/25/97	375		
1/26/97	681	2.3	
1/27/97	1980	19.2	
1/28/97	2770	30.8	
1/29/97	2750	33.0	4.6
1/30/97	2640	31.0	
1/31/97	1700	18.6	
2/1/97	1210	12.6	
2/2/97	1230	15.3	
2/3/97	1120	16.0	1.5
2/4/97	1120	14.1	
2/5/97	263		
2/6/97	388		
2/7/97	497	0.6	0.67
2/8/97	395		
2/9/97	335		
2/10/97	307		
2/11/97	407		
2/12/97	513	0.5	0.34
2/13/97	467		
2/14/97	420		
2/15/97	329		
2/16/97	183		
2/17/97	168		
2/18/97	163		
2/19/97	158		
2/20/97	151		
2/21/97	149		
2/22/97	152		
2/23/97	149		
2/24/97	150		
2/25/97	144		
2/26/97	150		
2/27/97	158	0.5	
2/28/97	152		
3/1/97	142		
3/2/97	143		
3/3/97	148		
3/4/97	146		
3/5/97	151	<0.4	
3/6/97	1690		
3/7/97	1770		
3/8/97	2030	4.2	3.1
3/9/97	2350	4.6	
3/10/97	2150		
3/11/97	1960		
3/12/97	3990		
3/13/97	4630	21.2	7.7
3/14/97	3340		
3/15/97	2960		
3/16/97	1370		
3/17/97	1100		
3/18/97	1650		
3/19/97	2140		
3/20/97	2860	6.2	
3/21/97	2670		
3/22/97	2990	10.2	5.2
3/23/97	2750		
3/24/97	2260		
3/25/97	3760	6.3	6.9

	EC	Se	B
Count	75	20	8
Min	122	<0.4	0.34
Max	4630	33.0	7.7
Mean	1030	12.4	3.8
Geo Mean	505	6.1	2.5
Median	375	11.4	3.9

Mud Slough (north) at San Luis Drain (MER542S)

Location: Latitude 37°19'50", Longitude 120°57'03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E.
5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

AUTOSAMPLER DATA: 4 DAY COMPOSITE SAMPLES

Date	EC µmhos/cm	Se µg/L	B mg/L	Date	EC µmhos/cm	Se µg/L	B mg/L
10/4/95	987	0.9	0.61	4/7/96	3230	3.0	3.3
10/6/95	978	1.0	0.64	4/11/96	3540	1.7	3.8
10/10/95	1120	1.0	0.75	4/15/96	3320	18.4	3.9
10/14/95	985	0.9	0.69	4/19/96	3940	19.4	3.7
10/18/95	610	1.0	0.45	4/23/96	2870	0.9	2.0
10/22/95	732	0.8	0.53	4/27/96	2130	1.0	1.5
10/26/95	791	0.7	0.58	5/1/96	1820	1.0	1.2
10/30/95	756	0.7	0.58	5/3/96	3070	0.9	2.6
11/3/95	837	1.0	0.66	5/7/96	3880	1.7	2.4
11/7/95	858	0.7	0.71	5/11/96	1840	4.2	1.2
11/11/95	889	0.7	0.70	5/15/96	1860	1.3	1.1
11/15/95	952	0.6	0.76	5/20/96	2300	1.4	1.6
11/19/95	1010	0.6	0.73	5/24/96	1530	1.4	1.6
11/24/95	1100	0.5	0.81	5/28/96	1810	1.1	1.2
11/28/95	1190	0.5	0.90	5/30/96	1340	0.7	1.3
12/2/95	1210	0.5	0.92	6/3/96	1420	1.3	1.0
12/6/95	1150	0.7	0.84	6/7/96	2410	1.0	1.8
12/8/95	1200	0.6	0.85	6/11/96	1700	1.1	1.3
12/12/95	1290	1.1	0.90	6/13/96	1570	1.2	NA
12/16/95	1190	0.7	0.83	6/16/96	NA	NA	NA
12/20/95	1230	0.6	0.89	6/17/96	NA	NA	NA
12/22/95	1260	0.8	0.85	6/21/96	NA	NA	NA
12/26/95	1340	0.7	1.0	6/25/96	NA	NA	NA
12/30/95	1550	1.1	1.2	6/27/96	NA	NA	NA
1/3/96	1760	0.8	1.3	7/1/96	3030	1.3	2.1
1/4/96	1910	0.8	1.2	7/5/96	3600	1.5	2.4
1/8/96	1880	0.9	1.4	7/9/96	3530	1.9	2.3
1/12/96	2000	0.8	1.4	7/11/96	2330	2.4	NA
1/16/96	1870	0.8	1.4	7/15/96	2550	1.3	1.8
1/18/96	1840	0.7	1.4	7/19/96	2550	1.9	1.8
1/22/96	1570	0.7	1.2	7/23/96	3810	1.1	2.7
1/26/96	1550	0.6	1.1	7/25/96	2690	1.2	NA
1/30/96	1750	0.6	1.3	7/29/96	1640	1.7	1.1
2/2/96	1050	0.7	0.85	8/2/96	1500	1.2	0.96
2/6/96	1010	0.7	0.81	8/6/96	1620	1.9	1.0
2/10/96	910	0.6	0.75	8/8/96	2640	1.2	NA
2/14/96	1590	0.6	1.4	8/12/96	1370	2.0	0.99
2/16/96	1830	0.6	1.4	8/16/96	2240	1.5	1.5
2/20/96	1810	2.2	1.4	8/20/96	1290	2.1	0.91
2/24/96	5150	2.1	2.3	8/23/96	1660	1.6	1.1
3/5/96	NA	NA	NA	8/27/96	2360	1.3	1.5
3/9/96	NA	NA	NA	8/31/96	1500	1.9	1.0
3/13/96	NA	NA	NA	9/4/96	967	1.9	0.66
3/17/96	NA	NA	NA	9/9/96	NA	NA	NA
3/18/96	NA	NA	NA	9/13/96	NA	NA	NA
3/22/96	2010	0.8	1.7	9/17/96	NA	NA	NA
3/26/96	2120	1.2	1.9	9/21/96	NA	NA	NA
3/30/96	2330	1.2	2.2	9/23/96	NA	NA	NA
4/3/96	2380	1.3	2.1	9/27/96	3670	7.1	5.6

Count	83	83	79
Min	610	0.5	0.45
Max	5150	19.4	5.6
Mean	1880	1.7	1.4
Geo Mean	1680	1.1	1.2
Median	1660	1.0	1.2

Mud Slough (north) at San Luis Drain (MER542S)

Location: Latitude 37°19'50", Longitude 120°57"03" In NW 1/4, NE 1/4, NW 1/4, Sec.14, T.7S., R.9E
5 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

AUTOSAMPLER DATA : Four day composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L	Date	EC µmhos/cm	Se µg/L	B mg/L
10/1/96	3760	31.4	6.2	1/4/97	1570	9.9	2.0
10/3/96	3340	50.6	4.9	1/8/97	NA	NA	NA
10/7/96	2380	27.8	3.1	1/9/97	1200	4.6	NA
10/11/96	1950	17.6	2.5	1/13/97	1380	5.7	1.6
10/15/96	1960	15.8	2.6	1/17/97	1900	12.2	2.2
10/18/96	1830	14.0	2.5	1/21/97	1620	9.5	1.8
10/22/96	1480	7.4	1.8	1/25/97	1620	9.6	1.8
10/26/96	1460	7.7	1.7	1/29/97	1280	7.6	1.4
10/29/96	1720	8.4	2.1	2/2/97	1170	4.5	1.3
11/2/96	1860	11.4	2.2	2/4/97	1290	6.7	1.5
11/6/96	1740	10.0	2.0	2/8/97	1680	9.9	2.0
11/10/96	1520	8.8	1.7	2/11/97	2240	17.5	2.7
11/14/96	1520	6.7	1.7	2/15/97	2780	27.8	3.3
11/18/96	1640	9.2	2.2	2/19/97	3150	31.5	4.2
11/22/96	1610	10.4	2.1	2/23/97	3500	36.4	4.8
11/26/96	1460	9.3	1.8	2/27/97	3420	33.0	4.3
11/30/96	1480	7.3	1.5	2/28/97	3300	32.4	NA
12/4/96	1660	6.6	1.8	3/4/97	3620	25.6	3.4
12/8/96	1790	5.0	1.9	3/8/97	3750	44.2	5.1
12/10/96	1650	4.5	1.7	3/12/97	3660	43.4	5.1
12/14/96	1420	4.9	1.6	3/13/97	3500	44.4	
12/18/96	1360	5.5	1.5	3/17/97	3460	42.2	
12/22/96	1510	7.2	1.7	3/21/97	3210	33.5	
12/26/96	1490	7.2	1.7	3/25/97	3140	28.4	
12/31/96	1300	7.1	1.4				

Count	48	48	42
Min	1170	4.5	1.3
Max	3760	50.6	6.2
Mean	2130	17.1	2.5
Geo Mean	1980	12.9	2.3
Median	1700	9.9	2.0

Salt Slough at Lander Avenue (MER531S)

Location: Latitude 37°14'55", Longitude 120°51'04". In NW 1/4, SE 1/4, SE 1/4, Sec. 10, T.8S., R.10E.
13.0 miles north of Los Banos. 5.0 miles south of Highway 140.

AUTOSAMPLER DATA: 4 DAY COMPOSITE SAMPLES

Date	EC µmhos/cm	Se µg/L	B mg/L
10/4/95	1090	7.2	0.95
10/6/95	886	1.8	0.47
10/10/95	1000	1.2	0.53
10/14/95	1090	1.3	0.56
10/18/95	938	2.1	0.56
10/22/95	1300	9.2	1.2
10/26/95	1540	14.8	1.6
10/30/95	1500	11.2	1.4
11/3/95	1570	7.8	1.3
11/7/95	1610	8.9	1.5
11/11/95	1680	7.9	1.4
11/15/95	1640	8.4	1.4
11/19/95	1920	13.2	1.8
11/24/95	1910	11.9	1.9
11/28/95	1890	11.8	1.8
12/2/95	1790	12.2	1.7
12/6/95	1850	13.4	1.7
12/8/95	1860	13.4	1.9
12/12/95	2010	11.6	1.7
12/16/95	1830	13.3	1.7
12/20/95	1960	12.5	1.9
12/22/95	2040	13.4	2.1
12/26/95	2060	13.4	2.0
12/30/95	2410	16.0	2.2
1/3/96	2500	16.2	2.4
1/4/96	2400	5.7	2.0
1/8/96	2620	6.1	2.2
1/12/96	2850	10.4	1.7
1/16/96	2900	24.2	2.8
1/18/96	2780	28.2	2.8
1/22/96	2510	29.8	2.8
1/26/96	2270	20.6	2.6
1/30/96	2340	21.8	2.6
2/2/96	1900	14.0	2.0
2/6/96	2000	12.9	1.9
2/10/96	2110	15.7	2.1
2/14/96	2550	22.6	2.6
2/16/96	2570	23.0	2.6
2/20/96	2420	22.4	2.6
2/24/96	2290	18.6	2.0
2/28/96	2020	17.6	1.9
3/1/96	2070	15.8	2.0
3/5/96	2260	17.9	2.1
3/9/96	2250	16.9	2.1
3/13/96	2430	19.0	2.2
3/17/96	2300	17.7	2.1
3/18/96	1960	15.9	NA
3/22/96	2130	17.1	2.1
3/26/96	2110	17.4	2.5
3/30/96	1940	11.8	1.9
4/3/96	2020	17.8	2.1
4/7/96	2230	16.6	1.9
4/11/96	2280	16.0	1.8
4/15/96	2060	16.0	1.7
4/19/96	1950	17.0	1.7
4/23/96	2140	22.1	2.0
4/27/96	2520	27.2	2.4
5/1/96	2800	33.8	2.7
5/3/96	2890	31.2	2.8
5/7/96	3170	37.8	3.0
5/11/96	2320	25.2	2.2
5/15/96	2100	19.9	1.9
5/16/96	2310	20.8	NA
5/20/96	1810	15.0	1.6
5/24/96	1870	14.2	1.9
5/28/96	1820	16.8	1.9
6/1/96	2260	20.9	2.5
6/5/96	2260	22.2	2.5
6/9/96	2510	25.1	3.0
6/13/96	2270	19.6	2.7
6/17/96	2310	18.5	2.5
6/21/96	2190	18.3	2.2
6/25/96	2250	19.3	2.2
6/27/96	2530	24.0	2.6
7/1/96	2540	NA	2.9
7/5/96	2350	22.8	2.7
7/9/96	2060	17.1	2.3
7/11/96	2140	18.4	2.4
7/15/96	2300	21.4	2.6
7/19/96	2330	20.4	2.7
7/23/96	2240	20.2	2.7
7/25/96	2120	18.8	2.7
7/29/96	1860	16.4	2.2
8/2/96	1740	15.8	2.1
8/6/96	1730	15.4	2.0
8/8/96	1530	12.8	1.8
8/12/96	1600	13.4	1.8
8/15/96	1470	12.1	1.6
8/19/96	NA	NA	NA
8/23/96	NA	NA	NA
8/27/96	NA	NA	NA
8/28/96	NA	NA	NA
9/1/96	1650	15.4	1.8
9/5/96	1510	12.8	1.5
9/9/96	1890	16.9	2.2
9/12/96	1630	13.6	1.8
9/16/96	1260	6.8	1.0
9/20/96	1630	14.0	1.6
9/24/96	1540	11.4	1.5
9/26/96	1280	7.4	1.0
9/30/96	1160	1.5	0.6
Count	97	96	95
Min	886	1.2	0.47
Max	3170	37.8	3.0
Mean	2020	16.0	2.0
Geo Mean	1970	13.9	1.9
Median	2060	16.0	2.0

Salt Slough at Lander Avenue (State Highway 165) (MER531S)

Location: Latitude 37°14'55", Longitude 120°51'04". In NW 1/4, SE 1/4, SE 1/4, Sec. 10, T.8S., R.10E.
13.0 miles north of Los Banos. 5.0 miles south of Highway 140.

AUTOSAMPLER DATA : Four day composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L	Date	EC µmhos/cm	Se µg/L	B mg/L
10/4/96	1210	1.5	0.64	1/4/97	1810	1.5	1.7
10/8/96	1260	1.1	0.66	1/8/97	1840	0.9	1.3
10/9/96	960	1.4	NA	1/9/97	1350	1.1	
10/13/96	1020	1.2	0.52	1/13/97	1160	1.0	0.93
10/17/96	1350	0.9	0.68	1/17/97	1460	0.9	1.2
10/21/96	1460	0.8	0.71	1/21/97	1580	1.0	1.3
10/24/96	1190	0.8	0.59	1/24/97	1610	1.0	1.3
10/28/96	1510	1.5	0.85	1/28/97	1650	1.0	1.2
11/1/96	1150	0.8	0.65	2/1/97	2070	6.3	1.9
11/5/96	1090	0.9	0.74	2/5/97	1980	4.6	1.7
11/7/96	1210	0.9	0.87	2/7/97	2060	5.9	1.9
11/11/96	1380	1.0	1.0	2/11/97	1723	1.4	1.4
11/15/96	1490	0.9	1.0	2/15/97	1660	0.8	1.2
11/19/96	1360	1.2	0.92	2/19/97	1650	0.6	1.0
11/22/96	1280	1.3	0.92	2/21/97	1460	0.5	0.82
11/26/96	1540	1.1	1.0	2/25/97	1160	0.6	0.57
11/30/96	1350	1.0	1.0	3/1/97	1070	0.7	0.53
12/4/96	1400	1.0	1.0	3/5/97	1020	0.6	0.47
12/6/96	NA	NA	NA	3/9/97	1170	0.7	0.51
12/10/96	1500	1.1	1.1	3/13/97	1180	0.8	0.52
12/14/96	1460	1.1	1.1	3/17/97	1230	1.2	0.72
12/18/96	1590	1.0	1.1	3/21/97	1120	1.6	
12/19/96	1620	0.86	NA	3/25/97	1360	1.2	
12/23/96	1690	1.0	1.1				
12/27/96	1810	0.8	1.2				
12/31/96	1810	0.9	1.2				

Count	48	48	43
Min	960	0.5	0.47
Max	2070	6.3	1.9
Mean	1440	1.3	1.0
Geo Mean	1410	1.1	0.93
Median	1430	1.0	1.0

San Luis Drain @ Terminus (MER535S)

Location: Latitude 37°19'50", Longitude 120°57"03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E. 5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

AUTOSAMPLER DATA : 12 hour daily composite samples

Date	EC µmhos/cm	Selenium µg/L	Boron mg/L
9/13/96	7410		
9/14/96	7120		
9/15/96	7340		
9/16/96	8680		
9/17/96	7160		
9/18/96	7330		
9/19/96	7570		
9/20/96	7720		
9/21/96	7730		
9/22/96	7780		
9/23/96	9790		
9/24/96	8510		
9/25/96	9030		
9/26/96	7850		
9/27/96	4660	56.9	
9/28/96	4570	71.6	
9/29/96	5050	77.8	
9/30/96		86.5	
Count	17	4	0
Min	4570	56.9	
Max	9790	86.5	
Mean	7371	73.2	
Geo Mean	7220	72.4	
Median	7570	74.7	

San Luis Drain @ Terminus (MER535S)

Location: Latitude 37°19'50", Longitude 120°57"03". In NW 1/4, NE 1/4, NW 1/4, Sec. 14, T.7S., R.9E.

5.0 miles east of Gustine, 3.5 miles SE of Highway 140. Located within Kesterson N. W. R.

AUTOSAMPLER DATA : 12 hour daily composite samples

Date	EC µmhos/cm	Se µg/L	B mg/L	Date	EC µmhos/cm	Se µg/L	B mg/L
10/1/96	5360	90.3	8.6	11/24/96	3510	61.4	6.1
10/2/96	4400	106	9.3	11/25/96	3200	51.8	5.5
10/3/96	4340	66.3	7.3	11/26/96	3180	52.4	4.9
10/4/96	4440	59.0	6.9	11/27/96	3750	63.9	6.2
10/5/96	4460	56.4	7.0	11/28/96	3670	68.2	6.0
10/6/96	4290	61.3	7.0	11/29/96	3520	57.3	5.6
10/7/96	4610	59.8	6.7	11/30/96	3540	53.3	5.6
10/8/96	4710	63.0	7.1	12/1/96	3720	46.1	6.1
10/9/96	4710	64.8	NA	12/2/96	3960	50.2	6.5
10/10/96	5030	63.5	7.6	12/3/96	4040	46.2	6.5
10/11/96	5250	69.6	8.5	12/4/96	3850	31.6	6.4
10/12/96	4850	72.6	9.0	12/5/96	3890	29.5	NA
10/13/96	5460	52.6	8.2	12/6/96	4100	38.3	6.7
10/14/96	NA	NA	NA	12/7/96	4170	39.3	6.5
10/15/96	NA	NA	NA	12/8/96	4080	38.2	6.2
10/16/96	NA	NA	NA	12/9/96	4110	34.8	6.4
10/17/96	NA	NA	NA	12/10/96	4190	34.7	7.1
10/18/96	NA	NA	NA	12/11/96	4470	42.4	7.8
10/19/96	3380	41.8	5.5	12/12/96	4320	49.2	7.6
10/20/96	3470	41.4	5.8	12/13/96	3850	45.3	6.7
10/21/96	3530	40.8	5.9	12/14/96	3870	48.3	6.7
10/22/96	3520	43.7	5.8	12/15/96	4100	51.8	7.4
10/23/96	3900	49.8	6.7	12/16/96	3850	50.9	6.9
10/24/96	4260	78.4	7.1	12/17/96	3840	47.2	6.4
10/25/96	4360	78.8	7.3	12/18/96	4020	50.8	6.9
10/26/96	4260	59.8	7.2	12/19/96	4140	51.1	7.3
10/27/96	3940	40.3	6.7	12/20/96	4190	54.8	7.4
10/28/96	4420	56.8	7.7	12/21/96	4400	56.1	7.9
10/29/96	4420	52.3	NA	12/22/96	4470	51.9	7.9
10/30/96	4240	60.3	6.8	12/23/96	4530	63.4	8.1
10/31/96	4200	51.9	6.1	12/24/96	4860	71.0	8.3
11/1/96	4080	43.6	NA	12/25/96	4870	71.3	8.4
11/2/96	4120	43.9	6.7	12/26/96	4580	67.3	6.6
11/3/96	4270	53.4	6.4	12/27/96	4040	62.9	6.2
11/4/96	4290	63.2	6.7	12/28/96	4290	65.7	6.6
11/5/96	4300	57.5	6.6	12/29/96	5220	63.0	7.7
11/6/96	4270	80.3	6.8	12/30/96	4820	67.9	7.6
11/7/96	3790	59.2	5.9	12/31/96	4930	74.6	7.5
11/8/96	3510	45.0	5.4	1/1/97	5080	80.8	7.9
11/9/96	3500	43.6	5.5	1/2/97	4870	73.6	7.0
11/10/96	3410	36.6	5.5	1/3/97	4740	76.6	6.8
11/11/96	3560	38.3	5.9	1/4/97	4100	65.0	5.8
11/12/96	3970	50.9	6.9	1/5/97	4280	61.8	6.8
11/13/96	4130	56.6	7.5	1/6/97	4100	53.9	6.3
11/14/96	4330	61.5	8.0	1/7/97	3040	36.6	4.3
11/15/96	4190	59.4	7.9	1/8/97	3510	35.8	5.3
11/16/96	4220	55.5	8.1	1/9/97	4080	44.1	6.3
11/17/96	4380	63.8	8.5	1/10/97	4250	47.2*	6.6*
11/18/96	4410	73.6	8.7	1/11/97	4550	60.0*	7.5*
11/19/96	4400	75.2	8.5	1/12/97	4650	64.0*	7.3*
11/20/96	4170	69.6	8.0	1/13/97	NA	NA	NA
11/21/96	4050	68.2	7.7	1/14/97	4700	63.6*	7.8*
11/22/96	4000	73.4	7.5	1/15/97	4710	66.3*	7.8*
11/23/96	3900	69.8	6.9	1/16/97	4830	66.8*	8.2*

San Luis Drain @ Terminus (MER535S) continued

Date	EC µmhos/cm	Se µg/L	B mg/L
1/17/97	4740	76.4*	7.3*
1/18/97	4730	70.3*	7.7*
1/19/97	4110	55.7*	5.6*
1/20/97	4360	55.2*	6.9*
1/21/97	4510	55.6*	NA
1/22/97	4650	62.8	7.7
1/23/97	4540	66.2	7.5
1/24/97	4620	73.0	7.4
1/25/97	4170	59.7	6.5
1/26/97	4010	56.4	6.1
1/27/97	4270	59.6	6.3
1/28/97	4300	65.1	6.6
1/29/97	4360	57.0	6.8
1/30/97	3570	40.6	5.5
1/31/97	3450	34.2	5.4
2/1/97	4160	45.8	6.5
2/2/97	4430	47.4	7.0
2/3/97	4550	58.2	7.1
2/4/97	4550	65.8	7.2
2/5/97	4570	62.3	7.3
2/6/97	4810	65.9	7.9
2/7/97	5020	72.8	8.1
2/8/97	5260	91.2	7.9
2/9/97	5230	90.5	7.7
2/10/97	5080	86.2	8.1
2/11/97	4940	79.1	7.9
2/12/97	5270	87.8	8.1
2/13/97	5340	81.8	8.4
2/14/97	5360	89.5	8.4
2/15/97	5230	86.0	8.1
2/16/97	5200	86.0	7.9
2/17/97	5210	85.3	8.1
2/18/97	5220	80.9	8.2
2/19/97	5300	81.0	8.4
2/20/97	5270	83.7	8.4
2/21/97	5280	84.4	8.1
2/22/97	5160	78.3	8.0
2/23/97	5040	78.4	7.7
2/24/97	5050	84.0	7.7
2/25/97	4970	71.1	7.4
2/26/97	5050	74.8	7.4
2/27/97	4700	70.0	6.9
2/28/97	4890	77.4	7.2
3/1/97	5080	75.4	7.7
3/2/97	5090	82.4	8.0
3/3/97	5270	101	7.9
3/4/97	5200	97.9	7.9
3/5/97	5140	87.8	7.9
3/6/97	5030	86.4	7.8
3/7/97	5090	89.8	7.8
3/8/97	4960	88.4	7.5
3/9/97	5030	87.2	7.7
3/10/97	5030	96.9	7.5
3/11/97	4910	95.5	7.3
3/12/97	4800	86.3	7.0
3/13/97	4650	86.2	6.4
3/14/97	4610	82.2	6.5
3/15/97	4600	87.4	6.4
3/16/97	4860	87.6	7.0
3/17/97	4980	89.9	7.0
3/18/97	4780	86.8	6.6
3/19/97	4580	81.4	6.2
3/20/97	4300	75.6	5.8
3/21/97	4550	82.1	6.6
3/22/97	4560	74.5	6.7
3/23/97	4630	69.8	6.3
3/24/97	4710	72.7	6.3
3/25/97	4890	79.0	6.8
3/26/97	4840	78.2	6.7
3/27/97	4710	82.0	6.8
3/28/97	4490	69.4	6.5
3/29/97	4580	78.0	6.6
3/30/97	4610	82.4	6.5
3/31/97	4710	89.0	6.5
4/1/97	4700	85.0	7.0
4/2/97	5020	90.6	7.4
4/3/97	5060	92.6	7.3
4/4/97	5510	104	7.9
4/5/97	5410	108	7.5
4/6/97	5420	112	7.5
4/7/97	5440	110	7.3
4/8/97	5490	110	7.4
4/9/97	5430	106	7.1
4/10/97	5420	106	7.1
4/11/97	5720	116	7.5
4/12/97	5760	113	7.6
4/13/97	5750	114	7.8
4/14/97	5480	108	7.5
4/15/97	5630	110	7.6
4/16/97	NA	116	7.5
4/17/97	5880	115	7.5
4/18/97	5530	116	7.5
4/19/97	5350	108	7.3
4/20/97	5350	106	7.3
4/21/97	5480	113	7.4
4/22/97	5510	110	7.5
4/23/97	5220	103	6.9
4/24/97	5010	96.6	6.8
4/25/97	5090	97.6	7.1
4/26/97	5120	98.6	7.1
4/27/97	5260	104	7.3
4/28/97	5390	108	7.4
4/29/97	5020	91.0	7.1
4/30/97	5090	96.6	7.0
5/1/97	4950	88.8	7.2
5/2/97	5170	88.4	7.1
5/3/97	5370	91.1	8.2
5/4/97	5520	96.6	8.5
5/5/97	5550	92.6	8.1
5/6/97	5530	102	9.0
5/7/97	5510	84.0	8.2
5/8/97	5490	85.7	7.8
5/9/97	5300	76.3	7.8
5/10/97	5050	79.1	7.1
5/11/97	4690	77.4	7.1
5/12/97	4760	77.9	7.3
5/13/97	4860	82.7	7.7

San Luis Drain @ Terminus (MER535S) continued

Date	EC µmhos/cm	Se µg/L	B mg/L	Date	EC µmhos/cm	Se µg/L	B mg/L
5/14/97	4660	77.5	7.5	7/12/97	4120	39.0	7.8
5/15/97	4570	72.4	7.2	7/13/97	3950	41.0	7.5
5/16/97	4450	60.7	7.0	7/14/97	4050	46.9	7.2
5/17/97	4550	65.8	7.0	7/15/97	4240	44.1	8.0
5/18/97	4750	67.8	7.5	7/16/97	4260	43.8	8.0
5/19/97	4690	68.4	7.3	7/17/97	4200	41.0	7.8
5/20/97	4440	67.6	7.2	7/18/97	4300	44.1	8.1
5/21/97	4420	71.4	6.9	7/19/97	4190	47.1	7.8
5/22/97	4030	63.8	6.1	7/20/97	4110	57.4	7.6
5/23/97	4230	64.4	6.8	7/21/97	4030	49.0	7.4
5/24/97	4270	65.0	6.9	7/22/97	4150	52.8	7.3
5/25/97	4720	72.0	8.1	7/23/97	4090	47.0	7.5
5/26/97	4580	63.9	7.8	7/24/97	4190	46.2	7.8
5/27/97	4570	66.6	7.7	7/25/97	4220	43.6	8.1
5/28/97	4560	68.2	7.7	7/26/97	4180	44.0	7.8
5/29/97	4460	66.5	7.7	7/27/97	3900	37.9	7.2
5/30/97	4400	70.0	6.5	7/28/97	3950	44.0	7.3
5/31/97	4520	72.0	6.9	7/29/97	4050	44.3	7.3
6/1/97	4580	80.4	6.9	7/30/97	4000	40.0	7.3
6/2/97	4770	78.8	7.4	7/31/97	3850	40.2	7.0
6/3/97	4730	75.8	7.4	8/1/97	3760	42.6	6.9
6/4/97	4820	77.2	7.6	8/2/97	3620	39.2	6.5
6/5/97	4800	75.7	7.8	8/3/97	3570	36.6	6.5
6/6/97	4680	56.7	7.6	8/4/97	3540	32.9	6.4
6/7/97	4660	55.8	7.6	8/5/97	3460	34.7	6.1
6/8/97	4680	56.5	7.3	8/6/97	3810	41.2	6.4
6/9/97	4780	51.3	8.1	8/7/97	3610	34.0	6.3
6/10/97	4680	45.4	8.0	8/8/97	4250	51.0	7.7
6/11/97	4770	56.8	8.0	8/9/97	4090	46.1	7.3
6/12/97	4590	58.4	7.9	8/10/97	3880	46.9	6.8
6/13/97	5040	78.6	9.0	8/11/97	3830	48.4	6.7
6/14/97	4910	64.4	8.8	8/12/97	3870	46.0	6.8
6/15/97	4850	67.8	8.7	8/13/97	3680	37.8	6.5
6/16/97	4840	69.0	8.7	8/14/97	3730	38.4	6.4
6/17/97	4820	73.0	8.6	8/15/97	3710	41.6	6.2
6/18/97	4300	61.2	7.4	8/16/97	3430	35.6	5.8
6/19/97	4440	65.4	7.6	8/17/97	3240	32.0	5.3
6/20/97	4540	66.7	7.9	8/18/97	3430	40.3	5.6
6/21/97	4380	57.2	7.6	8/19/97	3590	47.4	5.6
6/22/97	4580	74.7	7.4	8/20/97	3330	37.8	5.6
6/23/97	4410	67.7	7.4	8/21/97	3470	39.7	5.5
6/24/97	4450	66.2	7.3	8/22/97	3820	39.5	6.2
6/25/97	4260	55.8	7.2	8/23/97	3550	32.7	6.1
6/26/97	4680	68.1	8.3	8/24/97	3450	40.5	6.0
6/27/97	4650	59.1	8.1	8/25/97	3270	31.0	5.7
6/28/97	4570	56.8	8.1	8/26/97	3540	35.7	6.1
6/29/97	4530	54.2	8.1	8/27/97	3790	45.2	6.2
6/30/97	4470	53.0	7.9	8/28/97	4020	51.6	6.3
7/1/97	4480	66.8	8.3	8/29/97	4140	50.8	6.6
7/2/97	4540	62.8	7.9	8/30/97	3880	38.3	6.4
7/3/97	4400	57.4	7.6	8/31/97	3870	43.2	6.4
7/4/97	4430	54.8	7.8	9/1/97	4230	55.8	6.3
7/5/97	4670	61.4	8.5	9/2/97	4180	52.0	6.4
7/6/97	4510	49.9	8.4	9/3/97	3920	43.0	5.8
7/7/97	4350	51.1	7.9	9/4/97	3440	29.3	5.4
7/8/97	4090	42.9	7.4	9/5/97	3290	26.6	5.2
7/9/97	4410	61.2	7.7	9/6/97	3680	36.0	6.0
7/10/97	4060	43.4	7.5	9/7/97	3480	27.7	5.6
7/11/97	4330	45.8	8.1	9/8/97	3760	24.3	6.1

San Luis Drain @ Terminus (MER535S) continued

Date	EC µmhos/cm	Se µg/L	B mg/L
9/9/97	3410	22.1	5.8
9/10/97	3100	20.6	5.2
9/11/97	3150	25.4	5.1
9/12/97	2960	20.1	4.6
9/13/97	3260	27.4	5.0
9/14/97	3240	28.2	5.0
9/15/97	2740	18.4	4.2
9/16/97	2630	16.5	4.1
9/17/97	2620	15.2	4.1
9/18/97	2950	16.6	4.5
9/19/97	2980	18.4	4.6
9/20/97	2940	18.0	4.6
9/21/97	2890	19.0	4.6
9/22/97	3070	20.9	4.7
9/23/97	3320	21.6	5.2
9/24/97	3440	19.9	5.4
9/25/97	3520	20.0	5.4
9/26/97	3590	20.1	5.9
9/27/97	3700	20.9	6.1
9/28/97	3530	20.7	5.7
9/29/97	3470	22.0	5.6
9/30/97	3900	32.2	5.9
Count	358	348	344
Min	2620	15.2	4.1
Max	5880	116	9.3
Mean	4390	62.4	7.0
Geo Mean	4340	57.7	6.9
Median	4420	61.5	7.2

* Data under review

APPENDIX D

Impact of January 1997 Flood Flows Diverted Around the Grassland Bypass and into Camp 13 Ditch and the Agatha Canal (Data from USBR, 1997)

Key to Data Sources

GWD = Grassland Water District
Board = Central Valley Regional Water Quality Control Board
USBR = US Bureau of Reclamation

APPENDIX D
(Table taken from USBR, 1997)

Table 1. Camp 13 Ditch and Agatha Canal releases, selenium concentrations and selenium loads, with associated inflow to the San Luis Drain (Monitoring Station A), for period of January 21 through February 10, 1997

	Camp 13 Ditch				Agatha Canal				Inflow to Drain (A)
			Selenium				Selenium		
Parameter	Flow	EC	Conc.	Load	Flow	EC	Conc.	Load	Inflow
Data Source	GWD	GWD	Board	Computed	GWD	GWD	Board	Computed	USBR
Units	cfs	umhos	ug/l	lbs	cfs	umhos	ug/l	lbs	cfs
Jan. 21, 1997	91	360	na	na	25	250	na	na	71
Jan. 22, 1997	91	300	na	na	25	300	na	na	75
Jan. 23, 1997	91	300	na	na	25	300	na	na	76
Jan. 24, 1997	80	300	na	na	25	300	na	na	78
Jan. 25, 1997	80	300	na	na	25	300	na	na	80
Jan. 26, 1997	80	300	na	na	25	300	na	na	76
Jan. 27, 1997	220	3300*	19.2	22.8	25	300	na	na	74
Jan. 28, 1997	150	2900*	30.8	24.9	25	300	na	na	34
Jan. 29, 1997	100	2900*	33.0	17.8	25	300	na	na	50
Jan. 30, 1997	100	3100*	31.0	16.7	25	300	na	na	64
Jan. 31, 1997	65	2300*	18.6	6.5	25	300	na	na	82
Feb. 1, 1997	111	1700*	12.6	7.5	20	300	na	na	77
Feb. 2, 1997	111	1600*	15.3	9.2	20	300	na	na	71
Feb. 3, 1997	111	1500*	16.0	9.6	20	200	na	na	79
Feb. 4, 1997	110	1000*	14.1	8.4	70	3900**	33.0	12.5	38
Feb. 5, 1997	83	360	na	na	20	809***	6.8	0.7	87
Feb. 6, 1997	83	360	na	na	20	300	na	na	92
Feb. 7, 1997	20	200	na	na	45	200	na	na	93
Feb. 8, 1997	20	200	na	na	45	200	na	na	95
Feb. 9, 1997	20	200	na	na	45	200	na	na	88
Feb.10, 1997	28	200	na	na	45	200	na	na	85
Total selenium loads				123.4				13.2	

Total Camp 13 Ditch and Agatha Canal loads combined ..... 136.6 pounds

* Indicates commingled drainage waters

** Indicates commingled drainage waters, selenium value estimated

*** Indicates commingled drainage waters, EC source is CVRWQCB