Appendix I

Sampling Dates

Table I-1. Summary of collection dates for preplanned sampling events and the special study from 26 March 2003 to 7 October 2003.

		Round Number								
		Pre-Season		In-Season						
Site #	Site Description	1	2	S.S.[C]	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	4/3/03	5/29/03		6/12/03					
1	8 Mile & Rio Blanco Rd.					7/3/03	7/24/03	8/14/03	9/4/03	9/25/03
2	Unnamed Sl. @ Woodsbro Rd.	4/15/03	5/27/03							
2	Unnamed Sl. @ Woodsbro Rd. & Burns Cutoff Levee				6/12/03	7/3/03	7/24/03	8/14/03	9/4/03	9/25/03
3	Return Irrigation Drain @ MCD Rd.	4/3/03	5/29/03		6/12/03	7/3/03	7/24/03	8/14/03	9/4/03	9/25/03
4	SJR Source Water to Canal	4/1/03	5/27/03		6/12/03	7/3/03	7/24/03	8/14/03	9/4/03	9/25/03
5	Drain @ Wing Levee Rd.	3/26/03	5/27/03		6/12/03	7/3/03	7/24/03	8/14/03	9/4/03	9/25/03
6	Drain @ Bowman Rd.	4/1/03	5/27/03		6/12/03	7/3/03				
6	Tom Paine Slough @ El Rancho Rd.						7/24/03	8/14/03	9/4/03	9/25/03
7	Lone Tree Crk @ Newcastle Rd.	3/26/03	5/22/03		6/10/03	7/1/03	7/22/03	8/12/03	9/2/03	9/23/03
8	Little John Crk @ Newcastle Rd.	4/1/03	5/22/03		[A]	7/1/03	7/22/03	8/12/03	9/2/03**	[A]
9	Walthal Slough @ Woodward Ave.	4/1/03	5/27/03		6/10/03	7/1/03	7/22/03	8/12/03	9/2/03	9/23/03
10	Westport Drain @ Jennings Rd.	3/26/03	5/22/03		6/10/03	7/1/03	7/22/03**	8/12/03	9/2/03	9/23/03
11	Unnamed Drain @ Pomelo Rd.	3/26/03	5/22/03		6/10/03	7/1/03	7/22/03*	8/12/03	9/2/03	9/23/03
12	Drain @ Midway Rd E of Pedrick Rd.		5/29/03							
12a	Drain @ Robben Rd.				6/17/03	7/8/03	7/29/03	8/19/03	9/9/03	9/30/03
12b	Drain @ Robben Rd. & Midway Rd.				6/17/03	7/8/03	7/29/03	8/19/03	9/9/03	9/30/03
13	Drain @ Ulatis Creek @ Hwy 113	4/3/03	5/29/03		6/17/03	7/8/03	7/29/03	8/19/03	9/9/03	9/30/03
14	Drain @ Midway Rd W. of Schoeder	4/3/03	5/29/03							
14	Ck. @ Hawkins Rd.				6/17/03	7/8/03	7/29/03	8/19/03	9/9/03	9/30/03
15	Lateral to Gordon Slough @ Rd. 19	4/8/03	6/3/03		6/19/03	7/10/03	7/31/03	8/21/03**	9/11/03	10/2/03
16	Gordon Slough @ Rd. 19	4/8/03	6/3/03		6/19/03	7/10/03	7/31/03	8/21/03	9/11/03	10/2/03
17	Willow Slough @ Rd. 27	4/8/03								
17	Drain @ Mace Blvd.		6/5/03	6/11/03[B]	6/19/03	7/10/03	7/31/03	8/21/03	9/11/03	[A]
18	Stone Corral Creek @ 4 Mile Rd.	4/10/03	6/5/03	6/11/03**[B]	6/24/03	7/15/03	8/5/03	8/26/03	9/16/03	10/7/03
19	East Drain @ 4 Mile Rd.	4/10/03	6/5/03	6/11/03**[B]	6/24/03	7/15/03	8/5/03	8/26/03	9/16/03	10/7/03
20	Elk Creek @ Hahn & Miller's Rd.	[A]	[A]	[A]	[A]	[A]				
20	West Drainage @ Del Paso Rd.						8/5/03	8/26/03	9/16/03	10/7/03
21	Sand Creek @ Miller Rd.	4/10/03	6/5/03	6/11/03[B]	6/24/03	7/15/03	8/5/03	8/26/03	9/16/03	10/7/03
22	Drain South of Rd 14.		6/5/03							
22	Sycamore Slough @ Hwy 45			6/11/03**[B]	6/24/03	7/15/03	8/5/03	8/26/03	9/16/03	10/7/03
23	Knight's Landing Ridge CT South @ Rd 16.		6/3/03		6/19/03	7/10/03	7/31/03	8/21/03	9/11/03	10/2/03
24	Knight's Landing Ridge CT North @ Rd 16.	4/8/03	6/3/03		6/19/03	7/10/03	7/31/03	8/21/03	9/11/03	10/2/03

*: Resampled for cerio reset up, not toxicity.

**: Resampled for toxicity

[A]: Not sampled due to low flow or dryness.

[B]: Sampled after crop dusting.

[C]: Special Study

Appendix II

Ceriodaphnia dubia Toxicity Tests

Table II-1. Summary of *C. dubia* mortality (%) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	**Site Description**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Beaver Slough @ Blossom Rd.	0.0	0.0	0.0					
1	8 Mile & Rio Blanco Rd.				0.0	0.0	0.0	0.0	0.0
2	Unnamed Slough @ Woodsbro Rd.	0.0	0.0	0.0					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				0.0	0.0	0.0	0.0	0.0
3	Return Irrigation Drain @ MCD Rd.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	SJR Source Water to Canal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Drain @ Wing Levee Rd.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	Drain @ Bowman Rd.	0.0	0.0	0.0	0.0				
6	Tom Paine Slough @ El Rancho Rd.					0.0	0.0	5.0	0.0
7	Lone Tree Crk @ Newcastle Rd.	40.0	1.3	0.0	0.0	0.0	0.0	0.0	5.0
8	Little John Crk @ Newcastle Rd.	5.0	0.0		0.0	0.0	0.0	100.0	
9	Walthal Slough @ Woodward Ave	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	Westport Drain @ Jennings Rd.	5.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
11	Unnamed Drain @ Pomelo Rd.	0.0	0.0	0.0	0.0		0.0	0.0	0.0
12	Drain @ Midway Rd E of Pedrick Rd.		0.0		0.0				
12a	Drain @ Robben Rd.				0.0	0.0	0.0	100.0	0.0
12b	Drain @ Robben Rd. & Midway Rd.			0.0	5.0	0.0	0.0	0.0	0.0
13	Drain @ Ulatis Creek @ Hwy. 113	0.0	0.0		0.0	0.0	0.0	0.0	0.0
14	Drain @ Midway Rd W. of Schoeder	0.0	0.0						
14	Ck. @ Hawkins Rd.				0.0	0.0	0.0	0.0	0.0
15	Lateral to Gordon Slough @ Rd. 19	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
16	Gordon Slough @ Rd. 19	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	Willow Slough @ Rd. 27	0.0							
17	Drain @ Mace Blvd.		0.0	0.0	0.0	0.0	0.0	0.0	
18	Stone Corral Creek @ 4 Mile Rd.	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	East Drain @ 4 Mile Rd.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					0.0	0.0	0.0	0.0
21	Sand Creek @ Miller Rd.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Drain South of Rd. 14		0.0						
22	Sycamore Slough @ Hwy 45			0.0	0.0	0.0	0.0	0.0	0.0
23	Knight's Landing Ridge CT South @ Rd. 16		0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	Knight's Landing Ridge CT North @ Rd. 16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Highlighted cells indicate statistically significant toxicity.

[A]: Not sampled due to low flow or dryness.

Table II-2. Summary of *C. dubia* toxicity tests conducted on samples collected on 11 June 20003 as part of a special study.

Site #	Site Description	Mortality to *C. dubia*		Chemistry Measurements								
		Mean (%)	S.D.	Field Temp (°C)	Field DO (mg/L)	Field pH	NH_3 (mg/L)	Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	SC (µS/cm)	Velocity (m/s)	Flow (m^3/s)
17	Drain @ Mace Blvd.	0	0	24.1	5.60	8.15	0	316	384	813	1.3	NAV
18	Stone Corral Crk. @ 4 Mi. Rd.	75	0.1	26.4	7.97	7.82	0.02	104	140	336.4	NAV	NAV
19	East Drain @ 4 Mi. Rd.	50	0.2	31.3	7.05	7.64	0.02	112	162	493	4.2	7
21	Sand Crk. @ Miller Rd.	0	0	22.6	7.70	7.72	0.02	140	NAV	335.8	0	0
22	Sycamore Sl. @ Hwy. 45	100	0	29	6.02	7.71	0.03	144	182	525	0	0

Table II-3. Summary of *C. dubia* toxicity tests conducted on samples collected between 16 June 2003 and 19 September 2003 as follow-up to estimate duration and and cause(s) of toxicity.

Site #	Site Description	Sample Date	Mortality to *C. dubia*		Chemistry Measurements								
			Mean (%)	S.D.	Field Temp (°C)	Field DO (mg/L)	Field pH	NH_3 (mg/L)	Hardness (mg/L as $CaCO_3$)	Alkalinity (mg/L as $CaCO_3$)	SC (µS/cm)	Velocity (m/s)	Flow (m^3/s)
18	Stone Corral Crk. @ 4 Mi. Rd.	6/16/03	0	0	26.2	8.1	7.72	0	132	152	356.8	4.36	NAV
19	East Drain @ 4 Mi. Rd.	6/16/03	0	0	27.4	7.0	7.24	0	148	184	460.0	4.73	NAV
22	Drain S. of Rd. 14	6/16/03	0	0	22.9	6.7	7.81	0.01	212	212	684.0	0	0.0
10	Westport Drain @ Jennings Rd.	7/25/03	100	0	24.1	9.6	7.50	0.02	148	154	1032.0	1.73	14.8
10	Westport Drain @ Jennings Rd.	7/29/03	0	0	26.3	8.4	8.02	NAV	NAV	NAV	350.0	3.33	12.4
15	Lateral to Gordon Sl. @ Rd. 19	8/25/03	5	0.1	22.0	5.6	7.32	NAV	184	206	480.7	16	5.0
8	Little John Crk. @ Newcastle Rd.	9/4/03	0	0	26.8	5.6	6.75	0	NAV	70	179.0	0.74	0.8
12a	Drain @ Robben Rd.	9/12/03	100	0	25.3	15.5	7.93	0.01	280	220	478.0	0	1.0
12a	Drain @ Robben Rd.	9/15/03	100	0	22.0	14.5	8.72	0	212	212	440.3	0	NAV
12a	Drain @ Robben Rd.	9/19/03	10	0.2	18.8	8.7	8.06	0	212	212	479.0	1.8	0.8

Appendix III

Pesticide Use

Table III-1. Summary of chlorpyrifos use for the year 2000.[1]

County	Crop	Pounds Applied per Month												Total Period Pounds[2]	Total Annual Pounds
		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.		
Colusa	Walnut				52	52	365	179	160	273				1082	
Colusa	Alfalfa			247					428	110	23			807	
Colusa	Almond					137	179	543						853	
Sacto.	Structural Pest Control	897	440	966	2735	1539	1607	1306	2300	1736	1811	2021	2108	14001	19467
Sacto.	Alfalfa			1373	92			143	105					1713	
San Joaquin	Walnut	16	4		845	4959	6844	4771	3310	328				21058	21078
San Joaquin	Alfalfa		3219	9569	602		1498	2177	2882	345	55			17128	20347
San Joaquin	Structural Pest Control	1458	679	855	793	1233	1683	1035	1511	818	1251	886	1054	9179	13256
Solano	Walnut					284	943	1263	768	381				3638	
Solano	Alfalfa			803		42		400	972	387	66			2670	
Solano	Structural Pest Control	363	334	119	302	1172	1092	857	472	1292	125	679	79	5432	6886
Stanislaus	Alfalfa	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV		6793
Stanislaus	Walnut	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV	NAV		15682
Yolo	Alfalfa			3892	68			437	2426	107	74			7004	
Yolo	Walnut				310	448	3369	2217	1539	76				7959	

[1]: Data provided by Integrated Pest Management, www.ipm.ucdavis.edu.

[2]: Total Period Pounds is the number of pounds of chlorpyrifos applied from March to October, 2000.

Appendix IV

Pimephales promelas Toxicity Tests

Table IV-1. Summary of *P. promelas* mortality (%) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	**Site Description**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Beaver Slough @ Blossom Rd.	0.0	5.0	2.8					
1	8 Mile & Rio Blanco Rd.				0.0	5.0	0.0	7.5	0.0
2	Unnamed Sl. @ Woodsbro Rd.	0.0	5.6	2.5					
2	Unnamed Sl. @ Woodsbro Rd. & Burns Cutoff Levee				2.5	9.0	0.0	5.0	0.0
3	Return Irrigation Drain @ MCD Rd.	10.0	2.5	0.0	0.0	7.5	0.0	2.5	2.5
4	SJR Source Water to Canal		2.5	17.5	0.0	2.5	0.0	7.5	0.0
5	Drain @ Wing Levee Rd.	7.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0
6	Drain @ Bowman Rd.		2.5	2.5	0.0				
6	Tom Paine Slough @ El Rancho Rd.					2.5	2.5	0.0	2.5
7	Lone Tree Crk @ Newcastle Rd.	20.0	10.0	2.5	0.0	0.0	0.0	2.3	0.0
8	Little John Crk @ Newcastle Rd.		5.0		0.0	0.0	0.0	0.0	
9	Walthal Slough @ Woodward Ave.		15.0	14.6	2.5	2.8	0.0	0.0	0.0
10	Westport Drain @ Jennings Rd.	4.8	2.5	7.5	0.0	0.0	0.0	0.0	0.0
11	Unnamed drain @ Pomelo Rd.	5.9	0.0	18.5	0.0	5.0	0.0	2.5	0.0
12	Drain @ Midway Rd E of Pedrick Rd.		10.0	2.5	2.5				
12a	Drain @ Robben Rd.			0.0		2.5	2.5	0.0	2.5
12b	Drain @ Robben Rd. & Midway Rd.			0.0	2.5	5.0	0.0	2.5	0.0
13	Drain @ Ulatis Creek @ Hwy 113	0.0	9.8	0.0	0.0	0.0	2.5	0.0	2.5
14	Drain @ Midway Rd W. of Schoeder	2.5	7.5						
14	Ck. @ Hawkins Rd.			0.0	0.0	2.5	0.0	2.5	5.0
15	Lateral to Gordon Slough @ Rd. 19	2.5	0.0	0.0	0.0	2.3	2.5	0.0	0.0
16	Gordon Slough @ Rd. 19	0.0	5.0	5.4	2.9	2.5	7.5	0.0	0.0
17	Willow Slough @ Rd. 27	10.0							
17	Drain @ Mace Blvd.		2.5	6.5	5.0	2.5	2.5	0.0	
18	Stone Corral Creek @ 4 Mile Rd.	12.5	0.0	0.0	2.1	0.0	2.5	2.5	2.5
19	East Drain @ 4 Mile Rd.	5.0	0.0	0.0	4.2	0.0	0.0	0.0	2.5
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					0.0	0.0	0.0	0.0
21	Sand Creek @ Miller Rd.	5.0	5.0	0.0	0.0	0.0	0.0	0.0	2.3
22	Drain South of Rd 14.		0.0						
22	Sycamore Slough @ Hwy 45			2.3	2.5	0.0	0.0	2.5	5.0
23	Knight's Landing Ridge CT South @ Rd 16.		0.0	4.8	0.0	2.3	2.5	2.3	7.5
24	Knight's Landing Ridge CT North @ Rd 16.	5.3	2.5	2.3	0.0	2.3	0.0	0.0	2.5

[A]: Not sampled due to low flow or dryness.

Appendix V

Quality Assurance

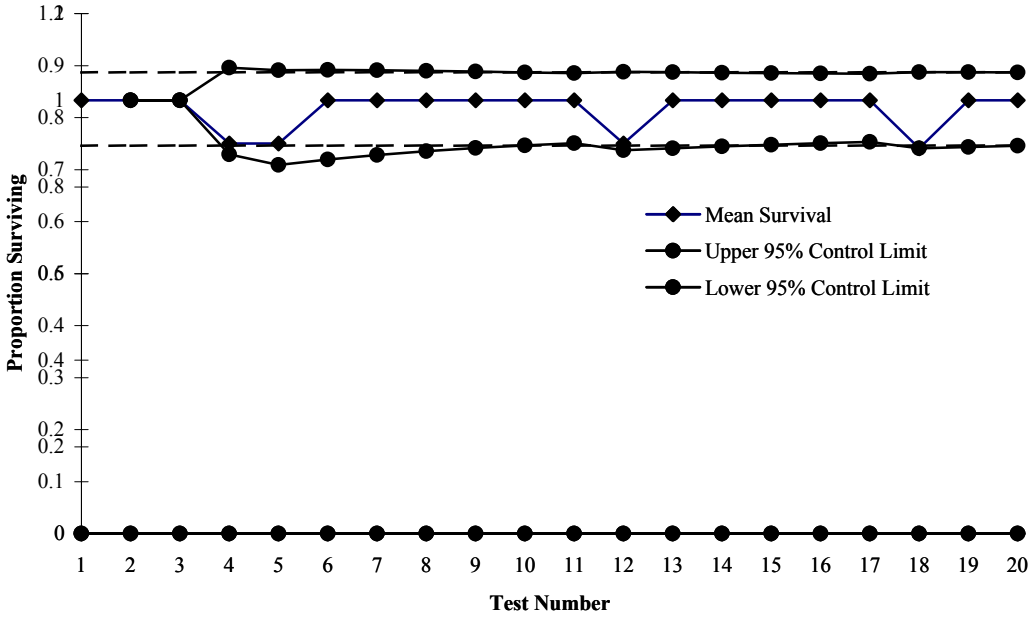

Figure V-1. Control survival for 7-day *C. dubia* sodium chloride reference toxicant tests.

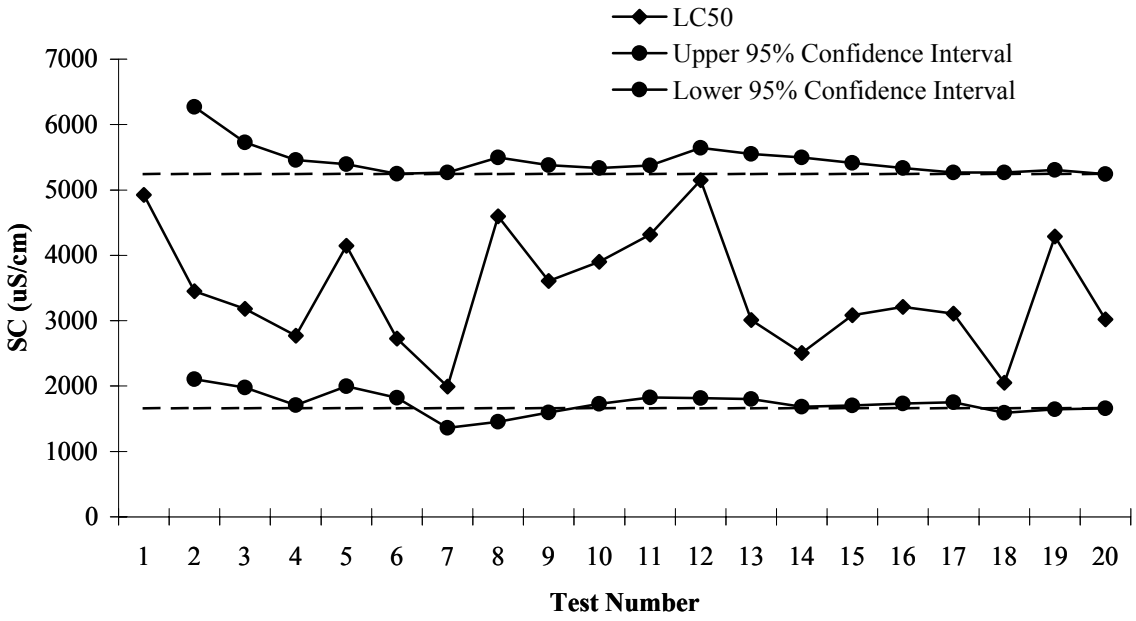

Figure V-2. Sodium chloride reference toxicant 7-day LC_{50} for C. dubia.

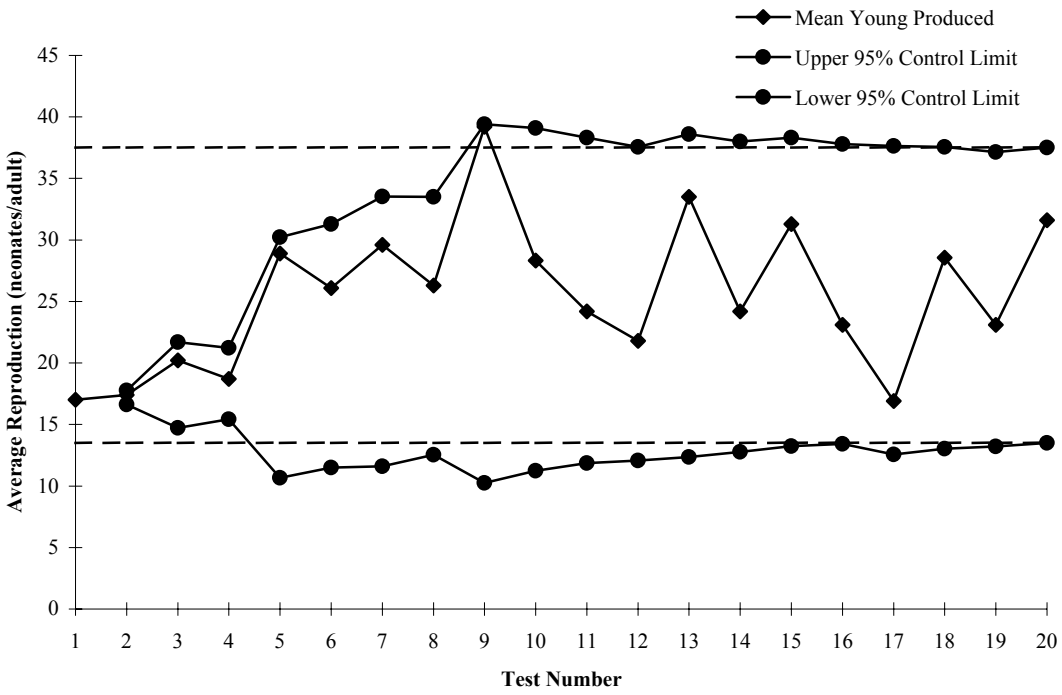

Figure V-3. Control reproduction for 7-day *C. dubia* sodium chloride reference toxicant tests.

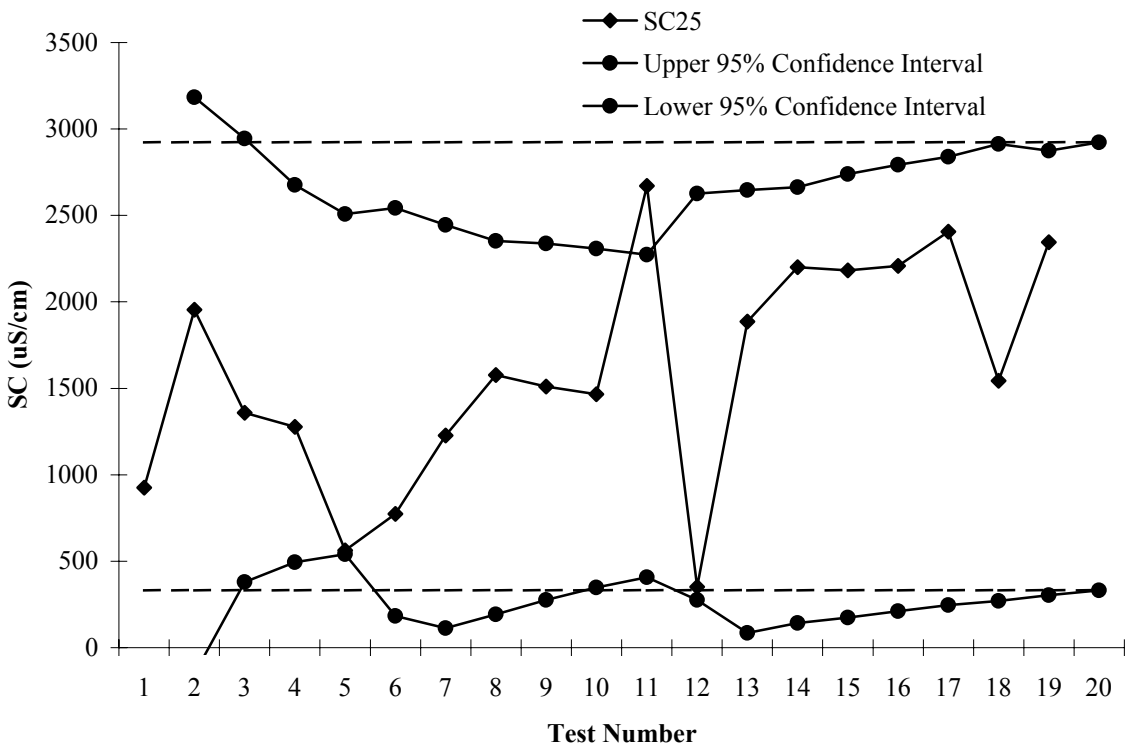

Figure V-4. Sodium chloride reference toxicant 7-day EC_{25} (reproduction) for *C. dubia* .

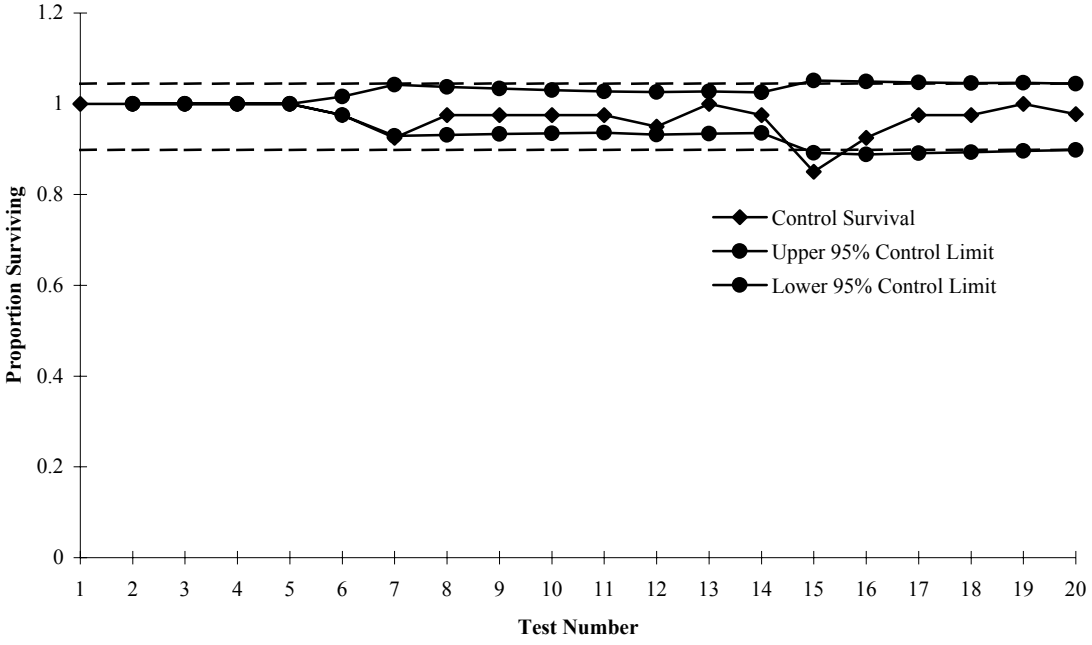

Figure V-5. Control survival for 7-day *P. promelas* sodium chloride reference toxicant tests.

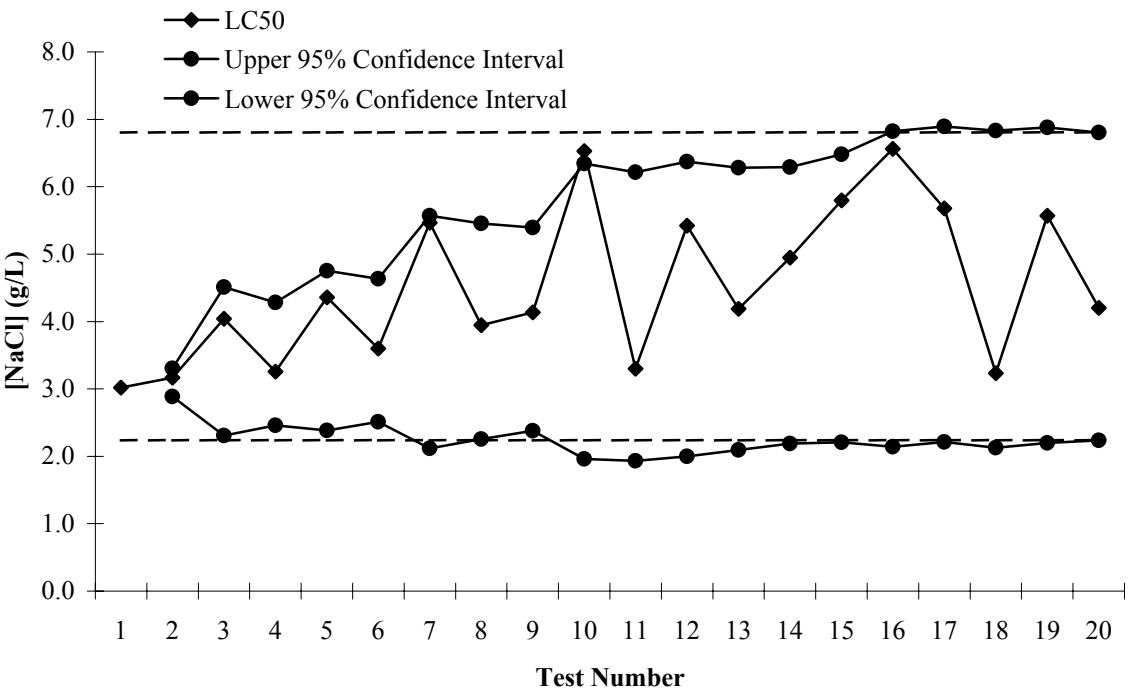

Figure V-6. Sodium chloride reference toxicant 7-day LC_{50} for *P. promelas* .

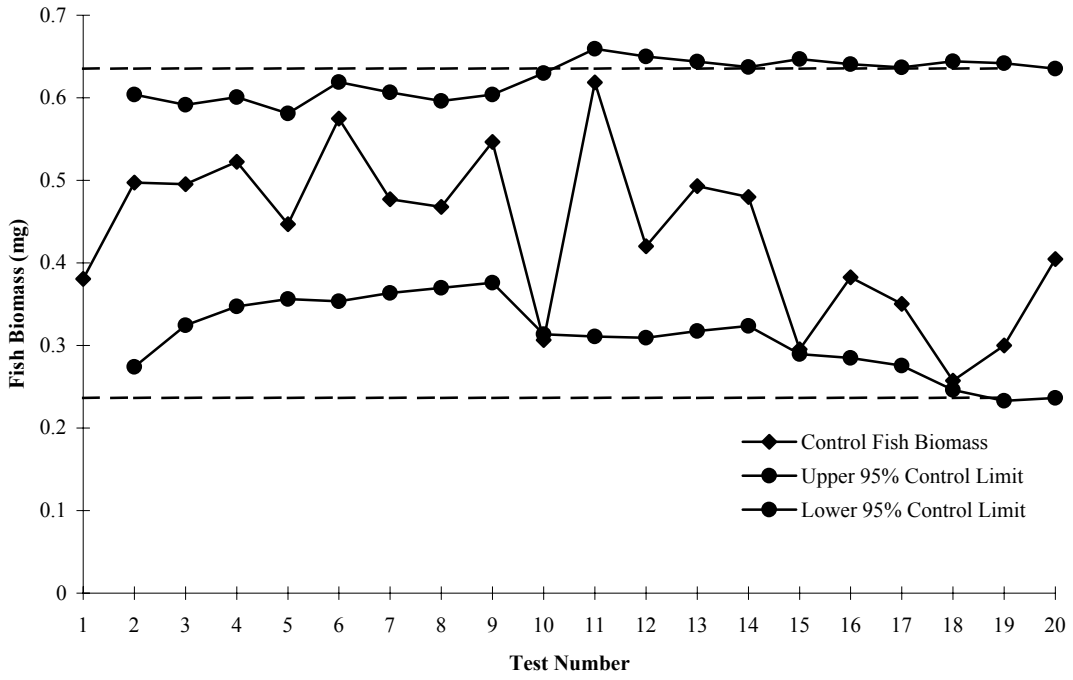

Figure V-7. Control biomass for 7-day *P. promelas* sodium chloride reference toxicant tests.

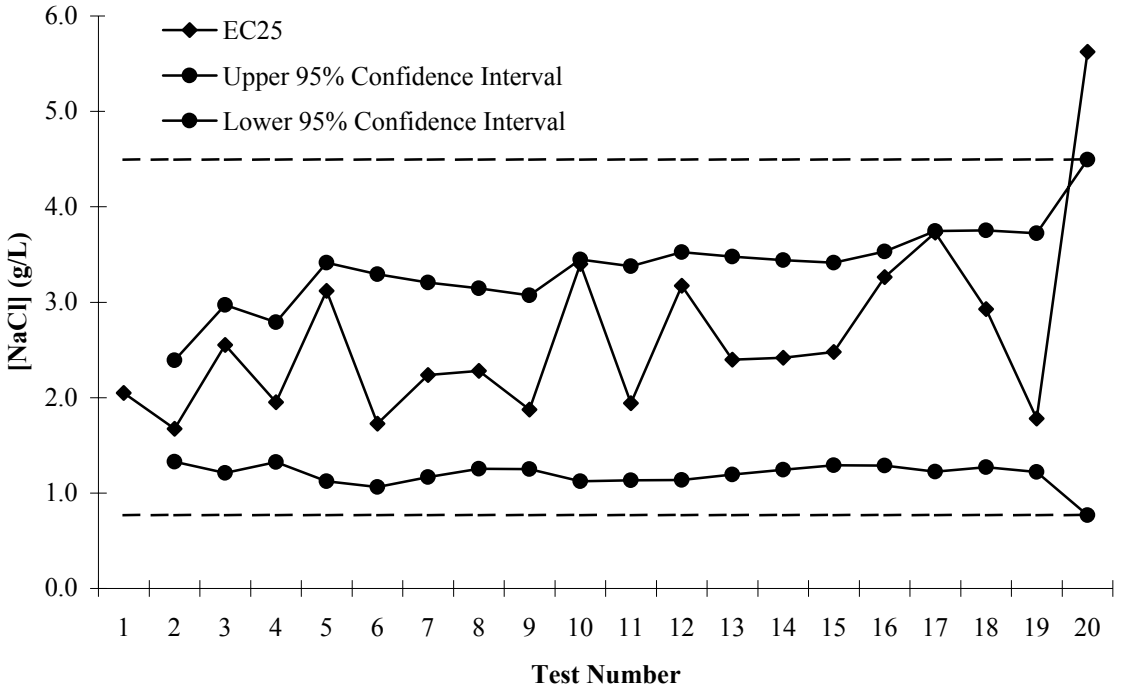

Figure V-8. Sodium chloride 7-day EC_{25} (biomass) for *P. promelas* .

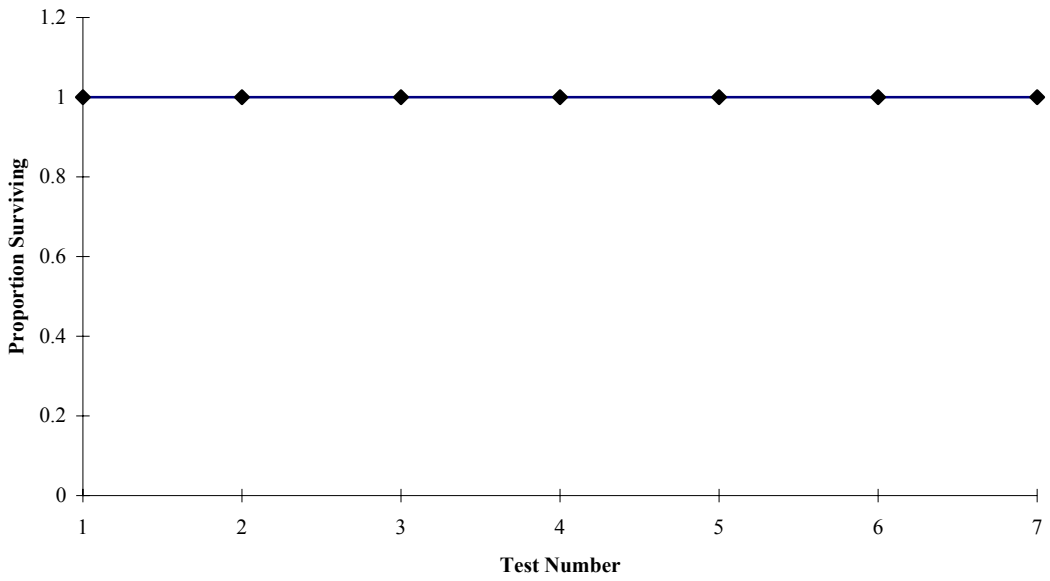

Figure V-9. Survival of control animals in monthly 4-day *C. dubia* acute reference toxicant tests.

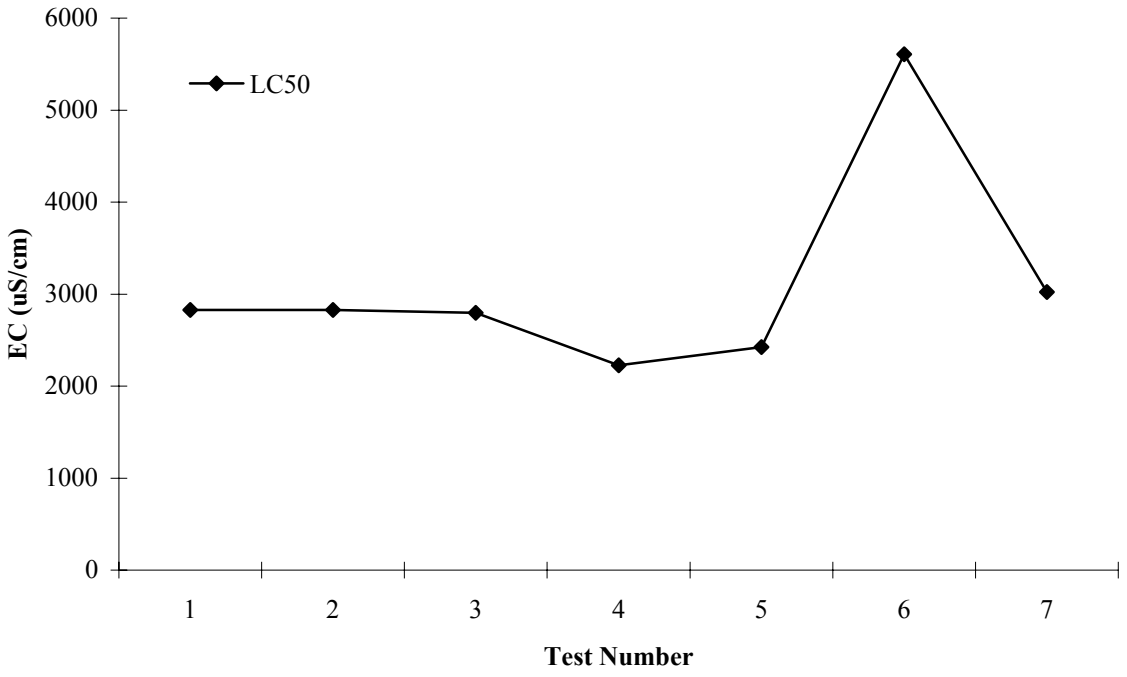

Figure V-10. Monthly survival LC_{50} of *C. dubia* in 4-day reference toxicant tests.

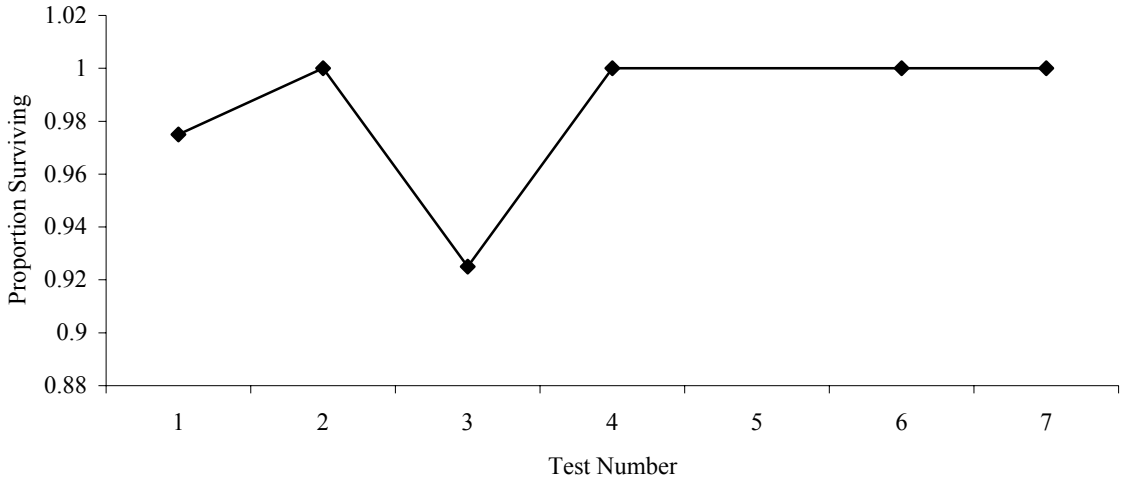

Figure V-11. Survival of control animals in monthly 4-day *P. promelas* acute reference toxicant tests.

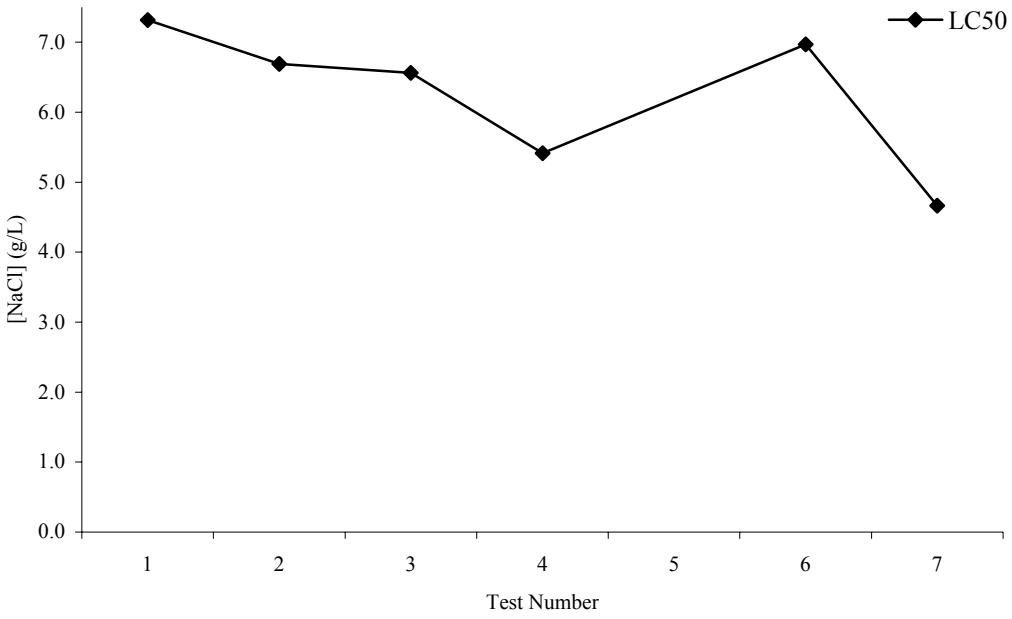

Figure V-12. Monthly survival LC_{50} of *P. promelas* in 4-day acute reference toxicant tests.

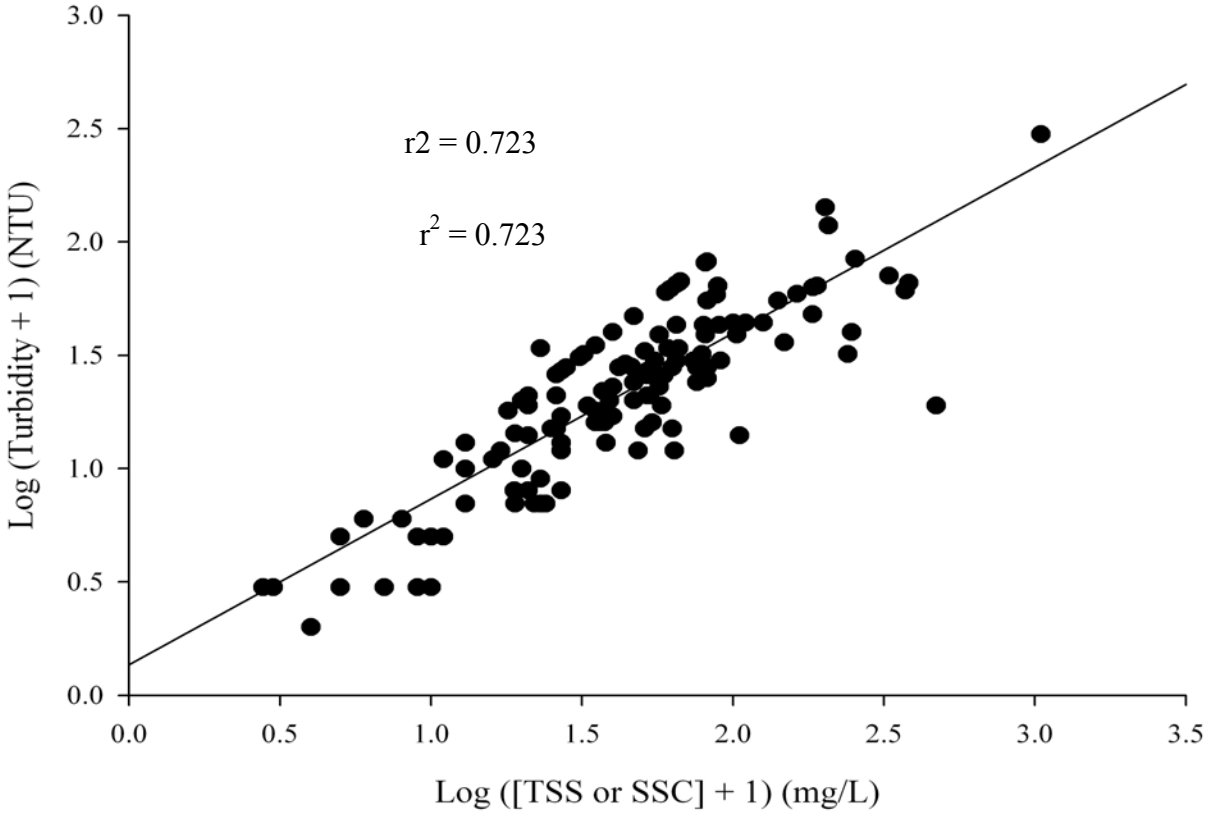

Figure V-13. Linear regression between log transformed measurements of TSS or SSC and log transformed turbidity measurements.

Table V-1. Relative percent precision for laboratory control duplicates, trip blanks, toxicant-spiked, and field duplicates of samples collected from 26 March 2003 to 7 October 2003.

Laboratory Control Duplicates						
	C. dubia			*P. promelas*		
	Sample Size	Mean	S.D.	Sample Size	Mean	S.D.
pH	6	10.05	21.19	6	1.20	1.48
EC	6	10.39	11.25	6	13.08	12.97
DO	6	7.96	7.11	6	2.71	2.08
Hardness	2	7.87	9.87	2	9.52	0.00
Alkalinity	3	5.29	4.01	2	5.71	1.06

Trip Blanks						
	C. dubia			*P. promelas*		
	Sample Size	Mean	S.D.	Sample Size	Mean	S.D.
pH	8	1.59	1.30	7	1.30	0.69
EC	8	19.15	25.20	7	25.17	30.32
DO	8	2.13	3.01	7	3.06	2.81
Hardness	5	14.98	8.30	3	3.18	2.75
Alkalinity	5	13.35	11.00	3	10.02	7.17

Toxicant-Spiked Duplicates		
	C. dubia	*P. promelas*
	Relative Percent Precision	Relative Percent Precision
pH	0.48	1.42
EC	7.86	6.00
DO	2.78	5.26

Field Duplicates			
	Sample Size	Mean	S.D.
pH	8	1.82	1.16
EC	8	3.92	2.65
DO	8	3.06	2.15
Hardness	8	15.87	25.77
Alkalinity	8	13.29	12.20
Ammonia	5	52.75	35.51
TSS/SSC	5	28.44	29.56

Appendix VI

Water Quality

Table VI-1. Summary of field temperature measurements for preplanned sampling events, a special study, and follow-samples from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	Temperature (°C)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	23.4	21.3	22.5	1.1
1[B]	8 Mile & Rio Blanco Rd.	5	29.5	22.1	26.2	2.8
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	9	28.6	14.9	23.2	3.9
3	Return Irrigation Drain @ MCD Rd.	8	29.5	20.5	26.1	3.2
4	SJR Source Water to Canal	8	27.8	20.9	25.0	2.1
5	Drain @ Wing Levee Rd.	8	30.5	18.1	25.4	3.9
6[A]	Drain @ Bowman Rd.	3	24.0	18.7	20.6	3.0
6[B]	Tom Paine Slough @ El Rancho Rd.	5	26.4	21.1	23.2	2.2
7	Lone Tree Creek @ Newcastle Rd.	8	30.5	21.5	25.8	3.4
8	Little John Creek @ Newcastle Rd.	7	37.2	17.2	28.4	6.3
9	Walthal Slough @ Woodward Ave.	8	26.3	18.3	23.4	2.5
10	Westport Drain @ Jennings Rd.	10	32.3	22.8	25.1	2.7
11	Unnamed Drain @ Pomelo Rd.	9	31.2	20.4	25.1	3.2
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	25.3	15.8	19.6	3.0
12b	Drain @ Robben Rd. & Midway Rd.	6	22.6	17.3	19.8	2.1
13	Drain @ Ulatis Creek @ Hwy. 113	8	27.9	15.4	23.5	3.8
14[C]	Creek @ Hawkins Rd.	7	25.9	18.1	22.1	2.3
15	Lateral to Gordon Slough @ Rd. 19	9	33.0	19.6	24.6	4.1
16	Gordon Slough @ Rd. 19	8	31.7	22.3	26.4	3.3
17[D]	Drain @ Mace Blvd.	7	24.1	18.1	21.1	2.5
18	Stone Corral Creek @ 4 Mile Rd.	10	27.8	18.8	24.5	2.8
19	East Drain @ 4 Mile Rd.	10	31.3	17.7	26.2	4.2
20	West Drainage @ Del Paso Rd.	4	29.1	22.7	24.9	2.9
21	Sand Creek @ Miller Rd.	9	26.2	20.2	23.7	2.1
22	Sycamore Slough @ Hwy. 45	9	29.0	20.7	25.2	2.7
23	Knight's Landing Ridge Cut South @ Rd. 16	7	28.9	19.7	23.6	3.5
24	Knight's Landing Ridge Cut North @ Rd. 16	8	32.2	20.0	24.5	4.2

[A]: Before 6/12/03

[B]: After 7/3/03

[C]: After 5/29/03

[D]: After 6/5/03

Table VI-2. Summary of field temperature (°C) measurements for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	21.3	23.4	22.8					
1	8 Mile & Rio Blanco Rd.				29.5	28.2	25.6	25.6	22.1
2	Unnamed Slough @ Woodsbro Rd.	14.9	24.9	21.8					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				26.0	28.6	24.8	24.7	22.0
3	Return Irrigation Drain @ MCD Rd.	20.5	24.0	27.5	28.5	29.5	24.7	29.5	24.3
4	SJR Source Water to Canal	20.9	24.0	24.3	26.5	27.8	25.9	25.9	24.8
5	Drain @ Wing Levee Rd.	23.2	27.0	18.1	30.5	29.6	24.3	24.7	25.4
6	Drain @ Bowman Rd.	18.7	24.0	19.0	23.0				
6	Tom Paine Slough @ El Rancho Rd.					26.4	21.5	24.2	21.1
7	Lone Tree Crk @ Newcastle Rd.	21.5	30.5	27.8	29.0	28.2	23.1	23.4	22.8
8	Little John Crk @ Newcastle Rd.	17.2	37.2		32.5	31.5	27.2	26.5	
9	Walthal Slough @ Woodward Ave	18.3	22.3	26.0	24.1	26.3	23.6	24.3	22.4
10	Westport Drain @ Jennings Rd.	24.7	32.3	23.8	24.5	24.8	22.8	23.3	23.9
11	Unnamed Drain @ Pomelo Rd.	20.4	31.2	25.0	26.5	26.4	22.0	22.9	27.1
12	Drain @ Midway Rd E of Pedrick Rd.								
12a	Drain @ Robben Rd.		23.1	19.3	16.8	19.2	18.0	15.8	17.9
12b	Drain @ Robben Rd. & Midway Rd.			22.6	17.3	22.0	18.6	18.3	19.7
13	Drain @ Ulatis Creek @ Hwy. 113	24.1	25.5	24.9	25.9	27.9	22.5	15.4	22.0
14	Drain @ Midway Rd W. of Schoeder	21.9	22.0	25.9					
14	Ck. @ Hawkins Rd.				22.1	22.4	21.3	18.1	23.0
15	Lateral to Gordon Slough @ Rd. 19	22.0	23.6	26.3	33.0	28.8	24.5	19.6	22.0
16	Gordon Slough @ Rd. 19	23.0	25.1	27.0	31.7	29.1	28.9	24.0	22.3
17	Willow Slough @ Rd. 27	22.9							
17	Drain @ Mace Blvd.		24.0	20.1	22.8	20.4	18.3	18.1	
18	Stone Corral Creek @ 4 Mile Rd.	26.8	27.8	24.4	26.6	23.2	21.5	23.6	18.8
19	East Drain @ 4 Mile Rd.	26.5	30.5	29.0	28.8	25.5	21.8	23.4	17.7
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					22.7	29.1	24.0	23.6
21	Sand Creek @ Miller Rd.	23.0	25.8	24.0	24.5	26.2	25.6	20.2	21.3
22	Drain South of Rd. 14		27.3						
22	Sycamore Slough @ Hwy 45			24.6	27.9	22.9	26.3	20.7	25.4
23	Knight's Landing Ridge CT South @ Rd. 16		28.9	20.4	25.5	26.6	22.8	21.2	19.7
24	Knight's Landing Ridge CT North @ Rd. 16	20.0	32.2	23.0	29.6	23.8	23.3	21.4	22.7

[A]: Not sampled due to low flow or dryness.

Table VI-3. Summary of field dissolved oxygen measurements for preplanned sample events, a special study, and up samples from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	DO (mg/L)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	8.50	3.93	6.74	2.46
1[B]	8 Mile & Rio Blanco Rd	5	7.70	5.30	6.41	1.14
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	9	7.49	4.20	5.66	1.36
3	Return Irrigation Drain @ MCD Rd.	8	8.06	3.88	6.52	1.47
4	SJR Source Water to Canal	8	9.40	4.35	6.11	1.59
5	Drain @ Wing Levee Rd.	8	9.50	2.80	6.44	1.93
6[A]	Drain @ Bowman Rd.	3	8.70	2.82	5.69	2.94
6[B]	Tom Paine Slough @ El Rancho Rd.	5	6.80	1.35	3.81	2.14
7	Lone Tree Creek @ Newcastle Rd.	8	9.70	3.15	6.63	1.95
8	Little John Creek @ Newcastle Rd.	7	12.00	4.60	7.61	2.36
9	Walthal Slough @ Woodward Ave.	7	6.13	1.70	4.69	1.42
10	Westport Drain @ Jennings Rd.	10	12.80	7.79	10.29	1.77
11	Unnamed Drain @ Pomelo Rd.	9	12.10	6.30	9.81	1.75
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	15.50	2.79	8.63	3.75
12b	Drain @ Robben Rd. & Midway Rd.	6	5.40	2.50	3.93	1.27
13	Drain @ Ulatis Creek @ Hwy. 113	8	10.00	4.50	6.98	1.74
14[C]	Creek @ Hawkins Rd.	7	10.62	6.70	7.75	1.36
15	Lateral to Gordon Slough @ Rd. 19	9	7.80	4.00	5.43	1.18
16	Gordon Slough @ Rd. 19	8	8.20	1.58	4.94	2.31
17[D]	Drain @ Mace Blvd.	7	6.85	3.38	5.38	1.18
18	Stone Corral Creek @ 4 Mile Rd.	10	8.10	3.11	7.07	1.47
19	East Drain @ 4 Mile Rd.	10	8.86	5.20	6.60	1.14
20	West Drainage @ Del Paso Rd.	4	10.41	5.20	7.65	2.23
21	Sand Creek @ Miller Rd.	9	8.58	3.28	6.90	1.55
22	Sycamore Slough @ Hwy 45	9	13.20	4.52	6.52	2.64
23	Knight's Landing Ridge Cut South @ Rd. 16	7	7.85	2.50	4.99	2.03
24	Knight's Landing Ridge Cut North @ Rd. 16	8	9.10	3.70	5.83	1.65

[A]: Before 6/12/03

[B]: After 7/3/03

[C]: After 5/29/03

[D]: After 6/5/03

Table VI-4. Summary of field dissolved oxygen measurements (mg/L) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	3.93	7.80	8.50					
1	8 Mile & Rio Blanco Rd.				6.00	5.30	7.70	7.57	5.50
2	Unnamed Slough @ Woodsbro Rd.	7.49	5.80	4.30					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				4.70	4.20	7.20	7.07	6.00
3	Return Irrigation Drain @ MCD Rd.	3.88	4.70	8.06	6.30	7.10	7.30	7.27	7.53
4	SJR Source Water to Canal	5.01	6.20	4.35	5.50	5.40	5.70	7.31	9.40
5	Drain @ Wing Levee Rd.	6.28	7.80	2.80	6.00	6.90	6.80	5.47	9.50
6	Drain @ Bowman Rd.	2.82	8.70	5.56	6.80				
6	Tom Paine Slough @ El Rancho Rd.					5.10	1.35	3.00	2.79
7	Lone Tree Crk @ Newcastle Rd.	5.13	3.15	8.13	9.70	6.40	6.50	6.82	7.22
8	Little John Crk @ Newcastle Rd.	7.87	4.60		12.00	8.50	7.10	7.58	
9	Walthal Slough @ Woodward Ave		5.53	6.13	5.20	1.70	4.70	5.03	4.55
10	Westport Drain @ Jennings Rd.	7.79	8.24	12.14	12.80	10.90	11.70	9.85	11.51
11	Unnamed Drain @ Pomelo Rd.	6.30	11.02	10.12	11.00	9.20	12.10	9.92	10.55
12	Drain @ Midway Rd E of Pedrick Rd.		7.00						
12a	Drain @ Robben Rd.		2.79	7.44	7.80	6.50	8.00	6.80	8.30
12b	Drain @ Robben Rd. & Midway Rd.			2.58	3.50	5.40	5.20	2.50	4.40
13	Drain @ Ulatis Creek @ Hwy. 113	7.10	4.50	6.84	7.50	10.00	7.90	7.20	4.80
14	Drain @ Midway Rd W. of Schoeder	6.04	7.70	10.62					
14	Ck. @ Hawkins Rd.				7.20	7.00	6.90	6.70	8.10
15	Lateral to Gordon Slough @ Rd. 19	4.06	5.30	4.69	4.00	5.30	6.40	5.76	7.80
16	Gordon Slough @ Rd. 19	1.58	7.80	5.61	2.40	4.60	4.90	8.20	4.40
17	Willow Slough @ Rd. 27	3.91							
17	Drain @ Mace Blvd.		6.85	3.38	6.60	5.30	5.30	4.61	
18	Stone Corral Creek @ 4 Mile Rd.	3.11	6.83	7.30	7.80	7.70	7.10	7.95	6.86
19	East Drain @ 4 Mile Rd.	5.80	6.33	5.20	6.81	6.00	5.20	8.86	7.70
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					5.20	6.70	8.30	10.41
21	Sand Creek @ Miller Rd.	3.28	6.81	8.00	7.60	7.40	6.70	6.05	8.58
22	Drain South of Rd. 14		6.45						
22	Sycamore Slough @ Hwy 45			4.52	5.40	5.20	4.60	6.61	13.20
23	Knight's Landing Ridge CT South @ Rd. 16		7.85	5.27	4.90	7.10	2.50	4.71	2.60
24	Knight's Landing Ridge CT North @ Rd. 16	6.65	9.10	5.33	5.40	3.70	5.50	4.37	6.60

[A]: Not sampled due to low flow or dryness.

Table VI-5. Summary of field pH measurements for preplanned sampling events, a special study, and follow-up samples from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	pH			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	7.72	7.24	7.46	0.24
1[B]	8 Mile & Rio Blanco Rd	5	7.61	7.02	7.42	0.24
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	9	7.63	7.07	7.36	0.21
3	Return Irrigation Drain @ MCD Rd.	8	7.66	6.41	6.97	0.43
4	SJR Source Water to Canal	8	7.99	6.74	7.35	0.36
5	Drain @ Wing Levee Rd.	8	7.74	6.80	7.34	0.29
6[A]	Drain @ Bowman Rd.	3	7.54	7.15	7.28	0.22
6[B]	Tom Paine Slough @ El Rancho Rd.	5	7.58	7.04	7.32	0.22
7	Lone Tree Creek @ Newcastle Rd.	8	8.49	6.46	7.23	0.71
8	Little John Creek @ Newcastle Rd.	7	8.71	6.75	7.64	0.67
9	Walthal Slough @ Woodward Ave.	8	7.27	6.36	6.86	0.27
10	Westport Drain @ Jennings Rd.	10	8.40	7.50	7.99	0.25
11	Unnamed Drain @ Pomelo Rd.	9	8.90	7.69	8.31	0.43
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	8.72	7.57	8.04	0.34
12b	Drain @ Robben Rd. & Midway Rd.	6	7.80	7.27	7.65	0.20
13	Drain @ Ulatis Creek @ Hwy. 113	8	9.10	7.05	7.92	0.67
14[C]	Creek @ Hawkins Rd.	7	8.33	7.57	7.86	0.28
15	Lateral to Gordon Slough @ Rd. 19	9	7.90	7.32	7.61	0.21
16	Gordon Slough @ Rd. 19	8	8.27	7.25	7.67	0.29
17[D]	Drain @ Mace Blvd.	7	8.35	7.63	8.07	0.26
18	Stone Corral Creek @ 4 Mile Rd.	10	8.24	7.34	7.66	0.25
19	East Drain @ 4 Mile Rd.	10	8.20	7.11	7.57	0.33
20	West Drainage @ Del Paso Rd.	4	8.05	7.06	7.52	0.41
21	Sand Creek @ Miller Rd.	9	8.14	6.47	7.45	0.48
22	Sycamore Slough @ Hwy 45	9	8.65	7.00	7.64	0.48
23	Knight's Landing Ridge Cut South @ Rd. 16	7	8.27	7.25	7.76	0.36
24	Knight's Landing Ridge Cut North @ Rd. 16	8	8.14	7.44	7.88	0.25

[A]: Before 6/12/03

[B]: After 7/3/03

[C]: After 5/29/03

[D]: After 6/5/03

Table VI-6. Summary of field pH measurements for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	7.72	7.24	7.41					
1	8 Mile & Rio Blanco Rd.				7.61	7.02	7.37	7.57	7.52
2	Unnamed Slough @ Woodsbro Rd.	7.57	7.29	7.63					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				7.59	7.24	7.43	7.07	7.3
3	Return Irrigation Drain @ MCD Rd.	7.66	6.70	6.77	6.41	6.89	6.67	7.27	7.42
4	SJR Source Water to Canal	7.99	7.38	7.06	7.30	6.74	7.47	7.31	7.53
5	Drain @ Wing Levee Rd.	7.40	7.61	6.80	7.30	7.74	7.22	7.18	7.44
6	Drain @ Bowman Rd.	7.16	7.54	7.15	7.49				
6	Tom Paine Slough @ El Rancho Rd.					7.30	7.58	7.04	7.17
7	Lone Tree Crk @ Newcastle Rd.	8.49	7.32	7.37	7.99	6.65	6.83	6.46	6.69
8	Little John Crk @ Newcastle Rd.	7.69	7.80		8.71	8.05	7.57	6.92	
9	Walthal Slough @ Woodward Ave	6.81	7.27	7.12	6.36	6.89	6.91	6.80	6.75
10	Westport Drain @ Jennings Rd.	7.91	8.40	8.17	8.16	7.82	8.05	7.83	8.08
11	Unnamed Drain @ Pomelo Rd.	7.86	8.90	8.26	8.81	8.09	8.60	7.99	8.57
12	Drain @ Midway Rd E of Pedrick Rd.		7.95						
12a	Drain @ Robben Rd.		7.70	7.57	8.45	7.99	8.01	7.81	8.13
12b	Drain @ Robben Rd. & Midway Rd.			7.58	7.80	7.80	7.73	7.69	7.27
13	Drain @ Ulatis Creek @ Hwy. 113	9.10	7.05	7.62	8.61	8.18	7.77	7.40	7.65
14	Drain @ Midway Rd W. of Schoeder	8.75	7.59	8.33					
14	Ck. @ Hawkins Rd.				8.03	7.65	7.95	7.57	7.91
15	Lateral to Gordon Slough @ Rd. 19	7.87	7.51	7.51	7.78	7.50	7.72	7.90	7.40
16	Gordon Slough @ Rd. 19	7.25	7.80	7.56	7.74	7.59	7.65	8.27	7.50
17	Willow Slough @ Rd. 27	7.97							
17	Drain @ Mace Blvd.		8.22	7.78	8.35	8.20	7.63	8.13	
18	Stone Corral Creek @ 4 Mile Rd.	8.24	7.58	7.34	7.56	7.51	7.48	7.63	7.70
19	East Drain @ 4 Mile Rd.	8.20	7.48	7.84	7.11	7.44	7.25	7.66	7.83
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					7.06	7.54	7.44	8.05
21	Sand Creek @ Miller Rd.	8.14	7.88	7.10	7.31	6.47	7.38	7.55	7.47
22	Drain South of Rd. 14		7.73						
22	Sycamore Slough @ Hwy 45			7.29	7.38	7.00	7.26	7.90	8.65
23	Knight's Landing Ridge CT South @ Rd. 16		7.85	8.27	7.98	7.98	7.43	7.59	7.25
24	Knight's Landing Ridge CT North @ Rd. 16	8.14	8.05		8.00	7.70	7.44	7.89	8.14

[A]: Not sampled due to low flow or dryness.

Table VI-7. Summary of un-ionized ammonia measurements for preplanned sampling events, a special study, and samples from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	Un-ionized Ammonia (mg/L)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	0.00	0.00	0.00	0.00
1[B]	8 Mile & Rio Blanco Rd	5	0.01	0.00	0.00	0.01
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	8	0.04	0.00	0.01	0.01
3	Return Irrigation Drain @ MCD Rd.	8	0.02	0.00	0.01	0.01
4	SJR Source Water to Canal	8	0.05	0.00	0.01	0.02
5	Drain @ Wing Levee Rd.	8	0.20	0.00	0.03	0.06
6[A]	Drain @ Bowman Rd.	3	0.02	0.01	0.01	0.01
6[B]	Tom Paine Slough @ El Rancho Rd.	5	0.10	0.00	0.04	0.04
7	Lone Tree Creek @ Newcastle Rd.	8	0.05	0.00	0.02	0.02
8	Little John Creek @ Newcastle Rd.	7	0.04	0.00	0.01	0.02
9	Walthal Slough @ Woodward Ave.	8	0.05	0.00	0.02	0.02
10	Westport Drain @ Jennings Rd.	9	0.05	0.00	0.02	0.02
11	Unnamed Drain @ Pomelo Rd.	9	0.17	0.00	0.04	0.06
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	0.28	0.00	0.03	0.09
12b	Drain @ Robben Rd. & Midway Rd.	5	0.10	0.00	0.03	0.04
13	Drain @ Ulatis Creek @ Hwy. 113	8	0.04	0.00	0.01	0.01
14[C]	Creek @ Hawkins Rd.	7	0.28	0.00	0.05	0.10
15	Lateral to Gordon Slough @ Rd. 19	8	0.74	0.00	0.22	0.30
16	Gordon Slough @ Rd. 19	8	0.14	0.00	0.04	0.06
17[D]	Drain @ Mace Blvd.	6	0.18	0.00	0.05	0.07
18	Stone Corral Creek @ 4 Mile Rd.	10	0.02	0.00	0.01	0.01
19	East Drain @ 4 Mile Rd.	10	0.02	0.00	0.01	0.01
20	West Drainage @ Del Paso Rd.	4	0.00	0.00	0.00	0.00
21	Sand Creek @ Miller Rd.	9	0.02	0.00	0.01	0.01
22	Sycamore Slough @ Hwy 45	9	0.06	0.00	0.02	0.02
23	Knight's Landing Ridge Cut South @ Rd. 16	7	0.24	0.00	0.07	0.10
24	Knight's Landing Ridge Cut North @ Rd. 16	8	0.07	0.00	0.03	0.04

[A]: Before 6/12/03
[B]: After 7/3/03
[C]: After 5/29/03
[D]: After 6/5/03

Table VI-8. Summary of un-ionized ammonia (mg/L) measurements for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	0.00	0.00	0.00					
1	8 Mile & Rio Blanco Rd.				0.01	0.00	0.00	0.01	0.00
2	Unnamed Slough @ Woodsbro Rd.	0.00	0.02	0.00					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				0.02	0.02	0.04	0.00	0.00
3	Return Irrigation Drain @ MCD Rd.	0.01	0.00	0.02	0.00	0.00	0.00	0.01	0.01
4	SJR Source Water to Canal	0.01	0.05	0.02	0.02	0.00	0.00	0.00	0.00
5	Drain @ Wing Levee Rd.	0.03	0.01	0.20	0.00	0.01	0.00	0.01	0.01
6	Drain @ Bowman Rd.	0.01	0.01	0.02	0.08				
6	Tom Paine Slough @ El Rancho Rd.					0.02	0.10	0.01	0.00
7	Lone Tree Crk @ Newcastle Rd.	0.00	0.02	0.01	0.03	0.01	0.05	0.00	0.01
8	Little John Crk @ Newcastle Rd.	0.04	0.00		0.00	0.02	0.00	0.00	
9	Walthal Slough @ Woodward Ave	0.03	0.05	0.02	0.02	0.00	0.05	0.00	0.00
10	Westport Drain @ Jennings Rd.	0.05	0.00	0.03	0.02	0.02	0.02	0.00	0.00
11	Unnamed Drain @ Pomelo Rd.	0.03	0.05	0.02	0.00	0.17	0.00	0.01	0.02
12	Drain @ Midway Rd E of Pedrick Rd.		0.05						
12a	Drain @ Robben Rd.		0.28	0.00	0.00	0.00	0.00	0.00	0.01
12b	Drain @ Robben Rd. & Midway Rd.				0.01	0.00	0.10	0.02	0.01
13	Drain @ Ulatis Creek @ Hwy. 113	0.00	0.04	0.00	0.00	0.00	0.01	0.00	0.02
14	Drain @ Midway Rd W. of Schoeder	0.00	0.10	0.00					
14	Ck. @ Hawkins Rd.				0.05	0.00	0.03	0.00	0.01
15	Lateral to Gordon Slough @ Rd. 19	0.28	0.74	0.61	0.12	0.03	0.00	0.00	0.01
16	Gordon Slough @ Rd. 19	0.02	0.02	0.14	0.12	0.04	0.00	0.00	0.01
17	Willow Slough @ Rd. 27	0.00							
17	Drain @ Mace Blvd.		0.10	0.00	0.18	0.01	0.00	0.01	
18	Stone Corral Creek @ 4 Mile Rd.	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00
19	East Drain @ 4 Mile Rd.	0.00	0.00	0.01	0.01	0.00	0.00	0.02	0.00
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					0.00	0.00	0.00	0.00
21	Sand Creek @ Miller Rd.	0.02	0.02	0.01	0.01	0.00	0.00	0.01	0.01
22	Drain South of Rd. 14		0.06						
22	Sycamore Slough @ Hwy 45			0.02	0.06	0.01	0.00	0.01	0.01
23	Knight's Landing Ridge CT South @ Rd. 16		0.03	0.24	0.16	0.03	0.00	0.00	0.00
24	Knight's Landing Ridge CT North @ Rd. 16	0.00	0.07	0.02	0.10	0.03	0.00	0.00	0.00

[A]: Not sampled due to low flow or dryness.

Table VI-9. Summary of hardness measurements for preplanned sampling events, a special study, and follow-up from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	Hardness (mg/L as $CaCO_3$)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	104	16	66.7	45.5
1[B]	8 Mile & Rio Blanco Rd	5	362	72	156.4	119.7
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	9	540	180	282.7	115.8
3	Return Irrigation Drain @ MCD Rd.	8	280	106	176.8	58.0
4	SJR Source Water to Canal	8	188	100	131.5	27.2
5	Drain @ Wing Levee Rd.	8	424	144	243.8	88.7
6[A]	Drain @ Bowman Rd.	2	960	788	874.0	121.6
6[B]	Tom Paine Slough @ El Rancho Rd.	5	348	280	326.4	26.9
7	Lone Tree Creek @ Newcastle Rd.	8	104	40	58.0	20.8
8	Little John Creek @ Newcastle Rd.	6	320	48	162.0	125.4
9	Walthal Slough @ Woodward Ave.	8	148	72	102.5	28.1
10	Westport Drain @ Jennings Rd.	9	248	132	196.0	39.1
11	Unnamed Drain @ Pomelo Rd.	9	472	264	370.2	58.2
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	460	212	318.2	85.1
12b	Drain @ Robben Rd. & Midway Rd.	6	446	222	339.3	86.7
13	Drain @ Ulatis Creek @ Hwy. 113	8	316	200	243.8	46.9
14[C]	Creek @ Hawkins Rd.	7	258	208	225.1	16.2
15	Lateral to Gordon Slough @ Rd. 19	9	324	140	201.6	50.1
16	Gordon Slough @ Rd. 19	8	400	156	221.3	81.4
17[D]	Drain @ Mace Blvd.	7	476	280	365.1	73.9
18	Stone Corral Creek @ 4 Mile Rd.	10	132	92	112.8	12.3
19	East Drain @ 4 Mile Rd.	10	162	104	139.0	18.7
20	West Drainage @ Del Paso Rd.	4	170	128	147.5	20.7
21	Sand Creek @ Miller Rd.	9	172	56	112.4	35.4
22	Sycamore Slough @ Hwy. 45	9	272	116	167.6	47.0
23	Knight's Landing Ridge Cut South @ Rd. 16	7	596	356	454.6	85.7
24	Knight's Landing Ridge Cut North @ Rd. 16	8	424	144	301.5	85.8

[A]: Before 6/12/03
[B]: After 7/3/03
[C]: After 5/29/03
[D]: After 6/5/03

Table VI-10. Summary of hardness measurements (mg/L as $CaCO_3$) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	16	104	80					
1	8 Mile & Rio Blanco Rd.				100	88	72	160	362
2	Unnamed Slough @ Woodsbro Rd.	540	260	216					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				180	200	192	256	368
3	Return Irrigation Drain @ MCD Rd.	280	106	244	160	136	140	180	168
4	SJR Source Water to Canal	188	120	120	116	100	120	140	148
5	Drain @ Wing Levee Rd.	424	316	196	144	180	212	236	242
6	Drain @ Bowman Rd.		960	788	280				
6	Tom Paine Slough @ El Rancho Rd.					340	328	336	348
7	Lone Tree Crk @ Newcastle Rd.	40	68	40	104	60	52	52	48
8	Little John Crk @ Newcastle Rd.	308	320		168	48	72	56	
9	Walthal Slough @ Woodward Ave	124	128	76	104	148	88	72	80
10	Westport Drain @ Jennings Rd.	244	212	196	132	176	248	200	208
11	Unnamed Drain @ Pomelo Rd.	380	472	344	384	360	420	328	264
12	Drain @ Midway Rd E of Pedrick Rd.		512						
12a	Drain @ Robben Rd.		328	280	276	440	322	460	372
12b	Drain @ Robben Rd. & Midway Rd.			384	316	264	446	404	222
13	Drain @ Ulatis Creek @ Hwy. 113	200	244	216	200	316	248	312	214
14	Drain @ Midway Rd W. of Schoeder	224	218	208					
14	Ck. @ Hawkins Rd.				220	216	258	224	232
15	Lateral to Gordon Slough @ Rd. 19	324	200	192	172	196	140	200	206
16	Gordon Slough @ Rd. 19	400	156	172	220	276	184	172	190
17	Willow Slough @ Rd. 27	340							
17	Drain @ Mace Blvd.		456	280	336	368	324	476	
18	Stone Corral Creek @ 4 Mile Rd.	128	92	120	116	108	112	116	100
19	East Drain @ 4 Mile Rd.	136	104	132	140	156	148	162	152
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					132	160	170	128
21	Sand Creek @ Miller Rd.	104	144	84	172	120	100	92	56
22	Drain South of Rd. 14		156						
22	Sycamore Slough @ Hwy 45			160	148	116	136	164	272
23	Knight's Landing Ridge CT South @ Rd. 16		364	412	356	456	596	512	486
24	Knight's Landing Ridge CT North @ Rd. 16	424	276	276	312	340	144	256	384

[A]: Not sampled due to low flow or dryness.

Table VI-11. Summary of alkalinity measurements for preplanned sampling events, a special study and follow-up from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	Alkalinity (mg/L as $CaCO_3$)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	60	32	49.3	15.1
1[B]	8 Mile & Rio Blanco Rd	5	273	80	135.0	80.6
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	9	226	102	144.8	44.4
3	Return Irrigation Drain @ MCD Rd.	8	268	60	110.5	67.1
4	SJR Source Water to Canal	8	142	72	97.3	21.4
5	Drain @ Wing Levee Rd.	8	222	90	137.1	39.8
6[A]	Drain @ Bowman Rd.	3	344	258	299.3	43.1
6[B]	Tom Paine Slough @ El Rancho Rd.	5	212	178	191.6	14.0
7	Lone Tree Creek @ Newcastle Rd.	8	108	40	64.8	24.9
8	Little John Creek @ Newcastle Rd.	7	262	48	129.1	87.3
9	Walthal Slough @ Woodward Ave.	8	150	72	106.8	27.2
10	Westport Drain @ Jennings Rd.	9	295	154	212.3	48.2
11	Unnamed Drain @ Pomelo Rd.	9	216	162	181.8	18.3
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	422	212	292.8	69.5
12b	Drain @ Robben Rd. & Midway Rd.	6	420	212	347.3	79.2
13	Drain @ Ulatis Creek @ Hwy. 113	8	246	206	219.4	13.0
14[C]	Creek @ Hawkins Rd.	7	264	194	215.4	22.9
15	Lateral to Gordon Slough @ Rd. 19	9	284	160	215.6	37.3
16	Gordon Slough @ Rd. 19	8	514	182	250.3	109.6
17[D]	Drain @ Mace Blvd.	7	486	354	404.6	55.8
18	Stone Corral Creek @ 4 Mile Rd.	10	248	132	162.8	37.0
19	East Drain @ 4 Mile Rd.	10	214	110	164.0	31.0
20	West Drainage @ Del Paso Rd.	4	213	152	183.8	28.5
21	Sand Creek @ Miller Rd.	8	174	64	130.0	34.2
22	Sycamore Slough @ Hwy. 45	9	368	170	210.0	61.5
23	Knight's Landing Ridge Cut South @ Rd. 16	7	370	320	341.4	17.5
24	Knight's Landing Ridge Cut North @ Rd. 16	8	426	286	324.5	46.1

[A]: Before 6/12/03
[B]: After 7/3/03
[C]: After 5/29/03
[D]: After 6/5/03

Table VI-12. Summary of alkalinity measurements (mg/L as $CaCO_3$) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	32	56	60					
1	8 Mile & Rio Blanco Rd.				92	90	80	140	273
2	Unnamed Slough @ Woodsbro Rd.	226	128	120					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				102	108	121	140	212
3	Return Irrigation Drain @ MCD Rd.	126	268	80	60	70	76	100	104
4	SJR Source Water to Canal	142	96	90	80	72	95	92	111
5	Drain @ Wing Levee Rd.	222	162	120	90	118	133	118	134
6	Drain @ Bowman Rd.	296	344	258	178				
6	Tom Paine Slough @ El Rancho Rd.					180	190	198	212
7	Lone Tree Crk @ Newcastle Rd.	40	84	52	108	88	48	46	52
8	Little John Crk @ Newcastle Rd.	262	234		146	62	82	48	
9	Walthal Slough @ Woodward Ave	136	150	86	92	126	96	72	96
10	Westport Drain @ Jennings Rd.	272	242	208	174	192	295	168	206
11	Unnamed Drain @ Pomelo Rd.	204	216	174	164	190	180	170	162
12	Drain @ Midway Rd E of Pedrick Rd.		500						
12a	Drain @ Robben Rd.		346	284	258	422	312	308	354
12b	Drain @ Robben Rd. & Midway Rd.			410	322	322	398	420	212
13	Drain @ Ulatis Creek @ Hwy. 113	220	228	212	212	246	222	209	206
14	Drain @ Midway Rd W. of Schoeder	212	212	200					
14	Ck. @ Hawkins Rd.				264	208	218	194	212
15	Lateral to Gordon Slough @ Rd. 19	284	202	258	206	182	160	224	218
16	Gordon Slough @ Rd. 19	514	182	202	224	266	212	190	212
17	Willow Slough @ Rd. 27	380							
17	Drain @ Mace Blvd.		484	374	370	380	354	486	
18	Stone Corral Creek @ 4 Mile Rd.	154	248	148	150	212	146	146	132
19	East Drain @ 4 Mile Rd.	110	142	164	174	146	214	202	142
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					152	202	213	168
21	Sand Creek @ Miller Rd.	116	174	138	156	152	132	108	64
22	Drain South of Rd. 14		188						
22	Sycamore Slough @ Hwy 45			206	170	170	182	212	368
23	Knight's Landing Ridge CT South @ Rd. 16		320	354	338	370	350	326	332
24	Knight's Landing Ridge CT North @ Rd. 16	426	298	300	306	320	304	286	356

[A]: Not sampled due to low flow or dryness.

Table VI-13. Summary of turbidity measurements for preplanned sample events, a special study, and follow-up samples 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	Turbidity (NTU)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	2	5.0	5.0	5.0	0.0
1[B]	8 Mile & Rio Blanco Rd	3	19.0	19.0	10.5	5.7
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	5	64.0	20.0	42.7	21.3
3	Return Irrigation Drain @ MCD Rd.	5	35.0	17.0	23.0	7.4
4	SJR Source Water to Canal	5	15.0	6.0	8.8	3.8
5	Drain @ Wing Levee Rd.	5	81.0	15.0	50.2	26.0
6[A]	Drain @ Bowman Rd.	3	15.0	15.0	15.0	0.0
6[B]	Tom Paine Slough @ El Rancho Rd.	2	31.0	4.0	14.8	13.2
7	Lone Tree Creek @ Newcastle Rd.	5	22.0	10.0	17.2	4.6
8	Little John Creek @ Newcastle Rd.	4	30.0	14.0	23.0	7.4
9	Walthal Slough @ Woodward Ave.	5	14.0	2.0	9.2	5.0
10	Westport Drain @ Jennings Rd.	5	4.0	1.0	2.2	1.1
11	Unnamed Drain @ Pomelo Rd.	5	47.0	14.0	37.6	13.6
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	5	11.0	2.0	6.6	3.5
12b	Drain @ Robben Rd. & Midway Rd.	5	31.0	13.0	19.2	7.1
13	Drain @ Ulatis Creek @ Hwy. 113	6	65.0	6.0	24.0	22.2
14[C]	Creek @ Hawkins Rd.	6	29.0	4.0	14.8	11.7
15	Lateral to Gordon Slough @ Rd. 19	6	298.0	24.8	108.0	97.7
16	Gordon Slough @ Rd. 19	6	66.0	12.0	33.6	24.7
17[D]	Drain @ Mace Blvd.	5	31.0	2.0	13.5	13.1
18	Stone Corral Creek @ 4 Mile Rd.	6	57.5	18.0	29.3	14.5
19	East Drain @ 4 Mile Rd.	6	32.0	19.0	24.7	4.9
20	West Drainage @ Del Paso Rd.	4	27.0	13.0	20.0	7.5
21	Sand Creek @ Miller Rd.	6	141.0	34.0	68.7	39.2
22	Sycamore Slough @ Hwy. 45	5	59.0	29.0	41.2	11.6
23	Knight's Landing Ridge Cut South @ Rd. 16	5	61.0	21.0	40.2	17.1
24	Knight's Landing Ridge Cut North @ Rd. 16	6	39.0	11.0	32.0	10.7

[A]: Before 6/12/03
[B]: After 7/3/03
[C]: After 5/29/03
[D]: After 6/5/03

Table VI-14. Summary of turbidity measurements (NTUs) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	5.0							
1	8 Mile & Rio Blanco Rd.					19.0	7.0	9.0	7.0
2	Unnamed Slough @ Woodsbro Rd.	20.0							
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee					64.0	62.0	27.0	23.0
3	Return Irrigation Drain @ MCD Rd.	35.0				17.0	17.0	24.0	22.0
4	SJR Source Water to Canal	15.0				10.0	6.0	6.0	7.0
5	Drain @ Wing Levee Rd.	15.0				81.0	70.0	42.0	43.0
6	Drain @ Bowman Rd.	15.0							
6	Tom Paine Slough @ El Rancho Rd.					20.0	31.0	4.0	4.0
7	Lone Tree Crk @ Newcastle Rd.	10.0				20.0	22.0	18.0	16.0
8	Little John Crk @ Newcastle Rd.	20.0				30.0	28.0	14.0	
9	Walthal Slough @ Woodward Ave	2.0				12.0	6.0	12.0	14.0
10	Westport Drain @ Jennings Rd.	2.0				4.0	2.0	1.0	2.0
11	Unnamed Drain @ Pomelo Rd.	38.0				46.0	47.0	14.0	43.0
12	Drain @ Midway Rd E of Pedrick Rd.								
12a	Drain @ Robben Rd.				11.0	5.0	9.0	2.0	6.0
12b	Drain @ Robben Rd. & Midway Rd.				15.0	31.0	13.0	20.0	17.0
13	Drain @ Ulatis Creek @ Hwy. 113	11.0			33.0	65.0	11.0	6.0	18.0
14	Drain @ Midway Rd W. of Schoeder	6.0							
14	Ck. @ Hawkins Rd.				7.0	26.0	29.0	8.0	4.0
15	Lateral to Gordon Slough @ Rd. 19	24.8			65.0	80.0	298.0	117.0	63.0
16	Gordon Slough @ Rd. 19	13.3			18.0	66.0	12.0	63.0	29.0
17	Willow Slough @ Rd. 27	24.8							
17	Drain @ Mace Blvd.				16.0	5.0	31.0	2.0	
18	Stone Corral Creek @ 4 Mile Rd.	57.5			18.0	25.0	27.0	29.0	19.0
19	East Drain @ 4 Mile Rd.	27.2			19.0	20.0	23.0	27.0	32.0
20	Elk Creek @ Hahn & Miller's Rd.								
20	West Drainage @ Del Paso Rd.					27.0	13.0	26.0	14.0
21	Sand Creek @ Miller Rd.	83.3			141.0	34.0	42.0	54.0	58.0
22	Drain South of Rd. 14								
22	Sycamore Slough @ Hwy 45				29.0	59.0	33.0	42.0	43.0
23	Knight's Landing Ridge CT South @ Rd. 16				54.0	61.0	38.0	27.0	21.0
24	Knight's Landing Ridge CT North @ Rd. 16	39.0			11.0	39.0	33.0	32.0	38.0

Table VI-15. Summary of suspended solids measurement ranges for preplanned sampling events from 26 March 2003 to October 2003.

Site	Site Description	Sample Size	Suspended Solids (mg/L)			
		n	Max.	Min.	Mean	S.D.
1	Beaver Slough @ Blossom Rd. / 8 Mile & Rio Blanco Rd.	7	269.4	7.0	65.0	91.8
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	8	371.0	52.0	173.0	112.5
3	Return Irrigation Drain @ MCD Rd.	8	147.0	26.0	59.4	39.8
4	SJR Source Water to Canal	8	36.6	5.8	20.8	8.9
5	Drain @ Wing Levee Rd.	8	1336.8	35.0	294.3	433.6
6	Drain @ Bowman Rd. / Tom Paine Sl. @ El Rancho Rd.	8	78.0	8.0	40.4	25.9
7	Lone Tree Creek @ Newcastle Rd.	8	54.3	15.0	35.7	10.9
8	Little John Creek @ Newcastle Rd.	6	235.2	24.0	73.7	80.5
9	Walthal Slough @ Woodward Ave.	8	50.0	1.8	31.3	15.8
10	Westport Drain @ Jennings Rd.	6	17.0	2.0	6.6	5.5
11	Unnamed Drain @ Pomelo Rd.	8	472.0	62.0	156.0	132.5
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	8	113.5	9.0	29.0	34.7
12b	Drain @ Robben Rd. & Midway Rd.	7	104.0	17.0	50.0	30.8
13	Drain @ Ulatis Creek @ Hwy. 113	9	1221.0	16.0	196.8	391.7
14[A]	Creek @ Hawkins Rd.	9	73.0	10.0	27.5	22.4
15	Lateral to Gordon Slough @ Rd. 19	8	1044.2	51.0	320.9	312.1
16	Gordon Slough @ Rd. 19	8	470.0	18.0	140.1	149.2
17[B]	Drain @ Mace Blvd.	6	239.0	8.0	81.8	93.7
18	Stone Corral Creek @ 4 Mile Rd.	8	87.0	38.0	61.5	16.1
19	East Drain @ 4 Mile Rd.	8	63.0	41.0	47.6	6.7
20	West Drainage @ Del Paso Rd.	4	51.0	20.0	33.8	14.0
21	Sand Creek @ Miller Rd.	8	253.0	63.0	135.5	73.8
22	Sycamore Slough @ Hwy. 45	7	117.0	0.3	74.8	46.0
23	Knight's Landing Ridge Cut South @ Rd. 16	7	140.0	36.0	88.9	38.2
24	Knight's Landing Ridge Cut North @ Rd. 16	8	246.0	23.0	87.9	68.4

[A]: After 5/29/03

[B]: After 6/5/03

Table VI-16. Summary of TSS/SSC* measurements (mg/L) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	7.00	52.84						
1	8 Mile & Rio Blanco Rd.				269.36	55.00	26.00	19.00	26.00
2	Unnamed Slough @ Woodsbro Rd.	52.00	294.63						
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				183.12	150.00	183.00	75.00	75.00
3	Return Irrigation Drain @ MCD Rd.	147.00	60.92	37.00	33.61	26.00	34.00	81.00	56.00
4	SJR Source Water to Canal	36.58	5.80	28.00	19.92	16.00	18.00	22.00	20.00
5	Drain @ Wing Levee Rd.	35.00	125.60	58.00	1336.78	274.00	327.00	89.00	109.00
6	Drain @ Bowman Rd.	34.00	35.85	74.00	46.14				
6	Tom Paine Slough @ El Rancho Rd.					38.00	78.00	8.00	9.00
7	Lone Tree Crk @ Newcastle Rd.	15.00	32.26	54.30	35.99	38.00	39.00	32.00	39.00
8	Little John Crk @ Newcastle Rd.	25.00	235.24		60.11	55.00	43.00	24.00	
9	Walthal Slough @ Woodward Ave	1.78	42.25	46.07	25.62	27.00	21.00	37.00	50.00
10	Westport Drain @ Jennings Rd.	4.00		7.58	16.99	1196.00	6.00	3.00	2.00
11	Unnamed Drain @ Pomelo Rd.	102.00	472.00	78.60	112.02	114.00	182.00	62.00	125.00
12	Drain @ Midway Rd E of Pedrick Rd.		18.49						
12a	Drain @ Robben Rd.		113.52	18.95	26.00	10.00	12.00	9.00	23.00
12b	Drain @ Robben Rd. & Midway Rd.			16.97	53.00	71.00	104.00	51.00	36.00
13	Drain @ Ulatis Creek @ Hwy. 113	16.00	98.14	36.90	60.00	261.00	1221.00	18.00	20.00
14	Drain @ Midway Rd W. of Schoeder	12.00	26.12	13.60					
14	Ck. @ Hawkins Rd.				17.89	58.00	73.00	22.00	10.00
15	Lateral to Gordon Slough @ Rd. 19	51.00	326.16	225.02	381.00	1246.00	1044.20	206.00	88.00
16	Gordon Slough @ Rd. 19	18.00	46.97	157.72	470.00	159.00	26.00	189.00	54.00
17	Willow Slough @ Rd. 27	58.00							
17	Drain @ Mace Blvd.		150.71		26.00	9.00	239.00	8.00	
18	Stone Corral Creek @ 4 Mile Rd.	87.00	62.09	51.87	57.00	51.00	81.00	64.00	38.00
19	East Drain @ 4 Mile Rd.	45.00	44.41	42.25	46.00	63.00	46.00	41.00	50.00
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					39.00	20.00	51.00	25.00
21	Sand Creek @ Miller Rd.	253.00	184.46	75.22	201.00	63.00	64.00	81.00	162.00
22	Drain South of Rd. 14		116.26						
22	Sycamore Slough @ Hwy 45			0.26	90.00	117.00	22.00	79.00	99.00
23	Knight's Landing Ridge CT South @ Rd. 16		75.15	137.39	140.00	92.00	80.00	62.00	36.00
24	Knight's Landing Ridge CT North @ Rd. 16	246.00	23.00	112.01	63.00	75.00	65.00	63.00	56.00

* Highlighted cells indicate TSS analysis.

[A]: Not sampled due to low flow or dryness.

Table VI-17. Summary of field specific conductivity measurements for preplanned sampling events, a special study, follow-up samples from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	SC (µS/cm)			
		n	Max.	Min.	Mean	S.D.
1[A]	Beaver Slough @ Blossom Rd.	3	210.2	59.3	147.1	78.4
1[B]	8 Mile & Rio Blanco Rd	5	1136.0	218.1	514.0	373.7
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	9	1495.0	559.0	1009.1	304.0
3	Return Irrigation Drain @ MCD Rd.	8	1170.0	582.0	803.4	198.9
4	SJR Source Water to Canal	8	756.0	447.3	596.2	95.1
5	Drain @ Wing Levee Rd.	8	1600.0	628.0	981.0	333.3
6[A]	Drain @ Bowman Rd.	3	3971.0	793.0	2545.0	1337.1
6[B]	Tom Paine Slough @ El Rancho Rd.	5	1558.0	1289.0	1440.0	98.2
7	Lone Tree Creek @ Newcastle Rd.	8	300.1	76.4	146.8	70.0
8	Little John Creek @ Newcastle Rd.	6	618.0	124.5	292.1	203.3
9	Walthal Slough @ Woodward Ave.	8	2320.0	191.3	609.5	702.0
10	Westport Drain @ Jennings Rd.	10	1032.0	350.0	635.9	228.4
11	Unnamed Drain @ Pomelo Rd.	9	1795.0	1213.0	1489.9	199.2
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	10	965.0	440.3	662.3	188.4
12b	Drain @ Robben Rd. & Midway Rd.	6	1094.0	493.1	885.4	218.7
13	Drain @ Ulatis Creek @ Hwy. 113	8	615.0	442.9	525.9	53.3
14[C]	Creek @ Hawkins Rd.	7	630.0	474.0	539.9	62.4
15	Lateral to Gordon Slough @ Rd. 19	9	680.0	352.0	513.3	89.4
16	Gordon Slough @ Rd. 19	8	1046.0	414.0	538.7	208.8
17[D]	Drain @ Mace Blvd.	7	1044.0	107.0	756.3	301.9
18	Stone Corral Creek @ 4 Mile Rd.	10	495.2	316.4	359.5	53.6
19	East Drain @ 4 Mile Rd.	10	709.0	455.0	537.6	88.9
20	West Drainage @ Del Paso Rd.	4	522.0	383.6	447.6	60.3
21	Sand Creek @ Miller Rd.	9	464.0	144.2	317.0	96.4
22	Sycamore Slough @ Hwy 45	9	1140.0	459.0	623.9	229.5
23	Knight's Landing Ridge Cut South @ Rd. 16	7	1654.0	857.0	1206.7	262.6
24	Knight's Landing Ridge Cut North @ Rd. 16	8	1222.0	768.0	961.1	158.8

[A]: Before 6/12/03

[B]: After 7/3/03

[C]: After 5/29/03

[D]: After 6/5/03

Table VI-18. Summary of field specific conductivity measurements (µS/cm) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.	59.3	210.2	171.8					
1	8 Mile & Rio Blanco Rd.				304.0	327.0	218.1	585.0	1136.0
2	Unnamed Slough @ Woodsbro Rd.	1408.0	1157.0	866.0					
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				759.0	825.0	559.0	969.0	1495.0
3	Return Irrigation Drain @ MCD Rd.	1014.0	1170.0	801.0	685.0	582.0	634.0	817.0	724.0
4	SJR Source Water to Canal	651.0	625.0	535.0	522.0	447.3	587.0	756.0	646.0
5	Drain @ Wing Levee Rd.	1600.0	1357.0	742.0	628.0	735.0	890.0	937.0	959.0
6	Drain @ Bowman Rd.	3030.0	793.0	2386.0	1289.0				
6	Tom Paine Slough @ El Rancho Rd.					1421.0	1558.0	1457.0	1475.0
7	Lone Tree Crk @ Newcastle Rd.	76.4	190.0	121.8	300.1	136.0	100.0	117.1	133.0
8	Little John Crk @ Newcastle Rd.	618.0			475.0	169.0	187.0	124.5	
9	Walthal Slough @ Woodward Ave	306.7	501.0	288.0	370.7	578.0	320.3	191.3	2320.0
10	Westport Drain @ Jennings Rd.	819.0	351.5	673.0	489.1	476.0	894.0	613.0	661.0
11	Unnamed Drain @ Pomelo Rd.	1216.0	1674.0	1478.0	1561.0	1608.0	1512.0	1352.0	1213.0
12	Drain @ Midway Rd E of Pedrick Rd.		1151.0						
12a	Drain @ Robben Rd.		669.0	565.0	578.0	965.0	710.0	960.0	761.0
12b	Drain @ Robben Rd. & Midway Rd.			928.0	842.0	875.0	1094.0	1080.0	493.1
13	Drain @ Ulatis Creek @ Hwy. 113	442.9	516.0	532.0	475.6	568.0	615.0	546.0	512.0
14	Drain @ Midway Rd W. of Schoeder	163.9	630.0	488.0					
14	Ck. @ Hawkins Rd.				474.0	542.0	571.0	477.0	597.0
15	Lateral to Gordon Slough @ Rd. 19	680.0	570.0	459.0	483.0	525.0	352.0	513.0	557.0
16	Gordon Slough @ Rd. 19	1046.0	414.0	419.7	506.0	521.0	468.0	439.0	495.9
17	Willow Slough @ Rd. 27	920.0							
17	Drain @ Mace Blvd.		107.0	808.0	786.0	941.0	795.0	1044.0	
18	Stone Corral Creek @ 4 Mile Rd.	495.2	316.4	396.4	369.2	334.3	330.0	340.0	316.9
19	East Drain @ 4 Mile Rd.	571.0	455.0	664.0	455.0	517.0	492.0	560.0	709.0
20	Elk Creek @ Hahn & Miller's Rd.	A	A	A	A				
20	West Drainage @ Del Paso Rd.					383.6	467.0	522.0	417.7
21	Sand Creek @ Miller Rd.	265.0	464.0	365.0	416.0	341.7	242.0	279.0	144.2
22	Drain South of Rd. 14		567.0						
22	Sycamore Slough @ Hwy 45			578.0	466.0	459.0	467.0	549.0	1140.0
23	Knight's Landing Ridge CT South @ Rd. 16		1050.0	1033.0	1264.0	857.0	1654.0	1389.0	1200.0
24	Knight's Landing Ridge CT North @ Rd. 16	1222.0	990.0	862.0	1020.0	924.0	768.0	785.0	1118.0

[A]: Not sampled due to low flow or dryness.

Table VI-19. Metal and ion compounds Ag through Ga collected periodically at Sites 5, 11, 12, 18, 19, 22, and 23.

Round	Sample Date	Site #	Element (Isotope)[2]													
			Ag (107)	Al (27)	As (75)	Ba (137)	Be (9)	Ca (43)	Cd (111)	Co (59)	Cr (52)	Cr (53)	Cs (133)	Cu (65)	Fe (57)	Ga (71)
1	3/26/03	5	0.00	48	4.36	88	0.00	46578	0.01	0.45	1.62	1.23	0.00	1.48	210	0.02
1	3/26/03	11	0.01	180	4.72	102	0.01	41548	0.02	1.63	1.82	1.10	0.02	3.85	528	0.08
1	4/10/03	18	0.03	4418	2.17	123	0.12	14028	0.05	5.12	16.07	15.01	0.17	16.51	6972	1.56
2	5/22/03	11	0.01	93	4.75	73	0.01	54158	0.03	0.47	1.95	1.35	0.01	3.96	341	0.04
2	5/27/03	5	0.00	92	3.59	87	0.01	41128	0.01	0.58	1.22	1.06	0.01	1.69	277	0.05
2	5/29/03	12	0.01	49	2.47	203	0.00	32538	0.01	0.90	23.99	21.38	0.00	5.97	166	0.02
2	6/5/03	18	0.01	210	2.20	47	0.01	10588	0.01	0.30	1.73	1.12	0.01	5.60	448	0.08
3	6/10/03	11	0.00	7	5.14	59	0.00	34148	0.01	0.35	1.46	1.06	0.00	6.71	126	0.01
ss*[1]	6/11/03	18	0.01	57	2.17	48	0.00	11338	0.00	0.13	1.13	0.69	0.00	5.77	157	0.02
3	6/12/03	5	0.00	41	4.02	59	0.00	22748	0.01	0.31	0.88	0.57	0.00	2.96	144	0.02
ss	6/16/03	18	0.01	221	2.31	51	0.01	10628	0.01	0.32	1.65	1.19	0.01	6.86	455	0.08
ss	6/16/03	19	0.01	193	2.64	59	0.01	11938	0.00	0.44	1.51	0.93	0.01	6.27	446	0.07
ss	6/16/03	22	0.00	214	7.15	51	0.01	12378	0.01	0.46	1.74	1.10	0.01	5.01	400	0.08
3	6/19/03	23	0.00	68	3.21	148	0.00	36288	0.00	0.78	10.08	9.08	0.01	1.84	211	0.03
ss*	6/11/03	19	0.00	39	2.86	73	0.00	14188	0.03	0.22	1.22	0.76	0.00	8.65	154	0.02

*. Indicates toxicity to *C. dubia.*
1. Samples collected during the special study.
2. Total metals concentrations given in ng/ml.

Table VI-20. Metal and ion compounds K through Zn collected periodically at Sites 5, 11, 12, 18, 19, 22, and 23.

Round	Sample Date	Site #	Element (Isotope)[2]															
			K (39)	Li (7)	Mg (25)	Mn (55)	Na (23)	Ni (60)	Ni (62)	Pb (208)	Rb (85)	Se (77)	Se (82)	Sr (88)	Tl (205)	U (238)	V (51)	Zn (66)
1	3/26/03	5	2319	26	26166	927	163895	3.06	2.53	0.09	0.91	2.13	1.61	878	0.01	17.20	7.26	3.28
1	3/26/03	11	4617	48	25066	798	125295	5.61	4.93	0.74	0.67	1.29	1.25	1157	0.00	32.36	15.45	3.60
1	4/10/03	18	1956	58	11146	387	56205	20.46	19.46	2.27	4.47	0.53	0.62	403	0.02	0.84	25.43	24.31
2	5/22/03	11	4251	112	32206	38		3.64	3.15	0.12	1.65	3.07	2.66	1508	0.01	15.40	13.45	2.56
2	5/27/03	5	2291	22	20466	821	123295	3.32	2.79	0.12	0.76	1.78	1.65	739	0.00	16.80	13.00	1.56
2	5/29/03	12	4645	126	54966	13	54205	9.59	8.84	0.05	2.27	1.53	1.75	571	0.00	3.25	8.55	4.12
2	6/5/03	18	1510	26	7123	24	31085	2.75	2.34	0.16	0.90	0.14	0.41	255	0.00	0.41	5.46	1.60
3	6/10/03	11	4531	81	21346	25		3.48	2.98	0.05	3.32	3.10	2.69	881	0.01	9.56	14.77	4.78
ss*[1]	6/11/03	18	1413	28	8006	3	41275	2.23	1.98	0.05	0.62	0.22	0.33	290	0.00	0.54	4.42	0.87
3	6/12/03	5	5364	24	12346	113	69545	3.32	2.88	0.04	8.60	1.20	1.29	428	0.00	6.18	9.06	1.66
ss	6/16/03	18	1428	27	7455	33	35445	2.64	2.47	0.16	0.83	0.18	0.40	268	0.00	0.46	5.26	2.10
ss	6/16/03	19	1595	42	10306	82	55725	3.20	2.91	0.23	0.86	0.24	0.53	327	0.00	0.62	6.99	1.49
ss	6/16/03	22	1658	19	13436	60	53965	4.58	4.18	0.18	0.54	0.56	0.70	266	0.00	1.71	21.85	1.73
3	6/19/03	23	3146	54	36056	6	70545	2.33	1.86	0.08	1.12	6.21	6.13	815	0.00	1.71	6.93	1.60
ss*	6/11/03	19	2295	49	12276	4	74635	3.13	2.71	0.24	0.71	0.33	0.49	406	0.00	0.68	5.20	24.27

*. Indicates toxicity to *C. dubia.*

1. Samples collected during the special study.

2. Total metals concentrations given in ng/ml.

Appendix VII

Field Data

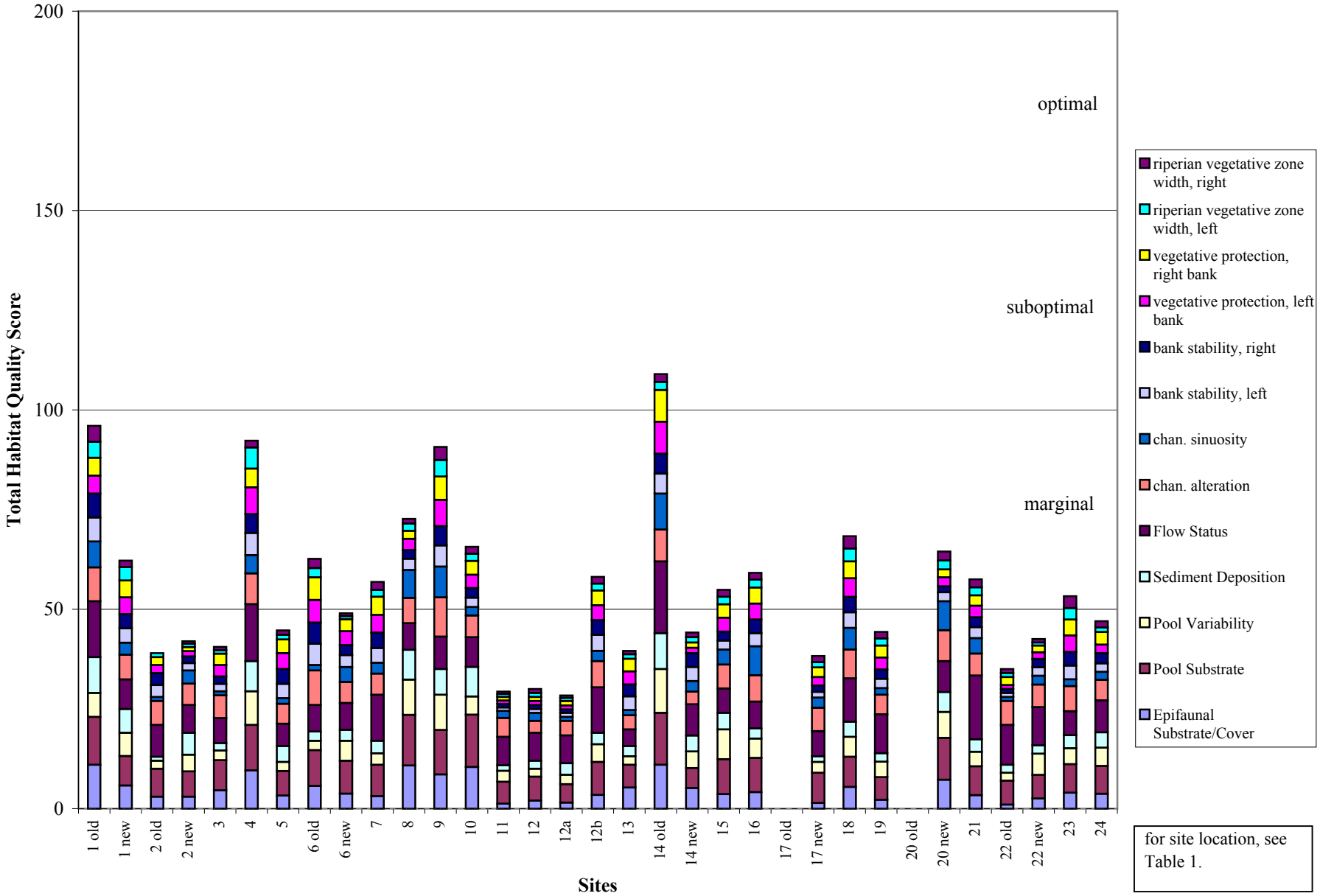

Figure VII - 1. Physical habitat scores at sampling site in the lower Sacramento River and San Joaquin River watersheds and Delta. For permanent sites, the n for determining the mean habitat score ranged from 4 to 9..

Table VII-1. Summary of velocity measurement ranges for preplanned sampling events, a special study, and samples from 26 March 2003 to 7 October 2003.

Site	Site Description	Sample Size	Velocity (m/s)			
		n	Max.	Min.	Mean	S.D.
1	8 Mile & Rio Blanco Rd.	6	1.1	0.0	0.3	0.5
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee	7	3.2	0.0	1.4	1.0
3	Return Irrigation Drain @ MCD Rd.	7	0.0	0.0	0.0	0.0
4	SJR Source Water to Canal	7	72.0	0.0	22.8	27.3
5	Drain @ Wing Levee Rd.	7	2.6	0.0	1.3	1.0
6	Drain @ Bowman Rd. / Tom Paine Sl. @ El Rancho Rd.	8	1.5	0.0	0.4	0.6
7	Lone Tree Creek @ Newcastle Rd.	8	3.9	0.8	2.4	1.1
8	Little John Creek @ Newcastle Rd.	8	6.0	0.0	2.3	2.1
9	Walthal Slough @ Woodward Ave.	7	2.9	0.7	1.5	0.7
10	Westport Drain @ Jennings Rd.	9	7.2	1.7	3.2	1.7
11	Unnamed Drain @ Pomelo Rd.	7	5.6	0.0	1.0	2.1
12	Drain @ Midway Rd. E. of Pedrick Rd.					
12a	Drain @ Robben Rd.	9	9.6	0.0	2.4	3.0
12b	Drain @ Robben Rd. & Midway Rd.	6	0.0	0.0	0.0	0.0
13	Drain @ Ulatis Creek @ Hwy. 113	8	3.0	0.0	0.5	1.1
14[A]	Creek @ Hawkins Rd.	8	4.7	0.0	0.9	1.6
15	Lateral to Gordon Slough @ Rd. 19	8	16.0	0.0	8.1	4.5
16	Gordon Slough @ Rd. 19	8	1.3	0.0	0.3	0.5
17[B]	Drain @ Mace Blvd.	6	4.0	0.0	1.4	1.5
18	Stone Corral Creek @ 4 Mile Rd.	9	5.3	3.3	4.4	0.8
19	East Drain @ 4 Mile Rd.	10	7.2	0.2	3.7	2.3
20	West Drainage @ Del Paso Rd.	4	0.6	0.0	0.2	0.3
21	Sand Creek @ Miller Rd.	9	4.7	0.0	0.5	1.6
22	Sycamore Slough @ Hwy. 45	8	1.0	0.0	0.2	0.4
23	Knight's Landing Ridge Cut South @ Rd. 16	7	0.0	0.0	0.0	0.0
24	Knight's Landing Ridge Cut North @ Rd. 16	7	1.2	0.0	0.2	0.5

[A]: After 5/29/03

[B]: After 6/5/03

Table VII - 2. Summary of velocity (m/s) measurements for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.			0.0					
1	8 Mile & Rio Blanco Rd.				1.1	0.0	0.6	0.0	0.0
2	Unnamed Slough @ Woodsbro Rd.	0.0							
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee			3.2	2.3	1.2	1.0	1.5	0.9
3	Return Irrigation Drain @ MCD Rd.		0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	SJR Source Water to Canal	0.0		26.0	0.9	72.0	16.1	44.9	0.0
5	Drain @ Wing Levee Rd.		0.0	2.6	2.2	1.1	1.6	0.0	1.4
6	Drain @ Bowman Rd.	0.0	0.0	0.0	0.9				
6	Tom Paine Slough @ El Rancho Rd.					1.5	0.7	0.0	0.0
7	Lone Tree Crk @ Newcastle Rd.	0.8	1.7	1.6	2.1	2.4	3.2	3.9	3.5
8	Little John Crk @ Newcastle Rd.	0.4	3.9	0.0	2.1	2.2	3.6	6.0	0.0
9	Walthal Slough @ Woodward Ave	1.8		1.0	1.5	1.8	0.7	1.0	2.9
10	Westport Drain @ Jennings Rd.		1.8	3.0	2.0	4.1	2.1	7.2	3.7
11	Unnamed Drain @ Pomelo Rd.		0.0	0.0	5.6	1.6	0.0	0.0	0.0
12	Drain @ Midway Rd E of Pedrick Rd.	[B]	0.0						
12a	Drain @ Robben Rd.			2.1	1.7	4.3	1.3	9.6	0.5
12b	Drain @ Robben Rd. & Midway Rd.			0.0	0.0	0.0	0.0	0.0	0.0
13	Drain @ Ulatis Creek @ Hwy. 113	0.0	0.0	3.0	0.0	0.0	0.0	1.3	0.0
14	Drain @ Midway Rd W. of Schoeder	0.2	0.0						
14	Ck. @ Hawkins Rd.			0.0	1.1	4.7	0.9	0.0	0.3
15	Lateral to Gordon Slough @ Rd. 19	0.0	2.6	5.6	8.8	8.2	16.0	12.4	11.2
16	Gordon Slough @ Rd. 19	0.0	0.0	0.7	0.0	0.0	1.3	0.0	0.0
17	Willow Slough @ Rd. 27	0.6							
17	Drain @ Mace Blvd.		0.0		0.0	0.9	4.0	1.9	[B]
18	Stone Corral Creek @ 4 Mile Rd.	3.5	5.1	5.0	4.9	4.4	5.3	3.6	3.3
19	East Drain @ 4 Mile Rd.	0.5	2.5	5.0	3.5	6.2	7.2	3.1	0.2
20	Elk Creek @ Hahn & Miller's Rd.	[B]	[B]	[B]	[B]				
20	West Drainage @ Del Paso Rd.					0.6	0.3	0.0	0.0
21	Sand Creek @ Miller Rd.	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	Drain South of Rd. 14	[B]	0.0						
22	Sycamore Slough @ Hwy 45			0.0	0.2	1.0	0.0	0.0	0.0
23	Knight's Landing Ridge CT South @ Rd. 16	[B]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	Knight's Landing Ridge CT North @ Rd. 16	0.0	0.0	1.2		0.0	0.0	0.0	0.0

[A]: Special Study

[B]: Not sampled due to low flow or dryness.

Table VII-3. Summary of flow calculations (m^3/s) for preplanned sampling events from 26 March 2003 to 7 October 2003.

		Round Number							
		Pre-Season		In-Season					
Site #	Site Description	1	2	3	4	5	6	7	8
1	Beaver Slough @ Blossom Rd.			0					
1	8 Mile & Rio Blanco Rd.				7	0	5	0	0
2	Unnamed Slough @ Woodsbro Rd.	0							
2	Unnamed Slough @ Woodsbro Rd. & Burns Cutoff Levee				11	6	5	8	2
3	Return Irrigation Drain @ MCD Rd.		0	0	0	0	0	0	0
4	SJR Source Water to Canal	0		74	3	204	45	127	127
5	Drain @ Wing Levee Rd.		0		1	1	0	0	0
6	Drain @ Bowman Rd.	0	0	0	3				
6	Tom Paine Slough @ El Rancho Rd.					21	7	0	0
7	Lone Tree Crk @ Newcastle Rd.				13	27	37	37	43
8	Little John Crk @ Newcastle Rd.		4	0	1	8	2	8	0
9	Walthal Slough @ Woodward Ave				9	10	3	7	14
10	Westport Drain @ Jennings Rd.				5	15	6	31	4
11	Unnamed Drain @ Pomelo Rd.		0	0	59	29	0	0	0
12	Drain @ Midway Rd E of Pedrick Rd.	B	0						
12a	Drain @ Robben Rd.			1	3	1	5	1	0
12b	Drain @ Robben Rd. & Midway Rd.			0	0	0	0	0	0
13	Drain @ Ulatis Creek @ Hwy. 113	0	0	0	0	0	0	1	0
14	Drain @ Midway Rd W. of Schoeder		0						
14	Ck. @ Hawkins Rd.			0	62	146	36	0	13
15	Lateral to Gordon Slough @ Rd. 19	0			3	20	6	9	3
16	Gordon Slough @ Rd. 19	0	0		0	1	21	0	0
17	Willow Slough @ Rd. 27								
17	Drain @ Mace Blvd.		0		0	0	1	0	B
18	Stone Corral Creek @ 4 Mile Rd.			65	64	26	72	33	28
19	East Drain @ 4 Mile Rd.			8	6	7	12	3	0
20	Elk Creek @ Hahn & Miller's Rd.	B	B	B	B				
20	West Drainage @ Del Paso Rd.					2	1	0	0
21	Sand Creek @ Miller Rd.		0	0	1	0	0	0	0
22	Drain South of Rd. 14	B	0						
22	Sycamore Slough @ Hwy 45			0	15	37	0	0	0
23	Knight's Landing Ridge CT South @ Rd. 16	B	0	0	0	0	0	0	0
24	Knight's Landing Ridge CT North @ Rd. 16	0	0			0	0	0	0

A: Special Study

B: Not sampled due to low flow or dryness.

Appendix VIII

Water Quality

Measurements by the Laboratory of Tom Young

Table VIII-1. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)*	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation**	Time
AD-1	04/03/03	12.04	9.93	7.72	21.30	59.30	3.93	44.16%	1215
AD-2	04/01/03	56.96	37.67	7.57	14.90	1408.00	7.49	74.38%	1600
AD-3	04/03/03	42.13	30.96	7.66	20.50	1014.00	3.88	43.60%	1045
AD-4	04/01/03	41.75	28.49	7.99	20.90	651.00	5.01	56.29%	1740
AD-5	03/26/03	54.37	36.78	7.40	23.20	1600.00	6.28	73.36%	1530
AD-6	04/01/03	73.88	51.16	7.16	18.70	3030.00	2.82	30.45%	1440
AD-7	03/26/03	12.80	10.64	8.49	21.50	76.40	5.13	58.76%	1715
AD-8	04/01/03	58.01	40.24	7.69	17.20	618.00	7.27	75.34%	945
AD-9	04/01/03	35.61	29.43	6.81	18.30	306.70	N/A	N/A	810
AD-10	03/26/03	58.44	36.99	7.91	24.70	819.00	7.79	94.54%	1325
AD-11	03/26/03	51.35	36.60	7.86	20.40	1216.00	6.30	69.38%	1050
AD-12	NoSample								
AD-13	04/03/03	48.14	32.63	9.10	24.10	442.90	7.10	84.52%	1535
AD-14	04/03/03	43.82	31.37	8.75	21.90	463.90	6.04	69.19%	1440
AD-15	04/08/03	74.42	55.55	7.87	22.00	680.00	4.06	46.51%	1015
AD-16	04/08/03	117.20	79.22	7.25	23.00	1046.00	1.58	18.46%	1100
AD-17	04/08/03	82.13	52.91	7.97	22.90	920.00	3.91	45.68%	915
AD-18	04/10/03	35.39	24.50	8.24	26.80	495.20	3.11	39.12%	1100
AD-19	04/10/03	28.61	23.32	8.20	26.50	571.00	5.80	72.96%	1235
AD-20	NoSample								
AD-21	04/10/03	33.32	26.27	8.14	23.00	265.00	3.28	38.32%	930
AD-22	NoSample								
AD-23	NoSample								
AD-24	04/08/03	97.31	67.99	8.14	20.00	1222.00	6.65	73.24%	1400

ppm is mg/L

Laboratory Blanks were analyzed with each batch

* Samples were filtered with .45um Millex-HV PVDF Durapore filters of 25mm diameter

**From 'Water Quality' by Tchobanaglous and Schroeder, page 734, Appendix F, Table assuming fresh water at sea level

Sites moved in early rounds:

AD-1 on 7/3

AD-6 on 7/3

AD12a on 6/17

AD12b on 6/17

AD14 on 5/29

AD17 on 6/5

AD23 on 6/5

Table VIII-2. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	05/29/03	26.37	20.08	7.24	23.40	210.20	7.80	91.12%	1230
AD-2	05/27/03	38.15	38.45	7.29	N/A	1157.00	5.80	N/A	1430
AD-3	05/29/03	44.78	41.47	6.70	24.00	1170.00	4.70	55.95%	1000
AD-4	05/27/03	27.13	24.40	7.38	N/A	625.00	6.20	N/A	1530
AD-5	05/27/03	49.50	47.41	7.61	N/A	1357.00	7.80	N/A	1200
AD-6	05/27/03	82.77	85.72	7.54	N/A	3971.00	8.70	N/A	1330
AD-7	05/22/03	26.15	31.26	7.32	30.50	190.00	3.15	41.78%	1400
AD-8	05/22/03	51.51	52.31	7.80	37.20	973.00	4.60	68.45%	1545
AD-9	05/27/03	44.71	42.24	7.27	N/A	501.00	5.53	N/A	1045
AD-10	05/22/03	61.15	60.79	8.40	32.30	351.50	8.24	113.03%	1115
AD-11	05/22/03	48.74	53.37	8.90	31.20	1674.00	11.02	148.72%	1100
AD-12	05/29/03	111.80	121.00	7.95	23.00	1151.00	7.00	81.78%	1430
AD-12A	06/03/03	91.74	90.44	7.70	23.10	669.00	2.79	32.59%	925
AD-13	05/29/03	87.37	89.95	7.05	25.50	630.00	4.50	54.61%	1600
AD-14	05/29/03	55.68	59.03	7.59	22.00	516.00	7.70	88.20%	1515
AD-15	06/03/03	58.28	57.48	7.51	23.60	570.00	5.30	63.10%	1145
AD-16	06/03/03	50.23	50.07	7.80	25.10	414.00	7.25	87.99%	1230
AD-17	06/05/03	110.40	114.40	8.22	24.00	1.07	6.85	81.55%	1130
AD-18	06/05/03	42.96	37.14	7.58	27.80	316.40	6.83	87.45%	1530
AD-19	06/05/03	44.33	43.80	7.48	30.50	455.00	6.33	83.95%	1630
AD-20	NoSample								
AD-21	06/05/03	39.26	42.46	7.88	25.80	464.00	6.81	84.18%	1400
AD-22	06/05/03	50.44	51.20	7.73	27.30	567.00	6.45	81.13%	1250
AD-23	06/03/03	70.30	70.46	7.85	28.90	1050.00	3.71	48.37%	1420
AD-24	06/03/03	73.61	74.68	8.05	32.20	990.00	9.10	124.83%	1550
AD-17FD	06/05/03	110.30	112.70	8.22	24.00	1.07	6.85	81.55%	1130
AD-20TB	06/05/03	5.66	1.59	N/A	N/A	N/A	N/A	N/A	1030

Table VIII-3. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	06/12/03	17.18	16.78	7.41	22.80	171.80	8.50	99.30%	1700
AD-2	06/12/03	32.22	33.26	7.03	21.80	866.00	4.30	49.26%	1315
AD-3	06/12/03	31.66	32.54	6.77	27.50	801.00	8.06	103.20%	1530
AD-4	06/12/03	24.88	24.53	7.06	24.30	535.00	4.35	51.79%	1430
AD-5	06/12/03	40.10	40.82	6.80	18.10	742.00	2.80	29.63%	1100
AD-6	06/12/03	60.83	63.75	7.15	19.00	2386.00	5.56	60.04%	945
AD-7	06/10/03	20.97	19.56	7.37	27.80	121.80	8.13	104.10%	1500
AD-8	NoSample								
AD-9	06/10/03	26.45	24.71	7.12	26.00	288.00	6.31	78.00%	1630
AD-10	06/10/03	54.10	59.44	8.17	23.80	673.00	12.14	144.52%	1200
AD-11	06/10/03	40.38	43.18	8.26	25.00	1478.00	10.12	122.82%	1100
AD-12A	06/17/03	69.58	67.35						930
AD-12B	06/17/03	94.12	99.36						1045
AD-13	06/17/03	75.15	70.92						1300
AD-14	06/17/03	57.74	55.08						1400
AD-15	06/19/03	62.02	57.19	7.51	26.30	459.00	4.69	57.97%	1345
AD-16	06/19/03	53.74	51.93	7.56	27.00	419.70	5.61	70.57%	1500
AD-17	06/11/03	93.50	102.40	7.78	20.10	808.00	3.38	37.22%	1015
AD-18	06/11/03	39.60	39.68	7.34	24.40	396.40	7.30	86.90%	1430
AD-19	06/11/03	55.39	47.90	7.84	29.00	664.00	5.20	67.80%	1530
AD-20	NoSample								
AD-21	06/11/03	34.50	34.25	7.10	24.00	365.00	8.00	95.24%	1335
AD-22	06/11/03	42.57	46.17	7.29	24.60	578.00	4.52	54.85%	1145
AD-23	06/19/03	73.86	72.74	8.27	20.40	1033.00	5.27	58.04%	930
AD-24	06/19/03	71.51	76.32	7.69	23.00	862.00	5.33	62.27%	1015
AD-1GE	06/12/03	21.05	18.18	7.41	22.80	171.80	8.50	99.30%	1700
AD-12AGE	06/17/03	69.26	67.65						950
AD-17GE	06/11/03	98.46	104.20	7.78	20.10	808.00	3.38	37.22%	1015
AD-17(2)	06/19/03	83.75	85.26	8.15	24.10	813.00	5.60	66.67%	1715
AD-18(2)	06/24/03	31.18	26.72	7.72	26.20	356.80	8.10	100.12%	1545
AD-19(2)	06/24/03	38.77	34.80	7.24	27.40	460.00	7.00	88.05%	1700
AD-20UC	06/11/03	3.03	2.09	N/A	N/A	N/A	N/A	N/A	915
AD-21(2)	06/24/03	35.78	30.12	7.72	22.60	335.80	7.70	89.95%	1250
AD-22(2)	06/24/03	41.15	35.94	7.81	22.90	864.00	6.70	78.27%	1030
AD-26	06/19/03	74.40	72.85	7.69	23.00	862.00	5.33	62.27%	1015

Table VIII-4. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	07/03/03	27.86	28.37	7.61	29.50	304.40	6.00	79.58%	1810
AD-2	07/03/03	28.99	32.55	7.59	26.00	759.00	4.70	58.10%	1400
AD-3	07/03/03	32.35	38.07	6.41	28.50	685.00	6.30	82.14%	1510
AD-4	07/03/03	22.69	24.60	7.30	26.50	522.00	5.50	69.18%	1650
AD-5	NoSample								1210
AD-6	07/03/03	39.78	43.58	7.49	23.00	1289.00	6.80	79.44%	1000
AD-7	07/01/03	30.61	32.60	7.99	29.00	300.10	9.70	126.47%	1600
AD-8	07/01/03	37.27	35.47	8.71	32.50	475.00	12.00	167.36%	1645
AD-9	07/01/03	25.39	25.34	6.36	24.10	370.70	5.20	61.90%	1800
AD-10	07/01/03	27.85	30.65	8.16	24.50	489.10	12.80	155.34%	1330
AD-11	07/01/03	39.05	43.06	8.81	26.50	1561.00	11.00	138.36%	1130
AD-12A	07/08/03	56.43	62.64	8.45	16.80	578.00	7.80	80.83%	900
AD-12B	07/08/03	83.41	87.78	7.80	17.30	842.00	3.50	36.27%	1030
AD-13	07/08/03	47.61	49.75	8.61	25.90	475.60	7.50	92.71%	1330
AD-14	07/08/03	52.82	52.11	8.03	22.10	474.00	7.20	82.47%	1415
AD-15	07/10/03	57.86	58.01	7.78	33.00	483.00	4.00	55.79%	1630
AD-16	07/10/03	63.39	68.04	7.74	31.70	506.00	2.40	32.92%	1745
AD-17	07/10/03	84.65	87.59	8.35	22.80	786.00	6.60	77.10%	N/A
AD-18	07/15/03	39.66	38.88	7.56	26.60	369.20	7.80	98.11%	1330
AD-19	07/15/03	44.76	49.07	7.11	28.80	455.00	6.81	88.79%	1430
AD-20	NoSample								
AD-21	07/15/03	44.76	42.55	7.31	24.50	416.00	7.60	92.23%	1130
AD-22	07/15/03	46.19	46.20	7.38	27.90	466.00	3.40	43.53%	1000
AD-23	07/10/03	77.60	76.93	7.98	25.50	1264.00	4.90	60.57%	N/A
AD-24	07/10/03	76.47	80.32	8.00	29.60	1020.00	5.40	67.92%	N/A
AD-28	07/03/03	37.36	37.25	6.41	28.50	685.00	6.30	82.14%	1510
AD-2(QA)	07/08/03			8.20	6.50	790.00	10.70	88.21%	
AD-5(QA)	07/03/03	25.42	27.38	7.30	30.50	628.00	6.00	80.97%	
CVAD-18	07/01/03	32.52	36.02						N/A
AD-27(QA	07/01/03			7.00	4.00	N/A	N/A	N/A	900
AD-29	07/08/03	6.80	6.86						800

Table VIII-5. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	07/24/03	29.49	29.02	7.02	28.20	327.00	5.30	67.86%	NA
AD-2	07/24/03	35.89	35.06	7.24	28.60	825.00	4.20	54.76%	NA
AD-3	07/24/03	33.96	37.49	6.89	29.50	582.00	7.10	94.16%	NA
AD-4	07/24/03	25.87	26.22	6.74	27.80	447.30	5.40	69.14%	NA
AD-5	07/24/03	35.68	35.01	7.74	29.60	735.00	6.90	91.51%	NA
AD-6	07/24/03	50.41	51.17	7.30	26.40	1421.00	5.10	63.04%	NA
AD-7	07/22/03	25.37	24.41	6.65	28.20	136.00	6.40	81.95%	1530
AD-8	07/22/03	18.28	14.83	8.05	31.50	169.00	8.50	116.60%	1630
AD-9	07/22/03	29.01	33.82	6.89	26.30	578.00	1.70	21.01%	1415
AD-10	07/22/03	38.89	40.97	7.82	24.80	136.00	6.40	77.67%	1145
AD-11	07/22/03	49.75	51.97	8.09	26.40	1608.00	9.20	113.72%	1030
AD-12A	07/29/03	98.43	105.10	7.99	19.20	965.00	6.50	69.97%	930
AD-12B	07/29/03	69.28	83.24	7.80	22.00	875.00	5.40	61.86%	1030
AD-13	07/29/03	69.59	62.50	8.18	27.90	568.00	10.00	128.04%	1300
AD-14	07/29/03	63.10	57.12	7.65	22.40	542.00	7.00	80.18%	1400
AD-15	07/31/03	72.94	73.60	7.50	28.80	52.50	5.30	69.10%	1445
AD-16	07/31/03	51.68	57.68	7.59	29.10	521.00	4.60	59.97%	1530
AD-17	07/31/03	91.46	105.80	8.20	20.40	941.00	5.30	58.37%	900
AD-18	08/05/03	40.54	45.03	7.51	23.20	334.00	7.70	89.95%	1400
AD-19	08/05/03	58.08	64.13	7.44	25.50	517.00	6.00	74.17%	1545
AD-20	08/05/03	49.64	51.12	7.06	22.70	383.60	5.20	60.75%	930
AD-21	08/05/03	43.51	41.80	6.47	26.20	341.70	7.40	91.47%	1715
AD-22	08/05/03	47.45	43.77	7.00	22.90	459.00	5.20	60.75%	1100
AD-23	07/31/03	69.98	72.53	7.98	26.60	857.00	7.10	89.31%	1100
AD-24	07/31/03	86.67	88.52	7.70	23.80	924.00	3.70	44.05%	1200
AD-28	NoSample								
AD-30	07/22/03	3.82	4.38	7.64	24.30	4.00	7.90	94.05%	730
AD-32	08/05/03	8.68	7.27	8.10	21.90	1.80	8.44	96.68%	730
AD-40	07/29/03	0.00	3.10	7.08	23.80	16.00	7.40	88.10%	730

Table VIII-6. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	08/14/03	21.76	23.48	7.37	25.60	218.10	7.70	95.18%	1815
AD-2	08/14/03	37.16	37.09	7.43	24.80	859.00	7.20	87.38%	1315
AD-3	08/14/03	34.28	35.88	6.67	24.70	634.00	7.30	88.59%	1430
AD-4	08/14/03	26.18	28.22	7.47	25.90	587.00	5.70	70.46%	1630
AD-5	08/14/03	39.93	40.03	7.22	24.30	890.00	6.80	80.95%	1140
AD-6	08/14/03	49.51	58.83	7.58	21.50	1558.00	1.35	15.46%	1000
AD-7	NoSample								??
AD-8	08/12/03	33.63	31.88	7.57	27.20	186.50	7.10	89.31%	1430
AD-9	08/12/03	30.90	32.96	6.91	23.60	320.30	4.70	55.95%	1530
AD-10	08/12/03	64.10	63.72	8.05	22.80	894.00	11.70	136.68%	1115
AD-11	08/12/03	40.26	44.82	8.60	22.00	1512.00	12.10	138.60%	1000
AD-12A	08/19/03	66.09	74.08	8.01	18.00	710.00	8.00	84.66%	900
AD-12B	08/19/03	109.50	104.50	7.73	18.60	1094.00	5.20	56.16%	1000
AD-13	08/19/03	73.01	75.95	7.77	22.50	615.00	7.90	92.29%	1200
AD-14	08/19/03	53.67	59.82	7.95	21.30	571.00	6.90	77.53%	1315
AD-15	08/21/03	47.94	44.21	7.72	24.50	352.00	6.40	77.67%	1200
AD-16	08/21/03	78.63	83.06	7.65	28.90	468.00	4.90	63.89%	1330
AD-17	08/21/03	87.08	92.63	7.44	18.30	795.00	5.30	56.08%	800
AD-18	08/26/03	42.06	41.39	7.48	21.50	330.00	7.10	81.33%	930
AD-19	08/26/03	53.84	56.41	7.25	21.80	492.00	5.20	59.56%	1100
AD-20	08/26/03	49.90	55.35	7.54	29.10	467.00	6.70	87.35%	1630
AD-21	08/26/03	29.70	30.82	7.38	25.60	242.00	0 (perhaps (	82.82%	1330
AD-22	08/26/03	46.14	47.21	7.26	26.30	467.00	4.60	56.86%	1500
AD-23	08/21/03	85.19	95.50	7.43	22.80	1654.00	2.50	29.21%	900
AD-24	08/21/03	74.58	76.20	7.44	23.30	768.00	5.50	64.25%	930
AD-28	NoSample								
AD-33	08/14/03	3.93	5.03	not on COC	not on COC	not on COC	not on COC		730
AD-34	08/19/03	8.95	7.63	8.40	23.70	3.10	8.50	101.19%	730
AD-35	08/26/03	5.54	6.01	7.53	26.00	287.20	7.90	97.65%	730
AD-39?*	08/12/03	18.23	20.47	6.53	23.10	0.15	6.50	75.93%	1330
AD-39?**	08/12/03	21.13	22.04	6.53	23.10	0.15	6.50	75.93%	1330

Table VIII-7. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	09/04/03	41.58	43.24	7.57	25.60	585.00	8.30	102.60%	1730
AD-2	09/04/03	46.09	44.77	7.07	24.70	969.00	3.58	43.45%	1345
AD-3	09/04/03	35.51	41.62	7.27	29.50	817.00	8.60	114.06%	1445
AD-4	09/09/03	71.46	70.30	7.31	7.30	576.00	6.15	49.44%	1545
AD-5	09/04/03	41.53	41.58	7.18	24.70	937.00	5.47	66.38%	1230
AD-6	09/04/03	46.95	56.78	7.04	24.20	1457.00	3.00	35.71%	1000
AD-7	09/02/03	18.74	20.98	6.46	23.40	117.10	6.82	79.67%	NA
AD-8	09/02/03	16.27	18.62	6.92	26.50	124.50	7.58	95.35%	1430
AD-9	09/02/03	21.25	24.97	6.80	24.30	191.30	5.03	59.88%	1515
AD-10	09/02/03	40.44	41.23	7.83	23.30	613.00	9.85	115.07%	1130
AD-11	09/02/03	45.58	45.10	7.99	22.90	1352.00	9.92	115.89%	NA
AD-12A	09/09/03	29.15	30.74	7.81	15.80	960.00	6.80	68.97%	840
AD-12B	09/09/03	89.60	93.40	7.69	18.30	1080.00	2.50	26.46%	930
AD-13	09/09/03	48.67	53.01	7.40	15.40	546.00	7.20	71.50%	1015
AD-14	09/09/03	148.60	142.70	7.57	18.10	477.00	6.70	70.90%	1115
AD-15	09/11/03	69.23	67.46	7.90	19.60	513.00	5.76	63.44%	1245
AD-16	09/11/03	57.68	55.84	8.27	24.00	439.00	8.20	97.62%	1330
AD-17	09/11/03	105.90	117.70	8.13	18.10	1044.00	4.61	48.78%	800
AD-18	09/16/03	30.79	39.07	7.63	23.60	340.30	7.95	94.64%	1245
AD-19	09/16/03	53.56	56.49	7.66	23.40	530.00	8.86	103.50%	1330
AD-20	09/16/03	57.68	61.59	7.44	24.00	522.00	8.30	98.81%	NA
AD-21	09/16/03	34.42	35.54	7.55	20.20	279.00	6.05	66.63%	1000
AD-22	09/16/03	53.18	56.83	7.90	20.70	549.00	6.61	74.27%	900
AD-23	09/11/03	74.30	72.13	7.59	21.20	1389.00	4.71	52.92%	900
AD-24	09/11/03	81.41	79.31	7.89	21.40	785.00	4.37	49.10%	1030
AD-28	NoSample								
AD-38	09/04/03	4.75	8.91	9.00	22.8	5.60	8.2	95.79%	730
AD-41	09/16/03	34.03	33.74	7.55	20.2	279.00	8.3	91.41%	NA

Table VIII-8. Water quality parameters measured in samples delivered to the laboratory of Tom Young.

Sample Site	Date Sampled	TOC (ppm)	DOC (ppm)	Field Data: pH	(C) Temperature	Conductivity (uS)	Dissolved Oxygen (ppm)	O_2 Saturation	Time
AD-1	09/25/03	17.69	22.14	7.52	22.10	1136.00	5.50	63.00%	1830
AD-2	09/25/03	24.87	25.48	7.30	22.00	1495.00	6.00	68.73%	1430
AD-3	09/25/03	16.26	26.59	7.42	24.30	724.00	7.53	89.64%	1530
AD-4	09/25/03	9.06	7.87	7.53	24.80	646.00	9.40	114.08%	1700
AD-5	09/25/03	8.64	19.22	7.44	25.40	959.00	9.50	115.29%	1300
AD-6	09/25/03	22.56	25.28	7.17	21.10	1475.00	2.79	31.38%	1030
AD-7	09/23/03	22.84	22.90	6.69	22.80	132.70	7.22	84.35%	1445
AD-8	NoSample								
AD-9	09/23/03	29.88	33.23	6.75	22.40	232.00	4.55	52.12%	1615
AD-10	09/23/03	48.61	56.14	8.08	23.90	661.00	11.51	137.02%	1315
AD-11	09/23/03	44.58	46.39	8.57	27.10	1213.00	10.55	132.70%	NA
AD-12A	09/30/03	29.90	34.66	8.13	17.90	761.00	8.30	87.83%	1000
AD-12B	09/30/03	28.15	34.65	7.27	19.70	493.10	4.40	48.46%	1030
AD-13	09/30/03	13.61	23.34	7.65	22.00	512.00	4.80	54.98%	1230
AD-14	09/30/03	12.88	19.83	7.91	23.00	597.00	8.10	94.63%	1330
AD-15	10/02/03	46.73	51.43	7.40	22.00	557.00	7.80	89.35%	1515
AD-16	10/02/03	51.35	53.49	7.50	22.30	495.90	4.40	50.40%	1623
AD-17	NoSample								
AD-18	10/07/03	39.91	37.75	7.70	18.80	316.90	6.86	74.08%	915
AD-19	10/07/03	33.75	35.63	7.83	17.70	709.00	7.70	81.48%	1015
AD-20	10/07/03	39.51	41.87	8.05	23.60	417.70	10.41	123.93%	1500
AD-21	10/07/03	19.16	19.45	7.47	21.30	144.20	8.58	96.40%	1215
AD-22	10/07/03	77.61	88.80	8.65	25.40	1140.00	13.20	160.19%	1330
AD-23	10/02/03	76.51	81.60	7.25	19.70	1200.00	2.60	28.63%	1100
AD-24	10/02/03	84.02	86.28	8.14	22.70	1118.00	6.60	77.10%	1215
AD-28	NoSample								
AD-42	09/25/03	2.14	2.68	7.52	20.90	21.10	7.02	78.88%	730
AD-43	09/23/03	6.11	5.86	7.47	23.00	45.60	7.50	87.62%	805

Table VIII-9. Elemental concentrations exceeding Basin Plan Water Quality Objectives.

		Dissolved Element			
		Al[1]	Mn[1]	Fe[1]	Ba[1]
Water quality objective:		200	50	300	100
Date	Site[2,3]				
3/26/2003	5		927.1		
3/26/2003	11		798.3	528.2	101.9
5/22/2003	11			341.0	
5/27/2003	5		820.5		
5/29/2003	12				202.7
6/5/2003	18	209.6		448.1	
6/5/2003	23		74.2		147.0
6/12/2003	5		112.5		
6/16/2003	18	220.5		454.6	
6/16/2003	19		81.8	445.6	
6/19/2003	23				148.1
7/1/2003	11			403.2	
7/3/2003	5	783.2	144.4	1045	
7/10/2003	23		96.9	371.4	162.9
7/15/2003	18		52.1	408.5	
7/22/2003	10				102.4
7/22/2003	11			392.2	
7/24/2003	5	376.5	123.1	542.4	
7/25/2003	23		89.1		145.2
7/31/2003	10			427.7	128.1
8/5/2003	18			547	
8/12/2003	11			384.9	
8/14/2003	5	363.3	189.4	535.9	
8/21/2003	23		117.1	349.7	212.8
8/21/2003	15	382.9		441.3	
8/25/2003	15	328.8		407.3	
8/26/2003	18			656.1	
9/4/2003	5	331.8	364.6	515.6	
9/11/2003	23		201.2	377.8	183.9
9/16/2003	18	262.2		604.9	
9/23/2003	11	297.2		514.9	
9/25/2003	5		325	322.8	
10/2/2003	23		279.8		144.7

1. All concentrations in ug/L.
2. Sites 5,11,18 and 23 were the 'baseline' locations. Samples from other sites were toxic or follow-up.
3. A small number of baseline site samples did not have exceedances and were omitted from this table.