

APPENDIX A

Summary Of The Physical And Chemical Data For White Lake Sediments

Table A-1. GPS and Loran Coordinates for Tannery Bay Interior and Exterior Stations.

Location	GPS Reading	Loran Reading	New GPS Reading 4/3/97
E-1	43 24 .5948 N 86 21 .3485 W	NA	43 24 .5501 N 86 21 .3872 W
E-2	43 24 .1418 N 86 21 .3747 W	NA	no sample taken
E-3	43 23 .8703 N 86 21 .4478 W	NA	no sample taken
E-4	43 23 .9169 N 86 21 .6866 W	NA	no sample taken
E-5	43 23 .7139 N 86 21 .5783 W	NA	no sample taken
E-6	43 23 .7284 N 86 21 .9930 W	NA	no sample taken
E-7	43 23 .5802 N 86 21 .7356 W	NA	no sample taken
E-9	43 23 .1767 N 86 22 .5553 W	NA	no sample taken
I-1	43 24 .1465 N 86 21 .1457 W	32411.9 N x 49269.0 W	43 24 .1280 N 86 21 .1451 W
I-2	43 24 .1105 N 86 21 .2691 W	32412.7 N x 49269.1 W	43 24 .1155 N 86 21 .2540 W
I-3	43 24 .0613 N 86 21 .3198 W	32413.4 N x 49269.8 W	43 24 .0398 N 86 21 .2800 W
I-4	43 24 .0541 N 86 21 .3089 W	32473.5 N x 49269.7 W	43 24 .0378 N 86 21 .2911 W
I-5M	43 24 .0373 N 86 21 .2537 W	32413.2 N x 49270.0 W	43 24 .0251 N 86 21 .2595 W
I-6	43 23 .9836 N 86 21 .2521 W	32413.3 N x 49270.3 W	43 23 .9929 N 86 21 .2667 W
I-7M	43 23 .9708 N 86 21 .2226 W	32413.5 N x 49270.4 W	43 23 .9811 N 86 21 .2885 W
I-8	44 23 .9692 N 86 21 .36105 W	32414.1 N x 49270.5 W	no sample taken
E-1P	43 24 .5906 N 86 21 .5906 W	32410.4 N x 49264.1 W	no sample taken
E-2P	43 21 .0963 N 86 21 .3804 W	32413.3 N x 49268.7 W	no sample taken
E-3P	43 23 .8899 N 86 21 .5021 W	NA	no sample taken
E-4P	43 23 .9319 N 86 21 .6933 W	32416.6 N x 49270.6 W	no sample taken
E-5P	43 23 .6980 N 86 21 .6060 w	NA	no sample taken
E-6P	43 23 .7032 N 86 21 .9534 W	32419.0 N x 49272.3 W	no sample taken
E-7P	43 23 .5865 N 86 21 .7058 W	32418.15 N X 49273.8 W	no sample taken
E-9P	43 23 .1334 N 86 21 .5877 W	NA	no sample taken

April 3, 1997 were collected with a Differential GPS

Table A-2. Sampling Station Information and Visual Descriptions for the Tannery Bay Interior and Exterior Core Samples.

Location	Date	Time	Water Depth (feet)	Core Depth (feet)	Sample ID	Visual Description
E1	10/7/96	11:15	9' 3"	5'	E-1 Top	0"-20" Black organic silts, macrophytes
					E-1 Middle	20"-40" Black,organic to 30", then sand/silt
					E-1 Bottom	40"-60" Sand/silt
E2	10/7/96	12:40	15' 8"	6'10"	E-2 Top	0"-27" Black organic silts
					E-2 Middle	27"-54" Black organic silt/wood chips
					E-2 Bottom	54"-82" Black organic slit
E3	10/7/96	15:30	5' 6"	5' 9"	E-3 Top	0"-23" Black organic silts, wood chips
					E-3 Middle	23"-46" Black organic silts
					E-3 Bottom	46"-69" Black organic silts with white chips
E4	10/7/96	16:30	22' 11"	5' 11"	E-4 Top	0"-23.6" Black organic silts, hydrocarbon odor
					E-4 Middle	23.6"-47.3" black organic silts
					E-4 Bottom	43.3"-71" black organic silts
E5	10/8/96	14:45	30' 7"	6' 10"	E-5 Top	0"-27" Black organic silts
					E-5 Middle	27"-54" Black organic silts
					E-5 Bottom	54"-82" Black organic silts
E6	10/8/96	12:10	42'	7' 3"	E-6 Top	0"-29" Black organic silts, wood chips
					E-6 Middle	, 29"-58" Black organic silts
					E-6 Bottom	58"-87" Black organic silts, compacted at bottom
E7	10/8/96	10:50	31' 6"	8'9"	E-7 Top	0"-25" Black organic silts
					E-7 Middle-1	25"-50" Black organic silts
					E-7 Middle-2	50"-75" Black organic silts
					E-7 Bottom	75"-105" Black organic silts
E9	10/8/96	8:45	52' 3"	8' 6"	E-9 0"-15"	0"-15" Loose, black organic silts
					E-9 15"-30"	15"-30" Oil discoloration , strong chemical odor, black organic silts
					E-9 30"-45"	30"-45" Black organic silts, chemical odor
					E-9 45"-60"	45"-60" Black organic silts
					E-9 60"-75"	60"-75" Black organic silts
E-9 75"-90"	75"-90" Black organic silts, sand in bottom					

Table A-3. Sampling Station Information and Visual Descriptions for the Tannery Bay Interior and Exterior Ponar Samples.

Sample ID	Date	Time	Water Depth (ft)	Visual Description
I-1	10/9/96	17:20	14'	Black organic sediment, macrophytes, some hair and hide fragments
I-2	10/9/96	17:01	15'	Black organic sediment, macrophytes, some hair and hide fragments
I-2 Field Duplicate	10/10/96	17:10	15'	Black organic sediment, macrophytes, some hair and hide fragments
I-3	10/9/96	15:17	14'	Organic brown/black sediment, some hide fragments
I-4	10/9/96	15:42	13'	Organic brown/black sediment, some hide fragments
I-5M	10/9/96	12:30	13"	Purple/black mud with considerable hide fragments and plants, distinct black on top with purple below, loose gelatinous consistency
I-6	10/9/96	9:55	11"	Black organic color with sulphur odor, macrophytes
I-7M	10/9/96	16:00	9'	Macrophytes, black organic sediment
I-8	10/9/96	16:44	12'	Wood chips and black organic sediment
E-1P	10/10/96	9:00	9.5	Black rich organic sediment, macrophytes
E-2P	10/10/96	9:45	15'	Black organic sediment, macrophytes
E-3P	10/10/96	12:53	23'	Shells, paint chips, black organic/sandy sediment
E-3P Field Duplicate	10/11/96	13:10	23'	Shells, paint chips, black organic/sandy sediment
E-4P	10/10/96	10:00	22'	Black organic sediment
E-5P	10/10/96	11:45	30'	Black organic sediment
E-6P	10/10/96	10:15	50'	Black organic sediment and wood chips
E-7P	10/10/96	11:10	32'	Black organic sediment
E9P	10/10/96	10:45	51'	Black organic sediment

Table A-4. Grain Size Distributions for Tannery Bay Exterior Core Samples.

Sample Number	Sample ID	<2000 um Weight %	1000-2000 um Weight%	850-1000 um Weight %	500-850 um Weight %	125-500 um Weight %	63-125 um Weight %	<63 um Weight %
2993	E-1 Top					10	24	66
2994	E-1 Middle	1				58	13	28
2995	E-1 Bottom	1				49	15	35
2996	E-2 Top					8	11	81
2997	E-2 Middle					9	9	82
2998	E-2 Bottom					5	7	88
2999	E-3 Top				3	28	33	36
3000	E-3 Middle				1	25	50	24
3001	E-3 Bottom				2	22	28	48
3002	E-4 Top					11	17	72
3002	E-4 Top Duplicate				1	11	17	71
3003	E-4 Middle				1	14	12	74
3004	E-4 Bottom					11	17	72
3005	E-5 Top				1	21	21	57
3006	E-5 Middle					12	16	72
3007	E-5 Bottom					14	18	68
3008	E-6 Top	2	3		1	11	12	71
3009	E-6 Middle				1	19	10	70
3010	E-6 Bottom					8	9	83
3011	E-7 Top					29	18	53
3012	E-7 Middle-1					11	12	77
3013	E-7 Middle-2					11	13	75
3013	E-7 Middle-2 Duplicate					12	13	76
3014	E-7 Bottom			1		13	20	67
3015	E-9 0-15					11	14	75
3016	E-9 15-30					5	7	88
3017	E-9 30-45					11	11	78
3018	E-9 45-60				6	27	15	52
3019	E-9 60-75		1		1	14	19	66
3020	E-9 75-90				3	51	23	24

Table A-5. Grain Size Distributions for Tannery Bay Exterior and Interior Station Ponar Samples.

Sample Number	Sample ID	<2000 um Weight %	1000-2000 um Weight%	850-1000 um Weight %	500-850 um Weight %	125-500 um Weight %	63-125 um Weight %	<63 um Weight %
3021	I-1	1				6	9	84
3022	I-2	3				20	13	64
3023	I-2 Field Duplicate	2			0	11	11	75
3024	I-3					25	21	54
3025	I-4				1	34	23	42
3027	I-5	1	1		1	24	24	49
3026	I-6	8	8	2	7	29	13	33
3028	I-7	2	1		1	14	24	58
3029	I-8	7	9	2	4	24	27	27
3031	E-1P				1	19	26	55
3031	E-1P Duplicate		1	1	1	21	24	52
3032	E-2P					9	16	75
3033	E-3P	2	2		2	54	12	28
3034	E-3P Field Duplicate	1	2		3	46	9	38
3035	E-4P					8	19	73
3036	E-5P					21	27	51
3037	E-6P	1	4	1	2	20	13	59
3038	E-7P					16	15	69
3039	E-9P					18	22	60
3039	E-9P Duplicate					15	22	64

Table A-6. Metals, TOC, and % Solids Results for the Tannery Bay Interior and Exterior Stations.

Sample Number	Sample Log ID	Sample Type	% Solids	Arsenic, Total mg/kg	Chromium, Total mg/kg	Mercury, Total mg/kg	TOC %
2993	E-1 Top	Core	17	6.9	37	0.18	16
2994	E-1 Middle	Core	50	2.5	6	<0.10	5
2995	E-1 Bottom	Core	45	3.5	13	<0.10	8
2996	E-2 Top	Core	18	7.9	512	0.39	16
2997	E-2 Middle	Core	29	5.5	19	0.11	14
2998	E-2 Bottom	Core	22	9.2	30	<0.10	17
2999	E-3 Top	Core	16	13	381	0.66	15
3000	E-3 Middle	Core	18	11	21	<0.10	12
3001	E-3 Bottom	Core	19	11	24	<0.10	12
3002	E-4 Top	Core	17	10	184	0.55	15
3003	E-4 Middle	Core	21	7.6	24	<0.10	15
3004	E-4 Bottom	Core	18	8.3	26	<0.10	18
3005	E-5 Top	Core	15	9.4	385	0.68	15
3006	E-5 Middle	Core	17	8.5	27	<0.10	16
3007	E-5 Bottom	Core	17	9.7	21	<0.10	15
3008	E-6 Top	Core	12	12	445	0.77	20
3009	E-6 Middle	Core	18	8.2	26	0.15	15
3010	E-6 Bottom	Core	19	8.7	21	<0.10	12
3011	E-7 Top	Core	13	9.9	313	0.67	14
3012	E-7 Middle-1	Core	15	9.3	32	<0.10	16
3013	E-7 Middle-2	Core	15	9.5	36	<0.10	16
3014	E-7 Bottom	Core	16	9.7	29	0.10	16
3015	E-9 0-15	Core	11	10	838	0.49	11
3016	E-9 15-30	Core	14	8.2	313	0.57	9
3017	E-9 30-45	Core	16	8.4	140	0.55	8
3018	E-9 45-60	Core	18	9.1	49	0.33	11
3019	E-9 60-75	Core	17	6.6	30	0.13	14
3020	E-9 75-90	Core	38	4.1	10	<0.10	3
3021	I-1	Ponar	13	7.5	212	0.28	17
3022	I-2	Ponar	14	8.8	259	0.29	15
3023	I-2 Field Duplicate	Ponar	14	8.9	290	0.23	16
3024	I-3	Ponar	14	8.4	934	0.47	13
3025	I-4	Ponar	14	9.0	1890	0.78	14
3026	I-5M	Ponar	17	174	4100	3.76	7
3027	I-6	Ponar	15	10	2650	1.04	12
3028	I-7M	Ponar	13	8.3	2560	0.87	12
3029	I-8	Ponar	15	8.6	515	0.39	21
3031	E-1P	Ponar	17	6.1	23	0.17	16
3032	E-2P	Ponar	15	8.1	64	0.21	16
3033	E-3P	Ponar	71	4.6	43	0.11	13
3034	E-3P Field Duplicate	Ponar	51	4.0	36	<0.10	12
3035	E-4P	Ponar	14	8.4	344	0.30	14
3036	E-5P	Ponar	12	8.6	492	0.39	13
3037	E-6P	Ponar	12	9.5	771	0.68	12
3038	E-7P	Ponar	12	8.6	541	0.63	13
3039	E-9P	Ponar	11	9.1	369	0.28	13

Table A-7. Visual Description of Stratigraphy Core Collected at I-5M on October 9, 1996*.

Depth (cm)	Visual Description
0-2	Loose black floc
2-4	Loose black floc
4-6	Black organic silts
6-8	Black organic silts, shell fragments
8-10	Black organic silts
10-12	Black organic silts, metal fragments, some gravel
12-14	Purple organic sediments
14-16	Purple organic sediments
16-18	Purple organic sediments
18-20	Purple organic sediments
20-22	Purple organic sediments, animal hide fragments
22-24	Purple organic sediments, animal hide fragments
24-26	Purple organic sediments
26-28	Purple organic sediments
28-30	Purple organic sediments
30-32	Purple organic sediments, animal hide fragments, very gelatinous
32-34	Purple organic sediments, animal hide fragments, very gelatinous
34-36	Purple organic sediments, animal hide fragments, very gelatinous
36-38	Purple organic sediments, animal hide fragments, very gelatinous
38-40	Purple organic sediments, animal hide fragments, very gelatinous

*A water leak developed during extrusion. Core sample was not analyzed.

Table A-8. Visual Description of Stratigraphy Core Collected at I-5M
on October 29, 1996.

Depth (cm)	Cr (mg/kg)	Visual Description	Depth (cm)	Cr (mg/kg)	Visual Description
0-2	2740	Loose black floc	58-60	9000	Purple organic silts
2-4	2520	Loose black floc	60-62	9200	Purple organic silts
4-6	2840	Black organic silts shell fragments	62-64	17100	Purple organic silts
6-8	3060	Black organic silts shell fragments	64-66	15900	Purple organic silts
8-10	3260	Black organic silts shell fragments	66-68	22800	Purple organic silts
10-12	3280	Black organic silts, hair mats	68-70	22200	Purple organic silts
12-14	3180	Black organic silts, hair	70-72	19600	Purple organic silts
14-16	3140	Black organic silts, hair	72-74	18500	Purple organic silts
16-18	2960	Black organic silts, hair mats, white fragments	74-76	22800	Purple organic silts
18-20	2770	Black organic silts, hair, white fragments	76-78	13200	Purple organic silts
20-22	2720	Black organic silts, hair, white fragments	78-80	12800	Purple organic silts
22-24	2980	Black organic silts, hair, white fragments	80-82	11500	Purple organic silts
24-26	3640	Black organic silts, hair, white fragments	82-84	6830	Purple organic silts
26-28	5050	Black organic silts, hair, white fragments	84-86	2050	Purple organic silts
28-30	7030	Black organic silts, hair	86-88	1170	Purple organic silts
30-32	20200	Black organic silts, grey fragments	88-90	730	Purple organic silts, hair mats
32-34	22200	Black organic silts, grey fragments	90-92	360	Purple organic silts, hair mats
34-36	7350	Black organic silts, grey fragments, hair	92-94	640	Purple organic silts
36-38	6080	Black organic silts, hair mats	94-96	1390	Purple organic silts
38-40	6640	Black organic silts, hair mats	96-98	1230	Purple organic silts
40-42	8150	Black/black organic silts, hair	98-100	1340	Purple organic silts
42-44	8350	Black/black organic silts, hair	100-102	3080	Purple organic silts
44-46	8250	Purple organic silts	102-104	1110	Purple organic silts
46-48	6580	Purple organic silts	104-106	2860	Purple organic silts
48-50	10700	Purple organic silts	106-108	860	Purple organic silts
50-52	14800	Purple organic silts	108-110	1680	Purple organic silts
52-54	9360	Purple organic silts	110-112	440	Purple organic silts
54-56	8230	Purple organic silts	112-114	770	Purple organic silts
56-58	6400	Purple organic silts			

Table A-9. Visual Description of Stratigraphy Core Collected at I-7M on October 9, 1996.

Depth (cm)	Cr (mg/kg)	Visual Description	Depth (cm)	Cr (mg/kg)	Visual Description
0-2	2060	Loose black floc	72-74	12900	Grey organic silts
2-4	2440	Loose black floc	74-76	10900	Grey organic silts
4-6	2280	Loose black floc	76-78	14700	Grey organic silts
6-8	2650	Loose black floc	78-80	14800	Grey organic silts
8-10	2800	Loose black floc	80-82	41600	Purple organic silts, hair mats
10-12	3580	Loose black floc	82-84	14000	Purple organic silts, hair mats
12-14	3770	Loose black floc	84-86	6980	Purple organic silts, hair mats
14-16	3800	Loose black floc	86-88	6330	Purple organic silts, hair mats
16-18	4070	Loose black floc	88-90	7300	Purple organic silts, hair mats
18-20	4410	Black organic silts	90-92	5690	Purple/red organic silts, hair mats
20-22	4070	Black organic silts, hair	92-94	6460	Purple/red organic silts, hair mats
22-24	4290	Black organic silts, hair	94-96	11500	Purple/red organic silts, hair mats
24-26	4200	Black organic silts, hair	96-98	14100	Purple/red organic silts, hair mats
26-28	4370	Black organic silts, hair	98-100	7850	Purple/red organic silts, hair mats
28-30	4500	Black organic silts, hair mats	100-102	14500	Purple organic silts, hair
30-32	4260	Black organic silts, hair mats	102-104	14000	Purple organic silts, hair
32-34	4640	Black organic silts	104-106	16400	Purple organic silts, hair
34-36	5310	Black organic silts	106-108	15100	Purple organic silts, hair
36-38	5700	Black organic silts	108-110	11500	Purple organic silts, hair
38-40	18300	Black organic silts	110-112	1670	Purple organic silts, hair
40-42	20900	Black organic silts	112-114	10300	Purple organic silts, hair
42-44	20100	Black organic silts	114-116	10100	Purple organic silts, hair
44-46	23500	Black organic silts	116-118	13100	Purple organic silts, hair
46-48	34200	Black organic silts	118-120	9850	Purple organic silts, hair
48-50	37400	Black organic silts	120-122	9270	Purple organic silts, hair
50-52	43300	Black organic silts	122-124	12100	Purple organic silts, hair
52-54	61100	Blue silts	124-126	8180	Purple organic silts, hair
54-56	25400	Black organic silts	126-128	8690	Purple organic silts, hair
56-58	25800	Black organic silts	128-130	2020	Purple organic silts, hair
58-60	10500	Black organic silts	130-132	1420	Purple organic silts, hair mats
60-62	6700	Grey organic silts	132-134	1600	Purple organic silts, hair mats
62-64	6640	Grey organic silts	134-136	1430	Purple organic silts, hair mats
64-66	6910	Grey organic silts	136-138	410	Purple organic silts, hair mats
68-70	9090	Grey organic silts	138-140	280	Purple organic silts, hair mats
70-72	9250	Grey organic silts	140-142	4220	Purple organic silts, hair mats

Table A-10. Spiked Sample Results for Total Chromium in Sediment Samples.

Sample Number	Sample ID	Initial Chromium Concentration mg/kg	Chromium Spiked Amount mg/kg	Measured Chromium Concentration mg/kg	% Recovery
2993	E-1 Top	37	281	268	82
3002	E-4 Top	216	96	305	93
3011	E-7 Top	313	355	622	87
3029	I-8	515	333	782	80
3086	I-7M (34-36)	5314	244	5523	86
3074	I-7M (12-14)	3000	2400	5410	100
3082	I-7M (26-28)	4170	2440	6510	96
3099	I-7M (60-62)	6890	4930	11300	89
3102	I-7M (66-68)	6760	4880	11400	95
3133	I-7M (128-130)	1940	2480	4440	101
3135	I-7M (132-134)	1440	2440	3780	96
3137	I-7M (136-138)	360	2430	2690	96
3159	I-5M (18-20)	2840	2420	5260	100
3161	I-5M (22-24)	2880	2380	5270	100
3162	I-5M (24-26)	3636	239	3775	58
3197	I-5M (94-96)	1394	246	1594	81
3170	I-5M (40-42)	6560	4810	11800	109
3193	I-5M (86-88)	1180	2460	3460	93
3194	I-5M (88-90)	757	2430	2920	89
3195	I-5M (90-92)	367	2430	2580	91

Table A-11. Laboratory Duplicate Sample Results for Total Chromium in Sediment Samples.

Sample Number	Sample ID	Initial Chromium Concentration mg/kg	Duplicate Chromium Concentration mg/kg	Relative Percent Difference %
2994	E-1 Mid	6.2	7.5	19
3002	E-7 Top	313	216	37
3012	E-7 Mid 1	32	29	10
3031	E-1P	23	22	6
3032	E-2P	64	71	10
3035	E-4P	344	382	10
3070	I-7M (2-4)	2444	2454	0
3074	I-7M (12-14)	3577	3000	18
3087	I-7M (36-38)	5703	5571	2
3099	I-7M (60-62)	6698	6890	3
3104	I-7M (70-72)	9250	9877	7
3118	I-7M (98-100)	7847	7790	1
3133	I-7M (128-130)	2023	1940	4
3135	I-7M (136-138)	407	360	12
3159	I-5M (18-20)	2771	2840	2
3163	I-5M (26-28)	5050	5127	2
3170	I-5M (40-42)	8149	6560	22
3182	I-5M (64-66)	15920	13090	20
3193	I-5M (86-88)	1174	1180	1
3195	I-5M (90-92)	362	367	1
3198	I-5M (96-98)	1234	1223	1

Table A-12. Spiked Sample Results for Total Arsenic and Total Mercury in Sediment .

Sample Number	Sampe ID	Initial Arsenic Concentration mg/kg	Spiked Amount mg/kg	Measured Arsenic Concentration mg/kg	% Recovery
2993	E-1 Top	6.94	2.79	9.34	86
2998	E-2 Bottom	8.88	2.40	11.1	93
3010	E-6 Bottom	8.92	2.43	11.3	98
3034	E-3P field dup	2.72	2.39	6.02	138

Sample Number	Sampe ID	Initial Mercury Concentration mg/kg	Spiked Amount mg/kg	Measured Mercury Concentration mg/kg	% Recovery
2993	E-1 Top	0.180	0.754	1.09	121
2994	E-1 Mid	0.062	0.162	0.227	102
3032	E-2 P	0.205	0.691	0.924	104
3034	E-3 P field dup	0.047	0.170	0.241	114

Table A-13. Laboratory Duplicate Sample Results for Total Arsenic, Total Mercury, and TOC in Sediment Samples.

Sample Number	Sample ID	Initial Arsenic Concentration mg/kg	Duplicate Arsenic Concentration mg/kg	Relative Percent Difference %
2993	E-1 Top	6.9	6.9	1
2994	E-1 Mid	2.5	2.5	1
2998	E-2 Bottom	8.9	9.2	4
3012	E-7 Mid 1	9.3	9.0	3
3031	E-1P	6.1	6.1	0
3034	E-3P field dup	2.7	4.0	38

Sample Number	Sample ID	Initial Mercury Concentration mg/kg	Duplicate Mercury Concentration mg/kg	Relative Percent Difference %
2993	E-1 Top	0.18	0.18	1
2994	E-1 Mid	0.06	0.07	18
3032	E-2 P	0.21	0.19	6
3034	E-3 P field dup	0.05	0.06	16

Sample Number	Sample ID	Initial TOC Concentration mg/kg	Duplicate TOC Concentration mg/kg	Relative Percent Difference %
2999	E-3 Top	15	15	1
3038	E-7P	13	14	4
3034	E-3 P field dup	13	12	8
3036	E-5P	13	13	2

Table A-14. Semivolatile Organics Results for Tannery Bay Exterior Stations E-7 and E-9.

Station	E-7	E-7	E-7	E-7	E-9	E-9	E-9	E-9	E-9
Depth (inches)	0"-25"	25"-50"	50"-75"	75"-105"	0"-15"	15"-30"	30"-45"	45"-60"	60"-90"
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Phenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Bis(2-chloroethyl)ether	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2-Chlorophenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
1,3-Dichlorobenzene	<0.33	<0.33	<0.33	<0.33	0.33	2.4	1.6	<0.33	<0.33
1,4-Dichlorobenzene	<0.33	<0.33	<0.33	<0.33	<0.33	1.2	0.41	<0.33	<0.33
1,2-Dichlorobenzene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2-Methylphenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
4-Methylphenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Hexachloroethane	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Isophorone	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2,4-Dimethylphenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Bis(2-chloroethoxy)methane	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2,4-Dichlorophenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
1,2,4-Trichlorobenzene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Naphthalene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Hexachlorobutadiene	<0.33	<0.33	<0.33	<0.33	<0.33	0.66	0.11	<0.33	<0.33
4-Chloro-3-methylphenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2-Methylnaphthalene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Hexachlorocyclopentadiene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2,4,6-Trichlorophenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2,4,5-Trichlorophenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
2-Chloronaphthalene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dimethylphthalate	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Acenaphthylene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Acenaphthene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Diethylphthalate	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
4-Chlorophenyl-phenyl ether	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Fluorene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
4,6-Dinitro-2-methylphenol	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
4-Bromophenyl-phenyl ether	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Hexachlorobenzene	<0.33	<0.33	<0.33	<0.33	<0.33	2.1	0.51	<0.33	<0.33
Pentachlorophenol	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7
Phenanthrene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Anthracene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Di-n-butylphthalate	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Fluoranthene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Pyrene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	0.41	<0.33	<0.33
Butylbenzylphthalate	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)anthracene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Chrysene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Bis(2-ethylhexyl)phthalate	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Di-n-octylphthalate	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(b)fluoranthene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(k)fluoranthene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(a)pyrene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Indeno(1,2,3-cd)pyrene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Dibenzo(a,h)anthracene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Benzo(g,h,i)perylene	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
3-Methylphenol	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33	<0.33
Surrogate Standards	%	%	%	%	%	%	%	%	%
	Recovery	Recovery	Recovery	Recovery	Recovery	Recovery	Recovery	Recovery	Recovery
Nitrobenzene-d5	75	72	62	68	71	78	78	60	78
2-Fluorobiphenyl	81	68	84	87	81	77	70	79	85
o-Terphenyl	73	66	74	84	88	70	68	88	77
Phenol-d6	69	77	68	71	63	77	70	70	70
2-Fluorophenol	72	68	74	70	67	69	75	74	69
2,4,6-Tribromophenol	83	68	75	74	78	88	66	68	72

Table A-15. Semivolatile Organics Matrix Spike and Matrix Spike Duplicate Results.

	E-9 45"-60" Initial mg/kg	E-9 MS 45"-60" Spiked Amount (mg/kg)	E-9 MS 45"-60" Measured mg/kg	E-9 MS 45"-60" % Recovery	E-9 MSD 45"-60" Spiked Amount (mg/kg)	E-9 MSD 45"-60" Measured mg/kg	E-9 MSD 45"-60" % Recovery	% RPD*
1,2,4-Trichlorobenzene	0.33	5.6	4.3	77	6.2	5.1	83	8
Acenaphthene	0.33	5.6	4.1	73	6.2	5.4	88	18
Pyrene	0.33	5.6	4.6	82	6.2	4.9	80	3
1,4-Dichlorobenzene	0.33	5.6	4.8	86	6.2	4.7	76	12
Pentachlorophenol	<1.7	22.4	9.7	43	24.6	9.5	39	12
Phenol	0.33	11.2	7.1	63	12.3	7.5	61	4
2-Chlorophenol	0.33	11.2	8.8	79	12.3	7.8	63	22
4-Chloro-3-methylphenol	0.33	11.2	7.5	67	12.3	7.1	58	15

* %RPD based on ug spiked

Table A-16. PCB results for Exterior Station E-9.

	E-9 15"-30" (mg/kg)	E-9 30"-45" (mg/kg)	Amount Spiked (mg/kg)	E-9 MS 15"-30" Measured (mg/kg)	% Recovery
Aroclor 1221	<5.9	<0.33			
Aroclor 1232	<5.9	<0.33			
Aroclor 1242	<5.9	<0.33			
Aroclor 1248	100	28			
Aroclor 1254	<5.9	<0.33	61.7	80.4	130
Aroclor 1260	<5.9	<0.33			

APPENDIX B

Summary Of Chemical Measurements For The Toxicity Test With Sediments From White Lake

Test No: CH-961101
 Toxicant: White Lake Sediment
 Organism: Hyalella azteca

Analyst: kcb, jh, kg
 Test Start: 11/1/96 1500
 Test Stop: 11/11/96 1500

Table B-1. Summary of Initial and Final Chemical Measurements for the *Hyalella azteca* Sediment Toxicity Tests

Sample	Parameter	Day		Difference (%)
		0	10	
E-IP	pH	7.4	7.4	0
	Conductivity (umhos/cm)	360	330	8
	Alkalinity (mg/l CaCO3)	110	92	16
	Hardness (mg/l CaCO3)	152	128	16
	Ammonia (mg/l NH3)	1.95	0.70	64
I-1	pH	7.2	7.4	3
	Conductivity (umhos/cm)	350	340	3
	Alkalinity (mg/l CaCO3)	94	88	6
	Hardness (mg/l CaCO3)	136	124	9
	Ammonia (mg/l NH3)	2.00	0.83	59
I-2	pH	7.1	7.2	1
	Conductivity (umhos/cm)	380	330	13
	Alkalinity (mg/l CaCO3)	96	84	13
	Hardness (mg/l CaCO3)	188	116	38
	Ammonia (mg/l NH3)	1.89	0.85	55
I-3	pH	7.2	7.4	3
	Conductivity (umhos/cm)	340	340	0
	Alkalinity (mg/l CaCO3)	96	96	0
	Hardness (mg/l CaCO3)	148	124	16
	Ammonia (mg/l NH3)	1.60	0.68	58
I-4	pH	7.4	7.5	1
	Conductivity (umhos/cm)	350	350	0
	Alkalinity (mg/l CaCO3)	112	92	18
	Hardness (mg/l CaCO3)	152	132	13
	Ammonia (mg/l NH3)	2.80	1.05	63
I-5M	pH	7.7	7.6	1
	Conductivity (umhos/cm)	470	360	23
	Alkalinity (mg/l CaCO3)	172	114	34
	Hardness (mg/l CaCO3)	200	156	22
	Ammonia (mg/l NH3)	6.30	1.00	84
I-6	pH	7.1	7.3	3
	Conductivity (umhos/cm)	480	340	29
	Alkalinity (mg/l CaCO3)	132	102	23
	Hardness (mg/l CaCO3)	152	152	0
	Ammonia (mg/l NH3)	7.60	1.80	76
I-7M	pH	7.1	7.3	3
	Conductivity (umhos/cm)	490	350	29
	Alkalinity (mg/l CaCO3)	182	100	45
	Hardness (mg/l CaCO3)	172	148	14
	Ammonia (mg/l NH3)	11.50	0.89	92
I-8	pH	7.4	7.4	0
	Conductivity (umhos/cm)	370	350	5
	Alkalinity (mg/l CaCO3)	112	100	11
	Hardness (mg/l CaCO3)	144	140	3
	Ammonia (mg/l NH3)	6.80	0.80	88

Test No: CH-961101
 Toxicant: White Lake Sediment
 Organism: *Hyalella azteca*

Analyst: kcb, jh, kg
 Test Start: 11/1/96 1500
 Test Stop: 11/11/96 1500

Table B-2. Summary of the Daily Chemical Measurements for the *Hyalella azteca* Sediment Toxicity

Sample: E-IP	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.6	6.8	4.7	3.7	4.4	3.9	3.5	4.9	5.4	7.0	7.6

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.2	5.0	3.5	3.4	3.6	3.4	4.2	4.4	7.2	6.3	6.9	

Sample: I-1	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	9.0	9.0	9.0	7.0	9.0	4.0	9.0	4.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.6	6.4	4.8	3.5	4.5	3.8	3.6	5.2	6.0	7.4	7.6

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
4.0	5.8	4.3	4.4	4.2	3.5	5.0	6.1	7.0	6.4	6.2	

Sample: I-2	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.4	5.9	3.5	3.7	4.4	4.3	3.5	5.4	4.6	7.2	7.8

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.2	5.4	4.2	4.0	3.9	3.7	4.0	6.0	6.4	7.1	6.2	

Sample: I-3	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	6.2	6.3	4.9	3.6	3.8	4.6	4.8	5.8	5.4	7.3	7.8

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.8	5.2	3.8	3.6	4.9	4.1	4.0	5.7	7.0	6.8	4.7	

Sample: I-4	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	6.5	6.1	3.6	4.2	4.0	5.1	4.3	5.2	5.1	7.4	7.6

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
6.4	5.6	3.6	3.8	4.7	3.9	4.5	4.5	6.5	6.7	6.7	

Sample: I-5M	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.9	5.8	3.8	4.0	3.8	4.1	3.8	4.9	5.5	7.4	7.5

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.6	5.7	4.0	3.8	3.5	3.9	4.8	4.6	7.2	7.4	4.5	

Sample: I-6	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.2	5.6	3.6	3.8	3.8	4.0	4.2	4.3	5.0	7.3	7.4

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.4	4.8	4.1	3.8	3.7	3.9	4.2	4.4	6.5	6.6	6.2	

Sample: I-7M	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.5	5.2	3.8	4.0	4.9	4.5	3.9	4.9	5.0	7.1	7.4

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.1	5.1	3.7	4.0	3.6	4.1	4.0	4.9	6.7	6.9	6.5	

Sample: I-8	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.3	5.8	3.7	4.5	4.2	5.4	4.8	5.3	5.4	7.3	7.5

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
22.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.0	5.7	4.1	4.4	4.1	3.9	4.8	5.5	6.9	5.9	6.8	

Test No: CM-961101
 Toxicant: White Lake Sediment
 Organism: Chironomus tentans

Analyst: kcb, jh, kg
 Test Start: 11/1/96 1500
 Test Stop: 11/11/96 1500

Table B-3. Summary of Initial and Final Chemical Measurements for the *Chironomus tentans* Sediment Toxicity Tests

Sample	Parameter	Day		Difference (%)
		0	10	
E-IP	pH	7.5	7.3	3
	Conductivity (umhos/cm)	360	360	0
	Alkalinity (mg/l CaCO3)	110	78	29
	Hardness (mg/l CaCO3)	152	132	13
	Ammonia (mg/l NH3)	1.95	0.80	59
I-1	pH	7.4	7.2	3
	Conductivity (umhos/cm)	360	360	0
	Alkalinity (mg/l CaCO3)	94	84	11
	Hardness (mg/l CaCO3)	136	136	0
	Ammonia (mg/l NH3)	2.00	1.10	45
I-2	pH	7.2	7.3	1
	Conductivity (umhos/cm)	360	350	3
	Alkalinity (mg/l CaCO3)	96	76	21
	Hardness (mg/l CaCO3)	188	136	28
	Ammonia (mg/l NH3)	1.89	1.28	32
I-3	pH	7.3	7.4	1
	Conductivity (umhos/cm)	370	370	0
	Alkalinity (mg/l CaCO3)	96	80	17
	Hardness (mg/l CaCO3)	148	136	8
	Ammonia (mg/l NH3)	1.60	1.00	38
I-4	pH	7.5	7.4	1
	Conductivity (umhos/cm)	380	380	0
	Alkalinity (mg/l CaCO3)	112	86	23
	Hardness (mg/l CaCO3)	152	132	13
	Ammonia (mg/l NH3)	2.80	0.70	75
I-5M	pH	7.5	7.6	1
	Conductivity (umhos/cm)	390	390	0
	Alkalinity (mg/l CaCO3)	172	96	44
	Hardness (mg/l CaCO3)	200	148	26
	Ammonia (mg/l NH3)	6.30	1.40	78
I-6	pH	7.2	7.4	3
	Conductivity (umhos/cm)	510	340	33
	Alkalinity (mg/l CaCO3)	132	86	35
	Hardness (mg/l CaCO3)	152	148	3
	Ammonia (mg/l NH3)	7.60	1.42	81
I-7M	pH	7.0	7.3	4
	Conductivity (umhos/cm)	430	360	16
	Alkalinity (mg/l CaCO3)	182	94	48
	Hardness (mg/l CaCO3)	172	152	12
	Ammonia (mg/l NH3)	11.50	1.20	90
I-8	pH	7.3	7.4	1
	Conductivity (umhos/cm)	370	370	0
	Alkalinity (mg/l CaCO3)	112	84	25
	Hardness (mg/l CaCO3)	144	144	0
	Ammonia (mg/l NH3)	6.80	1.24	82

Test No: CM-961101
 Toxicant: White Lake Sediment
 Organism: Chironomus tentans

Analyst: kcb, jh, kg
 Test Start: 11/1/96 1500
 Test Stop: 11/11/96 1500

Table B-4. Summary of Chemical Measurements for the *Chironomus tentans* Sediment Toxicity Tests.

Sample: E-IP	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.6	5.9	3.9	3.6	4.1	3.9	3.7	4.0	4.3	6.6	6.9

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.6	4.5	3.6	3.8	3.9	3.6	4.2	4.1	4.4	4.0	6.3	

Sample: I-1	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	9.0	9.0	9.0	7.0	9.0	4.0	9.0	4.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.6	4.0	3.6	3.8	4.9	4.3	4.0	4.2	4.8	6.2	7.0

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.6	3.8	3.9	4.2	3.7	3.9	3.6	3.8	4.2	4.1	6.3	

Sample: I-2	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.4	4.0	3.6	3.9	3.8	3.7	3.8	3.9	4.1	5.2	6.8

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.4	4.8	3.7	4.1	4.0	4.1	3.9	3.7	5.5	4.7	5.8	

Sample: I-3	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	4.2	5.2	3.7	3.6	4.0	3.9	4.1	3.6	3.9	6.5	7.0

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.8	3.8	3.6	3.9	3.8	4.0	3.6	3.7	4.1	3.9	5.8	

Sample: I-4	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	6.5	4.5	3.9	3.6	3.9	3.6	4.1	3.9	3.8	6.6	7.0

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
6.3	3.9	3.6	4.0	3.8	4.0	3.9	4.1	4.6	4.4	6.1	

Sample: I-5M	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.9	3.9	3.9	3.8	3.6	4.0	3.7	4.5	3.6	5.6	7.0

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
6.0	3.8	4.0	3.8	3.7	3.9	4.2	3.6	3.6	3.7	4.9	

Sample: I-6	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.2	3.6	3.9	4.0	4.4	4.1	3.8	3.6	4.1	5.2	6.8

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.4	3.9	4.1	3.7	3.6	3.9	4.0	4.3	4.7	3.9	4.8	

Sample: I-7M	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.5	3.6	3.8	3.6	3.9	3.6	4.1	4.3	3.6	5.0	6.8

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.0	3.9	3.7	4.1	3.9	4.4	4.1	5.0	3.7	5.1	4.8	

Sample: I-8	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0
D.O. Initial	8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4
mg/l Final	5.3	3.9	5.4	4.4	4.1	3.8	4.0	3.8	4.4	5.0	6.2

Day (PM)											
0	1	2	3	4	5	6	7	8	9	10	
23.0	22.0	22.0	23.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	
8.4	8.4	8.4	8.3	8.4	8.4	8.4	8.0	8.2	8.3	8.4	
5.6	3.9	3.8	3.9	3.7	4.5	4.5	3.9	4.4	3.9	5.8	

Test No: CH-970401
 Toxicant: White Lake Sediment
 Organism: Hyalella azteca

Analyst: kcb, jh, kg
 Test Start: 4/17/97 1500
 Test Stop: 4/27/97 1500

Table B-5. Summary of Initial and Final Chemical Measurements for the *Hyalella azteca* April 1997 Sediment Toxicity Tests.

Sample	Parameter	Day		Difference (%)
		0	10	
Control	pH	8.0	6.9	14
	Conductivity (umhos/cm)	230	310	35
	Alkalinity (mg/l CaCO3)	68	68	0
	Hardness (mg/l CaCO3)	120	112	7
	Ammonia (mg/l NH3)	0.02	0.01	50
I-2	pH	7.4	7.5	1
	Conductivity (umhos/cm)	360	330	8
	Alkalinity (mg/l CaCO3)	74	70	5
	Hardness (mg/l CaCO3)	116	112	3
	Ammonia (mg/l NH3)	1.30	0.51	61
I-5M	pH	7.8	8.0	3
	Conductivity (umhos/cm)	470	380	19
	Alkalinity (mg/l CaCO3)	112	100	11
	Hardness (mg/l CaCO3)	148	148	0
	Ammonia (mg/l NH3)	8.70	1.60	82
I-5T	pH	7.6	7.8	3
	Conductivity (umhos/cm)	410	340	17
	Alkalinity (mg/l CaCO3)	82	82	0
	Hardness (mg/l CaCO3)	132	120	9
	Ammonia (mg/l NH3)	4.00	0.45	89
I-7M	pH	7.5	7.9	5
	Conductivity (umhos/cm)	490	360	27
	Alkalinity (mg/l CaCO3)	118	110	7
	Hardness (mg/l CaCO3)	136	136	0
	Ammonia (mg/l NH3)	6.80	0.82	88
I-7T	pH	7.2	7.6	6
	Conductivity (umhos/cm)	490	330	33
	Alkalinity (mg/l CaCO3)	66	64	3
	Hardness (mg/l CaCO3)	124	124	0
	Ammonia (mg/l NH3)	9.70	0.75	92

Test No: CH-970401
 Toxicant: White Lake Sediment
 Organism: Hyalella azteca

Analyst: kcb, jh, kg
 Test Start: 4/17/97 1500
 Test Stop: 4/27/97 1500

Table B-6. Summary of Daily Chemical Measurements for the *Hayella azteca* April 1997 Sediment Toxicity Tests.

Sample: Control	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	23.0	21.0	22.0	22.0	23.0	23.0	22.0	22.0	22.0	23.0
D.O. Initial	8.6	8.4	8.1	8.3	8.4	8.4	8.3	8.4	8.3	8.0	8.3
mg/l Final	6.4	7.7	5.1	6.6	5.9	5.8	6.2	6.0	6.4	5.9	5.8

Day (PM)										
0	1	2	3	4	5	6	7	8	9	10
23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	22.0
8.5	8.7	8.2	8.0	8.4	8.3	8.4	8.6	8.5	8.3	8.4
7.4	7.2	6.0	6.1	5.9	4.7	4.5	5.5	6.2	6.1	5.4

Sample: I-2	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	23.0	21.0	22.0	22.0	23.0	23.0	22.0	22.0	22.0	23.0
D.O. Initial	8.6	8.4	8.1	8.3	8.4	8.4	8.3	8.4	8.3	8.0	8.3
mg/l Final	5.2	5.2	4.0	3.6	5.0	4.6	4.6	4.4	4.1	4.0	4.4

Day (PM)										
0	1	2	3	4	5	6	7	8	9	10
23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	22.0
8.5	8.7	8.2	8.0	8.4	8.3	8.4	8.6	8.5	8.3	8.4
4.2	3.9	4.9	5.2	4.7	3.9	3.2	4.5	4.1	4.7	5.2

Sample: I-5M	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	23.0	21.0	22.0	22.0	23.0	23.0	22.0	22.0	22.0	23.0
D.O. Initial	8.6	8.4	8.1	8.3	8.4	8.4	8.3	8.4	8.3	8.0	8.3
mg/l Final	4.3	4.3	3.9	3.5	3.4	4.0	3.5	4.0	3.3	3.3	3.5

Day (PM)										
0	1	2	3	4	5	6	7	8	9	10
23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	22.0
8.5	8.7	8.2	8.0	8.4	8.3	8.4	8.6	8.5	8.3	8.4
3.6	3.7	4.0	4.3	4.1	4.2	4.0	4.3	3.9	3.3	4.5

Sample: I-5T	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	23.0	21.0	22.0	22.0	23.0	23.0	22.0	22.0	22.0	23.0
D.O. Initial	8.6	8.4	8.1	8.3	8.4	8.4	8.3	8.4	8.3	8.0	8.3
mg/l Final	5.8	5.8	5.4	4.7	5.4	5.4	5.3	5.1	5.2	4.8	5.1

Day (PM)										
0	1	2	3	4	5	6	7	8	9	10
23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	22.0
8.5	8.7	8.2	8.0	8.4	8.3	8.4	8.6	8.5	8.3	8.4
4.9	5.0	5.5	5.3	4.9	4.5	4.4	5.0	4.5	5.1	5.3

Sample: I-7M	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	23.0	21.0	22.0	22.0	23.0	23.0	22.0	22.0	22.0	23.0
D.O. Initial	8.6	8.4	8.1	8.3	8.4	8.4	8.3	8.4	8.3	8.0	8.3
mg/l Final	5.2	5.2	5.3	3.8	5.4	5.2	5.4	5.2	4.8	5.2	4.6

Day (PM)										
0	1	2	3	4	5	6	7	8	9	10
23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	22.0
8.5	8.7	8.2	8.0	8.4	8.3	8.4	8.6	8.5	8.3	8.4
5.1	3.9	5.4	4.1	4.3	3.6	4.3	3.8	4.0	5.1	6.1

Sample: I-7T	Day (AM)										
	0	1	2	3	4	5	6	7	8	9	10
Temp (oC)	23.0	23.0	21.0	22.0	22.0	23.0	23.0	22.0	22.0	22.0	23.0
D.O. Initial	8.6	8.4	8.1	8.3	8.4	8.4	8.3	8.4	8.3	8.0	8.3
mg/l Final	3.8	3.8	4.0	3.6	5.2	4.0	5.1	4.8	4.0	4.3	3.5

Day (PM)										
0	1	2	3	4	5	6	7	8	9	10
23.0	22.0	23.0	22.0	22.0	23.0	23.0	23.0	23.0	23.0	22.0
8.5	8.7	8.2	8.0	8.4	8.3	8.4	8.6	8.5	8.3	8.4
3.6	3.6	4.2	3.3	3.7	4.0	3.6	3.4	3.7	4.4	5.2

APPENDIX C

**Summary Of Data For The *Lumbriculus variegatus* Toxicity Screening
And Mercury Bioaccumulation Tests With Sediments From White Lake**

Test No: AL-961001
 Toxicant: White Lake
Sediment
 Organism: Lumbriculus
variegatus

Analyst: kcb
 ,jh
 Test Start - 10/19/96
 Date/Time: 1500
 Test Stop - 10/23/96
 Date/Time: 1500

Table C-1. Summary of Daily Temperature and Dissolved Oxygen Measurements for the *Lumbriculus variegatus* Screening Test.

Sample: E-IP		Day (AM)				
		0	1	2	3	4
Temp (oC)		22.0	22.0	22.0	23.0	23.0
D.O. mg/l	Initial	8.4	8.5	8.4	8.3	8.3
	Final	8.1	5.1	3.9	5.2	4.1

Day (PM)				
0	1	2	3	4
23.0	22.0	22.0	23.0	23.0
8.4	8.5	8.5	8.4	8.4
3.5	3.7	4.1	4.7	4.8

Sample: I-5M		Day (AM)				
		0	1	2	3	4
Temp (oC)		22.0	22.0	22.0	23.0	23.0
D.O. mg/l	Initial	8.4	8.5	8.4	8.3	8.3
	Final	8.1	3.5	3.6	5.1	4.5

Day (PM)				
0	1	2	3	4
23.0	22.0	22.0	23.0	23.0
8.4	8.5	8.5	8.4	8.4
3.6	3.6	3.6	4.3	4.8

Sample: I-7M		Day (AM)				
		0	1	2	3	4
Temp (oC)		22.0	22.0	22.0	23.0	23.0
D.O. mg/l	Initial	8.4	8.5	8.4	8.3	8.3
	Final	8.0	4.8	3.7	3.8	3.6

Day (PM)				
0	1	2	3	4
23.0	22.0	22.0	23.0	23.0
8.4	8.5	8.5	8.4	8.4
3.8	4.8	4.5	5.1	3.7

Test No: AL-961001

Toxicant: White Lake Sediment

Organism

: ***Lumbriculus
variegatus***

Analyst: kcb,jh

Test Start - Date/Time: 10/19/96 1500

Test Stop - Date/Time: 10/23/96 1500

Table C-2. Summary of Initial and Final Chemical Measurements the *Lumbriculus variegatus* Screening Test

Sample	Parameter	Day		Difference (%)
		0	4	
E-IP	Ph	7.6	7.3	4
	Conductivity (umhos/cm)	420	370	12
	Alkalinity (mg/l CaCO3)	96	88	8
	Hardness (mg/l CaCO3)	148	128	14
	Ammonia (mg/l NH3)	0.1	0.062	38
I-5M	Ph	7.7	7.7	0
	Conductivity (umhos/cm)	490	440	10
	Alkalinity (mg/l CaCO3)	96	116	21
	Hardness (mg/l CaCO3)	148	132	11
	Ammonia (mg/l NH3)	4.91	3.01	39
I-7M	Ph	7.4	7.2	3
	Conductivity (umhos/cm)	500	410	18
	Alkalinity (mg/l CaCO3)	80	132	65
	Hardness (mg/l CaCO3)	188	176	6
	Ammonia (mg/l NH3)	7.82	2.2	72

Test No: BL-961001

Toxicant: White Lake Sediment

Organism: Lumbriculus variegatus

Analyst: kcb, jh, kg

Test Start - Date/Time: 10/25/96 1500

Test Stop - Date/Time: 11/21/96 1500

Table C-3. Summary of Daily Temperature and Dissolved Oxygen Measurements for the *Lumbriculus variegatus* Bioaccumulation Test.

Sample:		Day (AM)																												
E-IP		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Temp (oC)		22	22	22	22	22	22	21	21	21	21	21	21	22	22	23	23	21	21	20	21	21	21	23	21	21	22	21	21	21
D.O.	Initial	8.4	8.2	8.3	8.2	8.3	8.2	8.5	8.5	8.4	8.4	8.3	8.3	8.4	8.4	8.0	8.2	8.3	8.4	7.4	8.2	8.4	8.6	8.4	8.5	8.4	8.4	8.3	8.4	8.3
	Final	5.5	4.7	3.6	3.5	3.8	3.6	4.5	7.9	7.8	7.2	7.5	7.5	7.3	7.4	7.7	7.3	7.4	7.6	7.2	7.9	7.8	7.9	7.8	7.8	7.9	7.6	7.4	7.6	7.7

Sample:		Day (PM)																												
E-IP		*																												
E-IP		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Temp (oC)		21	21	21	21	22	21	21	21	21	22	21	21	23	23	22	22	21	22	21	21	21	21	22	22	22	22	22	22	22
D.O.	Initial	8.4	8.4	8.4	8.4	8.3	8.5	8.5	8.6	8.5	8.4	8.4	8.4	8.0	4.0	8.7	8.4	8.4	8.0	7.9	8.2	8.4	8.4	8.4	8.5	8.5	8.4	8.4	8.5	8.4
	Final	3.8	3.6	3.8	3.7	3.6	3.7	8.0	7.8	7.1	7.6	7.4	7.5	7.1	5.5	7.8	7.5	7.1	7.2	6.8	7.1	7.9	7.6	7.8	7.9	7.3	7.5	7.7	7.7	7.1

Sample:		Day (AM)																												
I-5M		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Temp (oC)		22	22	22	22	22	22	21	21	21	21	21	21	22	22	23	23	21	21	20	21	21	21	23	21	21	22	21	21	21
D.O.	Initial	8.4	8.2	8.3	8.2	8.3	8.2	8.5	8.5	8.4	8.4	8.3	8.3	8.4	8.4	8.0	8.2	8.3	8.4	7.4	8.2	8.4	8.6	8.4	8.5	8.4	8.4	8.3	8.4	8.3
	Final	5.1	4.2	3.7	3.9	3.8	4.5	3.6	7.6	7.8	7.4	7.6	7.5	7.3	7.3	7.7	7.4	7.6	7.8	7.2	7.8	7.9	7.5	7.6	7.8	8.0	7.5	7.4	7.4	7.6

Sample:		Day (PM)																												
I-5M		*																												
I-5M		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Temp (oC)		21	21	21	21	22	21	21	21	21	22	21	21	23	23	22	22	21	22	21	21	21	21	22	22	22	22	22	22	22
D.O.	Initial	8.4	8.4	8.4	8.4	8.3	8.5	8.5	8.6	8.5	8.4	8.4	8.4	8.0	4.0	8.7	8.4	8.4	8.0	7.9	8.2	8.4	8.4	8.4	8.5	8.5	8.4	8.4	8.5	8.4
	Final	4.1	3.7	3.6	3.7	4.0	4.1	7.8	7.9	7.7	6.7	6.8	6.5	7.6	6.1	7.1	7.7	7.6	7.1	6.8	7.2	8.1	7.8	7.5	8.0	7.1	7.7	7.6	7.8	8.1

Sample:		Day (AM)																												
I-7M		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Temp (oC)		22	22	22	22	22	22	21	21	21	21	21	21	22	22	23	23	21	21	20	21	21	21	23	21	21	22	21	21	21
D.O.	Initial	8.4	8.2	8.3	8.2	8.3	8.2	8.5	8.5	8.4	8.4	8.3	8.3	8.4	8.4	8.0	8.2	8.3	8.4	7.4	8.2	8.4	8.6	8.4	8.5	8.4	8.4	8.3	8.4	8.3
	Final	5.2	4.2	3.8	3.9	3.7	3.9	4.2	7.4	6.8	6.9	6.3	7.4	7.2	8.4	7.1	7.0	7.5	7.8	7.1	8.0	8.0	7.8	7.9	8.0	7.9	6.9	7.2	7.3	7.5

Sample:		Day (PM)																												
I-7M		*																												
I-7M		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Temp (oC)		21	21	21	21	22	21	21	21	21	22	21	21	23	23	22	22	21	22	21	21	21	21	22	22	22	22	22	22	22
D.O.	Initial	8.4	8.4	8.4	8.4	8.3	8.5	8.5	8.6	8.5	8.4	8.4	8.4	8.0	4.0	8.7	8.4	8.4	8.0	7.9	8.2	8.4	8.4	8.4	8.5	8.5	8.4	8.4	8.5	8.4
	Final	4.5	3.8	4.0	3.8	3.6	8.1	7.7	7.0	6.1	6.5	6.4	6.4	6.8	6.0	7.1	7.8	7.5	7.1	6.3	7.1	7.4	7.6	7.4	7.7	7.2	7.1	7.3	7.7	7.6

*started aeration

Test No: BL-961001
 Toxicant: White Lake Sediment
 Organism: *Lumbriculus variegatus*

Analyst: kcb, jh, kg
 Test Start – Date/Time: 10/25/96 1500
 Test Stop – Date/Time: 11/21/96 1500

Table C-4. Summary of Initial and Final Chemical Measurements for the *Lumbriculus variegatus* Bioaccumulation Test.

Sample	Parameter	Day					Difference (%)	
		0	7	14	21	28		
E-IP	pH	Initial	7.7	7.5	7.7	7.5	7.5	2.6
		Final	7.6	7.3	7.6	7.4	7.4	2.6
	Conductivity (umhos/cm)	350	360	320	350	390	8.6	
	Alkalinity (mg/l CaCO3)	92	74	80	76	82	19.6	
	Hardness (mg/l CaCO3)	144	120	124	136	128	16.7	
	Ammonia (mg/l as NH3)	1.14	0.80	1.10	0.40	0.20	82.5	
I-5M	pH	Initial	8.0	8.0	7.9	7.8	7.8	2.5
		Final	7.8	7.7	7.5	7.7	7.7	3.8
	Conductivity (umhos/cm)	530	520	350	360	400	24.5	
	Alkalinity (mg/l CaCO3)	210	106	144	98	96	54.3	
	Hardness (mg/l CaCO3)	240	106	136	156	148	55.8	
	Ammonia (mg/l as NH3)	7.90	1.60	1.39	0.40	0.34	95.7	
I-7M	pH	Initial	7.6	7.5	7.7	7.6	7.6	1.3
		Final	7.5	7.4	7.5	7.4	7.5	1.3
	Conductivity (umhos/cm)	470	520	340	350	360	27.7	
	Alkalinity (mg/l CaCO3)	222	98	98	84	80	64.0	
	Hardness (mg/l CaCO3)	208	140	136	140	188	34.6	
	Ammonia (mg/l as NH3)	15.9	3.3	2.90	1.68	1.50	90.6	

APPENDIX D

Summary Reference Test Data For Solid Phase Toxicity Evaluation Of White Lake Sediments

1.0 INTRODUCTION

This report contains the reference toxicity methods and data interpretation for the 96 hour acute tests for *Hyalella azteca* and *Chironomus tentans* when exposed to various concentrations of sodium chloride (NaCl).

2.0 PROCEDURES AND METHODS

Two 96 hour acute static renewal survival tests were performed with both *Hyalella azteca* and *Chironomus tentans*. Methods as outlined in EPA-600/R-94/002 were followed. The *H. azteca* tests were performed from April 14-18, 1997 and the *C. tentans* tests were run from June 13-17, 1997.

2.1 Laboratory Water Supply

A moderately hard water is employed in our facility for *H. azteca* and *C. tentans* cultures. Preparation of the reconstituted laboratory water is outlined in EPA-600/4-91/002. This water is made up in volumes of 200 L on which water quality parameters are run to check for consistencies between batches. Moderately hard water was used to make up the various concentrations of sodium chloride for exposures of *H. azteca* and *C. tentans*.

2.2 Test Organisms

H. azteca and *C. tentans* used in these reference experiments were from the same stock as those organisms employed in the sediment toxicity tests. The *H. azteca* used were 7-14 days old and *C. tentans* were third instar larvae and 12 to 14 days old.

2.3 Experimental Design

The purpose of this series of tests was to evaluate the "relative sensitivity" of both organisms to our reference toxicant, sodium chloride. *H. azteca* were exposed to five different concentrations of NaCl and one control with 10 replicates, one organism per replicate, for each treatment. The organisms were fed 0.1ml of YCS at the beginning of the test and after 48 hours. Renewal of the exposure solutions occurred after 48 hours. The *C. tentans* tests followed the same procedure as described above, except the concentrations of NaCl were different and the organisms were fed 0.25ml of Tetrafin[®] (4 g/L suspension) on day 0 and 2. Routine parameters were measured prior to the transfer of organisms to their respective exposure vessels and at the end of the test.

2.4 Statistical Analysis

Survival data for all tests were normally distributed according to Chi-square analysis, as a result, estimated EC₅₀ values were calculated using the Probit model. Tukey's method of multiple comparisons was employed to determine if there was a significant difference between the EC₅₀ values for *H. azteca* and *C. tentans*.

3.0 RESULTS AND DISCUSSION

Reference toxicity evaluations with *H. azteca* began on April 14, 1997 and on June 13, 1997 for *C. tentans*. The results of the reference toxicity tests are given in Tables D-1–D-4. Statistical analyses are presented in Tables D-5–D-9. All tests satisfied the validity requirement of 90% survival in the control. The routine physical-chemical parameters varied little over the test periods, the data are presented in Tables D-1 and D-2. For *H. azteca* and Tables D-3 and D-4 for *C. tentans*. Dissolved oxygen for *H. azteca* increased over the test period. This is not usual, but in this case it can be attributed to the fact that the membrane on the dissolved oxygen probe was changed subsequent to making the initial measurements because it was noted that the old membrane was defective. As expected, conductivity increased with increasing NaCl concentrations.

3.1 *Hyaella azteca*

Survival data for this organism are presented in test numbers Tables D-1 and D-2. The Probit model calculated a 96 hour EC₅₀ values of 4.13g/L NaCl with a 95% confidence interval ranging from 3.87, 4.41g/L NaCl for the first test. An EC₅₀ value of 4.04g/L with a 95% confidence interval of 3.76 to 4.34g/L NaCl was obtained for the second test. Statistical analyses are presented in Tables D-5 and D-6.

3.2 *Chironomus tentans*

Survival and chemistry results are presented in Tables D-3 and D-4 for this organism. The resulting 96 hour EC₅₀ values and 95% confidence intervals were calculated using the Probit model and are 7.84g/L NaCl, [7.43, 8.28] for the first test and 8.07g/L NaCl, [7.59, 8.58] for the second test. Statistical analyses are presented in Tables D-7 and D-8.

3.3 Comparison of Toxicity Test Results

Tukey's method of multiple comparisons found a statistically significant ($p = 0.05$) difference between the EC₅₀ values of the two test organisms. These results are summarized in Table D-9. This indicates that *H. azteca* is more sensitive to the reference toxicant sodium chloride than *C. tentans*.

4.0 SUMMARY

Separate reference toxicity tests with *Hyaella azteca* and *Chironomus tentans* were carried out with sodium chloride. Both sets of tests proved valid since 90% or greater survival in the controls was achieved after the four day period. In addition, it was determined that the amphipod, *H. azteca* is more sensitive to sodium chloride than the dipteran, *C. tentans*.

Test No. AH-970401R
 Toxicant: Sodium Chloride
 Test Species: *Hyalella azteca*
 EC Calculation Method: Probit

Analyst: PL
 Test Start - 4/14/97 1300
 Date/Time: _____
 Test Stop - 4/18/97 1300
 Date/Time: _____

Table D-1. Summary of Results of Reference Toxicity Test #1 for *Hyalella azteca*.

0 hr

Concentration (g/l)	Control	2.0	2.8	3.6	4.4	5.2
No. of Individuals	10	10	10	10	10	10
Temperature (oC)	24	24	24	24	24	24
Dissolved Oxygen (mg/l)	7.8	7.5	7.7	7.8	7.6	7.5
pH	8.1	8.0	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	280	3230	4700	5980	7190	8470
Alkalinity (mg/l as CaCO3)	60					
Hardness (mg/l as CaCO3)	116					

48 hr

Concentration (g/l)	Control	2.0	2.8	3.6	4.4	5.2
No. of Individuals Surviving	10	10	10	10	8	7
Temperature (oC)	23	23	23	23	23	23
Dissolved Oxygen (mg/l) Final	7.2	7.3	7.3	7.4	7.3	7.2
" " Initial	8.4	8.4	8.4	8.4	8.3	8.3
pH Final	8.1	8.0	8	7.9	7.9	7.9
" " Initial	8.1	8.0	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	290	3300	4920	6100	7450	9090

96 hr

Concentration (g/l)	Control	2.0	2.8	3.6	4.4	5.2
No. of Individuals Surviving	10	10	10	9	3	0
Temperature (oC)	23	23	23	23	23	23
Dissolved Oxygen (mg/l)	8.6	8.6	8.6	8.4	8.4	8.5
pH	8.1	7.9	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	360	3380	5480	8130	9110	10520

Test No. AH-970402R
 Toxicant: Sodium Chloride
 Test Species: *Hyalella azteca*
 EC Calculation Method: Probit

Analyst: PL
 Test Start - 4/14/97 1300
 Date/Time: _____
 Test Stop - 4/18/97 1300
 Date/Time: _____

Table D-2. Summary of Results of Reference Toxicity Test #2 for *Hyalella azteca*.

0 hr

Concentration (g/l)	Control	2.0	2.8	3.6	4.4	5.2
No. of Individuals	10	10	10	10	10	10
Temperature (oC)	24	24	24	24	24	24
Dissolved Oxygen (mg/l)	7.8	7.5	7.7	7.8	7.6	7.5
pH	8.1	8.0	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	280	3230	4700	5980	7190	8470
Alkalinity (mg/l as CaCO3)	60					
Hardness (mg/l as CaCO3)	116					

48 hr

Concentration (g/l)	Control	2.0	2.8	3.6	4.4	5.2
No. of Individuals Surviving	10	10	10	10	9	6
Temperature (oC)	23	23	23	23	23	23
Dissolved Oxygen (mg/l) Final	7.2	7.3	7.3	7.4	7.3	7.2
" " Initial	8.4	8.4	8.4	8.4	8.3	8.3
pH Final	8.1	8.0	8	7.9	7.9	7.9
" " Initial	8.1	8.0	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	290	3300	4920	6100	7450	9090

96 hr

Concentration (g/l)	Control	2.0	2.8	3.6	4.4	5.2
No. of Individuals Surviving	10	10	10	8	3	0
Temperature (oC)	24	24	24	24	24	24
Dissolved Oxygen (mg/l)	8.6	8.4	8.1	8.5	8.5	8.5
pH	8.2	8.1	8.1	8.1	8.0	8.0
Conductivity (umhos/cm)	440	4160	5810	7500	8950	10070

Test No. AM-970401R
 Toxicant: Sodium Chloride
 Test Species: Chironomus tentans
 EC Calculation Method: Probit

Analyst: JH, KCB
 Test Start - 6/13/97 1300
 Date/Time: _____
 Test Stop - 6/17/97 1300
 Date/Time: _____

Table D-3. Summary of Results of Reference Toxicity Test #1 for *Chironomus tentans*.

0 hr

Concentration (g/l)	Control	6.0	7.0	8.0	9.0	10.0
No. of Individuals	10	10	10	10	10	10
Temperature (oC)	25	25	25	25	25	25
Dissolved Oxygen (mg/l)	8.4	8.4	8.4	8.4	8.3	8.4
pH	7.9	7.7	7.7	7.7	7.7	7.7
Conductivity (umhos/cm)	380	8900	9400	11600	12700	13900
Alkalinity (mg/l as CaCO3)	70					
Hardness (mg/l as CaCO3)	108					

48 hr

Concentration (g/l)	Control	6.0	7.0	8.0	9.0	10.0
No. of Individuals Surviving	10	10	10	10	10	6
Temperature (oC)	25	25	25	25	25	25
Dissolved Oxygen (mg/l) Final	6.8	6.8	6.4	6.4	6.5	6.4
" " Initial	8.4	8.4	8.4	8.4	8.3	8.3
pH Final	8.1	8.0	7.9	7.9	7.9	7.9
" " Initial	8.1	8.0	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	290	9100	10510	11640	12850	13780

96 hr

Concentration (g/l)	Control	6.0	7.0	8.0	9.0	10.0
No. of Individuals Surviving	10	9	8	5	1	0
Temperature (oC)	23	23	23	23	23	23
Dissolved Oxygen (mg/l)	7.4	7.4	7.3	7.4	7.3	7.2
pH	7.8	7.8	7.7	7.7	7.7	7.6
Conductivity (umhos/cm)	460	10080	10620	12680	14200	16140

Test No. AM-970402R
 Toxicant: Sodium Chloride
 Test Species: Chironomus tentans
 EC Calculation Method: Probit

Analyst: JH, KCB
 Test Start - 6/13/97 1300
 Date/Time: _____
 Test Stop - 6/17/97 1300
 Date/Time: _____

Table D-4. Summary of Results of Reference Toxicity Test #2 for *Chironomus tentans*.

0 hr

Concentration (g/l)	Control	6.0	7.0	8.0	9.0	10.0
No. of Individuals	10	10	10	10	10	10
Temperature (oC)	25	25	25	25	25	25
Dissolved Oxygen (mg/l)	8.4	8.4	8.4	8.4	8.3	8.4
pH	7.9	7.7	7.7	7.7	7.7	7.7
Conductivity (umhos/cm)	380	8900	9400	11600	12700	13900
Alkalinity (mg/l as CaCO3)	70					
Hardness (mg/l as CaCO3)	108					

48 hr

Concentration (g/l)	Control	6.0	7.0	8.0	9.0	10.0
No. of Individuals Surviving	10	10	10	10	9	6
Temperature (oC)	25	25	25	25	25	25
Dissolved Oxygen (mg/l) Final	6.8	6.8	6.4	6.4	6.5	6.4
" " Initial	8.4	8.4	8.4	8.4	8.3	8.3
pH Final	8.1	8.0	7.9	7.9	7.9	7.9
" " Initial	8.1	8.0	7.9	7.9	7.9	7.9
Conductivity (umhos/cm)	290	9100	10510	11640	12850	13780

96 hr

Concentration (g/l)	Control	6.0	7.0	8.0	9.0	10.0
No. of Individuals Surviving	10	10	9	4	2	1
Temperature (oC)	23	23	23	23	23	23
Dissolved Oxygen (mg/l)	7.6	7.4	7.4	7.3	7.3	7.4
pH	7.8	7.8	7.8	7.7	7.7	7.6
Conductivity (umhos/cm)	480	9900	10920	12240	13390	14800

Table D-5
AH-970401R SODIUM CHLORIDE REFERENCE TEST
96-Hour EC₅₀ for *Hyaella azteca*

SUMMARY STATISTICS ON DATA -- Transform: NO TRANSFORMATION

GRP	IDENTIFICATI ON	N	MIN	MAX	MEAN
1	0.0 (control)	10	1.0000	1.0000	1.0000
2	2.0 g/L	10	1.0000	1.0000	1.0000
3	2.8 g/L	10	1.0000	1.0000	1.0000
4	3.6 g/L	10	0.0000	1.0000	0.9000
5	4.4 g/L	10	0.0000	1.0000	0.3000
6	5.2 g/L	10	0.0000	0.0000	0.0000

GRP	IDENTIFICATI ON	VARIANCE	SD	SEM	C.V. %
1	0.0 (control)	0.0000	0.0000	0.0000	0.0000
2	2.0 g/L	0.0000	0.0000	0.0000	0.0000
3	2.8 g/L	0.0000	0.0000	0.0000	0.0000
4	3.6 g/L	0.1000	0.3162	0.1000	35.1364
5	4.4 g/L	0.2333	0.4830	0.1528	161.0153
6	5.2 g/L	0.0000	0.0000	0.0000	N/A

PROBIT ANALYSIS - USING SMOOTHED PROPORTIONS -- Transform: LOG 10 DOSE

DOSE (g/L)	NUMBER SUBJECTS	NUMBER OBSERVE D	OBSERVE D PROPORTI ON	SMOOTHE D PROPORTI ON	PREDICTE D PROPORTI ON
2.00	10	10	1.0000	1.0000	1.0000
2.80	10	10	1.0000	1.0000	0.9999
3.60	10	9	0.9000	0.9000	0.9130
4.40	10	3	0.3000	0.3000	0.2666
5.20	10	0	0.0000	0.0000	0.0115

Est. Mu = 0.6161 Est. Sigma = 0.0440
sd = 0.0143 sd = 0.0128

Chi-Square lack of fit = 0.1952 Likelihood lack of fit = 0.3085
Table Chi-square = 11.3449 (alpha = 0.01, df = 3)
Table Chi-square = 7.8147 (alpha = 0.05, df = 3)

PROBIT EC ESTIMATES -- WITHOUT CONTROL DATA

POINT	EST. END POINT	95% CONFIDENCE LIMITS	
EC10	3.6285	3.2804	4.0135
EC20	3.7937	3.4919	4.1216
EC30	3.9175	3.6427	4.2130
EC40	4.0265	3.7662	4.3047
EC50	4.1311	3.8738	4.4055
EC60	4.2384	3.9714	4.5233
EC70	4.3563	4.0645	4.6690
EC80	4.4984	4.1605	4.8638
EC90	4.7032	4.2777	5.1711

Table D-6
AH-970402R SODIUM CHLORIDE REFERENCE TEST
96-Hour EC₅₀ for *Hyaella azteca*

SUMMARY STATISTICS ON DATA -- Transform: NO TRANSFORMATION

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	0.0 (control)	10	1.0000	1.0000	1.0000
2	2.0 g/L	10	1.0000	1.0000	1.0000
3	2.8 g/L	10	1.0000	1.0000	1.0000
4	3.6 g/L	10	0.0000	1.0000	0.8000
5	4.4 g/L	10	0.0000	1.0000	0.3000
6	5.2 g/L	10	0.0000	0.0000	0.0000

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	0.0 (control)	0.0000	0.0000	0.0000	0.0000
2	2.0 g/L	0.0000	0.0000	0.0000	0.0000
3	2.8 g/L	0.0000	0.0000	0.0000	0.0000
4	3.6 g/L	0.1778	0.4216	0.1333	52.7046
5	4.4 g/L	0.2333	0.4830	0.1528	161.0153
6	5.2 g/L	0.0000	0.0000	0.0000	N/A

PROBIT ANALYSIS - USING SMOOTHED PROPORTIONS -- Transform: LOG 10 DOSE

DOSE (g/L)	NUMBER SUBJECTS	NUMBER OBSERVE D	OBSERVE D PROPORTION	SMOOTHED D PROPORTION	PREDICTED D PROPORTION
2.00	10	10	1.0000	1.0000	1.0000
2.80	10	10	1.0000	1.0000	0.9987
3.60	10	8	0.8000	0.8000	0.8283
4.40	10	3	0.3000	0.3000	0.2441
5.20	10	0	0.0000	0.0000	0.0197

Est. Mu = 0.6066 Est. Sigma = 0.0531
 sd = 0.0158 sd = 0.0151

Chi-Square lack of fit = 0.4405 Likelihood lack of fit = 0.6414
 Table Chi-square = 11.3449 (alpha = 0.01, df = 3)
 Table Chi-square = 7.8147 (alpha = 0.05, df = 3)

PROBIT EC ESTIMATES -- WITHOUT CONTROL DATA

POINT	EST. END POINT	95% CONFIDENCE LIMITS	
EC10	3.4558	3.0707	3.8892
EC20	3.6469	3.3135	4.0138
EC30	3.7911	3.4894	4.1189
EC40	3.9189	3.6353	4.2247
EC50	4.0423	3.7634	4.3419
EC60	4.1695	3.8799	4.4807
EC70	4.3101	3.9909	4.6548
EC80	4.4806	4.1052	4.8903
EC90	4.7283	4.2451	5.2665

Table D-7
AM-970601R SODIUM CHLORIDE REFERENCE TEST
96-Hour EC₅₀ for *Chironomus tentans*

SUMMARY STATISTICS ON DATA -- Transform: NO TRANSFORMATION

GRP	IDENTIFICATI ON	N	MIN	MAX	MEAN
1	0.0 (control)	10	1.0000	1.0000	1.0000
2	6.0 g/L	10	1.0000	1.0000	1.0000
3	7.0 g/L	10	0.0000	1.0000	0.8000
4	8.0 g/L	10	0.0000	1.0000	0.5000
5	9.0 g/L	10	0.0000	1.0000	0.1000
6	10.0 g/L	10	0.0000	0.0000	0.0000

GRP	IDENTIFICATI ON	VARIANCE	SD	SEM	C.V. %
1	0.0 (control)	0.0000	0.0000	0.0000	0.0000
2	6.0 g/L	0.0000	0.0000	0.0000	0.0000
3	7.0 g/L	0.1778	0.4216	0.1333	52.7046
4	8.0 g/L	0.2778	0.5270	0.1667	105.4093
5	9.0 g/L	0.1000	0.3162	0.1000	316.2278
6	10.0 g/L	0.0000	0.0000	0.0000	N/A

PROBIT ANALYSIS - USING SMOOTHED PROPORTIONS -- Transform: LOG 10 DOSE

DOSE (g/L)	NUMBER SUBJECTS	NUMBER OBSERVE D	OBSERVE D PROPORTI ON	SMOOTHE D PROPORTI ON	PREDICTE D PROPORTI ON
6.00	10	10	1.0000	1.0000	0.9934
7.00	10	8	0.8000	0.8000	0.8535
8.00	10	5	0.5000	0.5000	0.4277
9.00	10	1	0.1000	0.1000	0.1020
10.00	10	0	0.0000	0.0000	0.0124

Est. Mu = 0.8945 Est. Sigma = 0.0470
 sd = 0.0120 sd = 0.0113

Chi-Square lack of fit = 0.6354 Likelihood lack of fit = 0.8044
 Table Chi-square = 11.3449 (alpha = 0.01, df = 3)
 Table Chi-square = 7.8147 (alpha = 0.05, df = 3)

PROBIT EC ESTIMATES -- WITHOUT CONTROL DATA

POINT	EST. END POINT	95% CONFIDENCE LIMITS	
EC10	6.8279	6.2499	7.4594
EC20	7.1609	6.6639	7.6950
EC30	7.4110	6.9627	7.8882
EC40	7.6316	7.2109	8.0769
EC50	7.8438	7.4304	8.2802
EC60	8.0619	7.6334	8.5144
EC70	8.3019	7.8310	8.8010
EC80	8.5919	8.0406	9.1809
EC90	9.0108	8.3057	9.7759

Table D-8
AM-970602R SODIUM CHLORIDE REFERENCE TEST
96-Hour EC₅₀ for *Chironomus tentans*

SUMMARY STATISTICS ON DATA -- Transform: NO TRANSFORMATION

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	0.0 (control)	10	1.0000	1.0000	1.0000
2	6.0 g/L	10	1.0000	1.0000	1.0000
3	7.0 g/L	10	0.0000	1.0000	0.9000
4	8.0 g/L	10	0.0000	1.0000	0.4000
5	9.0 g/L	10	0.0000	1.0000	0.2000
6	10.0 g/L	10	0.0000	1.0000	0.1000

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	0.0 (control)	0.0000	0.0000	0.0000	0.0000
2	6.0 g/L	0.0000	0.0000	0.0000	0.0000
3	7.0 g/L	0.1000	0.3162	0.1000	35.1364
4	8.0 g/L	0.2667	0.5164	0.1633	129.0994
5	9.0 g/L	0.1778	0.4216	0.1333	210.8185
6	10.0 g/L	0.1000	0.3162	0.1000	316.2278

PROBIT ANALYSIS - USING SMOOTHED PROPORTIONS -- Transform: LOG 10 DOSE

DOSE (g/L)	NUMBER SUBJECTS	NUMBER OBSERVE D	OBSERVE D PROPORTION	SMOOTHED D PROPORTION	PREDICTED D PROPORTION
6.00	10	10	1.0000	1.0000	0.9868
7.00	10	9	0.9000	0.9000	0.8566
8.00	10	4	0.4000	0.4000	0.5259
9.00	10	2	0.2000	0.2000	0.2069
10.00	10	1	0.1000	0.1000	0.0541

Est. Mu = 0.9069 Est. Sigma = 0.0580
 sd = 0.0135 sd = 0.0135

Chi-Square lack of fit = 1.3379 Likelihood lack of fit = 1.4082
 Table Chi-square = 11.3449 (alpha = 0.01, df = 3)
 Table Chi-square = 7.8147 (alpha = 0.05, df = 3)

PROBIT EC ESTIMATES -- WITHOUT CONTROL DATA

POINT	EST. END POINT	95% CONFIDENCE LIMITS	
EC10	6.8006	6.1284	7.5465
EC20	7.2120	6.6332	7.8412
EC30	7.5240	7.0039	8.0826
EC40	7.8012	7.3156	8.3191
EC50	8.0696	7.5938	8.5753
EC60	8.3472	7.8523	8.8734
EC70	8.6548	8.1046	9.2423
EC80	9.0292	8.3734	9.7364
EC90	9.5754	8.7163	10.5192

Table D-9
Comparison of 96 Hour EC₅₀ Values for the Reference Toxicant Sodium Chloride
Between *Hyalella azteca* and *Chironomus tentans*

SUMMARY STATISTICS ON DATA -- Transform: NO TRANSFORMATION

GRP	IDENTIFICATIO N	N	MIN	MAX	MEAN
1	<i>Hyalella azteca</i>	2	4.0423	4.1311	4.0867
2	<i>Chironomus tentans</i>	2	7.8438	8.0696	7.9567

GRP	IDENTIFICATI ON	VARIAN CE	SD	SEM	C.V. %
1	<i>Hyalella azteca</i>	0.0039	0.0628	0.0444	1.5365
2	<i>Chironomus tentans</i>	0.0255	0.1597	0.1129	2.0067

CHI-SQUARE TEST FOR NORMALITY: Actual and Expected Frequencies

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	0.268	0.968	1.528	0.968	0.268
OBSERVE D	0	2	0	2	0

Calculated Chi-Square goodness of fit test statistic = 4.2645

Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

SHAPIRO - WILK'S TEST FOR NORMALITY -- Transform: NO TRANSFORMATION

D = 0.029

W = 0.981

Critical W (P = 0.05) (n = 4) = 0.748

Critical W (P = 0.01) (n = 4) = 0.687

Data PASS normality test at P=0.01 level. Continue analysis.

Table D-9
Comparison of 96 Hour EC₅₀ Values for the Reference Toxicant Sodium Chloride
Between *Hyaella azteca* and *Chironomus tentans* (continued)

ANOVA Table -- Transform: NO TRANSFORMATION

SOURCE	DF	SS	MS	F
Between	1	14.9769	14.9769	1017.6066
Within (Error)	2	0.0294	0.0147	
Total	3	15.0063		

(p-value = 0.0010)

Critical F = 98.5025 (alpha = 0.01, df = 1,2)

18.5128 (alpha = 0.05, df = 1,2)

Since $F > \text{Critical } F$ REJECT H_0 : All equal (alpha = 0.05)

TUKEY METHOD OF MULTIPLE COMPARISONS -- Transform: NO TRANSFORMATION

IDENTIFICATION	TRANSFORMED	ORIGINAL	GROUP	GROUP	
	MEAN	MEAN		1	2
<i>Hyaella azteca</i>	4.087	4.087	1	\	
<i>Chironomus tentans</i>	7.957	7.957	2	*	\

* = significant difference (p=0.05) • = no significant difference

Tukey value (2,2) = 6.08 s = 0.015