



State of Ohio Environmental Protection Agency

Biological and Water Quality Study of Twin Creek and Selected Tributaries, 2005 APPENDICES

Darke, Preble, Montgomery and
Warren Counties

October 22, 2007

Ted Strickland, Governor
Chris Korleski, Director



Hester-Dendy Macroinvertebrate
Sampler



Smallmouth Bass

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Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 1 TWIN CREEK @ SR 722

Twin Creek Watershed (WAU:05080002-030)

River Mile: 45.56 Storet: H08K23

	07/13/2005	07/27/2005	Duplicate A	08/10/2005	Duplicate A	09/07/2005	Duplicate A	09/15/2005
Time	1135	1120		1240		1240		1135
Temp(C)	20.50	23.80		24.78		20.81		20.86
D.O. (mg/l)	6.30	5.53		8.60		11.09		8.72
D.O. Sat (%)	69.90	64.60		103.80		124.20		97.70
pH (fld) (SU)	7.00	7.88		7.82		7.93		7.87
pH (lab) (SU)								
Sp Cond (fld) (µmhos/cm)				701		694		703
Sp Cond (lab) (µmhos/cm)	655	640		690		684		691
BOD5 (mg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K	10 K		10		10 K		10 K
Alkalinity (mg/l)	289	278		306		308		314
Acidity (mg/l)	5 K	5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.138	0.130		0.098		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	2.05	0.10 K		0.10 K		0.10 K		0.10 K
Nitrite-N (mg/l)	0.022	0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.20 K	0.36		0.20 K		0.24		0.31
Phosphorus-T (mg/l)	0.010 K	0.033		0.024		0.061		0.020
Phosphorus-Dis (mg/l)								
TDS (mg/l)	388	388		400		408		424
TSS (mg/l)	5 K	5		7		5 K		5 K
Chloride (mg/l)	26.8	27.6		26.6		27.8		26.6
Sulfate (mg/l)	44.4	50.7		59.1		56.3		56.0
Aluminum-T (µg/l)	200 K	200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K	3.3		3.3		2.9		3.0
Barium-T (µg/l)	160	171		216		178		203
Cadmium-T (µg/l)	0.20 K	0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	80	73		86		82		89
Chromium-T (µg/l)	30 K	30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K	10 K		10 K		10 K		10 K
Iron-T (µg/l)	420	548		387		221		237
Lead-T (µg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	35	34		39		36		39
Manganese-T (µg/l)	32	93		82		22		15
Mercury-T (µg/l)	0.2 K	0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K	40 K		40 K		40 K		40 K
Potassium-T (mg/l)	2 K	2		2		2		2
Selenium-T (µg/l)	2 K	2 K		2 K		2 K		2 K
Sodium-T (mg/l)	11	11		12		12		12
Strontium-T (µg/l)	1420	1410		1740		1540		1710
Zinc-T (µg/l)	10 K	10 K		10 K		10 K		19
Hardness (mg/l CaCO3)	344	322		375		353		383

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 1 TWIN CREEK @ SR 722 (continued)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 45.56 Storet: H08K23

Duplicate B	08/10/2005	Duplicate B	09/07/2005	Duplicate B	09/15/2005
Time	1240		1240		1135
Temp(C)					
D.O. (mg/l)					
D.O. Sat (%)					
pH (fld) (SU)					
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	690		686		687
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K
COD (mg/l)	10		10 K		11
Alkalinity (mg/l)	307		307		317
Acidity (mg/l)	5 K		5 K		5 K
Ammonia-N (mg/l)	0.089		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	0.10 K		0.10 K		0.10 K
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.20		0.25		0.21
Phosphorus-T (mg/l)	0.024		0.084		0.014
Phosphorus-Dis (mg/l)					
TDS (mg/l)	402		410		426
TSS (mg/l)	7		5 K		5 K
Chloride (mg/l)	26.1		28.0		26.6
Sulfate (mg/l)	57.9		56.1		56.6
Aluminum-T (µg/l)	200 K		200 K		200 K
Arsenic-T (µg/l)	3.7		2.8		3.1
Barium-T (µg/l)	219		184		200
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	85		84		88
Chromium-T (µg/l)	30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K
Iron-T (µg/l)	408		222		214
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	39		37		38
Manganese-T (µg/l)	81		22		13
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K
Potassium-T (mg/l)	2		2		2
Selenium-T (µg/l)	2 K		2 K		2 K
Sodium-T (mg/l)	12		12		12
Strontium-T (µg/l)	1730		1580		1690
Zinc-T (µg/l)	10 K		10 K		10 K
Hardness (mg/l CaCO3)	373		362		376

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 2 TWIN CREEK @ EUPHEMIA-CASTINE RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 42.10 Storet: H08S02

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	0910	0915	1015	1110	0950
Temp(C)	22.30	24.90	22.53	18.44	19.71
D.O. (mg/l)	5.46	3.93	4.85	6.22	4.67
D.O. Sat (%)	62.80	47.50	56.20	66.40	51.10
pH (fld) (SU)	8.00	7.68	7.88	7.87	7.72
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			638	610	616
Sp Cond (lab) (µmhos/cm)	640	576	641	612	607
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10	12	10 K	11
Alkalinity (mg/l)	274	238	272	251	253
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.121	0.125	0.131	0.061	0.079
Nitrate-Nitrite-N (mg/l)	2.09	0.82	0.24	0.23	0.19
Nitrite-N (mg/l)	0.023	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.47	0.32	0.42	0.44
Phosphorus-T (mg/l)	0.010 K	0.075	0.064	0.092	0.089
Phosphorus-Dis (mg/l)					
TDS (mg/l)	372	344	410	358	432
TSS (mg/l)	5 K	5	20	6	8
Chloride (mg/l)	31.0	31.3	28.4	33.4	30.3
Sulfate (mg/l)	45.9	48.1	57.2	50.2	53.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	3.9	4.2	2.8	4.0
Barium-T (µg/l)	120	119	144	113	127
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	73	56	68	63	65
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	163	297	357	285	407
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	33	37	33	37
Manganese-T (µg/l)	24	61	63	44	55
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	2	3	2
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	13	13	13	15	14
Strontium-T (µg/l)	1280	1300	1630	1240	1530
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	330	276	322	293	315

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 3 TWIN CREEK @ EAST LOCK RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 38.00 Storet: H08S01

	07/13/2005	07/27/2005	Duplicate A	08/10/2005	Duplicate A	09/07/2005	Duplicate A	09/15/2005
Time	1200	1315		1350		1420		1210
Temp(C)	22.10	23.51		24.80		20.90		20.60
D.O. (mg/l)	8.00	7.59		11.50		11.53		10.57
D.O. Sat (%)		89.50						118.00
pH (fld) (SU)		8.06		8.26		8.20		8.15
pH (lab) (SU)								
Sp Cond (fld) (µmhos/cm)		588						
Sp Cond (lab) (µmhos/cm)	592	576		623		576		607
BOD5 (mg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K	10		10 K		10 K		10 K
Alkalinity (mg/l)	256	253		275		252		268
Acidity (mg/l)	5 K	5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.072	0.050 K		0.076		0.050 K		0.066
Nitrate-Nitrite-N (mg/l)	1.59	0.41		0.36		1.42		0.30
Nitrite-N (mg/l)	0.020 K	0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.51	0.33		0.40		0.45		0.33
Phosphorus-T (mg/l)	0.038	0.060		0.024		0.128		0.063
Phosphorus-Dis (mg/l)								
TDS (mg/l)	354	344		364		352		366
TSS (mg/l)	5 K	5 K		5 K		8		5 K
Chloride (mg/l)	27.2	26.6		26.5		26.4		27.8
Sulfate (mg/l)	38.9	40.9		49.3		35.6		44.9
Aluminum-T (µg/l)	200 K	200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K	3.1		4.5		2.0		2.7
Barium-T (µg/l)	97	108		117		110		108
Cadmium-T (µg/l)	0.20 K	0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	64	65		69		71		69
Chromium-T (µg/l)	30 K	30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K	10 K		10 K		10 K		10 K
Iron-T (µg/l)	120	165		171		226		147
Lead-T (µg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	34	34		38		29		35
Manganese-T (µg/l)	13	30		26		18		23
Mercury-T (µg/l)	0.2 K	0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K	40 K		40 K		40 K		40 K
Potassium-T (mg/l)	2	2		2		4		3
Selenium-T (µg/l)	2 K	2 K		2 K		2 K		2 K
Sodium-T (mg/l)	10	11		12		11		12
Strontium-T (µg/l)	1070	1180		1380		1010		1150
Zinc-T (µg/l)	10 K	10 K		19		10 K		10 K
Hardness (mg/l CaCO3)	300	302		329		297		316

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 3 TWIN CREEK @ EAST LOCK RD (continued)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 38.00 Storet: H08S01

Duplicate B	08/10/2005	Duplicate B	09/07/2005	Duplicate B	09/15/2005
Time	1350		1420		1210
Temp(C)					
D.O. (mg/l)					
D.O. Sat (%)					
pH (fld) (SU)					
pH (lab) (SU)					
Sp Cond (fld) (μ mhos/cm)					
Sp Cond (lab) (μ mhos/cm)	620		578		608
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K
COD (mg/l)	11		10		11
Alkalinity (mg/l)	266		251		267
Acidity (mg/l)	5 K		5 K		5 K
Ammonia-N (mg/l)	0.075		0.058		0.052
Nitrate-Nitrite-N (mg/l)	0.33		1.63		0.30
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.32		0.47		0.34
Phosphorus-T (mg/l)	0.026		0.136		0.059
Phosphorus-Dis (mg/l)					
TDS (mg/l)	366		356		362
TSS (mg/l)	5		8		5
Chloride (mg/l)	26.1		26.0		27.4
Sulfate (mg/l)	48.1		35.0		45.4
Aluminum-T (μ g/l)	200 K		200 K		200 K
Arsenic-T (μ g/l)	3.7		2.0		2.7
Barium-T (μ g/l)	118		109		105
Cadmium-T (μ g/l)	0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	68		70		67
Chromium-T (μ g/l)	30 K		30 K		30 K
Copper-T (μ g/l)	10 K		10 K		10 K
Iron-T (μ g/l)	152		357		150
Lead-T (μ g/l)	2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	37		28		34
Manganese-T (μ g/l)	26		28		22
Mercury-T (μ g/l)	0.2 K		0.2 K		0.2 K
Nickel-T (μ g/l)	40 K		40 K		40 K
Potassium-T (mg/l)	2		4		3
Selenium-T (μ g/l)	2 K		2 K		2 K
Sodium-T (mg/l)	12		11		11
Strontium-T (μ g/l)	1360		979		1120
Zinc-T (μ g/l)	17		10 K		10 K
Hardness (mg/l CaCO ₃)	322		290		307

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 4 TWIN CREEK DOWNSTREAM SWAMP CREEK

Twin Creek Watershed (WAU:05080002-030)

River Mile: 35.50 Storet: H08W22

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1050	1120	1145	1200	1030
Temp(C)	21.80	24.45	24.60	19.60	20.20
D.O. (mg/l)	7.20	7.60	10.00	11.40	9.11
D.O. Sat (%)		91.20			100.60
pH (fld) (SU)	8.22	8.09	8.37	8.28	8.12
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)		592			
Sp Cond (lab) (µmhos/cm)	599	580	621	581	614
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	258	249	263	234	258
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.070	0.050 K	0.072	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	1.50	0.27	0.12	1.13	0.18
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.34	0.25	0.31	0.44	0.34
Phosphorus-T (mg/l)	0.032	0.065	0.010 K	0.146	0.038
Phosphorus-Dis (mg/l)		0.010 K	0.010 K	0.056	
TDS (mg/l)	356	344	356	348	364
TSS (mg/l)	5 K	6	7	7	5 K
Chloride (mg/l)	30.1	29.6	30.6	30.0	32.8
Sulfate (mg/l)	38.4	42.6	51.2	45.1	47.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0	2.7	2.1	2.0 K	2.0 K
Barium-T (µg/l)	94	103	115	108	116
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	66	62	65	67	70
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	113	252	312	224	170
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	33	36	31	35
Manganese-T (µg/l)	12	30	25	16	20
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	2	2	4	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	12	13	14	14	15
Strontium-T (µg/l)	1070	1070	1120	913	1030
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	305	291	310	295	319

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 5 TWIN CREEK DOWNSTREAM LEWISBURG WWTP, UPSTREAM SALEM RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 34.90 Storet: H08S07

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1015	1025	1045	1115	0955
Temp(C)	21.80	25.09	23.20	19.70	20.50
D.O. (mg/l)	6.80	4.94	6.10	7.61	6.17
D.O. Sat (%)		60.00			68.60
pH (fld) (SU)	8.06	7.87	8.12	7.93	7.77
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)		638			
Sp Cond (lab) (µmhos/cm)	634	622	693	654	687
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	13	10 K	10 K	10 K
Alkalinity (mg/l)	251	241	249	238	250
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.080	0.082	0.113	0.053	0.084
Nitrate-Nitrite-N (mg/l)	2.59	2.11	3.12	4.69	2.93
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.49	0.45	0.44	0.58	0.47
Phosphorus-T (mg/l)	0.143	0.239	0.140	0.387	0.378
Phosphorus-Dis (mg/l)					
TDS (mg/l)	376	374	404	396	414
TSS (mg/l)	5	7	7	10	5
Chloride (mg/l)	37.5	41.5	45.6	44.8	50.2
Sulfate (mg/l)	40.8	44.1	56.1	43.9	54.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.7	2.8	2.3	2.2
Barium-T (µg/l)	97	106	120	111	112
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	68	64	68	69	68
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	170	321	351	342	251
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	33	38	31	35
Manganese-T (µg/l)	23	57	46	32	33
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	4	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	17	21	27	24	27
Strontium-T (µg/l)	1160	1220	1390	1110	1160
Zinc-T (µg/l)	10 K	10 K	11	14	10 K
Hardness (mg/l CaCO3)	310	296	326	300	314

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 6 TWIN CREEK DOWNSTREAM IAMS & AKEY OUTFALLS

Twin Creek Watershed (WAU:05080002-030)

River Mile: 33.60 Storet: H08W21

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	0945	1000	1010	1020	0930
Temp(C)	22.40	25.89	24.80	20.10	21.00
D.O. (mg/l)	6.60	4.76	11.50	7.50	6.44
D.O. Sat (%)		58.70			72.30
pH (fld) (SU)	8.07	8.03	8.26	8.03	8.00
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)		906			
Sp Cond (lab) (µmhos/cm)	817	722	1540	857	744
BOD5 (mg/l)	3.5	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	10	17	10	17
Alkalinity (mg/l)	165	252	238	240	246
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.135	0.192	0.181	0.053	0.080
Nitrate-Nitrite-N (mg/l)	4.73	1.86	14.60	3.74	6.79
Nitrite-N (mg/l)	0.021	0.025	0.057	0.021	0.022
TKN (mg/l)	1.39	0.61	2.38	0.68	0.99
Phosphorus-T (mg/l)	0.894	0.312	3.150	0.472	1.700
Phosphorus-Dis (mg/l)					
TDS (mg/l)	462	424	850	498	440
TSS (mg/l)	25	12	16	21	5 K
Chloride (mg/l)	124.0	64.6	309.0	103.0	71.2
Sulfate (mg/l)	33.3	50.0	64.2	45.9	51.3
Aluminum-T (µg/l)	448	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	3.4	3.1	2.7	2.9
Barium-T (µg/l)	57	102	104	99	100
Cadmium-T (µg/l)	0.50	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	46	66	74	67	70
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	824	262	298	203	147
Lead-T (µg/l)	2.2	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	22	34	38	30	35
Manganese-T (µg/l)	40	44	34	17	18
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	5	3	6	5	5
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	91	33	148	36	52
Strontium-T (µg/l)	758	1180	1410	1090	1110
Zinc-T (µg/l)	121	16	86	11	18
Hardness (mg/l CaCO3)	205	305	341	291	319

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 7 TWIN CREEK UPSTREAM PYRMONT ROAD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 31.70 Storet: H08S06

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1200	1215	1230	1315	1300
Temp(C)	21.80	24.50	24.90	22.10	21.00
D.O. (mg/l)	5.00	5.70	5.54	7.96	6.91
D.O. Sat (%)			68.90	91.40	78.30
pH (fld) (SU)	6.87	8.00	8.00	8.18	7.75
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	712	713	744	693	721
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	10	10 K	10	10 K
Alkalinity (mg/l)	264	261	256	240	248
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.074	0.078	0.094	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.94	0.89	1.06	2.04	1.22
Nitrite-N (mg/l)	0.020	0.020 K	0.020 K	0.021	0.020 K
TKN (mg/l)	0.34	0.46	0.44	0.55	0.39
Phosphorus-T (mg/l)	0.208	0.238	0.079	0.244	0.201
Phosphorus-Dis (mg/l)					
TDS (mg/l)	418	448	428	388	416
TSS (mg/l)	6	5 K	5 K	5 K	5 K
Chloride (mg/l)	58.1	60.7	63.0	60.9	68.3
Sulfate (mg/l)	42.5	45.0	50.8	44.4	48.3
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.7	2.6	2.6	2.2
Barium-T (µg/l)	90	104	108	100	98
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	68	72	74	69	69
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	122	130	127	128	117
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	33	34	36	30	32
Manganese-T (µg/l)	22	61	48	28	34
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	4	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	29	34	40	34	37
Strontium-T (µg/l)	1000	1080	1070	1040	924
Zinc-T (µg/l)	14	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	306	320	333	296	304

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 8 TWIN CREEK ADJACENT STOTLER RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 27.50 Storet: H08W19

Duplicate A	07/13/2005	Duplicate A	07/27/2005	Duplicate A	08/10/2005	Duplicate A	09/07/2005	Duplicate A	09/15/2005
Time	1100		1110		1115		1110		1130
Temp(C)	22.00		25.00		23.90		20.60		20.90
D.O. (mg/l)	7.00		5.80		8.12		9.80		8.74
D.O. Sat (%)					95.10		107.70		98.00
pH (fld) (SU)	7.92		8.26		7.82		7.95		7.81
pH (lab) (SU)									
Sp Cond (fld) (µmhos/cm)									
Sp Cond (lab) (µmhos/cm)	602		611		621		596		604
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K		10 K		10 K		10 K		10 K
Alkalinity (mg/l)	246		243		244		231		237
Acidity (mg/l)	5 K		5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.095		0.066		0.088		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	3.01		1.65		2.13		1.47		1.56
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020		0.020 K		0.020 K
TKN (mg/l)	0.39		0.40		0.27		0.41		0.29
Phosphorus-T (mg/l)	0.027		0.039		0.022		0.027		0.022
Phosphorus-Dis (mg/l)									
TDS (mg/l)	350		364		342		330		346
TSS (mg/l)	6		10		8		5 K		5 K
Chloride (mg/l)	34.2		41.2		38.6		40.1		40.8
Sulfate (mg/l)	36.7		36.8		38.7		39.3		36.9
Aluminum-T (µg/l)	200 K		200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Barium-T (µg/l)	77		81		87		74		76
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	62		65		67		63		62
Chromium-T (µg/l)	30 K		30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Iron-T (µg/l)	209		246		317		141		121
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	31		31		32		30		30
Manganese-T (µg/l)	25		38		48		25		24
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K		40 K		40 K
Potassium-T (mg/l)	3		3		3		3		3
Selenium-T (µg/l)	2 K		2 K		2 K		2 K		2 K
Sodium-T (mg/l)	14		19		18		20		19
Strontium-T (µg/l)	881		904		930		911		864
Zinc-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Hardness (mg/l CaCO3)	282		290		299		281		278

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 8 TWIN CREEK ADJACENT STOTLER RD (continued)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 27.50 Storet: H08W19

Duplicate B	07/13/2005	Duplicate B	07/27/2005	Duplicate B	08/10/2005	Duplicate B	09/07/2005	Duplicate B	09/15/2005
Time	1100		1110		1115		1110		1130
Temp(C)									
D.O. (mg/l)									
D.O. Sat (%)									
pH (fld) (SU)									
pH (lab) (SU)									
Sp Cond (fld) (µmhos/cm)									
Sp Cond (lab) (µmhos/cm)	601		610		618		595		602
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	12		10		10 K		10 K		10 K
Alkalinity (mg/l)	245		242		246		230		238
Acidity (mg/l)	5 K		5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.077		0.068		0.092		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	3.00		1.55		1.95		1.49		1.56
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.48		0.32		0.28		0.35		0.34
Phosphorus-T (mg/l)	0.027		0.040		0.023		0.029		0.022
Phosphorus-Dis (mg/l)									
TDS (mg/l)	354		354		350		328		346
TSS (mg/l)	7		10		8		5 K		5 K
Chloride (mg/l)	34.2		41.8		38.5		40.0		40.5
Sulfate (mg/l)	36.4		37.8		38.7		39.6		36.9
Aluminum-T (µg/l)	200 K		200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Barium-T (µg/l)	78		82		87		76		78
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	64		65		68		64		65
Chromium-T (µg/l)	30 K		30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Iron-T (µg/l)	227		243		228		162		154
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	31		31		33		30		31
Manganese-T (µg/l)	26		39		46		26		25
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K		40 K		40 K
Potassium-T (mg/l)	3		3		3		4		3
Selenium-T (µg/l)	2 K		2 K		2 K		2 K		2 K
Sodium-T (mg/l)	14		19		19		20		19
Strontium-T (µg/l)	890		899		958		932		901
Zinc-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Hardness (mg/l CaCO ₃)	287		290		306		283		290

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: # 9 TWIN CREEK DOWNSTREAM WEST ALEXANDRIA WWTP

Twin Creek Watershed (WAU:05080002-030)

River Mile: 26.70 Storet: H08W20

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1030	1050	1045	1000	1100
Temp(C)	21.80	25.00	24.40	19.50	21.40
D.O. (mg/l)	6.40	6.00	8.79	7.70	8.64
D.O. Sat (%)			105.00	84.70	94.20
pH (fld) (SU)	7.92	8.08	7.96	7.61	7.43
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	622	657	656	682	680
BOD5 (mg/l)	2.4	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	10 K	12	10	10 K
Alkalinity (mg/l)	241	244	250	235	238
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.092	0.076	0.100	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	3.28	2.23	2.53	3.34	3.19
Nitrite-N (mg/l)	0.020	0.025	0.024	0.034	0.031
TKN (mg/l)	0.76	0.36	0.31	0.58	0.48
Phosphorus-T (mg/l)	0.128	0.743	0.192	0.272	0.307
Phosphorus-Dis (mg/l)					
TDS (mg/l)	362	380	374	388	390
TSS (mg/l)	18	10	25	13	5 K
Chloride (mg/l)	41.6	55.4	48.4	62.4	62.1
Sulfate (mg/l)	35.3	36.8	37.3	38.3	35.5
Aluminum-T (µg/l)	231	200 K	378	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.3	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	89	100	108	107	108
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	63	64	68	62	61
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	441	270	612	213	108
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	31	31	33	29	30
Manganese-T (µg/l)	44	42	54	29	26
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	4	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	20	29	28	36	37
Strontium-T (µg/l)	1010	1130	1210	1370	1320
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	285	287	306	274	276

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #10 TWIN CREEK UPSTREAM HALDERMAN RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 23.90 Storet: H08S03

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0945	0900	0915	0930	0900
Temp(C)	22.00	27.00	21.40	17.60	19.20
D.O. (mg/l)	8.50	7.00	7.30	8.42	7.76
D.O. Sat (%)			82.30	89.30	84.50
pH (fld) (SU)	8.14	7.80	7.93	8.08	7.96
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	643	654	644	649	650
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10	10 K	10 K	10 K
Alkalinity (mg/l)	266	264	256	258	267
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.069	0.068	0.069	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	3.30	2.28	2.44	2.12	3.08
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.22	0.34	0.36	0.31	0.31
Phosphorus-T (mg/l)	0.031	0.110	0.010 K	0.053	0.087
Phosphorus-Dis (mg/l)		0.029	0.010 K	0.029	
TDS (mg/l)	368	378	368	382	374
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	38.4	47.4	43.1	41.6	44.8
Sulfate (mg/l)	36.2	38.8	39.9	36.2	36.8
Aluminum-T (µg/l)		200 K	200 K	200 K	200 K
Arsenic-T (µg/l)		2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)		100	103	100	105
Cadmium-T (µg/l)		0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)		71	70	69	71
Chromium-T (µg/l)		30 K	30 K	30 K	30 K
Copper-T (µg/l)		10 K	10 K	10 K	10 K
Iron-T (µg/l)		135	147	90	50 K
Lead-T (µg/l)		2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)		33	32	30	32
Manganese-T (µg/l)		21	12	10 K	10 K
Mercury-T (µg/l)		0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)		40 K	40 K	40 K	40 K
Potassium-T (mg/l)		3	3	3	3
Selenium-T (µg/l)		2 K	2 K	2 K	2 K
Sodium-T (mg/l)		23	20	21	23
Strontium-T (µg/l)		1070	1120	1110	1140
Zinc-T (µg/l)		10 K	10 K	11	10 K
Hardness (mg/l CaCO3)		313	306	296	309

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #11 TWIN CREEK @ ENTERPRISE RD, UPSTREAM GRATIS WWTP

Twin Creek Watershed (WAU:05080002-040)

River Mile: 19.20 Storet: H08S16

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1120	1130	1120	1145	1055
Temp(C)	25.00	26.90	23.84	20.00	19.60
D.O. (mg/l)	9.40	8.30	8.71	8.58	8.47
D.O. Sat (%)			103.40		92.70
pH (fld) (SU)	8.31	8.07	7.95	7.85	7.68
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			627		
Sp Cond (lab) (µmhos/cm)	621	617	621	602	607
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	255	256	252	250	255
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.071	0.058	0.056	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.99	1.49	1.66	1.26	1.45
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.22	0.23	0.28	0.28	0.25
Phosphorus-T (mg/l)	0.029	0.020	0.011	0.026	0.069
Phosphorus-Dis (mg/l)					
TDS (mg/l)	352	352	344	354	348
TSS (mg/l)	14	5 K	8	5	5 K
Chloride (mg/l)	34.9	39.2	38.5	35.2	36.0
Sulfate (mg/l)	36.0	38.6	42.7	36.0	36.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	84	95	93	90	93
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	67	70	69	68	71
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	171	128	187	121	78
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	30	32	30	29	31
Manganese-T (µg/l)	17	24	18	17	16
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	19	17	18	18
Strontium-T (µg/l)	945	1150	1110	983	1130
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	291	306	296	289	305

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #12 TWIN CREEK DOWNSTREAM GRATIS WWTP

Twin Creek Watershed (WAU:05080002-040)

River Mile: 18.29 Storet: H08S14

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1110	1115	1140	1115	1040
Temp(C)	23.00	26.60	24.34	19.70	19.70
D.O. (mg/l)	9.20	8.05	8.82	9.09	9.00
D.O. Sat (%)			105.60		98.90
pH (fld) (SU)	8.24	8.04	8.01	7.83	7.74
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			623		
Sp Cond (lab) (µmhos/cm)	626	618	615	610	615
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K		10 K	10 K	10 K
Alkalinity (mg/l)	258	256	248	255	259
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.068		0.057	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	3.05		1.72	1.29	1.52
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.027	0.020 K
TKN (mg/l)	0.25		0.25	0.29	0.24
Phosphorus-T (mg/l)	0.019		0.022	0.029	0.049
Phosphorus-Dis (mg/l)					
TDS (mg/l)	352	348	348	354	342
TSS (mg/l)	5 K	5	5	5	5 K
Chloride (mg/l)	35.2	39.0	39.3	34.9	37.4
Sulfate (mg/l)	37.2	38.3	43.8	35.8	37.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	87	98	92	87	91
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	69	72	67	68	70
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	109	130	172	73	50 K
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	31	33	30	28	30
Manganese-T (µg/l)	13	24	18	12	15
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	19	17	17	19
Strontium-T (µg/l)	1060	1140	1030	1030	1040
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	300	316	291	285	298

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #13 TWIN CREEK DOWNSTREAM TOM'S RUN

Twin Creek Watershed (WAU:05080002-040)

River Mile: 13.40 Storet: H08W17

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1245	1210	1305	1230	1210
Temp(C)	25.00	28.10	25.48	21.00	21.20
D.O. (mg/l)	9.80	7.80	8.44	9.82	8.45
D.O. Sat (%)			103.20		95.40
pH (fld) (SU)	8.27	8.10	8.12	8.02	7.89
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			609	576	603
Sp Cond (lab) (µmhos/cm)	606	599	604	584	586
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10	10 K
Alkalinity (mg/l)	254	254	248	242	246
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.062	0.057	0.054	0.050 K	0.112
Nitrate-Nitrite-N (mg/l)	2.72	1.36	1.32	0.90	1.16
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.21	0.30	0.28	0.25	0.32
Phosphorus-T (mg/l)	0.092	0.013	0.029	0.022	0.066
Phosphorus-Dis (mg/l)					
TDS (mg/l)	346	340	348	346	336
TSS (mg/l)	10	10	9	5	5 K
Chloride (mg/l)	32.4	35.7	35.6	33.6	34.1
Sulfate (mg/l)	37.1	37.5	35.6	35.8	37.7
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	84	93	95	88	91
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	68	70	70	68	67
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	140	251	228	145	112
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	31	31	31	29	30
Manganese-T (µg/l)	15	32	21	18	17
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	14	17	16	17	17
Strontium-T (µg/l)	937	1020	1090	912	955
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	297	302	302	289	291

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #14 TWIN CREEK @ USGS GAGE DOWNSTREAM GERMANTOWN DAM

Twin Creek Watershed (WAU:05080002-040)

River Mile: 9.80 Storet: H08W16

Duplicate A	07/12/2005	Duplicate A	07/26/2005	Duplicate A	08/09/2005	Duplicate A	09/06/2005	Duplicate A	09/14/2005
Time	1045		1020		1145		1100		1045
Temp(C)	23.30		27.10		25.00		20.57		20.34
D.O. (mg/l)	8.82		7.29		9.60		9.91		7.24
D.O. Sat (%)	103.60		91.80				110.30		80.30
pH (fld) (SU)	8.28		8.16				8.18		8.03
pH (lab) (SU)					8.31				
Sp Cond (fld) (µmhos/cm)			614				576		603
Sp Cond (lab) (µmhos/cm)	612		597		600		584		599
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K		10 K		10 K		10 K		10 K
Alkalinity (mg/l)	258		260		251		240		255
Acidity (mg/l)	5 K		5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.064		0.061		0.063		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	2.65		1.20		1.19		0.85		1.12
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.20 K		0.23		0.20		0.28		0.23
Phosphorus-T (mg/l)	0.010 K		0.010 K		0.010 K		0.018		0.061
Phosphorus-Dis (mg/l)									
TDS (mg/l)	344		352		346		334		350
TSS (mg/l)	5 K		7		5		5 K		5
Chloride (mg/l)	31.0		34.2		32.1		34.4		32.7
Sulfate (mg/l)	36.4		36.2		36.6		37.4		39.8
Aluminum-T (µg/l)	200 K		200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Barium-T (µg/l)	84		92		95		84		95
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	69		70		70		64		70
Chromium-T (µg/l)	30 K		30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Iron-T (µg/l)	96		159		197		61		105
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	30		30		30		28		31
Manganese-T (µg/l)	15		26		20		13		14
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K		40 K		40 K
Potassium-T (mg/l)	2		3		3		3		3
Selenium-T (µg/l)	2 K		2 K		2 K		2 K		2 K
Sodium-T (mg/l)	14		16		15		17		17
Strontium-T (µg/l)	1060		1160		1420		1130		1280
Zinc-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Hardness (mg/l CaCO3)	296		298		298		275		302

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #14 TWIN CREEK @ USGS GAGE DOWNSTREAM GERMANTOWN DAM (continued)

Twin Creek Watershed (WAU:05080002-040)

River Mile: 9.80 Storet: H08W16

Duplicate B	07/12/2005	Duplicate B	07/26/2005	Duplicate B	08/09/2005	Duplicate B	09/14/2005
Time	1045		1020		1145		1045
Temp(C)							
D.O. (mg/l)							
D.O. Sat (%)							
pH (fld) (SU)							
pH (lab) (SU)					8.31		
Sp Cond (fld) (µmhos/cm)							
Sp Cond (lab) (µmhos/cm)	610		598		601		599
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K		10 K		10 K		10 K
Alkalinity (mg/l)	258		259		247		259
Acidity (mg/l)	5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.060		0.060		0.063		0.057
Nitrate-Nitrite-N (mg/l)	2.67		1.37		1.25		1.11
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.22		0.28		0.20 K		0.22
Phosphorus-T (mg/l)	0.010 K		0.010		0.012		0.059
Phosphorus-Dis (mg/l)							
TDS (mg/l)	350		354		344		350
TSS (mg/l)	5 K		5		5		5 K
Chloride (mg/l)	31.3		34.1		32.2		32.5
Sulfate (mg/l)	36.4		36.5		36.0		39.8
Aluminum-T (µg/l)	200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K
Barium-T (µg/l)	84		91		94		90
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	67		70		70		67
Chromium-T (µg/l)	30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K		10 K
Iron-T (µg/l)	100		175		162		96
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	30		30		30		30
Manganese-T (µg/l)	14		27		19		13
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K		40 K
Potassium-T (mg/l)	2		3		3		3
Selenium-T (µg/l)	2 K		2 K		2 K		2 K
Sodium-T (mg/l)	14		16		15		16
Strontium-T (µg/l)	1050		1160		1420		1220
Zinc-T (µg/l)	10 K		10 K		10 K		10 K
Hardness (mg/l CaCO3)	291		298		298		291

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #15 TWIN CREEK UPSTREAM CHAMBERLAIN RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 3.40 Storet: H08W15

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1010	0950	1015	1025	1005
Temp(C)	22.20	24.93	22.00	18.60	19.98
D.O. (mg/l)	8.02	5.99	7.40	7.54	6.46
D.O. Sat (%)		72.50		80.80	71.10
pH (fld) (SU)	8.12	7.98		7.83	7.83
pH (lab) (SU)			8.07		
Sp Cond (fld) (µmhos/cm)		625		606	627
Sp Cond (lab) (µmhos/cm)	619	610	624	616	624
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	255	255	254	252	261
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.058	0.051	0.054	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.13	1.14	1.16	0.94	0.99
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.25	0.36	0.26	0.21
Phosphorus-T (mg/l)	0.010 K	0.010 K	0.010 K	0.013	0.057
Phosphorus-Dis (mg/l)					
TDS (mg/l)	344	358	356	348	366
TSS (mg/l)	5 K	7	5	5 K	5
Chloride (mg/l)	34.4	37.8	37.5	39.0	38.4
Sulfate (mg/l)	37.9	36.6	35.5	35.4	39.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	88	99	100	97	102
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	67	71	70	69	70
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	87	154	155	120	131
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	30	31	30	29	31
Manganese-T (µg/l)	12	24	16	15	12
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	18	18	20	19
Strontium-T (µg/l)	1040	1170	1120	1120	1180
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	291	305	298	292	302

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #16 TWIN CREEK @ DAYTON-OXFORD RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.90 Storet: 600180

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0940	0930	1045	1000	0945
Temp(C)	22.50	26.01	23.00	19.56	20.38
D.O. (mg/l)	8.21	6.06	8.00	7.54	6.60
D.O. Sat (%)		74.80		82.40	73.20
pH (fld) (SU)	8.10	8.05		7.94	7.93
pH (lab) (SU)			8.15		
Sp Cond (fld) (µmhos/cm)		618		594	615
Sp Cond (lab) (µmhos/cm)	618	600	614	603	605
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10	10 K	10 K	10 K
Alkalinity (mg/l)	256	256	250	243	254
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.056	0.056	0.050	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.26	1.19	1.42	0.92	1.02
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20	0.26	0.21	0.24	0.20
Phosphorus-T (mg/l)	0.010 K	0.010 K	0.010 K	0.011	0.045
Phosphorus-Dis (mg/l)					
TDS (mg/l)	346	364	356	342	348
TSS (mg/l)	5 K	8	7	6	5
Chloride (mg/l)	34.4	37.4	37.8	38.8	36.7
Sulfate (mg/l)	36.4	37.4	36.0	35.2	38.1
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	88	94	99	92	100
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	68	68	70	67	70
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	103	136	176	133	79
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	30	30	30	29	31
Manganese-T (µg/l)	10	19	13	10	10 K
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	18	17	20	18
Strontium-T (µg/l)	1040	1130	1100	1070	1100
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	293	293	298	287	302

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #17 TWIN CREEK NEAR MOUTH (NEW WESTERN CHANNEL)

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.10 Storet: H08K25

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0900	0900	0940	0930	0920
Temp(C)	23.10	26.75	24.00	19.80	21.29
D.O. (mg/l)	8.08	6.00	7.70	7.96	6.52
D.O. Sat (%)	94.50	75.10		87.30	73.70
pH (fld) (SU)	8.02	8.08		8.03	8.02
pH (lab) (SU)			8.18		
Sp Cond (fld) (µmhos/cm)		612		587	606
Sp Cond (lab) (µmhos/cm)	611	595	611	597	598
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	11	10 K	10 K
Alkalinity (mg/l)	250	249	247	240	251
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.054	0.050 K	0.052	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.39	1.16	1.23	0.91	1.05
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.23	0.20 K	0.23	0.20
Phosphorus-T (mg/l)	0.010	0.010 K	0.010 K	0.010	0.094
Phosphorus-Dis (mg/l)					
TDS (mg/l)	346	352	352	344	344
TSS (mg/l)	5 K	7	8	6	5
Chloride (mg/l)	34.6	37.6	37.8	38.7	37.0
Sulfate (mg/l)	36.3	36.9	36.1	35.2	38.6
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	88	93	98	90	97
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	67	67	69	66	67
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	113	111	196	102	152
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	31	31	30	28	30
Manganese-T (µg/l)	10	16	13	10 K	10 K
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	18	17	19	18
Strontium-T (µg/l)	1040	1130	1120	1050	1070
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	295	295	296	280	291

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #18 MAPLE SWAMP DITCH @ GRUBBS-REX RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 2.39 Storet: H08K03

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1235	1205	1330	1330	1320
Temp(C)	20.30	21.50	30.26	27.59	26.01
D.O. (mg/l)	8.73	13.93	18.08	17.50	16.51
D.O. Sat (%)	97.00	158.60	240.60	222.30	203.80
pH (fld) (SU)	8.03	8.15	8.42	8.39	8.47
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			578	585	571
Sp Cond (lab) (µmhos/cm)	666	621	559	560	548
BOD5 (mg/l)	2.0 K	2.7	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	15	10 K	10 K	10 K
Alkalinity (mg/l)	299	282	252	255	243
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.128	0.059	0.069	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.42	0.10 K	0.10 K	0.10 K	0.10 K
Nitrite-N (mg/l)	0.093	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.24	0.55	0.30	0.31	0.27
Phosphorus-T (mg/l)	0.010 K	0.052	0.044	0.034	0.037
Phosphorus-Dis (mg/l)					
TDS (mg/l)	412	380	332	336	328
TSS (mg/l)	5 K	13	12	19	18
Chloride (mg/l)	28.7	28.6	24.4	22.7	21.7
Sulfate (mg/l)	33.8	34.3	39.2	36.9	36.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	5.7	6.9	4.1	4.4
Barium-T (µg/l)	167	165	170	160	183
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	83	72	61	62	67
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	257	451	532	690	769
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	35	32	35	33	37
Manganese-T (µg/l)	10 K	87	26	47	53
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	2 K	2	2
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	11	10	10	9	10
Strontium-T (µg/l)	910	978	1120	1100	1210
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	351	312	296	291	320

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #19 MAPLE SWAMP DITCH @ OTTERBINE-ITHACA RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 1.37 Storet: H08K04

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1210	1145	1305	1305	1245
Temp(C)	18.50	20.20	20.90	17.82	19.08
D.O. (mg/l)	6.30	4.44	7.01	7.66	5.84
D.O. Sat (%)	67.00	46.40	78.70	80.80	63.20
pH (fld) (SU)	7.90	7.77	7.58	7.50	7.46
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			694	704	703
Sp Cond (lab) (µmhos/cm)	685	652	689	698	681
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10	10 K	10 K	10 K
Alkalinity (mg/l)	310	296	321	329	328
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.114	0.060	0.080	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.04	0.11	0.10 K	0.10 K	0.10 K
Nitrite-N (mg/l)	0.044	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.33	0.20 K	0.20 K	0.20 K
Phosphorus-T (mg/l)	0.010 K	0.040	0.025	0.028	0.094
Phosphorus-Dis (mg/l)					
TDS (mg/l)	426	390	394	414	422
TSS (mg/l)	6	12	10	20	17
Chloride (mg/l)	25.7	24.1	21.3	20.5	20.7
Sulfate (mg/l)	42.0	46.0	53.6	52.9	53.7
Aluminum-T (µg/l)	200 K	200 K	200 K	262	274
Arsenic-T (µg/l)	2.0 K	3.7	4.2	3.2	3.9
Barium-T (µg/l)	192	212	260	237	261
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	85	80	90	90	95
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	583	1150	787	895	948
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	35	39	37	40
Manganese-T (µg/l)	37	157	132	112	108
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	2	2	2	2
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	10	9	10	9	10
Strontium-T (µg/l)	1360	1420	1820	1660	1810
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	360	344	385	377	402

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #20 DRY FORK @ LOCKE RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 0.78 Storet: H08K05

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	0945	0945	1110	1045	1010
Temp(C)	20.50	22.70	23.16	18.32	19.15
D.O. (mg/l)	6.01	4.57	10.53	10.52	8.41
D.O. Sat (%)	67.00	54.30	123.30	112.00	91.20
pH (fld) (SU)	8.02	7.97	8.19	8.02	7.99
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			703	713	719
Sp Cond (lab) (µmhos/cm)	669	712	708	712	701
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	15	12	10 K	10 K
Alkalinity (mg/l)	282	308	327	311	327
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.112	0.087	0.101	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.23	0.46	0.21	0.27	0.15
Nitrite-N (mg/l)	0.020 K	0.021	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.25	0.53	0.42	0.36	0.36
Phosphorus-T (mg/l)	0.079	0.293	0.268	0.156	0.210
Phosphorus-Dis (mg/l)					
TDS (mg/l)	396	428	426	430	436
TSS (mg/l)	6	7	5 K	5 K	5 K
Chloride (mg/l)	43.1	47.3	32.2	38.0	33.4
Sulfate (mg/l)	35.2	37.3	45.5	47.7	46.6
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.4	6.8	5.7	3.4	4.8
Barium-T (µg/l)	84	88	101	102	113
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	73	78	88	88	95
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	135	266	252	123	157
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	34	38	35	39
Manganese-T (µg/l)	23	88	72	39	33
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	20	22	14	17	15
Strontium-T (µg/l)	1280	1280	1050	998	937
Zinc-T (µg/l)	10 K	10 K	19	10 K	10 K
Hardness (mg/l CaCO3)	322	335	376	364	398

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #21 MILLERS FORK @ GRUBBS-REX RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 10.78 Storet: H08K06

	07/13/2005	07/27/2005	09/07/2005	09/15/2005
Time	1255	1230	1530	1345
Temp(C)	21.60	22.90	22.06	21.40
D.O. (mg/l)	4.50	3.38	3.62	4.57
D.O. Sat (%)	51.20	39.60	41.50	51.80
pH (fld) (SU)	7.82	7.80	7.40	7.32
pH (lab) (SU)				
Sp Cond (fld) (µmhos/cm)			714	639
Sp Cond (lab) (µmhos/cm)	647	613	671	623
BOD5 (mg/l)	2.0 K	2.0 K	3.4	2.0 K
COD (mg/l)	14	30	15	14
Alkalinity (mg/l)	283	267	287	279
Acidity (mg/l)	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.072	0.322	0.957	0.383
Nitrate-Nitrite-N (mg/l)	0.10 K	0.10 K	0.10	0.10 K
Nitrite-N (mg/l)	0.020 K	0.020 K	0.052	0.021
TKN (mg/l)	0.20 K	2.34	1.56	1.00
Phosphorus-T (mg/l)	0.010 K	0.729	0.463	0.265
Phosphorus-Dis (mg/l)				
TDS (mg/l)	396	378	402	440
TSS (mg/l)	5 K	18	5 K	11
Chloride (mg/l)	30.8	35.5	41.6	38.0
Sulfate (mg/l)	42.6	29.4	37.3	28.3
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	11.0	24.2	13.6	15.1
Barium-T (µg/l)	103	110	86	86
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	76	66	71	75
Chromium-T (µg/l)	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K
Iron-T (µg/l)	455	1210	873	725
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	30	30	32
Manganese-T (µg/l)	359	871	332	436
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	4	5	4	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	11	12	30	18
Strontium-T (µg/l)	1270	1290	1580	1760
Zinc-T (µg/l)	10 K	10 K	10	10 K
Hardness (mg/l CaCO3)	330	288	301	319

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #22 MILLERS FORK @ CLARK RD, DOWNSTREAM ITHACA TRIBUTARIES

Twin Creek Watershed (WAU:05080002-030)

River Mile: 7.96 Storet: H08K07

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1310	1315	1415	1505	1410
Temp(C)		22.40	24.25	20.74	21.10
D.O. (mg/l)	6.36	5.82	8.57	8.65	7.86
D.O. Sat (%)	71.10	67.00	102.50	96.70	88.60
pH (fld) (SU)		8.09	8.15	7.96	8.00
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			755	723	761
Sp Cond (lab) (µmhos/cm)	676	655	754	717	744
BOD5 (mg/l)	2.0 K	14.0	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	13	12	10	11
Alkalinity (mg/l)	279	270	310	297	307
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.208	0.146	0.126	0.061	0.176
Nitrate-Nitrite-N (mg/l)	0.53	0.47	0.28	0.54	0.32
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20	0.56	0.44	0.54	0.69
Phosphorus-T (mg/l)	0.043	0.182	0.027	0.142	0.178
Phosphorus-Dis (mg/l)					
TDS (mg/l)	398	392	428	420	470
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	45.1	45.6	58.8	50.8	58.7
Sulfate (mg/l)	36.9	29.9	35.6	39.4	39.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	4.3	8.2	8.7	4.9	6.1
Barium-T (µg/l)	122	121	166	129	145
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	74	68	77	77	85
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	167	194	219	207	211
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	31	36	30	35
Manganese-T (µg/l)	48	72	54	36	51
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	3	4	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	22	21	34	25	34
Strontium-T (µg/l)	1870	1580	1800	1730	2490
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	325	297	340	316	356

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #23 MILLERS FORK @ GEORGETOWN-VERONA RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 3.95 Storet: H08K08

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1220	1250	1330	1345	1150
Temp(C)	22.00	24.62	23.70	18.65	19.51
D.O. (mg/l)	9.50	2.72	4.70	3.95	3.40
D.O. Sat (%)		32.70			37.50
pH (fld) (SU)		7.72	7.81	7.54	7.54
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)		631			
Sp Cond (lab) (µmhos/cm)	611	616	644	526	556
BOD5 (mg/l)	2.0 K	2.7	2.5	2.5	3.1
COD (mg/l)	12	13	10 K	16	14
Alkalinity (mg/l)	269	282	288	208	239
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.186	0.211	0.160	0.151	0.093
Nitrate-Nitrite-N (mg/l)	0.80	0.10 K	0.10 K	0.62	0.10
Nitrite-N (mg/l)	0.021	0.020 K	0.020 K	0.031	0.020 K
TKN (mg/l)	0.58	0.53	0.53	0.72	0.54
Phosphorus-T (mg/l)	0.060	0.151	0.120	0.120	0.133
Phosphorus-Dis (mg/l)					
TDS (mg/l)	358	358	370	312	328
TSS (mg/l)	15	36	32	12	28
Chloride (mg/l)	34.7	36.4	34.2	34.7	33.4
Sulfate (mg/l)	28.6	23.6	24.0	28.2	25.5
Aluminum-T (µg/l)	541	546	439	200 K	528
Arsenic-T (µg/l)	2.4	8.1	7.2	3.7	6.1
Barium-T (µg/l)	108	114	101	98	118
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	68	67	68	54	64
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	936	1210	699	451	1020
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	33	31	32	21	28
Manganese-T (µg/l)	151	306	202	140	262
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	4	5
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	17	17	18	19
Strontium-T (µg/l)	1530	1690	1910	1470	1920
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	306	295	302	221	275

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #24 SWAMP CREEK UPSTREAM COUNTY LINE RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 6.30 Storet: H08W28

	07/13/2005	07/27/2005	08/10/2005	09/07/2005
Time	1240	1225	1300	1315
Temp(C)	21.00	19.92	19.00	18.36
D.O. (mg/l)	4.70	3.71	2.80	5.34
D.O. Sat (%)		40.80		
pH (fld) (SU)		7.43	7.65	7.46
pH (lab) (SU)				
Sp Cond (fld) (µmhos/cm)		705		
Sp Cond (lab) (µmhos/cm)	683	659	731	820
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	14	13	10 K	10
Alkalinity (mg/l)	272	272	295	293
Acidity (mg/l)	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.202	0.210	0.197	0.177
Nitrate-Nitrite-N (mg/l)	0.21	0.16	0.16	0.11
Nitrite-N (mg/l)	0.024	0.033	0.020 K	0.020 K
TKN (mg/l)	0.66	0.62	0.29	0.62
Phosphorus-T (mg/l)	0.211	0.288	0.034	0.213
Phosphorus-Dis (mg/l)				
TDS (mg/l)	418	400	444	504
TSS (mg/l)	23	9	36	7
Chloride (mg/l)	46.3	44.7	31.4	69.9
Sulfate (mg/l)	44.2	41.1	68.7	64.6
Aluminum-T (µg/l)	1160	200 K	200 K	200 K
Arsenic-T (µg/l)	8.8	12.0	9.8	7.3
Barium-T (µg/l)	103	87	114	113
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	75	71	82	91
Chromium-T (µg/l)	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K
Iron-T (µg/l)	2620	628	1100	828
Lead-T (µg/l)	2.1	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	37	34	36	36
Manganese-T (µg/l)	335	286	199	219
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	4	3	2	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	19	20	15	33
Strontium-T (µg/l)	2100	2460	5260	3360
Zinc-T (µg/l)	13	10 K	10 K	10 K
Hardness (mg/l CaCO3)	340	317	353	375

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #25 SWAMP CREEK @ US 40

Twin Creek Watershed (WAU:05080002-030)

River Mile: 0.20 Storet: H08S33

	07/13/2005	07/21/2005	07/27/2005	08/10/2005	09/07/2005
Time	1120	1425	1145	1145	1220
Temp(C)	21.70		24.25	24.60	21.60
D.O. (mg/l)	6.30		5.09	7.10	12.10
D.O. Sat (%)			60.80		
pH (fld) (SU)	8.15		7.93	8.30	8.45
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			603		
Sp Cond (lab) (µmhos/cm)	611	570	589	660	515
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	8.6	4.2
COD (mg/l)	12	11	13	23	13
Alkalinity (mg/l)	257	234	261	236	199
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.088	0.128	0.079	0.062	0.050 K
Nitrate-Nitrite-N (mg/l)	0.66	1.16	0.39	0.10 K	0.16
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.43	0.36	0.40	0.76	0.56
Phosphorus-T (mg/l)	0.064	0.115	0.091	0.121	0.198
Phosphorus-Dis (mg/l)					
TDS (mg/l)	368	340	350	366	314
TSS (mg/l)	12	5 K	6	123	26
Chloride (mg/l)	35.1	34.6	31.7	65.4	33.9
Sulfate (mg/l)	37.3	29.9	32.2	20.0	35.9
Aluminum-T (µg/l)	335	200 K	200 K	350	340
Arsenic-T (µg/l)	2.2	3.8	4.4	7.6	4.2
Barium-T (µg/l)	74	68	73	75	65
Cadmium-T (µg/l)	0.38	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	71	61	66	58	56
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	621	167	545	696	663
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	35	28	30	33	23
Manganese-T (µg/l)	48	25	85	246	68
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	4	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	14	16	13	42	19
Strontium-T (µg/l)	1340	1490	1350	1240	1550
Zinc-T (µg/l)	10 K	10 K	10 K	33	10 K
Hardness (mg/l CaCO3)	321	268	288	281	234

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #25 SWAMP CREEK @ US 40 (continued)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 0.20 Storet: H08S33

09/15/2005

Time	1045
Temp(C)	21.07
D.O. (mg/l)	6.64
D.O. Sat (%)	74.50
pH (fld) (SU)	7.89
pH (lab) (SU)	
Sp Cond	
Sp Cond	539
BOD5 (mg/l)	2.1
COD (mg/l)	20
Alkalinity (mg/l)	209
Acidity (mg/l)	5 K
Ammonia-N (mg/l)	0.053
Nitrate-Nitrite-N (mg/l)	0.10 K
Nitrite-N (mg/l)	0.020 K
TKN (mg/l)	0.54
Phosphorus-T (mg/l)	0.090
Phosphorus-Dis (mg/l)	
TDS (mg/l)	316
TSS (mg/l)	11
Chloride (mg/l)	37.9
Sulfate (mg/l)	35.4
Aluminum-T (µg/l)	200 K
Arsenic-T (µg/l)	4.6
Barium-T (µg/l)	62
Cadmium-T (µg/l)	0.20 K
Calcium-T (mg/l)	55
Chromium-T (µg/l)	30 K
Copper-T (µg/l)	10 K
Iron-T (µg/l)	110
Lead-T (µg/l)	2.0 K
Magnesium-T (mg/l)	25
Manganese-T (µg/l)	39
Mercury-T (µg/l)	0.2 K
Nickel-T (µg/l)	40 K
Potassium-T (mg/l)	4
Selenium-T (µg/l)	2 K
Sodium-T (mg/l)	19
Strontium-T (µg/l)	1380
Zinc-T (µg/l)	10 K
Hardness (mg/l CaCO3)	240

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #26 TRIBUTARY TO SWAMP CREEK (RM 6.45) @ BALTIMORE-PHILLIPSBURG RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 0.30 Storet: H08K09

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1330	1215	1240	1255	1110
Temp(C)	21.50	22.72	22.40	18.20	19.19
D.O. (mg/l)	1.60	1.72	2.10	3.18	2.14
D.O. Sat (%)		20.00			23.20
pH (fld) (SU)		7.58	7.92	7.45	7.41
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)		606			
Sp Cond (lab) (µmhos/cm)	678	597	613	507	491
BOD5 (mg/l)	2.2	2.9	2.0 K	2.0 K	2.0 K
COD (mg/l)	20	24	20	16	22
Alkalinity (mg/l)	257	260	266	171	182
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.947	0.988	0.625	0.236	0.184
Nitrate-Nitrite-N (mg/l)	0.34	0.10	0.13	0.21	0.10
Nitrite-N (mg/l)	0.039	0.029	0.032	0.023	0.020 K
TKN (mg/l)	0.89	1.60	1.24	0.96	0.88
Phosphorus-T (mg/l)	0.072	0.556	0.366	0.348	0.548
Phosphorus-Dis (mg/l)					
TDS (mg/l)	408	356	358	310	296
TSS (mg/l)	8	22	6	7	5 K
Chloride (mg/l)	64.9	48.1	48.3	44.6	42.2
Sulfate (mg/l)	20.2	11.0	5.0 K	33.3	20.1
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	8.3	19.7	19.4	8.2	13.1
Barium-T (µg/l)	69	58	51	48	44
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	61	63	63	50	48
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	314	552	429	348	313
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	30	26	28	17	17
Manganese-T (µg/l)	385	1190	620	217	400
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	4	5	5
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	38	22	23	28	26
Strontium-T (µg/l)	1170	1410	1480	994	998
Zinc-T (µg/l)	26	10 K	19	10 K	10 K
Hardness (mg/l CaCO ₃)	276	264	273	195	190

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #27 PRICE CREEK @ PENCE-SHEWMAN RD, NEAR ELDORADO

Twin Creek Watershed (WAU:05080002-030)

River Mile: 13.70 Storet: H08W26

	07/13/2005	07/27/2005	09/07/2005	09/15/2005
Time	1055	1045	1210	1110
Temp(C)	20.10	22.60	19.33	20.25
D.O. (mg/l)	4.00	3.87	5.41	4.80
D.O. Sat (%)	44.20	44.80	58.90	53.20
pH (fld) (SU)	8.00	7.93	7.55	7.60
pH (lab) (SU)				
Sp Cond (fld) (µmhos/cm)			645	504
Sp Cond (lab) (µmhos/cm)	578	574	646	608
BOD5 (mg/l)	2.0 K	2.9	2.7	5.5
COD (mg/l)	14	24	21	42
Alkalinity (mg/l)	215	212	251	225
Acidity (mg/l)	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.135	0.094	0.180	0.182
Nitrate-Nitrite-N (mg/l)	3.80	0.10 K	0.10 K	0.10
Nitrite-N (mg/l)	0.069	0.020 K	0.022	0.020 K
TKN (mg/l)	0.20 K	1.03	1.04	1.50
Phosphorus-T (mg/l)	0.010 K	0.193	0.314	0.198
Phosphorus-Dis (mg/l)		0.134	0.142	
TDS (mg/l)	330	326	376	366
TSS (mg/l)	5 K	6	12	12
Chloride (mg/l)	46.0	56.8	58.0	65.6
Sulfate (mg/l)	26.5	19.4	20.9	14.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	4.6	5.0	7.3
Barium-T (µg/l)	48	49	64	69
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	59	52	65	57
Chromium-T (µg/l)	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K
Iron-T (µg/l)	119	206	420	612
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	30	23	24	27
Manganese-T (µg/l)	20	262	694	759
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	6	7	8
Selenium-T (µg/l)	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	17	26	29	34
Strontium-T (µg/l)	229	218	304	294
Zinc-T (µg/l)	19	38	11	10 K
Hardness (mg/l CaCO3)	271	224	261	254

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #28 PRICE CREEK @ SHURLEY RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 10.88 Storet: H08K10

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1015	1010	1140	1140	1040
Temp(C)	21.10	23.00	22.48	18.54	19.35
D.O. (mg/l)	6.60	4.71	6.86	6.54	4.19
D.O. Sat (%)	73.70	55.10	79.40	70.00	45.60
pH (fld) (SU)	8.18	8.04	8.04	7.75	7.68
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			663	539	615
Sp Cond (lab) (µmhos/cm)	665	667	664	537	612
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	14	13	12	18	17
Alkalinity (mg/l)	277	232	284	215	262
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.124	0.153	0.130	0.077	0.101
Nitrate-Nitrite-N (mg/l)	2.01	0.99	0.12	0.55	0.13
Nitrite-N (mg/l)	0.020	0.025	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.70	0.46	0.81	0.72
Phosphorus-T (mg/l)	0.010 K	0.203	0.086	0.414	0.289
Phosphorus-Dis (mg/l)					
TDS (mg/l)	386	382	374	314	186
TSS (mg/l)	5 K	5 K	18	5	7
Chloride (mg/l)	41.1	60.6	41.8	36.8	39.4
Sulfate (mg/l)	37.4	35.5	35.7	24.4	27.1
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	3.9	4.9	5.2	6.3
Barium-T (µg/l)	76	80	99	73	89
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	71	57	65	53	63
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	95	224	272	381	207
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	28	35	22	28
Manganese-T (µg/l)	17	52	86	156	126
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	6	4	7	7
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	23	39	32	24	28
Strontium-T (µg/l)	2420	3030	4360	2480	3670
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	317	258	306	223	273

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #29 PRICE CREEK @ JIMS RUN RD

Twin Creek Watershed (WAU:05080002-030)

River Mile: 3.79 Storet: H08K11

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1255	1235	1305	1355	1330
Temp(C)	21.00	23.90	23.60	21.60	21.00
D.O. (mg/l)	7.00	7.60	9.38	10.10	10.10
D.O. Sat (%)			111.30	114.00	114.60
pH (fld) (SU)	6.82	8.37	8.25	8.01	8.06
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	612	599	611	608	617
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	257	261	259	267	274
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.168	0.065	0.075	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	3.37	2.00	3.68	2.31	2.46
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.32	0.22	0.45	0.27
Phosphorus-T (mg/l)	0.010 K	0.030	0.013	0.059	0.036
Phosphorus-Dis (mg/l)					
TDS (mg/l)	354	348	348	350	356
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	34.6	34.5	31.5	33.0	32.7
Sulfate (mg/l)	31.4	31.2	33.4	31.6	32.2
Aluminum-T (µg/l)	200 K	200 K	361	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.4	2.0	2.0 K	2.0 K
Barium-T (µg/l)	60	60	64	59	59
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	66	63	65	66	67
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	120	140	597	125	67
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	35	35	38	33	39
Manganese-T (µg/l)	13	19	44	13	10 K
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	2	2 K	3	2
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	14	15	13	15	13
Strontium-T (µg/l)	475	531	261	535	283
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	309	301	319	301	328

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #30 PRICE CREEK UPSTREAM SR 503

Twin Creek Watershed (WAU:05080002-030)

River Mile: 0.60 Storet: H08P03

	07/13/2005	07/21/2005	07/27/2005	08/10/2005	08/23/2005
Time	1130	1210	1135	1145	1240
Temp(C)	20.90		24.50	23.90	
D.O. (mg/l)	5.80		6.70	5.77	
D.O. Sat (%)				72.50	
pH (fld) (SU)	4.42		8.14	7.84	
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	599	594	596	611	607
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	18	10 K	10 K
Alkalinity (mg/l)	255	256	259	266	267
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.060	0.112	0.072	0.073	0.069
Nitrate-Nitrite-N (mg/l)	2.22	1.14	0.84	0.96	0.66
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20	0.21	0.28	0.20 K	1.27
Phosphorus-T (mg/l)	0.010 K	0.011	0.161	0.011	0.065
Phosphorus-Dis (mg/l)					
TDS (mg/l)	354	326	348	352	368
TSS (mg/l)	5 K	5 K	6	5 K	5 K
Chloride (mg/l)	28.4	28.3	28.3	25.2	23.2
Sulfate (mg/l)	38.0	40.5	42.0	49.7	47.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	70	75	76	84	83
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	66	68	66	71	71
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	158	118	116	136	94
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	33	35	33	35	34
Manganese-T (µg/l)	12	26	32	23	18
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	11	11	11	10	9
Strontium-T (µg/l)	732	750	754	904	900
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	301	314	301	321	317

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #30 PRICE CREEK UPSTREAM SR 503 (continued)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 0.60 Storet: H08P03

09/07/2005

09/15/2005

Time	09/07/2005	09/15/2005
Temp(C)	20.40	20.50
D.O. (mg/l)	9.68	8.92
D.O. Sat (%)	107.70	95.10
pH (fld) (SU)	8.20	8.02
pH (lab) (SU)		
Sp Cond		
Sp Cond	614	610
BOD5 (mg/l)	2.0 K	2.0 K
COD (mg/l)	10 K	10 K
Alkalinity (mg/l)	266	270
Acidity (mg/l)	5 K	5 K
Ammonia-N (mg/l)	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	0.76	0.58
Nitrite-N (mg/l)	0.020 K	0.020 K
TKN (mg/l)	0.48	0.23
Phosphorus-T (mg/l)	0.018	0.012
Phosphorus-Dis (mg/l)		
TDS (mg/l)	356	360
TSS (mg/l)	5 K	5 K
Chloride (mg/l)	30.8	25.0
Sulfate (mg/l)	47.2	47.4
Aluminum-T (µg/l)	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K
Barium-T (µg/l)	77	85
Cadmium-T (µg/l)	0.20 K	0.20 K
Calcium-T (mg/l)	68	74
Chromium-T (µg/l)	30 K	30 K
Copper-T (µg/l)	10 K	10 K
Iron-T (µg/l)	78	77
Lead-T (µg/l)	2.0 K	2.0 K
Magnesium-T (mg/l)	31	35
Manganese-T (µg/l)	13	14
Mercury-T (µg/l)	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K
Potassium-T (mg/l)	3	3
Selenium-T (µg/l)	2 K	2 K
Sodium-T (mg/l)	15	11
Strontium-T (µg/l)	1010	1020
Zinc-T (µg/l)	10 K	10 K
Hardness (mg/l CaCO3)	297	329

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #31 LESLEY RUN @ SNYDER RD (NORTHEAST OF NEW LEXINGTON)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 6.00 Storet: H08W24

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	1000	1010	1015	1215	1025
Temp(C)	21.60	25.10	23.60	22.10	20.90
D.O. (mg/l)	2.50	2.50	3.27	6.08	5.59
D.O. Sat (%)			38.50	68.90	48.40
pH (fld) (SU)	7.71	7.76	7.68	7.83	7.61
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	659	553	586	481	493
BOD5 (mg/l)	2.6	5.5	11.0	8.6	19.0
COD (mg/l)	17	21	26	32	70
Alkalinity (mg/l)	275	247	270	197	209
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.235	0.050 K	0.074	0.050 K	0.050
Nitrate-Nitrite-N (mg/l)	0.67	0.10 K	0.10 K	0.10 K	0.12
Nitrite-N (mg/l)	0.030	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.48	0.78	0.80	1.01	1.00
Phosphorus-T (mg/l)	0.032	0.148	0.020	0.131	0.146
Phosphorus-Dis (mg/l)					
TDS (mg/l)	390	320	338	278	306
TSS (mg/l)	5 K	26	27	58	92
Chloride (mg/l)	45.1	36.2	37.6	25.6	25.6
Sulfate (mg/l)	27.1	19.1	10.7	33.4	26.2
Aluminum-T (µg/l)	295	407	536	1470	1630
Arsenic-T (µg/l)	5.2	10.0	13.2	7.0	7.5
Barium-T (µg/l)	58	59	70	79	88
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	64	56	63	50	52
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	600	1020	1030	2360	2730
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.1	2.4
Magnesium-T (mg/l)	35	29	32	24	25
Manganese-T (µg/l)	378	426	591	432	752
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	5	7	7
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	15	14	16	13	13
Strontium-T (µg/l)	1290	1210	1400	1630	1610
Zinc-T (µg/l)	10 K	10 K	10 K	11	13
Hardness (mg/l CaCO3)	304	259	289	224	233

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #32 LESLEY RUN @ US 35

Twin Creek Watershed (WAU:05080002-030)

River Mile: 3.56 Storet: H08K26

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	0940	0950	0950	0930	1008
Temp(C)	20.50	22.00	21.70	17.70	19.30
D.O. (mg/l)	2.70	1.50	2.90	3.10	2.71
D.O. Sat (%)			37.20	32.40	30.27
pH (fld) (SU)	7.63	7.50	7.39	7.37	7.25
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	620	679	725	799	798
BOD5 (mg/l)	3.9	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	14	13	12	10	14
Alkalinity (mg/l)	268	292	316	333	342
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.115	0.297	0.240	0.424	0.565
Nitrate-Nitrite-N (mg/l)	0.11	0.66	0.85	0.41	0.35
Nitrite-N (mg/l)	0.020 K	0.041	0.029	0.056	0.053
TKN (mg/l)	0.33	0.75	0.50	0.99	1.13
Phosphorus-T (mg/l)	0.050	0.189	0.221	0.292	0.306
Phosphorus-Dis (mg/l)					
TDS (mg/l)	370	394	418	454	472
TSS (mg/l)	21	5 K	5 K	6	5 K
Chloride (mg/l)	38.3	48.8	45.0	61.2	62.1
Sulfate (mg/l)	25.8	24.7	30.5	34.8	32.7
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	3.3	4.3	4.1	3.5	3.9
Barium-T (µg/l)	64	68	70	70	71
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	66	73	78	87	86
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	309	363	176	223	180
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	32	33	35	37	37
Manganese-T (µg/l)	402	419	148	174	204
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	4	4	3	5	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	22	24	25	30	28
Strontium-T (µg/l)	879	905	973	981	993
Zinc-T (µg/l)	10	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	296	318	339	370	367

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #33 LESLEY RUN @ EAST FACTORY RD (SOUTHEAST OF WEST ALEXANDRIA)

Twin Creek Watershed (WAU:05080002-030)

River Mile: 1.20 Storet: 200242

	07/13/2005	07/27/2005	08/10/2005	09/07/2005	09/15/2005
Time	0900	0935	0915	0845	0930
Temp(C)	26.30	23.00	20.90	16.70	19.00
D.O. (mg/l)	5.60	5.50	1.95	4.89	2.48
D.O. Sat (%)			20.10	52.10	26.82
pH (fld) (SU)	8.05	7.68	7.28	7.86	7.68
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	665	633	570	569	533
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	3.9
COD (mg/l)	23	10	17	15	
Alkalinity (mg/l)	285	288	255	229	220
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.086	0.081	0.210	0.085	
Nitrate-Nitrite-N (mg/l)	1.00	0.38	0.10 K	0.16	
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.35	0.37	0.70	0.74	
Phosphorus-T (mg/l)	0.088	0.172	0.247	0.206	
Phosphorus-Dis (mg/l)					
TDS (mg/l)	398	380	326	330	326
TSS (mg/l)	7	15	6	5	7
Chloride (mg/l)	38.5	35.6	34.8	37.2	35.1
Sulfate (mg/l)	35.6	30.2	11.9	36.7	25.1
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	
Arsenic-T (µg/l)	3.2	5.3	10.1	5.4	
Barium-T (µg/l)	68	74	65	65	
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	
Calcium-T (mg/l)	70	74	63	61	
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	
Copper-T (µg/l)	10 K	10 K	10 K	10 K	
Iron-T (µg/l)	215	274	382	204	
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	
Magnesium-T (mg/l)	34	33	32	27	
Manganese-T (µg/l)	28	85	217	88	
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	
Potassium-T (mg/l)	3	4	3	6	
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	
Sodium-T (mg/l)	14	14	15	17	
Strontium-T (µg/l)	786	803	766	684	
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	
Hardness (mg/l CaCO3)	315	321	289	264	

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #34 BANTAS FORK @ ORANGE RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 13.68 Storet: H08K13

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1200	1130	1140	1205	1145
Temp(C)	20.00	22.80	19.90	16.60	18.60
D.O. (mg/l)	6.30	4.00	4.72	4.79	4.13
D.O. Sat (%)			53.00	49.40	44.10
pH (fld) (SU)	7.81	7.54	7.83	7.77	7.72
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	844	810	868	860	873
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	304	294	303	322	322
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.160	0.177	0.130	0.123	0.059
Nitrate-Nitrite-N (mg/l)	0.25	0.49	0.10 K	0.11	0.26
Nitrite-N (mg/l)	0.021	0.036	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.29	0.39	0.47	0.45	0.36
Phosphorus-T (mg/l)	0.022	0.018	0.015	0.026	0.046
Phosphorus-Dis (mg/l)					
TDS (mg/l)	484	460	510	528	522
TSS (mg/l)	14	17	5 K	5 K	13
Chloride (mg/l)	70.3	70.9	76.8	81.3	78.3
Sulfate (mg/l)	60.8	57.7	73.2	61.3	63.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0	2.2	2.0
Barium-T (µg/l)	165	176	197	194	207
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	88	93	99	98	101
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	477	430	350	353	407
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	37	39	38	41
Manganese-T (µg/l)	151	188	167	170	192
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	31	32	34	37	35
Strontium-T (µg/l)	3310	3270	3960	3920	3960
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	29
Hardness (mg/l CaCO3)	368	384	408	401	421

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #35 BANTAS FORK @ US 127

Twin Creek Watershed (WAU:05080002-040)

River Mile: 9.44 Storet: H08K14

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1130	1030	1100	1140	1230
Temp(C)	21.40	28.00	22.00	18.30	19.80
D.O. (mg/l)	7.00	7.80	7.62	8.47	8.11
D.O. Sat (%)			94.00	90.80	89.30
pH (fld) (SU)	8.32	7.98	8.01	8.39	8.13
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	710	709	694	734	728
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	279	276	263	293	288
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.069	0.079	0.066	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	1.65	1.15	1.14	1.03	1.29
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.22	0.24	0.31	0.37
Phosphorus-T (mg/l)	0.016	0.024	0.987	0.031	0.022
Phosphorus-Dis (mg/l)					
TDS (mg/l)	424	428	416	454	450
TSS (mg/l)	6	11	5 K	5 K	6
Chloride (mg/l)	39.6	44.5	39.0	47.5	39.6
Sulfate (mg/l)	65.7	66.3	79.2	70.5	77.0
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	116	135	134	131	139
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	83	90	87	88	89
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	173	261	220	168	173
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	35	38	38	35	38
Manganese-T (µg/l)	10 K	16	11	10 K	10 K
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	15	19	15	24	17
Strontium-T (µg/l)	1620	1970	1820	1870	1910
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	351	381	374	364	379

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #36 BANTAS FORK @ BANTAS CREEK RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 7.10 Storet: H08K15

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1030	0950	0950	1045	1345
Temp(C)	21.00	25.00	21.60	17.10	19.40
D.O. (mg/l)	7.00	6.86	5.68	6.71	8.37
D.O. Sat (%)			55.00	70.20	91.20
pH (fld) (SU)	7.90	7.71	7.97	7.94	7.82
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	678	698	690	703	693
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	278	278	269	284	283
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.066	0.100	0.082	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	0.93	0.61	0.65	0.51	0.50
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.26	0.24	0.25	0.27
Phosphorus-T (mg/l)	0.010 K	0.010 K	0.010 K	0.018	0.065
Phosphorus-Dis (mg/l)					
TDS (mg/l)	382	366	398	420	412
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	41.3	49.4	42.2	51.0	45.5
Sulfate (mg/l)	49.1	50.6	58.4	51.6	55.7
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.2	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	114	132	134	130	135
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	73	82	79	81	83
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	104	400	172	168	100
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	33	35	35	33	35
Manganese-T (µg/l)	17	43	30	21	16
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	18	23	19	25	21
Strontium-T (µg/l)	1060	1250	1280	1260	1250
Zinc-T (µg/l)	10 K	45	10 K	10 K	10 K
Hardness (mg/l CaCO3)	318	349	341	338	351

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #37 BANTAS CREEK @ SR 503

Twin Creek Watershed (WAU:05080002-040)

River Mile: 1.30 Storet: H08S26

	07/12/2005	Duplicate A	07/26/2005	Duplicate A	08/09/2005	Duplicate A	09/06/2005	Duplicate A	09/14/2005
Time	1000		0920		0840		0950		0945
Temp(C)	25.00		25.00		21.50		16.90		19.30
D.O. (mg/l)	7.00		6.00		7.42		8.98		7.28
D.O. Sat (%)					84.10		93.90		79.40
pH (fld) (SU)	8.00		8.02		8.00		8.39		7.88
pH (lab) (SU)									
Sp Cond (fld) (µmhos/cm)									
Sp Cond (lab) (µmhos/cm)	617		636		614		669		614
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K		10 K		10 K		10 K		10 K
Alkalinity (mg/l)	249		262		244		269		243
Acidity (mg/l)	5 K		5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.057		0.073		0.071		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	0.94		0.74		0.63		0.47		0.10 K
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.29		0.21		0.29		0.28		0.26
Phosphorus-T (mg/l)	0.010 K		0.010 K		0.010 K		0.013		0.010 K
Phosphorus-Dis (mg/l)									
TDS (mg/l)	350		374		350		398		364
TSS (mg/l)	5 K		5 K		5 K		5 K		5 K
Chloride (mg/l)	38.4		42.3		39.4		53.0		45.0
Sulfate (mg/l)	43.8		44.4		45.6		45.0		44.9
Aluminum-T (µg/l)	200 K		200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.4
Barium-T (µg/l)	96		107		107		110		107
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	64		70		68		75		66
Chromium-T (µg/l)	30 K		30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Iron-T (µg/l)	62		64		93		54		81
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	31		32		31		31		33
Manganese-T (µg/l)	10 K		10 K		10		10 K		10 K
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K		40 K		40 K
Potassium-T (mg/l)	2		3		3		3		3
Selenium-T (µg/l)	2 K		2 K		2 K		2 K		2 K
Sodium-T (mg/l)	17		19		17		25		22
Strontium-T (µg/l)	983		1030		1030		1050		1010
Zinc-T (µg/l)	10 K		10 K		10 K		10 K		10 K
Hardness (mg/l CaCO3)	287		306		297		315		301

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #37 BANTAS CREEK @ SR 503 (continued)

Twin Creek Watershed (WAU:05080002-040)

River Mile: 1.30 Storet: H08S26

Duplicate B	07/26/2005	Duplicate B	08/09/2005	Duplicate B	09/06/2005	Duplicate B	09/14/2005
Time	0920		0840		0950		0945
Temp(C)							
D.O. (mg/l)							
D.O. Sat (%)							
pH (fld) (SU)							
pH (lab) (SU)							
Sp Cond (fld) (µmhos/cm)							
Sp Cond (lab) (µmhos/cm)	639		615		670		614
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K		10 K		10 K		10 K
Alkalinity (mg/l)	259		244		271		242
Acidity (mg/l)	5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.075		0.067		0.050 K		0.050 K
Nitrate-Nitrite-N (mg/l)	0.71		0.50		0.41		0.10 K
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.20 K		0.27		0.29		0.30
Phosphorus-T (mg/l)	0.010 K		0.010 K		0.014		0.010 K
Phosphorus-Dis (mg/l)							
TDS (mg/l)	384		354		396		354
TSS (mg/l)	5 K		5 K		5 K		5 K
Chloride (mg/l)	42.6		39.2		52.5		46.0
Sulfate (mg/l)	46.9		45.8		44.9		48.2
Aluminum-T (µg/l)	200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K
Barium-T (µg/l)	110		104		106		106
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	71		67		72		65
Chromium-T (µg/l)	30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K		10 K
Iron-T (µg/l)	164		90		57		119
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	32		31		30		32
Manganese-T (µg/l)	15		10		10 K		10
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K		40 K
Potassium-T (mg/l)	3		3		3		3
Selenium-T (µg/l)	2 K		2 K		2 K		2 K
Sodium-T (mg/l)	19		17		23		22
Strontium-T (µg/l)	1040		1010		995		989
Zinc-T (µg/l)	10 K		10 K		10 K		10 K
Hardness (mg/l CaCO3)	309		295		303		294

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #38 GOOSE CREEK @ SCHEYHING RD (WEST OF LEWISBURG)

Twin Creek Watershed (WAU:05080002-040)

River Mile: 4.40 Storet: H08W25

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1240	1115	1210	1235	1100
Temp(C)	21.70	25.00	22.00	18.90	19.30
D.O. (mg/l)	4.50	4.40	2.10	5.25	4.12
D.O. Sat (%)				62.80	45.00
pH (fld) (SU)	7.78	7.86	8.01	7.91	7.62
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	1600	1440	1570	1610	1800
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	106	22	30	19	18
Alkalinity (mg/l)	328	312	277	278	268
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.151	0.200	0.196	0.132	0.123
Nitrate-Nitrite-N (mg/l)	0.52	0.52	0.17	1.05	2.16
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.022	0.031
TKN (mg/l)	0.89	1.09	1.82	1.32	1.15
Phosphorus-T (mg/l)	0.417	0.700	0.974	0.503	0.595
Phosphorus-Dis (mg/l)					
TDS (mg/l)	902	820	882	912	1020
TSS (mg/l)	6	16	8	5 K	5 K
Chloride (mg/l)	326.0	302.0	358.0	365.0	425.0
Sulfate (mg/l)	48.7	42.8	43.8	53.1	50.9
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	6.1	7.7	8.9	5.2	5.0
Barium-T (µg/l)	94	152	84	97	105
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	88	85	74	86	84
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	254	125	461	171	368
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	41	36	33	34	35
Manganese-T (µg/l)	96	18	221	62	80
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	6	3	11	8	10
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	168	15	207	197	274
Strontium-T (µg/l)	1840	4990	2260	1990	2470
Zinc-T (µg/l)	10 K	10	10 K	10 K	10 K
Hardness (mg/l CaCO3)	388	360	321	355	354

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #39 GOOSE CREEK @ EATON-LEWISBURG RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.27 Storet: H08K16

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1050	1015	1020	1110	1300
Temp(C)	20.00	25.00	20.70	17.70	18.90
D.O. (mg/l)	7.20	6.00	6.12	7.62	6.25
D.O. Sat (%)			68.40	80.30	67.30
pH (fld) (SU)	7.98	7.82	7.78	8.14	7.70
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	669	684	663	687	689
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	288	290	275	290	291
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.075	0.080	0.078	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	1.67	1.01	0.68	0.42	0.41
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.25	0.24	0.24	0.25
Phosphorus-T (mg/l)	0.010 K	0.016	0.010 K	0.027	0.092
Phosphorus-Dis (mg/l)					
TDS (mg/l)	376	376	382	402	404
TSS (mg/l)	5 K	7	7	5 K	5 K
Chloride (mg/l)	37.6	45.7	38.1	48.8	42.9
Sulfate (mg/l)	38.9	40.5	43.3	40.6	40.9
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	92	100	101	92	100
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	78	81	82	81	86
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	132	158	177	142	70
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	32	33	33	30	32
Manganese-T (µg/l)	17	28	21	23	26
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	17	21	16	24	22
Strontium-T (µg/l)	429	441	419	398	378
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO ₃)	326	338	341	326	346

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #40 AUKERMAN CREEK @ KETTERMAN RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 3.36 Storet: H08K17

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0950	1010	1025	1010	0945
Temp(C)	20.80	24.00	20.83	17.14	18.56
D.O. (mg/l)	6.80	6.65	6.62	7.01	6.34
D.O. Sat (%)			74.20		67.30
pH (fld) (SU)	8.02	8.09	8.02	7.85	7.81
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			693		
Sp Cond (lab) (µmhos/cm)	717	711	691	727	723
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	284	283	254	267	269
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.079	0.057	0.057	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.99	1.78	0.31	0.52	0.10 K
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.20 K	0.20 K	0.31	0.25
Phosphorus-T (mg/l)	0.081	0.119	0.107	0.127	0.169
Phosphorus-Dis (mg/l)					
TDS (mg/l)	420	422	404	444	444
TSS (mg/l)	5 K	19	8	37	9
Chloride (mg/l)	36.0	44.2	44.0	45.3	44.7
Sulfate (mg/l)	67.1	62.1	74.9	79.3	82.9
Aluminum-T (µg/l)	200 K	341	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0	2.2	2.8
Barium-T (µg/l)	87	103	88	92	100
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	90	97	87	88	92
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	295	820	439	73	136
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	38	35	33	37
Manganese-T (µg/l)	15	42	37	34	54
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	3	4	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	13	17	16	19	18
Strontium-T (µg/l)	1100	1160	1180	1230	1400
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	373	399	361	356	382

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #41 AUKERMAN CREEK ADJACENT SWARTSEL RD, UPSTREAM SANDY RUN

Twin Creek Watershed (WAU:05080002-040)

River Mile: 1.80 Storet: H08K18

	07/12/2005	07/26/2005	Duplicate A	08/09/2005	Duplicate A	09/06/2005	Duplicate A	09/14/2005
Time	1015	0925		1045		0945		0915
Temp(C)	20.70	23.50		21.17		17.10		18.48
D.O. (mg/l)	9.30	7.07		7.52		8.56		7.59
D.O. Sat (%)				84.70				81.20
pH (fld) (SU)	8.16	7.85		8.03		7.99		7.91
pH (lab) (SU)								
Sp Cond (fld) (µmhos/cm)				627				
Sp Cond (lab) (µmhos/cm)	671	657		622		662		662
BOD5 (mg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K	10 K		10 K		10 K		10 K
Alkalinity (mg/l)	296	290		266		301		306
Acidity (mg/l)	5 K	5 K		5 K		5 K		5 K
Ammonia-N (mg/l)	0.063	0.071		0.077		0.050		0.050 K
Nitrate-Nitrite-N (mg/l)	2.14	1.10		0.58		0.65		0.31
Nitrite-N (mg/l)	0.020 K	0.020 K		0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.24	0.20 K		0.20 K		0.24		0.20 K
Phosphorus-T (mg/l)	0.013	0.025		0.014		0.052		0.089
Phosphorus-Dis (mg/l)								
TDS (mg/l)	388	388		366		404		394
TSS (mg/l)	5 K	11		5 K		5 K		5 K
Chloride (mg/l)	23.2	27.5		24.1		22.1		21.7
Sulfate (mg/l)	55.7	54.1		57.9		50.5		54.0
Aluminum-T (µg/l)	200 K	200 K		200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
Barium-T (µg/l)	128	84		148		167		182
Cadmium-T (µg/l)	0.20 K	0.20 K		0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	80	83		74		81		82
Chromium-T (µg/l)	30 K	30 K		30 K		30 K		30 K
Copper-T (µg/l)	10 K	10 K		10 K		10 K		10 K
Iron-T (µg/l)	68	298		102		186		113
Lead-T (µg/l)	2.0 K	2.0 K		2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	34	36		32		33		36
Manganese-T (µg/l)	12	240		14		19		14
Mercury-T (µg/l)	0.2 K	0.2 K		0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K	40 K		40 K		40 K		40 K
Potassium-T (mg/l)	2	7		3		3		3
Selenium-T (µg/l)	2 K	2 K		2 K		2 K		2 K
Sodium-T (mg/l)	12	164		13		15		16
Strontium-T (µg/l)	4310	1830		5480		6030		7620
Zinc-T (µg/l)	10 K	10 K		10 K		10 K		10 K
Hardness (mg/l CaCO ₃)	340	355		316		338		353

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #41 AUKERMAN CREEK ADJACENT SWARTSEL RD, UPSTREAM SANDY RUN (continued) Twin Creek Watershed (WAU:05080002-040)
 River Mile: 1.80 Storet: H08K18

Duplicate B	08/09/2005	Duplicate B	09/06/2005	Duplicate B	09/14/2005
Time	1045		0945		0915
Temp(C)					
D.O. (mg/l)					
D.O. Sat (%)					
pH (fld) (SU)					
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	622		662		660
BOD5 (mg/l)	2.0 K		2.0 K		2.0 K
COD (mg/l)	10 K		10 K		
Alkalinity (mg/l)	267		302		305
Acidity (mg/l)	5 K		5 K		5 K
Ammonia-N (mg/l)	0.080		0.050 K		
Nitrate-Nitrite-N (mg/l)	0.69		0.69		
Nitrite-N (mg/l)	0.020 K		0.020 K		0.020 K
TKN (mg/l)	0.20 K		0.20 K		
Phosphorus-T (mg/l)	0.010 K		0.050		
Phosphorus-Dis (mg/l)					
TDS (mg/l)	352		400		396
TSS (mg/l)	5 K		5 K		5 K
Chloride (mg/l)	24.5		22.2		21.6
Sulfate (mg/l)	57.7		50.7		53.2
Aluminum-T (µg/l)	200 K		200 K		200 K
Arsenic-T (µg/l)	2.0 K		2.4		2.0 K
Barium-T (µg/l)	150		172		173
Cadmium-T (µg/l)	0.20 K		0.20 K		0.20 K
Calcium-T (mg/l)	76		84		78
Chromium-T (µg/l)	30 K		30 K		30 K
Copper-T (µg/l)	10 K		10 K		10 K
Iron-T (µg/l)	127		260		100
Lead-T (µg/l)	2.0 K		2.0 K		2.0 K
Magnesium-T (mg/l)	32		34		35
Manganese-T (µg/l)	15		25		13
Mercury-T (µg/l)	0.2 K		0.2 K		0.2 K
Nickel-T (µg/l)	40 K		40 K		40 K
Potassium-T (mg/l)	3		3		3
Selenium-T (µg/l)	2 K		2 K		2 K
Sodium-T (mg/l)	14		15		15
Strontium-T (µg/l)	5330		5800		7100
Zinc-T (µg/l)	10 K		10 K		10 K
Hardness (mg/l CaCO3)	322		350		339

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #42 AUKERMAN CREEK @ FUDGE RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.55 Storet: H08K19

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1045	1045	1105	1050	1020
Temp(C)	21.80	25.20	22.76	18.37	18.88
D.O. (mg/l)	9.50	10.50	8.94	9.92	8.14
D.O. Sat (%)			103.90		87.60
pH (fld) (SU)	8.18	8.17	8.14	8.05	7.92
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			623		
Sp Cond (lab) (µmhos/cm)	672	638	621	678	676
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	288	276	265	302	303
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.066	0.050	0.056	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.53	1.34	1.23	1.47	1.05
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.20 K	0.23	0.25	0.20 K
Phosphorus-T (mg/l)	0.010	0.010 K	0.016	0.042	0.076
Phosphorus-Dis (mg/l)					
TDS (mg/l)	384	378	358	404	396
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	25.8	29.8	26.1	27.5	27.7
Sulfate (mg/l)	52.1	50.5	53.7	49.3	52.2
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	113	120	117	132	136
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	81	80	74	85	85
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	50 K	50 K	55	55	50 K
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	34	35	31	34	36
Manganese-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	2	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	13	15	13	16	16
Strontium-T (µg/l)	2840	2920	3290	3670	4030
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO ₃)	342	344	312	352	360

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #43 TRIBUTARY TO AUKERMAN CREEK (RM 2.88) @ AUKERMAN CREEK RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.55 Storet: H08K20

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0935	1020	1010	1025	0955
Temp(C)	19.70	23.00	20.28	17.34	18.49
D.O. (mg/l)	7.40	6.84	7.00	8.06	7.77
D.O. Sat (%)			77.60		81.20
pH (fld) (SU)	7.74	7.91	7.88	7.85	7.71
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)			696		
Sp Cond (lab) (µmhos/cm)	714	714	690	720	720
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	310	321	302	332	332
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.071	0.069	0.076	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	1.01	0.52	0.37	0.35	0.31
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.27	0.20 K	0.20 K	0.20 K
Phosphorus-T (mg/l)	0.062	0.010 K	0.013	0.022	0.037
Phosphorus-Dis (mg/l)					
TDS (mg/l)	420	400	416	450	440
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	18.4	20.8	19.0	15.9	16.1
Sulfate (mg/l)	69.7	72.6	75.8	72.5	76.1
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	120	138	134	138	150
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	86	92	87	90	92
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	130	209	157	102	88
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	39	36	36	39
Manganese-T (µg/l)	13	27	27	19	16
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	12	14	12	13	14
Strontium-T (µg/l)	7260	7970	8140	9610	9610
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	363	390	365	373	390

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #45 TOMS RUN @ AMITY RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 12.00 Storet: H08K22

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0855	1230	1330	1345	1445
Temp(C)	21.50	25.20	22.10	22.50	22.10
D.O. (mg/l)	2.50	2.00	1.82	9.05	6.83
D.O. Sat (%)			52.00	105.00	78.60
pH (fld) (SU)	7.68	7.50	7.80	7.98	7.87
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	724	751	701	853	810
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	23	13	13	19	16
Alkalinity (mg/l)	283	290	258	235	245
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.174	0.402	0.450	0.114	0.098
Nitrate-Nitrite-N (mg/l)	1.70	0.51	0.10 K	6.44	5.22
Nitrite-N (mg/l)	0.050	0.034	0.020 K	0.099	0.115
TKN (mg/l)	0.43	1.22	0.97	1.27	1.07
Phosphorus-T (mg/l)	0.104	0.182	0.145	0.072	0.170
Phosphorus-Dis (mg/l)					
TDS (mg/l)	410	444	412	532	480
TSS (mg/l)	5 K	12	10	5 K	6
Chloride (mg/l)	53.1	66.4	67.2	101.0	91.2
Sulfate (mg/l)	41.8	38.6	34.9	69.1	50.9
Aluminum-T (µg/l)	200 K	380	200 K	200 K	200 K
Arsenic-T (µg/l)	2.2	6.1	8.9	2.6	4.0
Barium-T (µg/l)	70	84	69	90	86
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	71	79	65	76	74
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	206	799	356	219	354
Lead-T (µg/l)	2.0 K	6.0	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	38	37	36	35
Manganese-T (µg/l)	146	518	536	48	73
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	3	6	6
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	24	32	29	49	43
Strontium-T (µg/l)	1100	1210	1050	1310	1230
Zinc-T (µg/l)	10 K	12	10 K	11	10 K
Hardness (mg/l CaCO3)	326	354	315	338	329

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #46 TOMS RUN @ BULL RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 8.50 Storet: H08W23

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	0830	1250	1305	1415	1500
Temp(C)	21.00	28.30	23.50	20.60	20.90
D.O. (mg/l)	4.80	5.50	4.15	5.74	8.31
D.O. Sat (%)			48.00	62.50	82.90
pH (fld) (SU)	7.61	7.73	7.94	7.93	7.93
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)					
Sp Cond (lab) (µmhos/cm)	712	647	701	650	622
BOD5 (mg/l)	2.0 K	2.0 K	3.3	2.0 K	2.6
COD (mg/l)	10 K	13	13	16	16
Alkalinity (mg/l)	275	249	268	188	192
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.123	0.129	0.172	0.070	0.050 K
Nitrate-Nitrite-N (mg/l)	0.56	0.19	0.10 K	4.82	0.10 K
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.044	0.020 K
TKN (mg/l)	0.48	0.52	0.67	0.87	0.73
Phosphorus-T (mg/l)	0.051	0.106	0.047	0.105	0.088
Phosphorus-Dis (mg/l)					
TDS (mg/l)	402	394	400	396	372
TSS (mg/l)	6	11	9	10	9
Chloride (mg/l)	61.4	58.7	65.1	68.9	63.3
Sulfate (mg/l)	37.6	31.7	26.6	55.8	54.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.2	4.3	6.4	2.8	4.2
Barium-T (µg/l)	61	68	68	70	65
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	65	66	68	64	60
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	174	423	406	244	181
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	32	31	30	25	27
Manganese-T (µg/l)	73	342	292	34	57
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	4	6	6
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	30	30	37	34	35
Strontium-T (µg/l)	1140	1140	1510	1070	1100
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO3)	294	292	293	263	261

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #47 TOM'S RUN ADJACENT ANTHONY RD (NEAR MOUTH)

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.11 Storet: H08K01

	07/12/2005	07/21/2005	07/26/2005	08/09/2005	08/23/2005
Time	1235	0945	1200	1255	1030
Temp(C)	25.00		23.10	20.64	
D.O. (mg/l)	8.60		7.50	9.16	
D.O. Sat (%)				102.20	
pH (fld) (SU)	8.22		8.06	7.88	
pH (lab) (SU)					
Sp Cond (fld) (µmhos/cm)				662	
Sp Cond (lab) (µmhos/cm)	653	634	650	659	648
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	278	257	279	271	279
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.063	0.091	0.051	0.052	0.099
Nitrate-Nitrite-N (mg/l)	2.02	1.56	1.65	1.47	1.61
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.22
Phosphorus-T (mg/l)	0.171	0.010 K	0.010 K	0.011	0.010
Phosphorus-Dis (mg/l)					
TDS (mg/l)	368	370	376	380	394
TSS (mg/l)	13	5 K	6	35	5 K
Chloride (mg/l)	35.9	37.6	37.3	37.0	32.8
Sulfate (mg/l)	39.9	37.0	42.0	50.3	38.4
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	88	83	96	108	114
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	74	73	80	82	82
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	50 K	50 K	77	120	50 K
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	31	30	33	33	31
Manganese-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	2
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	16	17	17	16	15
Strontium-T (µg/l)	840	889	890	876	812
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	19
Hardness (mg/l CaCO3)	312	306	336	341	332

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #47 TOM'S RUN ADJACENT ANTHONY RD (NEAR MOUTH) (continued)

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.11 Storet: H08K01

	09/06/2005	09/14/2005
Time	1220	1200
Temp(C)	17.49	18.83
D.O. (mg/l)	8.99	10.59
D.O. Sat (%)		113.80
pH (fld) (SU)	7.76	7.99
pH (lab) (SU)		
Sp Cond		
Sp Cond	675	656
BOD5 (mg/l)	2.0 K	2.0 K
COD (mg/l)	10 K	10 K
Alkalinity (mg/l)	288	284
Acidity (mg/l)	5 K	5 K
Ammonia-N (mg/l)	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	1.15	1.48
Nitrite-N (mg/l)	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.20 K
Phosphorus-T (mg/l)	0.010 K	0.059
Phosphorus-Dis (mg/l)		
TDS (mg/l)	388	380
TSS (mg/l)	8	5 K
Chloride (mg/l)	40.3	35.2
Sulfate (mg/l)	41.7	42.9
Aluminum-T (µg/l)	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K
Barium-T (µg/l)	96	135
Cadmium-T (µg/l)	0.20 K	0.20 K
Calcium-T (mg/l)	74	88
Chromium-T (µg/l)	30 K	30 K
Copper-T (µg/l)	10 K	10 K
Iron-T (µg/l)	50 K	50 K
Lead-T (µg/l)	2.0 K	2.0 K
Magnesium-T (mg/l)	31	32
Manganese-T (µg/l)	10 K	10 K
Mercury-T (µg/l)	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K
Potassium-T (mg/l)	3	2
Selenium-T (µg/l)	2 K	2 K
Sodium-T (mg/l)	20	15
Strontium-T (µg/l)	835	845
Zinc-T (µg/l)	10 K	10 K
Hardness (mg/l CaCO3)	312	352

K = less than

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #48 LITTLE TWIN CREEK @ HEMPLE RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 6.20 Storet: H08S22

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1355	1310	1345	1330	1315
Temp(C)	21.10	24.40	23.00	18.96	18.97
D.O. (mg/l)	7.96	8.21	9.30	5.63	4.20
D.O. Sat (%)	89.50	98.50		60.70	45.40
pH (fld) (SU)	8.13	7.94		7.66	7.57
pH (lab) (SU)			7.94		
Sp Cond (fld) (µmhos/cm)		761		793	805
Sp Cond (lab) (µmhos/cm)	759	742	784	771	795
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	325	315	327	312	332
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.067	0.054	0.072	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.21	1.73	1.60	1.04	0.73
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.23	0.24	0.30	0.35	0.31
Phosphorus-T (mg/l)	0.025	0.014	0.010 K	0.025	0.094
Phosphorus-Dis (mg/l)					
TDS (mg/l)	444	442	478	472	598
TSS (mg/l)	5 K	5 K	12	5 K	5 K
Chloride (mg/l)	42.7	48.7	56.5	58.7	51.6
Sulfate (mg/l)	47.9	47.9	59.0	55.4	56.2
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.1	2.0 K	2.3
Barium-T (µg/l)	77	76	85	75	78
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	90	88	97	89	92
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	105	77	269	165	182
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	35	38	35	36
Manganese-T (µg/l)	15	21	33	31	77
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	4
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	20	22	27	31	27
Strontium-T (µg/l)	1770	1840	2120	2110	2120
Zinc-T (µg/l)	10 K	10 K	10 K	14	10 K
Hardness (mg/l CaCO3)	373	364	399	366	378

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #49 LITTLE TWIN CREEK @ FARMERSVILLE-WEST CARROLLTON RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 4.70 Storet: H08P02

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1220	1135	1230	1205	1215
Temp(C)	22.80	25.68	22.00	18.06	19.42
D.O. (mg/l)	7.61	5.66	7.00	6.21	5.60
D.O. Sat (%)	82.00	69.60		65.90	61.10
pH (fld) (SU)	8.26	8.09		7.91	7.88
pH (lab) (SU)			8.24		
Sp Cond (fld) (µmhos/cm)		843		907	881
Sp Cond (lab) (µmhos/cm)	857	821	904	919	881
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	10	13	10	10 K
Alkalinity (mg/l)	303	270	300	280	278
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.077	0.079	0.088	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.87	1.72	0.86	0.73	1.55
Nitrite-N (mg/l)	0.022	0.029	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.37	0.54	0.81	0.67	0.59
Phosphorus-T (mg/l)	0.097	0.097	0.227	0.189	0.150
Phosphorus-Dis (mg/l)		0.074	0.215		
TDS (mg/l)	506	472	528	528	508
TSS (mg/l)	5 K	5 K	5 K	5	5 K
Chloride (mg/l)	78.8	88.7	102.0	112.0	103.0
Sulfate (mg/l)	45.7	45.4	57.6	47.4	47.4
Aluminum-T (µg/l)	200 K	200 K	200 K	368	200 K
Arsenic-T (µg/l)	2.1	3.3	4.5	3.9	4.0
Barium-T (µg/l)	101	98	108	119	110
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	81	75	78	80	73
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	104	67	117	567	152
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	33	35	32	30
Manganese-T (µg/l)	10 K	18	17	41	25
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	4	5	5	5	6
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	47	56	70	72	67
Strontium-T (µg/l)	2040	2220	2780	2750	2710
Zinc-T (µg/l)	10 K	10 K	10 K	64	10 K
Hardness (mg/l CaCO3)	350	323	339	332	306

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #50 LITTLE TWIN CREEK @ LITTLE TWIN RD

Twin Creek Watershed (WAU:05080002-040)

River Mile: 2.00 Storet: H08Q01

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1200	1055	1215	1140	1135
Temp(C)	19.40	21.38	19.50	16.86	17.88
D.O. (mg/l)	9.59	6.94	9.20	8.22	7.63
D.O. Sat (%)	104.10	78.60		85.00	80.50
pH (fld) (SU)	8.03	7.80		7.79	7.78
pH (lab) (SU)			7.99		
Sp Cond (fld) (µmhos/cm)		755		744	754
Sp Cond (lab) (µmhos/cm)	753	743	740	754	751
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	10 K	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	293	302	282	300	311
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.060	0.050	0.050 K	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	1.15	1.64	0.79	0.67	0.65
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Phosphorus-T (mg/l)	0.010 K	0.010 K	0.010 K	0.029	0.022
Phosphorus-Dis (mg/l)					
TDS (mg/l)	452	450	440	446	440
TSS (mg/l)	5 K	5 K	5 K	5 K	5 K
Chloride (mg/l)	44.6	46.0	44.7	45.7	45.2
Sulfate (mg/l)	62.3	64.2	64.5	65.0	67.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Barium-T (µg/l)	127	129	135	136	134
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	88	88	92	93	90
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	79	73	81	69	65
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	35	37	37	36
Manganese-T (µg/l)	18	15	12	14	11
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	3	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	20	19	19	21	20
Strontium-T (µg/l)	869	882	882	930	887
Zinc-T (µg/l)	10 K	10 K	10 K	11	10 K
Hardness (mg/l CaCO3)	368	364	382	384	373

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #51 REIGLE DITCH UPSTREAM WET WEATHER BYPASS, UPSTREAM PUMP STATION

Twin Creek Watershed (WAU:05080002-040)

River Mile: 1.20 Storet: H08K27

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1335	1250	1325	1305	1300
Temp(C)	22.10	29.50	30.00	23.63	20.58
D.O. (mg/l)	8.15	10.08	19.00	13.99	7.07
D.O. Sat (%)	93.90	132.40		165.30	78.80
pH (fld) (SU)	8.17	8.06		8.07	7.66
pH (lab) (SU)			8.43		
Sp Cond (fld) (µmhos/cm)		707		703	685
Sp Cond (lab) (µmhos/cm)	755	686	739	704	677
BOD5 (mg/l)	2.0 K	2.0 K	4.2	2.2	2.0 K
COD (mg/l)	10 K	13	22	10	10
Alkalinity (mg/l)	308	260	255	250	270
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.072	0.090	0.119	0.053	0.050 K
Nitrate-Nitrite-N (mg/l)	3.00	3.01	0.10 K	0.10 K	0.10 K
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.25	0.45	1.10	0.57	0.58
Phosphorus-T (mg/l)	0.038	0.082	0.116	0.051	0.103
Phosphorus-Dis (mg/l)					
TDS (mg/l)	440	406	428	414	366
TSS (mg/l)	5 K	8	14	6	30
Chloride (mg/l)	49.2	57.6	80.5	63.9	56.9
Sulfate (mg/l)	47.6	47.9	29.1	51.6	33.8
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	629
Arsenic-T (µg/l)	2.0 K	2.1	6.6	4.0	4.6
Barium-T (µg/l)	68	69	76	86	87
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	83	72	66	73	80
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	123	286	450	342	1250
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	31	34	30	28
Manganese-T (µg/l)	10	26	304	141	193
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	4	5	5
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	21	26	38	36	32
Strontium-T (µg/l)	1630	1530	1610	1680	1280
Zinc-T (µg/l)	10 K	10 K	11	10 K	10 K
Hardness (mg/l CaCO3)	355	307	305	306	315

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #52 REIGLE DITCH UPSTREAM FARMERSVILLE WWTP

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.50 Storet: H08S25

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1310	1225	1300	1240	1235
Temp(C)	21.90	26.64	25.00	19.66	19.42
D.O. (mg/l)	8.54	8.56	11.60	8.49	6.54
D.O. Sat (%)	97.10	106.90		93.00	71.20
pH (fld) (SU)	8.36	8.33		8.10	7.86
pH (lab) (SU)			8.52		
Sp Cond (fld) (µmhos/cm)		715		841	827
Sp Cond (lab) (µmhos/cm)	973	699	743	857	821
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	12	10 K	10 K	10 K	10 K
Alkalinity (mg/l)	301	260	278	233	207
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.061	0.050	0.053	0.050 K	0.050 K
Nitrate-Nitrite-N (mg/l)	2.07	0.89	0.10 K	0.42	0.16
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.22	0.36	0.31	0.48	0.40
Phosphorus-T (mg/l)	0.153	0.044	0.030	0.054	0.066
Phosphorus-Dis (mg/l)					
TDS (mg/l)	556	408	422	476	478
TSS (mg/l)	5 K	5 K	5 K	5 K	6
Chloride (mg/l)	104.0	63.0	65.0	122.0	127.0
Sulfate (mg/l)	51.4	41.6	41.7	39.2	34.3
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	231
Arsenic-T (µg/l)	2.0 K	2.0 K	2.4	2.4	2.4
Barium-T (µg/l)	81	80	77	78	72
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	88	75	76	71	63
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	103	182	92	182	259
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	36	31	32	28	24
Manganese-T (µg/l)	10 K	16	14	18	32
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	3	4	3	3	3
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	28	33	34	65	66
Strontium-T (µg/l)	1620	1700	1810	1820	1580
Zinc-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Hardness (mg/l CaCO ₃)	368	315	322	292	256

Appendix Table A-1. Twin Creek Watershed Inorganic Water Chemistry Sampling Results (2005)

Site Location: #53 REIGLE DITCH DOWNSTREAM FARMERSVILLE WWTP

Twin Creek Watershed (WAU:05080002-040)

River Mile: 0.30 Storet: H08K28

	07/12/2005	07/26/2005	08/09/2005	09/06/2005	09/14/2005
Time	1255	1205	1250	1225	1230
Temp(C)	22.50	26.09	24.00	21.76	21.46
D.O. (mg/l)	13.17	14.50	17.00	11.15	9.59
D.O. Sat (%)	151.60	179.60		127.30	109.00
pH (fld) (SU)	8.35	8.53		8.13	8.10
pH (lab) (SU)			8.49		
Sp Cond (fld) (µmhos/cm)		1090		1250	1272
Sp Cond (lab) (µmhos/cm)	777	1070	1240	1260	1250
BOD5 (mg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
COD (mg/l)	14	10	13	10	10 K
Alkalinity (mg/l)	304	309	304	311	298
Acidity (mg/l)	5 K	5 K	5 K	5 K	5 K
Ammonia-N (mg/l)	0.083	0.074	0.102	0.052	0.050 K
Nitrate-Nitrite-N (mg/l)	3.64	3.75	4.38	5.85	9.36
Nitrite-N (mg/l)	0.020 K	0.020 K	0.020 K	0.020 K	0.020 K
TKN (mg/l)	0.57	0.92	1.53	1.11	0.93
Phosphorus-T (mg/l)	0.391	0.659	0.300	1.180	1.010
Phosphorus-Dis (mg/l)					
TDS (mg/l)	442	624	708	724	714
TSS (mg/l)	5 K	5 K	15	5	5
Chloride (mg/l)	57.1	141.0	173.0	190.0	183.0
Sulfate (mg/l)	42.2	50.1	56.0	52.4	60.9
Aluminum-T (µg/l)	200 K	200 K	200 K	200 K	200 K
Arsenic-T (µg/l)	3.5	5.0	6.2	6.1	7.8
Barium-T (µg/l)	155	199	227	229	227
Cadmium-T (µg/l)	0.20 K	0.20 K	0.20 K	0.20 K	0.20 K
Calcium-T (mg/l)	80	81	81	87	83
Chromium-T (µg/l)	30 K	30 K	30 K	30 K	30 K
Copper-T (µg/l)	10 K	10 K	10 K	10 K	10 K
Iron-T (µg/l)	156	218	248	171	129
Lead-T (µg/l)	2.0 K	2.0 K	2.0 K	2.0 K	2.0 K
Magnesium-T (mg/l)	33	33	34	35	34
Manganese-T (µg/l)	14	19	24	18	14
Mercury-T (µg/l)	0.2 K	0.2 K	0.2 K	0.2 K	0.2 K
Nickel-T (µg/l)	40 K	40 K	40 K	40 K	40 K
Potassium-T (mg/l)	5	6	8	8	9
Selenium-T (µg/l)	2 K	2 K	2 K	2 K	2 K
Sodium-T (mg/l)	75	106	131	145	133
Strontium-T (µg/l)	3710	4680	5510	5110	5750
Zinc-T (µg/l)	10 K	15	36	27	22
Hardness (mg/l CaCO3)	336	338	342	361	347

Appendix Table A-2. Twin Creek Watershed Bacteriological Water Sampling Results (2005)

Twin Creek Watershed		(WAU 05080002-030)				
Storet ID	Location	Rivermile	Date	Time	Fecal coliform (#/100 ml)	E. coli (#/100 ml)
H08S01	# 3 TWIN CREEK @ EAST LOCK RD	38.00	09/08/2005	1035	440	170JL
			09/09/2005	1000	800JL	380
			09/12/2005	1005	100JL	90JL
			09/21/2005	1020	1000JL, J	380J
			09/22/2005	1015	330	110JL
H08W22	# 4 TWIN CREEK DOWNSTREAM SWAMP CREEK	35.50	09/08/2005	0945	360	150JL
			09/09/2005	0920	4200	2100
			09/12/2005	1050	320	180JL
			09/21/2005	0945	910JL	560
			09/22/2005	1105	370	200
H08S07	# 5 TWIN CREEK DOWNSTREAM LEWISBURG WWTP, UPSTREAM SALEM RD	34.90	09/08/2005	0915	250	190JL
			09/09/2005	0850	30000	6500
			09/12/2005	0935	580	370
			09/21/2005	0915	1700JL	640
			09/22/2005	0955	630JL	270
H08W21	# 6 TWIN CREEK DOWNSTREAM IAMS & AKEY OUTFALLS	33.60	09/08/2005	0900	170JL	160JL
			09/09/2005	0900	14000JL	13000JL
			09/12/2005	0945	270	160JL
			09/21/2005	0915	680JL	400
			09/22/2005	1020	390	140JL
H08S06	# 7 TWIN CREEK UPSTREAM PYRMONT ROAD	31.70	09/08/2005	1110	120JL	60JL
			09/09/2005	1015	700JL	440
			09/12/2005	0920	140JL	130JL
			09/21/2005	1025	640JL	390
			09/22/2005	0915	230	160JL
H08W19	# 8 TWIN CREEK ADJACENT STOTLER RD	27.50	09/08/2005	1030	170JL	100JL
			09/09/2005	1015	390	120JL
			09/12/2005	1010	30JL	40JL
			09/21/2005	0950	520	320
			09/22/2005	1030	330	200

Appendix Table A-2. Twin Creek Watershed Bacteriological Water Sampling Results (2005)

Twin Creek Watershed		(WAU 05080002-030)				
Storet ID	Location	Rivermile	Date	Time	Fecal coliform (#/100 ml)	E. coli (#/100 ml)
H08W20 # 9	TWIN CREEK DOWNSTREAM WEST ALEXANDRIA WWTP	26.70	09/09/2005	0955	1600JL	560
			09/12/2005	0955	970JL	690
			09/21/2005	0955	550	290
			09/22/2005	1052	280	140JL
H08K08 #23	MILLERS FORK @ GEORGETOWN-VERONA RD	3.95	09/08/2005	1020	240	40JL
			09/09/2005	0945	530	120JL
			09/12/2005	1020	560	320
			09/21/2005	1040	770JL	280J
			09/22/2005	1040	570	150JL
H08S33 #25	SWAMP CREEK @ US 40	0.20	09/08/2005	1000	280	230
			09/09/2005	0935	3800	1800JL
			09/12/2005	1100	470	270
			09/21/2005	0930	2000	1400JL
			09/22/2005	1120	480	80JL
H08W26 #27	PRICE CREEK @ PENCE-SHEWMAN RD, NEAR ELDORADO	13.70	09/08/2005	0940	360	310
			09/09/2005	0820	420	160JL
			09/12/2005	1110	190JL	100JL
			09/21/2005	0835	20000	23000
			09/22/2005	1045	1100JL	280
H08P03 #30	PRICE CREEK UPSTREAM SR 503	0.60	09/08/2005	1130	80JL	50JL
			09/09/2005	0945	640JL	160JL
			09/12/2005	0845	80JL	30JL
			09/21/2005	1100	2500	800
			09/22/2005	0845	420PT	150JL, P
H08K26 #32	LESLEY RUN @ US 35	3.56	09/08/2005	1020	230	1100JL
			09/09/2005	1005	5900	1800JL
			09/12/2005	1000	390	250
			09/21/2005	1010	720JL	410
			09/22/2005	1106	3900	200

Appendix Table A-2. Twin Creek Watershed Bacteriological Water Sampling Results (2005)

Twin Creek Watershed		(WAU 05080002-040)				
Storet ID	Location	Rivermile	Date	Time	Fecal coliform (#/100 ml)	E. coli (#/100 ml)
H08S03	#10 TWIN CREEK UPSTREAM HALDERMAN RD	23.90	09/08/2005	0930	220	70JL
			09/09/2005	0845	640JL	280
			09/12/2005	0930	90JL	70JL
			09/21/2005	0910	720JL	450
			09/22/2005	1005	330	170JL
H08S16	#11 TWIN CREEK @ ENTERPRISE RD, UPSTREAM GRATIS WWTP	19.20	09/08/2005	1000	220	210
			09/09/2005	0905	420	120JL
			09/12/2005	0945	140JL	50JL
			09/21/2005	1015	1800JL	930JL
			09/22/2005	1030	520	150JL
H08S14	#12 TWIN CREEK DOWNSTREAM GRATIS WWTP	18.29	09/08/2005	1010	110JL	90JL
			09/09/2005	0920	340	80JL
			09/12/2005	1200	20JL	30JL
			09/21/2005	1030	3000	1100JL
			09/22/2005	1040	360	100JL
H08W16	#14 TWIN CREEK @ USGS GAGE DOWNSTREAM GERMANTOWN DAM	9.80	09/08/2005	0915	70JL	30JL
			09/09/2005	0835	90JL	40JL
			09/12/2005	0905	90JL	40JL
			09/21/2005	0915	1500JL	860JL
			09/22/2005	0930	270	80JL
H08S26	#37 BANTAS CREEK @ SR 503	1.30	09/08/2005	0950	150JL	40JL
			09/09/2005	0945	1000JL	210
			09/12/2005	0942	200	80JL
			09/21/2005	0940	220	520
			09/22/2005	1020	130JL	50JL
H08W25	#38 GOOSE CREEK @ SCHEYHING RD (WEST OF LEWISBURG)	4.40	09/08/2005	1040	250	210
			09/09/2005	0930	7400JL	2400
			09/12/2005	1020	90JL	50JL
			09/21/2005	0955	470	150JL
			09/22/2005	0950	340	120JL

Appendix Table A-2. Twin Creek Watershed Bacteriological Water Sampling Results (2005)

Twin Creek Watershed		(WAU 05080002-040)				
Storet ID	Location	Rivermile	Date	Time	Fecal coliform (#/100 ml)	E. coli (#/100 ml)
H08K01	#47 TOM'S RUN ADJACENT ANTHONY RD (NEAR MOUTH)	0.11	09/08/2005	0940	100JL	70JL
			09/09/2005	0850	590	160JL
			09/12/2005	0925	140JL	80JL
			09/21/2005	0945	1000JL	870JL
			09/22/2005	1000	160JL	110JL
H08Q01	#50 LITTLE TWIN CREEK @ LITTLE TWIN RD	2.00	09/08/2005	0900	400	200
			09/09/2005	0820	830JL	350
			09/12/2005	0850	220	130JL
			09/21/2005	1130	530	250
			09/22/2005	0915	160JL	100JL

Appendix Table A-3. Datasonde© 48-Hour Continuous Recorder data from selected Twin Creek and tributary stations, July 2005.

Twin Creek RM 38.0 East Lock Road (Duplicate A)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	150000	1	23.31	9.31	0.591	93.0	7.78
071205	160000	2	23.74	9.18	0.587	101.5	8.42
071205	170000	3	23.76	9.19	0.589	93.8	7.78
071205	180000	4	23.55	9.14	0.595	87.3	7.27
071205	190000	5	23.33	9.05	0.596	78.7	6.57
071205	200000	6	23.12	8.95	0.597	72.2	6.06
071205	210000	7	22.93	8.89	0.599	71.4	6.01
071205	220000	8	22.73	8.79	0.600	63.4	5.36
071205	230000	9	22.50	8.78	0.600	61.5	5.22
071305	000000	10	22.32	8.72	0.599	61.6	5.25
071305	010000	11	22.21	8.62	0.598	59.2	5.05
071305	020000	12	22.06	8.60	0.597	59.3	5.08
071305	030000	13	21.91	8.57	0.596	57.2	4.92
071305	040000	14	21.82	8.57	0.595	57.4	4.94
071305	050000	15	21.73	8.55	0.595	57.6	4.96
071305	060000	16	21.64	8.48	0.595	55.4	4.79
071305	070000	17	21.55	8.47	0.595	54.4	4.71
071305	080000	18	21.44	8.52	0.595	58.1	5.03
071305	090000	19	21.42	8.53	0.594	59.4	5.15
071305	100000	20	21.39	8.48	0.590	59.1	5.13
071305	110000	21	21.39	8.49	0.589	60.0	5.20
071305	120000	22	21.35	8.53	0.587	64.2	5.57
071305	130000	23	21.39	8.53	0.589	65.9	5.72
071305	140000	24	21.47	8.58	0.588	73.6	6.37
071305	150000	25	21.62	8.58	0.587	76.0	6.56
071305	160000	26	21.67	8.58	0.587	76.1	6.57
071305	170000	27	21.72	8.66	0.588	77.3	6.66
071305	180000	28	22.00	8.62	0.586	81.5	6.99
071305	190000	29	22.08	8.76	0.585	80.3	6.87
071305	200000	30	21.89	8.68	0.588	71.6	6.15
071305	210000	31	21.78	8.65	0.588	65.1	5.60
071305	220000	32	21.63	8.61	0.589	62.8	5.42
071305	230000	33	21.55	8.58	0.588	60.7	5.25
071405	000000	34	21.40	8.53	0.588	58.8	5.10
071405	010000	35	21.28	8.48	0.588	56.7	4.93
071405	020000	36	21.22	8.47	0.587	59.1	5.14
071405	030000	37	21.16	8.44	0.587	55.6	4.84
071405	040000	38	21.10	8.45	0.590	55.5	4.84
071405	050000	39	21.04	8.42	0.592	55.1	4.81
071405	060000	40	21.02	8.39	0.594	54.9	4.80
071405	070000	41	20.98	8.40	0.596	53.8	4.71
071405	080000	42	20.96	8.43	0.599	55.4	4.85
071405	090000	43	20.96	8.42	0.602	57.9	5.06
071405	100000	44	21.04	8.45	0.604	61.9	5.41
071405	110000	45	21.08	8.44	0.606	64.3	5.61

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071405	120000	46	21.10	8.43	0.608	63.8	5.56
071405	130000	47	21.27	8.50	0.607	70.5	6.13
071405	140000	48	21.34	8.56	0.608	72.1	6.26

Twin Creek RM 38.0; East Lock Road (Duplicate B)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071205	160000	1	23.65	7.86	0.584	139.7	11.61
071205	170000	2	23.65	7.86	0.584	129.2	10.74
071205	180000	3	23.54	7.83	0.587	113.8	9.47
071205	190000	4	23.25	7.82	0.590	105.0	8.79
071205	200000	5	23.03	7.78	0.591	97.7	8.22
071205	210000	6	22.79	7.76	0.593	90.8	7.67
071205	220000	7	22.60	7.73	0.595	84.8	7.19
071205	230000	8	22.43	7.69	0.596	81.1	6.89
071305	000000	9	22.27	7.69	0.595	79.3	6.76
071305	010000	10	22.29	7.68	0.593	77.5	6.61
071305	020000	11	22.10	7.67	0.592	76.3	6.53
071305	030000	12	21.92	7.66	0.591	75.5	6.48
071305	040000	13	21.95	7.65	0.590	75.7	6.50
071305	050000	14	21.78	7.65	0.590	75.8	6.52
071305	060000	15	21.73	7.62	0.589	74.9	6.46
071305	070000	16	21.61	7.62	0.589	74.9	6.47
071305	080000	17	21.57	7.63	0.589	75.6	6.54
071305	090000	18	21.50	7.64	0.589	78.0	6.75
071305	100000	19	21.46	7.65	0.585	80.6	6.98
071305	110000	20	21.45	7.66	0.584	81.0	7.02
071305	120000	21	21.49	7.69	0.581	84.2	7.29
071305	130000	22	21.44	7.69	0.583	87.5	7.58
071305	140000	23	21.55	7.73	0.582	96.2	8.32
071305	150000	24	21.67	7.75	0.582	100.2	8.65
071305	160000	25	21.74	7.77	0.582	103.2	8.89
071305	170000	26	21.80	7.78	0.582	102.9	8.85
071305	180000	27	22.03	7.80	0.581	111.1	9.52
071305	190000	28	22.08	7.80	0.581	107.9	9.23
071305	200000	29	21.87	7.77	0.583	96.9	8.33
071305	210000	30	21.84	7.74	0.583	89.7	7.71
071305	220000	31	21.76	7.72	0.582	85.1	7.33
071305	230000	32	21.67	7.70	0.581	82.7	7.14
071405	000000	33	21.49	7.67	0.582	79.9	6.92
071405	010000	34	21.37	7.65	0.582	78.2	6.79
071405	020000	35	21.38	7.66	0.581	77.3	6.71
071405	030000	36	21.33	7.66	0.581	77.1	6.70
071405	040000	37	21.18	7.64	0.584	77.1	6.71
071405	050000	38	21.16	7.63	0.585	76.5	6.67
071405	060000	39	21.14	7.63	0.587	75.8	6.60
071405	070000	40	21.10	7.63	0.590	76.0	6.63
071405	080000	41	21.07	7.64	0.592	76.5	6.68

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071405	090000	42	21.12	7.65	0.594	79.3	6.92
071405	100000	43	21.13	7.68	0.597	85.2	7.43
071405	110000	44	21.23	7.71	0.598	86.6	7.53
071405	120000	45	21.20	7.71	0.601	88.8	7.74
071405	130000	46	21.30	7.71	0.601	95.2	8.27
071405	140000	47	21.35	7.74	0.602	100.2	8.70

Twin Creek RM 35.5; Dst Swamp Creek

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071205	130000	1	23.44	8.44	0.620	92.9	7.76
071205	140000	2	23.61	8.45	0.620	96.2	8.01
071205	150000	3	24.04	8.49	0.615	101.8	8.41
071205	160000	4	24.42	8.51	0.611	102.1	8.37
071205	170000	5	24.06	8.49	0.612	95.1	7.85
071205	180000	6	23.56	8.43	0.615	76.1	6.34
071205	190000	7	23.28	8.40	0.615	74.5	6.25
071205	200000	8	23.08	8.37	0.615	67.5	5.67
071205	210000	9	22.91	8.34	0.616	63.3	5.34
071205	220000	10	22.74	8.30	0.617	56.8	4.81
071205	230000	11	22.62	8.28	0.617	54.3	4.61
071305	000000	12	22.52	8.27	0.616	53.8	4.57
071305	010000	13	22.40	8.25	0.615	52.4	4.46
071305	020000	14	22.33	8.24	0.614	51.3	4.38
071305	030000	15	22.26	8.23	0.613	52.1	4.45
071305	040000	16	22.20	8.21	0.614	49.8	4.26
071305	050000	17	22.14	8.20	0.613	51.8	4.44
071305	060000	18	22.07	8.19	0.612	50.6	4.34
071305	070000	19	21.99	8.18	0.612	51.3	4.41
071305	080000	20	21.92	8.19	0.612	53.1	4.57
071305	090000	21	21.89	8.23	0.611	60.4	5.20
071305	100000	22	21.82	8.22	0.614	56.5	4.86
071305	110000	23	21.80	8.25	0.616	62.7	5.40
071305	120000	24	21.77	8.26	0.617	62.7	5.41
071305	130000	25	21.82	8.29	0.618	69.3	5.97
071305	140000	26	21.88	8.33	0.616	71.3	6.14
071305	150000	27	22.00	8.36	0.611	78.2	6.71
071305	160000	28	21.94	8.35	0.607	75.9	6.53
071305	170000	29	21.99	8.37	0.598	78.5	6.75
071305	180000	30	22.19	8.39	0.590	78.3	6.70
071305	190000	31	22.01	8.36	0.590	72.8	6.25
071305	200000	32	21.83	8.32	0.593	64.7	5.57
071305	210000	33	21.76	8.29	0.596	60.4	5.21
071305	220000	34	21.68	8.25	0.599	56.7	4.90
071305	230000	35	21.61	8.24	0.601	57.7	4.99
071405	000000	36	21.52	8.23	0.601	56.1	4.86
071405	010000	37	21.47	8.23	0.603	55.5	4.81
071405	020000	38	21.43	8.22	0.604	54.7	4.75

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071405	030000	39	21.38	8.20	0.605	52.6	4.57
071405	040000	40	21.34	8.19	0.607	51.1	4.45
071405	050000	41	21.31	8.19	0.609	54.9	4.78
071405	060000	42	21.28	8.19	0.613	53.5	4.66
071405	070000	43	21.26	8.18	0.616	52.8	4.60
071405	080000	44	21.25	8.19	0.618	53.3	4.64
071405	090000	45	21.33	8.22	0.619	58.1	5.05
071405	100000	46	21.43	8.26	0.620	64.1	5.57
071405	110000	47	21.40	8.26	0.622	62.2	5.40

Twin Creek RM 34.9; Dst Lewisburg WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	120000	1	22.98	7.81	0.637	85.6	7.20
071205	130000	2	23.15	7.85	0.635	90.1	7.55
071205	140000	3	23.39	7.85	0.649	94.1	7.86
071205	150000	4	23.77	7.92	0.636	105.3	8.73
071205	160000	5	24.17	7.97	0.633	115.0	9.46
071205	170000	6	24.19	7.99	0.628	116.5	9.58
071205	180000	7	24.12	7.99	0.628	113.2	9.32
071205	190000	8	23.99	7.98	0.629	108.5	8.95
071205	200000	9	23.85	7.96	0.631	102.0	8.44
071205	210000	10	23.72	7.95	0.632	97.3	8.07
071205	220000	11	23.60	7.94	0.634	93.3	7.75
071205	230000	12	23.51	7.93	0.633	90.6	7.55
071305	000000	13	23.41	7.93	0.632	87.8	7.32
071305	010000	14	23.26	7.91	0.629	83.5	6.99
071305	020000	15	23.08	7.90	0.629	78.8	6.62
071305	030000	16	22.93	7.86	0.632	75.3	6.34
071305	040000	17	22.75	7.85	0.627	72.0	6.08
071305	050000	18	22.59	7.83	0.625	69.2	5.87
071305	060000	19	22.43	7.81	0.621	67.7	5.76
071305	070000	20	22.30	7.80	0.618	66.6	5.68
071305	080000	21	22.20	7.80	0.619	67.0	5.72
071305	090000	22	22.14	7.79	0.621	67.3	5.75
071305	100000	23	22.08	7.80	0.620	68.4	5.86
071305	110000	24	22.05	7.80	0.624	70.2	6.01
071305	120000	25	22.05	7.80	0.608	71.2	6.10
071305	130000	26	22.09	7.79	0.629	73.9	6.32
071305	140000	27	22.12	7.84	0.611	79.5	6.80
071305	150000	28	22.23	7.84	0.608	81.1	6.92
071305	160000	29	22.26	7.89	0.606	86.1	7.34
071305	170000	30	22.36	7.91	0.613	88.9	7.57
071305	180000	31	22.49	7.93	0.624	92.8	7.88
071305	190000	32	22.49	7.95	0.612	95.0	8.06
071305	200000	33	22.45	7.95	0.615	92.8	7.89
071305	210000	34	22.38	7.95	0.620	89.9	7.65
071305	220000	35	22.28	7.93	0.618	86.7	7.40

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071305	230000	36	22.19	7.92	0.611	84.7	7.23
071405	000000	37	22.09	7.89	0.614	81.0	6.94
071405	010000	38	21.98	7.87	0.612	77.4	6.64
071405	020000	39	21.90	7.84	0.617	74.1	6.37
071405	030000	40	21.80	7.83	0.608	71.5	6.15
071405	040000	41	21.74	7.80	0.614	69.0	5.94
071405	050000	42	21.67	7.79	0.608	67.1	5.79
071405	060000	43	21.61	7.79	0.606	66.1	5.71
071405	070000	44	21.57	7.78	0.609	65.5	5.66
071405	080000	45	21.54	7.78	0.613	65.2	5.64
071405	090000	46	21.55	7.78	0.615	66.8	5.78
071405	100000	47	21.60	7.79	0.622	68.7	5.94

Twin Creek RM 33.9; Dst lams & North American Nutrition

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
071205	120000	1	23.28	8.21	0.719	7.72
071205	130000	2	23.39	8.25	0.715	8.09
071205	140000	3	23.65	8.31	0.708	8.83
071205	150000	4	24.09	8.37	0.705	9.45
071205	160000	5	24.28	8.41	0.697	9.80
071205	170000	6	24.29	8.43	0.675	9.82
071205	180000	7	24.25	8.43	0.687	8.72
071205	190000	8	24.06	8.39	0.695	8.53
071205	200000	9	23.89	8.36	0.690	8.32
071205	210000	10	23.74	8.33	0.685	7.91
071205	220000	11	23.65	8.32	0.696	6.45
071205	230000	12	23.58	8.30	0.684	7.41
071205	000000	13	23.52	8.28	0.685	7.36
071305	010000	14	23.44	8.25	0.681	6.46
071305	020000	15	23.31	8.23	0.681	6.70
071305	030000	16	23.18	8.20	0.684	6.61
071305	040000	17	23.04	8.17	0.685	6.39
071305	050000	18	22.89	8.14	0.690	6.14
071305	060000	19	22.73	8.11	0.686	6.16
071305	070000	20	22.61	8.09	0.702	5.78
071305	080000	21	22.49	8.07	0.687	5.72
071305	090000	22	22.39	8.07	0.688	5.56
071305	100000	23	22.28	8.07	0.679	6.10
071305	110000	24	22.22	8.07	0.678	5.98
071305	120000	25	22.17	8.09	0.665	6.15
071305	130000	26	22.26	8.13	0.660	6.69
071305	140000	27	22.28	8.16	0.660	7.10
071305	150000	28	22.40	8.20	0.667	7.45
071305	160000	29	22.38	8.23	0.654	7.68
071305	170000	30	22.49	8.25	0.659	7.91
071305	180000	31	22.69	8.29	0.675	8.48
071305	190000	32	22.67	8.30	0.649	8.38

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
071305	200000	33	22.61	8.28	0.667	7.71
071305	210000	34	22.50	8.23	0.670	7.34
071305	220000	35	22.43	8.20	0.688	7.09
071305	230000	36	22.36	8.19	0.674	6.71
071305	000000	37	22.29	8.18	0.664	6.65
071405	010000	38	22.19	8.16	0.654	6.57
071405	020000	39	22.10	8.14	0.660	6.23
071405	030000	40	22.02	8.12	0.656	6.00
071405	040000	41	21.94	8.10	0.661	5.75
071405	050000	42	21.86	8.08	0.659	6.17
071405	060000	43	21.78	8.07	0.663	5.79
071405	070000	44	21.72	8.06	0.661	5.58
071405	080000	45	21.67	8.05	0.663	5.68
071405	090000	46	21.66	8.06	0.663	5.79
071405	100000	47	21.75	8.07	0.748	5.97

Twin Creek RM 31.7; Pymont Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071205	110000	1	22.91	7.82	0.706	82.6	6.95
071205	120000	2	23.17	7.91	0.708	94.2	7.89
071205	130000	3	23.36	7.98	0.707	107.5	8.98
071205	140000	4	23.63	8.07	0.705	118.3	9.83
071205	150000	5	23.92	8.13	0.704	128.0	10.58
071205	160000	6	24.08	8.18	0.696	144.0	11.86
071205	170000	7	24.32	8.22	0.698	140.6	11.53
071205	180000	8	24.26	8.22	0.696	138.4	11.36
071205	190000	9	24.13	8.21	0.693	125.6	10.34
071205	200000	10	24.00	8.18	0.687	117.8	9.72
071205	210000	11	23.70	8.11	0.688	109.2	9.06
071205	220000	12	23.53	8.08	0.689	102.5	8.53
071205	230000	13	23.44	8.06	0.691	95.2	7.94
071305	000000	14	23.31	8.01	0.691	88.0	7.36
071305	010000	15	23.16	7.99	0.693	84.0	7.04
071305	020000	16	22.95	7.91	0.695	77.4	6.51
071305	030000	17	22.73	7.85	0.698	72.7	6.14
071305	040000	18	22.66	7.83	0.701	67.5	5.71
071305	050000	19	22.47	7.78	0.705	65.5	5.56
071305	060000	20	22.36	7.76	0.708	64.1	5.46
071305	070000	21	22.30	7.76	0.711	63.3	5.39
071305	080000	22	22.17	7.73	0.713	61.8	5.28
071305	090000	23	22.15	7.74	0.715	62.1	5.31
071305	100000	24	22.03	7.73	0.716	63.3	5.42
071305	110000	25	22.09	7.77	0.715	67.1	5.74
071305	120000	26	22.08	7.80	0.714	70.3	6.01
071305	130000	27	22.16	7.84	0.711	77.2	6.60
071305	140000	28	22.25	7.91	0.705	85.5	7.29
071305	150000	29	22.38	7.98	0.697	94.9	8.07

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071305	160000	30	22.58	8.06	0.688	104.2	8.83
071305	170000	31	22.67	8.10	0.682	108.4	9.17
071305	180000	32	22.85	8.14	0.674	115.1	9.70
071305	190000	33	22.94	8.16	0.670	114.7	9.66
071305	200000	34	22.87	8.11	0.670	106.5	8.98
071305	210000	35	22.74	8.05	0.673	99.4	8.40
071305	220000	36	22.57	8.00	0.676	92.0	7.80
071305	230000	37	22.48	7.96	0.677	86.6	7.35
071405	000000	38	22.35	7.92	0.681	81.8	6.96
071405	010000	39	22.28	7.90	0.684	78.4	6.68
071405	020000	40	22.18	7.86	0.686	74.4	6.36
071405	030000	41	22.05	7.81	0.689	70.3	6.02
071405	040000	42	21.98	7.78	0.690	68.1	5.84
071405	050000	43	21.91	7.76	0.690	66.1	5.68
071405	060000	44	21.82	7.73	0.690	64.4	5.54
071405	070000	45	21.76	7.72	0.690	63.0	5.42
071405	080000	46	21.71	7.71	0.691	62.5	5.38
071405	090000	47	21.70	7.71	0.691	63.0	5.43
071405	100000	48	21.75	7.73	0.691	66.5	5.72

Twin Creek RM 26.7; Dst West Alexandria WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071205	130000	2	24.23	8.25	0.608	123.5	10.15
071205	140000	3	24.48	8.33	0.604	128.2	10.49
071205	150000	4	24.62	8.40	0.599	137.8	11.24
071205	160000	5	24.99	8.45	0.596	148.2	12.01
071205	170000	6	25.14	8.44	0.592	140.9	11.39
071205	180000	7	24.74	8.38	0.592	120.5	9.81
071205	190000	8	24.42	8.34	0.597	111.1	9.09
071205	200000	9	24.32	8.34	0.594	107.6	8.83
071205	210000	10	24.22	8.30	0.596	101.1	8.31
071205	220000	11	24.04	8.25	0.601	93.7	7.72
071205	230000	12	23.83	8.20	0.607	86.5	7.16
071305	000000	13	23.65	8.16	0.603	82.0	6.82
071305	010000	14	23.49	8.13	0.607	78.6	6.55
071305	020000	15	23.29	8.10	0.604	76.4	6.39
071305	030000	16	23.13	8.08	0.603	74.4	6.24
071305	040000	17	23.01	8.07	0.603	73.1	6.14
071305	050000	18	22.93	8.06	0.602	71.8	6.05
071305	060000	19	22.83	8.05	0.601	72.4	6.10
071305	070000	20	22.74	8.03	0.604	71.2	6.02
071305	080000	21	22.67	8.03	0.604	71.3	6.04
071305	090000	22	22.61	8.04	0.605	73.0	6.19
071305	100000	23	22.57	8.06	0.604	75.4	6.39
071305	110000	24	22.52	8.06	0.602	76.1	6.46
071305	120000	25	22.57	8.07	0.594	79.3	6.73
071305	130000	26	22.67	8.12	0.605	86.5	7.32

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071305	140000	27	22.90	8.19	0.605	98.1	8.27
071305	150000	28	23.06	8.25	0.603	106.1	8.92
071305	160000	29	23.13	8.26	0.601	107.8	9.05
071305	170000	30	23.16	8.28	0.601	109.6	9.19
071305	180000	31	23.34	8.31	0.598	113.5	9.49
071305	190000	32	23.41	8.31	0.595	109.5	9.14
071305	200000	33	23.18	8.22	0.598	94.8	7.94
071305	210000	34	23.05	8.19	0.601	88.1	7.40
071305	220000	35	22.98	8.17	0.601	86.3	7.26
071305	230000	36	22.85	8.14	0.598	82.4	6.95
071405	000000	37	22.69	8.11	0.599	79.5	6.73
071405	010000	38	22.56	8.07	0.600	76.3	6.47
071405	020000	39	22.44	8.06	0.599	72.8	6.19
071405	030000	40	22.35	8.04	0.599	73.4	6.25
071405	040000	41	22.27	8.03	0.599	72.4	6.18
071405	050000	42	22.20	8.02	0.599	72.3	6.17
071405	060000	43	22.14	8.02	0.599	72.0	6.16
071405	070000	44	22.09	8.01	0.602	71.4	6.11
071405	080000	45	22.06	8.01	0.603	71.5	6.12
071405	090000	46	22.07	8.02	0.605	74.1	6.35
071405	100000	47	22.11	8.05	0.612	77.0	6.59
071405	110000	48	22.14	8.07	0.612	78.1	6.67

Twin Creek RM 23.9; Halderman Rd (Duplicate A)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	130000	1	22.72	8.16	0.612	101.7	8.61
071205	140000	2	23.11	8.30	0.615	103.9	8.74
071205	150000	3	23.67	8.38	0.619	113.3	9.43
071205	160000	4	23.96	8.43	0.619	117.2	9.70
071205	170000	5	23.80	8.39	0.617	104.3	8.65
071205	180000	6	23.55	8.34	0.616	96.7	8.06
071205	190000	7	23.33	8.31	0.615	93.0	7.78
071205	200000	8	23.18	8.29	0.614	89.1	7.48
071205	210000	9	23.01	8.26	0.615	84.7	7.13
071205	220000	10	22.81	8.21	0.615	81.1	6.86
071205	230000	11	22.63	8.18	0.614	78.2	6.64
071305	000000	12	22.47	8.15	0.613	76.2	6.48
071305	010000	13	22.31	8.12	0.612	75.3	6.42
071305	020000	14	22.15	8.10	0.611	73.6	6.30
071305	030000	15	22.01	8.08	0.608	73.0	6.27
071305	040000	16	21.90	8.07	0.608	72.6	6.24
071305	050000	17	21.79	8.06	0.608	73.0	6.29
071305	060000	18	21.71	8.05	0.607	72.4	6.25
071305	070000	19	21.60	8.05	0.608	71.5	6.19
071305	080000	20	21.53	8.05	0.608	71.8	6.22
071305	090000	21	21.48	8.06	0.608	72.4	6.28
071305	100000	22	21.44	8.07	0.606	74.1	6.43
071305	110000	23	21.42	8.08	0.603	75.9	6.59

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071305	120000	24	21.46	8.11	0.602	81.3	7.06
071305	130000	25	21.60	8.17	0.602	86.1	7.45
071305	140000	26	21.79	8.22	0.602	92.1	7.94
071305	150000	27	21.83	8.23	0.601	90.5	7.80
071305	160000	28	21.95	8.26	0.601	93.1	8.00
071305	170000	29	22.15	8.30	0.602	98.1	8.40
071305	180000	30	22.22	8.32	0.603	95.7	8.18
071305	190000	31	22.10	8.27	0.602	88.7	7.60
071305	200000	32	21.94	8.23	0.602	84.5	7.26
071305	210000	33	21.81	8.19	0.601	80.6	6.94
071305	220000	34	21.69	8.16	0.600	78.7	6.80
071305	230000	35	21.57	8.13	0.599	77.5	6.71
071405	000000	36	21.44	8.10	0.598	76.1	6.61
071405	010000	37	21.34	8.09	0.596	75.1	6.53
071405	020000	38	21.25	8.07	0.594	73.5	6.41
071405	030000	39	21.20	8.05	0.594	74.1	6.46
071405	040000	40	21.14	8.04	0.594	72.1	6.29
071405	050000	41	21.09	8.03	0.593	72.0	6.29
071405	060000	42	21.04	8.03	0.593	71.3	6.24
071405	070000	43	21.00	8.02	0.594	71.7	6.28
071405	080000	44	20.99	8.03	0.595	72.8	6.37
071405	090000	45	21.00	8.04	0.596	72.5	6.35
071405	100000	46	21.02	8.06	0.597	74.0	6.48
071405	110000	47	21.09	8.09	0.598	76.7	6.70
071405	120000	48	21.18	8.13	0.598	81.9	7.14

Twin Creek RM 23.9; Halderman Road (Duplicate B)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
071205	140000	1	23.10	8.16	0.647	9.13
071205	150000	2	23.66	8.24	0.642	10.04
071205	160000	3	23.96	8.28	0.636	10.19
071205	170000	4	23.80	8.24	0.635	9.30
071205	180000	5	23.54	8.19	0.637	8.49
071205	190000	6	23.33	8.16	0.638	8.10
071205	200000	7	23.17	8.14	0.639	7.83
071205	210000	8	23.01	8.10	0.642	7.47
071205	220000	9	22.82	8.06	0.644	7.28
071205	230000	10	22.64	8.02	0.646	6.93
071305	000000	11	22.47	7.99	0.647	6.92
071305	010000	12	22.31	7.97	0.648	6.67
071305	020000	13	22.14	7.95	0.649	6.56
071305	030000	14	22.00	7.93	0.650	6.61
071305	040000	15	21.88	7.92	0.651	6.49
071305	050000	16	21.80	7.91	0.651	6.42
071305	060000	17	21.70	7.90	0.652	6.50
071305	070000	18	21.60	7.90	0.654	6.41
071305	080000	19	21.53	7.90	0.656	6.53
071305	090000	20	21.48	7.91	0.656	6.58

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
071305	100000	21	21.44	7.92	0.654	6.73
071305	110000	22	21.42	7.93	0.651	6.93
071305	120000	23	21.46	7.96	0.650	7.28
071305	130000	24	21.59	8.02	0.648	7.70
071305	140000	25	21.79	8.07	0.645	8.31
071305	150000	26	21.82	8.08	0.643	8.10
071305	160000	27	21.93	8.11	0.641	8.35
071305	170000	28	22.15	8.15	0.639	8.98
071305	180000	29	22.21	8.17	0.638	8.87
071305	190000	30	22.08	8.13	0.639	8.08
071305	200000	31	21.93	8.08	0.641	7.53
071305	210000	32	21.82	8.04	0.643	7.26
071305	220000	33	21.69	8.01	0.645	7.11
071305	230000	34	21.57	7.98	0.645	7.07
071405	000000	35	21.45	7.96	0.645	6.96
071405	010000	36	21.33	7.94	0.645	6.85
071405	020000	37	21.26	7.92	0.644	6.78
071405	030000	38	21.20	7.91	0.644	6.69
071405	040000	39	21.14	7.90	0.645	6.66
071405	050000	40	21.10	7.89	0.645	6.73
071405	060000	41	21.05	7.88	0.646	6.64
071405	070000	42	21.01	7.88	0.647	6.61
071405	080000	43	20.99	7.88	0.648	6.67
071405	090000	44	21.01	7.90	0.649	6.81
071405	100000	45	21.04	7.92	0.649	6.95
071405	110000	46	21.09	7.95	0.650	7.18
071405	120000	47	21.19	7.98	0.649	7.48

Twin Creek RM 19.2; Ust Gratis WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071205	140000	1	23.37	999999	0.619	122.0	10.19
071205	150000	2	23.82	999999	0.616	132.7	10.99
071205	160000	3	24.04	999999	0.611	138.6	11.43
071205	170000	4	23.89	999999	0.609	128.9	10.66
071205	180000	5	23.47	999999	0.613	115.2	9.60
071205	190000	6	23.16	999999	0.615	106.4	8.92
071205	200000	7	23.05	999999	0.615	101.2	8.50
071205	210000	8	22.79	999999	0.621	94.2	7.96
071205	220000	9	22.68	999999	0.622	87.5	7.40
071205	230000	10	22.63	999999	0.621	82.1	6.96
071305	000000	11	22.30	999999	0.628	78.8	6.71
071305	010000	12	22.25	999999	0.627	76.3	6.51
071305	020000	13	22.09	999999	0.629	75.5	6.46
071305	030000	14	21.91	999999	0.632	73.9	6.34
071305	040000	15	21.86	999999	0.631	73.6	6.33
071305	050000	16	21.79	999999	0.632	73.1	6.29
071305	060000	17	21.60	999999	0.635	73.1	6.31

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071305	070000	18	21.63	999999	0.632	72.7	6.28
071305	080000	19	21.51	999999	0.635	73.0	6.32
071305	090000	20	21.52	999999	0.634	74.4	6.44
071305	100000	21	21.49	999999	0.632	76.3	6.61
071305	110000	22	21.50	999999	0.629	79.4	6.87
071305	120000	23	21.60	999999	0.630	85.8	7.41
071305	130000	24	21.59	999999	0.632	91.2	7.88
071305	140000	25	21.72	999999	0.630	95.6	8.24
071305	150000	26	21.83	999999	0.627	97.5	8.39
071305	160000	27	21.92	999999	0.628	102.0	8.76
071305	170000	28	22.41	999999	0.621	113.3	9.64
071305	180000	29	22.44	999999	0.620	113.7	9.67
071305	190000	30	22.27	999999	0.621	102.6	8.75
071305	200000	31	22.01	999999	0.626	93.3	8.00
071305	210000	32	21.82	999999	0.630	88.1	7.58
071305	220000	33	21.68	999999	0.630	83.9	7.23
071305	230000	34	21.59	999999	0.630	80.9	6.99
071405	000000	35	21.56	999999	0.628	78.7	6.80
071405	010000	36	21.42	999999	0.630	76.9	6.66
071405	020000	37	21.29	999999	0.633	75.5	6.56
071405	030000	38	21.21	999999	0.632	74.8	6.51
071405	040000	39	21.15	999999	0.633	74.8	6.52
071405	050000	40	21.14	999999	0.632	74.8	6.52
071405	060000	41	21.07	999999	0.635	74.0	6.46
071405	070000	42	21.06	999999	0.634	73.7	6.43
071405	080000	43	21.13	999999	0.632	75.4	6.58
071405	090000	44	21.16	999999	0.632	77.2	6.73
071405	100000	45	21.14	999999	0.633	80.2	6.99
071405	110000	46	21.22	999999	0.632	82.7	7.20
071405	120000	47	21.33	999999	0.632	88.8	7.71
071405	130000	48	21.57	999999	0.631	96.8	8.37
071405	140000	49	21.78	999999	0.631	103.1	8.87

Twin Creek RM 19.0; Dst Gratis WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071205	150000	1	23.68	8.13	0.616	128.3	10.65
071205	160000	2	23.83	8.20	0.612	131.4	10.88
071205	170000	3	23.60	8.17	0.612	122.0	10.15
071205	180000	4	23.37	8.15	0.611	115.2	9.62
071205	190000	5	23.02	8.09	0.614	105.7	8.89
071205	200000	6	22.73	8.05	0.617	99.8	8.44
071205	210000	7	22.56	8.01	0.619	93.9	7.96
071205	220000	8	22.38	7.97	0.622	88.8	7.56
071205	230000	9	22.22	7.92	0.624	83.1	7.09
071305	000000	10	22.09	7.90	0.625	79.6	6.82
071305	010000	11	21.97	7.88	0.626	77.7	6.66
071305	020000	12	21.80	7.86	0.627	77.0	6.63

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
071305	030000	13	21.68	7.85	0.628	70.9	6.11
071305	040000	14	21.57	7.84	0.628	73.8	6.38
071305	050000	15	21.50	7.83	0.628	70.0	6.06
071305	060000	16	21.41	7.83	0.628	72.8	6.32
071305	070000	17	21.33	7.84	0.629	73.8	6.41
071305	080000	18	21.30	7.85	0.628	74.4	6.47
071305	090000	19	21.25	7.85	0.628	76.4	6.64
071305	100000	20	21.21	7.86	0.625	77.7	6.76
071305	110000	21	21.24	7.88	0.624	80.5	7.01
071305	120000	22	21.33	7.92	0.623	79.5	6.91
071305	130000	23	21.39	7.95	0.620	83.5	7.24
071305	140000	24	21.52	8.00	0.618	92.6	8.01
071305	150000	25	21.54	8.01	0.619	93.7	8.10
071305	160000	26	21.84	8.07	0.615	98.8	8.50
071305	170000	27	22.08	8.11	0.614	106.2	9.09
071305	180000	28	22.14	8.12	0.611	103.4	8.84
071305	190000	29	22.06	8.09	0.611	95.7	8.20
071305	200000	30	21.86	8.05	0.612	90.2	7.75
071305	210000	31	21.66	7.99	0.615	83.2	7.18
071305	220000	32	21.51	7.95	0.616	81.2	7.03
071305	230000	33	21.37	7.93	0.617	80.0	6.94
071405	000000	34	21.26	7.91	0.617	77.4	6.73
071405	010000	35	21.17	7.89	0.628	75.9	6.61
071405	020000	36	21.13	7.88	0.629	75.9	6.62
071405	030000	37	21.01	7.86	0.623	74.2	6.48
071405	040000	38	20.95	7.86	0.623	71.5	6.26
071405	050000	39	20.89	7.87	0.622	74.9	6.56
071405	060000	40	20.86	7.86	0.621	72.8	6.38
071405	070000	41	20.84	7.86	0.621	70.4	6.17
071405	080000	42	20.90	7.88	0.621	74.2	6.49
071405	090000	43	20.90	7.89	0.620	76.0	6.66
071405	100000	44	20.93	7.91	0.617	79.2	6.93
071405	110000	45	20.96	7.93	0.614	81.1	7.09
071405	120000	46	21.10	7.97	0.612	78.1	6.81
071405	130000	47	21.34	8.02	0.611	90.5	7.86
071405	140000	48	21.58	8.07	0.617	97.3	8.41

Twin Creek RM 9.8; Germantown Gauge Station

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)	DO %sat
071205	180000	1	24.16	8.24	0.590	9.21	111.9
071205	190000	2	23.93	8.22	0.592	8.65	104.6
071205	200000	3	23.87	8.21	0.592	8.48	102.5
071205	210000	4	23.70	8.17	0.594	8.01	96.4
071205	220000	5	23.56	8.14	0.596	7.62	91.6
071205	230000	6	23.46	8.12	0.597	7.42	89.0
071305	000000	7	23.36	8.10	0.598	7.29	87.3
071305	010000	8	23.24	8.08	0.599	7.21	86.1
071305	020000	9	23.10	8.07	0.600	7.14	85.1
071305	030000	10	22.96	8.05	0.600	7.08	84.1
071305	040000	11	22.82	8.04	0.601	7.05	83.6
071305	050000	12	22.68	8.02	0.599	7.00	82.7
071305	060000	13	22.57	8.01	0.601	7.01	82.7
071305	070000	14	22.44	8.00	0.602	6.93	81.5
071305	080000	15	22.34	8.00	0.603	6.99	82.1
071305	090000	16	22.25	8.00	0.602	7.10	83.2
071305	100000	17	22.20	8.01	0.602	7.22	84.6
071305	110000	18	22.19	8.04	0.601	7.63	89.4
071305	120000	19	22.20	8.07	0.599	8.14	95.3
071305	130000	20	22.33	8.13	0.596	8.92	104.7
071305	140000	21	22.47	8.16	0.595	9.25	108.9
071305	150000	22	22.50	8.18	0.595	9.24	108.8
071305	160000	23	22.56	8.21	0.594	9.53	112.4
071305	170000	24	22.71	8.24	0.593	9.81	116.0
071305	180000	25	22.62	8.21	0.594	9.18	108.4
071305	190000	26	22.48	8.17	0.596	8.41	99.0
071305	200000	27	22.37	8.14	0.597	8.14	95.6
071305	210000	28	22.27	8.12	0.598	7.86	92.2
071305	220000	29	22.17	8.10	0.600	7.63	89.3
071305	230000	30	22.07	8.08	0.601	7.45	87.1
071405	000000	31	21.99	8.07	0.603	7.42	86.5
071405	010000	32	21.92	8.06	0.603	7.36	85.7
071405	020000	33	21.85	8.05	0.604	7.23	84.1
071405	030000	34	21.78	8.03	0.606	7.25	84.3
071405	040000	35	21.69	8.02	0.607	7.20	83.5
071405	050000	36	21.61	8.01	0.612	7.14	82.7
071405	060000	37	21.53	8.00	0.613	7.12	82.3
071405	070000	38	21.46	7.99	0.612	7.16	82.7
071405	080000	39	21.43	8.00	0.612	7.28	84.0
071405	090000	40	21.45	8.02	0.612	7.55	87.1
071405	100000	41	21.45	8.03	0.613	7.74	89.3
071405	110000	42	21.46	8.05	0.614	7.90	91.2
071405	120000	43	21.56	8.09	0.615	8.31	96.1
071405	130000	44	21.74	8.14	0.612	8.94	103.7
071405	140000	45	21.95	8.17	0.610	9.33	108.8
071405	150000	46	22.07	8.19	0.609	9.27	108.3
071405	160000	47	22.43	8.22	0.607	9.60	113.0
071405	170000	48	22.66	8.23	0.606	9.44	111.5

Millers Fork RM 3.9; Georgetown-Verona Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	160000	1	21.22	7.42	0.622	3.67	42.2
071205	170000	2	21.13	7.41	0.622	3.20	36.7
071205	180000	3	21.10	7.41	0.623	3.48	39.9
071205	190000	4	21.06	7.41	0.624	3.45	38.8
071205	200000	5	21.06	7.41	0.624	3.18	36.3
071205	210000	6	21.07	7.40	0.625	2.97	34.0
071205	220000	7	21.05	7.39	0.625	2.88	33.0
071205	230000	8	21.01	7.37	0.626	2.85	32.6
071305	000000	9	21.02	7.37	0.627	2.89	33.0
071305	010000	10	21.04	7.36	0.627	3.01	34.5
071305	020000	11	21.03	7.36	0.627	2.77	31.7
071305	030000	12	21.04	7.35	0.627	2.99	34.2
071305	040000	13	21.01	7.34	0.628	2.74	31.4
071305	050000	14	21.01	7.33	0.628	2.44	27.9
071305	060000	15	21.01	7.32	0.628	2.47	28.3
071305	070000	16	21.02	7.31	0.629	1.96	22.4
071305	080000	17	21.02	7.32	0.629	2.19	25.4
071305	090000	18	21.06	7.31	0.629	2.18	24.9
071305	100000	19	21.04	7.31	0.629	1.82	20.8
071305	110000	20	21.05	7.30	0.629	1.72	19.7
071305	120000	21	21.05	7.30	0.629	1.85	21.2
071305	130000	22	21.10	7.29	0.628	2.01	22.9
071305	140000	23	21.08	7.29	0.628	1.92	22.0
071305	150000	24	21.02	7.28	0.630	1.96	22.0
071305	160000	25	21.07	7.27	0.629	1.82	20.7
071305	170000	26	21.08	7.28	0.628	1.82	20.9
071305	180000	27	21.07	7.29	0.629	1.55	17.7
071305	190000	28	21.11	7.29	0.627	1.76	20.2
071305	200000	29	21.08	7.28	0.628	1.75	20.2
071305	210000	30	21.12	7.29	0.627	1.92	22.0
071305	220000	31	21.07	7.28	0.628	1.81	20.1
071305	230000	32	21.07	7.28	0.628	1.50	17.2
071405	000000	33	21.00	7.26	0.629	1.03	11.8
071405	010000	34	20.96	7.24	0.629	0.96	11.0
071405	020000	35	20.98	7.26	0.630	1.12	13.5
071405	030000	36	20.98	7.26	0.629	1.17	13.4
071405	040000	37	20.97	7.25	0.629	1.04	11.9
071405	050000	38	20.98	7.26	0.627	1.12	12.8
071405	060000	39	20.93	7.24	0.628	1.05	11.9
071405	070000	40	20.98	7.28	0.622	1.61	18.4
071405	080000	41	20.91	7.26	0.626	1.20	13.7
071405	090000	42	20.85	7.26	0.630	1.08	12.3
071405	100000	43	20.89	7.27	0.625	1.55	17.7
071405	110000	44	20.93	7.27	0.623	1.25	14.3
071405	120000	45	20.88	7.26	0.625	0.93	10.6
071405	130000	46	20.88	7.26	0.627	1.09	12.5
071405	140000	47	20.87	7.25	0.627	1.32	15.1
071405	150000	48	20.87	7.27	0.627	1.30	14.8

Swamp Creek RM 0.2; U.S. 40

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	130000	1	23.10	7.85	0.562	69.1	5.80
071205	140000	2	23.40	7.95	0.554	75.4	6.30
071205	150000	3	23.63	8.00	0.548	79.2	6.58
071205	160000	4	23.59	8.07	0.544	90.8	7.55
071205	170000	5	23.64	8.07	0.538	89.6	7.45
071205	180000	6	23.43	8.05	0.543	72.0	6.01
071205	190000	7	23.40	8.02	0.542	59.9	5.00
071205	200000	8	23.11	7.99	0.542	57.6	4.84
071205	210000	9*	22.79	7.97	0.545	55.6	4.70

*Note: power loss after hour 9

Price Creek RM 0.6; SR 503

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
071205	120000	1	22.12	8.08	0.594	7.62
071205	130000	2	22.25	8.09	0.595	7.80
071205	140000	3	22.22	8.14	0.594	8.09
071205	150000	4	22.43	8.22	0.593	8.64
071205	160000	5	22.82	8.27	0.594	8.72
071205	170000	6	22.58	8.19	0.593	7.99
071205	180000	7	22.42	8.16	0.591	7.16
071205	190000	8	22.33	8.15	0.588	7.03
071205	200000	9	22.32	8.14	0.586	6.98
071205	210000	10	22.30	8.11	0.584	6.63
071205	220000	11	22.25	8.10	0.582	6.26
071205	230000	12	22.16	8.06	0.580	5.88
071305	000000	13	22.11	8.04	0.579	5.92
071305	010000	14	21.99	8.03	0.577	5.64
071305	020000	15	21.87	8.02	0.577	5.60
071305	030000	16	21.76	7.98	0.578	5.46
071305	040000	17	21.64	7.97	0.579	5.35
071305	050000	18	21.50	7.94	0.581	5.21
071305	060000	19	21.35	7.91	0.581	5.15
071305	070000	20	21.22	7.91	0.582	5.23
071305	080000	21	21.09	7.93	0.583	5.33
071305	090000	22	21.01	7.93	0.583	5.22
071305	100000	23	20.92	7.92	0.581	5.37
071305	110000	24	20.88	7.93	0.580	5.74
071305	120000	25	20.82	7.94	0.579	5.90
071305	130000	26	20.89	8.02	0.580	6.35
071305	140000	27	21.00	8.10	0.577	6.93
071305	150000	28	21.07	8.12	0.577	7.71
071305	160000	29	21.05	8.10	0.577	7.35
071305	170000	30	21.10	8.14	0.577	7.25
071305	180000	31	21.24	8.17	0.576	7.57
071305	190000	32	21.16	8.12	0.575	6.90
071305	200000	33	21.07	8.10	0.574	6.60

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
071305	210000	34	21.05	8.10	0.573	6.40
071305	220000	35	21.03	8.09	0.572	6.21
071305	230000	36	21.00	8.08	0.571	6.29
071405	000000	37	20.94	8.06	0.570	6.19
071405	010000	38	20.89	8.05	0.570	5.97
071405	020000	39	20.84	8.03	0.571	5.73
071405	030000	40	20.78	8.00	0.573	5.56
071405	040000	41	20.70	7.97	0.575	5.35
071405	050000	42	20.61	7.95	0.577	5.35
071405	060000	43	20.53	7.93	0.578	5.31
071405	070000	44	20.45	7.92	0.579	5.28
071405	080000	45	20.39	7.91	0.580	5.33
071405	090000	46	20.37	7.93	0.581	5.43
071405	100000	47	20.38	7.97	0.581	5.58

Bantas Fork RM 1.3; SR 503

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	130000	1	22.39	8.51	0.521	8.13	95.5
071205	140000	2	22.92	8.68	0.508	9.18	109.0
071205	150000	3	24.03	8.75	0.497	9.86	119.5
071205	160000	4	23.98	8.74	0.494	9.19	111.2
071205	170000	5	23.64	8.61	0.495	7.76	93.4
071205	180000	6	23.59	8.63	0.490	7.62	91.6
071205	190000	7	23.37	8.57	0.490	7.14	85.5
071205	200000	8	23.11	8.48	0.497	6.46	76.9
071205	210000	9	22.71	8.37	0.509	6.04	71.4
071205	220000	10	22.35	8.31	0.518	5.74	67.4
071205	230000	11	22.08	8.26	0.524	5.58	65.2
071305	000000	12	21.85	8.23	0.529	5.55	64.5
071305	010000	13	21.60	8.20	0.533	5.61	64.9
071305	020000	14	21.43	8.19	0.535	5.62	64.8
071305	030000	15	21.27	8.18	0.536	5.60	64.3
071305	040000	16	21.13	8.18	0.536	5.67	65.1
071305	050000	17	21.00	8.19	0.535	5.72	65.4
071305	060000	18	20.90	8.19	0.535	5.62	64.2
071305	070000	19	20.82	8.19	0.535	5.78	65.9
071305	080000	20	20.78	8.22	0.534	5.92	67.4
071305	090000	21	20.75	8.25	0.532	6.13	69.8
071305	100000	22	20.76	8.27	0.531	6.34	72.2
071305	110000	23	20.78	8.30	0.527	6.44	73.3
071305	120000	24	20.88	8.36	0.526	7.00	79.9
071305	130000	25	21.10	8.44	0.524	7.61	87.2
071305	140000	26	21.40	8.54	0.520	8.46	97.6
071305	150000	27	21.31	8.52	0.521	7.56	87.0
071305	160000	28	21.61	8.61	0.515	8.59	99.5
071305	170000	29	21.98	8.65	0.512	8.87	103.4
071305	180000	30	21.90	8.57	0.515	7.96	92.6

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071305	190000	31	21.74	8.51	0.518	7.25	84.2
071305	200000	32	21.71	8.49	0.517	7.06	81.9
071305	210000	33	21.54	8.42	0.520	6.54	75.6
071305	220000	34	21.34	8.33	0.527	6.10	70.3
071305	230000	35	21.11	8.28	0.533	5.88	67.4
071405	000000	36	20.91	8.24	0.540	5.78	66.0
071405	010000	37	20.73	8.23	0.542	5.78	65.8
071405	020000	38	20.64	8.22	0.543	5.77	65.5
071405	030000	39	20.56	8.22	0.543	5.81	65.9
071405	040000	40	20.51	8.21	0.544	5.86	66.4
071405	050000	41	20.46	8.20	0.545	5.86	66.3
071405	060000	42	20.43	8.20	0.546	5.87	66.4
071405	070000	43	20.41	8.20	0.547	5.84	66.0
071405	080000	44	20.41	8.22	0.548	5.89	66.5
071405	090000	45	20.46	8.25	0.549	6.23	70.5
071405	100000	46	20.57	8.31	0.548	6.71	76.0
071405	110000	47	20.57	8.31	0.549	6.65	75.4
071405	120000	48	20.73	8.40	0.548	7.17	81.6

Toms Run RM 0.11; Anthony Rd

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	180000	1	20.25	7.86	0.645	101.8	9.03
071205	190000	2	19.97	7.85	0.647	94.7	8.45
071205	200000	3	19.76	7.84	0.650	91.4	8.19
071205	210000	4	19.61	7.82	0.652	88.6	7.96
071205	220000	5	19.47	7.79	0.654	85.4	7.70
071205	230000	6	19.35	7.78	0.656	83.9	7.58
071305	000000	7	19.26	7.77	0.658	83.0	7.51
071305	010000	8	19.15	7.76	0.659	82.0	7.43
071305	020000	9	19.05	7.76	0.661	81.9	7.44
071305	030000	10	18.96	7.76	0.662	81.2	7.39
071305	040000	11	18.85	7.76	0.663	81.2	7.41
071305	050000	12	18.76	7.75	0.660	81.1	7.41
071305	060000	13	18.69	7.74	0.661	79.9	7.31
071305	070000	14	18.61	7.75	0.662	80.1	7.34
071305	080000	15	18.55	7.76	0.663	80.8	7.42
071305	090000	16	18.47	7.76	0.659	81.1	7.45
071305	100000	17	18.43	7.76	0.657	82.2	7.57
071305	110000	18	18.44	7.78	0.656	84.6	7.78
071305	120000	19	18.46	7.82	0.656	89.2	8.20
071305	130000	20	18.57	7.85	0.651	95.2	8.73
071305	140000	21	18.67	7.89	0.651	98.3	9.00
071305	150000	22	18.73	7.91	0.651	100.3	9.17
071305	160000	23	18.73	7.90	0.651	98.5	9.00
071305	170000	24	18.74	7.91	0.652	98.8	9.03
071305	180000	25	18.69	7.88	0.653	94.8	8.68
071305	190000	26	18.62	7.86	0.655	90.7	8.31

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071305	200000	27	18.53	7.84	0.657	88.5	8.12
071305	210000	28	18.43	7.83	0.658	86.7	7.97
071305	220000	29	18.34	7.82	0.659	85.3	7.86
071305	230000	30	18.24	7.81	0.659	83.9	7.74
071405	000000	31	18.16	7.80	0.659	84.0	7.77
071405	010000	32	18.09	7.79	0.659	83.1	7.70
071405	020000	33	18.03	7.78	0.659	82.7	7.67
071405	030000	34	17.98	7.78	0.659	83.1	7.72
071405	040000	35	17.94	7.76	0.659	82.6	7.68
071405	050000	36	17.90	7.76	0.660	82.3	7.65
071405	060000	37	17.86	7.76	0.660	82.4	7.67
071405	070000	38	17.84	7.76	0.660	82.0	7.63
071405	080000	39	17.85	7.78	0.660	83.5	7.77
071405	090000	40	17.88	7.80	0.660	84.8	7.89
071405	100000	41	17.93	7.81	0.660	86.8	8.06
071405	110000	42	17.97	7.82	0.659	87.2	8.10
071405	120000	43	18.04	7.85	0.658	90.7	8.41
071405	130000	44	18.21	7.89	0.657	96.9	8.95
071405	140000	45	18.43	7.93	0.655	101.1	9.30
071405	150000	46	18.55	7.93	0.654	99.2	9.11
071405	160000	47	18.81	7.95	0.652	104.2	9.52

Little Twin Creek RM 2.0; Little Twin Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071205	180000	2	20.99	7.86	0.702	87.1	7.61
071205	190000	3	20.78	7.86	0.700	81.6	7.16
071205	200000	4	20.56	7.82	0.700	79.2	6.98
071205	210000	5	20.38	7.79	0.702	69.1	6.11
071205	220000	6	20.13	7.74	0.705	64.2	5.71
071205	230000	7	19.90	7.70	0.707	59.4	5.30
071305	000000	8	19.68	7.67	0.709	58.2	5.22
071305	010000	9	19.50	7.65	0.713	54.1	4.87
071305	020000	10	19.34	7.64	0.715	53.3	4.82
071305	030000	11	19.17	7.62	0.715	52.6	4.77
071305	040000	12	19.02	7.61	0.716	53.7	4.88
071305	050000	13	18.90	7.61	0.716	53.0	4.83
071305	060000	14	18.77	7.61	0.715	52.1	4.76
071305	070000	15	18.65	7.60	0.716	54.7	5.00
071305	080000	16	18.54	7.60	0.717	55.9	5.13
071305	090000	17	18.45	7.61	0.717	55.7	5.12
071305	100000	18	18.37	7.62	0.715	57.7	5.31
071305	110000	19	18.33	7.65	0.713	58.8	5.42
071305	120000	20	18.34	7.68	0.713	65.1	6.00
071305	130000	21	18.41	7.72	0.712	71.6	6.58
071305	140000	22	18.49	7.76	0.710	78.3	7.19
071305	150000	23	18.46	7.76	0.711	77.2	7.10
071305	160000	24	18.51	7.81	0.709	80.1	7.36

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
071305	170000	25	18.69	7.86	0.707	84.3	7.71
071305	180000	26	18.85	7.88	0.706	90.6	8.27
071305	190000	27	18.74	7.82	0.707	84.4	7.72
071305	200000	28	18.63	7.79	0.708	75.8	6.95
071305	210000	29	18.50	7.75	0.708	69.0	6.34
071305	220000	30	18.35	7.72	0.710	68.8	6.34
071305	230000	31	18.21	7.69	0.667	65.7	6.08
071405	000000	32	18.09	7.67	0.668	62.6	5.80
071405	010000	33	17.95	7.65	0.669	60.6	5.63
071405	020000	34	17.83	7.64	0.670	58.5	5.45
071405	030000	35	17.72	7.63	0.671	55.9	5.22
071405	040000	36	17.60	7.62	0.672	58.3	5.46
071405	050000	37	17.51	7.61	0.672	57.0	5.35
071405	060000	38	17.42	7.61	0.672	56.2	5.28
071405	070000	39	17.33	7.61	0.672	57.1	5.37
071405	080000	40	17.26	7.62	0.671	60.1	5.67
071405	090000	41	17.24	7.63	0.670	64.1	6.04
071405	100000	42	17.20	7.65	0.669	66.3	6.25
071405	110000	43	17.19	7.66	0.669	63.2	5.96
071405	120000	44	17.24	7.68	0.667	67.5	6.36
071405	130000	45	17.46	7.77	0.666	71.8	6.74
071405	140000	46	17.78	7.82	0.662	84.7	7.90
071405	150000	47	17.97	7.86	0.661	86.9	8.07
071405	160000	48	18.17	7.87	0.660	84.3	7.79

Appendix Table A-4. Datasonde© 48-Hour Continuous Recorder data from selected Twin Creek and tributary stations, August 2005.

Twin Creek RM 38.0; East Lock Road (Duplicate A)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
080605	170000	1	25.43	8.14	0.624	127.4	10.16
080605	180000	2	25.44	8.21	0.625	121.1	9.66
080605	190000	3	25.46	8.22	0.625	120.0	9.57
080605	200000	4	25.43	8.22	0.623	114.7	9.16
080605	210000	5	25.27	8.20	0.624	106.2	8.50
080605	220000	6	25.02	8.18	0.624	93.1	7.49
080605	230000	7	24.68	8.14	0.627	87.2	7.06
081005	000000	8	24.36	8.08	0.628	73.9	6.02
081005	010000	9	24.00	8.05	0.628	69.4	5.69
081005	020000	10	23.61	7.97	0.629	64.1	5.29
081005	030000	11	23.29	7.97	0.629	62.7	5.20
081005	040000	12	23.02	7.96	0.629	62.1	5.18
081005	050000	13	22.66	7.91	0.631	59.3	4.98
081005	060000	14	22.35	7.88	0.632	59.4	5.03
081005	070000	15	22.08	7.86	0.633	58.2	4.94
081005	080000	16	21.89	7.86	0.635	58.2	4.97

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (%sat)	DO (mg/l)
081005	090000	17	21.79	7.83	0.636	60.5	5.17
081005	100000	18	21.86	7.86	0.636	67.9	5.79
081005	110000	19	22.16	7.92	0.634	81.5	6.91
081005	120000	20	22.61	7.97	0.633	91.5	7.70
081005	130000	21	23.16	8.06	0.630	105.7	8.80
081005	140000	22	23.76	8.12	0.626	118.2	9.73
081005	150000	23	24.10	8.15	0.624	118.9	9.72
081005	160000	24	24.39	8.17	0.622	120.9	9.84
081005	170000	25	24.49	8.19	0.621	118.8	9.65
081005	180000	26	24.70	8.21	0.620	116.8	9.44
081005	190000	27	24.88	8.21	0.619	114.7	9.25
081005	200000	28	24.76	8.22	0.618	111.6	9.02
081005	210000	29	24.67	8.21	0.618	102.6	8.30
081005	220000	30	24.43	8.15	0.620	93.3	7.59
081005	230000	31	24.09	8.09	0.623	81.6	6.67
081105	000000	32	23.87	8.05	0.624	74.8	6.14
081105	010000	33	23.57	7.99	0.627	68.0	5.61
081105	020000	34	23.36	8.01	0.627	65.8	5.46
081105	030000	35	23.15	7.99	0.627	63.8	5.31
081105	040000	36	22.98	7.94	0.628	59.3	4.96
081105	050000	37	22.73	7.91	0.630	59.8	5.02
081105	060000	38	22.57	7.90	0.631	59.9	5.04
081105	070000	39	22.43	7.90	0.632	59.8	5.04
081105	080000	40	22.27	7.87	0.633	59.3	5.02
081105	090000	41	22.24	7.86	0.635	59.7	5.06
081105	100000	42	22.34	7.86	0.635	62.6	5.30
081105	110000	43	22.47	7.89	0.634	77.9	6.57
081105	120000	44	22.75	7.94	0.633	86.4	7.25
081105	130000	45	23.19	8.01	0.628	100.4	8.36
081105	140000	46	23.78	8.09	0.626	112.6	9.27
081105	150000	47	24.21	8.13	0.623	119.9	9.78
081105	160000	48	24.77	8.17	0.621	122.7	9.92

Twin Creek RM 38.0; East Lock Road (Duplicate B)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	170000	1	25.50	8.10	0.621	132.7	10.68
080905	180000	2	25.43	8.15	0.626	125.3	10.10
080905	190000	3	25.33	8.14	0.624	121.0	9.77
080905	200000	4	25.26	8.12	0.625	116.2	9.39
080905	210000	5	25.03	8.09	0.625	105.2	8.54
080905	220000	6	24.78	8.09	0.625	94.5	7.72
080905	230000	7	24.49	8.03	0.627	89.5	7.34
081005	000000	8	24.08	7.93	0.629	74.5	6.16
081005	010000	9	23.78	7.92	0.629	69.6	5.78
081005	020000	10	23.46	7.90	0.630	66.4	5.55
081005	030000	11	23.13	7.89	0.630	63.4	5.33
081005	040000	12	22.80	7.87	0.631	62.3	5.28

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081005	050000	13	22.53	7.83	0.632	60.3	5.13
081005	060000	14	22.22	7.76	0.634	58.6	5.02
081005	070000	15	21.96	7.81	0.634	59.7	5.14
081005	080000	16	21.75	7.80	0.635	60.2	5.2
081005	090000	17	21.77	7.83	0.636	64.4	5.57
081005	100000	18	21.86	7.84	0.636	72.2	6.22
081005	110000	19	22.15	7.89	0.634	87.9	7.53
081005	120000	20	22.65	7.95	0.633	95.0	8.07
081005	130000	21	23.09	8.02	0.630	110.7	9.32
081005	140000	22	23.77	8.10	0.625	119.7	9.95
081005	150000	23	24.01	8.13	0.623	124.4	10.29
081005	160000	24	24.32	8.15	0.623	124.1	10.21
081005	170000	25	24.53	8.17	0.621	123.4	10.11
081005	180000	26	24.72	8.20	0.619	120.3	9.82
081005	190000	27	24.86	8.20	0.616	118.4	9.65
081005	200000	28	24.66	8.18	0.618	113.2	9.26
081005	210000	29	24.46	8.13	0.619	103.2	8.47
081005	220000	30	24.28	8.11	0.621	95.3	7.85
081005	230000	31	24.05	8.04	0.623	84.8	7.01
081105	000000	32	23.78	8.02	0.625	75.6	6.29
081105	010000	33	23.49	7.97	0.627	71.5	5.97
081105	020000	34	23.28	7.94	0.627	68.9	5.78
081105	030000	35	23.08	7.95	0.627	66.9	5.64
081105	040000	36	22.92	7.92	0.628	64.7	5.46
081105	050000	37	22.73	7.89	0.630	62.8	5.33
081105	060000	38	22.51	7.81	0.632	59.7	5.08
081105	070000	39	22.39	7.87	0.632	62.3	5.32
081105	080000	40	22.23	7.84	0.634	62.1	5.32
081105	090000	41	22.19	7.81	0.635	62.5	5.36
081105	100000	42	22.29	7.83	0.633	69.1	5.91
081105	110000	43	22.53	7.88	0.633	81.7	6.95
081105	120000	44	22.80	7.94	0.632	93.0	7.87
081105	130000	45	23.30	8.03	0.628	110.3	9.25
081105	140000	46	23.77	8.09	0.625	120.2	9.99
081105	150000	47	24.33	8.16	0.623	126.8	10.44
081105	160000	48	24.9	8.20	0.621	129.1	10.51

Twin Creek RM 35.5; Dst Swamp Creek

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	120000	1	23.82	8.07	0.613	88.3	7.33
080905	130000	2	24.63	8.08	0.613	96.5	7.90
080905	140000	3	25.25	8.10	0.612	103.0	8.33
080905	150000	4	25.52	8.11	0.612	103.7	8.35
080905	160000	5	25.84	8.12	0.611	105.5	8.44
080905	170000	6	26.26	8.13	0.610	106.2	8.44
080905	180000	7	26.42	8.14	0.609	106.4	8.42
080905	190000	8	26.33	8.14	0.609	104.0	8.25

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	200000	9	26.22	8.13	0.609	98.5	7.82
080905	210000	10	26.04	8.13	0.609	96.4	7.69
080905	220000	11	25.81	8.12	0.610	93.3	7.47
080905	230000	12	25.55	8.12	0.610	90.9	7.31
081005	000000	13	25.28	8.12	0.610	90.4	7.3
081005	010000	14	25.00	8.12	0.610	88.8	7.22
081005	020000	15	24.73	8.11	0.610	87.0	7.11
081005	030000	16	24.45	8.11	0.610	85.6	7.02
081005	040000	17	24.18	8.10	0.611	83.4	6.88
081005	050000	18	23.93	8.09	0.611	82.2	6.81
081005	060000	19	23.70	8.07	0.612	80.1	6.67
081005	070000	20	23.49	8.06	0.613	77.8	6.50
081005	080000	21	23.35	8.05	0.614	77.1	6.46
081005	090000	22	23.36	8.05	0.614	77.7	6.51
081005	100000	23	23.47	8.06	0.614	80.4	6.72
081005	110000	24	23.69	8.08	0.612	83.3	6.94
081005	120000	25	24.12	8.10	0.613	89.3	7.37
081005	130000	26	24.41	8.11	0.614	92.8	7.62
081005	140000	27	24.84	8.12	0.614	97.2	7.92
081005	150000	28	25.18	8.15	0.615	102.5	8.30
081005	160000	29	25.43	8.16	0.613	104.0	8.38
081005	170000	30	25.59	8.17	0.613	104.8	8.42
081005	180000	31	25.75	8.17	0.612	103.4	8.29
081005	190000	32	25.73	8.17	0.613	99.4	7.97
081005	200000	33	25.60	8.16	0.613	95.7	7.69
081005	210000	34	25.35	8.14	0.614	91.7	7.41
081005	220000	35	25.09	8.12	0.615	88.0	7.14
081005	230000	36	24.88	8.12	0.614	86.4	7.04
081105	000000	37	24.68	8.11	0.615	85.4	6.98
081105	010000	38	24.48	8.11	0.616	83.8	6.87
081105	020000	39	24.30	8.11	0.615	83.1	6.84
081105	030000	40	24.12	8.10	0.615	82.2	6.79
081105	040000	41	23.97	8.10	0.615	81.1	6.72
081105	050000	42	23.80	8.09	0.617	79.4	6.60
081105	060000	43	23.66	8.07	0.616	78.0	6.50
081105	070000	44	23.51	8.06	0.617	76.5	6.39
081105	080000	45	23.44	8.06	0.618	75.2	6.29
081105	090000	46	23.47	8.06	0.619	77.6	6.49
081105	100000	47	23.60	8.07	0.618	80.3	6.69

Twin Creek RM 34.9; Dst Lewisburg WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	110000	1	23.81	8.02	0.697	101.3	8.41
080905	120000	2	24.80	8.11	0.692	117.1	9.55
080905	130000	3	24.63	8.10	0.692	114.7	9.39
080905	140000	4	26.59	8.26	0.688	148.8	11.75

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	150000	5	26.30	8.27	0.695	153.3	12.16
080905	160000	6	26.42	8.24	0.714	137.0	10.85
080905	170000	7	26.50	8.26	0.706	135.8	10.74
080905	180000	8	26.30	8.28	0.696	139.4	11.06
080905	190000	9	25.77	8.29	0.680	129.4	10.37
080905	200000	10	25.06	8.22	0.676	112.5	9.13
080905	210000	11	24.57	8.14	0.679	97.0	7.95
080905	220000	12	24.24	8.07	0.687	87.4	7.21
080905	230000	13	23.97	8.02	0.690	83.9	6.95
081005	000000	14	23.74	7.99	0.691	80.5	6.69
081005	010000	15	23.51	7.98	0.691	76.8	6.42
081005	020000	16	23.26	7.98	0.690	74.2	6.23
081005	030000	17	22.99	7.98	0.689	72.9	6.15
081005	040000	18	22.74	7.99	0.686	71.2	6.04
081005	050000	19	22.46	8.00	0.682	69.1	5.89
081005	060000	20	22.21	8.00	0.677	67.2	5.76
081005	070000	21	22.01	7.94	0.676	65.8	5.66
081005	080000	22	21.97	7.88	0.680	67.1	5.77
081005	090000	23	22.15	7.89	0.685	75.5	6.47
081005	100000	24	22.75	7.96	0.690	90.7	7.69
081005	110000	25	23.62	8.04	0.688	104.8	8.74
081005	120000	26	24.39	8.10	0.683	117.0	9.61
081005	130000	27	25.33	8.16	0.678	124.2	10.03
081005	140000	28	25.88	8.20	0.690	131.3	10.50
081005	150000	29	25.83	8.21	0.693	129.4	10.36
081005	160000	30	26.09	8.27	0.691	138.2	11.01
081005	170000	31	26.11	8.28	0.692	138.7	11.04
081005	180000	32	26.08	8.28	0.694	138.9	11.06
081005	190000	33	25.77	8.24	0.696	126.4	10.13
081005	200000	34	25.29	8.16	0.707	110.8	8.95
081005	210000	35	24.82	8.07	0.711	95.6	7.79
081005	220000	36	24.52	8.01	0.712	86.6	7.10
081005	230000	37	24.30	7.97	0.715	81.3	6.69
081105	000000	38	24.11	7.95	0.716	77.8	6.42
081105	010000	39	23.92	7.92	0.716	74.4	6.17
081105	020000	40	23.74	7.90	0.716	72.1	6.00
081105	030000	41	23.56	7.88	0.719	68.6	5.73
081105	040000	42	23.39	7.85	0.722	66.9	5.60
081105	050000	43	23.23	7.84	0.722	62.9	5.28
081105	060000	44	23.05	7.82	0.722	62.2	5.25
081105	070000	45	22.89	7.81	0.719	61.0	5.16
081105	080000	46	22.89	7.82	0.714	62.3	5.27
081105	090000	47	23.06	7.86	0.708	71.4	6.02
081105	100000	48	23.49	7.95	0.701	88.6	7.40

Twin Creek RM 33.6; Dst lams and North American Nutrition

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	130000	1	24.41	7.97	0.792	83.9	6.86
080905	140000	2	25.40	8.05	0.792	95.0	7.63
080905	150000	3	26.30	8.16	0.720	104.5	8.26
080905	160000	4	27.29	8.25	0.702	120.1	9.32
080905	170000	5	27.63	8.30	0.726	120.9	9.32
080905	180000	6	27.57	8.31	0.745	113.1	8.77
080905	190000	7	27.25	8.29	0.804	113.4	8.80
080905	200000	8	27.05	8.27	0.824	109.4	8.52
080905	210000	9	26.70	8.23	0.827	101.5	7.98
080905	220000	10	26.28	8.19	0.867	95.1	7.52
080905	230000	11	25.85	8.15	0.915	88.8	7.07
081005	000000	12	25.48	8.11	0.941	85.0	6.77
081005	010000	13	25.12	8.06	0.964	76.9	6.20
081005	020000	14	24.84	8.01	1.019	70.2	5.69
081005	030000	15	24.57	7.98	1.028	65.4	5.32
081005	040000	16	24.31	7.96	1.053	61.2	5.01
081005	050000	17	24.06	7.93	1.054	59.1	4.86
081005	060000	18	23.83	7.92	1.060	58.1	4.79
081005	070000	19	23.61	7.90	1.075	56.4	4.68
081005	080000	20	23.47	7.90	1.076	58.7	4.88
081005	090000	21	23.51	7.91	1.083	59.0	4.90
081005	100000	22	23.66	7.93	1.032	62.3	5.16
081005	110000	23	23.86	7.97	1.003	68.0	5.61
081005	120000	24	24.26	8.01	1.031	77.5	6.35
081005	130000	25	24.73	8.05	0.976	82.2	6.68
081005	140000	26	25.44	8.13	0.891	94.4	7.57
081005	150000	27	26.15	8.22	0.790	108.3	8.58
081005	160000	28	26.56	8.28	0.813	115.5	9.08
081005	170000	29	26.90	8.32	0.838	121.0	9.45
081005	180000	30	26.90	8.34	0.840	121.1	9.46
081005	190000	31	26.64	8.31	0.821	112.1	8.80
081005	200000	32	26.44	8.28	0.803	103.0	8.11
081005	210000	33	26.05	8.24	0.779	90.6	7.19
081005	220000	34	25.71	8.20	0.806	88.9	7.10
081005	230000	35	25.36	8.18	0.805	87.4	7.03
081105	000000	36	25.04	8.13	0.796	79.1	6.42
081105	010000	37	24.75	8.10	0.803	73.9	6.00
081105	020000	38	24.51	8.06	0.813	67.6	5.52
081105	030000	39	24.28	8.02	0.816	62.7	5.14
081105	040000	40	24.08	8.00	0.806	59.6	4.90
081105	050000	41	23.90	7.96	0.802	57.2	4.72
081105	060000	42	23.72	7.92	0.809	55.3	4.58
081105	070000	43	23.56	7.91	0.816	55.3	4.60
081105	080000	44	23.48	7.91	0.816	57.7	4.80
081105	090000	45	23.56	7.91	0.844	61.7	5.12
081105	100000	46	23.73	7.95	0.777	65.6	5.43
081105	110000	47	24.01	7.98	0.781	71.8	5.92

Twin Creek RM 31.7; Pymont Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	130000	1	23.64	7.67	0.760	83.5	6.96
080905	140000	2	23.74	7.75	0.759	92.0	7.65
080905	150000	3	24.27	7.78	0.757	99.5	8.19
080905	160000	4	25.24	7.89	0.753	127.8	10.33
080905	170000	5	25.50	7.94	0.750	135.6	10.91
080905	180000	6	25.64	7.98	0.753	141.6	11.37
080905	190000	7	25.69	7.97	0.747	138.8	11.13
080905	200000	8	25.62	7.96	0.745	131.0	10.52
080905	210000	9	25.49	7.92	0.743	121.5	9.78
080905	220000	10	25.42	7.84	0.744	106.8	8.60
080905	230000	11	25.35	7.84	0.742	96.7	7.80
081005	000000	12	25.12	7.84	0.738	87.4	7.09
081005	010000	13	24.68	7.80	0.739	80.9	6.61
081005	020000	14	24.31	7.78	0.741	75.8	6.23
081005	030000	15	23.85	7.73	0.742	69.0	5.72
081005	040000	16	23.51	7.70	0.746	65.4	5.47
081005	050000	17	23.23	7.69	0.747	60.2	5.06
081005	060000	18	22.88	7.68	0.746	59.9	5.06
081005	070000	19	22.60	7.66	0.747	53.6	4.56
081005	080000	20	22.38	7.65	0.747	52.6	4.49
081005	090000	21	22.31	7.65	0.746	54.6	4.66
081005	100000	22	22.39	7.65	0.746	54.6	4.65
081005	110000	23	22.52	7.64	0.747	54.3	4.62
081005	120000	24	22.77	7.66	0.746	63.1	5.35
081005	130000	25	23.03	7.68	0.745	73.0	6.15
081005	140000	26	23.37	7.69	0.745	85.4	7.15
081005	150000	27	23.84	7.76	0.743	96.5	8.01
081005	160000	28	24.62	7.89	0.739	123.7	10.11
081005	170000	29	25.04	7.96	0.738	134.3	10.9
081005	180000	30	25.22	7.99	0.734	141.5	11.45
081005	190000	31	25.12	8.02	0.732	145.7	11.80
081005	200000	32	24.99	7.98	0.737	137.8	11.19
081005	210000	33	24.94	7.93	0.741	122.2	9.93
081005	220000	34	24.89	7.89	0.742	119.3	9.71
081005	230000	35	24.81	7.86	0.744	106.9	8.71
081105	000000	36	24.61	7.84	0.749	86.7	7.09
081105	010000	37	24.29	7.84	0.753	81.3	6.69
081105	020000	38	24.00	7.80	0.755	75.5	6.24
081105	030000	39	23.72	7.78	0.758	70.8	5.89
081105	040000	40	23.47	7.74	0.760	64.1	5.35
081105	050000	41	23.29	7.71	0.760	60.1	5.06
081105	060000	42	23.07	7.69	0.760	55.8	4.69
081105	070000	43	22.90	7.68	0.762	55.5	4.69
081105	080000	44	22.77	7.67	0.763	52.4	4.44
081105	090000	45	22.80	7.66	0.762	52.8	4.47
081105	100000	46	22.87	7.65	0.761	53.0	4.48
081105	110000	47	23.01	7.66	0.763	58.1	4.90
081105	120000	48	23.18	7.67	0.763	66.2	5.56

Twin Creek RM 26.7; Dst West Alexandria WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	090000	1	21.84	7.57	0.000	100.8	8.71
080905	100000	2	22.85	7.28	0.0001	102.1	8.66
080905	110000	3	24.48	7.21	0.000	102.5	8.43
080905	120000	4	23.22	8.78	0.627	79.7	6.69
080905	130000	5	24.62	9.06	0.616	109.9	8.99
080905	140000	6	26.55	9.23	0.606	135.6	10.71
080905	150000	7	28.29	9.36	0.599	154.7	11.85
080905	160000	8	28.74	9.36	0.597	161.5	12.27
080905	170000	9	28.52	9.28	0.601	153.8	11.73
080905	180000	10	28.21	9.26	0.603	146.8	11.26
080905	190000	11	27.80	9.16	0.608	139.1	10.75
080905	200000	12	27.38	9.13	0.611	128.8	10.03
080905	210000	13	27.08	9.08	0.614	119.5	9.35
080905	220000	14	26.75	8.99	0.616	109.8	8.64
080905	230000	15	26.40	8.91	0.618	101.8	8.07
081005	000000	16	26.09	8.82	0.621	91.3	7.27
081005	010000	17	25.80	8.76	0.624	84.2	6.74
081005	020000	18	25.52	8.65	0.627	78.4	6.31
081005	030000	19	25.21	8.57	0.629	72.9	5.90
081005	040000	20	24.92	8.55	0.628	69.8	5.68
081005	050000	21	24.62	8.53	0.629	67.6	5.53
081005	060000	22	24.30	8.48	0.627	66.4	5.47
081005	070000	23	23.98	8.46	0.626	65.5	5.42
081005	080000	24	23.72	8.41	0.627	64.4	5.36
081005	090000	25	23.53	8.39	0.630	64.8	5.41
081005	100000	26	23.50	8.39	0.630	65.9	5.51
081005	110000	27	23.54	8.38	0.632	70.0	5.84
081005	120000	28	23.78	8.46	0.639	82.8	6.89
081005	130000	29	24.99	8.67	0.650	114.6	9.32
081005	140000	30	26.60	8.84	0.637	143.1	11.29
081005	150000	31	27.44	8.95	0.632	155.7	12.11
081005	160000	32	28.25	9.05	0.627	164.6	12.61
081005	170000	33	28.27	9.08	0.626	162.8	12.47
081005	180000	34	28.09	9.04	0.626	157.3	12.09
081005	190000	35	27.76	8.99	0.623	150.5	11.63
081005	200000	36	27.38	8.96	0.623	140.2	10.91
081005	210000	37	26.96	8.92	0.623	127.6	10.01
081005	220000	38	26.60	8.86	0.629	119.5	9.43
081005	230000	39	26.21	8.78	0.634	108.5	8.62
081105	000000	40	25.84	8.73	0.641	99.1	7.93
081105	010000	41	25.52	8.62	0.643	89.5	7.20
081105	020000	42	25.25	8.55	0.645	81.2	6.57
081105	030000	43	24.99	8.49	0.645	74.5	6.06
081105	040000	44	24.77	8.42	0.641	69.9	5.71
081105	050000	45	24.58	8.40	0.636	67.9	5.56
081105	060000	46	24.39	8.38	0.630	65.6	5.39
081105	070000	47	24.19	8.32	0.627	65.0	5.36
081105	080000	48	24.04	8.32	0.627	64.2	5.31

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081105	090000	49	24.00	8.32	0.627	64.4	5.33
081105	100000	50	24.00	8.29	0.628	66.2	5.48
081105	110000	51	24.09	8.35	0.630	72.4	5.98
081105	120000	52	25.18	8.37	0.000	101.3	8.23
081105	130000	53	26.18	8.42	0.000	100.7	8.03
081105	140000	54	27.23	8.39	0.000	100.7	7.88
081105	150000	55	28.29	8.45	0.0013	100.6	7.72
081105	160000	56	29.78	8.40	0.0001	101.4	7.58
081105	170000	57	31.12	8.29	0.0001	100.9	7.37
081105	180000	58	32.19	8.33	0.000	101.8	7.31
081105	190000	59	32.43	8.38	0.000	104.3	7.45
081105	200000	60	32.18	8.38	0.0001	101.6	7.29

Twin Creek RM 23.9; Halderman Road (Duplicate A)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	130000	1	23.80	8.01	0.651	116.7	9.70
080905	140000	2	25.21	8.08	0.641	131.3	10.63
080905	150000	3	26.63	8.14	0.634	143.8	11.34
080905	160000	4	27.24	8.16	0.630	145.9	11.38
080905	170000	5	27.52	8.17	0.628	144.6	11.22
080905	180000	6	27.01	8.15	0.630	128.8	10.09
080905	190000	7	26.60	8.12	0.634	114.4	9.03
080905	200000	8	26.37	8.08	0.638	103.5	8.20
080905	210000	9	26.04	8.04	0.641	93.7	7.47
080905	220000	10	25.60	8.00	0.645	85.8	6.90
080905	230000	11	25.13	7.96	0.649	81.2	6.58
081005	000000	12	24.65	7.93	0.653	78.3	6.41
081005	010000	13	24.21	7.90	0.655	77.0	6.35
081005	020000	14	23.81	7.88	0.657	76.1	6.32
081005	030000	15	23.44	7.87	0.660	75.5	6.32
081005	040000	16	23.11	7.86	0.662	75.1	6.32
081005	050000	17	22.79	7.85	0.663	74.8	6.34
081005	060000	18	22.50	7.84	0.665	74.5	6.34
081005	070000	19	22.24	7.83	0.665	74.6	6.38
081005	080000	20	22.06	7.83	0.666	76.6	6.58
081005	090000	21	22.01	7.84	0.666	80.7	6.94
081005	100000	22	22.13	7.88	0.665	87.0	7.46
081005	110000	23	22.41	7.93	0.663	96.1	8.20
081005	120000	24	23.08	8.00	0.658	109.3	9.20
081005	130000	25	24.07	8.07	0.650	124.3	10.27
081005	140000	26	25.16	8.14	0.643	137.8	11.17
081005	150000	27	25.91	8.18	0.640	142.3	11.37
081005	160000	28	26.64	8.21	0.632	147.1	11.60
081005	170000	29	26.87	8.21	0.624	145.5	11.43
081005	180000	30	26.57	8.20	0.622	135.0	10.66
081005	190000	31	26.15	8.16	0.621	119.0	9.47
081005	200000	32	25.91	8.12	0.622	105.4	8.42

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081005	210000	33	25.63	8.07	0.626	93.7	7.52
081005	220000	34	25.31	8.02	0.630	85.3	6.89
081005	230000	35	24.93	7.98	0.635	79.9	6.50
081105	000000	36	24.53	7.94	0.640	77.0	6.31
081105	010000	37	24.15	7.92	0.645	75.3	6.21
081105	020000	38	23.82	7.90	0.648	74.7	6.21
081105	030000	39	23.52	7.88	0.651	74.2	6.20
081105	040000	40	23.26	7.87	0.654	74.0	6.21
081105	050000	41	23.02	7.85	0.656	73.5	6.20
081105	060000	42	22.80	7.84	0.658	73.4	6.21
081105	070000	43	22.60	7.83	0.663	73.4	6.23
081105	080000	44	22.50	7.84	0.663	75.8	6.46
081105	090000	45	22.55	7.86	0.667	82.2	6.99
081105	100000	46	22.71	7.89	0.660	87.2	7.39
081105	110000	47	23.05	7.95	0.657	98.0	8.26
081105	120000	48	23.46	8.01	0.652	107.1	8.96

Twin Creek RM 23.9; Halderman Road (Duplicate B)

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
080905	130000	1	23.82	8.20	0.654	9.93
080905	140000	2	25.17	8.28	0.649	10.76
080905	150000	3	26.55	8.34	0.642	11.33
080905	160000	4	27.17	8.37	0.642	11.40
080905	170000	5	27.37	8.37	0.640	11.17
080905	180000	6	26.83	8.34	0.642	10.06
080905	190000	7	26.47	8.30	0.645	9.06
080905	200000	8	26.23	8.26	0.646	8.21
080905	210000	9	25.89	8.22	0.649	7.49
080905	220000	10	25.45	8.18	0.652	7.05
080905	230000	11	24.98	8.13	0.656	6.67
081005	000000	12	24.50	8.10	0.658	6.53
081005	010000	13	24.06	8.08	0.660	6.47
081005	020000	14	23.66	8.06	0.661	6.36
081005	030000	15	23.29	8.05	0.661	6.38
081005	040000	16	22.96	8.03	0.663	6.38
081005	050000	17	22.65	8.03	0.664	6.38
081005	060000	18	22.37	8.02	0.665	6.34
081005	070000	19	22.11	8.01	0.665	6.46
081005	080000	20	21.93	8.02	0.665	6.65
081005	090000	21	21.90	8.04	0.665	7.03
081005	100000	22	22.02	8.08	0.665	7.60
081005	110000	23	22.35	8.14	0.663	8.38
081005	120000	24	23.07	8.21	0.660	9.41
081005	130000	25	24.04	8.29	0.654	10.17
081005	140000	26	25.14	8.36	0.648	11.04
081005	150000	27	25.86	8.39	0.644	11.21
081005	160000	28	26.57	8.42	0.644	11.23

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (mg/l)
081005	170000	29	26.70	8.42	0.641	10.92
081005	180000	30	26.41	8.41	0.642	10.35
081005	190000	31	26.01	8.37	0.645	9.27
081005	200000	32	25.78	8.32	0.648	8.31
081005	210000	33	25.49	8.27	0.651	7.53
081005	220000	34	25.16	8.22	0.655	6.91
081005	230000	35	24.78	8.18	0.658	6.52
081105	000000	36	24.38	8.14	0.661	6.25
081105	010000	37	24.01	8.12	0.663	6.27
081105	020000	38	23.68	8.10	0.665	6.24
081105	030000	39	23.37	8.08	0.666	6.20
081105	040000	40	23.11	8.07	0.667	6.26
081105	050000	41	22.89	8.06	0.667	6.31
081105	060000	42	22.67	8.05	0.668	6.26
081105	070000	43	22.47	8.04	0.668	6.32
081105	080000	44	22.38	8.05	0.668	6.57
081105	090000	45	22.44	8.08	0.667	7.02
081105	100000	46	22.62	8.11	0.666	7.53
081105	110000	47	22.97	8.18	0.663	8.49
081105	120000	48	23.39	8.23	0.660	9.47

Twin Creek RM 19.2; Ust Gratis WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	150000	1	27.85	8.01	0.610	150.2	11.60
080905	160000	2	28.62	8.01	0.605	154.9	11.79
080905	170000	3	28.67	8.00	0.604	152.5	11.61
080905	180000	4	28.27	7.98	0.604	143.2	10.98
080905	190000	5	27.65	7.93	0.605	129.6	10.04
080905	200000	6	27.03	7.88	0.608	115.4	9.04
080905	210000	7	26.35	7.82	0.612	101.6	8.06
080905	220000	8	25.69	7.79	0.616	90.8	7.29
080905	230000	9	25.18	7.75	0.618	81.9	6.63
081005	000000	10	24.75	7.72	0.620	76.2	6.22
081005	010000	11	24.40	7.70	0.620	72.5	5.96
081005	020000	12	24.06	7.69	0.621	69.5	5.75
081005	030000	13	23.73	7.68	0.621	68.5	5.70
081005	040000	14	23.44	7.67	0.621	67.0	5.60
081005	050000	15	23.18	7.66	0.621	66.1	5.56
081005	060000	16	22.93	7.66	0.621	65.3	5.52
081005	070000	17	22.70	7.66	0.621	64.6	5.48
081005	080000	18	22.53	7.66	0.622	65.1	5.54
081005	090000	19	22.48	7.66	0.622	67.3	5.74
081005	100000	20	22.65	7.69	0.622	73.2	6.22
081005	110000	21	23.09	7.74	0.622	84.2	7.09
081005	120000	22	23.89	7.82	0.619	101.0	8.38
081005	130000	23	25.11	7.91	0.615	121.5	9.86
081005	140000	24	26.45	7.98	0.611	140.8	11.14

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081005	150000	25	27.47	8.02	0.606	153.0	11.89
081005	160000	26	27.99	8.03	0.603	156.7	12.07
081005	170000	27	28.07	8.02	0.601	154.9	11.91
081005	180000	28	27.82	8.00	0.601	147.0	11.36
081005	190000	29	27.38	7.95	0.601	136.0	10.59
081005	200000	30	26.80	7.89	0.604	120.2	9.46
081005	210000	31	26.14	7.82	0.607	104.1	8.29
081005	220000	32	25.56	7.78	0.609	93.0	7.48
081005	230000	33	25.01	7.73	0.611	82.6	6.71
081105	000000	34	24.57	7.70	0.613	76.0	6.22
081105	010000	35	24.22	7.68	0.614	71.3	5.88
081105	020000	36	23.92	7.66	0.614	68.6	5.69
081105	030000	37	23.65	7.65	0.615	67.3	5.61
081105	040000	38	23.43	7.64	0.615	65.5	5.49
081105	050000	39	23.23	7.63	0.615	64.2	5.40
081105	060000	40	23.03	7.63	0.615	63.6	5.36
081105	070000	41	22.85	7.62	0.615	63.0	5.33
081105	080000	42	22.73	7.62	0.616	63.8	5.41
081105	090000	43	22.74	7.63	0.615	66.8	5.67
081105	100000	44	22.91	7.65	0.615	72.7	6.14
081105	110000	45	23.36	7.72	0.615	85.8	7.19
081105	120000	46	23.85	7.79	0.613	100.7	8.36
081105	130000	47	24.69	7.87	0.610	117.3	9.59
081105	140000	48	25.73	7.95	0.607	136.0	10.90

Twin Creek RM 19.0; Dst Gratis WWTP

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	150000	1	26.50	7.89	0.617	132.5	10.48
080905	160000	2	27.40	7.96	0.612	133.8	10.41
080905	170000	3	27.88	7.97	0.608	131.8	10.17
080905	180000	4	27.78	7.95	0.607	126.3	9.76
080905	190000	5	27.27	7.91	0.609	115.4	9.00
080905	200000	6	26.55	7.84	0.612	100.9	7.97
080905	210000	7	25.87	7.77	0.615	88.2	7.05
080905	220000	8	25.23	7.71	0.618	79.8	6.46
080905	230000	9	24.61	7.68	0.620	74.5	6.10
081005	000000	10	24.11	7.65	0.622	70.1	5.80
081005	010000	11	23.66	7.63	0.624	67.2	5.60
081005	020000	12	23.27	7.62	0.624	65.5	5.50
081005	030000	13	22.93	7.61	0.625	63.7	5.39
081005	040000	14	22.63	7.60	0.626	62.1	5.28
081005	050000	15	22.33	7.60	0.625	61.5	5.26
081005	060000	16	22.08	7.59	0.627	60.5	5.19
081005	070000	17	21.82	7.58	0.626	60.2	5.19
081005	080000	18	21.64	7.59	0.626	62.7	5.43
081005	090000	19	21.69	7.62	0.626	66.9	5.78

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081005	100000	20	22.07	7.66	0.625	77.1	6.62
081005	110000	21	22.82	7.72	0.624	87.4	7.40
081005	120000	22	23.61	7.79	0.623	101.2	8.44
081005	130000	23	24.52	7.86	0.621	111.1	9.11
081005	140000	24	25.36	7.91	0.618	119.6	9.65
081005	150000	25	26.33	7.97	0.613	127.4	10.10
081005	160000	26	26.85	8.00	0.609	128.4	10.09
081005	170000	27	27.13	8.00	0.606	126.0	9.86
081005	180000	28	27.18	7.98	0.605	121.4	9.48
081005	190000	29	26.87	7.94	0.605	113.7	8.93
081005	200000	30	26.23	7.86	0.608	96.9	7.70
081005	210000	31	25.60	7.78	0.611	86.2	6.93
081005	220000	32	25.01	7.72	0.614	79.0	6.42
081005	230000	33	24.47	7.68	0.616	73.0	6.00
081105	000000	34	23.97	7.65	0.618	69.5	5.76
081105	010000	35	23.54	7.63	0.620	66.7	5.57
081105	020000	36	23.20	7.61	0.621	65.3	5.49
081105	030000	37	22.90	7.59	0.622	63.7	5.38
081105	040000	38	22.64	7.58	0.622	63.0	5.35
081105	050000	39	22.42	7.57	0.623	62.5	5.34
081105	060000	40	22.21	7.57	0.623	61.9	5.30
081105	070000	41	22.01	7.56	0.623	61.5	5.29
081105	080000	42	21.92	7.57	0.624	63.6	5.48
081105	090000	43	22.01	7.60	0.623	70.1	6.03
081105	100000	44	22.27	7.64	0.624	77.8	6.66
081105	110000	45	22.79	7.71	0.623	88.1	7.46
081105	120000	46	23.30	7.77	0.621	97.3	8.17
081105	130000	47	24.28	7.83	0.618	108.7	8.96
081105	140000	48	25.04	7.90	0.615	117.9	9.58

Twin Creek RM 9.8; Germantown Gauge Station

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	130000	1	26.67	0	0.569	91.7	7.23
080905	140000	2	28.20	0	0.569	92.1	7.07
080905	150000	3	29.68	0	0.574	93.6	7.00
080905	160000	4	31.78	0	0.579	92.8	6.69
080905	170000	5	33.24	0	0.583	98.8	6.95
080905	180000	6	28.04	0	0.597	118.5	9.11
080905	190000	7	27.80	0	0.601	112.2	8.67
080905	200000	8	27.27	0	0.604	102.6	8.00
080905	210000	9	26.64	0	0.607	93.0	7.33
080905	220000	10	26.16	0	0.610	87.1	6.93
080905	230000	11	25.79	0	0.612	84.4	6.76
081005	000000	12	25.46	0	0.613	82.7	6.66
081005	010000	13	25.16	0	0.614	81.0	6.56
081005	020000	14	24.87	0	0.614	78.8	6.42
081005	030000	15	24.59	0	0.615	79.6	6.51

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081005	040000	16	24.36	0	0.615	79.2	6.51
081005	050000	17	24.11	0	0.615	78.3	6.47
081005	060000	18	23.92	0	0.614	78.8	6.53
081005	070000	19	23.74	0	0.614	78.2	6.50
081005	080000	20	23.60	0	0.614	79.9	6.66
081005	090000	21	23.61	0	0.613	83.9	7.00
081005	100000	22	23.91	0	0.611	91.2	7.56
081005	110000	23	24.51	0	0.609	100.8	8.27
081005	120000	24	25.25	0	0.606	108.7	8.79
081005	130000	25	25.95	0	0.604	115.8	9.24
081005	140000	26	26.68	0	0.602	122.5	9.66
081005	150000	27	27.33	0	0.600	125.2	9.75
081005	160000	28	27.40	0	0.600	122.1	9.50
081005	170000	29	27.76	0	0.599	120.7	9.33
081005	180000	30	27.72	0	0.600	117.2	9.07
081005	190000	31	27.59	0	0.601	111.6	8.65
081005	200000	32	27.22	0	0.604	101.3	7.90
081005	210000	33	26.71	0	0.608	90.2	7.11
081005	220000	34	26.32	0	0.611	85.1	6.75
081005	230000	35	25.98	0	0.613	81.7	6.52
081105	000000	36	25.69	0	0.614	80.3	6.44
081105	010000	37	25.41	0	0.615	78.8	6.35
081105	020000	38	25.17	0	0.616	78.2	6.33
081105	030000	39	24.93	0	0.616	77.0	6.27
081105	040000	40	24.72	0	0.617	77.0	6.29
081105	050000	41	24.52	0	0.617	76.8	6.30
081105	060000	42	24.34	0	0.617	77.0	6.33
081105	070000	43	24.18	0	0.617	76.1	6.28
081105	080000	44	24.11	0	0.616	77.6	6.41
081105	090000	45	24.18	0	0.615	82.5	6.81
081105	100000	46	24.47	0	0.614	89.9	7.38
081105	110000	47	24.85	0	0.611	98.0	7.98
081105	120000	48	25.37	0	0.609	104.7	8.45
081105	130000	49	26.09	0	0.606	113.5	9.04
081105	140000	50	26.89	0	0.603	118.7	9.32
081105	150000	51	27.30	0	0.602	119.1	9.28
081105	160000	52	27.78	0	0.601	120.0	9.28

Millers Fork RM 3.9; Georgetown-Verona Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	160000	1	22.02	7.35	0.643	27.6	2.37
080905	170000	2	22.05	7.41	0.643	24.9	2.14
080905	180000	3	22.05	7.44	0.643	23.9	2.06
080905	190000	4	22.03	7.45	0.643	26.0	2.23
080905	200000	5	22.03	7.45	0.643	25.1	2.15
080905	210000	6	22.02	7.45	0.643	24.1	2.07
080905	220000	7	22.03	7.45	0.643	22.6	1.94

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	230000	8	22.02	7.45	0.643	20.1	1.73
081005	000000	9	22.10	7.43	0.643	18.9	1.63
081005	010000	10	22.11	7.42	0.642	16.7	1.44
081005	020000	11	22.05	7.41	0.642	14.9	1.28
081005	030000	12	21.91	7.39	0.644	15.1	1.30
081005	040000	13	22.01	7.39	0.643	13.9	1.19
081005	050000	14	21.91	7.39	0.644	12.5	1.07
081005	060000	15	21.99	7.41	0.645	18.4	1.58
081005	070000	16	21.93	7.45	0.644	16.6	1.43
081005	080000	17	21.85	7.48	0.643	23.3	2.01
081005	090000	18	21.81	7.51	0.642	23.3	2.01
081005	100000	19	21.78	7.49	0.643	22.8	1.97
081005	110000	20	21.77	7.49	0.644	23.4	2.02
081005	120000	21	21.81	7.51	0.645	21.4	1.85
081005	130000	22	21.84	7.50	0.644	20.9	1.81
081005	140000	23	21.87	7.50	0.644	22.3	1.92
081005	150000	24	21.95	7.51	0.644	20.2	1.74
081005	160000	25	21.95	7.51	0.644	22.7	1.95
081005	170000	26	21.99	7.50	0.644	23.1	1.98
081005	180000	27	22.00	7.48	0.644	20.1	1.73
081005	190000	28	22.02	7.50	0.644	19.9	1.71
081005	200000	29	22.01	7.48	0.644	19.2	1.65
081005	210000	30	21.99	7.48	0.645	16.2	1.39
081005	220000	31	22.02	7.47	0.644	15.2	1.31
081005	230000	32	21.98	7.46	0.645	14.7	1.26
081105	000000	33	21.98	7.46	0.645	13.9	1.20
081105	010000	34	21.95	7.47	0.645	12.8	1.10
081105	020000	35	21.95	7.46	0.645	13.0	1.12
081105	030000	36	21.96	7.45	0.645	11.4	0.98
081105	040000	37	21.93	7.45	0.646	9.9	0.85
081105	050000	38	21.94	7.44	0.646	8.8	0.75
081105	060000	39	21.94	7.44	0.647	8.6	0.74
081105	070000	40	21.94	7.46	0.647	11.3	0.97
081105	080000	41	21.95	7.44	0.646	8.5	0.74
081105	090000	42	21.98	7.45	0.646	9.3	0.80
081105	100000	43	21.97	7.45	0.647	8.7	0.75
081105	110000	44	22.02	7.46	0.646	9.3	0.80
081105	120000	45	22.03	7.46	0.646	8.1	0.69
081105	130000	46	22.12	7.48	0.645	9.5	0.82
081105	140000	47	22.14	7.48	0.645	8.9	0.76
081105	150000	48	22.16	7.48	0.646	12.7	1.09

Price Creek RM 13.7; Pence-Shewman Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	170000	1	26.60	8.25	0.580	108.4	8.55
080905	180000	2	27.00	8.28	0.575	107.3	8.41
080905	190000	3	26.86	8.24	0.579	97.9	7.69

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	200000	4	26.49	8.20	0.582	89.9	7.11
080905	210000	5	26.08	8.17	0.587	82.8	6.59
080905	220000	6	25.64	8.13	0.593	76.4	6.14
080905	230000	7	25.22	8.09	0.600	69.7	5.64
081005	000000	8	24.86	8.05	0.606	63.5	5.17
081005	100000	9	24.51	8.02	0.613	60.3	4.94
081005	200000	10	24.19	8.00	0.620	58.0	4.78
081005	300000	11	23.89	7.99	0.625	56.8	4.71
081005	400000	12	23.63	7.98	0.630	56.7	4.73
081005	500000	13	23.35	7.98	0.634	55.9	4.68
081005	600000	14	23.11	7.97	0.636	55.8	4.70
081005	700000	15	22.90	7.97	0.638	55.5	4.69
081005	800000	16	22.75	7.98	0.638	57.6	4.88
081005	900000	17	22.79	7.99	0.636	60.8	5.15
081005	1000000	18	23.09	8.03	0.633	69.7	5.86
081005	1100000	19	23.62	8.07	0.628	81.1	6.76
081005	1200000	20	24.13	8.12	0.621	91.0	7.52
081005	1300000	21	24.61	8.17	0.613	98.6	8.07
081005	1400000	22	25.11	8.22	0.606	106.9	8.67
081005	1500000	23	25.42	8.25	0.598	106.9	8.62
081005	1600000	24	25.91	8.27	0.593	108.1	8.64
081005	1700000	25	26.21	8.29	0.584	107.3	8.53
081005	1800000	26	26.31	8.30	0.583	104.6	8.30
081005	1900000	27	26.23	8.29	0.583	99.5	7.90
081005	2000000	28	25.98	8.27	0.586	92.8	7.41
081005	2100000	29	25.71	8.22	0.592	84.9	6.81
081005	2200000	30	25.34	8.17	0.599	76.9	6.21
081005	2300000	31	24.95	8.11	0.607	69.2	5.63
081105	000000	32	24.61	8.06	0.614	62.5	5.12
081105	100000	33	24.32	8.02	0.622	57.3	4.72
081105	200000	34	24.09	8.00	0.627	55.5	4.58
081105	300000	35	23.89	7.99	0.631	55.4	4.60
081105	400000	36	23.76	7.99	0.635	55.2	4.59
081105	500000	37	23.69	7.99	0.638	55.2	4.60
081105	600000	38	23.55	7.98	0.641	54.2	4.52
081105	700000	39	23.42	7.98	0.641	54.6	4.57
081105	800000	40	23.31	7.99	0.641	55.8	4.68
081105	900000	41	23.37	8.00	0.639	60.1	5.03
081105	1000000	42	23.59	8.04	0.634	68.1	5.68
081105	1100000	43	23.91	8.07	0.630	77.2	6.40
081105	1200000	44	24.26	8.11	0.622	85.4	7.03
081105	1300000	45	24.75	8.16	0.614	95.0	7.75
081105	1400000	46	25.40	8.21	0.603	103.4	8.34
081105	1500000	47	26.24	8.25	0.599	107.6	8.54

Price Creek RM 0.6; SR 503

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	140000	1	25.72	8.02	0.513	111.8	8.96
080905	150000	2	25.63	8.03	0.507	109.2	8.78
080905	160000	3	26.09	8.04	0.500	114.9	9.16
080905	170000	4	26.08	8.05	0.494	115.0	9.16
080905	180000	5	25.34	8.04	0.495	107.6	8.69
080905	190000	6	24.70	8.01	0.498	97.9	8.00
080905	200000	7	24.42	7.99	0.499	89.5	7.35
080905	210000	8	24.28	7.96	0.502	82.6	6.80
080905	220000	9	24.16	7.95	0.505	78.4	6.47
080905	230000	10	24.06	7.94	0.508	76.1	6.30
081005	000000	11	23.92	7.93	0.508	74.9	6.21
081005	010000	12	23.71	7.92	0.512	73.3	6.12
081005	020000	13	23.49	7.91	0.513	71.7	6.00
081005	030000	14	23.28	7.90	0.516	71.3	5.99
081005	040000	15	23.07	7.89	0.516	70.7	5.96
081005	050000	16	22.84	7.89	0.515	70.1	5.93
081005	060000	17	22.66	7.88	0.520	69.9	5.93
081005	070000	18	22.47	7.87	0.520	70.3	5.99
081005	080000	19	22.38	7.89	0.520	72.9	6.22
081005	090000	20	22.47	7.91	0.519	78.9	6.72
081005	100000	21	22.87	7.95	0.518	86.8	7.32
081005	110000	22	23.51	7.98	0.517	95.1	7.97
081005	120000	23	24.32	8.00	0.515	104.1	8.58
081005	130000	24	25.03	8.03	0.512	110.1	8.94
081005	140000	25	25.61	8.04	0.506	114.0	9.16
081005	150000	26	25.43	8.05	0.503	110.4	8.90
081005	160000	27	25.70	8.06	0.497	114.3	9.17
081005	170000	28	25.69	8.07	0.493	114.0	9.15
081005	180000	29	25.50	8.06	0.488	111.3	8.97
081005	190000	30	24.87	8.03	0.491	98.8	8.05
081005	200000	31	24.52	8.00	0.492	89.3	7.33
081005	210000	32	24.30	7.98	0.496	82.7	6.81
081005	220000	33	24.12	7.96	0.515	78.8	6.52
081005	230000	34	23.99	7.95	0.516	76.7	6.35
081105	000000	35	23.85	7.94	0.517	75.5	6.27
081105	010000	36	23.69	7.93	0.517	74.2	6.17
081105	020000	37	23.53	7.92	0.518	73.2	6.11
081105	030000	38	23.37	7.91	0.519	72.2	6.05
081105	040000	39	23.22	7.91	0.519	71.8	6.03
081105	050000	40	23.09	7.90	0.519	71.4	6.02
081105	060000	41	22.93	7.89	0.519	70.4	5.93
081105	070000	42	22.80	7.89	0.519	70.1	5.94
081105	080000	43	22.78	7.90	0.518	72.8	6.16
081105	090000	44	22.93	7.93	0.518	78.7	6.65
081105	100000	45	23.23	7.96	0.516	85.9	7.22
081105	110000	46	23.67	7.99	0.515	94.2	7.85
081105	120000	47	24.03	8.01	0.514	98.9	8.18

Bantas Fork RM 7.10; Bantas Creek Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	180000	1	24.00	7.74	0.671	136.1	11.26
080905	190000	2	23.95	7.74	0.668	131.8	10.92
080905	200000	3	23.84	7.72	0.671	117.2	9.73
080905	210000	4	23.79	7.68	0.674	110.0	9.14
080905	220000	5	23.79	7.68	0.675	92.3	7.68
080905	230000	6	23.55	7.67	0.678	83.5	6.97
081005	000000	7	23.26	7.68	0.679	57.4	4.81
081005	010000	8	22.97	7.66	0.679	50.0	4.22
081005	020000	9	22.62	7.64	0.681	52.6	4.47
081005	030000	10	22.29	7.63	0.681	45.7	3.91
081005	040000	11	21.93	7.62	0.682	45.3	3.90
081005	050000	12	21.63	7.62	0.682	45.1	3.91
081005	060000	13	21.34	7.61	0.682	43.0	3.74
081005	070000	14	21.11	7.58	0.683	43.0	3.76
081005	080000	15	20.92	7.59	0.683	44.0	3.86
081005	090000	16	20.81	7.58	0.684	41.6	3.67
081005	100000	17	20.82	7.58	0.686	49.7	4.37
081005	110000	18	20.99	7.57	0.686	48.6	4.26
081005	120000	19	21.28	7.60	0.685	59.6	5.20
081005	130000	20	21.74	7.64	0.684	64.6	5.58
081005	140000	21	22.36	7.69	0.680	78.6	6.71
081005	150000	22	22.91	7.71	0.675	94.3	7.97
081005	160000	23	23.38	7.77	0.672	98.5	8.25
081005	170000	24	23.70	7.77	0.667	109.4	9.11
081005	180000	25	23.98	7.80	0.659	109.0	9.03
081005	190000	26	23.97	7.79	0.664	111.0	9.20
081005	200000	27	23.90	7.78	0.663	96.8	8.03
081005	210000	28	23.84	7.74	0.663	88.6	7.36
081005	220000	29	23.83	7.73	0.676	71.0	5.90
081005	230000	30	23.56	7.70	0.679	60.8	5.07
081105	000000	31	23.30	7.67	0.679	53.8	4.51
081105	010000	32	23.04	7.65	0.680	50.3	4.24
081105	020000	33	22.78	7.64	0.680	46.9	3.97
081105	030000	34	22.54	7.62	0.681	44.2	3.76
081105	040000	35	22.28	7.61	0.681	42.2	3.61
081105	050000	36	22.06	7.60	0.682	42.5	3.65
081105	060000	37	21.83	7.59	0.684	41.3	3.56
081105	070000	38	21.63	7.58	0.686	46.2	4.00
081105	080000	39	21.50	7.57	0.686	41.5	3.60
081105	090000	40	21.42	7.55	0.686	45.4	3.95
081105	100000	41	21.46	7.56	0.685	45.4	3.94
081105	110000	42	21.62	7.56	0.684	49.1	4.25
081105	120000	43	21.83	7.59	0.683	58.2	5.02
081105	130000	44	22.23	7.61	0.681	64.9	5.56
081105	140000	45	22.68	7.67	0.677	71.9	6.10
081105	150000	46	22.89	7.69	0.670	88.7	7.50
081105	160000	47	23.06	7.70	0.668	95.8	8.07

Bantas Fork RM 1.3; SR 503

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	120000	1	23.08	8.36	0.622	107.1	9.02
080905	130000	2	24.30	8.40	0.617	117.4	9.66
080905	140000	3	25.60	8.41	0.611	126.2	10.15
080905	150000	4	26.97	8.45	0.604	131.6	10.32
080905	160000	5	27.87	8.44	0.597	116.4	8.98
080905	170000	6	28.64	8.46	0.587	122.1	9.29
080905	180000	7	28.19	8.42	0.582	104.1	7.99
080905	190000	8	27.50	8.40	0.580	94.7	7.35
080905	200000	9	27.10	8.36	0.580	91.8	7.18
080905	210000	10	26.60	8.37	0.581	78.9	6.22
080905	220000	11	26.10	8.34	0.583	78.8	6.28
080905	230000	12	25.64	8.32	0.586	72.7	5.84
081005	000000	13	25.17	8.29	0.589	70.7	5.73
081005	010000	14	24.74	8.26	0.593	70.1	5.72
081005	020000	15	24.34	8.24	0.600	69.3	5.70
081005	030000	16	23.89	8.24	0.608	68.7	5.70
081005	040000	17	23.41	8.23	0.615	69.4	5.81
081005	050000	18	22.98	8.21	0.623	73.0	6.16
081005	060000	19	22.57	8.22	0.629	70.6	6.00
081005	070000	20	22.18	8.21	0.633	70.1	6.00
081005	080000	21	21.91	8.23	0.637	74.4	6.41
081005	090000	22	21.96	8.20	0.637	81.7	7.03
081005	100000	23	22.37	8.23	0.635	96.5	8.24
081005	110000	24	22.98	8.28	0.634	102.2	8.63
081005	120000	25	23.75	8.34	0.630	112.5	9.35
081005	130000	26	24.83	8.38	0.626	121.7	9.92
081005	140000	27	25.77	8.42	0.619	128.0	10.26
081005	150000	28	26.59	8.44	0.612	127.3	10.05
081005	160000	29	27.27	8.46	0.604	125.8	9.81
081005	170000	30	27.85	8.46	0.596	119.9	9.26
081005	180000	31	27.71	8.44	0.590	110.0	8.51
081005	190000	32	27.19	8.42	0.587	96.4	7.53
081005	200000	33	26.80	8.43	0.585	87.0	6.84
081005	210000	34	26.32	8.40	0.587	80.5	6.39
081005	220000	35	25.85	8.37	0.587	74.0	5.92
081005	230000	36	25.44	8.35	0.588	71.9	5.80
081105	000000	37	25.07	8.31	0.590	71.3	5.79
081105	010000	38	24.70	8.29	0.593	68.9	5.63
081105	020000	39	24.41	8.27	0.597	68.8	5.65
081105	030000	40	24.09	8.25	0.603	67.5	5.58
081105	040000	41	23.79	8.24	0.609	68.3	5.68
081105	050000	42	23.48	8.23	0.617	67.7	5.66
081105	060000	43	23.17	8.22	0.625	69.0	5.80
081105	070000	44	22.88	8.22	0.632	70.0	5.92
081105	080000	45	22.75	8.25	0.636	73.9	6.26
081105	090000	46	22.89	8.26	0.639	81.6	6.90
081105	100000	47	23.16	8.24	0.642	88.2	7.41
081105	110000	48	23.63	8.29	0.639	102.5	8.54

Toms Run RM 0.11; Anthony Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	160000	1	20.95	7.41	0.673	115.8	10.16
080905	170000	2	21.09	7.53	0.673	114.1	9.99
080905	180000	3	21.11	7.49	0.673	102.4	8.95
080905	190000	4	21.25	7.48	0.672	101.8	8.88
080905	200000	5	21.03	7.39	0.675	79.6	6.98
080905	210000	6	21.17	7.37	0.675	65.9	5.75
080905	220000	7	21.13	7.37	0.679	65.5	5.73
080905	230000	8	21.25	7.36	0.678	58.0	5.06
081005	000000	9	21.38	7.39	0.679	56.9	4.95
081005	010000	10	21.34	7.41	0.679	58.9	5.13
081005	020000	11	21.16	7.43	0.679	59.7	5.22
081005	030000	12	20.94	7.43	0.680	59.4	5.21
081005	040000	13	20.67	7.44	0.681	59.5	5.25
081005	050000	14	20.46	7.43	0.682	58.1	5.15
081005	060000	15	20.20	7.44	0.683	58.0	5.17
081005	070000	16	19.99	7.44	0.685	58.3	5.21
081005	080000	17	19.82	7.45	0.686	59.9	5.37
081005	090000	18	19.79	7.47	0.686	61.7	5.54
081005	100000	19	19.88	7.48	0.686	67.4	6.04
081005	110000	20	20.17	7.51	0.685	75.4	6.71
081005	120000	21	20.33	7.54	0.683	87.1	7.73
081005	130000	22	20.54	7.56	0.680	97.3	8.60
081005	140000	23	20.70	7.57	0.676	109.6	9.67
081005	150000	24	20.85	7.59	0.672	119.5	10.51
081005	160000	25	20.96	7.51	0.671	108.3	9.50
081005	170000	26	21.00	7.49	0.670	117.2	10.28
081005	180000	27	21.03	7.43	0.671	95.8	8.39
081005	190000	28	21.01	7.39	0.671	86.9	7.61
081005	200000	29	20.88	7.35	0.673	77.3	6.79
081005	210000	30	20.85	7.33	0.673	71.2	6.26
081005	220000	31	20.82	7.28	0.674	52.2	4.59
081005	230000	32	20.93	7.27	0.675	47.3	4.15
081105	000000	33	21.07	7.32	0.676	48.5	4.25
081105	010000	34	21.33	7.34	0.675	54.8	4.77
081105	020000	35	21.34	7.38	0.676	55.3	4.82
081105	030000	36	21.18	7.38	0.677	56.2	4.91
081105	040000	37	21.05	7.40	0.677	56.4	4.94
081105	050000	38	20.90	7.39	0.679	55.8	4.90
081105	060000	39	20.73	7.40	0.680	56.2	4.95
081105	070000	40	20.57	7.40	0.681	56.1	4.96
081105	080000	41	20.44	7.41	0.682	57.9	5.13
081105	090000	42	20.44	7.43	0.683	61.4	5.45
081105	100000	43	20.53	7.44	0.683	65.2	5.77
081105	110000	44	20.68	7.45	0.682	72.9	6.43
081105	120000	45	20.78	7.46	0.678	86.9	7.65
081105	130000	46	20.94	7.48	0.677	94.4	8.29

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081105	140000	47	21.07	7.48	0.672	108.3	9.48
081105	150000	48	21.10	7.48	0.669	111.3	9.74

Little Twin Creek RM 2.0; Little Twin Road

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
080905	170000	1	24.64	7.92	0.720	150.4	12.29
080905	180000	2	24.95	7.97	0.710	151.3	12.30
080905	190000	3	24.66	7.95	0.711	140.9	11.52
080905	200000	4	24.19	7.92	0.724	128.0	10.55
080905	210000	5	23.77	7.89	0.717	115.8	9.62
080905	220000	6	23.27	7.85	0.718	100.7	8.44
080905	230000	7	22.78	7.82	0.722	88.4	7.48
081005	000000	8	22.29	7.80	0.727	80.9	6.91
081005	010000	9	21.82	7.79	0.732	75.5	6.51
081005	020000	10	21.37	7.79	0.736	72.0	6.26
081005	030000	11	20.94	7.79	0.739	68.7	6.02
081005	040000	12	20.58	7.79	0.741	67.2	5.94
081005	050000	13	20.26	7.80	0.742	66.6	5.92
081005	060000	14	19.95	7.80	0.743	66.7	5.97
081005	070000	15	19.68	7.81	0.744	66.4	5.97
081005	080000	16	19.48	7.83	0.744	68.0	6.14
081005	090000	17	19.41	7.84	0.745	71.1	6.43
081005	100000	18	19.52	7.87	0.744	78.8	7.11
081005	110000	19	19.99	7.89	0.743	89.0	7.95
081005	120000	20	20.47	7.91	0.743	100.7	8.92
081005	130000	21	21.00	7.97	0.741	114.3	10.02
081005	140000	22	21.82	8.00	0.737	127.2	10.97
081005	150000	23	22.72	8.04	0.730	141.2	11.97
081005	160000	24	23.41	8.05	0.727	148.8	12.45
081005	170000	25	23.83	8.05	0.724	150.8	12.52
081005	180000	26	24.05	8.03	0.718	148.3	12.26
081005	190000	27	23.92	8.01	0.717	139.4	11.55
081005	200000	28	23.64	7.98	0.714	127.3	10.61
081005	210000	29	23.28	7.93	0.718	114.0	9.56
081005	220000	30	22.90	7.88	0.720	98.8	8.34
081005	230000	31	22.56	7.84	0.720	87.8	7.47
081105	000000	32	22.20	7.81	0.723	79.7	6.83
081105	010000	33	21.84	7.79	0.725	74.4	6.42
081105	020000	34	21.51	7.77	0.727	70.3	6.10
081105	030000	35	21.19	7.77	0.729	67.7	5.91
081105	040000	36	20.94	7.77	0.729	66.1	5.80
081105	050000	37	20.67	7.77	0.729	65.7	5.80
081105	060000	38	20.43	7.77	0.732	65.5	5.80
081105	070000	39	20.23	7.77	0.733	65.4	5.82
081105	080000	40	20.10	7.79	0.735	66.9	5.97
081105	090000	41	20.05	7.80	0.736	71.8	6.41

Date (MMDDYY)	Time (HHMMSS)	Time (hours)	Temperature (°C)	pH (S.U.)	Conductivity (mS/cm)	DO (% sat)	DO (mg/l)
081105	100000	42	20.17	7.83	0.735	79.1	7.05
081105	110000	43	20.48	7.87	0.735	90.8	8.03
081105	120000	44	20.80	7.91	0.733	104.0	9.15
081105	130000	45	21.55	7.95	0.729	118.3	10.26
081105	140000	46	22.15	7.98	0.730	130.7	11.20
081105	150000	47	22.85	8.01	0.720	142.9	12.09
081105	160000	48	23.30	8.02	0.720	147.5	12.36

Stream		
River Mile (Location)		-----Date Sample Collected-----

Appendix Table A-5. Concentrations ($\mu\text{g/l}$) of organic compounds detected in water samples collected in the Twin Creek study area during 2005.

WAU: 05080002030

Twin Creek (mainstem)

RM 38.00 (East Lock Rd.)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0034	0.0034
Atrazine	--	0.59 ^J
Dieldrin	0.0028	0.0034
Heptachlor epoxide	0.0043	0.0057
Metolachlor	--	0.63 ^J
γ -BHC	0.0027	--
TICs [†] (number detected)	1	2

RM 35.50 (dst Swamp Creek)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0032	0.0033
Atrazine	0.74	0.48
Dieldrin	0.0031	0.0027
Heptachlor epoxide	0.0033	0.0055
Metolachlor	0.29	0.60
γ -BHC	0.0026	--
TICs [†] (number detected)	1	3

RM 34.90 (dst Lewisburg WWTP)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	--	0.0032
Atrazine	0.75	0.49
Dieldrin	0.0039	0.0057
Heptachlor epoxide	0.0046	0.0055
Metolachlor	0.30	0.71
γ -BHC	--	0.0029
TICs [†] (number detected)	1	4

RM 33.60 (dst Iams and Akey)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0038	0.0028
Atrazine	--	0.49
d-BHC	--	0.0030

Stream**River Mile (Location)**-----Date Sample Collected-----

Twin Creek (mainstem)**RM 33.60** (dst lams and Akey), continued

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
Endrin	--	0.0030
Heptachlor epoxide	0.0025	0.0062
Metolachlor	--	0.77
y-BHC	0.0028	--
TICs [†] (number detected)	9	5

RM 31.70 (ust Pymont Rd.)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0035	0.0029
Atrazine	0.71	0.47 ^J
bis(2-Ethylhexyl)phthalate	--	0.54 ^J
Dieldrin	--	0.0028
Heptachlor epoxide	0.0032	0.0046
Metolachlor	0.30	0.81 ^J
y-BHC	0.0027	--
TICs [†] (number detected)	1	6

RM 27.50 (adj. Stotler Rd.)

<u>Parameter*</u>	<u>21JUN05</u>	[Duplicate A / B] <u>07SEP05</u>
a-BHC	0.0034	0.0030/0.0030
Acetochlor	0.23	--/--
Aldrin	--	0.0025/0.0022
Atrazine	1.02	0.78/0.81 ^J
Dieldrin	0.0025	0.0027/0.0029
Heptachlor epoxide	0.0031	0.0025/0.0036
Metolachlor	0.36	0.54/0.54 ^J
y-BHC	--	0.0025/0.0030
TICs [†] (number detected)	1	3/6

RM 26.70 (dst W. Alexdrandria WWTP)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0032	--
Acetochlor	0.23	--
Atrazine	0.94	0.71
Chloroform	0.60	--
Dieldrin	--	0.0034
Heptachlor epoxide	0.0032	0.0027
Metolachlor	0.36	0.51
y-BHC	0.0027	0.0025

Stream		
River Mile (Location)	-----Date Sample Collected-----	
Twin Creek		
RM 26.70 (dst W. Alexdrandria WWTP), continued		
<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
TICs [†] (number detected)	3	4
Swamp Creek		
RM 0.20 (US 40)		
<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0054	0.0037
Acetochlor	--	0.25
Atrazine	0.77	0.30
d-BHC	0.0030 ^B	--
Dieldrin	0.0034	--
Heptachlor epoxide	0.0032	0.0032
Metolachlor	0.25	0.33
y-BHC	--	0.0040
TICs [†] (number detected)	--	6
Swamp Creek		
RM 0.20 (US 40)		
<u>Parameter*</u>	<u>30JUN05</u>	
Atrazine	1.59 ^J	
Dieldrin	0.0038	
Metolachlor	0.28 ^J	
y-BHC	0.0026	
TICs [†] (number detected)	2	
Price Creek		
RM 13.70 (Pence-Shewman Rd.)		
<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.022	0.0038 ^{UJ}
Acetochlor	0.25	0.25 ^J
Atrazine	1.47	0.30 ^J
bis(2-Ethylhexyl)phthalate	--	0.87 ^J
d-BHC	--	0.0036 ^{UJ}
Dieldrin	0.0033	--
Endrin	--	0.0034 ^{UJ}
Heptachlor epoxide	--	0.0022 ^{UJ}
Metolachlor	0.50	0.32 ^J
y-BHC	0.0051	--
TICs [†] (number detected)	1	6

Stream
River Mile (Location) -----**Date Sample Collected**-----

Price Creek

RM 0.60 (ust SR 503)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0036	0.0030
Acetochlor	0.24	0.28 ^J
Atrazine	1.11	1.43 ^J
Dieldrin	0.0034	0.0026
Heptachlor epoxide	0.0034	0.0036
Metolachlor	0.45	0.63 ^J
y-BHC	0.0026	--
TICs [†] (number detected)	--	2

Miller's Fork

RM 3.90 (Georgetown-Verona Rd.)

<u>Parameter*</u>	<u>21JUN05</u>	<u>07SEP05</u>
a-BHC	0.0058	0.0030
Acetochlor	0.24	--
Atrazine	1.02	--
d-BHC	--	0.0037
Dieldrin	0.0028	0.0058
Heptachlor epoxide	0.0031	0.0049
Metolachlor	0.31	--
TICs [†] (number detected)	--	2

WAU: 05080002040

Twin Creek (mainstem)

RM 23.90 (ust Halderman Rd.)

<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	0.0032	0.0045
Atrazine	0.83	0.38 ^J
bis(2-Ethylhexyl)phthalate	--	0.54 ^J
Dieldrin	0.0023	0.0024
Heptachlor epoxide	0.0028	--
Metolachlor	0.31	0.28 ^J
y-BHC	0.0028	--
TICs [†] (number detected)	--	5

Twin Creek

RM 19.20 (Enterprise Rd.)

<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	0.0037	0.0029

Stream		
River Mile (Location)	-----Date Sample Collected-----	
<i>Twin Creek</i>		
RM 19.20 (Enterprise Rd.), continued		
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
Atrazine	0.96	0.29
d-BHC	--	0.0031
Dieldrin	0.0024	--
Heptachlor epoxide	0.0030	0.0021
Metolachlor	0.33	0.26
TICs [†] (number detected)	1	1
RM 19.00 (dst Gratis WWTP)		
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	0.0037	0.0033
Atrazine	0.86	0.27
d-BHC	--	0.0036
Dieldrin	0.0023	--
Heptachlor epoxide	--	0.0040
Metolachlor	0.31	0.25
y-BHC	0.0029	--
TICs [†] (number detected)	1	2
RM 9.80 (old gauge station)		
	[Duplicate A / B]	
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	0.0031 ^{UJ} /0.0030	0.0052
Aldrin	--/--	0.0022/0.0023
Atrazine	0.90/--	0.25/0.26 ^{UJ}
d-BHC	--/--	0.0035/0.0031
Dieldrin	0.0023/0.0024	--/--
Heptachlor epoxide	0.0032/0.0030	0.0024/0.0022
Metolachlor	0.34/0.38 ^J	0.25/0.26 ^{UJ}
TICs [†] (number detected)	--/3	2/3
RM 9.80 (Twin Creek below the dam)		
<u>Parameter*</u>	<u>30JUN05</u>	
a-BHC	0.0031	
Acetochlor	0.27 ^J	
Atrazine	2.20 ^J	
bis(2-Ethylhexyl)phthalate	0.84	
Metolachlor	1.24	
y-BHC	0.0024	
TICs [†] (number detected)	2	

Stream		
River Mile (Location)	-----Date Sample Collected-----	
Tom's Run		
RM 0.11 (adj. Anthony Rd.)		
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
Atrazine	0.61	--
Dieldrin	0.0028	--
Heptachlor epoxide	0.0025	--
Metolachlor	0.27	--
Simazine	0.20	--
y-BHC	0.0029	--
TICs [†] (number detected)	1	2
Little Twin Creek		
RM 2.00 (Little Twin Rd.)		
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	--	0.0029
Atrazine	0.34	--
Dieldrin	0.0021	0.0025
Heptachlor epoxide	0.0024	0.0022
Metolachlor	0.24	--
TICs [†] (number detected)	--	1
Goose Creek		
RM 4.40 (Scheyhing Rd.)		
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	0.0032	0.0032
Acetochlor	0.24	--
Atrazine	0.53	--
bis(2-Ethylhexyl)phthalate	--	0.54 ^J
d-BHC	--	0.0045
Endrin	--	0.0034
Heptachlor epoxide	--	0.0021
Metolachlor	0.25	--
Pentachlorophenol	--	5.3 ^J
Simazine	0.21	--
y-BHC	0.0034	--
TICs [†] (number detected)	5	7
Bantas Fork		
RM 1.30 (SR 503)		[Duplicate A / B]
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
a-BHC	0.0033	0.0032/0.0030
Atrazine	0.45	0.20/--
bis(2-Ethylhexyl)phthalate	--	--/0.56 ^{UJ}

Stream		
River Mile (Location)	-----Date Sample Collected-----	
Bantas Fork		
RM 1.30 (SR 503), continued		[Duplicate A / B]
<u>Parameter*</u>	<u>21JUN05</u>	<u>14SEP05</u>
d-BHC	--	--/0.0029
Dieldrin	0.0037	--/0.0026
Heptachlor epoxide	0.0027	0.0025/0.0024
Metolachlor	0.26	0.21/
y-BHC	0.0027	--/--
TICs [†] (number detected)	--	1/6

- * Only compounds that were detected at least once are listed. No polychlorinated biphenyls (PCBs) were detected at any site.
- ** No samples collected at site.
- Compound not detected or below the method detection limit.
- † TICs (Tentatively Identified Compounds); analysis indicates the presence of an analyte (non-priority pollutant) that has been "tentatively identified."

Qualifiers:

- J The analyte was positively identified; the associated numerical value is estimated.
- UJ The analyte was not detected above the sample quantitation limit (QL). However, the reported QL is estimated.
- B Analytical result is estimated. Analyte was detected in the associated method/trip/field blank as well as in the sample.

Table A-6. Aggregated catch summaries for fish sampling locations, Twin Creek watershed, 2005

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 46.50	Location: St. Rt. 722	Date Range: 07/22/2005
Time Fished: 1246 sec	Drainage: 19.7 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Hog Sucker	R	I	S	M	3	6.00	0.43	0.98	9.22	163.33
White Sucker	W	O	S	T	9	18.00	1.28	1.68	15.80	93.33
Creek Chub	N	G	N	T	30	60.00	4.27	0.48	4.55	8.07
Rosyface Shiner	N	I	S	I	2	4.00	0.28	0.01	0.06	1.50
Scarlet Shiner	N	I	S	M	50	100.00	7.11	0.27	2.52	2.68
Striped Shiner	N	I	S		14	28.00	1.99	0.40	3.74	14.21
Sand Shiner	N	I	M	M	42	84.00	5.97	0.16	1.47	1.86
Silverjaw Minnow	N	I	M		42	84.00	5.97	0.13	1.19	1.50
Bluntnose Minnow	N	O	C	T	227	454.00	32.29	1.39	13.06	3.06
Central Stoneroller	N	H	N		50	100.00	7.11	0.56	5.28	5.61
Rock Bass	S	C	C		40	80.00	5.69	1.58	14.85	19.74
Smallmouth Bass	F	C	C	M	2	4.00	0.28	0.07	0.64	17.00
Longear Sunfish	S	I	C	M	37	74.00	5.26	2.00	18.81	27.03
Johnny Darter	D	I	C		1	2.00	0.14	0.00	0.02	1.00
Greenside Darter	D	I	S	M	57	114.00	8.11	0.63	5.93	5.53
Banded Darter	D	I	S	I	42	84.00	5.97	0.11	1.03	1.31
Rainbow Darter	D	I	S	M	54	108.00	7.68	0.19	1.81	1.78
Least Darter [S]	D	I	N		1	2.00	0.14	0.00	0.02	1.00
<i>Mile Total</i>					703	1,406.00		10.63		
<i>Number of Species</i>					18					
<i>Number of Hybrids</i>					0					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 42.10	Location: Euphemia-Castine Rd.	Date Range: 08/23/2005
Time Fished: 2728 sec	Drainage: 28.0 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Hog Sucker	R	I	S	M	12	18.00	1.18	3.15	9.80	175.08
White Sucker	W	O	S	T	62	93.00	6.10	14.54	45.22	156.39
Western Blacknose Dace	N	G	S	T	1	1.50	0.10	0.00	0.01	1.00
Creek Chub	N	G	N	T	68	102.00	6.69	1.88	5.83	18.38
Silver Shiner	N	I	S	I	6	9.00	0.59	0.02	0.06	2.00
Rosyface Shiner	N	I	S	I	1	1.50	0.10	0.00	0.01	2.00
Scarlet Shiner	N	I	S	M	104	156.00	10.24	0.26	0.80	1.65
Striped Shiner	N	I	S		11	16.50	1.08	0.41	1.28	25.00
Spotfin Shiner	N	I	M		15	22.50	1.48	0.08	0.23	3.33
Sand Shiner	N	I	M	M	62	93.00	6.10	0.12	0.37	1.29
Silverjaw Minnow	N	I	M		12	18.00	1.18	0.05	0.14	2.50
Bluntnose Minnow	N	O	C	T	228	342.00	22.44	0.86	2.66	2.50
Central Stoneroller	N	H	N		38	57.00	3.74	0.43	1.33	7.50
Rock Bass	S	C	C		84	126.00	8.27	5.15	16.01	40.85
Smallmouth Bass	F	C	C	M	4	6.00	0.39	0.86	2.67	143.25
Green Sunfish	S	I	C	T	5	7.50	0.49	0.11	0.33	14.00
Longear Sunfish	S	I	C	M	100	150.00	9.84	3.56	11.08	23.75
Johnny Darter	D	I	C		11	16.50	1.08	0.02	0.06	1.09
Greenside Darter	D	I	S	M	41	61.50	4.04	0.34	1.04	5.46
Banded Darter	D	I	S	I	19	28.50	1.87	0.05	0.14	1.58
Rainbow Darter	D	I	S	M	128	192.00	12.60	0.28	0.85	1.43
Fantail Darter	D	I	C		3	4.50	0.30	0.01	0.03	2.33
Mottled Sculpin		I	C		1	1.50	0.10	0.02	0.06	12.00
<i>Mile Total</i>					1,016	1,524.00		32.16		
<i>Number of Species</i>					23					
<i>Number of Hybrids</i>					0					

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 38.00	Location: East Lock Rd.	Date Range: 07/22/2005
Time Fished: 3306 sec	Drainage: 38.0 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Hog Sucker	R	I	S M	17	25.50	0.99	1.35	4.94	52.94
White Sucker	W	O	S T	18	27.00	1.05	1.50	5.49	55.56
Creek Chub	N	G	N T	42	63.00	2.45	4.07	14.88	64.52
Silver Shiner	N	I	S I	23	34.50	1.34	0.18	0.65	5.13
Rosyface Shiner	N	I	S I	114	171.00	6.65	0.34	1.25	2.00
Scarlet Shiner	N	I	S M	12	18.00	0.70	0.03	0.11	1.67
Striped Shiner	N	I	S	40	60.00	2.34	1.24	4.54	20.68
Spotfin Shiner	N	I	M	9	13.50	0.53	0.04	0.13	2.67
Sand Shiner	N	I	M M	30	45.00	1.75	0.07	0.24	1.47
Bluntnose Minnow	N	O	C T	95	142.50	5.55	0.42	1.54	2.95
Central Stoneroller	N	H	N	1,057	1,585.50	61.70	10.75	39.35	6.78
Blackstripe Topminnow		I	M	2	3.00	0.12	0.01	0.03	3.00
Rock Bass	S	C	C	22	33.00	1.28	2.08	7.61	63.00
Smallmouth Bass	F	C	C M	23	34.50	1.34	4.18	15.29	121.04
Bluegill Sunfish	S	I	C P	1	1.50	0.06	0.03	0.10	18.00
Greenside Darter	D	I	S M	81	121.50	4.73	0.50	1.83	4.11
Banded Darter	D	I	S I	2	3.00	0.12	0.01	0.03	2.50
Rainbow Darter	D	I	S M	87	130.50	5.08	0.29	1.06	2.22
Fantail Darter	D	I	C	4	6.00	0.23	0.02	0.05	2.50
Mottled Sculpin		I	C	34	51.00	1.98	0.24	0.86	4.61
<i>Mile Total</i>				1,713	2,569.50		27.31		
<i>Number of Species</i>				20					
<i>Number of Hybrids</i>				0					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 35.50	Location: upst. Lewisburg WWTP	Date Range: 07/21/2005
Time Fished: 1855 sec	Drainage: 69.0 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Black Redhorse	R	I	S I	38	57.00	5.39	16.13	36.15	282.89
Golden Redhorse	R	I	S M	14	21.00	1.99	8.08	18.11	384.62
Northern Hog Sucker	R	I	S M	36	54.00	5.11	4.50	10.09	83.33
White Sucker	W	O	S T	6	9.00	0.85	1.88	4.20	208.33
Creek Chub	N	G	N T	2	3.00	0.28	0.13	0.29	42.50
Silver Shiner	N	I	S I	21	31.50	2.98	0.17	0.37	5.24
Rosyface Shiner	N	I	S I	41	61.50	5.82	0.16	0.36	2.63
Scarlet Shiner	N	I	S M	16	24.00	2.27	0.06	0.13	2.44
Striped Shiner	N	I	S	52	78.00	7.38	2.21	4.94	28.27
Spotfin Shiner	N	I	M	7	10.50	0.99	0.05	0.12	5.00
Sand Shiner	N	I	M M	34	51.00	4.82	0.08	0.19	1.62
Mimic Shiner	N	I	M I	14	21.00	1.99	0.03	0.06	1.21
Silverjaw Minnow	N	I	M	1	1.50	0.14	0.00	0.01	2.00
Bluntnose Minnow	N	O	C T	14	21.00	1.99	0.08	0.17	3.57
Central Stoneroller	N	H	N	143	214.50	20.28	2.24	5.01	10.42
Yellow Bullhead		I	C T	1	1.50	0.14	0.05	0.12	36.00
Rock Bass	S	C	C	51	76.50	7.23	2.96	6.63	38.64
Smallmouth Bass	F	C	C M	19	28.50	2.70	3.58	8.03	125.69
Largemouth Bass	F	C	C	4	6.00	0.57	0.02	0.03	2.50
Green Sunfish	S	I	C T	16	24.00	2.27	0.50	1.11	20.63
Bluegill Sunfish	S	I	C P	9	13.50	1.28	0.20	0.44	14.50
Longear Sunfish	S	I	C M	17	25.50	2.41	0.88	1.98	34.65
Greenside Darter	D	I	S M	15	22.50	2.13	0.12	0.27	5.27
Banded Darter	D	I	S I	20	30.00	2.84	0.06	0.13	1.90
Rainbow Darter	D	I	S M	88	132.00	12.48	0.17	0.37	1.25
Mottled Sculpin		I	C	26	39.00	3.69	0.31	0.70	7.96
<i>Mile Total</i>				705	1,057.50		44.60		
<i>Number of Species</i>				26					
<i>Number of Hybrids</i>				0					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 34.90	Location: Salem Rd.	Date Range: 07/21/2005
Time Fished: 4308 sec	Drainage: 91.0 sq mi	Thru: 10/04/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight	
Black Redhorse	R	I	S	I	50	37.50	3.39	10.14	24.74	270.33
Golden Redhorse	R	I	S	M	41	30.75	2.78	6.77	16.52	220.17
Northern Hog Sucker	R	I	S	M	66	49.50	4.47	6.44	15.71	130.04
White Sucker	W	O	S	T	66	49.50	4.47	2.97	7.25	60.00
Common Carp	G	O	M	T	1	0.75	0.07	1.69	4.12	2,250.00
Goldfish	G	O	M	T	1	0.75	0.07	0.11	0.26	143.00
Bigeye Chub	N	I	S	I	4	3.00	0.27	0.01	0.02	2.50
Creek Chub	N	G	N	T	7	5.25	0.47	0.01	0.03	2.07
Silver Shiner	N	I	S	I	77	57.75	5.21	0.24	0.57	4.06
Rosyface Shiner	N	I	S	I	58	43.50	3.93	0.08	0.20	1.84
Scarlet Shiner	N	I	S	M	61	45.75	4.13	0.09	0.22	1.96
Striped Shiner	N	I	S		37	27.75	2.51	1.08	2.64	38.92
Spotfin Shiner	N	I	M		12	9.00	0.81	0.04	0.10	4.38
Sand Shiner	N	I	M	M	100	75.00	6.77	0.10	0.25	1.38
Mimic Shiner	N	I	M	I	2	1.50	0.14	0.00	0.01	2.50
Bluntnose Minnow	N	O	C	T	75	56.25	5.08	0.22	0.54	3.95
Central Stoneroller	N	H	N		317	237.75	21.46	1.60	3.90	6.71
Striped Sh X Rosyface Sh		I			1	0.75	0.07	0.01	0.03	15.00
Yellow Bullhead		I	C	T	1	0.75	0.07	0.11	0.27	147.00
Stonecat Madtom		I	C	I	1	0.75	0.07	0.00	0.01	5.00
Blackstripe Topminnow		I	M		4	3.00	0.27	0.01	0.01	1.75
Rock Bass	S	C	C		125	93.75	8.46	4.68	11.42	49.90
Smallmouth Bass	F	C	C	M	34	25.50	2.30	2.63	6.42	103.15
Largemouth Bass	F	C	C		2	1.50	0.14	0.03	0.07	18.50
Green Sunfish	S	I	C	T	22	16.50	1.49	0.49	1.19	29.64
Bluegill Sunfish	S	I	C	P	16	12.00	1.08	0.30	0.74	25.19
Longear Sunfish	S	I	C	M	26	19.50	1.76	0.60	1.47	30.85
Green Sf X Hybrid					2	1.50	0.14	0.08	0.20	54.50
Logperch	D	I	S	M	4	3.00	0.27	0.04	0.10	14.25
Johnny Darter	D	I	C		2	1.50	0.14	0.00	0.01	1.50
Greenside Darter	D	I	S	M	34	25.50	2.30	0.08	0.19	3.03
Banded Darter	D	I	S	I	32	24.00	2.17	0.04	0.10	1.72
Rainbow Darter	D	I	S	M	142	106.50	9.61	0.15	0.37	1.41
Orangethroat Darter	D	I	S		1	0.75	0.07	0.00	0.00	2.00
Fantail Darter	D	I	C		3	2.25	0.20	0.00	0.01	2.00
Mottled Sculpin		I	C		50	37.50	3.39	0.14	0.34	3.74
<i>Mile Total</i>					1,477	1,107.75		40.98		
<i>Number of Species</i>					34					
<i>Number of Hybrids</i>					2					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 33.60	Location: dst. Iams and Akey outfalls	Date Range: 07/21/2005
Time Fished: 2006 sec	Drainage: 94.0 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Black Redhorse	R	I	S	I	29	43.50	2.71	13.50	28.82	310.34
Golden Redhorse	R	I	S	M	18	27.00	1.68	6.38	13.61	236.11
Northern Hog Sucker	R	I	S	M	35	52.50	3.27	8.25	17.61	157.14
White Sucker	W	O	S	T	27	40.50	2.53	2.25	4.80	55.56
River Chub	N	I	N	I	3	4.50	0.28	0.09	0.19	19.67
Creek Chub	N	G	N	T	56	84.00	5.24	1.34	2.85	15.91
Silver Shiner	N	I	S	I	17	25.50	1.59	0.11	0.22	4.12
Rosyface Shiner	N	I	S	I	59	88.50	5.52	0.18	0.38	2.03
Scarlet Shiner	N	I	S	M	27	40.50	2.53	0.11	0.23	2.63
Striped Shiner	N	I	S		36	54.00	3.37	1.54	3.29	28.57
Spotfin Shiner	N	I	M		14	21.00	1.31	0.10	0.21	4.64
Sand Shiner	N	I	M	M	95	142.50	8.89	0.35	0.75	2.46
Mimic Shiner	N	I	M	I	5	7.50	0.47	0.02	0.03	2.00
Bluntnose Minnow	N	O	C	T	41	61.50	3.84	0.19	0.41	3.10
Central Stoneroller	N	H	N		280	420.00	26.19	3.77	8.04	8.97
Striped Sh X River Chub		I			1	1.50	0.09	0.02	0.03	10.00
Rock Bass	S	C	C		62	93.00	5.80	4.67	9.96	50.16
Smallmouth Bass	F	C	C	M	16	24.00	1.50	2.52	5.38	105.00
Largemouth Bass	F	C	C		5	7.50	0.47	0.12	0.26	16.00
Green Sunfish	S	I	C	T	5	7.50	0.47	0.17	0.37	23.00
Bluegill Sunfish	S	I	C	P	7	10.50	0.65	0.17	0.36	15.86
Longear Sunfish	S	I	C	M	9	13.50	0.84	0.31	0.65	22.67
Logperch	D	I	S	M	2	3.00	0.19	0.05	0.11	16.50
Greenside Darter	D	I	S	M	37	55.50	3.46	0.19	0.40	3.41
Banded Darter	D	I	S	I	40	60.00	3.74	0.08	0.18	1.39
Rainbow Darter	D	I	S	M	111	166.50	10.38	0.21	0.45	1.27
Fantail Darter	D	I	C		2	3.00	0.19	0.01	0.01	2.00
Mottled Sculpin		I	C		30	45.00	2.81	0.18	0.39	4.03
<i>Mile Total</i>					1,069	1,603.50		46.84		
<i>Number of Species</i>					27					
<i>Number of Hybrids</i>					1					

Species List

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River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 31.70	Location: Brennersville-Pyrmont Rd.	Date Range: 07/20/2005
Time Fished: 4956 sec	Drainage: 99.0 sq mi	Thru: 10/03/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	3	2.25	0.32	0.19	0.88	85.67
Black Redhorse	R	I	S I	16	12.00	1.70	3.11	14.23	259.03
Golden Redhorse	R	I	S M	11	8.25	1.17	2.47	11.30	299.09
Northern Hog Sucker	R	I	S M	62	46.50	6.59	2.89	13.21	62.03
White Sucker	W	O	S T	20	15.00	2.13	1.21	5.52	80.35
Common Carp	G	O	M T	1	0.75	0.11	3.75	17.17	5,000.00
Creek Chub	N	G	N T	5	3.75	0.53	0.06	0.27	16.00
Silver Shiner	N	I	S I	19	14.25	2.02	0.09	0.40	6.07
Rosyface Shiner	N	I	S I	6	4.50	0.64	0.01	0.04	1.67
Scarlet Shiner	N	I	S M	58	43.50	6.16	0.07	0.33	1.68
Striped Shiner	N	I	S	38	28.50	4.04	0.41	1.88	14.40
Spotfin Shiner	N	I	M	11	8.25	1.17	0.05	0.22	5.91
Sand Shiner	N	I	M M	4	3.00	0.43	0.01	0.03	1.75
Mimic Shiner	N	I	M I	10	7.50	1.06	0.01	0.04	1.20
Silverjaw Minnow	N	I	M	1	0.75	0.11	0.00	0.01	2.00
Bluntnose Minnow	N	O	C T	77	57.75	8.18	0.18	0.81	3.07
Central Stoneroller	N	H	N	29	21.75	3.08	0.36	1.66	16.62
Yellow Bullhead		I	C T	8	6.00	0.85	0.64	2.93	106.50
Rock Bass	S	C	C	142	106.50	15.09	2.95	13.49	27.66
Smallmouth Bass	F	C	C M	15	11.25	1.59	1.42	6.51	126.33
Largemouth Bass	F	C	C	6	4.50	0.64	0.12	0.57	27.50
Green Sunfish	S	I	C T	24	18.00	2.55	0.55	2.53	30.67
Bluegill Sunfish	S	I	C P	40	30.00	4.25	0.41	1.87	13.57
Longear Sunfish	S	I	C M	23	17.25	2.44	0.39	1.81	22.87
Pumpkinseed Sunfish	S	I	C P	1	0.75	0.11	0.06	0.28	82.00
Green Sf X Hybrid				2	1.50	0.21	0.07	0.31	45.50
Logperch	D	I	S M	11	8.25	1.17	0.12	0.56	14.91
Johnny Darter	D	I	C	3	2.25	0.32	0.00	0.01	0.67
Greenside Darter	D	I	S M	152	114.00	16.15	0.14	0.64	1.23
Banded Darter	D	I	S I	32	24.00	3.40	0.03	0.13	1.19
Rainbow Darter	D	I	S M	103	77.25	10.95	0.07	0.33	0.92
Fantail Darter	D	I	C	8	6.00	0.85	0.01	0.05	2.00
<i>Mile Total</i>				941	705.75		21.84		
<i>Number of Species</i>				31					
<i>Number of Hybrids</i>				1					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 27.50	Location: 0.7 mi. dst. New Lexington	Date Range: 07/20/2005
Time Fished: 4446 sec	Drainage: 142.0 sq mi	Thru: 10/04/2005
Dist Fished: 0.40 km	Basin: Great Miami River	Sampler Type: D
	No of Passes: 2	

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Black Redhorse	R	I	S	I	100	75.00	5.54	17.97	31.43	239.63
Golden Redhorse	R	I	S	M	34	25.50	1.88	8.32	14.55	326.35
Northern Hog Sucker	R	I	S	M	63	47.25	3.49	3.63	6.35	76.86
White Sucker	W	O	S	T	22	16.50	1.22	2.58	4.52	156.55
Common Carp	G	O	M	T	1	0.75	0.06	1.35	2.36	1,800.00
River Chub	N	I	N	I	52	39.00	2.88	1.40	2.45	35.94
Creek Chub	N	G	N	T	2	1.50	0.11	0.00	0.01	2.00
Silver Shiner	N	I	S	I	42	31.50	2.33	0.12	0.22	3.90
Rosyface Shiner	N	I	S	I	167	125.25	9.25	0.17	0.30	1.38
Scarlet Shiner	N	I	S	M	46	34.50	2.55	0.06	0.11	1.79
Striped Shiner	N	I	S		110	82.50	6.09	2.84	4.96	34.37
Spotfin Shiner	N	I	M		44	33.00	2.44	0.17	0.29	5.00
Sand Shiner	N	I	M	M	12	9.00	0.66	0.02	0.03	2.03
Bluntnose Minnow	N	O	C	T	57	42.75	3.16	0.16	0.29	3.81
Central Stoneroller	N	H	N		410	307.50	22.70	2.88	5.04	9.36
Yellow Bullhead		I	C	T	3	2.25	0.17	0.50	0.87	221.67
Stonecat Madtom		I	C	I	1	0.75	0.06	0.00	0.00	2.00
Rock Bass	S	C	C		66	49.50	3.65	3.42	5.98	69.12
Smallmouth Bass	F	C	C	M	58	43.50	3.21	6.78	11.87	155.96
Largemouth Bass	F	C	C		12	9.00	0.66	1.15	2.01	127.33
Green Sunfish	S	I	C	T	13	9.75	0.72	0.63	1.11	64.92
Bluegill Sunfish	S	I	C	P	18	13.50	1.00	0.40	0.70	29.78
Longear Sunfish	S	I	C	M	21	15.75	1.16	0.40	0.69	25.10
Green Sf X Hybrid					36	27.00	1.99	1.56	2.72	57.66
Logperch	D	I	S	M	13	9.75	0.72	0.12	0.20	12.00
Johnny Darter	D	I	C		1	0.75	0.06	0.00	0.00	2.00
Greenside Darter	D	I	S	M	103	77.25	5.70	0.22	0.38	2.83
Banded Darter	D	I	S	I	118	88.50	6.53	0.11	0.19	1.22
Rainbow Darter	D	I	S	M	168	126.00	9.30	0.19	0.33	1.50
Fantail Darter	D	I	C		13	9.75	0.72	0.02	0.04	2.08
<i>Mile Total</i>					1,806	1,354.50		57.18		
<i>Number of Species</i>					29					
<i>Number of Hybrids</i>					1					

Species List

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River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 26.70	Location: dst. West Alexandria WWTP	Date Range: 07/22/2005
Time Fished: 5911 sec	Drainage: 143.0 sq mi	Thru: 10/04/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Quillback	C	O	M	1	0.75	0.03	0.02	0.03	24.00
Black Redhorse	R	I	S I	85	63.75	2.15	16.27	25.14	255.18
Golden Redhorse	R	I	S M	25	18.75	0.63	5.84	9.03	311.61
Northern Hog Sucker	R	I	S M	152	114.00	3.84	8.74	13.50	76.65
White Sucker	W	O	S T	45	33.75	1.14	3.87	5.98	114.59
River Chub	N	I	N I	107	80.25	2.70	1.21	1.88	15.12
Bigeye Chub	N	I	S I	44	33.00	1.11	0.12	0.19	3.77
Western Blacknose Dace	N	G	S T	9	6.75	0.23	0.02	0.03	2.89
Creek Chub	N	G	N T	69	51.75	1.74	0.95	1.46	18.31
Silver Shiner	N	I	S I	17	12.75	0.43	0.07	0.10	5.27
Rosyface Shiner	N	I	S I	201	150.75	5.08	0.29	0.45	1.92
Scarlet Shiner	N	I	S M	271	203.25	6.84	0.38	0.58	1.84
Striped Shiner	N	I	S	352	264.00	8.89	4.90	7.57	18.56
Spotfin Shiner	N	I	M	151	113.25	3.81	0.36	0.55	3.14
Sand Shiner	N	I	M M	254	190.50	6.41	0.30	0.46	1.56
Silverjaw Minnow	N	I	M	18	13.50	0.45	0.04	0.06	3.11
Bluntnose Minnow	N	O	C T	95	71.25	2.40	0.18	0.28	2.56
Central Stoneroller	N	H	N	843	632.25	21.29	3.68	5.68	5.81
Channel Catfish	F		C	2	1.50	0.05	1.09	1.68	725.00
Yellow Bullhead		I	C T	7	5.25	0.18	0.04	0.07	8.43
Stonecat Madtom		I	C I	16	12.00	0.40	0.13	0.21	11.06
Brindled Madtom		I	C I	2	1.50	0.05	0.01	0.02	7.00
Rock Bass	S	C	C	176	132.00	4.44	8.40	12.98	63.64
Smallmouth Bass	F	C	C M	51	38.25	1.29	4.19	6.47	109.53
Largemouth Bass	F	C	C	16	12.00	0.40	0.13	0.21	11.13
Green Sunfish	S	I	C T	3	2.25	0.08	0.07	0.11	32.00
Bluegill Sunfish	S	I	C P	53	39.75	1.34	0.91	1.41	22.90
Longear Sunfish	S	I	C M	44	33.00	1.11	0.84	1.29	25.37
Green Sf X Hybrid				8	6.00	0.20	0.41	0.64	68.63
Logperch	D	I	S M	11	8.25	0.28	0.10	0.16	12.64
Greenside Darter	D	I	S M	138	103.50	3.48	0.28	0.43	2.72
Banded Darter	D	I	S I	260	195.00	6.57	0.25	0.38	1.27
Rainbow Darter	D	I	S M	415	311.25	10.48	0.52	0.81	1.67
Fantail Darter	D	I	C	8	6.00	0.20	0.01	0.01	1.13
Mottled Sculpin		I	C	11	8.25	0.28	0.10	0.15	12.00
<i>Mile Total</i>				3,960	2,970.00		64.71		
<i>Number of Species</i>				34					
<i>Number of Hybrids</i>				1					

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 23.90	Location: Halderman Rd.	Date Range: 07/15/2005
Time Fished: 4366 sec	Drainage: 197.0 sq mi	Thru: 10/03/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Black Redhorse	R	I	S I	105	78.75	4.54	19.80	38.99	251.44
Golden Redhorse	R	I	S M	8	6.00	0.35	1.00	1.97	166.38
Northern Hog Sucker	R	I	S M	118	88.50	5.10	4.61	9.07	52.07
White Sucker	W	O	S T	13	9.75	0.56	1.31	2.58	134.49
River Chub	N	I	N I	188	141.00	8.12	2.26	4.44	16.01
Bigeye Chub	N	I	S I	35	26.25	1.51	0.10	0.19	3.66
Creek Chub	N	G	N T	2	1.50	0.09	0.10	0.19	66.00
Silver Shiner	N	I	S I	34	25.50	1.47	0.08	0.17	3.28
Rosyface Shiner	N	I	S I	159	119.25	6.87	0.23	0.46	1.95
Scarlet Shiner	N	I	S M	10	7.50	0.43	0.02	0.04	2.60
Striped Shiner	N	I	S	115	86.25	4.97	1.89	3.72	21.89
Spotfin Shiner	N	I	M	38	28.50	1.64	0.09	0.19	3.29
Sand Shiner	N	I	M M	48	36.00	2.07	0.07	0.13	1.84
Mimic Shiner	N	I	M I	1	0.75	0.04	0.00	0.00	2.00
Silverjaw Minnow	N	I	M	12	9.00	0.52	0.03	0.06	3.40
Bluntnose Minnow	N	O	C T	100	75.00	4.32	0.29	0.58	3.91
Central Stoneroller	N	H	N	827	620.25	35.74	8.90	17.52	14.34
Yellow Bullhead		I	C T	3	2.25	0.13	0.16	0.31	70.67
Stonecat Madtom		I	C I	8	6.00	0.35	0.07	0.14	12.00
Brindled Madtom		I	C I	1	0.75	0.04	0.01	0.01	9.00
Rock Bass	S	C	C	71	53.25	3.07	3.90	7.68	73.27
Smallmouth Bass	F	C	C M	50	37.50	2.16	4.03	7.94	107.52
Largemouth Bass	F	C	C	4	3.00	0.17	0.11	0.21	35.50
Green Sunfish	S	I	C T	17	12.75	0.73	0.31	0.61	24.18
Bluegill Sunfish	S	I	C P	4	3.00	0.17	0.06	0.11	18.25
Longear Sunfish	S	I	C M	23	17.25	0.99	0.37	0.73	21.55
Green Sf X Hybrid				6	4.50	0.26	0.26	0.52	58.33
Logperch	D	I	S M	2	1.50	0.09	0.01	0.02	7.00
Greenside Darter	D	I	S M	102	76.50	4.41	0.33	0.66	4.35
Banded Darter	D	I	S I	47	35.25	2.03	0.07	0.14	2.04
Rainbow Darter	D	I	S M	144	108.00	6.22	0.20	0.40	1.89
Mottled Sculpin		I	C	19	14.25	0.82	0.12	0.23	8.11

Mile Total 2,314 1,735.50 50.79

Number of Species 31

Number of Hybrids 1

Species List

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River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 19.20	Location: upst. Gratis WWTP	Date Range: 07/15/2005
Time Fished: 4390 sec	Drainage: 226.0 sq mi	Thru: 09/14/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Black Redhorse	R	I	S I	156	117.00	5.66	32.16	51.83	274.89
Golden Redhorse	R	I	S M	3	2.25	0.11	1.05	1.69	466.67
Northern Hog Sucker	R	I	S M	133	99.75	4.83	9.81	15.81	98.37
White Sucker	W	O	S T	31	23.25	1.13	0.82	1.32	35.29
River Chub	N	I	N I	104	78.00	3.77	1.44	2.32	18.46
Bigeye Chub	N	I	S I	8	6.00	0.29	0.02	0.04	3.63
Western Blacknose Dace	N	G	S T	2	1.50	0.07	0.00	0.01	2.50
Creek Chub	N	G	N T	12	9.00	0.44	0.21	0.33	22.93
Silver Shiner	N	I	S I	24	18.00	0.87	0.07	0.11	3.88
Rosyface Shiner	N	I	S I	438	328.50	15.90	0.69	1.10	2.08
Scarlet Shiner	N	I	S M	11	8.25	0.40	0.01	0.02	1.64
Striped Shiner	N	I	S	173	129.75	6.28	2.36	3.81	18.22
Spotfin Shiner	N	I	M	83	62.25	3.01	0.20	0.32	3.19
Sand Shiner	N	I	M M	108	81.00	3.92	0.17	0.27	2.07
Silverjaw Minnow	N	I	M	10	7.50	0.36	0.03	0.04	3.33
Bluntnose Minnow	N	O	C T	192	144.00	6.97	0.59	0.95	4.08
Central Stoneroller	N	H	N	738	553.50	26.79	7.72	12.44	13.94
Striped Sh X Rosyface Sh		I		1	0.75	0.04	0.00	0.01	6.00
Stonecat Madtom		I	C I	9	6.75	0.33	0.11	0.18	16.22
Rock Bass	S	C	C	31	23.25	1.13	1.37	2.21	58.97
Smallmouth Bass	F	C	C M	27	20.25	0.98	2.67	4.30	131.63
Largemouth Bass	F	C	C	2	1.50	0.07	0.01	0.02	9.50
Green Sunfish	S	I	C T	1	0.75	0.04	0.02	0.03	24.00
Bluegill Sunfish	S	I	C P	1	0.75	0.04	0.01	0.01	7.00
Johnny Darter	D	I	C	1	0.75	0.04	0.00	0.00	2.00
Greenside Darter	D	I	S M	75	56.25	2.72	0.13	0.21	2.29
Banded Darter	D	I	S I	186	139.50	6.75	0.20	0.33	1.45
Rainbow Darter	D	I	S M	165	123.75	5.99	0.09	0.15	0.76
Fantail Darter	D	I	C	4	3.00	0.15	0.01	0.01	2.75
Mottled Sculpin		I	C	26	19.50	0.94	0.08	0.13	4.04
<i>Mile Total</i>				2,755	2,066.25		62.05		
<i>Number of Species</i>				29					
<i>Number of Hybrids</i>				1					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 19.00	Location: just dst. Gratis WWTP	Date Range: 07/15/2005
Time Fished: 4767 sec	Drainage: 226.0 sq mi	Thru: 09/14/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Quillback	C	O	M	11	8.25	0.36	2.38	4.84	288.73
Black Redhorse	R	I	S I	133	99.75	4.34	21.43	43.52	214.88
Golden Redhorse	R	I	S M	22	16.50	0.72	3.88	7.89	235.41
Northern Hog Sucker	R	I	S M	78	58.50	2.55	6.65	13.50	113.60
White Sucker	W	O	S T	82	61.50	2.68	2.68	5.44	43.53
River Chub	N	I	N I	77	57.75	2.51	0.88	1.78	15.16
Bigeye Chub	N	I	S I	12	9.00	0.39	0.02	0.05	2.58
Western Blacknose Dace	N	G	S T	2	1.50	0.07	0.00	0.01	2.00
Creek Chub	N	G	N T	46	34.50	1.50	0.26	0.53	7.50
Silver Shiner	N	I	S I	38	28.50	1.24	0.11	0.23	3.90
Rosyface Shiner	N	I	S I	254	190.50	8.29	0.33	0.67	1.74
Scarlet Shiner	N	I	S M	10	7.50	0.33	0.01	0.02	1.45
Striped Shiner	N	I	S	68	51.00	2.22	0.57	1.16	11.18
Spotfin Shiner	N	I	M	39	29.25	1.27	0.11	0.23	3.85
Sand Shiner	N	I	M M	352	264.00	11.49	0.37	0.75	1.40
Silverjaw Minnow	N	I	M	67	50.25	2.19	0.16	0.32	3.14
Bluntnose Minnow	N	O	C T	270	202.50	8.81	0.41	0.83	2.02
Central Stoneroller	N	H	N	946	709.50	30.87	3.37	6.84	4.75
Stonecat Madtom		I	C I	8	6.00	0.26	0.08	0.16	13.50
Brindled Madtom		I	C I	1	0.75	0.03	0.00	0.01	5.00
Rock Bass	S	C	C	18	13.50	0.59	0.65	1.32	48.17
Smallmouth Bass	F	C	C M	37	27.75	1.21	4.11	8.35	148.16
Largemouth Bass	F	C	C	7	5.25	0.23	0.12	0.25	23.14
Greenside Darter	D	I	S M	78	58.50	2.55	0.16	0.33	2.81
Banded Darter	D	I	S I	199	149.25	6.49	0.21	0.43	1.41
Rainbow Darter	D	I	S M	169	126.75	5.52	0.19	0.38	1.46
Fantail Darter	D	I	C	3	2.25	0.10	0.00	0.01	1.67
Mottled Sculpin		I	C	37	27.75	1.21	0.09	0.18	3.27
<i>Mile Total</i>				3,064	2,298.00		49.25		
<i>Number of Species</i>				28					
<i>Number of Hybrids</i>				0					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 13.40	Location: dst. Toms Run	Date Range: 07/14/2005
Time Fished: 5230 sec	Drainage: 271.0 sq mi	Thru: 09/14/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Quillback	C	O	M	2	1.50	0.05	1.20	2.10	800.00
Black Redhorse	R	I	S I	116	87.00	3.12	22.85	40.04	262.63
Golden Redhorse	R	I	S M	32	24.00	0.86	3.02	5.29	125.88
Shorthead Redhorse	R	I	S M	1	0.75	0.03	0.45	0.79	600.00
Northern Hog Sucker	R	I	S M	128	96.00	3.45	9.07	15.90	94.52
White Sucker	W	O	S T	51	38.25	1.37	1.62	2.84	42.39
River Chub	N	I	N I	207	155.25	5.57	2.16	3.79	13.92
Western Blacknose Dace	N	G	S T	1	0.75	0.03	0.00	0.00	2.00
Creek Chub	N	G	N T	34	25.50	0.92	0.42	0.74	16.61
Suckermouth Minnow	N	I	S	3	2.25	0.08	0.02	0.03	6.67
Silver Shiner	N	I	S I	57	42.75	1.53	0.11	0.19	2.55
Rosyface Shiner	N	I	S I	529	396.75	14.24	0.87	1.53	2.19
Scarlet Shiner	N	I	S M	3	2.25	0.08	0.01	0.01	2.33
Striped Shiner	N	I	S	149	111.75	4.01	1.40	2.45	12.51
Spotfin Shiner	N	I	M	145	108.75	3.90	0.46	0.80	4.21
Sand Shiner	N	I	M M	463	347.25	12.46	0.59	1.04	1.71
Mimic Shiner	N	I	M I	2	1.50	0.05	0.00	0.00	1.00
Silverjaw Minnow	N	I	M	140	105.00	3.77	0.35	0.61	3.31
Bluntnose Minnow	N	O	C T	155	116.25	4.17	0.45	0.79	3.88
Central Stoneroller	N	H	N	1,005	753.75	27.05	5.98	10.47	7.93
Striped Sh X Rosyface Sh		I		2	1.50	0.05	0.01	0.02	6.00
Stonecat Madtom		I	C I	6	4.50	0.16	0.03	0.05	5.83
Brindled Madtom		I	C I	2	1.50	0.05	0.01	0.02	9.00
Rock Bass	S	C	C	31	23.25	0.83	1.39	2.43	59.71
Smallmouth Bass	F	C	C M	59	44.25	1.59	4.03	7.07	91.14
Largemouth Bass	F	C	C	1	0.75	0.03	0.00	0.01	4.00
Green Sunfish	S	I	C T	1	0.75	0.03	0.00	0.01	4.00
Longear Sunfish	S	I	C M	3	2.25	0.08	0.03	0.06	14.00
Greenside Darter	D	I	S M	78	58.50	2.10	0.19	0.33	3.17
Banded Darter	D	I	S I	204	153.00	5.49	0.21	0.36	1.34
Rainbow Darter	D	I	S M	87	65.25	2.34	0.11	0.19	1.69
Orangethroat Darter	D	I	S	1	0.75	0.03	0.00	0.00	1.00
Fantail Darter	D	I	C	1	0.75	0.03	0.00	0.00	1.00
Mottled Sculpin		I	C	16	12.00	0.43	0.04	0.06	2.88
<i>Mile Total</i>				3,715	2,786.25		57.07		
<i>Number of Species</i>				33					
<i>Number of Hybrids</i>				1					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 9.80	Location: road just dst. Germantown Dam	Date Range: 07/14/2005
Time Fished: 5584 sec	Drainage: 275.0 sq mi	Thru: 09/13/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	20	15.00	0.86	0.38	0.93	25.50
Quillback	C	O	M	2	1.50	0.09	0.58	1.41	386.00
Black Redhorse	R	I	S I	61	45.75	2.61	10.51	25.54	229.62
Golden Redhorse	R	I	S M	47	35.25	2.01	4.26	10.36	120.94
Shorthead Redhorse	R	I	S M	1	0.75	0.04	0.07	0.18	97.00
Northern Hog Sucker	R	I	S M	143	107.25	6.12	4.22	10.26	39.33
White Sucker	W	O	S T	40	30.00	1.71	1.11	2.69	36.92
Common Carp	G	O	M T	4	3.00	0.17	7.03	17.09	2,343.75
Golden Shiner	N	I	M T	1	0.75	0.04	0.00	0.01	4.00
River Chub	N	I	N I	12	9.00	0.51	0.08	0.20	9.06
Creek Chub	N	G	N T	3	2.25	0.13	0.05	0.11	20.67
Suckermouth Minnow	N	I	S	17	12.75	0.73	0.07	0.18	5.65
Silver Shiner	N	I	S I	38	28.50	1.63	0.05	0.13	1.89
Rosyface Shiner	N	I	S I	205	153.75	8.77	0.30	0.74	1.98
Scarlet Shiner	N	I	S M	17	12.75	0.73	0.02	0.04	1.35
Striped Shiner	N	I	S	31	23.25	1.33	0.33	0.80	14.06
Spotfin Shiner	N	I	M	162	121.50	6.93	0.39	0.96	3.24
Sand Shiner	N	I	M M	40	30.00	1.71	0.04	0.10	1.35
Mimic Shiner	N	I	M I	1	0.75	0.04	0.00	0.00	2.00
Bluntnose Minnow	N	O	C T	315	236.25	13.47	0.91	2.22	3.86
Central Stoneroller	N	H	N	253	189.75	10.82	2.90	7.04	15.26
Channel Catfish	F		C	8	6.00	0.34	1.21	2.94	201.25
Yellow Bullhead		I	C T	2	1.50	0.09	0.02	0.04	10.50
Stonecat Madtom		I	C I	14	10.50	0.60	0.14	0.35	13.57
Brindled Madtom		I	C I	3	2.25	0.13	0.02	0.04	7.33
Rock Bass	S	C	C	69	51.75	2.95	1.96	4.76	37.81
Smallmouth Bass	F	C	C M	28	21.00	1.20	1.65	4.01	78.43
Largemouth Bass	F	C	C	5	3.75	0.21	0.07	0.17	18.80
Green Sunfish	S	I	C T	8	6.00	0.34	0.11	0.26	17.50
Bluegill Sunfish	S	I	C P	97	72.75	4.15	1.02	2.49	14.07
Longear Sunfish	S	I	C M	58	43.50	2.48	0.43	1.05	9.91
Blackside Darter	D	I	S	2	1.50	0.09	0.01	0.01	3.50
Logperch	D	I	S M	15	11.25	0.64	0.19	0.45	16.60
Greenside Darter	D	I	S M	127	95.25	5.43	0.43	1.04	4.47
Banded Darter	D	I	S I	270	202.50	11.55	0.28	0.67	1.36
Rainbow Darter	D	I	S M	205	153.75	8.77	0.26	0.63	1.68
Fantail Darter	D	I	C	4	3.00	0.17	0.01	0.02	2.25
Mottled Sculpin		I	C	10	7.50	0.43	0.05	0.12	6.50
<i>Mile Total</i>				2,338	1,753.50		41.13		
<i>Number of Species</i>				38					
<i>Number of Hybrids</i>				0					

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 3.40	Location: Chamberlain Rd.	Date Range: 07/14/2005
Time Fished: 4731 sec	Drainage: 312.0 sq mi	Thru: 09/13/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Quillback	C	O	M	10	7.50	0.45	3.30	5.20	440.00
Highfin Carpsucker	C	O	M	1	0.75	0.05	0.41	0.64	540.00
Black Redhorse	R	I	S I	48	36.00	2.18	11.56	18.21	321.04
Golden Redhorse	R	I	S M	53	39.75	2.41	12.68	19.97	318.87
Northern Hog Sucker	R	I	S M	148	111.00	6.73	10.64	16.76	95.85
White Sucker	W	O	S T	37	27.75	1.68	1.10	1.74	39.72
Common Carp	G	O	M T	5	3.75	0.23	5.10	8.03	1,359.00
Western Blacknose Dace	N	G	S T	1	0.75	0.05	0.00	0.00	1.00
Suckermouth Minnow	N	I	S	1	0.75	0.05	0.00	0.00	3.00
Silver Shiner	N	I	S I	42	31.50	1.91	0.09	0.14	2.76
Rosyface Shiner	N	I	S I	360	270.00	16.38	0.61	0.96	2.25
Scarlet Shiner	N	I	S M	2	1.50	0.09	0.00	0.00	2.00
Striped Shiner	N	I	S	51	38.25	2.32	0.63	0.99	16.43
Spotfin Shiner	N	I	M	196	147.00	8.92	0.52	0.82	3.53
Sand Shiner	N	I	M M	49	36.75	2.23	0.05	0.09	1.49
Mimic Shiner	N	I	M I	5	3.75	0.23	0.01	0.01	1.40
Bluntnose Minnow	N	O	C T	109	81.75	4.96	0.29	0.46	3.60
Central Stoneroller	N	H	N	397	297.75	18.06	4.44	7.00	14.92
Striped Sh X Rosyface Sh		I		1	0.75	0.05	0.00	0.00	4.00
Channel Catfish	F		C	56	42.00	2.55	5.23	8.24	124.59
Yellow Bullhead		I	C T	1	0.75	0.05	0.05	0.08	68.00
Stonecat Madtom		I	C I	4	3.00	0.18	0.01	0.02	3.75
Brindled Madtom		I	C I	1	0.75	0.05	0.00	0.00	4.00
Rock Bass	S	C	C	35	26.25	1.59	1.65	2.59	62.71
Smallmouth Bass	F	C	C M	50	37.50	2.27	3.85	6.06	102.62
Green Sunfish	S	I	C T	5	3.75	0.23	0.14	0.21	36.00
Bluegill Sunfish	S	I	C P	21	15.75	0.96	0.17	0.26	10.56
Longear Sunfish	S	I	C M	8	6.00	0.36	0.04	0.06	6.38
Logperch	D	I	S M	9	6.75	0.41	0.06	0.10	9.44
Johnny Darter	D	I	C	1	0.75	0.05	0.00	0.00	1.00
Greenside Darter	D	I	S M	82	61.50	3.73	0.34	0.54	5.53
Banded Darter	D	I	S I	254	190.50	11.56	0.28	0.44	1.46
Rainbow Darter	D	I	S M	142	106.50	6.46	0.19	0.30	1.79
Fantail Darter	D	I	C	5	3.75	0.23	0.01	0.01	1.40
Mottled Sculpin		I	C	8	6.00	0.36	0.04	0.06	6.38
<i>Mile Total</i>				2,198	1,648.50		63.47		
<i>Number of Species</i>				34					
<i>Number of Hybrids</i>				1					

Species List

River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 0.90	Location: Dayton-Oxford Rd.	Date Range: 07/13/2005
Time Fished: 5238 sec	Drainage: 315.0 sq mi	Thru: 09/13/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Quillback	C	O	M	4	3.00	0.29	1.35	2.59	450.00
Black Redhorse	R	I	S I	67	50.25	4.93	16.50	31.71	328.32
Golden Redhorse	R	I	S M	12	9.00	0.88	2.20	4.22	244.00
Shorthead Redhorse	R	I	S M	2	1.50	0.15	0.02	0.04	13.00
Northern Hog Sucker	R	I	S M	104	78.00	7.65	8.26	15.87	105.88
White Sucker	W	O	S T	7	5.25	0.52	0.22	0.42	42.00
Common Carp	G	O	M T	7	5.25	0.52	7.43	14.27	1,414.29
Emerald Shiner	N	I	M	2	1.50	0.15	0.00	0.00	1.50
Silver Shiner	N	I	S I	55	41.25	4.05	0.35	0.66	8.37
Rosyface Shiner	N	I	S I	179	134.25	13.17	0.20	0.39	1.49
Striped Shiner	N	I	S	36	27.00	2.65	0.39	0.75	14.39
Spotfin Shiner	N	I	M	244	183.00	17.95	0.35	0.67	1.91
Sand Shiner	N	I	M M	22	16.50	1.62	0.03	0.05	1.55
Mimic Shiner	N	I	M I	4	3.00	0.29	0.01	0.01	1.75
Bluntnose Minnow	N	O	C T	98	73.50	7.21	0.27	0.52	3.65
Central Stoneroller	N	H	N	118	88.50	8.68	1.32	2.53	14.89
Channel Catfish	F		C	31	23.25	2.28	7.17	13.78	308.45
Flathead Catfish	F	P	C	2	1.50	0.15	1.50	2.89	1,001.50
Brindled Madtom		I	C I	3	2.25	0.22	0.01	0.01	2.33
Rock Bass	S	C	C	17	12.75	1.25	0.86	1.65	67.24
Smallmouth Bass	F	C	C M	52	39.00	3.83	2.86	5.50	73.32
Green Sunfish	S	I	C T	2	1.50	0.15	0.02	0.04	15.00
Bluegill Sunfish	S	I	C P	10	7.50	0.74	0.09	0.17	11.60
Longear Sunfish	S	I	C M	4	3.00	0.29	0.05	0.09	15.50
Blackside Darter	D	I	S	1	0.75	0.07	0.00	0.00	2.00
Logperch	D	I	S M	2	1.50	0.15	0.01	0.01	4.00
Johnny Darter	D	I	C	2	1.50	0.15	0.00	0.00	1.50
Greenside Darter	D	I	S M	91	68.25	6.70	0.36	0.69	5.28
Banded Darter	D	I	S I	111	83.25	8.17	0.14	0.26	1.65
Rainbow Darter	D	I	S M	69	51.75	5.08	0.10	0.18	1.84
Fantail Darter	D	I	C	1	0.75	0.07	0.00	0.00	2.00
<i>Mile Total</i>				1,359	1,019.25		52.03		
<i>Number of Species</i>				31					
<i>Number of Hybrids</i>				0					

Species List

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River Code: 14-500	Stream: Twin Creek	Sample Date: 2005
River Mile: 0.10	Location: at mouth	Date Range: 07/13/2005
Time Fished: 5040 sec	Drainage: 316.0 sq mi	Thru: 09/12/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	1	0.75	0.02	0.00	0.01	4.00
Quillback	C	O	M	3	2.25	0.07	0.02	0.06	10.00
Black Redhorse	R	I	S I	35	26.25	0.81	3.16	8.00	120.34
Golden Redhorse	R	I	S M	36	27.00	0.83	1.75	4.43	64.72
Shorthead Redhorse	R	I	S M	10	7.50	0.23	0.14	0.36	19.00
Northern Hog Sucker	R	I	S M	450	337.50	10.42	7.40	18.74	21.93
White Sucker	W	O	S T	18	13.50	0.42	0.09	0.24	7.00
Common Carp	G	O	M T	2	1.50	0.05	3.23	8.17	2,150.00
Western Blacknose Dace	N	G	S T	1	0.75	0.02	0.00	0.00	2.00
Creek Chub	N	G	N T	87	65.25	2.01	0.26	0.65	3.92
Suckermouth Minnow	N	I	S	110	82.50	2.55	0.45	1.13	5.42
Silver Shiner	N	I	S I	14	10.50	0.32	0.04	0.09	3.33
Rosyface Shiner	N	I	S I	439	329.25	10.17	0.39	0.99	1.18
Striped Shiner	N	I	S	63	47.25	1.46	0.18	0.46	3.84
Spotfin Shiner	N	I	M	272	204.00	6.30	0.71	1.79	3.46
Sand Shiner	N	I	M M	262	196.50	6.07	0.38	0.95	1.91
Mimic Shiner	N	I	M I	26	19.50	0.60	0.03	0.08	1.54
Silverjaw Minnow	N	I	M	10	7.50	0.23	0.02	0.04	2.00
Bluntnose Minnow	N	O	C T	561	420.75	12.99	1.55	3.93	3.69
Central Stoneroller	N	H	N	1,221	915.75	28.28	6.79	17.21	7.42
Channel Catfish	F		C	17	12.75	0.39	1.31	3.32	102.94
Yellow Bullhead		I	C T	2	1.50	0.05	0.01	0.03	7.50
Flathead Catfish	F	P	C	3	2.25	0.07	6.60	16.72	2,934.67
Stonecat Madtom		I	C I	8	6.00	0.19	0.04	0.09	6.25
Brindled Madtom		I	C I	1	0.75	0.02	0.00	0.01	4.00
Rock Bass	S	C	C	12	9.00	0.28	0.17	0.42	18.58
Smallmouth Bass	F	C	C M	69	51.75	1.60	3.20	8.09	61.74
Spotted Bass	F	C	C	2	1.50	0.05	0.00	0.01	2.50
Largemouth Bass	F	C	C	9	6.75	0.21	0.10	0.26	15.29
Green Sunfish	S	I	C T	12	9.00	0.28	0.07	0.19	8.24
Bluegill Sunfish	S	I	C P	32	24.00	0.74	0.29	0.73	12.06
Orangespotted Sunfish	S	I	C	3	2.25	0.07	0.02	0.04	7.33
Longear Sunfish	S	I	C M	27	20.25	0.63	0.24	0.62	12.00
Redear Sunfish	E	I	C	6	4.50	0.14	0.10	0.25	22.17
Green Sf X Longear Sf				1	0.75	0.02	0.01	0.03	15.00
Green Sf X Hybrid				2	1.50	0.05	0.03	0.06	16.50
Blackside Darter	D	I	S	1	0.75	0.02	0.00	0.00	2.00
Logperch	D	I	S M	9	6.75	0.21	0.03	0.09	5.00
Greenside Darter	D	I	S M	103	77.25	2.39	0.32	0.80	4.08
Banded Darter	D	I	S I	246	184.50	5.70	0.24	0.60	1.28
Rainbow Darter	D	I	S M	129	96.75	2.99	0.13	0.32	1.29
Fantail Darter	D	I	C	3	2.25	0.07	0.00	0.01	2.00
<i>Mile Total</i>				4,318	3,238.50		39.49		
<i>Number of Species</i>				40					
<i>Number of Hybrids</i>				2					

River Code: 14-501	Stream: Little Twin Creek	Sample Date: 2005
River Mile: 6.20	Location: Hemple Rd.	Date Range: 08/04/2005
Time Fished: 3047 sec	Drainage: 4.9 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	99	148.50	8.26	5.93	28.50	39.90
Western Blacknose Dace	N	G	S	T	174	261.00	14.51	1.08	5.20	4.14
Creek Chub	N	G	N	T	248	372.00	20.68	8.91	42.85	23.95
South. Redbelly Dace	N	H	S		60	90.00	5.00	0.30	1.44	3.32
Silverjaw Minnow	N	I	M		3	4.50	0.25	0.03	0.13	6.00
Bluntnose Minnow	N	O	C	T	60	90.00	5.00	0.26	1.23	2.83
Central Stoneroller	N	H	N		416	624.00	34.70	2.54	12.21	4.07
Largemouth Bass	F	C	C		5	7.50	0.42	0.06	0.28	7.80
Green Sunfish	S	I	C	T	21	31.50	1.75	0.93	4.46	29.43
Bluegill Sunfish	S	I	C	P	1	1.50	0.08	0.05	0.22	30.00
Green Sf X Hybrid					11	16.50	0.92	0.50	2.38	30.00
Johnny Darter	D	I	C		33	49.50	2.75	0.08	0.38	1.61
Greenside Darter	D	I	S	M	3	4.50	0.25	0.02	0.09	4.00
Orangethroat Darter	D	I	S		51	76.50	4.25	0.09	0.43	1.16
Fantail Darter	D	I	C		14	21.00	1.17	0.05	0.22	2.14
<i>Mile Total</i>					1,199	1,798.50		20.79		
<i>Number of Species</i>					14					
<i>Number of Hybrids</i>					1					

River Code: 14-501	Stream: Little Twin Creek	Sample Date: 2005
River Mile: 4.70	Location: Farmersville-West Carrollton Rd.	Date Range: 08/03/2005
Time Fished: 4057 sec	Drainage: 12.4 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S T	300	450.00	15.05	4.09	28.36	9.09
Western Blacknose Dace	N	G	S T	45	67.50	2.26	0.09	0.60	1.29
Creek Chub	N	G	N T	198	297.00	9.93	3.23	22.41	10.89
Scarlet Shiner	N	I	S M	1	1.50	0.05	0.01	0.03	3.00
Striped Shiner	N	I	S	50	75.00	2.51	1.39	9.62	18.50
Spotfin Shiner	N	I	M	2	3.00	0.10	0.01	0.04	2.00
Sand Shiner	N	I	M M	59	88.50	2.96	0.23	1.57	2.56
Silverjaw Minnow	N	I	M	16	24.00	0.80	0.10	0.68	4.06
Bluntnose Minnow	N	O	C T	31	46.50	1.56	0.13	0.89	2.77
Central Stoneroller	N	H	N	975	1,462.50	48.92	3.76	26.04	2.57
Yellow Bullhead		I	C T	3	4.50	0.15	0.32	2.25	72.00
Largemouth Bass	F	C	C	4	6.00	0.20	0.06	0.44	10.50
Green Sunfish	S	I	C T	3	4.50	0.15	0.14	1.00	32.00
Bluegill Sunfish	S	I	C P	1	1.50	0.05	0.01	0.04	4.00
Johnny Darter	D	I	C	36	54.00	1.81	0.05	0.33	0.89
Greenside Darter	D	I	S M	23	34.50	1.15	0.30	2.11	8.82
Rainbow Darter	D	I	S M	197	295.50	9.88	0.42	2.88	1.41
Orangethroat Darter	D	I	S	38	57.00	1.91	0.02	0.15	0.37
Fantail Darter	D	I	C	6	9.00	0.30	0.02	0.15	2.33
Mottled Sculpin		I	C	5	7.50	0.25	0.06	0.42	8.00
<i>Mile Total</i>				1,993	2,989.50		14.43		
<i>Number of Species</i>				20					
<i>Number of Hybrids</i>				0					

River Code: 14-501	Stream: Little Twin Creek	Sample Date: 2005
River Mile: 2.00	Location: Little Twin Creek Rd.	Date Range: 08/03/2005
Time Fished: 3574 sec	Drainage: 19.8 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Hog Sucker	R	I	S	M	3	4.50	0.11	0.16	0.51	35.00
White Sucker	W	O	S	T	356	534.00	12.90	8.13	26.27	15.23
Western Blacknose Dace	N	G	S	T	427	640.50	15.47	1.58	5.09	2.46
Creek Chub	N	G	N	T	68	102.00	2.46	1.84	5.94	18.01
Suckermouth Minnow	N	I	S		1	1.50	0.04	0.01	0.02	4.00
South. Redbelly Dace	N	H	S		1	1.50	0.04	0.01	0.02	3.00
Rosyface Shiner	N	I	S	I	8	12.00	0.29	0.02	0.07	1.75
Scarlet Shiner	N	I	S	M	1	1.50	0.04	0.00	0.01	2.00
Striped Shiner	N	I	S		143	214.50	5.18	3.22	10.39	14.99
Spotfin Shiner	N	I	M		7	10.50	0.25	0.01	0.04	1.17
Sand Shiner	N	I	M	M	17	25.50	0.62	0.06	0.19	2.29
Silverjaw Minnow	N	I	M		34	51.00	1.23	0.18	0.57	3.47
Bluntnose Minnow	N	O	C	T	57	85.50	2.07	0.23	0.73	2.63
Central Stoneroller	N	H	N		1,214	1,821.00	43.99	14.28	46.12	7.84
Striped Sh X Rosyface Sh		I			1	1.50	0.04	0.00	0.01	2.00
Smallmouth Bass	F	C	C	M	1	1.50	0.04	0.01	0.02	4.00
Bluegill Sunfish	S	I	C	P	3	4.50	0.11	0.02	0.07	5.00
Johnny Darter	D	I	C		11	16.50	0.40	0.05	0.15	2.73
Greenside Darter	D	I	S	M	6	9.00	0.22	0.05	0.16	5.33
Rainbow Darter	D	I	S	M	244	366.00	8.84	0.52	1.67	1.41
Orangethroat Darter	D	I	S		9	13.50	0.33	0.02	0.06	1.33
Fantail Darter	D	I	C		5	7.50	0.18	0.03	0.09	3.60
Mottled Sculpin		I	C		143	214.50	5.18	0.56	1.82	2.63
<i>Mile Total</i>					2,760	4,140.00		30.95		
<i>Number of Species</i>					22					
<i>Number of Hybrids</i>					1					

Species List

River Code: 14-502	Stream: Toms Run	Sample Date: 2005
River Mile: 12.00	Location: Amity Rd.	Date Range: 07/26/2005
Time Fished: 2110 sec	Drainage: 6.0 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	62	124.00	2.62	1.30	3.48	10.48
Western Blacknose Dace	N	G	S	T	5	10.00	0.21	0.01	0.03	1.20
Creek Chub	N	G	N	T	196	392.00	8.29	5.12	13.71	13.05
South. Redbelly Dace	N	H	S		27	54.00	1.14	0.11	0.31	2.11
Scarlet Shiner	N	I	S	M	2	4.00	0.08	0.01	0.02	2.00
Striped Shiner	N	I	S		2	4.00	0.08	0.01	0.03	2.50
Fathead Minnow	N	O	C	T	15	30.00	0.63	0.10	0.27	3.33
Bluntnose Minnow	N	O	C	T	156	312.00	6.60	0.66	1.76	2.11
Central Stoneroller	N	H	N		1,799	3,598.00	76.07	29.67	79.48	8.25
Yellow Bullhead		I	C	T	2	4.00	0.08	0.12	0.32	29.50
Largemouth Bass	F	C	C		1	2.00	0.04	0.01	0.02	4.00
Johnny Darter	D	I	C		9	18.00	0.38	0.02	0.05	1.11
Greenside Darter	D	I	S	M	3	6.00	0.13	0.05	0.13	8.00
Rainbow Darter	D	I	S	M	5	10.00	0.21	0.02	0.05	2.00
Orangethroat Darter	D	I	S		81	162.00	3.42	0.13	0.34	0.78
<i>Mile Total</i>					2,365	4,730.00		37.33		
<i>Number of Species</i>					15					
<i>Number of Hybrids</i>					0					

Species List

River Code: 14-502	Stream: Toms Run	Sample Date: 2005
River Mile: 8.50	Location: upst. Bull Rd.	Date Range: 08/04/2005
Time Fished: 2700 sec	Drainage: 9.5 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	109	163.50	21.08	2.93	35.74	17.90
Western Blacknose Dace	N	G	S	T	49	73.50	9.48	0.22	2.64	2.94
Creek Chub	N	G	N	T	172	258.00	33.27	3.57	43.56	13.82
South. Redbelly Dace	N	H	S		2	3.00	0.39	0.01	0.07	2.00
Striped Shiner	N	I	S		13	19.50	2.51	0.45	5.46	22.92
Silverjaw Minnow	N	I	M		2	3.00	0.39	0.00	0.04	1.00
Bluntnose Minnow	N	O	C	T	34	51.00	6.58	0.11	1.38	2.21
Central Stoneroller	N	H	N		78	117.00	15.09	0.47	5.68	3.97
Yellow Bullhead		I	C	T	3	4.50	0.58	0.35	4.31	78.33
Rock Bass	S	C	C		12	18.00	2.32	0.01	0.13	0.64
Bluegill Sunfish	S	I	C	P	1	1.50	0.19	0.00	0.04	2.00
Johnny Darter	D	I	C		10	15.00	1.93	0.01	0.15	0.80
Greenside Darter	D	I	S	M	2	3.00	0.39	0.01	0.13	3.50
Rainbow Darter	D	I	S	M	10	15.00	1.93	0.03	0.32	1.70
Orangethroat Darter	D	I	S		18	27.00	3.48	0.02	0.20	0.59
Fantail Darter	D	I	C		2	3.00	0.39	0.01	0.17	4.50
<i>Mile Total</i>					517	775.50		8.19		
<i>Number of Species</i>					16					
<i>Number of Hybrids</i>					0					

River Code: 14-502	Stream: Toms Run	Sample Date: 2005
River Mile: 0.40	Location: near mouth, adj. Anthony Rd.	Date Range: 07/14/2005
Time Fished: 2460 sec	Drainage: 24.3 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Golden Redhorse	R	I	S	M	3	4.50	0.28	0.01	0.04	1.00
Northern Hog Sucker	R	I	S	M	6	9.00	0.56	0.15	1.08	16.67
White Sucker	W	O	S	T	57	85.50	5.29	1.01	7.23	11.77
Western Blacknose Dace	N	G	S	T	53	79.50	4.92	0.16	1.12	1.96
Creek Chub	N	G	N	T	112	168.00	10.40	3.89	27.92	23.15
Rosyface Shiner	N	I	S	I	26	39.00	2.41	0.08	0.60	2.15
Scarlet Shiner	N	I	S	M	6	9.00	0.56	0.02	0.15	2.33
Striped Shiner	N	I	S		41	61.50	3.81	1.00	7.17	16.22
Spotfin Shiner	N	I	M		10	15.00	0.93	0.05	0.34	3.20
Sand Shiner	N	I	M	M	24	36.00	2.23	0.06	0.40	1.54
Silverjaw Minnow	N	I	M		17	25.50	1.58	0.07	0.49	2.65
Bluntnose Minnow	N	O	C	T	70	105.00	6.50	0.13	0.96	1.27
Central Stoneroller	N	H	N		249	373.50	23.12	3.66	26.30	9.81
Rock Bass	S	C	C		12	18.00	1.11	1.28	9.15	70.83
Smallmouth Bass	F	C	C	M	3	4.50	0.28	0.23	1.65	51.00
Spotted Bass	F	C	C		2	3.00	0.19	0.01	0.04	2.00
Largemouth Bass	F	C	C		1	1.50	0.09	0.01	0.06	5.00
Green Sunfish	S	I	C	T	1	1.50	0.09	0.02	0.17	16.00
Bluegill Sunfish	S	I	C	P	10	15.00	0.93	0.10	0.73	6.80
Greenside Darter	D	I	S	M	5	7.50	0.46	0.02	0.15	2.80
Banded Darter	D	I	S	I	6	9.00	0.56	0.01	0.09	1.33
Rainbow Darter	D	I	S	M	57	85.50	5.29	0.13	0.90	1.47
Mottled Sculpin		I	C		306	459.00	28.41	1.85	13.27	4.03
<i>Mile Total</i>					1,077	1,615.50		13.93		
<i>Number of Species</i>					23					
<i>Number of Hybrids</i>					0					

Species List

River Code: 14-504	Stream: Aukerman Creek	Sample Date: 2005
River Mile: 3.30	Location: Ketterman Rd.	Date Range: 07/26/2005
Time Fished: 2855 sec	Drainage: 5.2 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	71	142.00	12.24	4.00	31.59	28.17
Western Blacknose Dace	N	G	S	T	113	226.00	19.48	0.80	6.31	3.54
Creek Chub	N	G	N	T	33	66.00	5.69	3.89	30.68	58.87
South. Redbelly Dace	N	H	S		29	58.00	5.00	0.17	1.36	2.96
Scarlet Shiner	N	I	S	M	12	24.00	2.07	0.06	0.51	2.67
Striped Shiner	N	I	S		32	64.00	5.52	0.62	4.90	9.69
Silverjaw Minnow	N	I	M		17	34.00	2.93	0.15	1.18	4.41
Bluntnose Minnow	N	O	C	T	30	60.00	5.17	0.24	1.90	4.00
Central Stoneroller	N	H	N		132	264.00	22.76	1.35	10.69	5.13
Striped Sh X S Redbelly D					1	2.00	0.17	0.01	0.09	6.00
Rock Bass	S	C	C		5	10.00	0.86	0.58	4.58	58.00
Green Sunfish	S	I	C	T	1	2.00	0.17	0.06	0.47	30.00
Johnny Darter	D	I	C		4	8.00	0.69	0.01	0.09	1.50
Rainbow Darter	D	I	S	M	39	78.00	6.72	0.12	0.91	1.47
Orangethroat Darter	D	I	S		10	20.00	1.72	0.02	0.19	1.20
Fantail Darter	D	I	C		2	4.00	0.34	0.01	0.06	2.00
Mottled Sculpin		I	C		49	98.00	8.45	0.57	4.49	5.80
<i>Mile Total</i>					580	1,160.00		12.66		
<i>Number of Species</i>					16					
<i>Number of Hybrids</i>					1					

River Code: 14-504	Stream: Aukerman Creek	Sample Date: 2005
River Mile: 1.80	Location: upst. Sandy Run	Date Range: 07/26/2005
Time Fished: 5507 sec	Drainage: 13.7 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	106	159.00	4.02	2.33	9.39	14.68
Western Blacknose Dace	N	G	S	T	395	592.50	14.98	1.43	5.74	2.41
Creek Chub	N	G	N	T	124	186.00	4.70	1.95	7.85	10.48
Scarlet Shiner	N	I	S	M	12	18.00	0.46	0.04	0.14	1.92
Striped Shiner	N	I	S		85	127.50	3.22	1.84	7.40	14.41
Sand Shiner	N	I	M	M	125	187.50	4.74	0.48	1.92	2.54
Silverjaw Minnow	N	I	M		19	28.50	0.72	0.11	0.46	4.00
Bluntnose Minnow	N	O	C	T	48	72.00	1.82	0.27	1.09	3.75
Central Stoneroller	N	H	N		1,192	1,788.00	45.22	13.18	53.03	7.37
Rock Bass	S	C	C		9	13.50	0.34	1.28	5.13	94.44
Bluegill Sunfish	S	I	C	P	1	1.50	0.04	0.01	0.02	4.00
Greenside Darter	D	I	S	M	20	30.00	0.76	0.15	0.60	4.95
Banded Darter	D	I	S	I	1	1.50	0.04	0.00	0.01	2.00
Rainbow Darter	D	I	S	M	308	462.00	11.68	0.70	2.83	1.52
Orangethroat Darter	D	I	S		4	6.00	0.15	0.01	0.05	2.00
Mottled Sculpin		I	C		187	280.50	7.09	1.08	4.36	3.86
<i>Mile Total</i>					2,636	3,954.00		24.85		
<i>Number of Species</i>					16					
<i>Number of Hybrids</i>					0					

River Code: 14-504	Stream: Aukerman Creek	Sample Date: 2005
River Mile: 0.50	Location: Fudge Rd.	Date Range: 07/25/2005
Time Fished: 2525 sec	Drainage: 20.7 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Hog Sucker	R	I	S	M	4	6.00	0.25	0.01	0.12	1.75
White Sucker	W	O	S	T	95	142.50	5.94	0.46	4.93	3.23
River Chub	N	I	N	I	2	3.00	0.13	0.02	0.22	7.00
Western Blacknose Dace	N	G	S	T	487	730.50	30.46	1.66	17.77	2.27
Creek Chub	N	G	N	T	103	154.50	6.44	1.07	11.46	6.93
Rosyface Shiner	N	I	S	I	11	16.50	0.69	0.04	0.39	2.18
Scarlet Shiner	N	I	S	M	1	1.50	0.06	0.00	0.03	2.00
Striped Shiner	N	I	S		2	3.00	0.13	0.01	0.09	2.50
Spotfin Shiner	N	I	M		1	1.50	0.06	0.01	0.06	4.00
Sand Shiner	N	I	M	M	35	52.50	2.19	0.12	1.27	2.26
Silverjaw Minnow	N	I	M		10	15.00	0.63	0.05	0.53	3.30
Bluntnose Minnow	N	O	C	T	30	45.00	1.88	0.17	1.80	3.73
Central Stoneroller	N	H	N		406	609.00	25.39	4.48	47.90	7.35
Largemouth Bass	F	C	C		1	1.50	0.06	0.01	0.06	4.00
Greenside Darter	D	I	S	M	6	9.00	0.38	0.04	0.37	3.83
Banded Darter	D	I	S	I	3	4.50	0.19	0.01	0.09	1.67
Rainbow Darter	D	I	S	M	189	283.50	11.82	0.29	3.13	1.03
Orangethroat Darter	D	I	S		3	4.50	0.19	0.01	0.09	1.67
Fantail Darter	D	I	C		2	3.00	0.13	0.01	0.06	2.00
Mottled Sculpin		I	C		208	312.00	13.01	0.90	9.67	2.90
<i>Mile Total</i>					1,599	2,398.50		9.35		
<i>Number of Species</i>					20					
<i>Number of Hybrids</i>					0					

River Code: 14-505	Stream: Bantas Fork	Sample Date: 2005
River Mile: 13.70	Location: Orange Rd.	Date Range: 08/05/2005
Time Fished: 2114 sec	Drainage: 6.6 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	91	136.50	11.58	4.74	41.33	34.73
Western Blacknose Dace	N	G	S	T	56	84.00	7.12	0.16	1.43	1.95
Creek Chub	N	G	N	T	252	378.00	32.06	2.60	22.63	6.87
South. Redbelly Dace	N	H	S		3	4.50	0.38	0.02	0.18	4.67
Scarlet Shiner	N	I	S	M	21	31.50	2.67	0.07	0.65	2.33
Striped Shiner	N	I	S		39	58.50	4.96	1.04	9.02	17.69
Fathead Minnow	N	O	C	T	1	1.50	0.13	0.00	0.03	2.00
Bluntnose Minnow	N	O	C	T	68	102.00	8.65	0.22	1.94	2.18
Central Stoneroller	N	H	N		121	181.50	15.39	0.41	3.56	2.25
Yellow Bullhead		I	C	T	1	1.50	0.13	0.15	1.33	102.00
Rock Bass	S	C	C		13	19.50	1.65	0.72	6.30	37.00
Smallmouth Bass	F	C	C	M	5	7.50	0.64	0.89	7.74	118.40
Green Sunfish	S	I	C	T	1	1.50	0.13	0.02	0.13	10.00
Bluegill Sunfish	S	I	C	P	3	4.50	0.38	0.12	1.05	26.67
Johnny Darter	D	I	C		7	10.50	0.89	0.02	0.21	2.29
Rainbow Darter	D	I	S	M	22	33.00	2.80	0.03	0.29	1.00
Orangethroat Darter	D	I	S		19	28.50	2.42	0.03	0.26	1.05
Fantail Darter	D	I	C		2	3.00	0.25	0.01	0.12	4.50
Mottled Sculpin		I	C		61	91.50	7.76	0.21	1.83	2.30
<i>Mile Total</i>					786	1,179.00		11.47		
<i>Number of Species</i>					19					
<i>Number of Hybrids</i>					0					

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River Code: 14-505	Stream: Bantas Fork	Sample Date: 2005
River Mile: 9.40	Location: U.S. Rt. 127	Date Range: 08/05/2005
Time Fished: 2700 sec	Drainage: 11.8 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Northern Hog Sucker	R	I	S	M	20	30.00	1.69	0.08	0.85	2.65
White Sucker	W	O	S	T	18	27.00	1.52	0.21	2.20	7.67
Bigeye Chub	N	I	S	I	5	7.50	0.42	0.04	0.44	5.40
Western Blacknose Dace	N	G	S	T	164	246.00	13.86	0.79	8.41	3.21
Creek Chub	N	G	N	T	166	249.00	14.03	2.95	31.38	11.84
Scarlet Shiner	N	I	S	M	7	10.50	0.59	0.01	0.15	1.29
Striped Shiner	N	I	S		49	73.50	4.14	0.69	7.34	9.39
Sand Shiner	N	I	M	M	1	1.50	0.08	0.01	0.05	3.00
Silverjaw Minnow	N	I	M		5	7.50	0.42	0.03	0.31	3.80
Bluntnose Minnow	N	O	C	T	11	16.50	0.93	0.07	0.79	4.45
Central Stoneroller	N	H	N		410	615.00	34.66	3.00	31.95	4.88
Rock Bass	S	C	C		4	6.00	0.34	0.20	2.13	33.25
Smallmouth Bass	F	C	C	M	2	3.00	0.17	0.01	0.15	4.50
Johnny Darter	D	I	C		5	7.50	0.42	0.02	0.16	2.00
Greenside Darter	D	I	S	M	11	16.50	0.93	0.02	0.18	1.00
Rainbow Darter	D	I	S	M	114	171.00	9.64	0.23	2.39	1.32
Fantail Darter	D	I	C		17	25.50	1.44	0.04	0.37	1.35
Mottled Sculpin		I	C		174	261.00	14.71	1.02	10.80	3.89
<i>Mile Total</i>					1,183	1,774.50		9.40		
<i>Number of Species</i>					18					
<i>Number of Hybrids</i>					0					

Species List

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River Code: 14-505	Stream: Bantas Fork	Sample Date: 2005
River Mile: 7.10	Location: Bantas Creek Rd.	Date Range: 07/27/2005
Time Fished: 3655 sec	Drainage: 24.4 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Golden Redhorse	R	I	S M	1	1.50	0.12	0.58	4.51	388.00
Northern Hog Sucker	R	I	S M	2	3.00	0.25	0.01	0.04	1.50
White Sucker	W	O	S T	49	73.50	6.05	2.48	19.20	33.67
Bigeye Chub	N	I	S I	9	13.50	1.11	0.09	0.70	6.67
Western Blacknose Dace	N	G	S T	20	30.00	2.47	0.04	0.33	1.40
Creek Chub	N	G	N T	104	156.00	12.84	2.73	21.14	17.48
Silver Shiner	N	I	S I	5	7.50	0.62	0.02	0.14	2.40
Rosyface Shiner	N	I	S I	1	1.50	0.12	0.00	0.02	2.00
Scarlet Shiner	N	I	S M	2	3.00	0.25	0.01	0.04	1.50
Striped Shiner	N	I	S	115	172.50	14.20	3.61	27.98	20.91
Sand Shiner	N	I	M M	6	9.00	0.74	0.02	0.19	2.67
Silverjaw Minnow	N	I	M	2	3.00	0.25	0.02	0.14	6.00
Bluntnose Minnow	N	O	C T	5	7.50	0.62	0.03	0.23	4.00
Central Stoneroller	N	H	N	118	177.00	14.57	1.13	8.73	6.36
Rock Bass	S	C	C	4	6.00	0.49	0.06	0.44	9.50
Smallmouth Bass	F	C	C M	14	21.00	1.73	1.01	7.79	47.85
Green Sunfish	S	I	C T	2	3.00	0.25	0.13	0.98	42.00
Johnny Darter	D	I	C	5	7.50	0.62	0.01	0.05	0.80
Greenside Darter	D	I	S M	37	55.50	4.57	0.25	1.93	4.49
Banded Darter	D	I	S I	3	4.50	0.37	0.01	0.05	1.33
Rainbow Darter	D	I	S M	193	289.50	23.83	0.29	2.25	1.00
Orangethroat Darter	D	I	S	4	6.00	0.49	0.01	0.09	1.75
Fantail Darter	D	I	C	2	3.00	0.25	0.01	0.04	1.50
Mottled Sculpin		I	C	107	160.50	13.21	0.39	3.02	2.43
<i>Mile Total</i>				810	1,215.00		12.89		
<i>Number of Species</i>				24					
<i>Number of Hybrids</i>				0					

River Code: 14-505	Stream: Bantas Fork	Sample Date: 2005
River Mile: 1.30	Location: St. Rt. 503	Date Range: 07/27/2005
Time Fished: 5867 sec	Drainage: 34.0 sq mi	Thru: 09/22/2005
Dist Fished: 0.40 km	Basin: Great Miami River	No of Passes: 2
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Black Redhorse	R	I	S I	3	2.25	0.10	0.20	1.36	90.00
Golden Redhorse	R	I	S M	4	3.00	0.13	0.25	1.65	81.88
Northern Hog Sucker	R	I	S M	143	107.25	4.59	0.58	3.92	5.43
White Sucker	W	O	S T	106	79.50	3.40	1.23	8.24	15.42
River Chub	N	I	N I	91	68.25	2.92	0.83	5.60	12.21
Bigeye Chub	N	I	S I	15	11.25	0.48	0.04	0.29	3.77
Western Blacknose Dace	N	G	S T	12	9.00	0.39	0.03	0.18	3.00
Creek Chub	N	G	N T	38	28.50	1.22	0.77	5.17	27.00
Silver Shiner	N	I	S I	12	9.00	0.39	0.01	0.06	1.00
Rosyface Shiner	N	I	S I	93	69.75	2.99	0.15	1.01	2.14
Scarlet Shiner	N	I	S M	277	207.75	8.89	0.35	2.37	1.69
Striped Shiner	N	I	S	397	297.75	12.74	1.90	12.76	6.37
Spotfin Shiner	N	I	M	95	71.25	3.05	0.21	1.41	2.94
Sand Shiner	N	I	M M	75	56.25	2.41	0.07	0.45	1.20
Silverjaw Minnow	N	I	M	37	27.75	1.19	0.10	0.65	3.49
Fathead Minnow	N	O	C T	1	0.75	0.03	0.00	0.01	2.00
Bluntnose Minnow	N	O	C T	295	221.25	9.47	0.77	5.15	3.46
Central Stoneroller	N	H	N	915	686.25	29.37	4.85	32.64	7.07
Striped Sh X Rosyface Sh		I		2	1.50	0.06	0.01	0.08	7.50
Yellow Bullhead		I	C T	1	0.75	0.03	0.01	0.05	10.00
Stonecat Madtom		I	C I	2	1.50	0.06	0.06	0.37	36.50
Rock Bass	S	C	C	22	16.50	0.71	0.88	5.89	53.05
Smallmouth Bass	F	C	C M	24	18.00	0.77	0.60	4.03	33.29
Largemouth Bass	F	C	C	5	3.75	0.16	0.04	0.24	9.60
Green Sunfish	S	I	C T	5	3.75	0.16	0.11	0.74	29.40
Bluegill Sunfish	S	I	C P	7	5.25	0.22	0.06	0.43	12.14
Longear Sunfish	S	I	C M	1	0.75	0.03	0.00	0.03	5.00
Greenside Darter	D	I	S M	54	40.50	1.73	0.13	0.84	3.09
Banded Darter	D	I	S I	19	14.25	0.61	0.03	0.17	1.74
Rainbow Darter	D	I	S M	237	177.75	7.61	0.25	1.66	1.39
Fantail Darter	D	I	C	7	5.25	0.22	0.01	0.10	2.71
Mottled Sculpin		I	C	120	90.00	3.85	0.37	2.47	4.09
<i>Mile Total</i>				3,115	2,336.25		14.87		
<i>Number of Species</i>				31					
<i>Number of Hybrids</i>				1					

River Code: 14-506	Stream: Goose Run	Sample Date: 2005
River Mile: 4.40	Location: Scheyhing Rd.	Date Range: 08/25/2005
Time Fished: 1200 sec	Drainage: 3.3 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	21	42.00	2.25	0.93	8.21	22.10
Western Blacknose Dace	N	G	S	T	178	356.00	19.08	1.34	11.82	3.75
Creek Chub	N	G	N	T	330	660.00	35.37	6.55	57.94	9.92
South. Redbelly Dace	N	H	S		37	74.00	3.97	0.16	1.40	2.14
Striped Shiner	N	I	S		16	32.00	1.71	0.48	4.23	14.94
Silverjaw Minnow	N	I	M		21	42.00	2.25	0.18	1.59	4.29
Bluntnose Minnow	N	O	C	T	75	150.00	8.04	0.46	4.07	3.07
Central Stoneroller	N	H	N		92	184.00	9.86	0.87	7.66	4.71
Striped Sh X Creek Chub		I			1	2.00	0.11	0.01	0.11	6.00
Rock Bass	S	C	C		1	2.00	0.11	0.00	0.02	1.00
Johnny Darter	D	I	C		66	132.00	7.07	0.13	1.17	1.00
Rainbow Darter	D	I	S	M	25	50.00	2.68	0.06	0.50	1.12
Orangethroat Darter	D	I	S		60	120.00	6.43	0.12	1.06	1.00
Fantail Darter	D	I	C		10	20.00	1.07	0.03	0.23	1.30
<i>Mile Total</i>					933	1,866.00		11.30		
<i>Number of Species</i>					13					
<i>Number of Hybrids</i>					1					

River Code: 14-506	Stream: Goose Run	Sample Date: 2005
River Mile: 0.30	Location: Eaton-Lewisburg Rd.	Date Range: 07/27/2005
Time Fished: 3624 sec	Drainage: 11.2 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	39	58.50	4.32	0.80	7.88	13.59
Western Blacknose Dace	N	G	S	T	82	123.00	9.09	0.44	4.39	3.60
Creek Chub	N	G	N	T	221	331.50	24.50	3.93	38.95	11.86
South. Redbelly Dace	N	H	S		1	1.50	0.11	0.01	0.08	5.00
Striped Shiner	N	I	S		30	45.00	3.33	0.89	8.80	19.73
Silverjaw Minnow	N	I	M		6	9.00	0.67	0.05	0.50	5.50
Bluntnose Minnow	N	O	C	T	10	15.00	1.11	0.07	0.68	4.60
Central Stoneroller	N	H	N		99	148.50	10.98	0.88	8.74	5.94
Rock Bass	S	C	C		5	7.50	0.55	0.46	4.58	61.60
Smallmouth Bass	F	C	C	M	6	9.00	0.67	0.02	0.18	2.00
Green Sunfish	S	I	C	T	3	4.50	0.33	0.12	1.18	26.33
Johnny Darter	D	I	C		3	4.50	0.33	0.01	0.11	2.33
Greenside Darter	D	I	S	M	7	10.50	0.78	0.03	0.26	2.50
Banded Darter	D	I	S	I	1	1.50	0.11	0.00	0.03	2.00
Rainbow Darter	D	I	S	M	130	195.00	14.41	0.27	2.70	1.40
Orangethroat Darter	D	I	S		7	10.50	0.78	0.02	0.15	1.43
Fantail Darter	D	I	C		12	18.00	1.33	0.04	0.35	1.92
Mottled Sculpin		I	C		240	360.00	26.61	2.07	20.49	5.74
<i>Mile Total</i>					902	1,353.00		10.09		
<i>Number of Species</i>					18					
<i>Number of Hybrids</i>					0					

Species List

River Code: 14-508	Stream: Lesley Run	Sample Date: 2005
River Mile: 6.00	Location: Snyder Rd.	Date Range: 08/05/2005
Time Fished: 638 sec	Drainage: 4.4 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	2	4.00	1.05	0.02	1.43	4.50
Western Blacknose Dace	N	G	S	T	14	28.00	7.33	0.06	4.94	2.21
Creek Chub	N	G	N	T	11	22.00	5.76	0.24	19.11	10.91
South. Redbelly Dace	N	H	S		4	8.00	2.09	0.03	2.07	3.25
Scarlet Shiner	N	I	S	M	14	28.00	7.33	0.04	3.18	1.43
Striped Shiner	N	I	S		2	4.00	1.05	0.02	1.43	4.50
Bluntnose Minnow	N	O	C	T	43	86.00	22.51	0.12	9.24	1.35
Central Stoneroller	N	H	N		36	72.00	18.85	0.28	22.61	3.94
Yellow Bullhead		I	C	T	1	2.00	0.52	0.01	0.48	3.00
Rock Bass	S	C	C		6	12.00	3.14	0.10	7.96	8.33
Bluegill Sunfish	S	I	C	P	2	4.00	1.05	0.10	8.28	26.00
Longear Sunfish	S	I	C	M	9	18.00	4.71	0.19	15.29	10.67
Johnny Darter	D	I	C		8	16.00	4.19	0.01	0.64	0.50
Orangethroat Darter	D	I	S		33	66.00	17.28	0.03	2.55	0.48
Least Darter [S]	D	I	N		6	12.00	3.14	0.01	0.80	0.83
<i>Mile Total</i>					191	382.00		1.26		
<i>Number of Species</i>					15					
<i>Number of Hybrids</i>					0					

River Code: 14-508	Stream: Lesley Run	Sample Date: 2005
River Mile: 1.20	Location: East Factory Rd.	Date Range: 08/04/2005
Time Fished: 2558 sec	Drainage: 7.5 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	38	57.00	10.95	0.05	2.09	0.95
Western Blacknose Dace	N	G	S	T	21	31.50	6.05	0.07	2.68	2.19
Creek Chub	N	G	N	T	125	187.50	36.02	2.00	77.73	10.69
South. Redbelly Dace	N	H	S		10	15.00	2.88	0.05	2.09	3.60
Striped Shiner	N	I	S		1	1.50	0.29	0.00	0.08	1.00
Bluntnose Minnow	N	O	C	T	23	34.50	6.63	0.08	2.99	2.22
Central Stoneroller	N	H	N		33	49.50	9.51	0.11	4.07	2.12
Rock Bass	S	C	C		25	37.50	7.20	0.10	4.03	2.76
Longear Sunfish	S	I	C	M	3	4.50	0.86	0.02	0.66	3.67
Johnny Darter	D	I	C		22	33.00	6.34	0.02	0.78	0.59
Rainbow Darter	D	I	S	M	12	18.00	3.46	0.03	1.16	1.67
Orangethroat Darter	D	I	S		27	40.50	7.78	0.03	1.24	0.78
Fantail Darter	D	I	C		7	10.50	2.02	0.01	0.54	1.29
<i>Mile Total</i>					347	520.50		2.58		
<i>Number of Species</i>					13					
<i>Number of Hybrids</i>					0					

River Code: 14-510	Stream: Price Creek	Sample Date: 2005
River Mile: 13.70	Location: upst. Pence-Shewman Rd.	Date Range: 08/24/2005
Time Fished: 1935 sec	Drainage: 4.7 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	178	356.00	22.50	0.54	22.65	1.51
Creek Chub	N	G	N	T	191	382.00	24.15	0.81	34.07	2.11
Scarlet Shiner	N	I	S	M	7	14.00	0.88	0.02	0.93	1.57
Striped Shiner	N	I	S		17	34.00	2.15	0.03	1.18	0.82
Silverjaw Minnow	N	I	M		26	52.00	3.29	0.10	4.31	1.96
Fathead Minnow	N	O	C	T	42	84.00	5.31	0.04	1.69	0.48
Bluntnose Minnow	N	O	C	T	156	312.00	19.72	0.50	21.13	1.60
Central Stoneroller	N	H	N		124	248.00	15.68	0.17	7.27	0.69
Rock Bass	S	C	C		8	16.00	1.01	0.10	4.40	6.50
Johnny Darter	D	I	C		6	12.00	0.76	0.02	0.76	1.50
Greenside Darter	D	I	S	M	1	2.00	0.13	0.01	0.42	5.00
Banded Darter	D	I	S	I	1	2.00	0.13	0.00	0.17	2.00
Rainbow Darter	D	I	S	M	2	4.00	0.25	0.00	0.17	1.00
Orangethroat Darter	D	I	S		32	64.00	4.05	0.02	0.85	0.31
<i>Mile Total</i>					791	1,582.00		2.37		
<i>Number of Species</i>					14					
<i>Number of Hybrids</i>					0					

River Code: 14-510	Stream: Price Creek	Sample Date: 2005
River Mile: 10.90	Location: Shurley Rd.	Date Range: 08/24/2005
Time Fished: 2439 sec	Drainage: 11.4 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	38	57.00	2.71	0.11	0.96	1.84
Creek Chub	N	G	N	T	490	735.00	34.95	6.55	60.11	8.91
Scarlet Shiner	N	I	S	M	38	57.00	2.71	0.09	0.84	1.61
Striped Shiner	N	I	S		67	100.50	4.78	0.73	6.68	7.24
Sand Shiner	N	I	M	M	56	84.00	3.99	0.15	1.38	1.79
Silverjaw Minnow	N	I	M		68	102.00	4.85	0.30	2.73	2.91
Fathead Minnow	N	O	C	T	1	1.50	0.07	0.00	0.03	2.00
Bluntnose Minnow	N	O	C	T	165	247.50	11.77	0.41	3.80	1.67
Central Stoneroller	N	H	N		187	280.50	13.34	0.95	8.70	3.38
Yellow Bullhead		I	C	T	2	3.00	0.14	0.11	1.01	36.50
Rock Bass	S	C	C		47	70.50	3.35	1.01	9.30	14.36
Smallmouth Bass	F	C	C	M	2	3.00	0.14	0.01	0.06	2.00
Bluegill Sunfish	S	I	C	P	1	1.50	0.07	0.02	0.17	12.00
Johnny Darter	D	I	C		111	166.50	7.92	0.18	1.68	1.10
Greenside Darter	D	I	S	M	8	12.00	0.57	0.06	0.55	5.00
Rainbow Darter	D	I	S	M	84	126.00	5.99	0.16	1.49	1.29
Orangethroat Darter	D	I	S		36	54.00	2.57	0.05	0.49	0.97
Rainbow X Orangethroat		I			1	1.50	0.07	0.01	0.06	4.00
<i>Mile Total</i>					1,402	2,103.00		10.90		
<i>Number of Species</i>					17					
<i>Number of Hybrids</i>					1					

Species List

River Code: 14-510	Stream: Price Creek	Sample Date: 2005
River Mile: 3.80	Location: Jims Run Rd.	Date Range: 08/25/2005
Time Fished: 2576 sec	Drainage: 20.1 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	154	231.00	5.32	0.73	4.00	3.15
Creek Chub	N	G	N	T	127	190.50	4.39	1.80	9.88	9.45
Scarlet Shiner	N	I	S	M	17	25.50	0.59	0.04	0.20	1.47
Striped Shiner	N	I	S		20	30.00	0.69	0.02	0.09	0.55
Sand Shiner	N	I	M	M	10	15.00	0.35	0.03	0.18	2.10
Silverjaw Minnow	N	I	M		187	280.50	6.46	0.74	4.05	2.63
Bluntnose Minnow	N	O	C	T	302	453.00	10.43	1.20	6.60	2.65
Central Stoneroller	N	H	N		1,645	2,467.50	56.82	11.54	63.32	4.67
Yellow Bullhead		I	C	T	3	4.50	0.10	0.02	0.10	4.00
Rock Bass	S	C	C		8	12.00	0.28	1.20	6.59	100.00
Smallmouth Bass	F	C	C	M	5	7.50	0.17	0.20	1.12	27.20
Johnny Darter	D	I	C		20	30.00	0.69	0.03	0.16	0.95
Greenside Darter	D	I	S	M	219	328.50	7.56	0.32	1.74	0.96
Rainbow Darter	D	I	S	M	143	214.50	4.94	0.29	1.61	1.37
Fantail Darter	D	I	C		35	52.50	1.21	0.07	0.38	1.31
<i>Mile Total</i>					2,895	4,342.50		18.22		
<i>Number of Species</i>					15					
<i>Number of Hybrids</i>					0					

River Code: 14-512	Stream: Swamp Creek	Sample Date: 2005
River Mile: 6.30	Location: upst. County Line Rd.	Date Range: 08/29/2005
Time Fished: 1995 sec	Drainage: 8.7 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	80	160.00	8.51	0.26	6.18	1.63
Western Blacknose Dace	N	G	S	T	36	72.00	3.83	0.07	1.67	0.97
Creek Chub	N	G	N	T	315	630.00	33.51	2.22	52.76	3.52
Scarlet Shiner	N	I	S	M	5	10.00	0.53	0.01	0.33	1.40
Striped Shiner	N	I	S		6	12.00	0.64	0.01	0.19	0.67
Sand Shiner	N	I	M	M	125	250.00	13.30	0.32	7.68	1.29
Silverjaw Minnow	N	I	M		33	66.00	3.51	0.16	3.81	2.42
Fathead Minnow	N	O	C	T	6	12.00	0.64	0.01	0.33	1.17
Bluntnose Minnow	N	O	C	T	125	250.00	13.30	0.49	11.61	1.95
Central Stoneroller	N	H	N		94	188.00	10.00	0.34	8.06	1.80
Yellow Bullhead		I	C	T	1	2.00	0.11	0.00	0.10	2.00
Blackstripe Topminnow		I	M		6	12.00	0.64	0.01	0.29	1.00
Rock Bass	S	C	C		6	12.00	0.64	0.08	1.90	6.67
Longear Sunfish	S	I	C	M	2	4.00	0.21	0.08	1.86	19.50
Johnny Darter	D	I	C		26	52.00	2.77	0.03	0.71	0.58
Greenside Darter	D	I	S	M	7	14.00	0.74	0.03	0.67	2.00
Rainbow Darter	D	I	S	M	16	32.00	1.70	0.03	0.71	0.94
Orangethroat Darter	D	I	S		39	78.00	4.15	0.04	1.00	0.54
Least Darter [S]	D	I	N		12	24.00	1.28	0.01	0.17	0.27
<i>Mile Total</i>					940	1,880.00		4.20		
<i>Number of Species</i>					19					
<i>Number of Hybrids</i>					0					

River Code: 14-513	Stream: Millers Fork	Sample Date: 2005
River Mile: 10.80	Location: Grubbs Rd.	Date Range: 08/24/2005
Time Fished: 1836 sec	Drainage: 5.7 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	4	8.00	0.48	0.15	2.25	19.00
Common Carp	G	O	M	T	1	2.00	0.12	0.09	1.36	46.00
Creek Chub	N	G	N	T	311	622.00	37.20	3.42	50.56	5.49
Scarlet Shiner	N	I	S	M	9	18.00	1.08	0.02	0.30	1.11
Striped Shiner	N	I	S		55	110.00	6.58	0.08	1.14	0.70
Silverjaw Minnow	N	I	M		7	14.00	0.84	0.01	0.18	0.86
Bluntnose Minnow	N	O	C	T	192	384.00	22.97	0.45	6.69	1.18
Central Stoneroller	N	H	N		73	146.00	8.73	0.69	10.17	4.71
Yellow Bullhead		I	C	T	13	26.00	1.56	0.29	4.26	11.08
Black Bullhead		I	C	P	1	2.00	0.12	0.14	2.07	70.00
Blackstripe Topminnow		I	M		70	140.00	8.37	0.16	2.37	1.14
Rock Bass	S	C	C		14	28.00	1.67	0.37	5.47	13.23
Largemouth Bass	F	C	C		35	70.00	4.19	0.47	6.91	6.67
Green Sunfish	S	I	C	T	1	2.00	0.12	0.04	0.53	18.00
Bluegill Sunfish	S	I	C	P	3	6.00	0.36	0.22	3.26	36.67
Longear Sunfish	S	I	C	M	4	8.00	0.48	0.13	1.89	16.00
Johnny Darter	D	I	C		1	2.00	0.12	0.00	0.03	1.00
Rainbow Darter	D	I	S	M	13	26.00	1.56	0.01	0.18	0.44
Orangethroat Darter	D	I	S		15	30.00	1.79	0.01	0.15	0.33
Fantail Darter	D	I	C		2	4.00	0.24	0.01	0.09	1.50
Least Darter [S]	D	I	N		12	24.00	1.44	0.01	0.13	0.36
<i>Mile Total</i>					836	1,672.00		6.76		
<i>Number of Species</i>					21					
<i>Number of Hybrids</i>					0					

River Code: 14-513	Stream: Millers Fork	Sample Date: 2005
River Mile: 8.00	Location: Clark Rd.	Date Range: 08/24/2005
Time Fished: 2566 sec	Drainage: 10.1 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	78	117.00	8.83	0.40	6.43	3.40
Creek Chub	N	G	N	T	312	468.00	35.33	2.02	32.68	4.32
Silver Shiner	N	I	S	I	36	54.00	4.08	0.05	0.84	0.97
Scarlet Shiner	N	I	S	M	23	34.50	2.60	0.07	1.07	1.91
Striped Shiner	N	I	S		78	117.00	8.83	1.29	20.87	11.04
Sand Shiner	N	I	M	M	1	1.50	0.11	0.01	0.08	3.00
Silverjaw Minnow	N	I	M		19	28.50	2.15	0.03	0.47	1.00
Bluntnose Minnow	N	O	C	T	74	111.00	8.38	0.32	5.09	2.84
Central Stoneroller	N	H	N		34	51.00	3.85	0.36	5.85	7.09
Yellow Bullhead		I	C	T	2	3.00	0.23	0.17	2.76	57.00
Rock Bass	S	C	C		9	13.50	1.02	0.08	1.21	5.56
Smallmouth Bass	F	C	C	M	3	4.50	0.34	0.38	6.06	83.33
Largemouth Bass	F	C	C		2	3.00	0.23	0.25	3.97	82.00
Green Sunfish	S	I	C	T	2	3.00	0.23	0.07	1.07	22.00
Bluegill Sunfish	S	I	C	P	4	6.00	0.45	0.08	1.29	13.25
Longear Sunfish	S	I	C	M	1	1.50	0.11	0.02	0.24	10.00
Johnny Darter	D	I	C		9	13.50	1.02	0.02	0.24	1.11
Greenside Darter	D	I	S	M	28	42.00	3.17	0.13	2.12	3.11
Rainbow Darter	D	I	S	M	101	151.50	11.44	0.19	3.05	1.24
Orangethroat Darter	D	I	S		1	1.50	0.11	0.00	0.03	1.00
Fantail Darter	D	I	C		13	19.50	1.47	0.03	0.52	1.62
Mottled Sculpin		I	C		53	79.50	6.00	0.26	4.12	3.21
<i>Mile Total</i>					883	1,324.50		6.19		
<i>Number of Species</i>					22					
<i>Number of Hybrids</i>					0					

River Code: 14-513	Stream: Millers Fork	Sample Date: 2005
River Mile: 3.90	Location: Georgetown-Verona Rd.	Date Range: 08/29/2005
Time Fished: 1907 sec	Drainage: 19.7 sq mi	
Dist Fished: 0.20 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	1	1.50	0.37	0.33	2.99	221.00
Golden Redhorse	R	I	S M	2	3.00	0.74	1.26	11.32	419.00
White Sucker	W	O	S T	10	15.00	3.70	2.23	20.03	148.30
Creek Chub	N	G	N T	6	9.00	2.22	0.28	2.48	30.67
Silver Shiner	N	I	S I	20	30.00	7.41	0.16	1.42	5.26
Scarlet Shiner	N	I	S M	7	10.50	2.59	0.01	0.08	0.86
Striped Shiner	N	I	S	20	30.00	7.41	1.00	8.97	33.20
Bluntnose Minnow	N	O	C T	18	27.00	6.67	0.05	0.48	1.94
Yellow Bullhead		I	C T	5	7.50	1.85	0.47	4.24	62.80
Rock Bass	S	C	C	9	13.50	3.33	0.86	7.77	63.89
Smallmouth Bass	F	C	C M	2	3.00	0.74	0.39	3.48	129.00
Largemouth Bass	F	C	C	3	4.50	1.11	0.21	1.88	46.33
Green Sunfish	S	I	C T	51	76.50	18.89	1.58	14.18	20.59
Bluegill Sunfish	S	I	C P	93	139.50	34.44	1.80	16.20	12.90
Longear Sunfish	S	I	C M	12	18.00	4.44	0.41	3.70	22.83
Green Sf X Bluegill Sf				2	3.00	0.74	0.04	0.40	14.50
Logperch	D	I	S M	2	3.00	0.74	0.04	0.34	12.50
Johnny Darter	D	I	C	1	1.50	0.37	0.00	0.02	1.00
Greenside Darter	D	I	S M	1	1.50	0.37	0.00	0.02	1.00
Rainbow Darter	D	I	S M	5	7.50	1.85	0.01	0.05	0.80
<i>Mile Total</i>				270	405.00		11.11		
<i>Number of Species</i>				19					
<i>Number of Hybrids</i>				1					

River Code: 14-515	Stream: Dry Fork	Sample Date: 2005
River Mile: 0.80	Location: Locke Rd.	Date Range: 08/23/2005
Time Fished: 1933 sec	Drainage: 5.4 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	39	78.00	5.64	0.09	2.03	1.13
Western Blacknose Dace	N	G	S	T	130	260.00	18.81	0.52	12.07	2.02
Creek Chub	N	G	N	T	253	506.00	36.61	2.63	60.50	5.19
Striped Shiner	N	I	S		23	46.00	3.33	0.03	0.67	0.64
Bluntnose Minnow	N	O	C	T	54	108.00	7.81	0.22	5.02	2.02
Central Stoneroller	N	H	N		32	64.00	4.63	0.21	4.93	3.34
Johnny Darter	D	I	C		9	18.00	1.30	0.02	0.37	0.89
Greenside Darter	D	I	S	M	10	20.00	1.45	0.08	1.80	3.90
Rainbow Darter	D	I	S	M	47	94.00	6.80	0.17	3.85	1.78
Orangethroat Darter	D	I	S		58	116.00	8.39	0.16	3.59	1.35
Fantail Darter	D	I	C		25	50.00	3.62	0.09	2.14	1.86
Least Darter [S]	D	I	N		2	4.00	0.29	0.00	0.05	0.50
Rainbow X Orangethroat		I			2	4.00	0.29	0.01	0.18	2.00
Mottled Sculpin		I	C		7	14.00	1.01	0.12	2.81	8.71
<i>Mile Total</i>					691	1,382.00		4.34		
<i>Number of Species</i>					13					
<i>Number of Hybrids</i>					1					

Species List

River Code: 14-518	Stream: Trib. to Twin Creek (RM 18.29)	Sample Date: 2005
River Mile: 0.60	Location: St. Rt. 725	Date Range: 08/30/2005
Time Fished: 1940 sec	Drainage: 3.3 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S T	88	176.00	12.21	0.81	18.88	4.59
Western Blacknose Dace	N	G	S T	233	466.00	32.32	0.81	18.97	1.74
Creek Chub	N	G	N T	127	254.00	17.61	0.66	15.42	2.60
South. Redbelly Dace	N	H	S	6	12.00	0.83	0.01	0.28	1.00
Striped Shiner	N	I	S	5	10.00	0.69	0.12	2.76	11.80
Silverjaw Minnow	N	I	M	2	4.00	0.28	0.01	0.28	3.00
Bluntnose Minnow	N	O	C T	2	4.00	0.28	0.02	0.47	5.00
Central Stoneroller	N	H	N	118	236.00	16.37	0.92	21.50	3.90
Largemouth Bass	F	C	C	9	18.00	1.25	0.11	2.62	6.22
Bluegill Sunfish	S	I	C P	2	4.00	0.28	0.14	3.18	34.00
Johnny Darter	D	I	C	1	2.00	0.14	0.00	0.09	2.00
Rainbow Darter	D	I	S M	23	46.00	3.19	0.08	1.78	1.65
Orangethroat Darter	D	I	S	5	10.00	0.69	0.01	0.19	0.80
Fantail Darter	D	I	C	3	6.00	0.42	0.01	0.23	1.67
Mottled Sculpin		I	C	97	194.00	13.45	0.57	13.36	2.95
<i>Mile Total</i>				721	1,442.00		4.28		
<i>Number of Species</i>				15					
<i>Number of Hybrids</i>				0					

Species List

River Code: 14-519	Stream: Maple Swamp Ditch	Sample Date: 2005
River Mile: 2.40	Location: Grubbs-Rex Rd.	Date Range: 07/25/2005
Time Fished: 1107 sec	Drainage: 5.5 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Creek Chub	N	G	N	T	3	6.00	4.29	0.04	10.22	6.33
Sand Shiner	N	I	M	M	1	2.00	1.43	0.00	1.08	2.00
Bluntnose Minnow	N	O	C	T	5	10.00	7.14	0.02	5.91	2.20
Central Stoneroller	N	H	N		1	2.00	1.43	0.01	2.15	4.00
Yellow Bullhead		I	C	T	1	2.00	1.43	0.01	2.15	4.00
Blackstripe Topminnow		I	M		48	96.00	68.57	0.18	49.46	1.92
Largemouth Bass	F	C	C		5	10.00	7.14	0.03	9.14	3.40
Bluegill Sunfish	S	I	C	P	1	2.00	1.43	0.02	4.30	8.00
Longear Sunfish	S	I	C	M	4	8.00	5.71	0.05	14.52	6.75
Rainbow Darter	D	I	S	M	1	2.00	1.43	0.00	1.08	2.00
<i>Mile Total</i>					70	140.00		0.37		
<i>Number of Species</i>					10					
<i>Number of Hybrids</i>					0					

River Code: 14-519	Stream: Maple Swamp Ditch	Sample Date: 2005
River Mile: 1.40	Location: Otterbine-Ithica Rd.	Date Range: 08/23/2005
Time Fished: 2089 sec	Drainage: 10.2 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River	No of Passes: 1
		Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	16	32.00	2.59	2.00	18.81	62.50
Common Carp	G	O	M	T	5	10.00	0.81	0.96	9.01	95.80
Creek Chub	N	G	N	T	106	212.00	17.18	1.50	14.09	7.07
Scarlet Shiner	N	I	S	M	21	42.00	3.40	0.15	1.37	3.48
Striped Shiner	N	I	S		27	54.00	4.38	0.24	2.26	4.44
Spotfin Shiner	N	I	M		15	30.00	2.43	0.09	0.85	3.00
Sand Shiner	N	I	M	M	27	54.00	4.38	0.08	0.77	1.52
Silverjaw Minnow	N	I	M		2	4.00	0.32	0.01	0.09	2.50
Bluntnose Minnow	N	O	C	T	186	372.00	30.15	1.51	14.20	4.06
Central Stoneroller	N	H	N		27	54.00	4.38	0.43	4.03	7.93
Yellow Bullhead		I	C	T	2	4.00	0.32	0.09	0.88	23.50
Blackstripe Topminnow		I	M		4	8.00	0.65	0.02	0.23	3.00
Rock Bass	S	C	C		47	94.00	7.62	1.75	16.46	18.62
Smallmouth Bass	F	C	C	M	2	4.00	0.32	0.09	0.83	22.00
Largemouth Bass	F	C	C		1	2.00	0.16	0.01	0.09	5.00
Bluegill Sunfish	S	I	C	P	5	10.00	0.81	0.10	0.90	9.60
Longear Sunfish	S	I	C	M	52	104.00	8.43	1.28	11.99	12.25
Johnny Darter	D	I	C		13	26.00	2.11	0.03	0.28	1.15
Greenside Darter	D	I	S	M	8	16.00	1.30	0.08	0.79	5.25
Banded Darter	D	I	S	I	11	22.00	1.78	0.04	0.40	1.91
Rainbow Darter	D	I	S	M	35	70.00	5.67	0.15	1.45	2.20
Orangethroat Darter	D	I	S		3	6.00	0.49	0.01	0.09	1.67
Fantail Darter	D	I	C		2	4.00	0.32	0.01	0.11	3.00
<i>Mile Total</i>					617	1,234.00		10.63		
<i>Number of Species</i>					23					
<i>Number of Hybrids</i>					0					

Species List

River Code: 14-520	Stream: Trib. to Aukerman Creek (RM 2.88)	Sample Date: 2005
River Mile: 0.50	Location: near mouth, upst. trib.	Date Range: 07/26/2005
Time Fished: 2633 sec	Drainage: 4.5 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	28	56.00	1.75	0.06	0.55	1.14
Western Blacknose Dace	N	G	S	T	486	972.00	30.34	2.29	19.79	2.35
Creek Chub	N	G	N	T	408	816.00	25.47	4.60	39.78	5.63
South. Redbelly Dace	N	H	S		239	478.00	14.92	1.01	8.75	2.12
Bluntnose Minnow	N	O	C	T	1	2.00	0.06	0.01	0.05	3.00
Central Stoneroller	N	H	N		137	274.00	8.55	1.44	12.49	5.27
Rock Bass	S	C	C		8	16.00	0.50	0.81	7.02	50.75
Johnny Darter	D	I	C		1	2.00	0.06	0.00	0.03	2.00
Rainbow Darter	D	I	S	M	63	126.00	3.93	0.19	1.66	1.52
Orangethroat Darter	D	I	S		51	102.00	3.18	0.13	1.11	1.25
Fantail Darter	D	I	C		29	58.00	1.81	0.11	0.97	1.93
Mottled Sculpin		I	C		151	302.00	9.43	0.90	7.79	2.98
<i>Mile Total</i>					1,602	3,204.00		11.56		
<i>Number of Species</i>					12					
<i>Number of Hybrids</i>					0					

Species List

River Code: 14-521	Stream: Trib. to Swamp Creek (RM 6.45)	Sample Date: 2005
River Mile: 0.30	Location: Baltimore-Phillipsburg Rd.	Date Range: 08/29/2005
Time Fished: 1277 sec	Drainage: 4.7 sq mi	
Dist Fished: 0.15 km	Basin: Great Miami River No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
White Sucker	W	O	S	T	232	464.00	26.21	0.84	24.41	1.80
Western Blacknose Dace	N	G	S	T	2	4.00	0.23	0.01	0.23	2.00
Creek Chub	N	G	N	T	324	648.00	36.61	1.46	42.54	2.25
Striped Shiner	N	I	S		1	2.00	0.11	0.00	0.12	2.00
Sand Shiner	N	I	M	M	1	2.00	0.11	0.00	0.12	2.00
Fathead Minnow	N	O	C	T	12	24.00	1.36	0.01	0.35	0.50
Bluntnose Minnow	N	O	C	T	84	168.00	9.49	0.33	9.58	1.95
Central Stoneroller	N	H	N		127	254.00	14.35	0.40	11.68	1.57
Blackstripe Topminnow		I	M		2	4.00	0.23	0.01	0.35	3.00
Rock Bass	S	C	C		1	2.00	0.11	0.01	0.35	6.00
Green Sunfish	S	I	C	T	8	16.00	0.90	0.24	7.01	15.00
Bluegill Sunfish	S	I	C	P	1	2.00	0.11	0.02	0.58	10.00
Longear Sunfish	S	I	C	M	1	2.00	0.11	0.03	0.82	14.00
Johnny Darter	D	I	C		1	2.00	0.11	0.00	0.06	1.00
Rainbow Darter	D	I	S	M	5	10.00	0.56	0.01	0.35	1.20
Orangethroat Darter	D	I	S		27	54.00	3.05	0.02	0.61	0.38
Least Darter [S]	D	I	N		56	112.00	6.33	0.03	0.85	0.26
<i>Mile Total</i>					885	1,770.00		3.43		
<i>Number of Species</i>					17					
<i>Number of Hybrids</i>					0					

Total list of fish species collected in the Twin Creek basin in 2005.							Grand Total of All Streams			
							Date Range: 07/13/2005			
							Thru: 10/04/2005			
Dist Fished: 11.30 km		No of Streams: 15		No of Passes: 60						

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Gizzard Shad		O	M	25	0.63	0.03	0.02	0.09	39.68
Quillback	C	O	M	33	0.83	0.04	0.30	1.03	357.64
Highfin Carpsucker	C	O	M	1	0.03	0.00	0.01	0.05	540.00
Black Redhorse	R	I	S I	1,042	26.05	1.39	6.68	23.35	256.52
Golden Redhorse	R	I	S M	366	9.15	0.49	2.05	7.18	224.52
Shorthead Redhorse	R	I	S M	14	0.35	0.02	0.02	0.08	65.21
Northern Hog Sucker	R	I	S M	1,926	48.18	2.57	3.08	10.75	63.78
White Sucker	W	O	S T	3,118	84.87	4.52	1.85	6.47	23.07
Common Carp	G	O	M T	27	0.73	0.04	1.00	3.50	1,479.44
Goldfish	G	O	M T	1	0.03	0.00	0.00	0.01	143.00
Golden Shiner	N	I	M T	1	0.03	0.00	0.00	0.00	4.00
River Chub	N	I	N I	843	21.08	1.12	0.34	1.20	16.32
Bigeye Chub	N	I	S I	132	3.30	0.18	0.01	0.04	3.85
Western Blacknose Dace	N	G	S T	3,199	89.95	4.80	0.23	0.80	2.55
Creek Chub	N	G	N T	5,939	170.46	9.09	1.61	5.62	9.89
Suckermouth Minnow	N	I	S	132	3.30	0.18	0.02	0.06	5.45
South. Redbelly Dace	N	H	S	419	13.33	0.71	0.03	0.11	2.41
Emerald Shiner	N	I	M	2	0.05	0.00	0.00	0.00	1.50
Silver Shiner	N	I	S I	597	14.93	0.80	0.06	0.21	3.93
Rosyface Shiner	N	I	S I	3,351	83.79	4.47	0.16	0.55	1.88
Scarlet Shiner	N	I	S M	1,181	30.53	1.63	0.06	0.20	1.86
Striped Shiner	N	I	S	2,712	69.47	3.70	1.04	3.63	15.19
Spotfin Shiner	N	I	M	1,572	39.43	2.10	0.13	0.45	3.26
Sand Shiner	N	I	M M	2,540	65.13	3.47	0.11	0.39	1.72
Mimic Shiner	N	I	M I	70	1.75	0.09	0.00	0.01	1.49
Silverjaw Minnow	N	I	M	846	22.40	1.19	0.07	0.23	2.95
Fathead Minnow	N	O	C T	78	2.58	0.14	0.00	0.01	1.14
Bluntnose Minnow	N	O	C T	5,119	139.11	7.42	0.40	1.41	2.95
Central Stoneroller	N	H	N	19,556	512.58	27.33	3.75	13.09	7.35
Striped Sh X River Chub		I		1	0.03	0.00	0.00	0.00	10.00
Striped Sh X Rosyface Sh		I		8	0.20	0.01	0.00	0.00	6.75
Striped Sh X Creek Chub		I		1	0.03	0.00	0.00	0.00	6.00
Striped Sh X S Redbelly D				1	0.03	0.00	0.00	0.00	6.00
Channel Catfish	F		C	114	2.85	0.15	0.53	1.87	187.27
Yellow Bullhead		I	C T	68	1.87	0.10	0.09	0.31	50.15
Black Bullhead		I	C P	1	0.03	0.00	0.00	0.01	70.00
Flathead Catfish	F	P	C	5	0.13	0.01	0.27	0.94	2,161.40
Stonecat Madtom		I	C I	77	1.93	0.10	0.02	0.08	11.65
Brindled Madtom		I	C I	14	0.35	0.02	0.00	0.01	5.93
Blackstripe Topminnow		I	M	136	4.48	0.24	0.01	0.02	1.54
Rock Bass	S	C	C	1,327	34.31	1.83	1.53	5.36	45.55
Smallmouth Bass	F	C	C M	663	16.61	0.89	1.64	5.73	98.96
Spotted Bass	F	C	C	4	0.10	0.01	0.00	0.00	2.25
Largemouth Bass	F	C	C	145	4.05	0.22	0.09	0.30	22.85
Green Sunfish	S	I	C T	233	5.91	0.32	0.15	0.53	25.94
Bluegill Sunfish	S	I	C P	448	11.32	0.60	0.18	0.62	15.56
Orangespotted Sunfish	S	I	C	3	0.08	0.00	0.00	0.00	7.33

Species List

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longear Sunfish	S	I	C	M	489	13.13	0.70	0.26	0.92	20.18
Redear Sunfish	E	I	C		6	0.15	0.01	0.00	0.01	22.17
Pumpkinseed Sunfish	S	I	C	P	1	0.03	0.00	0.00	0.01	82.00
Green Sf X Bluegill Sf					2	0.05	0.00	0.00	0.00	14.50
Green Sf X Longear Sf					1	0.03	0.00	0.00	0.00	15.00
Green Sf X Hybrid					67	1.68	0.09	0.09	0.31	52.80
Blackside Darter	D	I	S		4	0.10	0.01	0.00	0.00	2.75
Logperch	D	I	S	M	80	2.00	0.11	0.02	0.09	12.19
Johnny Darter	D	I	C		440	12.22	0.65	0.01	0.05	1.11
Greenside Darter	D	I	S	M	1,853	47.04	2.51	0.16	0.56	3.37
Banded Darter	D	I	S	I	2,127	53.63	2.86	0.08	0.26	1.41
Rainbow Darter	D	I	S	M	4,726	120.88	6.45	0.17	0.61	1.44
Orangethroat Darter	D	I	S		633	19.28	1.03	0.02	0.06	0.87
Fantail Darter	D	I	C		259	7.08	0.38	0.01	0.05	1.86
Least Darter [S]	D	I	N		89	2.97	0.16	0.00	0.00	0.33
Rainbow X Orangethroat		I			3	0.09	0.00	0.00	0.00	2.67
Mottled Sculpin		I	C		2,176	56.93	3.04	0.22	0.78	3.92
<i>Grand Total</i>					71,047	1,875.55		28.62		
<i>Number of Species</i>					56					
<i>Number of Hybrids</i>					8					

Table A-7. IBI scores and metrics, headwater sites. Twin Creek watershed, 2005.

Index of Biotic Integrity (IBI) scores from sites in the Twin Creek basin, sampled in 2005.

River Mile	Type	Date	Drainage area (sq mi)	Number of						Percent of Individuals					Rel.No. minus tolerants / (0.3km)	IBI	
				Total species	Minnow species	Headwater species	Sensitive species	Darter & Sculpin species	Simple Lithophils	Tolerant fishes	Omni-vores	Pioneering fishes	Insect-ivores	DELT anomalies			
<i>Twin Creek - (14-500)</i>																	
Year: 2005																	
46.50	E	07/22/2005	19.7	18(5)	8(5)	0(1)	9(5)	5(5)	8(5)	38(3)	34(3)	43(3)	49(3)	0.0(5)	874(5)	48	
<i>Little Twin Creek - (14-501)</i>																	
Year: 2005																	
6.20	E	08/04/2005	4.9	14(5)	6(5)	3(3)	1(1)	4(5)	5(5)	50(3)	13(5)	35(3)	11(1)	0.0(5)	896(5)	46	
4.70	E	08/03/2005	12.4	20(5)	9(5)	3(3)	4(3)	6(5)	7(5)	29(5)	17(5)	16(5)	22(3)	0.0(5)	2120(5)	54	
2.00	E	08/03/2005	19.8	22(5)	12(5)	4(5)	7(5)	6(5)	11(5)	33(3)	15(5)	7(5)	23(1)	0.0(5)	2778(5)	54	
<i>Toms Run - (14-502)</i>																	
Year: 2005																	
12.00	E	07/26/2005	6.0	15(5)	8(5)	2(3)	3(3)	4(5)	8(5)	18(5)	10(5)	19(5)	4(1)	0.0(5)	3858(5)	52	
8.50	E	08/04/2005	9.5	16(5)	7(5)	3(3)	2(1)	5(5)	7(5)	71(1)	28(3)	46(3)	12(1)	0.0(5)	225(3)	40	
<i>Aukerman Creek - (14-504)</i>																	
Year: 2005																	
3.30	E	07/26/2005	5.2	16(5)	8(5)	4(5)	2(1)	5(5)	7(5)	43(3)	17(3)	16(5)	29(3)	0.0(5)	664(5)	50	
1.80	E	07/26/2005	13.7	16(5)	8(5)	2(3)	5(3)	5(5)	8(5)	26(5)	6(5)	7(5)	29(3)	0.0(5)	2945(5)	54	
<i>Bantas Fork - (14-505)</i>																	
Year: 2005																	
13.70	E	08/05/2005	6.6	19(5)	8(5)	4(5)	3(3)	5(5)	7(5)	60(1)	20(3)	44(3)	22(3)	0.0(5)	474(3)	46	
9.40	E	08/05/2005	11.8	18(5)	9(5)	3(3)	7(5)	5(5)	8(5)	30(5)	3(5)	16(5)	35(3)	0.0(5)	1236(5)	56	
<i>Goose Creek - (14-506)</i>																	
Year: 2005																	
4.40	E	08/25/2005	3.3	13(5)	7(5)	3(3)	1(1)	4(5)	6(5)	65(1)	10(5)	59(1)	21(3)	0.0(5)	658(5)	44	
0.30	E	07/27/2005	11.2	18(5)	7(5)	4(5)	4(3)	7(5)	8(5)	39(3)	5(5)	28(5)	49(5)	0.0(5)	821(5)	56	
<i>Lesley Run - (14-508)</i>																	
Year: 2005																	
6.00	E	08/05/2005	4.4	15(5)	7(5)	2(3)	2(3)	3(5)	6(5)	37(3)	24(3)	50(3)	39(5)	0.0(5)	240(3)	48	
1.20	E	08/04/2005	7.5	13(3)	6(5)	3(3)	2(1)	4(5)	6(5)	60(1)	18(3)	57(1)	21(3)	0.0(5)	210(3)	38	

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Index of Biotic Integrity (IBI) scores from sites in the Twin Creek basin, sampled in 2005.

River Mile	Type	Date	Drainage area (sq mi)	Number of						Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI	
				Total species	Minnow species	Headwater species	Sensitive species	Darter & Sculpin species	Simple Lithophils	Tolerant fishes	Omni- vores	Pioneering fishes	Insect- ivores	DELT anomalies			
Price Creek - (14-510)																	
Year: 2005																	
13.70	E	08/24/2005	4.7	14(5)	7(5)	0(1)	4(5)	5(5)	7(5)	72(1)	48(1)	57(1)	12(1)	0.0(5)	448(3)	38	
10.90	E	08/24/2005	11.4	17(5)	8(5)	0(1)	5(3)	4(3)	6(3)	50(3)	15(5)	62(1)	34(3)	0.0(5)	1059(5)	42	
Swamp Creek - (14-512)																	
Year: 2005																	
6.30	E	08/29/2005	8.7	19(5)	9(5)	1(1)	5(5)	5(5)	7(5)	60(1)	23(3)	58(1)	30(3)	0.0(5)	754(5)	44	
Millers Fork - (14-513)																	
Year: 2005																	
10.80	E	08/24/2005	5.7	20(5)	6(5)	1(1)	3(3)	5(5)	5(5)	62(1)	24(3)	63(1)	25(3)	0.1(3)	628(5)	40	
8.00	E	08/24/2005	10.1	22(5)	8(5)	2(3)	7(5)	6(5)	7(5)	53(3)	17(3)	47(3)	42(3)	0.0(5)	623(3)	48	
3.90	E	08/29/2005	19.7	19(5)	5(3)	0(1)	8(5)	4(3)	8(5)	33(3)	11(5)	28(5)	81(5)	0.0(5)	270(3)	48	
Dry Fork - (14-515)																	
Year: 2005																	
0.80	E	08/23/2005	5.4	13(5)	5(3)	3(3)	2(1)	7(5)	6(5)	69(1)	14(5)	54(3)	27(3)	0.3(3)	430(3)	40	
Twin Creek Trb 18.29 - (14-518)																	
Year: 2005																	
0.60	E	08/30/2005	3.3	15(5)	7(5)	4(5)	1(1)	5(5)	6(5)	62(1)	13(3)	19(5)	19(3)	0.0(5)	542(5)	48	
Maple Swamp Ditch - (14-519)																	
Year: 2005																	
2.40	E	07/25/2005	5.5	10(3)	4(3)	0(1)	3(3)	1(1)	1(1)	13(5)	7(5)	11(5)	80(5)	0.0(5)	122(1) *	38	
1.40	E	08/23/2005	10.2	22(5)	8(5)	1(1)	7(5)	6(5)	7(5)	51(3)	34(1)	50(3)	37(3)	0.0(5)	604(3)	44	
Aukerman Cr trb 2.88 - (14-520)																	
Year: 2005																	
0.50	E	07/26/2005	4.5	12(5)	5(3)	4(5)	1(1)	5(5)	5(5)	58(1)	2(5)	29(5)	18(3)	0.0(5)	1358(5)	48	
Swamp Creek trb 6.45 - (14-521)																	
Year: 2005																	
0.30	E	08/29/2005	4.7	17(5)	7(5)	1(1)	3(3)	4(5)	5(5)	75(1)	37(1)	52(3)	12(1)	0.0(5)	446(3)	38	

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Table A-8. IBI scores and metrics, wading sites. Twin Creek watershed, 2005.

Index of Biotic Integrity (IBI) scores from sites in the Twin Creek basin, sampled in 2005.

River Mile	Type	Date	Drainage area (sq mi)	Number of					Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI	Modified Iwb	
				Total species	Sunfish species	Sucker species	Intolerant species	Darter species	Simple Lithophils	Tolerant fishes	Omni-vores	Top carnivores	Insect-ivores				DELT anomalies
Twin Creek - (14500)																	
Year: 2005																	
42.10	E	08/23/2005	28	23(5)	3(3)	2(3)	3(3)	5(5)	38(5)	36(3)	29(3)	8.7(5)	52(3)	0.0(5)	978(5)	48	9.1
38.00	D	07/22/2005	38	20(5)	2(3)	2(3)	3(3)	4(3)	23(3)	9(5)	7(5)	2.6(3)	27(3)	0.0(5)	2337(5)	46	9.0
35.50	D	07/21/2005	69	26(5)	4(5)	4(5)	5(5)	3(3)	49(5)	6(5)	3(5)	10.5(5)	66(5)	0.0(5)	999(5)	58	10.2
34.90	D	07/21/2005	91	30(5)	4(5)	4(5)	6(5)	6(5)	45(5)	7(5)	6(5)	12.7(5)	57(5)	0.4(3)	963(5)	58	10.2
34.90	D	10/04/2005	91	29(5)	4(5)	4(5)	7(5)	6(5)	46(5)	15(5)	13(5)	9.3(5)	57(5)	0.1(3)	993(5)	58	10.2
33.60	D	07/21/2005	94	27(5)	4(5)	4(5)	6(5)	5(5)	41(5)	12(5)	6(5)	7.8(5)	54(3)	0.1(5)	1410(5)	58	10.4
31.70	D	07/20/2005	99	29(5)	5(5)	4(5)	5(3)	5(5)	41(5)	16(5)	13(5)	21.5(5)	59(5)	0.0(5)	470(3)	56	9.8
31.70	D	10/03/2005	99	26(5)	4(5)	4(5)	4(3)	6(5)	66(5)	13(5)	10(5)	14.6(5)	74(5)	0.2(3)	740(3)	54	9.6
27.50	D	07/20/2005	142	27(5)	4(5)	4(3)	6(5)	5(3)	56(5)	5(5)	4(5)	8.3(5)	64(5)	0.2(3)	963(5)	54	10.3
27.50	D	10/04/2005	142	26(5)	4(5)	4(3)	5(3)	6(5)	54(5)	5(5)	4(5)	7.1(5)	63(5)	0.0(5)	1599(5)	56	10.5
26.70	D	07/22/2005	143	33(5)	4(5)	4(3)	8(5)	5(3)	52(5)	6(5)	4(5)	5.3(5)	69(5)	0.0(5)	2676(5)	56	11.1
26.70	D	10/04/2005	143	32(5)	3(3)	5(5)	7(5)	5(3)	50(5)	6(5)	3(5)	6.9(5)	64(5)	0.0(5)	2922(5)	56	11.2
23.90	D	07/15/2005	197	27(5)	4(5)	4(3)	8(5)	3(3)	28(3)	3(5)	2(5)	5.1(5)	43(3)	0.0(5)	1419(5)	52	9.5
23.90	D	10/03/2005	197	29(5)	4(5)	4(3)	8(5)	4(3)	46(5)	8(5)	7(5)	5.7(5)	61(5)	0.0(5)	1850(5)	56	10.5
19.20	D	07/15/2005	226	25(5)	3(3)	4(3)	6(5)	4(3)	51(5)	2(5)	1(5)	2.4(3)	68(5)	0.0(5)	1325(5)	52	9.6
19.20	D	09/14/2005	226	27(5)	1(1)	4(3)	7(5)	5(3)	51(5)	12(5)	11(5)	2.1(3)	60(5)	0.0(5)	2451(5)	50	10.2
19.00	D	07/15/2005	226	23(5)	1(1)	4(3)	6(5)	4(3)	60(5)	12(5)	11(5)	4.3(3)	78(5)	0.0(5)	645(3)	48	9.5
19.00	D	09/14/2005	226	28(5)	1(1)	5(5)	8(5)	4(3)	33(3)	13(5)	12(5)	1.6(3)	49(3)	0.0(5)	3351(5)	48	10.5
13.40	D	07/14/2005	271	24(5)	2(3)	4(3)	6(5)	3(3)	40(5)	4(5)	3(5)	2.6(3)	64(5)	0.0(5)	1491(5)	52	9.6
13.40	D	09/14/2005	271	32(5)	2(3)	6(5)	8(5)	5(3)	38(5)	8(5)	7(5)	2.4(3)	64(5)	0.0(5)	3719(5)	54	11.0
9.80	D	07/14/2005	275	27(5)	4(5)	4(3)	7(5)	5(3)	58(5)	15(5)	14(5)	2.8(3)	70(5)	0.0(5)	1041(5)	54	10.0
9.80	D	09/13/2005	275	33(5)	4(5)	6(5)	6(5)	5(3)	49(5)	17(5)	17(5)	5.2(5)	67(5)	0.1(5)	1907(5)	58	10.9
3.40	D	07/14/2005	312	22(3)	3(3)	5(5)	3(3)	5(3)	71(5)	8(5)	11(5)	3.5(3)	81(5)	0.5(3)	509(3)	46	9.6

na - Qualitative data, Modified Iwb not applicable.

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Index of Biotic Integrity (IBI) scores from sites in the Twin Creek basin, sampled in 2005.

River Mile	Type	Date	Drainage area (sq mi)	Number of					Percent of Individuals					Rel.No. minus tolerants /(0.3km)	IBI	Modified Iwb	
				Total species	Sunfish species	Sucker species	Intolerant species	Darter species	Simple Lithophils	Tolerant fishes	Omnivores	Top carnivores	Insectivores				DELT anomalies
3.40	D	09/13/2005	312	32(5)	4(5)	5(5)	7(5)	6(5)	53(5)	7(5)	7(5)	3.9(3)	66(5)	0.1(3)	2552(5)	56	11.0
0.90	D	07/13/2005	315	26(5)	4(5)	5(5)	5(3)	5(3)	47(5)	9(5)	9(5)	4.2(3)	80(5)	0.0(5)	651(3)	52	9.4
0.90	D	09/13/2005	315	28(5)	4(5)	6(5)	5(3)	7(5)	58(5)	8(5)	8(5)	5.8(5)	73(5)	0.1(5)	1217(5)	58	10.3
0.10	D	07/13/2005	316	25(5)	4(5)	5(5)	4(3)	5(3)	23(3)	15(5)	15(5)	3.3(3)	66(5)	0.2(3)	1136(5)	50	9.6
0.10	D	09/12/2005	316	35(5)	5(5)	6(5)	6(5)	5(3)	43(5)	16(5)	13(5)	1.9(3)	50(3)	0.0(5)	4317(5)	54	10.7
Toms Run - (14502)																	
Year: 2005																	
0.40	E	07/14/2005	24	23(5)	3(3)	3(5)	2(3)	3(3)	24(3)	27(5)	12(5)	1.7(3)	48(3)	0.0(5)	1176(5)	48	8.9
Aukerman Creek - (14504)																	
Year: 2005																	
0.50	E	07/25/2005	20	20(5)	0(1)	2(3)	3(5)	5(5)	50(5)	45(3)	8(5)	0.1(1)	30(3)	0.0(5)	1326(5)	46	8.0
Bantas Fork - (14505)																	
Year: 2005																	
7.10	E	07/27/2005	24	24(5)	2(3)	3(5)	4(5)	6(5)	54(5)	22(5)	7(5)	2.2(3)	61(5)	0.0(5)	945(5)	56	8.7
1.30	E	07/27/2005	34	25(5)	1(1)	4(5)	6(5)	4(3)	44(5)	10(5)	7(5)	1.9(3)	57(5)	0.0(5)	1817(5)	52	9.8
1.30	E	09/22/2005	34	29(5)	4(5)	4(5)	7(5)	4(3)	44(5)	19(5)	17(5)	1.5(3)	52(3)	0.0(5)	2169(5)	54	9.8
Price Creek - (14510)																	
Year: 2005																	
3.80	E	08/25/2005	20	15(3)	1(1)	1(1)	0(1)	4(5)	19(3)	20(5)	16(5)	0.5(1)	23(1)	0.0(5)	3464(5)	36	8.4

na - Qualitative data, Modified Iwb not applicable.

◆ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

● - One or more species excluded from IBI calculation.

Table A-9. Macroinvertebrate collection data, Twin Creek watershed, 2005.

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/20/2005 River Code: 14-500 RM: 46.60 Site: Twin Creek St. Rt. 722

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
02600	<i>Nematomorpha</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
03360	<i>Plumatella sp</i>	+	85800	<i>Tanytarsus sp</i>	+
03600	<i>Oligochaeta</i>	+	86100	<i>Chrysops sp</i>	+
04964	<i>Mooreobdella microstoma</i>	+	93900	<i>Elimia sp</i>	+
06201	<i>Hyalella azteca</i>	+	95100	<i>Physella sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	95907	<i>Gyraulus (Torquis) parvus</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	98600	<i>Sphaerium sp</i>	+
08601	<i>Hydrachnidia</i>	+	99220	<i>Alasmidonta viridis</i>	+
11120	<i>Baetis flavistriga</i>	+			
11125	<i>Pseudocloeon frondale</i>	+	No. Quantitative Taxa: 0		Total Taxa: 53
11130	<i>Baetis intercalaris</i>	+	No. Qualitative Taxa: 53		ICI:
11200	<i>Callibaetis sp</i>	+	Number of Organisms: 0		Qual EPT: 20
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
16700	<i>Tricorythodes sp</i>	+			
17200	<i>Caenis sp</i>	+			
18600	<i>Ephemera sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
44501	<i>Corixidae</i>	+			
47600	<i>Sialis sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	+			
57400	<i>Neophylax sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59310	<i>Mystacides sepulchralis</i>	+			
59410	<i>Nectopsyche diarina</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
74100	<i>Simulium sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78140	<i>Labrundinia pilosella</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/06/2005 River Code: 14-500 RM: 42.00 Site: Twin Creek Dst. Euphemia-Castine Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	4 +	69225	<i>Optioservus fastiditus</i>	+
02600	<i>Nematomorpha</i>	+	69400	<i>Stenelmis sp</i>	8 +
03600	<i>Oligochaeta</i>	+	71100	<i>Hexatoma sp</i>	+
04685	<i>Placobdella ornata</i>	+	72340	<i>Dixella sp</i>	+
06201	<i>Hyaella azteca</i>	+	72700	<i>Anopheles sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	77120	<i>Ablabesmyia mallochi</i>	+
11020	<i>Acerpenna pygmaea</i>	10 +	77150	<i>Ablabesmyia simpsoni</i>	+
11130	<i>Baetis intercalaris</i>	+	77500	<i>Conchapelopia sp</i>	27
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	77800	<i>Helopelopia sp</i>	20
11670	<i>Procloeon viridoculare</i>	+	78402	<i>Natarsia baltimoreus</i>	+
12200	<i>Isonychia sp</i>	1 +	80370	<i>Corynoneura lobata</i>	50
13000	<i>Leucrocota sp</i>	+	81650	<i>Parametriocnemus sp</i>	7
13100	<i>Nixe sp</i>	+	81690	<i>Paratrichocladius sp</i>	7
13400	<i>Stenacron sp</i>	51 +	82101	<i>Thienemanniella taurocapita</i>	1
13521	<i>Stenonema femoratum</i>	36 +	82730	<i>Chironomus (C.) decorus group</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	7 +	82800	<i>Cladopelma sp</i>	+
16700	<i>Tricorythodes sp</i>	1 +	82820	<i>Cryptochironomus sp</i>	+
17200	<i>Caenis sp</i>	9 +	82885	<i>Cryptotendipes pseudotener</i>	+
21200	<i>Calopteryx sp</i>	+	83040	<i>Dicrotendipes neomodestus</i>	7
22001	<i>Coenagrionidae</i>	+	84155	<i>Paralauterborniella nigrohalteralis</i>	+
22300	<i>Argia sp</i>	11 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
23909	<i>Boyeria vinosa</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	27
25510	<i>Stylogomphus albistylus</i>	+	84460	<i>Polypedilum (P.) fallax group</i>	27
45100	<i>Palmacorixa sp</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
47600	<i>Sialis sp</i>	+	84700	<i>Stenochironomus sp</i>	+
50315	<i>Chimarra obscura</i>	+	84750	<i>Stictochironomus sp</i>	+
52200	<i>Cheumatopsyche sp</i>	15 +	84790	<i>Tribelos fuscicorne</i>	7
52430	<i>Ceratopsyche morosa group</i>	+	85500	<i>Paratanytarsus sp</i>	7
52530	<i>Hydropsyche depravata group</i>	2 +	85625	<i>Rheotanytarsus sp</i>	14 +
53501	<i>Hydroptilidae</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	7
57400	<i>Neophylax sp</i>	+	85800	<i>Tanytarsus sp</i>	7 +
57900	<i>Pycnopsyche sp</i>	1 +	85802	<i>Tanytarsus curticornis</i>	7 +
58505	<i>Helicopsyche borealis</i>	4 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	48 +
59300	<i>Mystacides sp</i>	+	85840	<i>Tanytarsus sepp</i>	7
59500	<i>Oecetis sp</i>	4 +	86100	<i>Chrysops sp</i>	+
59970	<i>Petrophila sp</i>	+	93900	<i>Elimia sp</i>	41 +
60900	<i>Peltodytes sp</i>	+	95100	<i>Physella sp</i>	1
66500	<i>Enochrus sp</i>	+	97601	<i>Corbicula fluminea</i>	+
67700	<i>Paracymus sp</i>	+	99100	<i>Pyganodon grandis</i>	+
68075	<i>Psephenus herricki</i>	+	99160	<i>Anodontoides ferussacianus</i>	+
68130	<i>Helichus sp</i>	+	99820	<i>Villosa iris iris</i>	+
68201	<i>Scirtidae</i>	+	99860	<i>Lampsilis radiata luteola</i>	+
68708	<i>Dubiraphia vittata group</i>	6 +			
68901	<i>Macronychus glabratus</i>	89 +			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/06/2005 River Code: 14-500 RM: 42.00 Site: Twin Creek Dst. Euphemia-Castine Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
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No. Quantitative Taxa: 36 Total Taxa: 86

No. Qualitative Taxa: 72 ICI: **46**

Number of Organisms: 578 Qual EPT: 22

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/06/2005 River Code: 14-500 RM: 38.10 Site: Twin Creek upst. East Lock Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	83840	<i>Microtendipes pedellus group</i>	2
01801	<i>Turbellaria</i>	4 +	84000	<i>Parachironomus sp</i>	2
05900	<i>Lirceus sp</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	48 +
11018	<i>Acerpenna macdunnoughi</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
11020	<i>Acerpenna pygmaea</i>	20	85625	<i>Rheotanytarsus sp</i>	63 +
11120	<i>Baetis flavistriga</i>	9 +	85818	<i>Tanytarsus glabrescens group sp 4</i>	+
11130	<i>Baetis intercalaris</i>	251 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	7
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	87540	<i>Hemerodromia sp</i>	7
12200	<i>Isonychia sp</i>	45 +	93900	<i>Elimia sp</i>	22 +
13000	<i>Leucrocota sp</i>	4 +	95100	<i>Physella sp</i>	+
13400	<i>Stenacron sp</i>	48 +			
13521	<i>Stenonema femoratum</i>	7 +	No. Quantitative Taxa: 26		Total Taxa: 55
13540	<i>Maccaffertium mediopunctatum</i>	36 +	No. Qualitative Taxa: 49		ICI: 50
17200	<i>Caenis sp</i>	+	Number of Organisms: 697		Qual EPT: 19
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	1 +			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
48620	<i>Nigronia serricornis</i>	+			
50315	<i>Chimarra obscura</i>	72 +			
51400	<i>Nyctiophylax sp</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	14 +			
52430	<i>Ceratopsyche morosa group</i>	5 +			
52530	<i>Hydropsyche depravata group</i>	3 +			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59970	<i>Petrophila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	4 +			
68901	<i>Macronychus glabratus</i>	10 +			
69200	<i>Optioservus sp</i>	+			
69400	<i>Stenelmis sp</i>	2 +			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74100	<i>Simulium sp</i>	4 +			
77500	<i>Conchapelopia sp</i>	7			
80310	<i>Cardiocladius obscurus</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/06/2005 River Code: 14-500 RM: 35.40 Site: Twin Creek upst. Lewisburg WWTP

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	261	68708	<i>Dubiraphia vittata group</i>	+
02600	<i>Nematomorpha</i>	1	68901	<i>Macronychus glabratus</i>	12 +
03360	<i>Plumatella sp</i>	2 +	69400	<i>Stenelmis sp</i>	+
03600	<i>Oligochaeta</i>	+	70600	<i>Antocha sp</i>	+
05800	<i>Caecidotea sp</i>	+	71100	<i>Hexatoma sp</i>	+
06201	<i>Hyalella azteca</i>	+	77500	<i>Conchapelopia sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+
08601	<i>Hydrachnidia</i>	+	77800	<i>Helopelopia sp</i>	+
11014	<i>Acentrella turbida</i>	+	78450	<i>Nilotanytus fimbriatus</i>	28
11020	<i>Acerpenna pygmaea</i>	12	79100	<i>Thienemannimyia group</i>	8
11120	<i>Baetis flavistriga</i>	1 +	80370	<i>Corynoneura lobata</i>	72
11130	<i>Baetis intercalaris</i>	4 +	81240	<i>Nanocladius (N.) distinctus</i>	27
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	81690	<i>Paratrichocladius sp</i>	9
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	82101	<i>Thienemanniella taurocapita</i>	8
12200	<i>Isonychia sp</i>	40 +	82141	<i>Thienemanniella xena</i>	8
13000	<i>Leucrocuta sp</i>	2 +	82730	<i>Chironomus (C.) decorus group</i>	+
13100	<i>Nixe sp</i>	+	83040	<i>Dicrotendipes neomodestus</i>	46
13400	<i>Stenacron sp</i>	18 +	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	9 +
13521	<i>Stenonema femoratum</i>	72 +	83840	<i>Microtendipes pedellus group</i>	27 +
13540	<i>Maccaffertium mediopunctatum</i>	130 +	84118	<i>Paracladopelma undine</i>	+
14950	<i>Leptophlebia sp or Paraleptophlebia sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	73
16700	<i>Tricorythodes sp</i>	85 +	84460	<i>Polypedilum (P.) fallax group</i>	9
17200	<i>Caenis sp</i>	17 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	9 +
18600	<i>Ephemera sp</i>	+	84750	<i>Stictochironomus sp</i>	+
21200	<i>Calopteryx sp</i>	+	85500	<i>Paratanytarsus sp</i>	37 +
22001	<i>Coenagrionidae</i>	+	85625	<i>Rheotanytarsus sp</i>	431 +
22300	<i>Argia sp</i>	3 +	85800	<i>Tanytarsus sp</i>	+
23909	<i>Boyeria vinosa</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	165 +
47600	<i>Sialis sp</i>	+	93900	<i>Elimia sp</i>	1 +
48410	<i>Corydalus cornutus</i>	+	96900	<i>Ferrissia sp</i>	+
48620	<i>Nigronia serricornis</i>	+	97601	<i>Corbicula fluminea</i>	+
50315	<i>Chimarra obscura</i>	9 +	98600	<i>Sphaerium sp</i>	+
51300	<i>Neureclipsis sp</i>	1			
51400	<i>Nyctiophylax sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	32 +			
52430	<i>Ceratopsyche morosa group</i>	16 +	No. Quantitative Taxa: 39	Total Taxa: 76	
52530	<i>Hydropsyche depravata group</i>	1 +	No. Qualitative Taxa: 61	ICI: 50	
57400	<i>Neophylax sp</i>	+	Number of Organisms: 1688	Qual EPT: 24	
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59300	<i>Mystacides sp</i>	1 +			
59500	<i>Oecetis sp</i>	1			
59970	<i>Petrophila sp</i>	+			
68075	<i>Psephenus herricki</i>	+			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/06/2005 River Code: 14-500 RM: 34.90 Site: Twin Creek Salem Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	541	69400	<i>Stenelmis sp</i>	1 +
03360	<i>Plumatella sp</i>	2 +	71100	<i>Hexatoma sp</i>	+
03600	<i>Oligochaeta</i>	25 +	77120	<i>Ablabesmyia mallochi</i>	+
04964	<i>Mooreobdella microstoma</i>	1 +	77500	<i>Conchapelopia sp</i>	18
05800	<i>Caecidotea sp</i>	2 +	77800	<i>Helopelopia sp</i>	36
05900	<i>Lirceus sp</i>	+	78140	<i>Labrundinia pilosella</i>	8
06201	<i>Hyaella azteca</i>	+	78655	<i>Procladius (Holotanypus) sp</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	80410	<i>Cricotopus (C.) sp</i>	36
11020	<i>Acerpenna pygmaea</i>	33 +	80430	<i>Cricotopus (C.) tremulus group</i>	18
11120	<i>Baetis flavistriga</i>	+	82730	<i>Chironomus (C.) decorus group</i>	36 +
11130	<i>Baetis intercalaris</i>	+	82820	<i>Cryptochironomus sp</i>	18 +
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	83003	<i>Dicrotendipes fumidus</i>	324 +
12200	<i>Isonychia sp</i>	+	83040	<i>Dicrotendipes neomodestus</i>	487
13400	<i>Stenacron sp</i>	1	83840	<i>Microtendipes pedellus group</i>	126 +
13521	<i>Stenonema femoratum</i>	127 +	84060	<i>Parachironomus pectinatellae</i>	18
13540	<i>Maccaffertium mediopunctatum</i>	10 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	162 +
13561	<i>Maccaffertium pulchellum</i>	9 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	90 +
16700	<i>Tricorythodes sp</i>	361 +	84750	<i>Stictochironomus sp</i>	+
17200	<i>Caenis sp</i>	91 +	85500	<i>Paratanytarsus sp</i>	90 +
18600	<i>Ephemera sp</i>	1 +	85625	<i>Rheotanytarsus sp</i>	54
21200	<i>Calopteryx sp</i>	1 +	85800	<i>Tanytarsus sp</i>	+
22001	<i>Coenagrionidae</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	126
22300	<i>Argia sp</i>	20 +	93900	<i>Elimia sp</i>	1 +
23909	<i>Boyeria vinosa</i>	+	94400	<i>Fossaria sp</i>	1 +
24900	<i>Gomphus sp</i>	+	95100	<i>Physella sp</i>	41 +
42700	<i>Belostoma sp</i>	+	96900	<i>Ferrissia sp</i>	25 +
43570	<i>Neoplea sp</i>	+	96930	<i>Laevapex fuscus</i>	1
48620	<i>Nigronia serricornis</i>	+			
50315	<i>Chimarra obscura</i>	+	No. Quantitative Taxa: 44		Total Taxa: 71
51600	<i>Polycentropus sp</i>	+	No. Qualitative Taxa: 59		ICI: 38
52200	<i>Cheumatopsyche sp</i>	1 +	Number of Organisms: 2981		Qual EPT: 18
52430	<i>Ceratopsyche morosa group</i>	21 +			
52530	<i>Hydropsyche depravata group</i>	1 +			
57400	<i>Neophylax sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59970	<i>Petrophila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	2 +			
67800	<i>Tropisternus sp</i>	+			
68075	<i>Psephenus herricki</i>	11 +			
68130	<i>Helichus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	2 +			
68901	<i>Macronychus glabratus</i>	1 +			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/07/2005 River Code: 14-500 RM: 33.50 Site: Twin Creek adj. St. Rt. 503

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	48	77500	<i>Conchapelopia sp</i>	37 +
01801	<i>Turbellaria</i>	2 +	77800	<i>Helopelopia sp</i>	+
03360	<i>Plumatella sp</i>	2	78450	<i>Nilotanypus fimbriatus</i>	32
03600	<i>Oligochaeta</i>	+	78655	<i>Procladius (Holotanypus) sp</i>	+
04686	<i>Placobdella papillifera</i>	+	80370	<i>Corynoneura lobata</i>	108
05800	<i>Caecidotea sp</i>	+	80410	<i>Cricotopus (C.) sp</i>	6
06201	<i>Hyaella azteca</i>	+	81690	<i>Paratrichocladius sp</i>	6
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	82730	<i>Chironomus (C.) decorus group</i>	+
08601	<i>Hydrachnidia</i>	+	82820	<i>Cryptochironomus sp</i>	+
11018	<i>Acerpenna macdunnoughi</i>	2 +	83040	<i>Dicrotendipes neomodestus</i>	43 +
11120	<i>Baetis flavistriga</i>	6 +	84020	<i>Parachironomus carinatus</i>	6 +
11130	<i>Baetis intercalaris</i>	187 +	84060	<i>Parachironomus pectinatellae</i>	6
11651	<i>Proclaeon sp (w/o hindwing pads)</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
12200	<i>Isonychia sp</i>	103 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	258 +
13000	<i>Leucrocota sp</i>	1	84750	<i>Stictochironomus sp</i>	+
13400	<i>Stenacron sp</i>	33	85500	<i>Paratanytarsus sp</i>	18
13521	<i>Stenonema femoratum</i>	37 +	85615	<i>Rheotanytarsus pellucidus</i>	6
13540	<i>Maccaffertium mediopunctatum</i>	134 +	85625	<i>Rheotanytarsus sp</i>	271
13561	<i>Maccaffertium pulchellum</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	+
16700	<i>Tricorythodes sp</i>	53 +	85752	<i>Sublettea coffmani</i>	18
17200	<i>Caenis sp</i>	32 +	85800	<i>Tanytarsus sp</i>	6 +
18600	<i>Ephemera sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	31
21200	<i>Calopteryx sp</i>	+	87540	<i>Hemerodromia sp</i>	16
22001	<i>Coenagrionidae</i>	+	93900	<i>Elimia sp</i>	+
22300	<i>Argia sp</i>	+	95100	<i>Physella sp</i>	+
47600	<i>Sialis sp</i>	+	96900	<i>Ferrissia sp</i>	+
48620	<i>Nigronia serricornis</i>	+	97601	<i>Corbicula fluminea</i>	+
50315	<i>Chimarra obscura</i>	208 +			
51400	<i>Nyctiophylax sp</i>	+	No. Quantitative Taxa: 35		Total Taxa: 71
52200	<i>Cheumatopsyche sp</i>	239 +	No. Qualitative Taxa: 56		ICI: 52
52430	<i>Ceratopsyche morosa group</i>	29 +	Number of Organisms: 1995		Qual EPT: 18
52530	<i>Hydropsyche depravata group</i>	1 +			
58505	<i>Helicopsyche borealis</i>	+			
59300	<i>Mystacides sp</i>	+			
59970	<i>Petrophila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	8 +			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	2 +			
70600	<i>Antocha sp</i>	+			
71900	<i>Tipula sp</i>	+			
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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/07/2005 River Code: 14-500 RM: 31.70 Site: Twin Creek Brennersville-Pyrmont Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	48	71100	<i>Hexatoma sp</i>	+
03360	<i>Plumatella sp</i>	1	77500	<i>Conchapelopia sp</i>	33
06201	<i>Hyaella azteca</i>	+	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	44 +
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	80370	<i>Corynoneura lobata</i>	26
11020	<i>Acerpenna pygmaea</i>	45	82101	<i>Thienemanniella taurocapita</i>	24
11120	<i>Baetis flavistriga</i>	1 +	82141	<i>Thienemanniella xena</i>	6
11130	<i>Baetis intercalaris</i>	2 +	82730	<i>Chironomus (C.) decorus group</i>	+
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	82820	<i>Cryptochironomus sp</i>	+
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	83040	<i>Dicrotendipes neomodestus</i>	22
11670	<i>Procloeon viridoculare</i>	+	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	11
12200	<i>Isonychia sp</i>	57 +	83840	<i>Microtendipes pedellus group</i>	+
13000	<i>Leucrocuta sp</i>	2 +	84000	<i>Parachironomus sp</i>	11
13400	<i>Stenacron sp</i>	4 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	142 +
13521	<i>Stenonema femoratum</i>	115 +	84470	<i>Polypedilum (P.) illinoense</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	140 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	11 +
13561	<i>Maccaffertium pulchellum</i>	167	84750	<i>Stictochironomus sp</i>	+
16700	<i>Tricorythodes sp</i>	135 +	85230	<i>Cladotanytarsus mancus group</i>	11
17200	<i>Caenis sp</i>	18 +	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
18600	<i>Ephemera sp</i>	+	85625	<i>Rheotanytarsus sp</i>	601 +
21200	<i>Calopteryx sp</i>	+	85800	<i>Tanytarsus sp</i>	11
22001	<i>Coenagrionidae</i>	+	85818	<i>Tanytarsus glabrescens group sp 4</i>	44
22300	<i>Argia sp</i>	4 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	230 +
23909	<i>Boyeria vinosa</i>	+	93900	<i>Elimia sp</i>	+
48620	<i>Nigronia serricornis</i>	1 +	95100	<i>Physella sp</i>	+
50315	<i>Chimarra obscura</i>	21 +	96900	<i>Ferrissia sp</i>	1
50906	<i>Psychomyia flavida</i>	5 +	97601	<i>Corbicula fluminea</i>	7 +
51400	<i>Nyctiophylax sp</i>	+	99860	<i>Lampsilis radiata luteola</i>	+
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	154 +			
52430	<i>Ceratopsyche morosa group</i>	56 +			
52530	<i>Hydropsyche depravata group</i>	1 +	No. Quantitative Taxa: 41	Total Taxa: 71	
53501	<i>Hydroptilidae</i>	2	No. Qualitative Taxa: 55	ICI: 54	
57400	<i>Neophylax sp</i>	+	Number of Organisms: 2240	Qual EPT: 24	
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	1 +			
59310	<i>Mystacides sepulchralis</i>	+			
59970	<i>Petrophila sp</i>	+			
65800	<i>Berosus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68601	<i>Ancyronyx variegata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	8 +			
69400	<i>Stenelmis sp</i>	17 +			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/08/2005 River Code: 14-500 RM: 27.60 Site: Twin Creek adj. Stotler Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	2 +	77355	<i>Clinotanypus pinguis</i>	+
03360	<i>Plumatella sp</i>	3 +	77500	<i>Conchapelopia sp</i>	165
03600	<i>Oligochaeta</i>	+	77800	<i>Helopelopia sp</i>	15 +
06201	<i>Hyalella azteca</i>	+	78140	<i>Labrundinia pilosella</i>	4
08601	<i>Hydrachnidia</i>	+	78402	<i>Natarsia baltimoreus</i>	15
11020	<i>Acerpenna pygmaea</i>	23	78450	<i>Nilotanypus fimbriatus</i>	24
11120	<i>Baetis flavistriga</i>	4 +	78655	<i>Procladius (Holotanypus) sp</i>	+
11130	<i>Baetis intercalaris</i>	295 +	80370	<i>Corynoneura lobata</i>	68
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	81250	<i>Nanocladius (N.) minimus</i>	45
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	81632	<i>Parakiefferiella n.sp 2</i>	15
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	82730	<i>Chironomus (C.) decorus group</i>	+
11670	<i>Procloeon viridoculare</i>	+	82820	<i>Cryptochironomus sp</i>	+
12200	<i>Isonychia sp</i>	4 +	83040	<i>Dicrotendipes neomodestus</i>	15 +
13400	<i>Stenacron sp</i>	116 +	83840	<i>Microtendipes pedellus group</i>	+
13521	<i>Stenonema femoratum</i>	149 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	451 +
13540	<i>Maccaffertium mediopunctatum</i>	35 +	84470	<i>Polypedilum (P.) illinoense</i>	15 +
13561	<i>Maccaffertium pulchellum</i>	111	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
16700	<i>Tricorythodes sp</i>	132 +	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	15
17200	<i>Caenis sp</i>	161 +	85615	<i>Rheotanytarsus pellucidus</i>	15
18600	<i>Ephemera sp</i>	+	85625	<i>Rheotanytarsus sp</i>	301
21200	<i>Calopteryx sp</i>	8	85720	<i>Stempellinella n.sp nr. flavidula</i>	15
22001	<i>Coenagrionidae</i>	1 +	85818	<i>Tanytarsus glabrescens group sp 4</i>	75
22300	<i>Argia sp</i>	1 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	150 +
23600	<i>Aeshna sp</i>	+	85840	<i>Tanytarsus sepp</i>	60
44501	<i>Corixidae</i>	+	87540	<i>Hemerodromia sp</i>	12
47600	<i>Sialis sp</i>	+	93900	<i>Elimia sp</i>	1 +
48410	<i>Corydalus cornutus</i>	1	95100	<i>Physella sp</i>	+
48620	<i>Nigronia serricornis</i>	1			
50315	<i>Chimarra obscura</i>	311 +	No. Quantitative Taxa: 43		Total Taxa: 71
51400	<i>Nyctiophylax sp</i>	+	No. Qualitative Taxa: 51		ICI: 52
51600	<i>Polycentropus sp</i>	+	Number of Organisms: 3098		Qual EPT: 21
52200	<i>Cheumatopsyche sp</i>	206 +			
52430	<i>Ceratopsyche morosa group</i>	51 +			
52530	<i>Hydropsyche depravata group</i>	+			
57400	<i>Neophylax sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59970	<i>Petrophila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	1			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	5 +			
69400	<i>Stenelmis sp</i>	1 +			
71900	<i>Tipula sp</i>	+			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/08/2005 River Code: 14-500 RM: 26.60 Site: Twin Creek dst. West Alexandria WWTP

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	1 +	69400	<i>Stenelmis sp</i>	2 +
03360	<i>Plumatella sp</i>	3 +	72700	<i>Anopheles sp</i>	8 +
03600	<i>Oligochaeta</i>	+	77500	<i>Conchapelopia sp</i>	141
04687	<i>Placobdella parasitica</i>	+	77800	<i>Helopelopia sp</i>	35
05800	<i>Caecidotea sp</i>	+	78140	<i>Labrundinia pilosella</i>	+
06201	<i>Hyalella azteca</i>	+	78655	<i>Procladius (Holotanypus) sp</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	80310	<i>Cardiocladius obscurus</i>	+
11020	<i>Acerpenna pygmaea</i>	24 +	80370	<i>Corynoneura lobata</i>	40
11120	<i>Baetis flavistriga</i>	107 +	80430	<i>Cricotopus (C.) tremulus group</i>	18
11130	<i>Baetis intercalaris</i>	50 +	81240	<i>Nanocladius (N.) distinctus</i>	18
11200	<i>Callibaetis sp</i>	+	82101	<i>Thienemanniella taurocapita</i>	16
11670	<i>Procloeon viridoculare</i>	+	82121	<i>Thienemanniella lobapodema</i>	8
12200	<i>Isonychia sp</i>	7 +	82141	<i>Thienemanniella xena</i>	16
13100	<i>Nixe sp</i>	+	82885	<i>Cryptotendipes pseudotener</i>	+
13400	<i>Stenacron sp</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	+
13521	<i>Stenonema femoratum</i>	20 +	83310	<i>Glyptotendipes (Heynotendipes) amplus</i>	35 +
13540	<i>Maccaffertium mediopunctatum</i>	3	84450	<i>Polypedilum (Uresipedilum) flavum</i>	952 +
13561	<i>Maccaffertium pulchellum</i>	296 +	84470	<i>Polypedilum (P.) illinoense</i>	18 +
16700	<i>Tricorythodes sp</i>	1 +	85230	<i>Cladotanytarsus mancus group</i>	+
17200	<i>Caenis sp</i>	430 +	85625	<i>Rheotanytarsus sp</i>	353 +
18600	<i>Ephemera sp</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	+
21200	<i>Calopteryx sp</i>	1 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	159
22001	<i>Coenagrionidae</i>	+	93900	<i>Elimia sp</i>	+
22300	<i>Argia sp</i>	1 +	94400	<i>Fossaria sp</i>	+
27500	<i>Somatochlora sp</i>	+	96930	<i>Laevapex fuscus</i>	+
47600	<i>Sialis sp</i>	+	97601	<i>Corbicula fluminea</i>	+
48410	<i>Corydalus cornutus</i>	17 +			
48620	<i>Nigronia serricornis</i>	+	No. Quantitative Taxa: 32		Total Taxa: 70
50315	<i>Chimarra obscura</i>	275 +	No. Qualitative Taxa: 60		ICI: 44
51400	<i>Nyctiophylax sp</i>	+	Number of Organisms: 3293		Qual EPT: 20
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	194 +			
52430	<i>Ceratopsyche morosa group</i>	44 +			
52530	<i>Hydropsyche depravata group</i>	+			
57400	<i>Neophylax sp</i>	+			
59970	<i>Petrophila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/08/2005 River Code: 14-500 RM: 23.70 Site: Twin Creek dst. Halderman Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
05900	<i>Lirceus sp</i>	+	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	117
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	78140	<i>Labrundinia pilosella</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	78450	<i>Nilotanypus fimbriatus</i>	72
11014	<i>Acentrella turbida</i>	+	80310	<i>Cardiocladius obscurus</i>	+
11020	<i>Acerpenna pygmaea</i>	1	80370	<i>Corynoneura lobata</i>	48
11120	<i>Baetis flavistriga</i>	69 +	80420	<i>Cricotopus (C.) bicinctus</i>	29
11130	<i>Baetis intercalaris</i>	69 +	80430	<i>Cricotopus (C.) tremulus group</i>	176
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	81270	<i>Nanocladius (N.) spiniplenus</i>	8
11670	<i>Procloeon viridoculare</i>	+	82101	<i>Thienemanniella taurocapita</i>	48
12200	<i>Isonychia sp</i>	24 +	82710	<i>Chironomus (C.) sp</i>	+
13400	<i>Stenacron sp</i>	2 +	82820	<i>Cryptochironomus sp</i>	+
13521	<i>Stenonema femoratum</i>	+	83040	<i>Dicrotendipes neomodestus</i>	29
13540	<i>Maccaffertium mediopunctatum</i>	163 +	83840	<i>Microtendipes pedellus group</i>	29
13561	<i>Maccaffertium pulchellum</i>	136 +	84020	<i>Parachironomus carinatus</i>	29
16700	<i>Tricorythodes sp</i>	69 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
17200	<i>Caenis sp</i>	220 +	84300	<i>Phaenopsectra obediens group</i>	59
18600	<i>Ephemera sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	381 +
21200	<i>Calopteryx sp</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
22001	<i>Coenagrionidae</i>	+	85625	<i>Rheotanytarsus sp</i>	1115 +
22300	<i>Argia sp</i>	1 +	85752	<i>Sublettea coffmani</i>	29
24900	<i>Gomphus sp</i>	+	85800	<i>Tanytarsus sp</i>	+
47600	<i>Sialis sp</i>	+	85818	<i>Tanytarsus glabrescens group sp 4</i>	29
48410	<i>Corydalus cornutus</i>	12 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	557
48620	<i>Nigronia serricornis</i>	1 +	85840	<i>Tanytarsus sepp</i>	117
50315	<i>Chimarra obscura</i>	12 +	93900	<i>Elimia sp</i>	5 +
51400	<i>Nyctiophylax sp</i>	+	96900	<i>Ferrissia sp</i>	1
52200	<i>Cheumatopsyche sp</i>	80 +	97601	<i>Corbicula fluminea</i>	+
52430	<i>Ceratopsyche morosa group</i>	119 +			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	+	No. Quantitative Taxa: 37		Total Taxa: 71
57400	<i>Neophylax sp</i>	+	No. Qualitative Taxa: 53		ICI: 50
57900	<i>Pycnopsyche sp</i>	+	Number of Organisms: 3918		Qual EPT: 22
58505	<i>Helicopsyche borealis</i>	+			
59580	<i>Oecetis persimilis</i>	1			
59970	<i>Petrophila sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
70600	<i>Antocha sp</i>	32 +			
71910	<i>Tipula abdominalis</i>	+			
72700	<i>Anopheles sp</i>	+			
77500	<i>Conchapelopia sp</i>	29 +			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/08/2005 River Code: 14-500 RM: 19.20 Site: Twin Creek upst. Gratis WWTP

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	44	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+
03360	<i>Plumatella sp</i>	1	77800	<i>Helopelopia sp</i>	18 +
03600	<i>Oligochaeta</i>	+	78450	<i>Nilotanypus fimbriatus</i>	48
04685	<i>Placobdella ornata</i>	+	78655	<i>Procladius (Holotanypus) sp</i>	+
05900	<i>Lirceus sp</i>	+	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	8
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	80370	<i>Corynoneura lobata</i>	20
11020	<i>Acerpenna pygmaea</i>	1	80410	<i>Cricotopus (C.) sp</i>	18
11120	<i>Baetis flavistriga</i>	17 +	81270	<i>Nanocladius (N.) spiniplenus</i>	18
11130	<i>Baetis intercalaris</i>	53 +	82121	<i>Thienemanniella lobapodema</i>	8
11650	<i>Proclaeon sp (w/ hindwing pads)</i>	1 +	82141	<i>Thienemanniella xena</i>	4
11651	<i>Proclaeon sp (w/o hindwing pads)</i>	+	82820	<i>Cryptochironomus sp</i>	+
12200	<i>Isonychia sp</i>	22 +	83040	<i>Dicrotendipes neomodestus</i>	36
13000	<i>Leucrocota sp</i>	3	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
13100	<i>Nixe sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	108 +
13400	<i>Stenacron sp</i>	201 +	84460	<i>Polypedilum (P.) fallax group</i>	18
13521	<i>Stenonema femoratum</i>	8 +	84520	<i>Polypedilum (Tripodura) halterale group</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	51	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
13561	<i>Maccaffertium pulchellum</i>	192 +	84700	<i>Stenochironomus sp</i>	+
16700	<i>Tricorythodes sp</i>	33 +	84750	<i>Stictochironomus sp</i>	+
17200	<i>Caenis sp</i>	47 +	85625	<i>Rheotanytarsus sp</i>	923 +
18600	<i>Ephemera sp</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	18
21200	<i>Calopteryx sp</i>	8 +	85752	<i>Sublettea coffmani</i>	18
22001	<i>Coenagrionidae</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	217
22300	<i>Argia sp</i>	1 +	85840	<i>Tanytarsus sepp</i>	18
23600	<i>Aeshna sp</i>	+	87540	<i>Hemerodromia sp</i>	16
23909	<i>Boyeria vinosa</i>	+	93900	<i>Elimia sp</i>	+
24900	<i>Gomphus sp</i>	+	95100	<i>Physella sp</i>	+
47600	<i>Sialis sp</i>	+	96900	<i>Ferrissia sp</i>	8 +
48410	<i>Corydalis cornutus</i>	6 +	97601	<i>Corbicula fluminea</i>	+
50315	<i>Chimarra obscura</i>	68 +	98600	<i>Sphaerium sp</i>	5
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	79 +	No. Quantitative Taxa: 42 Total Taxa: 74		
52430	<i>Ceratopsyche morosa group</i>	4 +	No. Qualitative Taxa: 53 ICI: 52		
57400	<i>Neophylax sp</i>	+	Number of Organisms: 2480 Qual EPT: 18		
58505	<i>Helicopsyche borealis</i>	+			
59970	<i>Petrophila sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68901	<i>Macronychus glabratus</i>	4 +			
69400	<i>Stenelmis sp</i>	1 +			
72340	<i>Dixella sp</i>	+			
74100	<i>Simulium sp</i>	+			
77500	<i>Conchapelopia sp</i>	108			

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Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/08/2005 River Code: 14-500 RM: 19.00 Site: Twin Creek just dst. Gratis WWTP

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00653	<i>Eunapius fragilis</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
03600	<i>Oligochaeta</i>	+	84480	<i>Polypedilum (P.) laetum group</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	84750	<i>Stictochironomus sp</i>	+
08601	<i>Hydrachnidia</i>	+	85230	<i>Cladotanytarsus mancus group</i>	+
11120	<i>Baetis flavistriga</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
11130	<i>Baetis intercalaris</i>	+	85625	<i>Rheotanytarsus sp</i>	+
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	85800	<i>Tanytarsus sp</i>	+
11670	<i>Procloeon viridoculare</i>	+	85840	<i>Tanytarsus sepp</i>	+
12200	<i>Isonychia sp</i>	+	86100	<i>Chrysops sp</i>	+
13000	<i>Leucrocuta sp</i>	+	93900	<i>Elimia sp</i>	+
13400	<i>Stenacron sp</i>	+	95100	<i>Physella sp</i>	+
13521	<i>Stenonema femoratum</i>	+	96900	<i>Ferrissia sp</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	+	97601	<i>Corbicula fluminea</i>	+
13561	<i>Maccaffertium pulchellum</i>	+			
16700	<i>Tricorythodes sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 56
17200	<i>Caenis sp</i>	+	No. Qualitative Taxa: 56		ICI:
18600	<i>Ephemera sp</i>	+	Number of Organisms: 0		Qual EPT: 21
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
48410	<i>Corydalus cornutus</i>	+			
50315	<i>Chimarra obscura</i>	+			
51300	<i>Neureclipsis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59300	<i>Mystacides sp</i>	+			
59970	<i>Petrophila sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71300	<i>Limonia sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80310	<i>Cardiocladius obscurus</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			182

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/09/2005 River Code: 14-500 RM: 13.40 Site: Twin Creek dst. Toms Run

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	16	68130	<i>Helichus sp</i>	1 +
01801	<i>Turbellaria</i>	+	68708	<i>Dubiraphia vittata group</i>	+
03360	<i>Plumatella sp</i>	3 +	68901	<i>Macronychus glabratus</i>	35 +
03600	<i>Oligochaeta</i>	+	69400	<i>Stenelmis sp</i>	3 +
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	71100	<i>Hexatoma sp</i>	+
08601	<i>Hydrachnidia</i>	16 +	72700	<i>Anopheles sp</i>	+
11119	<i>Plauditus dubius or P. virilis</i>	8 +	77500	<i>Conchapelopia sp</i>	141
11120	<i>Baetis flavistriga</i>	+	78450	<i>Nilotanytus fimbriatus</i>	40
11130	<i>Baetis intercalaris</i>	35 +	80351	<i>Corynoneura n.sp 1</i>	16
11200	<i>Callibaetis sp</i>	+	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	32
11625	<i>Paracloeodes sp 3</i>	+	80370	<i>Corynoneura lobata</i>	144
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	80410	<i>Cricotopus (C.) sp</i>	94
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	80420	<i>Cricotopus (C.) bicinctus</i>	23
11670	<i>Procloeon viridoculare</i>	+	81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	23
12200	<i>Isonychia sp</i>	119 +	81270	<i>Nanocladius (N.) spinipennis</i>	23
13000	<i>Leucrocuta sp</i>	+	82101	<i>Thienemanniella taurocapita</i>	64
13100	<i>Nixe sp</i>	+	82121	<i>Thienemanniella lobapodema</i>	+
13400	<i>Stenacron sp</i>	+	82820	<i>Cryptochironomus sp</i>	+
13510	<i>Maccaffertium exiguum</i>	9	83040	<i>Dicrotendipes neomodestus</i>	235 +
13521	<i>Stenonema femoratum</i>	7 +	83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	23
13540	<i>Maccaffertium mediopunctatum</i>	2 +	84060	<i>Parachironomus pectinatellae</i>	+
13561	<i>Maccaffertium pulchellum</i>	1019 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	305 +
16700	<i>Tricorythodes sp</i>	100 +	84460	<i>Polypedilum (P.) fallax group</i>	47
17200	<i>Caenis sp</i>	114 +	84470	<i>Polypedilum (P.) illinoense</i>	+
18100	<i>Anthopotamus sp</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	23 +
18600	<i>Ephemera sp</i>	1 +	84960	<i>Pseudochironomus sp</i>	+
21200	<i>Calopteryx sp</i>	1 +	85230	<i>Cladotanytarsus mancus group</i>	+
21300	<i>Hetaerina sp</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	23 +
22001	<i>Coenagrionidae</i>	+	85615	<i>Rheotanytarsus pellucidus</i>	47
22300	<i>Argia sp</i>	11 +	85625	<i>Rheotanytarsus sp</i>	681
23600	<i>Aeshna sp</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	23
23909	<i>Boyeria vinosa</i>	+	85752	<i>Sublettea coffmani</i>	94
48410	<i>Corydalus cornutus</i>	7 +	85818	<i>Tanytarsus glabrescens group sp 4</i>	23 +
50315	<i>Chimarra obscura</i>	343 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	352
51300	<i>Neureclipsis sp</i>	+	85840	<i>Tanytarsus sepp</i>	+
52200	<i>Cheumatopsyche sp</i>	69 +	93900	<i>Elimia sp</i>	+
52430	<i>Ceratopsyche morosa group</i>	68 +	95100	<i>Physella sp</i>	+
52530	<i>Hydropsyche depravata group</i>	+	96900	<i>Ferrissia sp</i>	+
53501	<i>Hydroptilidae</i>	8 +	97601	<i>Corbicula fluminea</i>	+
57900	<i>Pycnopsyche sp</i>	+			
59970	<i>Petrophila sp</i>	+			
60800	<i>Haliphus sp</i>	+			
65800	<i>Berosus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/09/2005 River Code: 14-500 RM: 13.40 Site: Twin Creek dst. Toms Run

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
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No. Quantitative Taxa: 45	Total Taxa: 83
No. Qualitative Taxa: 64	ICI: 50
Number of Organisms: 4471	Qual EPT: 26

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/12/2005 River Code: 14-500 RM: 9.70 Site: Twin Creek upst. Germantown Gaging Station

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	16	78655	<i>Procladius (Holoanypus) sp</i>	+
01801	<i>Turbellaria</i>	+	80310	<i>Cardiocladius obscurus</i>	+
03360	<i>Plumatella sp</i>	2 +	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16
03600	<i>Oligochaeta</i>	40 +	80370	<i>Corynoneura lobata</i>	24
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	80410	<i>Cricotopus (C.) sp</i>	39
08601	<i>Hydrachnidia</i>	8	81200	<i>Nanocladius sp</i>	20
11014	<i>Acentrella turbida</i>	8	82130	<i>Thienemanniella similis</i>	8
11120	<i>Baetis flavistriga</i>	20 +	83040	<i>Dicrotendipes neomodestus</i>	197
11130	<i>Baetis intercalaris</i>	87 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	39
11670	<i>Procloeon viridoculare</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	256 +
12200	<i>Isonychia sp</i>	130 +	84460	<i>Polypedilum (P.) fallax group</i>	59
13400	<i>Stenacron sp</i>	87 +	84470	<i>Polypedilum (P.) illinoense</i>	+
13510	<i>Maccaffertium exiguum</i>	76 +	84750	<i>Stictochironomus sp</i>	20
13521	<i>Stenonema femoratum</i>	+	85230	<i>Cladotanytarsus mancus group</i>	20 +
13540	<i>Maccaffertium mediopunctatum</i>	7	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	20
13561	<i>Maccaffertium pulchellum</i>	593 +	85265	<i>Cladotanytarsus vanderwulpi group Type 5</i>	+
16700	<i>Tricorythodes sp</i>	217 +	85625	<i>Rheotanytarsus sp</i>	651 +
17200	<i>Caenis sp</i>	74 +	85720	<i>Stempellinella n.sp nr. flavidula</i>	8
18100	<i>Anthopotamus sp</i>	+	85752	<i>Sublettea coffmani</i>	256
18600	<i>Ephemera sp</i>	+	85800	<i>Tanytarsus sp</i>	+
21200	<i>Calopteryx sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	493
22001	<i>Coenagrionidae</i>	+	85840	<i>Tanytarsus sepp</i>	237 +
22300	<i>Argia sp</i>	3	87540	<i>Hemerodromia sp</i>	8
23909	<i>Boyeria vinosa</i>	+	93900	<i>Elimia sp</i>	+
24900	<i>Gomphus sp</i>	+	97601	<i>Corbicula fluminea</i>	1 +
48410	<i>Corydalus cornutus</i>	2 +			
48620	<i>Nigronia serricornis</i>	+			
50315	<i>Chimarra obscura</i>	83 +	No. Quantitative Taxa: 46		Total Taxa: 69
51300	<i>Neureclipsis sp</i>	+	No. Qualitative Taxa: 47		ICI: 52
52200	<i>Cheumatopsyche sp</i>	139 +	Number of Organisms: 4092		Qual EPT: 16
52430	<i>Ceratopsyche morosa group</i>	13 +			
59580	<i>Oecetis persimilis</i>	2			
59970	<i>Petrophila sp</i>	+			
65800	<i>Berosus sp</i>	1 +			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	9 +			
69400	<i>Stenelmis sp</i>	1 +			
70600	<i>Antocha sp</i>	8 +			
72700	<i>Anopheles sp</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	39 +			
77800	<i>Helopelopia sp</i>	39			
78450	<i>Nilotanypus fimbriatus</i>	16			185

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/12/2005 River Code: 14-500 RM: 3.40 Site: Twin Creek Chamberlain Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	83040	<i>Dicrotendipes neomodestus</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	83840	<i>Microtendipes pedellus group</i>	+
11014	<i>Acentrella turbida</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
11130	<i>Baetis intercalaris</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
11625	<i>Paracloeodes sp 3</i>	+	84480	<i>Polypedilum (P.) laetum group</i>	+
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
11670	<i>Procloeon viridoculare</i>	+	85230	<i>Cladotanytarsus mancus group</i>	+
12200	<i>Isonychia sp</i>	+	85625	<i>Rheotanytarsus sp</i>	+
13400	<i>Stenacron sp</i>	+	93900	<i>Elimia sp</i>	+
13521	<i>Stenonema femoratum</i>	+	95100	<i>Physella sp</i>	+
13561	<i>Maccaffertium pulchellum</i>	+	97601	<i>Corbicula fluminea</i>	+
16700	<i>Tricorythodes sp</i>	+			
17200	<i>Caenis sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 55
18600	<i>Ephemera sp</i>	+	No. Qualitative Taxa: 55		ICI:
21200	<i>Calopteryx sp</i>	+	Number of Organisms: 0		Qual EPT: 22
21300	<i>Hetaerina sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
48410	<i>Corydalus cornutus</i>	+			
50315	<i>Chimarra obscura</i>	+			
51300	<i>Neureclipsis sp</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
53800	<i>Hydroptila sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59001	<i>Leptoceridae</i>	+			
59700	<i>Triaenodes sp</i>	+			
59970	<i>Petrophila sp</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
74100	<i>Simulium sp</i>	+			
77115	<i>Ablabesmyia janta</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/12/2005 River Code: 14-500 RM: 0.90 Site: Twin Creek Dayton-Oxford Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	28	74501	<i>Ceratopogonidae</i>	+
01801	<i>Turbellaria</i>	+	77120	<i>Ablabesmyia mallochi</i>	24 +
03360	<i>Plumatella sp</i>	3 +	77500	<i>Conchapelopia sp</i>	119
06201	<i>Hyaella azteca</i>	+	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	71 +
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	77800	<i>Helopelopia sp</i>	167
08601	<i>Hydrachnidia</i>	+	78450	<i>Nilotanypus fimbriatus</i>	16
11014	<i>Acentrella turbida</i>	+	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16
11116	<i>Plauditus cestus</i>	+	80370	<i>Corynoneura lobata</i>	80
11119	<i>Plauditus dubius or P. virilis</i>	1 +	81240	<i>Nanocladius (N.) distinctus</i>	24
11120	<i>Baetis flavistriga</i>	11	81632	<i>Parakiefferiella n.sp 2</i>	+
11130	<i>Baetis intercalaris</i>	+	82101	<i>Thienemanniella taurocapita</i>	8
11200	<i>Callibaetis sp</i>	+	82820	<i>Cryptochironomus sp</i>	+
11650	<i>Procloeon sp (w/ hindwing pads)</i>	4 +	83040	<i>Dicrotendipes neomodestus</i>	524 +
11670	<i>Procloeon viridoculare</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	95 +
12200	<i>Isonychia sp</i>	22 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	71
13400	<i>Stenacron sp</i>	501 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
13510	<i>Maccaffertium exiguum</i>	21	84960	<i>Pseudochironomus sp</i>	+
13521	<i>Stenonema femoratum</i>	67 +	85230	<i>Cladotanytarsus mancus group</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	49	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
13561	<i>Maccaffertium pulchellum</i>	712 +	85625	<i>Rheotanytarsus sp</i>	643 +
16700	<i>Tricorythodes sp</i>	348 +	85720	<i>Stempellinella n.sp nr. flavidula</i>	8
17200	<i>Caenis sp</i>	125 +	85752	<i>Sublettea coffmani</i>	71
18100	<i>Anthopotamus sp</i>	+	85818	<i>Tanytarsus glabrescens group sp 4</i>	71
18700	<i>Hexagenia sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	262
21300	<i>Hetaerina sp</i>	1	85840	<i>Tanytarsus sepp</i>	48
22001	<i>Coenagrionidae</i>	1 +	87540	<i>Hemerodromia sp</i>	40
22300	<i>Argia sp</i>	10 +	95100	<i>Physella sp</i>	9 +
23909	<i>Boyeria vinosa</i>	+	97601	<i>Corbicula fluminea</i>	1 +
44501	<i>Corixidae</i>	+			
48410	<i>Corydalus cornutus</i>	3 +	No. Quantitative Taxa: 40		Total Taxa: 72
50315	<i>Chimarra obscura</i>	+	No. Qualitative Taxa: 53		ICI: 48
51600	<i>Polycentropus sp</i>	+	Number of Organisms: 4470		Qual EPT: 22
52200	<i>Cheumatopsyche sp</i>	111 +			
52430	<i>Ceratopsyche morosa group</i>	84 +			
53800	<i>Hydroptila sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59310	<i>Mystacides sepulchralis</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/12/2005 River Code: 14-500 RM: 0.10 Site: Twin Creek at mouth

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	16	83003	<i>Dicrotendipes fumidus</i>	+
01801	<i>Turbellaria</i>	69 +	83040	<i>Dicrotendipes neomodestus</i>	28 +
03360	<i>Plumatella sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	28 +
11014	<i>Acentrella turbida</i>	+	84520	<i>Polypedilum (Tripodura) halterale group</i>	+
11020	<i>Acerpenna pygmaea</i>	1	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
11119	<i>Plauditus dubius or P. virilis</i>	8 +	84750	<i>Stictochironomus sp</i>	+
11120	<i>Baetis flavistriga</i>	3	85230	<i>Cladotanytarsus mancus group</i>	+
11130	<i>Baetis intercalaris</i>	352 +	85625	<i>Rheotanytarsus sp</i>	1047
11625	<i>Paracloeodes sp 3</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	+
11650	<i>Procloeon sp (w/ hindwing pads)</i>	7	85840	<i>Tanytarsus sepp</i>	14
11651	<i>Procloeon sp (w/o hindwing pads)</i>	7 +	87540	<i>Hemerodromia sp</i>	8 +
12200	<i>Isonychia sp</i>	154 +	95100	<i>Physella sp</i>	1 +
13000	<i>Leucrocuta sp</i>	5 +			
13100	<i>Nixe sp</i>	+	No. Quantitative Taxa: 37		Total Taxa: 56
13400	<i>Stenacron sp</i>	631 +	No. Qualitative Taxa: 43		ICI: 46
13510	<i>Maccaffertium exiguum</i>	28	Number of Organisms: 6665		Qual EPT: 20
13521	<i>Stenonema femoratum</i>	172 +			
13540	<i>Maccaffertium mediopunctatum</i>	74 +			
13561	<i>Maccaffertium pulchellum</i>	1907 +			
13570	<i>Maccaffertium terminatum</i>	252 +			
16700	<i>Tricorythodes sp</i>	1466 +			
17200	<i>Caenis sp</i>	8			
18100	<i>Anthopotamus sp</i>	+			
18600	<i>Ephemera sp</i>	+			
21300	<i>Hetaerina sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	2 +			
45100	<i>Palmacorixa sp</i>	+			
50315	<i>Chimarra obscura</i>	26 +			
51300	<i>Neureclipsis sp</i>	1			
52200	<i>Cheumatopsyche sp</i>	145 +			
52430	<i>Ceratopsyche morosa group</i>	59 +			
53800	<i>Hydroptila sp</i>	4 +			
59970	<i>Petrophila sp</i>	1 +			
68901	<i>Macronychus glabratus</i>	1 +			
69400	<i>Stenelmis sp</i>	+			
74100	<i>Simulium sp</i>	1			
77120	<i>Ablabesmyia mallochi</i>	14 +			
77500	<i>Conchapelopia sp</i>	57			
78140	<i>Labrundinia pilosella</i>	4			
80370	<i>Corynoneura lobata</i>	64			
81240	<i>Nanocladius (N.) distinctus</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/09/2005 River Code: 14-501 RM: 6.30 Site: Little Twin Creek upst. Hemple Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	1 +	84750	<i>Stictochironomus sp</i>	+
03600	<i>Oligochaeta</i>	8 +	85501	<i>Paratanytarsus n.sp 1</i>	43
04935	<i>Erpobdella punctata punctata</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	2
05900	<i>Lirceus sp</i>	+	85800	<i>Tanytarsus sp</i>	16 +
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	85802	<i>Tanytarsus curticornis</i>	18
08601	<i>Hydrachnidia</i>	2	85821	<i>Tanytarsus glabrescens group sp 7</i>	14
11670	<i>Procloeon viridoculare</i>	+	86100	<i>Chrysops sp</i>	+
13400	<i>Stenacron sp</i>	1 +	87540	<i>Hemerodromia sp</i>	1
13521	<i>Stenonema femoratum</i>	3 +	87601	<i>Dolichopodidae</i>	+
14950	<i>Leptophlebia sp or Paraleptophlebia sp</i>	+	95100	<i>Physella sp</i>	1 +
21200	<i>Calopteryx sp</i>	+	96900	<i>Ferrissia sp</i>	15 +
27500	<i>Somatochlora sp</i>	+			
45300	<i>Sigara sp</i>	+	No. Quantitative Taxa: 29		Total Taxa: 55
50301	<i>Chimarra aterrima</i>	+	No. Qualitative Taxa: 42		ICI: 36
51600	<i>Polycentropus sp</i>	1 +	Number of Organisms: 228		Qual EPT: 9
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
58505	<i>Helicopsyche borealis</i>	11 +			
63300	<i>Hydroporus sp</i>	+			
68075	<i>Psephenus herricki</i>	5 +			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69225	<i>Optioservus fastiditus</i>	2 +			
69400	<i>Stenelmis sp</i>	6 +			
69930	<i>Lampyridae</i>	+			
71100	<i>Hexatoma sp</i>	+			
71700	<i>Pilaria sp</i>	+			
71900	<i>Tipula sp</i>	+			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	1			
77500	<i>Conchapelopia sp</i>	2			
77800	<i>Helopelopia sp</i>	7 +			
78140	<i>Labrundinia pilosella</i>	1			
78601	<i>Pentaneura Type 1</i>	9 +			
79400	<i>Zavreliomyia sp</i>	14 +			
80370	<i>Corynoneura lobata</i>	8			
81650	<i>Parametriocnemus sp</i>	+			
82200	<i>Tvetenia bavarica group</i>	+			
83840	<i>Microtendipes pedellus group</i>	11			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	14 +			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	2			
84470	<i>Polypedilum (P.) illinoense</i>	9			
84700	<i>Stenochironomus sp</i>	+			

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/12/2005 River Code: 14-501 RM: 4.60 Site: Little Twin Creek

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	5 +	84750	<i>Stictochironomus sp</i>	+
05900	<i>Lirceus sp</i>	+	85230	<i>Cladotanytarsus mancus group</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
08601	<i>Hydrachnidia</i>	+	85500	<i>Paratanytarsus sp</i>	13 +
11120	<i>Baetis flavistriga</i>	53	85625	<i>Rheotanytarsus sp</i>	448 +
11130	<i>Baetis intercalaris</i>	93 +	85720	<i>Stempellinella n.sp nr. flavidula</i>	13
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	85800	<i>Tanytarsus sp</i>	38 +
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	115 +
11670	<i>Procloeon viridoculare</i>	+	85840	<i>Tanytarsus sepp</i>	1
12200	<i>Isonychia sp</i>	4 +	87540	<i>Hemerodromia sp</i>	24
13000	<i>Leucrocuta sp</i>	+	96900	<i>Ferrissia sp</i>	1 +
13400	<i>Stenacron sp</i>	52 +			
13521	<i>Stenonema femoratum</i>	226 +	No. Quantitative Taxa: 31		Total Taxa: 54
17200	<i>Caenis sp</i>	16 +	No. Qualitative Taxa: 46		ICI: 50
21200	<i>Calopteryx sp</i>	+	Number of Organisms: 2311		Qual EPT: 14
22300	<i>Argia sp</i>	24 +			
50315	<i>Chimarra obscura</i>	408 +			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	82 +			
52430	<i>Ceratopsyche morosa group</i>	1 +			
52530	<i>Hydropsyche depravata group</i>	+			
68075	<i>Psephenus herricki</i>	1 +			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	1 +			
71100	<i>Hexatoma sp</i>	+			
74501	<i>Ceratopogonidae</i>	1 +			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	102 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
77800	<i>Helopelopia sp</i>	64 +			
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	+			
78450	<i>Nilotanytarsus fimbriatus</i>	35			
79400	<i>Zavreliomyia sp</i>	+			
80370	<i>Corynoneura lobata</i>	88			
81270	<i>Nanocladius (N.) spinipennis</i>	13			
82141	<i>Thienemanniella xena</i>	5			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			
83840	<i>Microtendipes pedellus group</i>	13 +			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	26 +			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	345 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			

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Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/13/2005 River Code: 14-501 RM: 2.00 Site: Little Twin Creek Little Twin Creek Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	83840	<i>Microtendipes pedellus group</i>	+
03600	<i>Oligochaeta</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
08601	<i>Hydrachnidia</i>	+	84750	<i>Stictochironomus sp</i>	+
11120	<i>Baetis flavistriga</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
11130	<i>Baetis intercalaris</i>	+	85500	<i>Paratanytarsus sp</i>	+
11200	<i>Callibaetis sp</i>	+	85625	<i>Rheotanytarsus sp</i>	+
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	85800	<i>Tanytarsus sp</i>	+
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
12200	<i>Isonychia sp</i>	+	87540	<i>Hemerodromia sp</i>	+
13400	<i>Stenacron sp</i>	+	95100	<i>Physella sp</i>	+
13521	<i>Stenonema femoratum</i>	+	96900	<i>Ferrissia sp</i>	+
16700	<i>Tricorythodes sp</i>	+			
17200	<i>Caenis sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 55
21200	<i>Calopteryx sp</i>	+	No. Qualitative Taxa: 55		ICI:
23909	<i>Boyeria vinosa</i>	+	Number of Organisms: 0		Qual EPT: 18
48620	<i>Nigronia serricornis</i>	+			
50315	<i>Chimarra obscura</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59300	<i>Mystacides sp</i>	+			
59580	<i>Oecetis persimilis</i>	+			
60400	<i>Gyrinus sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
65800	<i>Berosus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71900	<i>Tipula sp</i>	+			
72700	<i>Anopheles sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
77800	<i>Helopelopia sp</i>	+			
81650	<i>Parametriocnemus sp</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			
82220	<i>Tvetenia discoloripes group</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/14/2005 River Code: 14-502 RM: 12.00 Site: Toms Run Amity Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyalella azteca</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
21001	<i>Calopterygidae</i>	+			
23600	<i>Aeshna sp</i>	+			
27500	<i>Somatochlora sp</i>	+			
45300	<i>Sigara sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84302	<i>Phaenopsectra punctipes</i>	+			
84750	<i>Stictochironomus sp</i>	+			
95100	<i>Physella sp</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			
97601	<i>Corbicula fluminea</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 23
No. Qualitative Taxa: 23	ICI:
Number of Organisms: 0	Qual EPT: 4

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/14/2005 River Code: 14-502 RM: 8.50 Site: Toms Run upst. Bull Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyaella azteca</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
22001	<i>Coenagrionidae</i>	+			
24900	<i>Gomphus sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
72700	<i>Anopheles sp</i>	+			
72900	<i>Culex sp</i>	+			
82710	<i>Chironomus (C.) sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
84750	<i>Stictochironomus sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 24
No. Qualitative Taxa: 24	ICI:
Number of Organisms: 0	Qual EPT: 3

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/09/2005 River Code: 14-502 RM: 0.40 Site: Toms Run near mouth, adj. Anthony Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	24	82101	<i>Thienemanniella taurocapita</i>	8
01801	<i>Turbellaria</i>	5 +	82141	<i>Thienemanniella xena</i>	16
03000	<i>Ectoprocta</i>	+	82200	<i>Tvetenia bavarica group</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	82820	<i>Cryptochironomus sp</i>	+
11130	<i>Baetis intercalaris</i>	+	83840	<i>Microtendipes pedellus group</i>	60 +
11430	<i>Dipheter hageni</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	53 +
11670	<i>Procloeon viridoculare</i>	+	84440	<i>Polypedilum (Uresipedilum) aviceps</i>	8
12200	<i>Isonychia sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
13400	<i>Stenacron sp</i>	8 +	84460	<i>Polypedilum (P.) fallax group</i>	45
13521	<i>Stenonema femoratum</i>	55 +	84470	<i>Polypedilum (P.) illinoense</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	16 +	84475	<i>Polypedilum (P.) ophioides</i>	15
16700	<i>Tricorythodes sp</i>	+	84480	<i>Polypedilum (P.) laetum group</i>	+
17200	<i>Caenis sp</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	8 +
18600	<i>Ephemera sp</i>	+	85500	<i>Paratanytarsus sp</i>	219 +
21200	<i>Calopteryx sp</i>	4 +	85501	<i>Paratanytarsus n.sp 1</i>	98
22001	<i>Coenagrionidae</i>	+	85615	<i>Rheotanytarsus pellucidus</i>	8
22300	<i>Argia sp</i>	+	85625	<i>Rheotanytarsus sp</i>	8 +
23909	<i>Boyeria vinosa</i>	1 +	85720	<i>Stempellinella n.sp nr. flavidula</i>	45
27500	<i>Somatochlora sp</i>	+	85800	<i>Tanytarsus sp</i>	38 +
44501	<i>Corixidae</i>	+	85802	<i>Tanytarsus curticornis</i>	60
50301	<i>Chimarra aterrima</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	8
50315	<i>Chimarra obscura</i>	+	85840	<i>Tanytarsus sepp</i>	8
51600	<i>Polycentropus sp</i>	+	87540	<i>Hemerodromia sp</i>	+
52200	<i>Cheumatopsyche sp</i>	+	93900	<i>Elimia sp</i>	2 +
52430	<i>Ceratopsyche morosa group</i>	+	95100	<i>Physella sp</i>	3 +
52530	<i>Hydropsyche depravata group</i>	+	96900	<i>Ferrissia sp</i>	5 +
59300	<i>Mystacides sp</i>	+	96930	<i>Laevapex fuscus</i>	1
59500	<i>Oecetis sp</i>	+			
59720	<i>Triaenodes ignitus</i>	+	No. Quantitative Taxa: 33		Total Taxa: 71
63300	<i>Hydroporus sp</i>	+	No. Qualitative Taxa: 57		ICI: 34
68075	<i>Psephenus herricki</i>	+	Number of Organisms: 1222		Qual EPT: 19
68601	<i>Ancyronyx variegata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	1 +			
69400	<i>Stenelmis sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77500	<i>Conchapelopia sp</i>	38 +			
77800	<i>Helopelopia sp</i>	30 +			
78450	<i>Nilotanypus fimbriatus</i>	+			
78500	<i>Paramerina fragilis</i>	8 +			
80370	<i>Corynoneura lobata</i>	316			
81650	<i>Parametriocnemus sp</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			

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Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/13/2005 River Code: 14-504 RM: 3.30 Site: Aukerman Creek Ketterman Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	85800	<i>Tanytarsus sp</i>	+
03360	<i>Plumatella sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	85840	<i>Tanytarsus sepp</i>	+
11120	<i>Baetis flavistriga</i>	+	86100	<i>Chrysops sp</i>	+
11130	<i>Baetis intercalaris</i>	+	93900	<i>Elimia sp</i>	+
11430	<i>Dipheter hageni</i>	+	95100	<i>Physella sp</i>	+
11670	<i>Proclleon viridoculare</i>	+			
12200	<i>Isonychia sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 50
13400	<i>Stenacron sp</i>	+	No. Qualitative Taxa: 50		ICI:
13521	<i>Stenonema femoratum</i>	+	Number of Organisms: 0		Qual EPT: 17
13590	<i>Maccaffertium vicarium</i>	+			
17200	<i>Caenis sp</i>	+			
18600	<i>Ephemera sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
50301	<i>Chimarra aterrima</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59001	<i>Leptoceridae</i>	+			
59310	<i>Mystacides sepulchralis</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
79400	<i>Zavreliomyia sp</i>	+			
81650	<i>Parametriocnemus sp</i>	+			
82770	<i>Chironomus (C.) riparius group</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84480	<i>Polypedilum (P.) laetum group</i>	+			

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/13/2005 River Code: 14-504 RM: 1.80 Site: Aukerman Creek upst. Sandy Run

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	93900	<i>Elimia sp</i>	+
11120	<i>Baetis flavistriga</i>	+	95100	<i>Physella sp</i>	+
11130	<i>Baetis intercalaris</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+
12200	<i>Isonychia sp</i>	+			
13521	<i>Stenonema femoratum</i>	+	No. Quantitative Taxa: 0		Total Taxa: 47
13590	<i>Maccaffertium vicarium</i>	+	No. Qualitative Taxa: 47		ICI:
17200	<i>Caenis sp</i>	+	Number of Organisms: 0		Qual EPT: 13
21200	<i>Calopteryx sp</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
24900	<i>Gomphus sp</i>	+			
50301	<i>Chimarra aterrima</i>	+			
50315	<i>Chimarra obscura</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68601	<i>Ancyronyx variegata</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69200	<i>Optioservus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
70600	<i>Antocha sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
72340	<i>Dixella sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78450	<i>Nilotanytus fimbriatus</i>	+			
78655	<i>Procladius (Holotanytus) sp</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
85625	<i>Rheotanytarsus sp</i>	+			
85800	<i>Tanytarsus sp</i>	+			
85821	<i>Tanytarsus glabrescens group sp 7</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/08/2005 River Code: 14-504 RM: 0.40 Site: Aukerman Creek dst. Fudge Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	8	71100	<i>Hexatoma sp</i>	+
01801	<i>Turbellaria</i>	4 +	74100	<i>Simulium sp</i>	+
03600	<i>Oligochaeta</i>	+	77120	<i>Ablabesmyia mallochi</i>	+
06201	<i>Hyalella azteca</i>	+	77500	<i>Conchapelopia sp</i>	58 +
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	8 +
11115	<i>Baetis tricaudatus</i>	11	77800	<i>Helopelopia sp</i>	25 +
11120	<i>Baetis flavistriga</i>	24	78140	<i>Labrundinia pilosella</i>	8
11130	<i>Baetis intercalaris</i>	6 +	78450	<i>Nilotanypus fimbriatus</i>	28
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	80204	<i>Brillia flavifrons group</i>	8
11430	<i>Dipheter hageni</i>	+	80351	<i>Corynoneura n.sp 1</i>	4
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16
11670	<i>Procloeon viridoculare</i>	+	80370	<i>Corynoneura lobata</i>	128
12200	<i>Isonychia sp</i>	29 +	81650	<i>Parametriocnemus sp</i>	+
13000	<i>Leucrocuta sp</i>	+	82730	<i>Chironomus (C.) decorus group</i>	+
13100	<i>Nixe sp</i>	+	82820	<i>Cryptochironomus sp</i>	+
13400	<i>Stenacron sp</i>	4	83840	<i>Microtendipes pedellus group</i>	+
13521	<i>Stenonema femoratum</i>	78 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	1	84450	<i>Polypedilum (Uresipedilum) flavum</i>	58 +
13561	<i>Maccaffertium pulchellum</i>	+	84460	<i>Polypedilum (P.) fallax group</i>	8
13590	<i>Maccaffertium vicarium</i>	4 +	84470	<i>Polypedilum (P.) illinoense</i>	+
16700	<i>Tricorythodes sp</i>	4 +	84480	<i>Polypedilum (P.) laetum group</i>	+
17200	<i>Caenis sp</i>	4 +	84700	<i>Stenochironomus sp</i>	+
21200	<i>Calopteryx sp</i>	2 +	84750	<i>Stictochironomus sp</i>	+
22001	<i>Coenagrionidae</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
22300	<i>Argia sp</i>	+	85501	<i>Paratanytarsus n.sp 1</i>	8
23909	<i>Boyeria vinosa</i>	+	85615	<i>Rheotanytarsus pellucidus</i>	75
48410	<i>Corydalus cornutus</i>	1 +	85625	<i>Rheotanytarsus sp</i>	274 +
50315	<i>Chimarra obscura</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	8 +
52200	<i>Cheumatopsyche sp</i>	1 +	85802	<i>Tanytarsus curticornis</i>	8
52430	<i>Ceratopsyche morosa group</i>	30 +	85818	<i>Tanytarsus glabrescens group sp 4</i>	8 +
52530	<i>Hydropsyche depravata group</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	25 +
53800	<i>Hydroptila sp</i>	4 +	86100	<i>Chrysops sp</i>	+
58505	<i>Helicopsyche borealis</i>	+	93900	<i>Elimia sp</i>	5 +
59310	<i>Mystacides sepulchralis</i>	1 +	94400	<i>Fossaria sp</i>	+
60900	<i>Peltodytes sp</i>	+	95100	<i>Physella sp</i>	15 +
63300	<i>Hydroporus sp</i>	+			
65800	<i>Berosus sp</i>	+			
67500	<i>Laccobius sp</i>	+			
68075	<i>Psephenus herricki</i>	+	No. Quantitative Taxa: 39		Total Taxa: 79
68130	<i>Helichus sp</i>	+	No. Qualitative Taxa: 63		ICI: 52
68708	<i>Dubiraphia vittata group</i>	+	Number of Organisms: 992		Qual EPT: 20
68901	<i>Macronychus glabratus</i>	1			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/19/2005 River Code: 14-505 RM: 13.70 Site: Bantas Fork Orange Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	98600	<i>Sphaerium sp</i>	+
03600	<i>Oligochaeta</i>	+			
04685	<i>Placobdella ornata</i>	+	No. Quantitative Taxa: 0		Total Taxa: 45
05900	<i>Lirceus sp</i>	+	No. Qualitative Taxa: 45		ICI:
06201	<i>Hyaella azteca</i>	+	Number of Organisms: 0		Qual EPT: 9
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+			
12200	<i>Isonychia sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
13540	<i>Maccaffertium mediopunctatum</i>	+			
17200	<i>Caenis sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
50301	<i>Chimarra aterrima</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
72340	<i>Dixella sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78402	<i>Natarsia baltimoreus</i>	+			
81650	<i>Parametriocnemus sp</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
84700	<i>Stenochironomus sp</i>	+			
84750	<i>Stictoichironomus sp</i>	+			
85720	<i>Stempellinella n.sp nr. flavidula</i>	+			
85800	<i>Tanytarsus sp</i>	+			
86100	<i>Chrysops sp</i>	+			
93900	<i>Elimia sp</i>	+			
94400	<i>Fossaria sp</i>	+			
95100	<i>Physella sp</i>	+			
96900	<i>Ferrissia sp</i>	+			

Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection

Collection Date: 09/07/2005 River Code: 14-505 RM: 9.50 Site: Bantas Fork U.S. Rt. 127

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	4	80351	<i>Corynoneura n.sp 1</i>	8
01801	<i>Turbellaria</i>	1 +	80370	<i>Corynoneura lobata</i>	146
03600	<i>Oligochaeta</i>	+	81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	11
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	82820	<i>Cryptochironomus sp</i>	+
11020	<i>Acerpenna pygmaea</i>	1	83040	<i>Dicrotendipes neomodestus</i>	+
11120	<i>Baetis flavistriga</i>	8 +	83840	<i>Microtendipes pedellus group</i>	124
11130	<i>Baetis intercalaris</i>	22 +	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	11
11430	<i>Dipheter hageni</i>	8 +	84460	<i>Polypedilum (P.) fallax group</i>	+
11651	<i>Procloeon sp (w/o hindwing pads)</i>	2 +	84475	<i>Polypedilum (P.) ophioides</i>	+
13400	<i>Stenacron sp</i>	92 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
13521	<i>Stenonema femoratum</i>	234 +	84700	<i>Stenochironomus sp</i>	+
13590	<i>Maccaffertium vicarium</i>	+	84750	<i>Stictochironomus sp</i>	+
17200	<i>Caenis sp</i>	2 +	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+
18600	<i>Ephemera sp</i>	+	85500	<i>Paratanytarsus sp</i>	5 +
21200	<i>Calopteryx sp</i>	5 +	85501	<i>Paratanytarsus n.sp 1</i>	134
22300	<i>Argia sp</i>	+	85625	<i>Rheotanytarsus sp</i>	43
45300	<i>Sigara sp</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	5
50301	<i>Chimarra aterrima</i>	10 +	85800	<i>Tanytarsus sp</i>	48
50315	<i>Chimarra obscura</i>	1 +	85802	<i>Tanytarsus curticornis</i>	70
51600	<i>Polycentropus sp</i>	+	85818	<i>Tanytarsus glabrescens group sp 4</i>	5 +
52200	<i>Cheumatopsyche sp</i>	4 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	27
52430	<i>Ceratopsyche morosa group</i>	+	85840	<i>Tanytarsus sepp</i>	11
52530	<i>Hydropsyche depravata group</i>	+	86100	<i>Chrysops sp</i>	+
57400	<i>Neophylax sp</i>	+	87540	<i>Hemerodromia sp</i>	8
57900	<i>Pycnopsyche sp</i>	+	93900	<i>Elimia sp</i>	14 +
58505	<i>Helicopsyche borealis</i>	3 +	95100	<i>Physella sp</i>	40 +
59730	<i>Triaenodes melaca</i>	+	96900	<i>Ferrissia sp</i>	4 +
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+	No. Quantitative Taxa: 38		Total Taxa: 72
68130	<i>Helichus sp</i>	+	No. Qualitative Taxa: 54		ICI: 54
68601	<i>Ancyronyx variegata</i>	+	Number of Organisms: 1195		Qual EPT: 20
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	1			
69400	<i>Stenelmis sp</i>	+			
70600	<i>Antocha sp</i>	9			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74100	<i>Simulium sp</i>	+			
77500	<i>Conchapelopia sp</i>	43 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
77800	<i>Helopelopia sp</i>	27 +			
78450	<i>Nilotanypus fimbriatus</i>	4			
78500	<i>Paramerina fragilis</i>	+	199		

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/07/2005 River Code: 14-505 RM: 7.00 Site: Bantas Fork dst. Bantas Creek Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	17	83040	<i>Dicrotendipes neomodestus</i>	12
06201	<i>Hyalella azteca</i>	+	83840	<i>Microtendipes pedellus group</i>	60 +
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	70
11120	<i>Baetis flavistriga</i>	8 +	84300	<i>Phaenopsectra obediens group</i>	12
11130	<i>Baetis intercalaris</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	35 +
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	84750	<i>Stictochironomus sp</i>	+
11670	<i>Procloeon viridoculare</i>	+	85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	23 +
12200	<i>Isonychia sp</i>	7 +	85500	<i>Paratanytarsus sp</i>	12
13400	<i>Stenacron sp</i>	13 +	85501	<i>Paratanytarsus n.sp 1</i>	70
13521	<i>Stenonema femoratum</i>	51 +	85720	<i>Stempellinella n.sp nr. flavidula</i>	58
13540	<i>Maccaffertium mediopunctatum</i>	20 +	85800	<i>Tanytarsus sp</i>	94
13590	<i>Maccaffertium vicarium</i>	1 +	85802	<i>Tanytarsus curticornis</i>	317
17200	<i>Caenis sp</i>	192 +	85818	<i>Tanytarsus glabrescens group sp 4</i>	129 +
18600	<i>Ephemera sp</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	23
18700	<i>Hexagenia sp</i>	+	85840	<i>Tanytarsus sepp</i>	35
21200	<i>Calopteryx sp</i>	+	86100	<i>Chrysops sp</i>	+
22001	<i>Coenagrionidae</i>	+	87540	<i>Hemerodromia sp</i>	+
23909	<i>Boyeria vinosa</i>	+	93900	<i>Elimia sp</i>	32 +
48410	<i>Corydalus cornutus</i>	+	95100	<i>Physella sp</i>	21
50301	<i>Chimarra aterrima</i>	+	96900	<i>Ferrissia sp</i>	9 +
50315	<i>Chimarra obscura</i>	27 +	96930	<i>Laevapex fuscus</i>	1
51400	<i>Nyctiophylax sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	8 +	No. Quantitative Taxa: 40		Total Taxa: 65
52530	<i>Hydropsyche depravata group</i>	9 +	No. Qualitative Taxa: 46		ICI: 50
57400	<i>Neophylax sp</i>	+	Number of Organisms: 1661		Qual EPT: 20
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	1 +			
59310	<i>Mystacides sepulchralis</i>	1			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	4 +			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	8 +			
74100	<i>Simulium sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77500	<i>Conchapelopia sp</i>	82 +			
77800	<i>Helopelopia sp</i>	23 +			
78450	<i>Nilotanypus fimbriatus</i>	16			
80370	<i>Corynoneura lobata</i>	132			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	12			
81240	<i>Nanocladius (N.) distinctus</i>	12			
82100	<i>Thienemanniella sp</i>	4			
82820	<i>Cryptochironomus sp</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			

Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection

Collection Date: 09/07/2005 River Code: 14-505 RM: 1.20 Site: Bantas Fork dst. St. Rt. 503

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+	84480	<i>Polypedilum (P.) laetum group</i>	3
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	85501	<i>Paratanytarsus n.sp 1</i>	3
08601	<i>Hydrachnidia</i>	+	85625	<i>Rheotanytarsus sp</i>	3
11120	<i>Baetis flavistriga</i>	+	85802	<i>Tanytarsus curticornis</i>	6
11650	<i>Procloeon sp (w/ hindwing pads)</i>	+	85818	<i>Tanytarsus glabrescens group sp 4</i>	21
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	30
11670	<i>Procloeon viridoculare</i>	+	85840	<i>Tanytarsus sepp</i>	15
13400	<i>Stenacron sp</i>	+	87540	<i>Hemerodromia sp</i>	1
13521	<i>Stenonema femoratum</i>	19 +	93900	<i>Elimia sp</i>	5 +
17200	<i>Caenis sp</i>	3 +	95100	<i>Physella sp</i>	3 +
18600	<i>Ephemera sp</i>	+			
22001	<i>Coenagrionidae</i>	2 +	No. Quantitative Taxa: 22		Total Taxa: 54
22300	<i>Argia sp</i>	+	No. Qualitative Taxa: 38		ICI: 32
23909	<i>Boyeria vinosa</i>	+	Number of Organisms: 160		Qual EPT: 14
24900	<i>Gomphus sp</i>	+			
48410	<i>Corydalus cornutus</i>	+			
48620	<i>Nigronia serricornis</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
63300	<i>Hydroporus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	1 +			
71910	<i>Tipula abdominalis</i>	+			
72700	<i>Anopheles sp</i>	+			
77500	<i>Conchapelopia sp</i>	9			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	3			
77800	<i>Helopelopia sp</i>	9			
78140	<i>Labrundinia pilosella</i>	1			
78500	<i>Paramerina fragilis</i>	3			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80370	<i>Corynoneura lobata</i>	16			
81250	<i>Nanocladius (N.) minimus</i>	3			
82100	<i>Thienemanniella sp</i>	1			
82820	<i>Cryptochironomus sp</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			

201

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/14/2005 River Code: 14-506 RM: 4.20 Site: Goose Run

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
04666	<i>Helobdella triserialis</i>	+			
05900	<i>Lirceus sp</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
11200	<i>Callibaetis sp</i>	+			
13400	<i>Stenacron sp</i>	+			
17200	<i>Caenis sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
42700	<i>Belostoma sp</i>	+			
45300	<i>Sigara sp</i>	+			
47600	<i>Sialis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
55300	<i>Ptilostomis sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
63900	<i>Laccophilus sp</i>	+			
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69200	<i>Optioservus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78140	<i>Labrundinia pilosella</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
81460	<i>Orthocladius (O.) sp</i>	+			
81650	<i>Parametriocnemus sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
84750	<i>Stictochironomus sp</i>	+			
86900	<i>Myxosargus sp</i>	+			
93900	<i>Elimia sp</i>	+			
95100	<i>Physella sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 41
 No. Qualitative Taxa: 41 ICI:
 Number of Organisms: 0 Qual EPT: 8

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/13/2005 River Code: 14-506 RM: 0.30 Site: Goose Run Eaton-Lewisburg Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
01801	<i>Turbellaria</i>	+	84480	<i>Polypedilum (P.) laetum group</i>	+
03600	<i>Oligochaeta</i>	+	84700	<i>Stenochironomus sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84750	<i>Stictochironomus sp</i>	+
08601	<i>Hydrachnidia</i>	+	85800	<i>Tanytarsus sp</i>	+
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	93900	<i>Elimia sp</i>	+
11430	<i>Dipheter hageni</i>	+			
11670	<i>Procloeon viridoculare</i>	+	No. Quantitative Taxa: 0		Total Taxa: 50
12200	<i>Isonychia sp</i>	+	No. Qualitative Taxa: 50		ICI:
13400	<i>Stenacron sp</i>	+	Number of Organisms: 0		Qual EPT: 17
13521	<i>Stenonema femoratum</i>	+			
13540	<i>Maccaffertium mediopunctatum</i>	+			
13590	<i>Maccaffertium vicarium</i>	+			
17200	<i>Caenis sp</i>	+			
18600	<i>Ephemera sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
45300	<i>Sigara sp</i>	+			
47600	<i>Sialis sp</i>	+			
48620	<i>Nigronia serricornis</i>	+			
50301	<i>Chimarra aterrima</i>	+			
51300	<i>Neureclipsis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78402	<i>Natarsia baltimoreus</i>	+			
79400	<i>Zavreliomyia sp</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/14/2005 River Code: 14-508 RM: 4.90 Site: Lesley Run

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyalella azteca</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60400	<i>Gyrinus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84750	<i>Stictochironomus sp</i>	+			
93900	<i>Elimia sp</i>	+			
95100	<i>Physella sp</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 20
No. Qualitative Taxa: 20	ICI:
Number of Organisms: 0	Qual EPT: 4

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/14/2005 River Code: 14-508 RM: 1.30 Site: Lesley Run

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
05900	<i>Lirceus sp</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
45300	<i>Sigara sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
78402	<i>Natarsia baltimoreus</i>	+			
79400	<i>Zavrelimyia sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84700	<i>Stenochironomus sp</i>	+			
84750	<i>Stictochironomus sp</i>	+			
93900	<i>Elimia sp</i>	+			
95100	<i>Physella sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 18
No. Qualitative Taxa: 18	ICI:
Number of Organisms: 0	Qual EPT: 3

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/06/2005 River Code: 14-510 RM: 13.60 Site: Price Creek

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05900	<i>Lirceus sp</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
13521	<i>Stenonema femoratum</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
27500	<i>Somatochlora sp</i>	+			
45300	<i>Sigara sp</i>	+			
47600	<i>Sialis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
65800	<i>Berosus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84302	<i>Phaenopsectra punctipes</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
93900	<i>Elimia sp</i>	+			
94400	<i>Fossaria sp</i>	+			
95100	<i>Physella sp</i>	+			
95907	<i>Gyraulus (Torquis) parvus</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 33
No. Qualitative Taxa: 33	ICI:
Number of Organisms: 0	Qual EPT: 3

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/19/2005 River Code: 14-510 RM: 10.90 Site: Price Creek Shurley Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	84480	<i>Polypedilum (P.) laetum group</i>	+
03600	<i>Oligochaeta</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
05900	<i>Lirceus sp</i>	+	85500	<i>Paratanytarsus sp</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	+
11120	<i>Baetis flavistriga</i>	+	85800	<i>Tanytarsus sp</i>	+
11130	<i>Baetis intercalaris</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	86100	<i>Chrysops sp</i>	+
12200	<i>Isonychia sp</i>	+	93900	<i>Elimia sp</i>	+
13400	<i>Stenacron sp</i>	+	95100	<i>Physella sp</i>	+
13521	<i>Stenonema femoratum</i>	+	96900	<i>Ferrissia sp</i>	+
17200	<i>Caenis sp</i>	+	98600	<i>Sphaerium sp</i>	+
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+	No. Quantitative Taxa: 0		Total Taxa: 55
22300	<i>Argia sp</i>	+	No. Qualitative Taxa: 55		ICI:
50315	<i>Chimarra obscura</i>	+	Number of Organisms: 0		Qual EPT: 12
52200	<i>Cheumatopsyche sp</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59310	<i>Mystacides sepulchralis</i>	+			
60900	<i>Peltodytes sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
72340	<i>Dixella sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	+			
77800	<i>Helopelopia sp</i>	+			
78140	<i>Labrundinia pilosella</i>	+			
78500	<i>Paramerina fragilis</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
81650	<i>Parametriocnemus sp</i>	+			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83820	<i>Microtendipes "caelum" (sensu Simpson & Bode, 1980)</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/07/2005 River Code: 14-510 RM: 3.90 Site: Price Creek Jims Run Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	80370	<i>Corynoneura lobata</i>	80
01801	<i>Turbellaria</i>	8	81231	<i>Nanocladius (N.) crassicornus</i> or <i>N. (N.) "rectinervis"</i>	31
03600	<i>Oligochaeta</i>	+	82200	<i>Tvetenia bavarica</i> group	21
05900	<i>Lirceus</i> sp	+	82730	<i>Chironomus (C.) decorus</i> group	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	82820	<i>Cryptochironomus</i> sp	+
11020	<i>Acerpenna pygmaea</i>	10	83040	<i>Dicrotendipes neomodestus</i>	10
11120	<i>Baetis flavistriga</i>	1	83840	<i>Microtendipes pedellus</i> group	10 +
11130	<i>Baetis intercalaris</i>	55 +	84210	<i>Paratendipes albimanus</i> or <i>P. duplicatus</i>	+
11670	<i>Procloeon viridoculare</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	157
12200	<i>Isonychia</i> sp	38 +	84460	<i>Polypedilum (P.) fallax</i> group	10
13521	<i>Stenonema femoratum</i>	64 +	84750	<i>Stictochironomus</i> sp	+
13540	<i>Maccaffertium mediopunctatum</i>	149 +	85501	<i>Paratanytarsus n.sp 1</i>	52
17200	<i>Caenis</i> sp	+	85625	<i>Rheotanytarsus</i> sp	701 +
18600	<i>Ephemera</i> sp	+	85720	<i>Stempellinella n.sp nr. flavidula</i>	21
21200	<i>Calopteryx</i> sp	8	85800	<i>Tanytarsus</i> sp	94
22001	<i>Coenagrionidae</i>	+	85802	<i>Tanytarsus curticornis</i>	10
22300	<i>Argia</i> sp	+	85821	<i>Tanytarsus glabrescens</i> group sp 7	105
30000	<i>Plecoptera</i>	8	87540	<i>Hemerodromia</i> sp	20
45300	<i>Sigara</i> sp	+	93900	<i>Elimia</i> sp	3 +
47600	<i>Sialis</i> sp	+	95100	<i>Physella</i> sp	+
48410	<i>Corydalis cornutus</i>	+			
48620	<i>Nigronia serricornis</i>	10 +	No. Quantitative Taxa: 35		Total Taxa: 64
50301	<i>Chimarra aterrima</i>	1 +	No. Qualitative Taxa: 42		ICI: 50
50315	<i>Chimarra obscura</i>	39 +	Number of Organisms: 1905		Qual EPT: 16
51400	<i>Nyctiophylax</i> sp	+			
51600	<i>Polycentropus</i> sp	+			
52200	<i>Cheumatopsyche</i> sp	59 +			
52430	<i>Ceratopsyche morosa</i> group	6			
52530	<i>Hydropsyche depravata</i> group	4 +			
57400	<i>Neophylax</i> sp	+			
57900	<i>Pycnopsyche</i> sp	+			
58505	<i>Helicopsyche borealis</i>	+			
59970	<i>Petrophila</i> sp	+			
68025	<i>Ectopria</i> sp	+			
68075	<i>Psephenus herricki</i>	+			
68708	<i>Dubiraphia vittata</i> group	+			
68901	<i>Macronychus glabratus</i>	4			
69400	<i>Stenelmis</i> sp	+			
77500	<i>Conchapelopia</i> sp	42			
77800	<i>Helopelopia</i> sp	42 +			
78402	<i>Natarsia baltimoreus</i>	+			
78450	<i>Nilotanypus fimbriatus</i>	16			
79400	<i>Zavrelimyia</i> sp	+			
80351	<i>Corynoneura n.sp 1</i>	16			

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**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/21/2005 River Code: 14-512 RM: 6.50 Site: Swamp Creek

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01900	<i>Nemertea</i>	+			
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
28208	<i>Erythemis simplicicollis</i>	+			
28500	<i>Libellula sp</i>	+			
28955	<i>Plathemis lydia</i>	+			
42700	<i>Belostoma sp</i>	+			
45300	<i>Sigara sp</i>	+			
60800	<i>Haliplus sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
66500	<i>Enochrus sp</i>	+			
67700	<i>Paracymus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
93900	<i>Elimia sp</i>	+			
95100	<i>Physella sp</i>	+			
95907	<i>Gyraulus (Torquis) parvus</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			
98200	<i>Pisidium sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 23
No. Qualitative Taxa: 23	ICI:
Number of Organisms: 0	Qual EPT: 0

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/21/2005 River Code: 14-512 RM: 6.40 Site: Swamp Creek

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04685	<i>Placobdella ornata</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
04962	<i>Mooreobdella fervida</i>	+			
05900	<i>Lirceus sp</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
11200	<i>Callibaetis sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
42700	<i>Belostoma sp</i>	+			
45300	<i>Sigara sp</i>	+			
45900	<i>Notonecta sp</i>	+			
47600	<i>Sialis sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60800	<i>Haliphus sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
66500	<i>Enochrus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
77355	<i>Clinotanypus pinguis</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
93900	<i>Elimia sp</i>	+			
95100	<i>Physella sp</i>	+			
95907	<i>Gyraulus (Torquis) parvus</i>	+			
98600	<i>Sphaerium sp</i>	+			
99160	<i>Anodontoides ferussacianus</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 36
No. Qualitative Taxa: 36	ICI:
Number of Organisms: 0	Qual EPT: 4

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/19/2005 River Code: 14-512 RM: 0.20 Site: Swamp Creek

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
03600	<i>Oligochaeta</i>	+			
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyalella azteca</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
11200	<i>Callibaetis sp</i>	+			
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+			
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+			
11670	<i>Procloeon viridoculare</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
45300	<i>Sigara sp</i>	+			
55300	<i>Ptilostomis sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
78500	<i>Paramerina fragilis</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
85800	<i>Tanytarsus sp</i>	+			
86100	<i>Chrysops sp</i>	+			
94400	<i>Fossaria sp</i>	+			
95100	<i>Physella sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 34
 No. Qualitative Taxa: 34 ICI:
 Number of Organisms: 0 Qual EPT: 9

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/20/2005 River Code: 14-513 RM: 10.80 Site: Millers Fork Grubbs Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04666	<i>Helobdella triserialis</i>	+			
04685	<i>Placobdella ornata</i>	+			
04686	<i>Placobdella papillifera</i>	+			
04935	<i>Erpobdella punctata punctata</i>	+			
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyaella azteca</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
08601	<i>Hydrachnidia</i>	+			
11200	<i>Callibaetis sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
28705	<i>Pachydiplax longipennis</i>	+			
45100	<i>Palmacorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
77355	<i>Clinotanypus pinguis</i>	+			
87400	<i>Stratiomys sp</i>	+			
93900	<i>Elimia sp</i>	+			
95100	<i>Physella sp</i>	+			
96002	<i>Helisoma anceps anceps</i>	+			
96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+			
96900	<i>Ferrissia sp</i>	+			
98600	<i>Sphaerium sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 38
 No. Qualitative Taxa: 38 ICI:
 Number of Organisms: 0 Qual EPT: 5

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/21/2005 River Code: 14-513 RM: 8.00 Site: Millers Fork Clark Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	96002	<i>Helisoma anceps anceps</i>	+
03600	<i>Oligochaeta</i>	+	98600	<i>Sphaerium sp</i>	+
04935	<i>Erpobdella punctata punctata</i>	+			
05800	<i>Caecidotea sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 46
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	No. Qualitative Taxa: 46		ICI:
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	Number of Organisms: 0		Qual EPT: 13
11120	<i>Baetis flavistriga</i>	+			
11670	<i>Procloeon viridoculare</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
14950	<i>Leptophlebia sp or Paraleptophlebia sp</i>	+			
17200	<i>Caenis sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
23909	<i>Boyeria vinosa</i>	+			
44501	<i>Corixidae</i>	+			
47600	<i>Sialis sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
51400	<i>Nyctiophylax sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
55300	<i>Ptilostomis sp</i>	+			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68601	<i>Ancyronyx variegata</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69200	<i>Optioservus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
72340	<i>Dixella sp</i>	+			
74100	<i>Simulium sp</i>	+			
74501	<i>Ceratopogonidae</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
78402	<i>Natarsia baltimoreus</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
85800	<i>Tanytarsus sp</i>	+			
93900	<i>Elimia sp</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/21/2005 River Code: 14-513 RM: 3.90 Site: Millers Fork Georgetown-Verona Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	95100	<i>Physella sp</i>	+
03360	<i>Plumatella sp</i>	+	96900	<i>Ferrissia sp</i>	+
03600	<i>Oligochaeta</i>	+	98200	<i>Pisidium sp</i>	+
05900	<i>Lirceus sp</i>	+			
06201	<i>Hyaella azteca</i>	+	No. Quantitative Taxa: 0		Total Taxa: 47
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	No. Qualitative Taxa: 47		ICI:
11120	<i>Baetis flavistriga</i>	+	Number of Organisms: 0		Qual EPT: 10
11130	<i>Baetis intercalaris</i>	+			
11670	<i>Procloeon viridoculare</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
45300	<i>Sigara sp</i>	+			
50315	<i>Chimarra obscura</i>	+			
51400	<i>Nyctiophylax sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
74100	<i>Simulium sp</i>	+			
78140	<i>Labrundinia pilosella</i>	+			
78402	<i>Natarsia baltimoreus</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
81632	<i>Parakiefferiella n.sp 2</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84800	<i>Tribelos jucundum</i>	+			
85500	<i>Paratanytarsus sp</i>	+			
85840	<i>Tanytarsus sepp</i>	+			
93900	<i>Elimia sp</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/19/2005 River Code: 14-515 RM: 0.80 Site: Dry Fork Locke Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	84750	<i>Stictochironomus sp</i>	+
03600	<i>Oligochaeta</i>	+	93900	<i>Elimia sp</i>	+
04666	<i>Helobdella triserialis</i>	+	95100	<i>Physella sp</i>	+
04685	<i>Placobdella ornata</i>	+	98200	<i>Pisidium sp</i>	+
05900	<i>Lirceus sp</i>	+	98600	<i>Sphaerium sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	No. Quantitative Taxa: 0		Total Taxa: 49
08601	<i>Hydrachnidia</i>	+	No. Qualitative Taxa: 49		ICI:
11120	<i>Baetis flavistriga</i>	+	Number of Organisms: 0		Qual EPT: 10
12200	<i>Isonychia sp</i>	+			
13400	<i>Stenacron sp</i>	+			
17200	<i>Caenis sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22300	<i>Argia sp</i>	+			
23600	<i>Aeshna sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
24900	<i>Gomphus sp</i>	+			
27500	<i>Somatochlora sp</i>	+			
45300	<i>Sigara sp</i>	+			
45900	<i>Notonecta sp</i>	+			
50301	<i>Chimarra aterrima</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59730	<i>Triaenodes melaca</i>	+			
60900	<i>Peltodytes sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
65700	<i>Anacaena sp</i>	+			
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68201	<i>Scirtidae</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69200	<i>Optioservus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
71900	<i>Tipula sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
72340	<i>Dixella sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
78500	<i>Paramerina fragilis</i>	+			
84210	<i>Paratendipes albimanus or P. duplicatus</i>	+			
84480	<i>Polypedilum (P.) laetum group</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/13/2005 River Code: 14-518 RM: 0.70 Site: Trib. to Twin Creek (RM 18.29) St. Rt. 725

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+
05900	<i>Lirceus sp</i>	+	82820	<i>Cryptochironomus sp</i>	+
07875	<i>Cambarus (Tubericambarus) sp A</i>	+	83840	<i>Microtendipes pedellus group</i>	+
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+	84210	<i>Paratendipes albimanus or P. duplicatus</i>	+
08601	<i>Hydrachnidia</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
11018	<i>Acerpenna macdunnoughi</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
11120	<i>Baetis flavistriga</i>	+	84750	<i>Stictochironomus sp</i>	+
11130	<i>Baetis intercalaris</i>	+	85500	<i>Paratanytarsus sp</i>	+
11250	<i>Centroptilum sp (w/o hindwing pads)</i>	+	85800	<i>Tanytarsus sp</i>	+
11430	<i>Diphetero hageni</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
11670	<i>Procloeon viridoculare</i>	+	94400	<i>Fossaria sp</i>	+
12200	<i>Isonychia sp</i>	+	95100	<i>Physella sp</i>	+
13400	<i>Stenacron sp</i>	+	96900	<i>Ferrissia sp</i>	+
13521	<i>Stenonema femoratum</i>	+			
13590	<i>Maccaffertium vicarium</i>	+	No. Quantitative Taxa: 0		Total Taxa: 57
17200	<i>Caenis sp</i>	+	No. Qualitative Taxa: 57		ICI:
18600	<i>Ephemera sp</i>	+	Number of Organisms: 0		Qual EPT: 23
21200	<i>Calopteryx sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
45300	<i>Sigara sp</i>	+			
50301	<i>Chimarra aterrima</i>	+			
50315	<i>Chimarra obscura</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52440	<i>Ceratopsyche slossonae</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
57400	<i>Neophylax sp</i>	+			
57900	<i>Pycnopsyche sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59720	<i>Triaenodes ignitus</i>	+			
67100	<i>Hydrobius sp</i>	+			
68025	<i>Ectopria sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68130	<i>Helichus sp</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
79400	<i>Zavrelimyia sp</i>	+			
81650	<i>Parametriocnemus sp</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/20/2005 River Code: 14-519 RM: 2.40

Site: Maple Swamp Ditch Grubbs-Rex Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+			
01900	<i>Nemertea</i>	+			
03600	<i>Oligochaeta</i>	+			
04664	<i>Helobdella stagnalis</i>	+			
04964	<i>Mooreobdella microstoma</i>	+			
06201	<i>Hyalella azteca</i>	+			
11200	<i>Callibaetis sp</i>	+			
17200	<i>Caenis sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
28955	<i>Plathemis lydia</i>	+			
45400	<i>Trichocorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68130	<i>Helichus sp</i>	+			
79030	<i>Tanytus "punctipennis" (sensu Roback, 1977)</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
81632	<i>Parakiefferiella n.sp 2</i>	+			
98200	<i>Pisidium sp</i>	+			

No. Quantitative Taxa: 0	Total Taxa: 21
No. Qualitative Taxa: 21	ICI:
Number of Organisms: 0	Qual EPT: 2

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/20/2005 River Code: 14-519 RM: 1.40 Site: Maple Swamp Ditch Otterbine-Ithica Rd.

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	85800	<i>Tanytarsus sp</i>	+
02600	<i>Nematomorpha</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
03600	<i>Oligochaeta</i>	+	85840	<i>Tanytarsus sepp</i>	+
04686	<i>Placobdella papillifera</i>	+	86100	<i>Chrysops sp</i>	+
06201	<i>Hyaella azteca</i>	+	96264	<i>Planorbella (Pierosoma) pilsbryi</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
08601	<i>Hydrachnidia</i>	+	No. Quantitative Taxa: 0		Total Taxa: 49
11020	<i>Acerpenna pygmaea</i>	+	No. Qualitative Taxa: 49		ICI:
11120	<i>Baetis flavistriga</i>	+	Number of Organisms: 0		Qual EPT: 13
11125	<i>Pseudocloeon frondale</i>	+			
11130	<i>Baetis intercalaris</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
17200	<i>Caenis sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
45300	<i>Sigara sp</i>	+			
47600	<i>Sialis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
53800	<i>Hydroptila sp</i>	+			
57400	<i>Neophylax sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
60900	<i>Peltodytes sp</i>	+			
65800	<i>Berosus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68130	<i>Helichus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69400	<i>Stenelmis sp</i>	+			
71910	<i>Tipula abdominalis</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77500	<i>Conchapelopia sp</i>	+			
78500	<i>Paramerina fragilis</i>	+			
78655	<i>Procladius (Holotanypus) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
81632	<i>Parakiefferiella n.sp 2</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
82885	<i>Cryptotendipes pseudotener</i>	+			
83003	<i>Dicrotendipes fumidus</i>	+			
84470	<i>Polypedilum (P.) illinoense</i>	+			
85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+			
85500	<i>Paratanytarsus sp</i>	+			

**Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection**

Collection Date: 09/13/2005 River Code: 14-520 RM: 0.70 Site: Trib. to Aukerman Creek (RM 2.88)

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
08270	<i>Orconectes (Rhoadesius) sloanii</i>	+			
11018	<i>Acerpenna macdunnoughi</i>	+			
11120	<i>Baetis flavistriga</i>	+			
11430	<i>Dipheter hageni</i>	+			
11670	<i>Procloeon viridoculare</i>	+			
12200	<i>Isonychia sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13521	<i>Stenonema femoratum</i>	+			
13590	<i>Maccaffertium vicarium</i>	+			
17200	<i>Caenis sp</i>	+			
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
50301	<i>Chimarra aterrima</i>	+			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52530	<i>Hydropsyche depravata group</i>	+			
57400	<i>Neophylax sp</i>	+			
58505	<i>Helicopsyche borealis</i>	+			
59310	<i>Mystacides sepulchralis</i>	+			
59580	<i>Oecetis persimilis</i>	+			
59730	<i>Triaenodes melaca</i>	+			
68075	<i>Psephenus herricki</i>	+			
68707	<i>Dubiraphia quadrinotata</i>	+			
68708	<i>Dubiraphia vittata group</i>	+			
69225	<i>Optioservus fastiditus</i>	+			
69400	<i>Stenelmis sp</i>	+			
71100	<i>Hexatoma sp</i>	+			
71800	<i>Pseudolimnophila sp</i>	+			
71900	<i>Tipula sp</i>	+			
72340	<i>Dixella sp</i>	+			
72700	<i>Anopheles sp</i>	+			
78401	<i>Natarsia species A (sensu Roback, 1978)</i>	+			
83840	<i>Microtendipes pedellus group</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+			
85261	<i>Cladotanytarsus vanderwulpi group Type 1</i>	+			
93900	<i>Elimia sp</i>	+			

No. Quantitative Taxa: 0 Total Taxa: 38
 No. Qualitative Taxa: 38 ICI:
 Number of Organisms: 0 Qual EPT: 19

Table A-10. ICI scores and metrics, Twin Creek watershed, 2005.

River Mile	Drainage Area (sq mi)	Number of				Percent:					Qual. EPT	Eco-region	ICI
		Total Taxa	Mayfly Taxa	Caddisfly Taxa	Dipteran Taxa	Mayflies	Caddisflies	Tanytarsini	Other Dipt/NI	Tolerant Organisms			
Twin Creek (14-500)													
Year: 2005													
42.00	28.0	36(4)	7(4)	5(6)	17(4)	19.9(4)	4.5(4)	16.8(4)	39.1(4)	4.8(6)	22(6)	5	46
38.10	38.0	26(4)	8(6)	4(6)	8(2)	60.3(6)	13.5(6)	10.0(2)	13.8(6)	0.0(6)	19(6)	5	50
35.40	90.0	39(6)	10(6)	7(6)	16(4)	22.6(4)	3.6(2)	37.5(6)	35.4(4)	2.1(6)	24(6)	5	50
34.90	91.0	44(6)	8(4)	3(4)	16(4)	21.2(4)	0.8(2)	9.1(2)	67.7(0)	4.3(6)	18(6)	5	38
33.50	94.0	35(4)	10(6)	4(6)	16(4)	29.5(4)	23.9(6)	17.5(4)	28.6(6)	0.0(6)	18(6)	5	52
31.70	99.0	41(6)	11(6)	7(6)	15(4)	30.6(4)	10.7(4)	40.0(6)	17.3(6)	0.0(6)	24(6)	5	54
27.60	142.0	43(6)	10(6)	3(4)	19(6)	33.2(6)	18.3(4)	20.4(4)	27.4(4)	0.5(6)	21(6)	5	52
26.60	143.0	32(4)	9(6)	3(4)	14(4)	28.5(4)	15.6(4)	15.5(2)	39.8(4)	1.1(6)	20(6)	5	44
23.70	197.0	37(6)	9(6)	4(4)	19(6)	19.2(4)	5.4(2)	47.1(6)	27.9(4)	0.8(6)	22(6)	5	50
19.20	226.0	42(6)	12(6)	3(4)	18(6)	25.4(4)	6.1(2)	48.1(6)	19.6(6)	1.0(6)	18(6)	5	52
13.40	271.0	45(6)	10(6)	4(4)	22(6)	31.6(6)	10.9(2)	27.8(4)	28.4(4)	1.6(6)	26(6)	5	50
9.70	275.0	46(6)	10(6)	4(4)	22(6)	31.7(6)	5.8(2)	41.2(6)	20.9(6)	2.4(6)	16(4)	5	52
0.90	315.0	40(6)	11(6)	2(2)	19(6)	41.6(6)	4.4(2)	24.7(4)	29.0(4)	0.7(6)	22(6)	5	48
0.10	316.0	37(6)	16(6)	5(4)	10(2)	76.1(6)	3.5(2)	15.9(2)	4.4(6)	0.0(6)	20(6)	5	46
Little Twin Creek (14-501)													
Year: 2005													
6.30	4.9	29(4)	2(0)	2(4)	17(4)	1.8(2)	5.3(6)	40.8(6)	46.5(2)	14.5(4)	9(4)	5	36
4.60	12.4	31(4)	6(4)	3(6)	17(4)	19.2(4)	21.2(6)	27.2(6)	31.2(4)	0.0(6)	14(6)	5	50
Toms Run (14-502)													
Year: 2005													
0.40	24.3	33(4)	3(2)	0(0)	21(6)	6.5(2)	0.0(0)	40.9(6)	52.1(2)	4.3(6)	19(6)	5	34
Aukerman Creek (14-504)													
Year: 2005													
0.40	20.7	39(6)	10(6)	4(6)	18(4)	16.6(4)	3.6(4)	40.9(6)	38.4(4)	2.3(6)	20(6)	5	52
Bantas Fork (14-505)													
Year: 2005													
9.50	11.8	38(6)	8(6)	4(6)	19(4)	30.9(6)	1.5(4)	29.1(6)	38.0(4)	3.7(6)	20(6)	5	54
7.00	24.4	40(6)	7(4)	5(6)	21(6)	17.6(4)	2.8(2)	45.8(6)	33.1(4)	2.5(6)	20(6)	5	50
1.20	34.0	22(2)	2(0)	0(0)	17(4)	13.8(4)	0.0(0)	48.8(6)	36.3(4)	1.9(6)	14(6)	5	32
Price Creek (14-510)													
Year: 2005													
3.90	20.1	35(4)	6(4)	5(6)	18(4)	16.6(4)	5.7(4)	51.6(6)	24.5(6)	0.5(6)	16(6)	5	50