

Biological and Water Quality Study of the Muskingum River

2006

APPENDICES

Coshocton, Muskingum, Morgan, Washington Counties, Ohio
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prepared by

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Appendix Table 1. Muskingum River Chemical/Physical and Bacteriological Water Sampling Results (2006)

Site Location: UPST Coshocton WWTP @ boat ramp								
River Mile:108.75 Storet: R11W01 Latitude: 40.2415 Longitude: 81.8726 USGS Topo Quad: Wills Creek								
Parameter	Units	6/15/2006	6/27/2006	Dup A	Dup B	Dup A	Dup B	10/17/2006
		10:05 AM	4:20 PM	8/9/2006 12:01 PM	8/9/2006 12:01 PM	8/31/2006 12:50 PM	8/31/2006 12:50 PM	2:17 PM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	144	89.3	155	152	170	171	78.0
Aluminum	ug/L	319	1480	<200	<200	<200	<200	2040
Ammonia	mg/L	<0.050	0.065	<0.050	<0.050	0.081	0.074	0.065
Arsenic	ug/L	2.1	3.9	<2.0	2.0	2.2	2.5	2.6
Barium	ug/L	55	61	52	51	52	52	70
BOD5	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	3.3
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	71	46	71	70	73	72	61
Chloride	mg/L	52.4	32.6	52.1	52.3	88.7	87.7	38.8
Chromium	ug/L	<30	<30	<30	<30	<30	<30	<30
COD	mg/L	11	12	<10	10	<10	<10	<10
Conductivity (lab)	umhos/cm	631	407	638	637	764	770	490
Copper	ug/L	<10	<10	<10	<10	<10	<10	<10
Hardness, Total	mg/L	264	172	260	253	269	266	230
Iron	ug/L	934	4030	448	429	328	431	5030
Lead	ug/L	<2.0	4.9	<2.0	<2.0	<2.0	<2.0	4.0
Magnesium	mg/L	21	14	20	19	21	21	19
Manganese	ug/L	142	513	106	104	78	77	504
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.87	2.05	1.58	1.78	2.73	2.47	1.09
Nitrite	mg/L	<0.020	0.034	<0.020	<0.020	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	4	4	5	5	6
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	31	19	32	31	49	49	27
Strontium	ug/L	245	181	226	223	240	240	212
Sulfate	mg/L	97.8	71.3	90.7	96.5	108	108	81.8
TKN	mg/L	0.41	0.57	0.26	0.23	0.34	0.37	<0.20
TDS	mg/L	400	280	386	382	478	486	304
Total Phosphorus	mg/L	0.097	0.183	0.151	0.104	0.285	0.265	0.204
TSS	mg/L	19	102	7	8	10	9	63
Zinc	ug/L	11	28	<10	<10	<10	<10	27
Field Measurements								
Temperature	°C	18.95	22.44	25.52	25.52	22.21	22.21	11.43
Conductivity	umhos/cm	637	436	568	568	779	779	488
D.O. Saturation	%	74.5		82.9	82.9	77.1	77.1	88.5
Dissolved Oxygen	mg/L	6.81	6.52	6.78	6.78	6.70	6.70	9.65
pH	S.U.	8.13	7.62	7.94	7.94	7.86	7.86	7.77

Appendix Table 1. Continued.

Site Location: DST Coshocton WWTP @ SR 83								
River Mile:108.1 Storet: 611740 Latitude: 40.2415 Longitude: 81.8717 USGS Topo Quad: Wills Creek								
Parameter	Units	Dup A	Dup B	Dup A	Dup B	8/9/2006	8/31/2006	10/17/2006
		6/15/2006 10:25 AM	6/15/2006 10:25 AM	6/27/2006 4:05 PM	6/27/2006 4:05 PM	11:50 AM	1:05 PM	2:08 PM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	138	140	90.0	93.0	147	168	75.9
Aluminum	ug/L	332	347	1200	1200	203	327	4270
Ammonia	mg/L	<0.050	<0.050	0.063	0.057	0.064	0.070	0.061
Arsenic	ug/L	2.0	2.4	3.2	3.4	2.2	3.2	3.9
Barium	ug/L	56	56	57	56	53	56	103
BOD5	mg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.3
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20
Calcium	mg/L	71	71	46	46	68	72	52
Chloride	mg/L	51.6	52.2	32.0	32.2	51.7	82.6	33.6
Chromium	ug/L	<30	<30	<30	<30	<30	<30	<30
COD	mg/L	<10	<10	12	12	10	<10	10
Conductivity (lab)	umhos/cm	618	620	406	405	619	726	448
Copper	ug/L	<10	<10	<10	<10	<10	<10	10
Hardness, Total	mg/L	264	264	168	168	248	266	200
Iron	ug/L	953	1010	3150	3100	556	791	10900
Lead	ug/L	<2.0	2.1	3.7	3.7	<2.0	<2.0	8.9
Magnesium	mg/L	21	21	13	13	19	21	17
Manganese	ug/L	140	145	395	381	85	122	1030
Mercury	ug/L	<0.20	0.26	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.86	1.83	1.90	1.87	1.44	1.98	1.23
Nitrite	mg/L	<0.020	<0.020	0.035	0.034	<0.020	<0.020	<0.020
Potassium	mg/L	4	4	5	5	4	5	6
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	32	31	19	19	31	47	20
Strontium	ug/L	251	245	181	181	224	246	183
Sulfate	mg/L	97.2	95.6	68.3	68.3	88.7	125	72.3
TKN	mg/L	0.52	0.60	0.48	0.67	0.26	0.32	0.33
TDS	mg/L	384	384	272	276	372	452	272
Total Phosphorus	mg/L	0.097	0.092	0.167	0.160	0.110	0.244	0.296
TSS	mg/L	18	21	98	91	14	17	342
Zinc	ug/L	14	14	19	20	<10	<10	54
Field Measurements								
Temperature	°C	19.44	19.44	22.18	22.18	24.14	21.87	11.79
Conductivity	umhos/cm	625	625	432	432	546	731	448
D.O. Saturation	%	70	70			84.0	78.1	94.6
Dissolved Oxygen	mg/L	6.34	6.34	6.44	6.44	7.05	6.83	10.23
pH	S.U.	7.89	7.89	7.58	7.58	8.06	8.01	7.77

Appendix Table 1. Continued.

Site Location: Conesville @ CR 273 USGS Topo Quad: Conesville						
River Mile: 103.5 Storet: 601810 Latitude: 40.1878 Longitude: 81.8881						
Parameter	Units	6/15/2006 10:53 AM	6/27/2006 3:45 PM	8/9/2006 11:35 AM	8/31/2006 2:18 PM	10/17/2006 1:52PM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	138	93.5	146	170	87.9
Aluminum	ug/L	293	1100	238	243	1600
Ammonia	mg/L	<0.050	0.057	0.050	0.069	0.060
Arsenic	ug/L	2.0	3.2	2.9	2.8	2.3
Barium	ug/L	56	56	52	54	64
BOD5	mg/L	<2.0	<2.0	<2.0	<2.0	2.8
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	73	46	68	69	60
Chloride	mg/L	50.0	31.9	50.3	81.8	39.8
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	11	12	<10	<10	36
Conductivity (lab)	umhos/cm	609	400	608	732	509
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	269	168	248	255	228
Iron	ug/L	836	2890	638	603	4320
Lead	ug/L	<2.0	3.3	<2.0	<2.0	4.4
Magnesium	mg/L	21	13	19	20	19
Manganese	ug/L	124	360	92	100	503
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	2.06	2.26	1.62	2.12	1.42
Nitrite	mg/L	<0.020	0.032	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	4	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	30	19	30	44	26
Strontium	ug/L	246	177	221	230	208
Sulfate	mg/L	94.2	71.5	84.4	99.6	84.2
TKN	mg/L	0.39	0.59	0.72	0.42	0.32
TDS	mg/L	378	280	362	452	346
Total Phosphorus	mg/L	0.094	0.147	0.109	0.234	0.188
TSS	mg/L	17	79	14	17	104
Zinc	ug/L	<10	19	<10	<10	29
Field Measurements						
Temperature	°C	19.39	22.29	24.40	21.85	12.20
Conductivity (Field)	umhos/cm	619	426	544	731	514
D.O. Saturation	%	65.6		81.2	75.8	98.6
Dissolved Oxygen	mg/L	5.91	6.33	6.78	6.63	10.56
pH (Field)	S.U.	7.93	7.6	8.10	8.05	7.84

Appendix Table 1. Continued.

Site Location: Adams Mills @ Stillwell Road USGS Topo Quad: Conesville							
River Mile: 97.4 Storet: R11S14 Latitude: 40.1384 Longitude: 81.8881							
Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	Dup A	Dup B
		11:15 AM	3:25 PM	1:45 PM	2:05 PM	10/17/2006 3:46 PM	10/17/2006 3:46 PM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	136	91.3	141	175	83.4	86.2
Aluminum	ug/L	342	1280	250	292	1550	1660
Ammonia	mg/L	<0.050	0.062	<0.050	0.070	0.065	0.067
Arsenic	ug/L	3.1	3.2	3.0	3.5	3.2	3.3
Barium	ug/L	56	58	56	57	68	65
BOD5	mg/L	<2.0	<2.0	<2.0	<2.0	2.7	2.6
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	70	46	72	72	68	63
Chloride	mg/L	48.1	31.9	49.9	89.5	38.2	38.9
Chromium	ug/L	<30	<30	<30	<30	<30	<30
COD	mg/L	<10	18	<10	<10	13	<10
Conductivity (lab)	umhos/cm	617	407	631	788	527	522
Copper	ug/L	<10	<10	<10	<10	<10	<10
Hardness, Total	mg/L	265	172	266	270	260	240
Iron	ug/L	969	3260	645	691	4460	4730
Lead	ug/L	<2.0	3.8	<2.0	<2.0	5.6	6.4
Magnesium	mg/L	22	14	21	22	22	20
Manganese	ug/L	165	408	120	125	513	543
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.82	2.98	1.57	2.46	1.36	1.22
Nitrite	mg/L	<0.020	0.035	<0.020	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	4	5	6	6
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	30	19	31	50	31	29
Strontium	ug/L	255	177	239	250	255	238
Sulfate	mg/L	99.6	65.3	98.8	113	96.2	97.9
TKN	mg/L	0.34	0.51	0.30	0.40	0.38	0.41
TDS	mg/L	378	282	374	492	340 PT	354 PT
Total Phosphorus	mg/L	0.094	0.156	0.093	0.246	0.235	0.202
TSS	mg/L	26	97	11	17	101	101
Zinc	ug/L	17	21	<10	<10	36	37
Field Measurements							
Temperature	°C	19.99	22.37	25.88	22.42	12.43	12.43
Conductivity (Field)	umhos/cm	628	436	555	794	525.70	525.70
D.O. Saturation	%	91		90.4	73.0	100.4	100.4
Dissolved Oxygen	mg/L	8.42	6.39	7.34	6.32	10.70	10.70
pH (Field)	S.U.	7.98	7.58	8.07	8.01	7.93	7.93

Appendix Table 1. Continued.

Site Location: Dresden @ SR 208 USGS Topo Quad: Dresden						
River Mile: 92.2 Storet: 611750 Latitude: 40.1206 Longitude: 82.0002						
Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	10/17/2006
		11:50 AM	2:55 PM	11:00 AM	2:40 PM	1:24 PM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	139	93.1	144	179	88.4
Aluminum	ug/L	308	1270	<200	323	1920
Ammonia	mg/L	<0.050	0.050	<0.050	0.069	0.073
Arsenic	ug/L	2.4	4.0	2.4	2.8	3.2
Barium	ug/L	55	58	53	60	68
BOD5	mg/L	<2.0	<2.0	<2.0	<2.0	2.5
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	71	46	69	75	60
Chloride	mg/L	48.3	32.2	47.8	88.4	39.8
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	<10	18	13	<10	<10
Conductivity (lab)	µmhos/cm	619	405	616	800	539
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	268	168	255	282	228
Iron	ug/L	873	3200	466	794	4690
Lead	ug/L	<2.0	3.7	<2.0	<2.0	3.8
Magnesium	mg/L	22	13	20	23	19
Manganese	ug/L	144	402	104	139	498
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.85	2.00	1.45	2.76	1.38
Nitrite	mg/L	<0.020	0.034	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	4	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	29	20	29	51	28
Strontium	ug/L	252	178	229	261	233
Sulfate	mg/L	102	67.2	95.8	115	104
TKN	mg/L	0.39	0.67	<0.20	0.41	0.49
TDS	mg/L	394	278	366	500	334
Total Phosphorus	mg/L	0.090	0.194	0.257 J	0.263	0.245
TSS	mg/L	21	92	8	18	144
Zinc	ug/L	<10	21	<10	<10	20
Field Measurements						
Temperature	°C	20.45	22.58	25.37	22.53	12.02
Conductivity (Field)	µmhos/cm	630	436	548	797	568
D.O. Saturation	%	85.9		83.7	71.8	100.5
Dissolved Oxygen	mg/L	7.7	6.32	6.86	6.20	10.81
pH (Field)	S.U.	8.11	7.65	8.01	8.03	7.98

Appendix Table 1. Continued.

Site Location: Downstream Ellis Lock and Dam # 11							
River Mile: 84.6 Storet: R11S12 Latitude: 40.0433 Longitude: 81.9783 USGS Topo Quad: Adamsville							
Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	Dup A	Dup B
		12:55 PM	2:20 PM	10:30 AM	3:00 PM	10/17/2006 12:59 PM	10/17/2006 12:59 PM
Acidity	mg/L	< 5	< 5	< 5	< 5	< 5	< 5
Alkalinity	mg/L	140	89.2	139	172	77.7	78.3
Aluminum	ug/L	316	1260	249	275	3020	3280
Ammonia	mg/L	< 0.05	0.053	< 0.05	0.068	0.07	0.068
Arsenic	ug/L	2.4	3.1	3	3.2	3.6	3.3
Barium	ug/L	56	60	55	58	79	81
BOD5	mg/L	< 2	< 2	< 2	< 2	2.9	2.9
Cadmium	ug/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Calcium	mg/L	69	46	69	74	59	60
Chloride	mg/L	47.7	31.4	47.4	83.2	37.8	37.7
Chromium	ug/L	< 30	< 30	< 30	< 30	< 30	< 30
COD	mg/L	19	15	< 10	< 10	22	16
Conductivity (lab)	umhos/cm	614	398	613	780	517	522
Copper	ug/L	< 10	< 10	<10	< 10	< 10	< 10
Hardness, Total	mg/L	259	172	255	279	230	232
Iron	ug/L	897	3190	631	650	7340	7870
Lead	ug/L	< 2	3.9	< 2	< 2	5.9	5.8
Magnesium	mg/L	21	14	20	23	20	20
Manganese	ug/L	153	436	113	103	704	733
Mercury	ug/L	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Nickel	ug/L	< 40	< 40	< 40	< 40	< 40	< 40
Nitrate+nitrite	mg/L	1.82	2.24	1.57	2.3	1.15	1.16
Nitrite	mg/L	< 0.02	0.035	< 0.02	< 0.02	< 0.02	< 0.02
Potassium	mg/L	4	5	4	5	5	6
Selenium	ug/L	< 2	< 2	< 2	< 2	< 2	< 2
Sodium	mg/L	29	20	29	47	26	26
Strontium	ug/L	251	178	229	257	230	230
Sulfate	mg/L	101	64.7	105	115	107	108
TKN	mg/L	0.42	0.55	< 0.2	< 0.2	0.44	0.42
TDS	mg/L	384	270	358	492	330	336
Total Phosphorus	mg/L	0.09	0.176	0.509	0.215	0.197	0.201
TSS	mg/L	22	87	12	20	249	228
Zinc	ug/L	< 10	20	< 10	< 10	26	25
Field Measurements							
Temperature	°C	20.46	22.52	25.6	22.52	11.8	11.8
D.O. Saturation	%	70.6		79.6	73	100.7	100.7
Dissolved Oxygen	mg/L	6.26	6.08	6.5	6.31	10.88	10.88
pH	S.U.	7.92	7.56	7.94	7.97	7.86	7.86
Conductivity	umhos/cm	620	429	541.6	787.3	518.2	518

Appendix Table 1. Continued.

Site Location: Zanesville @ US RT 22/6th St. USGS Topo Quad: Zanesville West							
River Mile: 75.8 Storet: R16P06 Latitude: 39.935 Longitude: 82.0061							
Parameter	Units	Dup A		Dup B		8/31/2006 2:04 PM	10/17/2006 12:27 PM
		6/15/2006 1:40 PM	6/27/2006 1:30 PM	6/27/2006 1:30 PM	8/9/2006 9:30 AM		
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	144	104	105	138	187	83.4
Aluminum	ug/L	305	1090	1160	218	310	3920
Ammonia	mg/L	<0.050	0.070	0.070	<0.050	0.097	0.120
Arsenic	ug/L	2.1	3.8	2.9	2.5	4.7	5.0
Barium	ug/L	56	58	59	55	57	89
BOD5	mg/L	<2.0	2.9 J	2.9 J	<2.0	<2.0	8.3
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	69	47	48	63	66	45
Chloride	mg/L	42.9	34.8	34.7	43.3	65.6	27.5
Chromium	ug/L	<30	<30	<30	<30	<30	<30
COD	mg/L	<10	12	12	10	<10	16
Conductivity (lab)	µmhos/cm	585	417	418	576	693	347
Copper	ug/L	<10	<10	<10	<10	<10	<10
Hardness, Total	mg/L	259	175	178	236	251	174
Iron	ug/L	798	2770	2920	545	636	8030
Lead	ug/L	<2.0	3.7	4.0	<2.0	<2.0	13.3
Magnesium	mg/L	21	14	14	19	21	15
Manganese	ug/L	117	366	382	99	86	498
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	2.14	2.56	2.67	1.29	1.53	0.91
Nitrite	mg/L	0.026	0.046	0.046	0.020	<0.020	<0.020
Potassium	mg/L	4	5	5	4	5	6
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	28	21	21	26	38	18
Strontium	ug/L	310	232	233	251	299	339
Sulfate	mg/L	86.2	58.4	61.8	85.6	96.3	34.2
TKN	mg/L	0.47	0.51	0.51	0.22	0.42	0.60
TDS	mg/L	372	284	282	344	446	226
Total Phosphorus	mg/L	0.104	0.181	0.171	0.115	0.208	0.410
TSS	mg/L	17	83	85	10	18	296
Zinc	ug/L	16	17	17	<10	<10	40
Field Measurements							
Temperature	°C	21.28	22.43	22.43	25.55	23.74	12.50
Conductivity (Field)	µmhos/cm	588	445	445	512	655	353
D.O. Saturation	%	94.7			87.5	86.0	97.3
Dissolved Oxygen	mg/L	8.27	6.74	6.74	7.15	7.26	10.35
pH (Field)	S.U.	7.96	7.5	7.5	8.01	7.93	7.88

Appendix Table 1. Continued.

Site Location: **DST Zanesville UPST Moxahala Creek** USGS Topo Quad: Zanesville West
 River Mile: 73.5 Storet: R16S34 Latitude: 39.9091 Longitude: 82.0032

Parameter	Units	6/15/2006 2:05 PM	6/27/2006 12:55 PM	8/9/2006 9:10 AM	8/31/2006 1:47 PM	10/17/2006 12:12 PM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	142	94.9	140	188	69.1
Aluminum	ug/L	269	1010	<200	256	2850
Ammonia	mg/L	<0.050	0.170	0.243	0.309	0.202
Arsenic	ug/L	<2.0	2.6	2.5	3.5	4.3
Barium	ug/L	54	53	55	58	71
BOD5	mg/L	<2.0	2.4	<2.0	<2.0	5.1
Cadmium	ug/L	<0.20	0.24	<0.20	<0.20	<0.20
Calcium	mg/L	69	46	64	69	43
Chloride	mg/L	44.2	34.3	46.8	69.8	29.1
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	<10	15	10	<10	10
Conductivity (lab)	umhos/cm	587	411	590	710	354
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	259	168	238	263	161
Iron	ug/L	731	2540	438	579	5760
Lead	ug/L	<2.0	3.0	<2.0	2.1	10.9
Magnesium	mg/L	21	13	19	22	13
Manganese	ug/L	109	319	99	84	339
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.98	3.02	1.57	1.72	1.03
Nitrite	mg/L	<0.020	0.048	0.027	0.034	<0.020
Potassium	mg/L	4	5	5	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	27	21	28	42	19
Strontium	ug/L	277	194	244	294	232
Sulfate	mg/L	91.6	64.2	95.3	98.3	45.7
TKN	mg/L	0.44	0.65	0.55	0.79	0.54
TDS	mg/L	380	272	360	456	238
Total Phosphorus	mg/L	0.095	0.170	0.191	0.296	0.232
TSS	mg/L	18	62	10	17	147
Zinc	ug/L	<10	17	<10	<10	34
Field Measurements						
Temperature	°C	21.89	22.6	25.60	23.71	12.50
Conductivity (Field)	umhos/cm	603	446	525	709	359
D.O. Saturation	%	98.4		67.1	86.1	102.8
Dissolved Oxygen	mg/L	8.49	7.41	5.48	7.27	10.94
pH (Field)	S.U.	8.02	7.33	8.02	7.77	7.90

Appendix Table 1. Continued.

Site Location: **Duncan Falls Dst Philo Lock & Dam # 9** USGS Topo Quad: Philo
 River Mile: 67.3 Storet: R16P08 Latitude: 39.8692 Longitude: 81.9094

Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	10/17/2006
		12:20 PM	12:35 PM	2:42 PM	1:25 PM	11:52 AM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	139	85.6	131	189	89.1
Aluminum	ug/L	243	1720	223	228	1350
Ammonia	mg/L	<0.050	0.050	<0.050	0.068	0.156
Arsenic	ug/L	<2.0	3.8	2.6	2.9	3.1
Barium	ug/L	54	61	52	53	60
BOD5	mg/L	<2.0	<2.0	<2.0	<2.0	2.6
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	70	45	67	69	64
Chloride	mg/L	43.9	31.9	44.2	67.6	43.5
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	<10	12	<10	<10	<10
Conductivity (lab)	umhos/cm	606	390	586	718	563 RC
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	261	166	250	263	246 RC
Iron	ug/L	644	4280	568	502	3180
Lead	ug/L	<2.0	4.6	<2.0	<2.0	6.2
Magnesium	mg/L	21	13	20	22	21
Manganese	ug/L	117	520	107	90	517
Mercury	ug/L	0.24	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.98	2.98	1.51	1.71	1.26
Nitrite	mg/L	<0.020	0.032	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	5	4	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	28	19	28	38	31
Strontium	ug/L	266	170	234	256	310
Sulfate	mg/L	102	62.6	93.9	104	104
TKN	mg/L	0.37	0.49	0.21	0.25	0.61
TDS	mg/L	380	270	364	466	212 RC
Total Phosphorus	mg/L	0.081	0.170	0.095	0.168	0.220
TSS	mg/L	15	108	14	16	67
Zinc	ug/L	<10	28	<10	<10	26
Field Measurements						
Temperature	°C	21.3	22.26	27.22	24.06	12.00
Conductivity (Field)	umhos/cm	635	417	519	718	563
D.O. Saturation	%	92.4		100.1	85.8	106.1
Dissolved Oxygen	mg/L	8.06	7.12	7.93	7.20	11.42
pH (Field)	S.U.	7.98	7.42	8.23	8.05	7.89

Appendix Table 1. Continued.

Site Location: Gaysport @ CR 66 USGS Topo Quad: Philo						
River Mile: 62.7 Storet: R16P07 Latitude: 39.8039 Longitude: 81.8933						
Parameter	Units	6/15/2006 12:05 PM	6/27/2006 12:15 PM	8/9/2006 3:01 PM	8/31/2006 1:07 PM	10/17/2006 11:32 AM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	142	88.4	134	185	85.9
Aluminum	ug/L	213	1540	<200	389	1210
Ammonia	mg/L	<0.050	0.054	<0.050	0.070	0.056
Arsenic	ug/L	<2.0	3.3	2.0	4.1	2.7
Barium	ug/L	53	59	51	57	60
BOD5	mg/L	<2.0	<2.0	2.9	<2.0	<2.0
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	69	45	66	73	63
Chloride	mg/L	43.6	32.6	46.1	70.4	40.3
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	<10	12	13	<10	10
Conductivity (lab)	umhos/cm	602	393	595	724	532
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	259	166	247	281	240
Iron	ug/L	560	3930	344	877	2660
Lead	ug/L	<2.0	4.3	<2.0	<2.0	2.8
Magnesium	mg/L	21	13	20	24	20
Manganese	ug/L	124	460	88	132	292
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	2.04	2.37	1.47	1.55	1.24
Nitrite	mg/L	<0.020	0.033	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	5	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	28	20	29	41	29
Strontium	ug/L	275	176	239	293	279
Sulfate	mg/L	104	60.4	94.2	111	88.7
TKN	mg/L	0.39	0.52	0.31	0.33	0.42
TDS	mg/L	376	264	356	458	344
Total Phosphorus	mg/L	0.095	0.162	0.095	0.233	0.183
TSS	mg/L	14	110	11	24	73
Zinc	ug/L	<10	21	<10	<10	15
Field Measurements						
Temperature	°C	20.42	22.26	27.13	24.25	11.84
Conductivity (Field)	umhos/cm	632	422	526	729	529
D.O. Saturation	%	102.6		112.1	87.8	107.1
Dissolved Oxygen	mg/L	9.21	7.33	8.90	7.35	11.57
pH (Field)	S.U.	8.07	7.43	8.40	8.07	7.85

Appendix Table 1. Continued.

Site Location: **McConnelsville @ Veterans Memorial Bridge** USGS Topo Quad: McConnelsville
 River Mile: 49.8 Storet: R16S24 Latitude: 39.6486 Longitude: 81.8578

Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	10/17/2006
		11:35 AM	11:40 AM	3:35 PM	12:44 PM	10:07 AM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	136	88.6	137	189	89.3
Aluminum	ug/L	200	643	<200	236	1170
Ammonia	mg/L	<0.050	0.055	<0.050	0.093	0.061
Arsenic	ug/L	2.1	3.0	2.6	3.4	2.4
Barium	ug/L	53	44	53	58	60
BOD5	mg/L	<2.0	<2.0	3.0	<2.0	2.1
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	67	43	68	75	69
Chloride	mg/L	43.2	29.4	53.6	76.1	46.8
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	<10	12	<10	<10	<10
Conductivity (lab)	umhos/cm	587	386	620	763	588
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	254	161	252	286	263
Iron	ug/L	503	1540	362	454	1960
Lead	ug/L	<2.0	<2.0	4.5	<2.0	2.4
Magnesium	mg/L	21	13	20	24	22
Manganese	ug/L	112	176	93	107	160
Mercury	ug/L	0.39	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.93	2.40	1.24	1.28	1.43
Nitrite	mg/L	<0.020	0.036	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	5	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	2.0	<2.0
Sodium	mg/L	27	18	33	44	33
Strontium	ug/L	268	170	246	279	300
Sulfate	mg/L	96.8	64.0	104	117	104
TKN	mg/L	0.32	0.55	0.39	0.49	0.50
TDS	mg/L	370	268	374	494	336
Total Phosphorus	mg/L	0.071	0.100	0.342	0.228	0.139
TSS	mg/L	13	34	12	13	59
Zinc	ug/L	<10	<10	14	<10	13
Field Measurements						
Temperature	°C	20.73	22.34	28.45	25.21	12.06
Conductivity (Field)	umhos/cm	617	414	547	768	589
D.O. Saturation	%	100.6		117.5	82.2	105.8
Dissolved Oxygen	mg/L	8.88	7.17	9.11	6.75	11.37
pH (Field)	S.U.	8.09	7.52	8.53	8.10	7.88

Appendix Table 1. Continued.

Site Location: **SR 266 UPST Stockport Lock # 6** USGS Topo Quad: Stockport
 River Mile: 39.7 Storet: R16P01 Latitude: 39.5483 Longitude: 81.7889

Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	10/17/2006
		11:10 AM	11:15 AM	4:00 PM	12:11 PM	10:42 AM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	135	85.8	138	193	99.8
Aluminum	ug/L	<200	602	<200	<200	468
Ammonia	mg/L	<0.050	0.064	<0.050	<0.050	<0.050
Arsenic	ug/L	2.1	2.6	2.7	3.2	2.7
Barium	ug/L	50	43	56	57	55
BOD5	mg/L	<2.0	<2.0	3.8	<2.0	<2.0
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	64	43	70	76	74
Chloride	mg/L	40.6	28.4	53.2	75.1	53.6
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	14	15	10	<10	<10
Conductivity (lab)	umhos/cm	571	384	619	760	631
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	242	161	261	289	279
Iron	ug/L	441	1430	361	412	816
Lead	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Magnesium	mg/L	20	13	21	24	23
Manganese	ug/L	101	158	104	102	104
Mercury	ug/L	0.22	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.94	2.52	1.29	1.25	1.53
Nitrite	mg/L	<0.020	0.040	<0.020	<0.020	<0.020
Potassium	mg/L	4	5	5	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	26	18	33	42	37
Strontium	ug/L	258	179	254	268	300
Sulfate	mg/L	90.4	64.1	94.3	115	114
TKN	mg/L	0.52	0.50	0.42	0.36	0.50
TDS	mg/L	354	262	368	502	370
Total Phosphorus	mg/L	0.075	0.118	0.082	0.118 J	0.143
TSS	mg/L	12	31	11	13	25
Zinc	ug/L	<10	<10	<10	<10	<10
Field Measurements						
Temperature	°C	21.05	22.31	28.20	24.98	12.31
Conductivity (Field)	umhos/cm	599	413	530	763	632
D.O. Saturation	%	119		116.6	90.5	106.8
Dissolved Oxygen	mg/L	10.44	7.67	9.08	7.47	11.4
pH (Field)	S.U.	8.18	7.56	8.58	8.23	7.92

Appendix Table 1. Continued.

Site Location: **Beverly @ SR 339** USGS Topo Quad: Beverly
 River Mile: 24 Storet: 611780 Latitude: 39.5436 Longitude: 81.6411

Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/9/2006	8/31/2006	10/17/2006
		10:35 AM	10:40 AM	4:40 PM	4:40 PM	11:45 AM	10:13
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	138	85.7	133	132	184	81.5
Aluminum	ug/L	NA	1830	455	510	410	4620
Ammonia	mg/L	NA	0.088	<0.050	<0.050	0.136	0.074
Arsenic	ug/L	NA	3.1	2.6	2.9	3.8	3.0
Barium	ug/L	NA	59	56	56	60	95
BOD5	mg/L	<2.0	4.4 J	2.5	2.5	<2.0	4.4
Cadmium	ug/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	NA	44	64	65	74	49
Chloride	mg/L	38.9	26.8	44.3	44.6	66.8	29.3
Chromium	ug/L	NA	<30	<30	<30	<30	<30
COD	mg/L	NA	12	15	15	<10	16
Conductivity (lab)	umhos/cm	558	382	585	587	716	408
Copper	ug/L	NA	<10	<10	<10	<10	<10
Hardness, Total	mg/L	NA	163	238	245	279	184
Iron	ug/L	NA	4130	838	913	755	6990
Lead	ug/L	NA	4.3	<2.0	<2.0	<2.0	6.1
Magnesium	mg/L	NA	13	19	20	23	15
Manganese	ug/L	NA	448	141	137	162	387
Mercury	ug/L	NA	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	NA	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	NA	2.44	1.22	1.19	0.89	1.27
Nitrite	mg/L	<0.020	0.038	<0.020	<0.020	<0.020	<0.020
Potassium	mg/L	NA	5	5	5	4	5
Selenium	ug/L	NA	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	NA	17	28	28	39	19
Strontium	ug/L	NA	186	251	258	280	217
Sulfate	mg/L	92.8	67.2	94.9	94.5	113	71.6
TKN	mg/L	NA	0.53	<0.20	0.21	0.42	0.35
TDS	mg/L	346	266	356	346	458	254
Total Phosphorus	mg/L	NA	0.163	0.083	0.094	0.141	0.273
TSS	mg/L	17	114	23	21	23	259
Zinc	ug/L	NA	23	12	11	<10	29
Field Measurements							
Temperature	°C	21.45	22.40	29.47	29.47	27.15	12.61
Conductivity (Field)	umhos/cm	584	416	524	524	725	427
D.O. Saturation	%	92.1		96.8	96.8	81.6	104.6
Dissolved Oxygen	mg/L	8.02	7.90	7.38	7.38	6.47	11.1
pH (Field)	S.U.	8.25	7.56	8.37	8.37	8.19	7.8

Appendix Table 1. Continued.

Site Location: **Dst Lowell Dam** USGS Topo Quad: Lowell
 River Mile: 13.6 Storet: R19K04 Latitude: 39.5272 Longitude: 81.5078

Parameter	Units	6/15/2006	6/27/2006	8/9/2006	8/31/2006	10/17/2006
		10:10 AM	10:10 AM	5:05 PM	11:15 AM	9:47 AM
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	134	81.3	128	181	88.0
Aluminum	ug/L	226	1400	525	534	5170
Ammonia	mg/L	<0.050	0.059	0.060	0.219	0.054
Arsenic	ug/L	<2.0	2.6	2.4	3.7	4.4
Barium	ug/L	53	54	58	64	108
BOD5	mg/L	<2.0	4.1 J	2.3	<2.0	4.0
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	65	44	64	72	66
Chloride	mg/L	37.4	25.8	41.7	64.2	39.3
Chromium	ug/L	<30	<30	<30	<30	<30
COD	mg/L	22	12	<10	<10	18
Conductivity (lab)	umhos/cm	548	364	570	720	521
Copper	ug/L	<10	<10	<10	<10	<10
Hardness, Total	mg/L	245	163	238	274	247
Iron	ug/L	565	3190	887	1000	7550
Lead	ug/L	<2.0	4.0	<2.0	<2.0	7.9
Magnesium	mg/L	20	13	19	23	20
Manganese	ug/L	113	348	130	197	482
Mercury	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	2.14	2.61	1.26	1.24	1.34
Nitrite	mg/L	<0.020	0.043	<0.020	0.022	<0.020
Potassium	mg/L	4	5	5	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	25	16	27	40	27
Strontium	ug/L	269	181	260	304	283
Sulfate	mg/L	92.7	65.5	96.0	121	85.2
TKN	mg/L	0.47	0.51	0.21	0.73	0.34
TDS	mg/L	344	254	360	458	332
Total Phosphorus	mg/L	0.058	0.160	0.086	0.151	0.218
TSS	mg/L	17	92	22	26	274
Zinc	ug/L	<10	20	12	<10	30
Field Measurements						
Temperature	°C	21.12	22.38	29.60	27.81	13.46
Conductivity (Field)	umhos/cm	572	409	506	725	517
D.O. Saturation	%	100.7		92.7	77.0	107.7
Dissolved Oxygen	mg/L	8.88	7.15	7.05	6.03	11.22
pH (Field)	S.U.	8.37	7.54	8.33	8.11	7.74

Appendix Table 1. Continued.

Site Location: **Marietta @ Washington St.** USGS Topo Quad: Beverly
 River Mile: 0.9 Storet: R19K01 Latitude: 39.4197 Longitude: 81.4626

Parameter	Units	Dup A	Dup B	6/27/2006 9:40 AM	8/9/2006 5:50 PM	8/31/2006 10:25 AM	10/17/2006 9:24 AM
		6/15/2006 9:30 AM	6/15/2006 9:30 AM				
Acidity	mg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity	mg/L	130	132	81.7	134	182	88.4
Aluminum	ug/L	<200	<200	1380	204	291	1500
Ammonia	mg/L	<0.050	<0.050	0.059	<0.050	0.170	<0.050
Arsenic	ug/L	<2.0	<2.0	2.5	2.8	3.6	3.0
Barium	ug/L	49	52	53	55	63	68
BOD5	mg/L	<2.0	<2.0	4.4 J	<2.0	<2.0	<2.0
Cadmium	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Calcium	mg/L	61	64	43	65	75	66
Chloride	mg/L	35.2	35.2	25.8	46.2	66.7	43.0
Chromium	ug/L	<30	<30	<30	<30	<30	<30
COD	mg/L	11	<10	12	<10	<10	<10
Conductivity (lab)	umhos/cm	533	534	384	594	717	562
Copper	ug/L	<10	<10	<10	<10	<10	<10
Hardness, Total	mg/L	230	242	161	240	286	251
Iron	ug/L	432	465	3160	450	507	2080
Lead	ug/L	<2.0	<2.0	3.9	<2.0	<2.0	2.9
Magnesium	mg/L	19	20	13	19	24	21
Manganese	ug/L	102	109	321	104	112	168
Mercury	ug/L	0.26	<0.20	<0.20	<0.20	<0.20	<0.20
Nickel	ug/L	<40	<40	<40	<40	<40	<40
Nitrate+nitrite	mg/L	1.96	1.89	2.74	1.32	2.99	1.41
Nitrite	mg/L	<0.020	<0.020	0.049	<0.020	0.020	<0.020
Potassium	mg/L	4	4	5	4	5	5
Selenium	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	mg/L	23	24	16	28	42	30
Strontium	ug/L	253	266	183	253	308	297
Sulfate	mg/L	90.5	92.8	70.5	98.5	119	89.1
TKN	mg/L	0.39	0.51	0.43	0.23	0.46	0.37
TDS	mg/L	336	340	258	356	472	358
Total Phosphorus	mg/L	0.059	0.058	0.144	0.105	0.159	0.152
TSS	mg/L	14	16	88	15	15	76
Zinc	ug/L	33	38	18	<10	<10	15
Field Measurements							
Temperature	°C	20.56	20.56	22.3	29.93	26.74	14.13
Conductivity (Field)	umhos/cm	604	604	420	528	726	556
D.O. Saturation	%	99.4	99.4		99.7	74.7	104.2
Dissolved Oxygen	mg/L	8.8	8.8	6.42	7.53	5.97	10.7
pH (Field)	S.U.	8.02	8.02	7.28	8.34	8.10	7.82

J - The analyte was positively identified, the associated numerical value is estimated.

< - Less than detection limit

PT - Reported result is estimated because the sample was not analyzed within the required holding time.

RC - The result is rejected because of poor correlation with its co-analyte.

NA - Not analyzed

Appendix Table 1. Continued.

Muskingum River Bacteria: Fecal Coliform											
Date Sampled	7/18/2006	7/31/2006	8/7/2006	8/10/2006	8/17/2006	8/31/2006	10/5/2006	10/12/2006	10/17/2006	10/19/2006	11/2/2006
River Mile											
108.7	390	250	160JL	200*JL	110JL	180*JL	320	750JL	3300	10500*JL	490
108.1	450*	180*JL	165*JL	240	170JL	160JL	240	2200	9000JL	8400JL	280
103.5	410	240	160JL	150JL	140JL	330	270	480	3600	5900JL	520
92.2	280	260	140JL	80JL	60JL	90JL	180JL	540	14000JL	4900	870JL
84.6	330	140JL	50JL	70JL	85*JL	20JL	150JL	110*JL	3850*	6900JL	380*
75.8	270	190JL	140JL	490	40JL	120JL	1600JL	460	20000	7100JL	330
73.5	420	240	80JL	760JL	230	180JL	1500JL	930JL	10000JL	6500JL	1200JL
67.3	420	330	60JL	130JL	150JL	260	2600	170JL	290	10000JL	560
62.7	240	180JL	60JL	40JL	10JL	110JL	1700JL	590	900JL	6000J,JL	410
49.8	370	40JL	40JL	40JL	20JL	40JL	200	600	910JL	6600JL	720JL
48	1000*J,JL	2500*	920*JL	670JL	620J,JL	910*JL	475*	1800JL	1850*JL	5400	420
39.7	530	320	290	120JL	190JL	120JL	770JL	600	430	7800JL	380
24.0	570	240	50JL	60*JL	<10	360	4300	8400JL	3800	5800	450
13.6	600J,JL	220	120JL	110JL	50*JL	110JL	420	500J,JL	4900	4100	400
0.9	630JL	100JL	80JL	70JL	20JL	90JL	475*	3300	1000J,JL	5900*	385*
Coshocton WWTP		220	180JL	2800	2700	320	130JL	1000JL	60000E	3700	60000E
Zanesville WWTP	50JL	10JL	80JL	70JL	<10	90JL	150JL	350	430	30JL	60000E
Muskingum River Bacteria: E. Coli											
Date Sampled	7/18/2006	7/31/2006	8/7/2006	8/10/2006	8/17/2006	8/31/2006	10/5/2006	10/12/2006	10/17/2006	10/19/2006	11/2/2006
River Mile											
108.7	280	130JL	80JL	100*JL	50JL	80*JL	120JL	450	1300JL	2150*	200
108.1	325*	85*JL	75*JL	70JL	90JL	50JL	200	1500JL	4400	3700	150JL
103.5	190JL	130JL	90JL	40JL	60JL	120JL	140JL	290	2000	3200	330
92.2	240	120JL	90JL	40JL	30JL	10JL	150JL	210	6100	3900	490J
84.6	210	90JL	60JL	10JL	15*JL	<10	50JL	85*JL	950*JL	3700	350*
75.8	280	120JL	40JL	250	20JL	50JL	600	250	7400	4200	310
73.5	40J,JL	210	70JL	590	130JL	60JL	680	510	5300	4100	540
67.3	250	80JL	40JL	100JL	60JL	60JL	1200JL	80JL	180JL	4800	230
62.7	190J,JL	70JL	<10	20JL	<10	20JL	530	350	400	4300	110JL
49.8	120JL	80JL	10JL	10JL	<10	40JL	150JL	460	430	4200	260
48	535*	675*	440*	560	330	305*	240*JL	810JL	925*JL	5900	340
39.7	200	70JL	110JL	50JL	60JL	10JL	280	490	190JL	4600	120JL
24.0	210	70JL	70JL	35*JL	<10	240	3300	5700	1100JL	3600	320
13.6	190	120JL	150JL	50JL	20*JL	50JL	290	510	1700JL	2600*	200
0.9	310J	10JL	70JL	50JL	20JL	20JL	350*	1300JL	1500JL	3900	220*
Coshocton WWTP		60JL	80JL	550	490	110JL	70JL	450	52000	700	80000E
Zanesville WWTP	20JL	<10	50JL	20JL	<10	30JL	20JL	120JL	20JL	20	37000

* - Value is the average of field duplicates

J - The analyte was positively identified, the associated numerical value is estimated.

JL - The reported result is estimated because it has been computed using a colony count that is not within the acceptable count range

E - Analyte was quantified but the concentration exceeds the instruments callibration range for that specific analysis.

< - Less than detection limit

PT - Reported result is estimated because the sample was not analyzed within the required holding time.

RC - The result is rejected because of poor correlation with its co-analyte.

NA - Not analyzed

Appendix Table 2. Surface water results for semivolatile organic compounds, pesticides, and PCBs from the Muskingum River, October, 2006.

Stream	Muskingum River	Muskingum River	Muskingum River	Muskingum River
River Mile	103.5	75.8	24.0	0.9
Date Sampled	10/17/2006	10/17/2006	10/17/2006	10/17/2006
Time Sampled	1:52 PM	12:27 PM	10:13 AM	9:24 AM
Semivolatile Organic Compounds (ug/l)				
Acenaphthene	<5.1 UJ	<5.4 UJ	<5.2 UJ	<5.2 UJ
Acenaphthylene	<5.1	<5.4 UJ	<5.2 UJ	<5.2
Anthracene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Benzo[a]anthracene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Benzo[a]pyrene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Benzo[b]fluoranthene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Benzo[g,h,i]perylene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Benzo[k]fluoranthene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
bis(2-Chloroethoxy)methane	<5.1	<5.4 UJ	<5.2 UJ	<5.2
bis(2-Chloroethyl)ether	<2.1 UJ	<2.2 UJ	<2.1 UJ	<2.1 UJ
bis(2-Chloroisopropyl)ether	<2.1	<2.2 UJ	<2.1 UJ	<2.1
bis(2-Ethylhexyl)phthalate	<10.2	<10.8 UJ	<10.5 UJ	<10.4
4-Bromophenyl-phenylether	<5.1	<5.4 UJ	<5.2 UJ	<5.2
Butylbenzylphthalate	<2.1	<2.2 UJ	<2.1 UJ	<2.1
4-Chloro-3-methylphenol	<10.2 UJ	<10.8 UJ	<10.5 UJ	<10.4 UJ
2-Chloronaphthalene	<5.1	<5.4 UJ	<5.2 UJ	<5.2
2-Chlorophenol	<2.1	<2.2	<2.1	<2.1
4-Chlorophenyl-phenylether	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Chrysene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Di-n-butylphthalate	<5.1	<5.4 UJ	<5.2 UJ	<5.2
Di-n-octylphthalate	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Dibenz[a,h]anthracene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
1,3-Dichlorobenzene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
1,4-Dichlorobenzene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
1,2-Dichlorobenzene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
2,4-Dichlorophenol	<2.1	<2.2	<2.1	<2.1
Diethylphthalate	<5.1	<5.4 UJ	<5.2 UJ	<5.2
2,4-Dimethylphenol	<10.2	<10.8	<10.5	<10.4
Dimethylphthalate	<5.1	<5.4 UJ	<5.2 UJ	<5.2
4,6-Dinitro-2-methylphenol	<5.1	<5.4	<5.2	<5.2
2,4-Dinitrophenol	<20.5	<21.5	<20.9	<20.8
2,6-Dinitrotoluene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
2,4-Dinitrotoluene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Fluoranthene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Fluorene	<2.1 UJ	<2.2 UJ	<2.1 UJ	<2.1 UJ
Hexachlorobenzene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Hexachlorobutadiene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Hexachlorocyclopentadiene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Hexachloroethane	<5.1	<5.4 UJ	<5.2 UJ	<5.2
Indeno[1,2,3-cd]pyrene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Isophorone	<2.1	<2.2 UJ	<2.1 UJ	<2.1
N-Nitroso-di-n-propylamine	<2.1	<2.2 UJ	<2.1 UJ	<2.1
N-Nitrosodiphenylamine	<5.1	<5.4 UJ	<5.2 UJ	<5.2
Naphthalene	<2.1	<2.2 UJ	<2.1 UJ	<2.1

Appendix Table 2. Continued.

Stream	Muskingum River 103.5	Muskingum River 75.8	Muskingum River 24.0	Muskingum River 0.9
River Mile				
Date Sampled	10/17/2006	10/17/2006	10/17/2006	10/17/2006
Time Sampled	1:52 PM	12:27 PM	10:13 AM	9:24 AM
Semivolatile Organic Compounds (ug/l)				
Nitrobenzene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
2-Nitrophenol	<2.1 UJ	<2.2 UJ	<2.1 UJ	<2.1 UJ
4-Nitrophenol	<20.5	<21.5	<20.9	<20.8
Pentachlorophenol	<10.2	<10.8	<10.5	<10.4
Phenanthrene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
Phenol	<2.1	<2.2	<2.1	<2.1
Pyrene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
1,2,4-Trichlorobenzene	<2.1	<2.2 UJ	<2.1 UJ	<2.1
2,4,6-Trichlorophenol	<5.1	<5.4	<5.2	<5.2
Pesticides (ug/l)				
Aldrin	<0.0020	<0.0021	<0.0022	<0.0022
a-BHC	<0.0020	<0.0021	<0.0022	<0.0022
b-BHC	<0.0020	<0.0021	<0.0022	<0.0022
d-BHC	<0.0020	<0.0021	<0.0022	<0.0022
γ-BHC	<0.0020	<0.0021	<0.0022	<0.0022
4,4'-DDD	<0.0061	<0.0064	<0.0065	<0.0064
4,4'-DDE	<0.0020	<0.0021	<0.0022	<0.0022
4,4'-DDT	<0.0061	<0.0064	<0.0065	<0.0064
Dieldrin	<0.0020	<0.0021	<0.0022	<0.0022
Endosulfan I	<0.0020	<0.0021	<0.0022	<0.0022
Endosulfan II	<0.0020	<0.0021	<0.0022	<0.0022
Endosulfan sulfate	<0.020	<0.021	<0.022	<0.022
Endrin	<0.0020	<0.0021	<0.0022	<0.0022
Endrin aldehyde	<0.0061	<0.0064	<0.0065	<0.0064
Heptachlor	<0.0020	<0.0021	<0.0022	<0.0022
Heptachlor epoxide	<0.0020	<0.0021	<0.0022	<0.0022
Methoxychlor	<0.010	<0.011	<0.011	<0.011
Mirex	<0.010	<0.011	<0.011	<0.011
Hexachlorobenzene	0.0026	<0.0021	<0.0022	<0.0022
Chlordane	<0.20	<0.21	<0.22	<0.22
PCBs (ug/l)				
PCB-1016	<0.10	<0.11	<0.11	<0.11
PCB-1221	<0.10	<0.11	<0.11	<0.11
PCB-1232	<0.10	<0.11	<0.11	<0.11
PCB-1242	<0.10	<0.11	<0.11	<0.11
PCB-1248	<0.10	<0.11	<0.11	<0.11
PCB-1254	<0.10	<0.11	<0.11	<0.11
PCB-1260	<0.10	<0.11	<0.11	<0.11

UJ - Estimated due to low surrogate recoveries.

< - Not detected at or above the method detection limit (MDL value reported with the less than symbol).

Appendix Table 3. Sediment results (metals, nutrients) from twelve locations sampled in the Muskingum River, September and November, 2006.

Stream	Muskingum River	Muskingum River	Muskingum River	Muskingum River	Muskingum River	Muskingum River
River Mile	108.7	101.8	97.4	86.0	77.6	72.0
Date Sampled	9/26/2006	9/28/2006	9/26/2006	9/26/2006	9/26/2006	9/26/2006
Time Sampled	1:55 PM	1:50 PM	2:20 PM	2:55 PM	4:00 PM	11:45 AM
Metals (mg/kg)						
Aluminum	5470J	5480J	5820J	8090J	13000J	11100J
Arsenic	9.85	9.31	9.31	13.4	14.2	13.6
Barium	78.2	77.0	87.0	131	145	127
Cadmium	0.591	0.500	0.475	0.674	0.907	0.624
Calcium	6320	7840	8400	8720	13100	8640
Chromium	28	19	21	39	69	32
Copper	16.2	14.2	13.8	21.1	30.4	23.7
Iron	21200	18800	21300	27100	36900	35300
Lead	<23	25	<23	30	48	39
Magnesium	2610	2990	2970	3300	3720	3830
Manganese	1060	1290	1640	2080	2340	2020
Mercury	0.047	0.063	0.049	0.064	0.084	0.118
Nickel	32	26	30	50	64	41
Potassium	<1130	<1020	<1160	<1270	1160	<1260
Selenium	<1.13	<1.02	<1.16	<1.27	1.03	<1.26
Sodium	<2820	<2540	<2910	<3170	<2570	<3150
Strontium	<17	18	20	24	33	27
Zinc	145	117	116	172	202	163
Other						
Ammonia (mg/kg)	39	97	67	62	190	200
Phosphorus - Total (mg/kg)	967	727	992	990	1460	1270
Percent Solids	65.6	55.4	55.5	57.3	48.1	48.1

Stream	Muskingum River	Muskingum River	Muskingum River	Muskingum River	Muskingum River	Muskingum River
River Mile	62.7	42.2	26.2	19.0	8.1	0.9
Date Sampled	9/26/2006	11/8/2006	11/8/2006	11/8/2006	11/8/2006	11/8/2006
Time Sampled	10:30 AM	11:50 AM	11:10 AM	10:35 AM	10:00 AM	9:30 AM
Metals (mg/kg)						
Aluminum	12300J	11600	9880	7670	11500	8160
Arsenic	13.4	12.3	9.42	7.98	10.5	8.69
Barium	132	157	122	75.2	132	98.0
Cadmium	0.688	0.709	0.469	0.398	0.51	0.456
Calcium	11900	10800	10900	9070	14300	8810
Chromium	45	30	24	19	26	23
Copper	23.2	28.9	25.9	16.9	22.7	18.6
Iron	34600	34600	26600	22100	29300	23700
Lead	47	<34	<31	24	37	26
Magnesium	3660	4230	3710	2980	4470	3350
Manganese	1830	3030	2200	1250	2210	1730
Mercury	0.084	0.067	0.057	0.044	0.046	0.055
Nickel	52	47	40	32	40	34
Potassium	1310	<1680	<1560	<924	<1290	<1240
Selenium	<1.24	<1.68	<1.52	<0.92	<1.29	<1.24
Sodium	<3090	<4200	<3890	<2310	<3220	<3100
Strontium	34	37	35	29	46	28
Zinc	176	183	133	108	138	120
Other						
Ammonia (mg/kg)	53	140	110	110	100	77
Phosphorus - Total (mg/kg)	1270	1800	1260	847	996	897
Percent Solids	54.8	39.0	51.4	60.1	47.1	55.7

J - Aluminum estimated due to high matrix spike recoveries.

Appendix Table 4. Sediment sampling results for semivolatile organic compounds, pesticides, and PCBs from the Muskingum River, September and November, 2006.

Stream	Muskingum River	Muskingum River	Muskingum River	Muskingum River
River Mile	101.8	72.0	26.2	0.9
Date Sampled	9/28/2006	9/26/2006	11/8/2006	11/8/2006
Time Sampled	1:50 PM	11:45 AM	11:10 AM	9:30 AM
Semivolatile Organic Compounds (mg/kg)				
Acenaphthene	<0.71	<0.78	<0.79	<0.75
Acenaphthylene	<0.71	<0.78	<0.79	<0.75
Acetophenone	<0.71	<0.78	<0.79	<0.75
2-Acetylaminofluorene	<0.71	<0.78	<0.79	<0.75
Aniline	<3.5	<3.9	<3.9	<3.7
Anthracene	<0.71	<0.78	<0.79	<0.75
Benzo[a]anthracene	<0.71	<0.78	<0.79	<0.75
Benzo[a]pyrene	<0.71	<0.78	<0.79	<0.75
Benzo[b]fluoranthene	<0.71	<0.78	<0.79	<0.75
Benzo[g,h,i]perylene	<0.71	<0.78	<0.79	<0.75
Benzo[k]fluoranthene	<0.71	<0.78	<0.79	<0.75
Benzyl alcohol	<0.71	<0.78	<0.79	<0.75
bis(2-Chloroethoxy)methane	<0.71	<0.78	<0.79	<0.75
bis(2-Chloroethyl)ether	<0.71	<0.78	<0.79	<0.75
bis(2-Chloroisopropyl)ether	<0.71	<0.78	<0.79	<0.75
bis(2-Ethylhexyl)phthalate	0.88	<0.78	<0.79	<0.75
4-Bromophenyl-phenylether	<0.71	<0.78	<0.79	<0.75
Butylbenzylphthalate	<0.71	<0.78	<0.79	<0.75
4-Chloro-3-methylphenol	<0.71	<0.78	<0.79 UJ	<0.75 UJ
2-Chloronaphthalene	<0.71	<0.78	<0.79	<0.75
2-Chlorophenol	<0.71	<0.78	<0.79	<0.75
4-Chlorophenyl-phenylether	<0.71	<0.78	<0.79	<0.75
Chrysene	<0.71	<0.78	<0.79	<0.75
Di-n-butylphthalate	<0.71	<0.78	<0.79	<0.75
Di-n-octylphthalate	<0.71	<0.78	<0.79	<0.75
Dibenz[a,h]anthracene	<0.71	<0.78	<0.79	<0.75
Dibenzofuran	<0.71	<0.78	<0.79	<0.75
1,3-Dichlorobenzene	<0.71	<0.78	<0.79	<0.75
1,4-Dichlorobenzene	<0.71	<0.78	<0.79	<0.75
1,2-Dichlorobenzene	<0.71	<0.78	<0.79	<0.75
3,3'-Dichlorobenzidine	<3.5 R	<3.9	<3.9	<3.7
2,6-Dichlorophenol	<0.71	<0.78	<0.79	<0.75
2,4-Dichlorophenol	<0.71	<0.78	<0.79	<0.75
Diethylphthalate	<0.71	<0.78	<0.79	<0.75
p-Dimethylaminoazobenzene	<0.71	<0.78	<0.79	<0.75
7,12-Dimethylbenz[a]anthracene	<3.5	<3.9	<3.9	<3.7
2,4-Dimethylphenol	<0.71	<0.78	<0.79	<0.75
Dimethylphthalate	<0.71	<0.78	<0.79	<0.75
4,6-Dinitro-2-methylphenol	<0.71	<0.78	<0.79	<0.75
1,3-Dinitrobenzene	<0.71	<0.78	<0.79	<0.75
2,4-Dinitrophenol	<3.5	<3.9	<3.9	<3.7
2,6-Dinitrotoluene	<0.71	<0.78	<0.79	<0.75

Appendix Table 4. Continued.

Stream	Muskingum River	Muskingum River	Muskingum River	Muskingum River
River Mile	101.8	72.0	26.2	0.9
Date Sampled	9/28/2006	9/26/2006	11/8/2006	11/8/2006
Time Sampled	1:50 PM	11:45 AM	11:10 AM	9:30 AM
Semivolatile Organic Compounds (mg/kg)				
2,4-Dinitrotoluene	<0.71	<0.78	<0.79	<0.75
Dinoseb	<0.71	<0.78	<0.79	<0.75
Diphenylamine	<0.71 R	<0.78	<0.79 UJ	<0.75 UJ
Ethyl methanesulfonate	<0.71	<0.78	<0.79	<0.75
Fluoranthene	1.38	<0.78	<0.79	<0.75
Fluorene	<0.71	<0.78	<0.79	<0.75
Hexachlorobenzene	<0.71	<0.78	<0.79	<0.75
Hexachlorobutadiene	<0.71	<0.78	<0.79	<0.75
Hexachlorocyclopentadiene	<0.71	<0.78	<0.79	<0.75
Hexachloroethane	<0.71	<0.78	<0.79	<0.75
Hexachloropropene	<0.71	<0.78	<0.79	<0.75
Indeno[1,2,3-cd]pyrene	<0.71	<0.78	<0.79	<0.75
Isophorone	<0.71	<0.78	<0.79	<0.75
Methyl methanesulfonate	<0.71	<0.78	<0.79	<0.75
3-Methylcholanthrene	<0.71	<0.78	<0.79	<0.75
2-Methylnaphthalene	<0.71	<0.78	<0.79	<0.75
3&4-Methylphenol	<0.71	<0.78	<0.79	<0.75
2-Methylphenol	<0.71	<0.78	<0.79	<0.75
N-Nitroso-di-n-butylamine	<0.71	<0.78	<0.79	<0.75
N-Nitroso-di-n-propylamine	<0.71	<0.78	<0.79 UJ	<0.75 UJ
N-Nitrosomorpholine	<0.71	<0.78	<0.79	<0.75
N-Nitrosopiperidine	<0.71	<0.78	<0.79	<0.75
N-Nitrosopyrrolidine	<0.71	<0.78	<0.79	<0.75
Naphthalene	<0.71	<0.78	<0.79	<0.75
1,4-Naphthoquinone	<0.71	<0.78	<0.79 UJ	<0.75 UJ
2-Nitroaniline	<0.71	<0.78	<0.79	<0.75
4-Nitroaniline	<0.71 R	<0.78	<0.79	<0.75
Nitrobenzene	<0.71	<0.78	<0.79	<0.75
4-Nitrophenol	<3.5	<3.9	<3.9 UJ	<3.7 UJ
2-Nitrophenol	<0.71	<0.78	<0.79	<0.75
Pentachlorobenzene	<0.71	<0.78	<0.79	<0.75
Pentachlorophenol	<0.71	<0.78	<0.79 UJ	<0.75 UJ
Phenacetin	<0.71	<0.78	<0.79	<0.75
Phenanthrene	0.77	<0.78	<0.79	<0.75
Phenol	<0.71	<0.78	<0.79	<0.75
2-Picoline	<0.71	<0.78	<0.79	<0.75
Pronamide	<0.71	<0.78	<0.79	<0.75
Pyrene	1.02	<0.78	<0.79	<0.75
Safrole	<0.71	<0.78	<0.79	<0.75
1,2,4,5-Tetrachlorobenzene	<0.71	<0.78	<0.79	<0.75
2,3,4,6-Tetrachlorophenol	<0.71	<0.78	<0.79	<0.75
1,2,4-Trichlorobenzene	<0.71	<0.78	<0.79	<0.75
2,4,6-Trichlorophenol	<0.71	<0.78	<0.79	<0.75
2,4,5-Trichlorophenol	<0.71	<0.78	<0.79	<0.75

Appendix Table 4. Continued.

Stream	Muskingum River 101.8	Muskingum River 72.0	Muskingum River 26.2	Muskingum River 0.9
River Mile				
Date Sampled	9/28/2006	9/26/2006	11/8/2006	11/8/2006
Time Sampled	1:50 PM	11:45 AM	11:10 AM	9:30 AM
Pesticides (ug/kg)				
Aldrin	<7.1	<7.7	<7.9	<7.5
a-BHC	<7.1	<7.7	<7.9	<7.5
b-BHC	<7.1	<7.7	<7.9	<7.5
d-BHC	<7.1	<7.7	<7.9	<7.5
y-BHC	<7.1	<7.7	<7.9	<7.5
4,4'-DDD	<7.1	<7.7	<7.9	<7.5
4,4'-DDE	<7.1	<7.7	<7.9	<7.5
4,4'-DDT	<7.1	<7.7	<7.9	<7.5
Dieldrin	<7.1	<7.7	<7.9	<7.5
Endosulfan I	<7.1	<7.7	<7.9	<7.5
Endosulfan II	<7.1	<7.7	<7.9	<7.5
Endosulfan sulfate	<7.1	<7.7	<7.9	<7.5
Endrin	<7.1	<7.7	<7.9	<7.5
Endrin aldehyde	<7.1	<7.7	<7.9	<7.5
Heptachlor	<7.1	<7.7	<7.9	<7.5
Heptachlor epoxide	<7.1	<7.7	<7.9	<7.5
Methoxychlor	<7.1	<7.7	<7.9	<7.5
Mirex	<7.1	<7.7	<7.9	<7.5
Hexachlorobenzene	119	67.7	45.3	74.2
Alpha-Chlordane	<7.1	<7.7	<7.9	<7.5
Gamma-Chlordane	<7.1	<7.7	<7.9	<7.5
Oxychlordane	<7.1	<7.7	<7.9	<7.5
cis-Nonachlor	<7.1	<7.7	<7.9	<7.5
trans-Nonachlor	<7.1	<7.7	<7.9	<7.5
PCBs (ug/kg)				
PCB-1016	<35.4	<38.7	<39.2	<37.2
PCB-1221	<35.4	<38.7	<39.2	<37.2
PCB-1232	<35.4	<38.7	<39.2	<37.2
PCB-1242	<35.4	<38.7	<39.2	<37.2
PCB-1248	<35.4	<38.7	<39.2	<37.2
PCB-1254	37.0	47.2	<39.2	<37.2
PCB-1260	<35.4	<38.7	<39.2	<37.2

< - Not detected at or above the method detection limit (MDL value reported with the less than symbol).

UJ - Estimated due to failure of the reporting limit standard, or due to low spike recovery.

R - Results are rejected because calibration criteria was not met.

Appendix Table 5. Hourly river measurements of dissolved oxygen, pH, temperature, and conductivity at four locations in the Muskingum River using Datasonde© continuous recorders, August 29-31, 2006.

MUSKINGUM RIVER - RM 106.4						
Date M/DD/YEAR	Time HHMM	Temp. °C	pH SU	Spec.Conduct. mS/cm	DO% Saturation	D.O. mg/l
8/29/2006	11:00	23.6	8	0.707	80.7	6.69
8/29/2006	12:00	23.91	8.01	0.706	83.7	6.89
8/29/2006	1:00	24.08	8.02	0.705	86.2	7.08
8/29/2006	2:00	24.28	8.02	0.705	88.2	7.22
8/29/2006	3:00	24.43	8.03	0.706	89.3	7.28
8/29/2006	16:00	24.48	8.05	0.708	91.5	7.46
8/29/2006	17:00	24.61	8.06	0.711	93.8	7.63
8/29/2006	18:00	24.64	8.08	0.712	94.8	7.71
8/29/2006	19:00	24.59	8.09	0.715	94.8	7.71
8/29/2006	20:00	24.49	8.09	0.716	94.2	7.68
8/29/2006	21:00	24.4	8.1	0.716	94.2	7.69
8/29/2006	22:00	24.31	8.1	0.717	93.7	7.67
8/29/2006	23:00	24.19	8.1	0.716	91.7	7.52
8/30/2006	0:00	24.09	8.09	0.716	90.6	7.44
8/30/2006	1:00	23.98	8.08	0.719	89.3	7.35
8/30/2006	2:00	23.87	8.07	0.721	87.6	7.23
8/30/2006	3:00	23.75	8.07	0.724	85.9	7.1
8/30/2006	4:00	23.64	8.06	0.726	85.1	7.05
8/30/2006	5:00	23.56	8.06	0.729	84.2	6.98
8/30/2006	6:00	23.49	8.05	0.73	83.4	6.92
8/30/2006	7:00	23.41	8.04	0.726	82.8	6.89
8/30/2006	8:00	23.31	8.02	0.729	81.5	6.79
8/30/2006	9:00	23.22	8.01	0.732	80.8	6.74
8/30/2006	10:00	23.16	8	0.735	80.8	6.75
8/30/2006	11:00	23.15	7.99	0.742	81.4	6.8
8/30/2006	12:00	23.17	7.98	0.749	81.4	6.8
8/30/2006	13:00	23.16	7.98	0.755	81.9	6.84
8/30/2006	14:00	23.14	7.98	0.763	82.1	6.86
8/30/2006	15:00	23.16	7.99	0.769	84.5	7.06
8/30/2006	16:00	23.19	8	0.773	85.6	7.15
8/30/2006	17:00	23.21	8.01	0.777	85.6	7.15
8/30/2006	18:00	23.2	8.01	0.781	85.9	7.17
8/30/2006	19:00	23.18	8	0.786	85.9	7.18
8/30/2006	20:00	23.14	8	0.789	85.3	7.13
8/30/2006	21:00	23.1	8	0.794	85.1	7.11
8/30/2006	22:00	23.04	7.99	0.797	84.7	7.09
8/30/2006	23:00	22.95	7.99	0.801	83.5	7
8/31/2006	0:00	22.85	7.98	0.8	84.2	7.07
8/31/2006	1:00	22.74	7.97	0.804	82.2	6.92
8/31/2006	2:00	22.63	7.97	0.805	82.9	6.99
8/31/2006	3:00	22.52	7.96	0.803	83.2	7.03
8/31/2006	4:00	22.43	7.95	0.798	83	7.03
8/31/2006	5:00	22.35	7.94	0.792	82.5	7
8/31/2006	6:00	22.25	7.93	0.787	81.9	6.96
8/31/2006	7:00	22.14	7.92	0.769	81.6	6.95
8/31/2006	8:00	22.03	7.91	0.76	81.1	6.92
8/31/2006	9:00	21.98	7.91	0.749	81.3	6.95
8/31/2006	10:00	21.95	7.91	0.743	82	7.01
8/31/2006	11:00	21.94	7.9	0.738	82.5	7.06
8/31/2006	12:00	21.96	7.91	0.732	83.3	7.12
8/31/2006	13:00	22	7.91	0.73	84.5	7.22

Appendix Table 5. Continued.

MUSKINGUM RIVER - RM 97.4						
Date M/DD/YEAR	Time HHMM	Temp. °C	pH SU	Spec.Conduct. mS/cm	DO% Saturation	D.O. mg/l
8/29/2006	12:00	24.34	7.96	0.74		6.73
8/29/2006	13:00	24.56	7.97	0.741		6.78
8/29/2006	14:00	24.82	7.98	0.741		6.83
8/29/2006	15:00	25.17	8	0.739		6.89
8/29/2006	16:00	25.5	8.03	0.736		7.03
8/29/2006	17:00	25.69	8.01	0.736		7
8/29/2006	18:00	25.72	8.01	0.737		6.93
8/29/2006	19:00	25.72	8.01	0.738		6.87
8/29/2006	20:00	25.67	8	0.739		6.84
8/29/2006	21:00	25.59	7.99	0.74		6.75
8/29/2006	22:00	25.5	7.98	0.74		6.68
8/29/2006	23:00	25.44	7.97	0.74		6.66
8/30/2006	0:00	25.32	7.95	0.741		6.6
8/30/2006	1:00	25.2	7.95	0.742		6.57
8/30/2006	2:00	25.03	7.95	0.744		6.52
8/30/2006	3:00	24.89	7.95	0.745		6.52
8/30/2006	4:00	24.72	7.95	0.747		6.59
8/30/2006	5:00	24.58	7.96	0.747		6.57
8/30/2006	6:00	24.39	7.96	0.746		6.59
8/30/2006	7:00	24.07	7.97	0.746		6.64
8/30/2006	8:00	23.82	7.97	0.746		6.63
8/30/2006	9:00	23.74	7.96	0.748		6.63
8/30/2006	10:00	23.68	7.96	0.75		6.58
8/30/2006	11:00	23.67	7.97	0.752		6.56
8/30/2006	12:00	23.7	7.97	0.756		6.59
8/30/2006	13:00	23.74	7.98	0.759		6.63
8/30/2006	14:00	23.76	7.98	0.762		6.65
8/30/2006	15:00	23.79	7.98	0.764		6.73
8/30/2006	16:00	23.77	7.98	0.764		6.75
8/30/2006	17:00	23.71	7.98	0.769		6.8
8/30/2006	18:00	23.65	7.97	0.768		6.82
8/30/2006	19:00	23.61	7.97	0.779		6.78
8/30/2006	20:00	23.56	7.96	0.783		6.77
8/30/2006	21:00	23.46	7.96	0.791		6.79
8/30/2006	22:00	23.37	7.96	0.797		6.83
8/30/2006	23:00	23.28	7.96	0.802		6.81
8/31/2006	0:00	23.18	7.95	0.806		6.79
8/31/2006	1:00	23.09	7.95	0.81		6.73
8/31/2006	2:00	23.02	7.95	0.814		6.7
8/31/2006	3:00	22.95	7.94	0.817		6.73
8/31/2006	4:00	22.88	7.94	0.82		6.68
8/31/2006	5:00	22.8	7.94	0.823		6.69
8/31/2006	6:00	22.72	7.94	0.826		6.62
8/31/2006	7:00	22.64	7.93	0.829		6.65
8/31/2006	8:00	22.56	7.93	0.832		6.66
8/31/2006	9:00	22.55	7.93	0.833		6.71
8/31/2006	10:00	22.53	7.93	0.833		6.66
8/31/2006	11:00	22.52	7.93	0.827		6.75
8/31/2006	12:00	22.58	7.93	0.827		6.81
8/31/2006	13:00	22.64	7.92	0.82		6.8

Appendix Table 5. Continued.

MUSKINGUM RIVER - RM 29.2						
Date M/DD/YEAR	Time HHMM	Temp. °C	pH SU	Spec.Conduct. mS/cm	DO% Saturation	D.O. mg/l
8/29/2006	15:00	26.87	8.26	0.734	82.8	6.46
8/29/2006	16:00	26.94	8.27	0.733	85	6.62
8/29/2006	17:00	27.11	8.28	0.733	87	6.76
8/29/2006	18:00	27.18	8.28	0.733	89.2	6.92
8/29/2006	19:00	27.09	8.29	0.731	89.2	6.94
8/29/2006	20:00	27	8.28	0.731	88	6.86
8/29/2006	21:00	27.02	8.28	0.731	88.2	6.86
8/29/2006	22:00	27.02	8.27	0.731	88.5	6.88
8/29/2006	23:00	27	8.27	0.732	87.1	6.78
8/30/2006	0:00	26.96	8.27	0.734	86.5	6.74
8/30/2006	1:00	26.88	8.26	0.735	84.3	6.57
8/30/2006	2:00	26.79	8.26	0.736	82.4	6.44
8/30/2006	3:00	26.71	8.25	0.736	80.4	6.29
8/30/2006	4:00	26.61	8.25	0.737	78.3	6.16
8/30/2006	5:00	26.5	8.24	0.736	77.2	6.07
8/30/2006	6:00	26.39	8.24	0.735	76.6	6.03
8/30/2006	7:00	26.31	8.23	0.737	76.3	6.02
8/30/2006	8:00	26.24	8.22	0.737	76.4	6.03
8/30/2006	9:00	26.2	8.21	0.735	75.5	5.96
8/30/2006	10:00	26.15	8.2	0.736	76.1	6.02
8/30/2006	11:00	26.15	8.2	0.736	77.5	6.13
8/30/2006	12:00	26.19	8.21	0.736	79.2	6.25
8/30/2006	13:00	26.29	8.22	0.735	82.9	6.54
8/30/2006	14:00	26.36	8.23	0.733	85.3	6.72
8/30/2006	15:00	26.37	8.24	0.733	86.4	6.8
8/30/2006	16:00	26.39	8.24	0.733	87.5	6.88
8/30/2006	17:00	26.49	8.26	0.733	90.3	7.09
8/30/2006	18:00	26.56	8.28	0.732	92.3	7.24
8/30/2006	19:00	26.47	8.27	0.733	90.5	7.11
8/30/2006	20:00	26.37	8.26	0.732	88.7	6.99
8/30/2006	21:00	26.28	8.25	0.733	87.3	6.89
8/30/2006	22:00	26.22	8.25	0.733	87.2	6.88
8/30/2006	23:00	26.16	8.24	0.732	86.9	6.86
8/31/2006	0:00	26.09	8.23	0.733	86	6.8
8/31/2006	1:00	26	8.2	0.732	83.3	6.63
8/31/2006	2:00	25.91	8.19	0.734	82.2	6.53
8/31/2006	3:00	25.84	8.17	0.736	80.9	6.43
8/31/2006	4:00	25.79	8.16	0.739	80.7	6.42
8/31/2006	5:00	25.75	8.15	0.74	80.1	6.38
8/31/2006	6:00	25.71	8.14	0.742	79.7	6.35
8/31/2006	7:00	25.68	8.14	0.747	80.5	6.42
8/31/2006	8:00	25.68	8.15	0.748	82.5	6.58
8/31/2006	9:00	25.72	8.16	0.752	83.1	6.62
8/31/2006	10:00	25.78	8.17	0.754	85.6	6.81
8/31/2006	11:00	25.82	8.17	0.756	85.9	6.81
8/31/2006	12:00	25.87	8.18	0.757	87.5	6.96
8/31/2006	13:00	25.89	8.17	0.758	87.8	6.97
8/31/2006	14:00	25.93	8.18	0.76	88.9	7.05
8/31/2006	15:00	25.92	8.18	0.76	88	6.99
8/31/2006	16:00	25.9	8.18	0.762	88.4	7.02
8/31/2006	17:00	25.87	8.17	0.762	87.5	6.95

Appendix Table 5. Continued.

MUSKINGUM RIVER - RM 25.0						
Date M/DD/YEAR	Time HHMM	Temp. °C	pH SU	Spec.Conduct. mS/cm	DO% Saturation	D.O. mg/l
8/29/2006	14:00	30.71	8.12	0.757	69.5	5.09
8/29/2006	15:00	30.35	8.08	0.755	71.3	5.25
8/29/2006	16:00	31.13	8.17	0.758	84.6	6.15
8/29/2006	17:00	31.57	8.2	0.758	90.1	6.5
8/29/2006	18:00	31.78	8.21	0.759	90.6	6.51
8/29/2006	19:00	31.85	8.21	0.76	90.7	6.51
8/29/2006	20:00	31.63	8.17	0.76	84.9	6.11
8/29/2006	21:00	31.54	8.15	0.76	80.8	5.83
8/29/2006	22:00	31.41	8.12	0.76	77	5.57
8/29/2006	23:00	31.43	8.11	0.761	75.1	5.43
8/30/2006	0:00	31.35	8.11	0.761	74.2	5.37
8/30/2006	1:00	31.3	8.09	0.76	72.5	5.26
8/30/2006	2:00	31.3	8.09	0.76	71.9	5.21
8/30/2006	3:00	31.17	8.08	0.76	71.2	5.17
8/30/2006	4:00	31.16	8.08	0.759	71.1	5.17
8/30/2006	5:00	31.07	8.08	0.758	71.9	5.23
8/30/2006	6:00	30.97	8.06	0.758	69.7	5.08
8/30/2006	7:00	30.88	8.08	0.757	71.8	5.24
8/30/2006	8:00	30.95	8.08	0.754	74.1	5.4
8/30/2006	9:00	30.85	8.08	0.754	73.5	5.37
8/30/2006	10:00	30.47	8.1	0.752	73.8	5.42
8/30/2006	11:00	29.83	8.11	0.746	74.9	5.57
8/30/2006	12:00	29.54	8.11	0.744	72	5.38
8/30/2006	13:00	29.4	8.12	0.743	72.9	5.46
8/30/2006	14:00	29.29	8.13	0.743	72.1	5.41
8/30/2006	15:00	29.2	8.14	0.744	72.6	5.45
8/30/2006	16:00	29.27	8.17	0.744	75.8	5.68
8/30/2006	17:00	29.54	8.18	0.746	78.8	5.88
8/30/2006	18:00	29.79	8.18	0.746	79.7	5.93
8/30/2006	19:00	29.84	8.16	0.747	79.3	5.89
8/30/2006	20:00	29.9	8.14	0.748	76.6	5.69
8/30/2006	21:00	29.93	8.13	0.748	77	5.71
8/30/2006	22:00	29.91	8.13	0.746	76.5	5.68
8/30/2006	23:00	29.86	8.12	0.744	76.9	5.71
8/31/2006	0:00	29.89	8.12	0.744	78.3	5.81
8/31/2006	1:00	29.92	8.13	0.743	79.7	5.91
8/31/2006	2:00	29.85	8.12	0.743	78.2	5.81
8/31/2006	3:00	29.79	8.11	0.742	76.8	5.71
8/31/2006	4:00	29.55	8.13	0.74	79.3	5.92
8/31/2006	5:00	29.43	8.11	0.74	76.3	5.71
8/31/2006	6:00	29.35	8.12	0.74	77.9	5.83
8/31/2006	7:00	29.24	8.12	0.738	77.3	5.8
8/31/2006	8:00	28.89	8.13	0.736	76.9	5.81
8/31/2006	9:00	28.46	8.13	0.737	75.9	5.77
8/31/2006	10:00	28.25	8.13	0.735	76.1	5.81
8/31/2006	11:00	28.15	8.12	0.734	74.7	5.72
8/31/2006	12:00	28.09	8.11	0.736	72.9	5.58
8/31/2006	13:00	27.98	8.11	0.737	73.2	5.62
8/31/2006	14:00	27.91	8.1	0.738	73.1	5.62
8/31/2006	15:00	28.06	8.11	0.75	78.6	6.02
8/31/2006	16:00	28.32	8.1	0.75	78	5.95
8/31/2006	17:00	28.59	8.11	0.748	80.8	6.14

Appendix Table 6. Half-hourly measurements of water temperature at five locations in the Muskingum River using HOBO© water temp Pro v2 data loggers, August - September, 2006.

Date	MUSKINGUM R. RM 105.0			MUSKINGUM R. RM 101.8		
	Water Temperature °C			Water Temperature °C		
	Mean	Maximum	Minimum	Mean	Maximum	Minimum
August 1, 2006	27.07	27.41	26.18	28.01	28.32	27.43
August 2, 2006	26.99	28.1	25.94	27.87	28.96	26.69
August 3, 2006	27.11	27.82	26.28	27.99	28.87	26.96
August 4, 2006	26.57	27.53	25.57	27.36	28.42	26.11
August 5, 2006	26.01	26.84	24.99	26.22	27.31	25.26
August 6, 2006	25.56	26.33	24.56	25.77	26.35	24.97
August 7, 2006	25.72	26.35	24.92	26.55	27.48	25.62
August 8, 2006	25.62	26.38	24.77	26.58	27.53	25.45
August 9, 2006	24.94	25.74	23.93	25.89	26.77	24.65
August 10, 2006	24.81	25.26	24.31	25.68	26.18	25.02
August 11, 2006	24.26	24.99	23.4	25.03	25.82	24.17
August 12, 2006	23.63	24.68	22.49	24.18	24.99	23.21
August 13, 2006	23.4	24.44	22.25	24.07	25.19	23.04
August 14, 2006	23.57	24.12	22.85	24.64	25.84	23.59
August 15, 2006	24.07	25.43	23.06	25.11	26.65	23.88
August 16, 2006	24.11	25.31	23.09	24.89	25.87	23.91
August 17, 2006	24.11	25.09	23.02	25.15	26.4	23.81
August 18, 2006	24.12	24.65	23.74	25.28	25.96	24.58
August 19, 2006	24.14	24.92	23.66	25.41	26.45	24.44
August 20, 2006	24.31	25.45	23.69	25.38	26.67	24.31
August 21, 2006	23.75	25.04	22.68	24.82	26.47	23.4
August 22, 2006	23.72	24.99	22.78	24.9	26.5	23.4
August 23, 2006	23.75	24.89	22.85	25	26.57	23.52
August 24, 2006	23.61	24.41	23.02	24.98	26.11	23.74
August 25, 2006	23.52	24.8	22.49	24.91	26.47	23.28
August 26, 2006	24.35	25.57	23.5	25.96	27.23	24.68
August 27, 2006	24.77	25.79	24.22	26.05	27.16	25.11
August 28, 2006	24.17	24.82	23.81	25.57	26.69	24.87
August 29, 2006	24.08	24.82	23.54	25.13	26.16	24.12
August 30, 2006	23.43	24.17	22.99	24.03	25.45	23.35
August 31, 2006	22.24	22.94	21.72	22.81	23.33	22.39
September 1, 2006	21.12	21.68	20.51	21.74	22.27	21.1
September 2, 2006	19.9	20.46	19.63	20.42	21.01	20.2
September 3, 2006	19.26	19.58	18.84	19.84	20.2	19.41
September 4, 2006	19.22	19.96	18.53	19.8	20.46	19.1
September 5, 2006	19.36	19.58	19.1	20.23	20.98	19.77
September 6, 2006	19.54	20.89	18.56	20.5	22.27	19.15
September 7, 2006	20.43	21.77	19.53	21.59	23.02	20.2
September 8, 2006	21.05	22.37	20.22	22.01	23.71	20.67
September 9, 2006	21.42	22.87	20.46	22.48	24.15	21.06
September 10, 2006	21.78	23.06	20.89	22.59	23.59	21.56
September 11, 2006	21.13	21.84	20.79	22.27	23.06	21.57

Appendix Table 6. Continued.

MUSKINGUM R. RM 88.6			
Date	Water Temperature °C		
	Mean	Maximum	Minimum
August 2, 2006	28	28.27	27.33
August 3, 2006	27.89	28.52	27.33
August 4, 2006	27.32	27.78	26.79
August 5, 2006	26.54	26.96	25.94
August 6, 2006	26.07	26.87	25.23
August 7, 2006	26.32	27.28	25.33
August 8, 2006	26.52	27.11	25.91
August 9, 2006	25.87	26.65	24.94
August 10, 2006	25.44	25.77	25.04
August 11, 2006	25	25.79	24.29
August 12, 2006	24.24	25.21	23.14
August 13, 2006	24.05	25.19	22.68
August 14, 2006	24.36	25.38	23.21
August 15, 2006	24.94	26.04	23.93
August 16, 2006	24.94	26.06	23.88
August 17, 2006	24.86	25.99	23.47
August 18, 2006	25.01	25.5	24.51
August 19, 2006	25.1	25.89	24.51
August 20, 2006	25.08	26.11	24.56
August 21, 2006	24.5	25.91	23.33
August 22, 2006	24.59	26.13	23.42
August 23, 2006	24.66	26.06	23.45
August 24, 2006	24.73	26.01	23.78
August 25, 2006	24.77	26.21	23.64
August 26, 2006	25.42	26.84	24.29
August 27, 2006	25.81	26.74	25.21
August 28, 2006	25.08	25.52	24.68
August 29, 2006	25.02	25.55	24.61
August 30, 2006	24.3	24.8	23.57
August 31, 2006	22.87	23.5	22.49
September 1, 2006	21.75	22.44	21.01
September 2, 2006	20.42	20.96	19.98
September 3, 2006	19.8	20.44	19.17
September 4, 2006	19.89	20.79	19.01
September 5, 2006	19.91	20.29	19.53
September 6, 2006	20.11	21.27	19.13
September 7, 2006	21.16	22.61	20.13
September 8, 2006	21.92	23.4	20.96
September 9, 2006	22.26	23.78	21.08
September 10, 2006	22.67	24.29	21.56
September 11, 2006	22.13	23.18	21.17
September 12, 2006	22.12	22.25	21.94

Appendix Table 6. Continued.

MUSKINGUM R. RM 29.2				MUSKINGUM R. RM 26.2			
Date	Water Temperature °C				Water Temperature °C		
	Mean	Maximum	Minimum		Mean	Maximum	Minimum
August 4, 2006	28.93	29.29	28.64		31.11	31.2	31
August 5, 2006	28.45	28.96	28		30.34	31.15	29.44
August 6, 2006	28.49	28.89	28.07		30.05	30.62	29.34
August 7, 2006	28.42	28.77	28.07		30.57	31.61	29.14
August 8, 2006	28.27	28.57	27.9		30.96	31.53	29.81
August 9, 2006	27.78	28.15	27.46		30.71	31.48	29.51
August 10, 2006	27.59	27.8	27.38		30.51	31.15	29.36
August 11, 2006	27.29	27.55	27.09		30.38	30.98	29.24
August 12, 2006	26.75	27.14	26.35		29.52	30.32	28.42
August 13, 2006	26.71	27.16	26.33		29.57	30.9	28.42
August 14, 2006	26.64	27.21	26.18		29.95	30.9	28.47
August 15, 2006	26.78	27.48	26.23		29.8	31.08	28.92
August 16, 2006	26.6	27.58	25.69		28.54	29.24	27.43
August 17, 2006	26.52	27.58	25.52		29.23	31.18	27.97
August 18, 2006	26.51	27.06	25.91		30.4	31.36	28.82
August 19, 2006	26.68	27.43	26.04		30.37	31.53	28.94
August 20, 2006	26.77	27.38	26.26		30.68	31.79	29.51
August 21, 2006	26.49	27.33	25.67		30.34	31.46	29.16
August 22, 2006	26.55	27.46	25.65		30.53	31.38	29.34
August 23, 2006	26.39	27.16	25.52		30.46	31.46	29.14
August 24, 2006	26.42	26.99	25.69		30.98	31.66	30.09
August 25, 2006	26.52	27.14	25.87		31.14	32.02	30.12
August 26, 2006	26.73	27.21	26.13		31.06	32	29.86
August 27, 2006	26.75	27.06	26.4		30.3	31.03	29.39
August 28, 2006	26.52	26.94	26.3		30.72	31.28	29.61
August 29, 2006	26.44	26.89	26.06		31	31.94	29.71
August 30, 2006	26.21	26.79	25.91		29.99	31.43	28.87
August 31, 2006	25.59	25.87	25.21		28.56	29.59	27.68
September 1, 2006	24.88	25.19	24.51		26.21	28.49	25.4
September 2, 2006	23.89	24.46	23.52		24.82	25.52	24.41
September 3, 2006	23.31	23.5	23.11		24.2	24.39	23.93
September 4, 2006	22.68	23.06	22.39		23.72	24.1	23.57
September 5, 2006	22.18	22.49	21.99		23.33	23.64	22.87
September 6, 2006	21.94	22.56	21.39		23.61	24.68	22.92
September 7, 2006	22.17	22.97	21.46		24.51	25.94	23.59
September 8, 2006	22.19	22.85	21.46		25.63	27.01	24.41
September 9, 2006	22.4	23.18	21.7		25.37	27.09	24.31
September 10, 2006	22.56	23.35	21.82		25.4	26.35	24.87
September 11, 2006	22.87	23.52	22.23		25.71	26.77	25.09
September 12, 2006	22.75	23.45	22.54		26.02	26.62	25.14
September 13, 2006	22.19	22.54	22.06		25.49	26.16	24.73
September 14, 2006	21.9	22.11	21.79		24.02	25.43	23.23

Appendix Table 7. Concentrations of monitored chemicals in effluent discharged from 28 facilities along the Muskingum River. Results are reported for the time period 2000-2006. MDL = below lab method detection limit.

Discharger/ Parameter	50 th Percentile	95 th Percentile	Permit Limit -Monthly Avg.-	Permit Limit -Maximum-
Coshocton WWTP (0PD00004) - RM 108.56				
pH (S.U.)	6.6	7.4	--	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	19	31	30	45 (weekly)
Total Dissolved Solids (mg/l)	644	1098	Monitor	Monitor
CBOD5 (mg/l)	19	32	25	40 (weekly)
Oil & Grease (mg/l)	3	6	Monitor	10
Ammonia-N (mg/l)	2.32	10.65	Monitor	Monitor
Nitrate/Nitrite-N (mg/l)	9.04	14.3	Monitor	Monitor
Free Cyanide (ug/l)	MDL	MDL	Monitor	Monitor
Nickel -T (ug/l)	MDL	70.5	Monitor	Monitor
Silver-T (ug/l)	1.83	2.91	2.9	12
Zinc-T (ug/l)	60	100	Monitor	Monitor
Cadmium-T (ug/l)	MDL	MDL	Monitor	Monitor
Lead-T (ug/l)	MDL	4	Monitor	Monitor
Chromium-T (ug/l)	10	20	Monitor	Monitor
Chromium-Hexavalent (ug/l)	MDL	MDL	Monitor	Monitor
Copper-T (ug/l)	19	40	Monitor	60
Selenium-T (ug/l)	MDL	MDL	Monitor	Monitor
Mercury-T (ng/l)	41.9	85.0	Monitor	Monitor
Chlorine- TR (mg/l)	0.019	0.030	Monitor	0.038
Fecal Coliform (cfu/100ml): May-October	51	808	1000	2000 (weekly)
AK Steel – Coshocton (0ID00014) - RM 105.88				
pH (S.U.)	7.5 (5 th percentile)	8.7	-	6.5 (min)-9.0 (max)
Total Dissolved Solids (mg/l)	2648	3416	Monitor	Monitor
Oil & Grease (mg/l)	MDL	MDL	15	20
Nitrite-N (mg/l)	1.165	3.582	Monitor	Monitor
Nitrate-N (mg/l)	161.5	224	Monitor	Monitor
Fluoride (mg/l)	11	17	Monitor	Monitor
Molybdenum (ug/l)	586	1012	Monitor	Monitor
Nickel-T (ug/l)	61	180	Monitor	Monitor
Strontium-T (ug/l)	325	450	Monitor	Monitor
Copper-T (ug/l)	17.5	32	Monitor	Monitor
Chlorine- TR (mg/l)	MDL	MDL	Monitor	0.038
AEP Conesville (0IB00013) - RM 102.89				
Temperature (°F): June-October 15	78	101.8	Monitor*	Monitor*
pH (S.U.)	7.2 (5 th percentile)	8.2	-	6.5 (min)-9.0 (max)
Total Dissolved Residue (mg/l)	402	673	Monitor	Monitor
Selenium-T (ug/l)	MDL	32	5.6	Monitor
Mercury-T (ng/l)	14.2	40.4	Monitor	Monitor
Chlorine- TR (mg/l)	AH	AH	Monitor	0.2

Table 7. Continued.

Discharger / Parameter	50 th Percentile	95 th Percentile	Permit Limit -30 Day Avg.-	Permit Limit -Maximum-
Dresden WWTP (0PB00012) - RM 91.6				
Total Suspended Solids (mg/l)	6	19.6	30	45 (weekly)
Ammonia-N (mg/l)	1.55	9.57	Monitor	Monitor
CBOD5 (mg/l)	8	17	25	40 (weekly)
Oil & Grease (mg/l)	3	4.1	Monitor	10
Chlorine- TR (mg/l)	0.03	0.03	Monitor	0.038
Fecal Coliform (cfu/100ml)	9	762	1000	2000 (weekly)
Dresden Energy (0IB00031) - RM 89.8 No Discharge (2000-2006)				
pH (S.U.)	-	-	--	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	-	-	30	50
Oil & Grease (mg/l)	-	-	15	20
Fecal Coliform (cfu/100ml)	-	-	1000	2000 (weekly)
AK Steel – Zanesville (0ID00002) – RM 78.06				
Outfall 001				
pH (S.U.)	7.2 (5 th percentile)	8.5	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	3	44	Monitor	Monitor
Oil & Grease (mg/l)	MDL	13.2	Monitor	Monitor
Copper-T (ug/l)	10	30	-	-
Silver-T (ug/l)	MDL	3	-	-
Zinc-T (ug/l)	20	66	-	-
Hexavalent Chromium – Dissolved (ug/l)	MDL (<10)	MDL (<10)	Monitor	31
Outfall 002				
pH (S.U.)	7.2 (5 th percentile)	8.4	6.5 min.	9.0
Total Suspended Solids (mg/l)	14	159	Monitor	Monitor
Oil & Grease (mg/l)	MDL	4	Monitor	Monitor
Zanesville WTP (0IY00090) – RM 78				
pH (S.U.)	7.6 (5 th percentile)	7.9	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	1	6	30	45
Iron – Suspended (ug/l)	12	72	1000	2000
Manganese – Suspended (ug/l)	4	39	1000	2000
Chlorine- TR (mg/l)	0.02	0.052	Monitor	0.038
Zanesville WWTP (0PE00000) – RM 74.07				
Total Suspended Solids (mg/l)	14	30	30	45 (weekly)
CBOD5 (mg/l)	17	29	25	40 (weekly)
Oil & Grease (mg/l)	5.1	9.7	Monitor	10
Ammonia-N (mg/l): all year	9.04	14.94	Monitor	12.67 (winter)
Ammonia-N (mg/l): June - September	8.9	14.03	Monitor	8.85 (summer)
Nitrate/Nitrite-N (mg/l)	7.29	10.17	Monitor	Monitor
Free Cyanide (ug/l)	5	12.2	Monitor	Monitor
Nickel –T (ug/l)	5.3	11.5	Monitor	Monitor
Zinc-T (ug/l)	28.8	101	Monitor	Monitor
Cadmium-T (ug/l)	0.16	0.42	Monitor	Monitor
Lead-T (ug/l)	3.4	7.3	Monitor	Monitor
Chromium-T (ug/l)	2.9	5.9	Monitor	Monitor
Hexavalent Chromium – Dissolved (ug/l)	20	70	Monitor	31
Copper-T (ug/l)	35.2	60.5	Monitor	Monitor

Table 7. Continued.

Discharger / Parameter	50 th Percentile	95 th Percentile	Permit Limit -30 Day Avg.-	Permit Limit -Maximum-
Mercury-T (ug/l)	0.12	0.48	0.012	1.7
Chlorine- TR (mg/l)	0.008	0.03	Monitor	0.038
Fecal Coliform (cfu/100ml)	20	780	1000	2000 (weekly)
Riverview Manor (OPV00029) – RM 74.07				
Total Suspended Solids (mg/l)	16.5	109	30	45
Ammonia-N (mg/l)	3	31.7	Monitor	Monitor
Chlorine- TR (mg/l): MDL since July 2004	0.22	0.466	--	0.038
CBOD5 (mg/l)	7	75.7	25	40
Fecal Coliform (cfu/100ml)	90	8720	1000	2000 (weekly)
Dun-Falls Association (OPX00000) - RM 67.3				
Total Suspended Solids (mg/l)	9	46	30	45
Ammonia-N (mg/l)	0.1	2.5	Monitor	Monitor
Chlorine- TR (mg/l): 2003 - 2006	MDL	MDL	--	0.038
CBOD5 (mg/l)	3	20	25	40
Fecal Coliform (cfu/100ml)	100	10,000	1000	2000 (weekly)
Gould (0IN00256) – RM 51.91 - Permit in Draft Stage				
pH (S.U.)	-	-	-	6.5 (min)-9.0 (max)
Copper-T (ug/l)	-	-	Monitor	73
Tetrachloroethylene (ug/l)	-	-	Monitor	164
1,1,1-Trichloroethane (ug/l)	-	-	Monitor	59
1,2-Trans Dichloroethylene (ug/l)	-	-	Monitor	66
Vinyl chloride (ug/l)	-	-	Monitor	172
Trichloroethylene (ug/l)	-	-	Monitor	69
Miba Bearings (0IC00000) - RM 51.74				
Outfall 001				
pH (S.U.)	6.0 (5 th percentile)	8.4	-	6.5 (min)-9.0 (max)
Fluoride (mg/l)	21	42	-	-
Nickel –T (ug/l)	110	470	-	-
Silver-T (ug/l)	MDL	3	-	19
Lead-T (ug/l)	132	911	Monitor	900
Copper-T (ug/l)	10	75	Monitor	73
Tetrachloroethylene (ug/l)	20	75	Monitor	Monitor
1,1,1-Trichloroethane (ug/l)	MDL	MDL	Monitor	Monitor
1,2-Trans Dichloroethylene (ug/l)	MDL	MDL	Monitor	Monitor
Vinyl chloride (ug/l)	MDL	MDL	Monitor	Monitor
Trichloroethylene (ug/l)	MDL	MDL	Monitor	Monitor
Outfall 002				
CBOD5 (mg/l)	3	7	10	15
Ammonia-N (mg/l)	0.11	23.2	Monitor	Monitor
Total Suspended Solids (mg/l)	MDL	5.2	12	18
Copper-T (ug/l)	40	91	Monitor	71
Zinc-T (ug/l)	115	445	Monitor	540
Chlorine- TR (mg/l)	0.01	0.033	Monitor	0.038
Fecal Coliform (cfu/100ml)	39	1437	1000	2000 (weekly)
Glacier Vandervell (0IC00027) - RM 51.7				
pH (S.U.)	7.7 (5 th percentile)	8.5	--	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	MDL	9.4	14.7	28.7
Oil & Grease (mg/l)	MDL	MDL	8.4	16.3

Table 7. Continued.

Discharger / Parameter	50 th Percentile	95 th Percentile	Permit Limit -30 Day Avg.-	Permit Limit -Maximum-
Hardness (mg/l)	166	651	Monitor	Monitor
Nickel -T (ug/l)	MDL	MDL	-	-
Silver-T (ug/l)	MDL	MDL	-	-
Zinc-T (ug/l)	27.8	100	-	-
Tin-T (ug/l)	MDL	MDL	-	-
Lead-T (ug/l)	MDL	140	-	-
Copper-T (ug/l)	22.1	70	Monitor	65
Chlorine- TR (mg/l)	MDL	1.15	-	-
Malta Well Field (0IN00155) - RM 50.2				
1,1,1-Trichloroethane (ug/l)	53.4	83.6	Monitor	Monitor
1,1-Dichloroethylene (ug/l)	6.7	10.3	Monitor	Monitor
Malta CSO Collection System (0PA00095) - RM 50.48-48.15				
Total Suspended Solids (mg/l)	AH, AI, or AF	AH, AI, or AF	Monitor	Monitor
CBOD5 (mg/l)	AF	AF	Monitor	Monitor
Flow Rate	AF	AF	Report	Report
Bypass Duration	AL or AF	AL or AF	Report	Report
Bypass Occurance	AH, AI, or AF	AH, AI, or AF	Report	Report
McConnelsville WWTP (0PC00000) – RM 48.10				
pH (S.U.)	7.7 (5 th percentile)	8.5	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	9	50.1	30	45
CBOD5 (mg/l)	2.3	30.5	25	40
Oil & Grease (mg/l)	5	5.5	Monitor	Monitor
Ammonia-N (mg/l)	0.36	13.8	Monitor	Monitor
Nitrate/Nitrite-N (mg/l)	5.1	14.9	Monitor	Monitor
Nickel -T (ug/l)	20	20	Monitor	Monitor
Zinc-T (ug/l)	37	102	Monitor	Monitor
Cadmium-T (ug/l)	10	10	Monitor	Monitor
Lead-T (ug/l)	20	20	Monitor	Monitor
Chromium-T (ug/l)	10	10	Monitor	Monitor
Hexavalent Chromium – Dissolved (ug/l)	10	20	Monitor	Monitor
Copper-T (ug/l)	40	50	Monitor	Monitor
Mercury-T (ug/l)	0.5	4.95	Monitor	Monitor
Chlorine- TR (mg/l)	0.02	0.03	-	0.038
Fecal Coliform (cfu/100ml)	7	6000	1000	2000 (weekly)
Morgan Jr. and Sr. High School (OPT00058) – RM 45.9				
Total Suspended Solids (mg/l)	13	139	12	18
Ammonia-N (mg/l)	0.15 Sum/1.9 Wint	1.9 Sum/17.5 Wint	1.0 (Sum)/3.0(Wint)	1.5 (Sum)/4.5(Wint)
Chlorine- TR (mg/l): 2003 - 2006	- ^a	- ^a	-	0.019
CBOD5 (mg/l)	3	21.8	10	15
Fecal Coliform (cfu/100ml)	95	7015	1000	2000 (weekly)
Morgan County Care Center (0PR00145) – RM 45.8				
Total Suspended Solids (mg/l)	1	18	12	18
Ammonia-N (mg/l)	0.1	0.48	1.0 (Sum)/3.0(Wint)	1.5 (Sum)/4.5(Wint)
Chlorine- TR (mg/l): 2003 - 2006	No Data	No Data	-	0.019
CBOD5 (mg/l)	3	7	10	15
Fecal Coliform (cfu/100ml)	50	420	1000	2000 (weekly)
Stockport WWTP (0PA00005) – RM 39.26				
Total Suspended Solids (mg/l)	28	56	30	45

Table 7. Continued.

Discharger / Parameter	50 th Percentile	95 th Percentile	Permit Limit -30 Day Avg.-	Permit Limit -Maximum-
CBOD5 (mg/l)	17	39	25	40
Ammonia-N (mg/l)	0.71	17.6	Monitor	Monitor
Fecal Coliform (cfu/100ml)	135	5527	1000	2000 (weekly)
Waterford Energy – Columbus Southern Power (OIB00027) – RM 33.8				
Temperature (°F): June-October 15	73.9	81	85	89
CBOD5 (mg/l)	MDL	14.8	Monitor	Monitor
COD (mg/l)	10	50.5	Monitor	Monitor
pH (S.U.)	7.2 (5 th percentile)	8.4	6.5 min.	9.0
Total Dissolved Residue (mg/l)	380	919	Monitor	Monitor
Total Suspended Solids (mg/l)	MDL	16.8	30	100
Oil & Grease (mg/l)	MDL	MDL	Monitor	Monitor
Ammonia-N (mg/l)	0.2	0.5	Monitor	Monitor
Free Cyanide (ug/l)	MDL	20.9	Monitor	Monitor
Zinc-T (ug/l)	MDL	150	Monitor	Monitor
Lead-T (ug/l)	MDL	MDL	Monitor	Monitor
Chromium-T (ug/l)	MDL	MDL	Monitor	Monitor
Copper-T (ug/l)	MDL	MDL	Monitor	76
Mercury-T (ug/l)	MDL	MDL	Monitor	Monitor
Chlorine- TR (mg/l)	0.01	0.1	Monitor	0.2
AEP Muskingum River Plant (OIB00003) – RM 28.53-27.09				
Outfall 001				
Temperature (°F): June-October 15	88.6	98	Monitor*	Monitor*
pH (S.U.)	7.7 (5 th percentile)	8.5	-	6.5 (min)-9.0 (max)
Chlorine- TR (mg/l)	MDL	MDL	Monitor	0.2
Outfall 002				
pH (S.U.)	7.6 (5 th percentile)	8.5	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	13	29	30	100
Oil & Grease (mg/l)	MDL	1.1	15	20
Ammonia-N (mg/l)	0.25	2.23	Monitor	Monitor
TKN (mg/l)	1.27	7.54	Monitor	Monitor
Nitrate/Nitrite-N (mg/l)	2.1	3.1	Monitor	Monitor
Phosphorus-T (mg/l)	0.2	0.78	Monitor	Monitor
Copper-T (ug/l)	14	38.9	Monitor	Monitor
Mercury-T (ng/l)	2.78	5.98	Monitor	Monitor
Chlorine- TR (mg/l)	MDL	0.03	Monitor	0.038
Outfall 003				
pH (S.U.)	7.2 (5 th percentile)	8.2	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	MDL	7	30	100
Oil & Grease (mg/l)	MDL	MDL	15	20
Chlorine- TR (mg/l)	MDL	0.02	Monitor	0.038
Globe Metallurgical (OID00005) – RM 27.81				
Outfall 001				
Temperature (°C): June-October 15	22	26	Monitor	Monitor
pH (S.U.)	7.1(5 th percentile)	8.5	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	8	351	30	45
Oil & Grease (mg/l)	MDL	MDL	-	16
Phosphorus-T (mg/l)	2.45	4.12	Monitor	Monitor
Chromium-T (ug/l)	23	197	-	4300

Table 7. Continued.

Discharger / Parameter	50 th Percentile	95 th Percentile	Permit Limit -30 Day Avg.-	Permit Limit -Maximum-
Hexavalent Chromium (ug/l)	MDL	106	-	16
Manganese-T (ug/l)	27	148	Monitor	Monitor
Chlorine- TR (mg/l)	0.02	0.05	-	0.038
Outfall 002				
BOD5 (mg/l)	MDL	6	Monitor	Monitor
Specific Conductance (µmhos/cm)	200	290	Monitor	Monitor
COD (mg/l)	31.8	52	Monitor	Monitor
pH (S.U.)	6.5 (5 th percentile)	7.9	-	6.5 (min)-9.0 (max)
Total Dissolved Residue (mg/l)	118	168	Monitor	Monitor
Total Suspended Solids (mg/l)	7.2	29.4	30	100
Oil & Grease (mg/l)	MDL	MDL	Monitor	Monitor
Ammonia-N (mg/l)	0.15	0.40	Monitor	Monitor
Phosphorus-T (mg/l)	0.13	3.33	Monitor	Monitor
Chloride (mg/l)	19.2	44.5	Monitor	Monitor
Sulfate (mg/l)	6.3	15	Monitor	Monitor
Barium-T (ug/l)	29.1	42.8	Monitor	Monitor
Beryllium-T (ug/l)	MDL	10	Monitor	Monitor
Chromium-T (ug/l)	MDL	20	Monitor	Monitor
Hexavalent Chromium (ug/l)	MDL	10	Monitor	Monitor
Copper-T (ug/l)	MDL	34.4	Monitor	Monitor
Iron-T (ug/l)	1100	2900	Monitor	Monitor
Lead-T (ug/l)	MDL	100	Monitor	Monitor
Manganese-T (ug/l)	61.5	259	Monitor	Monitor
Nickel-T (ug/l)	MDL	40	Monitor	Monitor
Zinc-T (ug/l)	MDL	182	Monitor	Monitor
Cincinnati Gas & Electric (0IB00028) – RM 27.1				
Temperature (°F): June-October 15	75.5	83	85	89
CBOD5 (mg/l)	MDL	8.3	Monitor	Monitor
COD (mg/l)	34	68	Monitor	Monitor
pH (S.U.)	7.2 (5 th percentile)	8.5	-	6.5 (min)-9.0 (max)
Total Dissolved Residue (mg/l)	1995	3130	Monitor	Monitor
Total Suspended Solids (mg/l)	7.5	19	30	100
Oil & Grease (mg/l)	7.2	22.5	Monitor	Monitor
Ammonia-N (mg/l)	0.23	0.50	-	-
Free Cyanide (ug/l)	MDL	MDL	-	-
Zinc-T (ug/l)	69	338	Monitor	Monitor
Lead-T (ug/l)	MDL	MDL	-	-
Chromium-T (ug/l)	MDL	MDL	-	-
Copper-T (ug/l)	MDL	47	Monitor	73
Mercury-T (ug/l)	MDL	MDL	-	-
Chlorine- TR (mg/l)	MDL	0.07	Monitor	0.2
BP Oil, Beverly Plant (0IN00134) – RM 25.8 Insignificant discharge – rainfall dependent				
pH (S.U.)	-	-	-	6.5 (min)-9.0 (max)
Oil & Grease (mg/l)	-	-	15	20
Beverly WWTP (0PB00002) – RM 23.25				
pH (S.U.)	7.1	7.9	-	6.5 (min)-9.0 (max)
CBOD5 (mg/l)	6	14	25	40
Total Suspended Solids (mg/l)	18	78	30	45

Table 7. Continued.

Discharger / Parameter	50 th Percentile	95 th Percentile	Permit Limit -30 Day Avg.-	Permit Limit -Maximum-
Oil & Grease (mg/l)	MDL	3.7	Monitor	Monitor
Ammonia-N (mg/l)	3.5	8.0	Monitor	Monitor
Nitrate/Nitrite-N (mg/l)	9.1	18.0	Monitor	Monitor
Phosphorus-T (mg/l)	2.75	4.18	Monitor	Monitor
Hexavalent Chromium (ug/l)	MDL	MDL	Monitor	Monitor
Zinc-T (ug/l)	79	245	Monitor	Monitor
Chlorine- TR (mg/l)	0.02	0.18	-	0.038
Fecal Coliform (cfu/100ml)	1200	7940	1000	2000 (weekly)
Lowell WWTP (0PB00022) – RM 13.1				
pH (S.U.)	7.0	8.7	-	6.5 (min)-9.0 (max)
CBOD5 (mg/l)	5	18	25	40
Total Suspended Solids (mg/l)	9	45	30	45
Oil & Grease (mg/l)	MDL	2.9	-	10
Ammonia-N (mg/l)	5.85	29.72	Monitor	Monitor
Fecal Coliform (cfu/100ml)	100	6025	1000	2000 (weekly)
Devola WWTP (0PG00019) – RM 4.36				
pH (S.U.)	6.7	8.0	-	6.5 (min)-9.0 (max)
CBOD5 (mg/l)	MDL	8.3	25	40
Total Suspended Solids (mg/l)	8	33	30	45
Chlorine- TR (mg/l)	0.14	0.80	-	0.019
Ammonia-N (mg/l)	0.38	5.92	Monitor	Monitor
Fecal Coliform (cfu/100ml)	80	8880	1000	2000
RJF International (0IQ00020) – RM 3.39				
Temperature (°C): June-October 15	25	37	Monitor	Monitor
BOD5 (mg/l)	MDL	MDL	25	40
pH (S.U.)	7.3 (5 th percentile)	8.3	-	6.5 (min)-9.0 (max)
Total Suspended Solids (mg/l)	MDL	5	30	45
Oil & Grease (mg/l)	MDL	4	5	10
Chlorine- TR (mg/l)	0.01	0.207	-	0.038
Marietta WTP (0IW00080) – RM 1.8				
pH (S.U.)	8.0 (5 th percentile)	8.2	-	6.5 (min)-9.0 (max)
Tetrachloroethylene (ug/l)	0.811	4	5.0	Monitor

AF – High stream water inundates sample site

AH – Sample not taken

AL – No Discharge for the Month

^a - Only five samples were collected (four= 0.01 mg/l, one= 5 mg/l).

* - Temperature limits vary for the AEP Conesville and AEP Muskingum River Plant in accordance with their Thermal Management Plan.

Appendix Table 8. Index of Biotic Integrity (IBI) and Modified Index of Well-being (MIwb) metrics and scores for fish sampling sites on the Muskingum River, 2006.

River Mile	Type	Date	Drainage area (sq mi)	Number of				Percent of Individuals							Rel.No. minus tolerants /(1.0 km)	Modified IBI	Modified Iwb
				Total species	Sunfish species	Sucker species	Intolerant species	Rnd-bodied suckers	Simple Lithophils	Tolerant fishes	Omnivores	Top carnivores	Insect- ivores	DELTA anomalies			
Muskingum River - (17-001)																	
Year: 2006																	
110.70	A	08/08/2006	4852	18(3)	1(1)	5(3)	2(3)	12(1)	21(3)	6(5)	9(5)	8(3)	79(5)	0.6(5)	294(3)	40	9.1
110.70	A	09/18/2006	4852	22(5)	2(3)	6(5)	3(3)	20(3)	26(3)	8(5)	13(5)	6(3)	77(5)	0.0(5)	444(5)	50	9.6
107.60	A	08/08/2006	4863	24(5)	3(3)	6(5)	5(5)	15(1)	26(3)	11(5)	12(5)	5(3)	78(5)	0.0(5)	422(5)	50	9.2
107.60	A	09/28/2006	4863	27(5)	4(5)	6(5)	4(5)	8(1)	12(1)	17(3)	19(3)	6(3)	67(5)	0.0(5)	542(5)	46	9.7
105.00	A	08/08/2006	4873	21(5)	0(1)	6(5)	4(5)	11(1)	17(3)	2(5)	3(5)	1(1)	95(5)	0.0(5)	604(5)	46	8.7
105.00	A	09/28/2006	4873	23(5)	3(3)	6(5)	5(5)	15(1)	25(3)	6(5)	12(5)	3(1)	80(5)	0.0(5)	500(5)	48	9.9
101.80	A	08/08/2006	4883	23(5)	2(3)	6(5)	3(3)	9(1)	12(1)	17(3)	20(3)	1(1)	70(5)	0.4(5)	444(5)	40	9.5
101.80	A	10/10/2006	4883	32(5)	2(3)	5(3)	8(5)	7(1)	22(3)	11(5)	14(5)	2(1)	82(5)	0.0(5)	836(5)	46	9.5
97.40	A	08/09/2006	5747	22(5)	1(1)	5(3)	3(3)	8(1)	19(3)	4(5)	7(5)	3(1)	84(5)	0.0(5)	558(5)	42	9.2
97.40	A	09/28/2006	5747	27(5)	3(3)	6(5)	5(5)	8(1)	25(3)	10(5)	18(3)	2(1)	73(5)	0.0(5)	596(5)	46	9.8
92.20	A	08/09/2006	5993	21(5)	4(5)	5(3)	1(1)	20(3)	21(3)	4(5)	5(5)	3(1)	86(5)	0.0(5)	742(5)	46	8.6
92.20	A	09/18/2006	5993	25(5)	2(3)	4(3)	4(5)	16(1)	24(3)	6(5)	12(5)	4(1)	73(5)	0.0(5)	570(5)	46	9.0
87.00	A	08/09/2006	6036	12(3)	2(3)	3(3)	1(1)	11(1)	11(1)	5(5)	5(5)	8(3)	84(5)	1.2(3)	315(3)	36	6.8
84.60	A	08/09/2006	6042	26(5)	3(3)	7(5)	2(3)	14(1)	19(3)	5(5)	15(5)	5(1)	61(5)	0.0(5)	648(5)	46	10.5
84.60	A	09/18/2006	6042	28(5)	2(3)	6(5)	4(5)	6(1)	8(1)	3(5)	7(5)	2(1)	84(5)	0.0(5)	1142(5)	46	9.7
80.20	N	08/23/2006	6063	22(5)	3(3)	4(3)	1(1)	2(1)	4(1)	2(5)	6(5)	3(1)	88(5)	0.0(5)	1400(5)	40	9.0
77.60	N	08/23/2006	6066	17(3)	4(5)	3(3)	0(1)	3(1)	3(1)	8(5)	25(3)	9(3)	61(5)	0.0(5)	424(5)	40	7.1
75.80	A	08/10/2006	6850	23(5)	1(1)	7(5)	4(5)	6(1)	7(1)	3(5)	7(5)	3(1)	86(5)	0.0(5)	807(5)	44	9.2
75.80	A	09/29/2006	6850	22(5)	2(3)	6(5)	3(3)	9(1)	10(1)	4(5)	18(3)	4(1)	75(5)	0.0(5)	753(5)	42	9.6
72.40	N	08/24/2006	7159	21(5)	4(5)	5(3)	1(1)	6(1)	7(1)	6(5)	9(5)	23(5)	65(5)	0.0(5)	636(5)	46	9.0
67.30	A	08/10/2006	7196	24(5)	1(1)	7(5)	4(5)	13(1)	19(3)	2(5)	12(5)	12(5)	71(5)	0.7(3)	560(5)	48	10.3
67.30	A	10/10/2006	7196	23(5)	2(3)	5(3)	4(5)	3(1)	4(1)	1(5)	14(5)	2(1)	81(5)	0.0(5)	1762(5)	44	9.1
63.70	N	08/24/2006	7350	23(5)	2(3)	4(3)	2(3)	1(1)	2(1)	2(5)	2(5)	3(1)	94(5)	0.0(5)	2104(5)	42	8.9
56.40	A	08/10/2006	7386	20(3)	3(3)	4(3)	3(3)	2(1)	3(1)	1(5)	15(5)	9(3)	72(5)	0.3(5)	746(5)	42	9.3

♦ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

Appendix Table 8. Index of Biotic Integrity (IBI) and Modified Index of Well-being (MIwb) metrics and scores for fish sampling sites on the Muskingum River, 2006.

River Mile	Type	Date	Drainage area (sq mi)	Number of				Percent of Individuals							Rel.No. minus tolerants /(1.0 km)	Modified IBI	Modified lwb
				Total species	Sunfish species	Sucker species	Intolerant species	Rnd-bodied suckers	Simple Lithophils	Tolerant fishes	Omnivores	Top carnivores	Insectivores	DELTA anomalies			
56.40	A	10/10/2006	7386	22(5)	3(3)	7(5)	3(3)	5(1)	7(1)	3(5)	4(5)	9(3)	85(5)	0.0(5)	544(5)	46	8.5
52.10	N	08/24/2006	7414	21(5)	4(5)	5(3)	1(1)	3(1)	3(1)	8(5)	9(5)	7(3)	80(5)	0.0(5)	1042(5)	44	9.6
48.80	A	08/10/2006	7422	26(5)	4(5)	7(5)	2(3)	3(1)	7(1)	1(5)	13(5)	10(3)	64(5)	0.4(5)	542(5)	48	9.9
48.80	A	10/11/2006	7422	25(5)	5(5)	7(5)	3(3)	10(1)	12(3)	2(5)	7(5)	10(5)	74(5)	0.0(5)	484(5)	52	9.7
43.20	N	08/25/2006	7441	19(3)	3(3)	5(3)	1(1)	1(1)	1(1)	4(5)	9(5)	4(1)	84(5)	0.0(5)	754(5)	38	8.5
39.50	A	08/22/2006	7457	25(5)	1(1)	7(5)	5(5)	4(1)	16(3)	8(5)	15(5)	3(1)	76(5)	0.0(5)	700(5)	46	9.8
39.50	A	10/11/2006	7457	22(5)	4(5)	6(5)	2(3)	3(1)	5(1)	5(5)	8(5)	5(3)	81(5)	0.5(5)	391(3)	46	9.0
36.20	N	08/30/2006	7463	16(3)	4(5)	3(3)	1(1)	2(1)	2(1)	8(5)	9(5)	14(5)	68(5)	0.0(5)	438(5)	44	8.7
33.50	A	08/22/2006	7470	27(5)	2(3)	9(5)	4(5)	10(1)	13(3)	3(5)	32(1)	7(3)	55(5)	0.0(5)	648(5)	46	10.5
33.50	A	10/11/2006	7470	27(5)	3(3)	6(5)	4(5)	3(1)	4(1)	10(5)	12(5)	8(3)	74(5)	0.0(5)	568(5)	48	9.0
29.20	N	08/31/2006	7624	23(5)	2(3)	6(5)	2(3)	15(1)	18(3)	1(5)	13(5)	8(3)	75(5)	0.5(5)	900(5)	48	10.2
26.20	N	08/30/2006	7711	17(3)	4(5)	3(3)	0(1)	6(1)	6(1)	3(5)	7(5)	15(5)	67(5)	0.0(5)	552(5)	44	9.3
24.70	A	08/11/2006	7713	25(5)	1(1)	7(5)	2(3)	5(1)	7(1)	3(5)	16(5)	17(5)	56(5)	0.0(5)	475(5)	46	10.1
24.70	A	10/11/2006	7713	28(5)	2(3)	6(5)	4(5)	2(1)	4(1)	5(5)	6(5)	26(5)	62(5)	0.0(5)	452(5)	50	9.4
20.90	N	08/31/2006	7950	19(3)	4(5)	4(3)	0(1)	2(1)	2(1)	2(5)	19(3)	18(5)	55(5)	0.0(5)	350(3)	40	9.1
13.90	A	08/11/2006	7995	27(5)	2(3)	9(5)	3(3)	9(1)	13(3)	1(5)	15(5)	26(5)	36(3)	0.6(3)	340(3)	44	10.4
13.90	A	10/16/2006	7995	20(3)	2(3)	7(5)	1(1)	5(1)	8(1)	2(5)	12(5)	23(5)	40(3)	0.0(5)	318(3)	40	10.1
9.40	N	09/01/2006	8009	21(5)	3(3)	5(3)	0(1)	1(1)	1(1)	4(5)	12(5)	19(5)	62(5)	0.0(5)	568(5)	44	9.6
5.60	A	08/11/2006	8041	20(3)	0(1)	6(5)	3(3)	10(1)	15(3)	1(5)	5(5)	19(5)	55(5)	0.6(3)	334(3)	42	9.7
5.60	A	10/16/2006	8041	17(3)	2(3)	3(3)	1(1)	2(1)	3(1)	7(5)	22(3)	31(5)	25(1)	0.0(5)	334(3)	34	9.7

♦ - IBI is low end adjusted.

* - < 200 Total individuals in sample

** - < 50 Total individuals in sample

Appendix Table 9. Ohio EPA fish results for the Muskingum River, 2006. Relative numbers and weight are based on a distance of 1.0 km.

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 110.70	Location:	Date Range: 08/08/2006
Time Fished: 4620 sec	Drainage: 4852.0 sq mi	Thru: 09/18/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	1	1.00	0.25	0.88	0.38	875.00
Gizzard Shad		O	M	9	9.00	2.26	1.66	0.73	184.39
Quillback	C	O	M	4	4.00	1.01	4.20	1.84	1,050.00
Highfin Carpsucker	C	O	M	3	3.00	0.75	1.96	0.86	653.33
Silver Redhorse	R	I	S M	13	13.00	3.27	11.96	5.23	919.85
Golden Redhorse	R	I	S M	31	31.00	7.79	23.40	10.23	754.71
River Redhorse [S]	R	I	S I	15	15.00	3.77	37.99	16.61	2,532.59
Smallmouth Redhorse	R	I	S M	7	7.00	1.76	4.96	2.17	708.29
Common Carp	G	O	M T	23	23.00	5.78	80.85	35.35	3,515.02
Emerald Shiner	N	I	M	1	1.00	0.25	0.00	0.00	3.00
Silver Shiner	N	I	S I	2	2.00	0.50	0.02	0.01	10.00
Spotfin Shiner	N	I	M	184	184.00	46.23	0.56	0.25	3.05
Sand Shiner	N	I	M M	6	6.00	1.51	0.01	0.00	1.33
Mimic Shiner	N	I	M I	17	17.00	4.27	0.04	0.02	2.06
Bluntnose Minnow	N	O	C T	6	6.00	1.51	0.03	0.01	4.17
Grass Carp	E		M	1	1.00	0.25	7.90	3.45	7,900.00
Channel Catfish	F		C	10	10.00	2.51	9.86	4.31	985.50
Flathead Catfish	F	P	C	6	6.00	1.51	28.49	12.46	4,748.33
Rock Bass	S	C	C	1	1.00	0.25	0.04	0.02	35.00
Smallmouth Bass	F	C	C M	16	16.00	4.02	2.77	1.21	173.13
Largemouth Bass	F	C	C	2	2.00	0.50	0.02	0.01	10.00
Bluegill Sunfish	S	I	C P	6	6.00	1.51	0.15	0.06	24.17
Logperch	D	I	S M	18	18.00	4.52	0.22	0.10	12.39
Johnny Darter	D	I	C	2	2.00	0.50	0.00	0.00	2.00
Greenside Darter	D	I	S M	8	8.00	2.01	0.02	0.01	1.88
Sauger X Walleye	E	P		1	1.00	0.25	1.40	0.61	1,400.00
Freshwater Drum			M P	5	5.00	1.26	9.35	4.09	1,870.00
	<i>Mile Total</i>			398	398.00		228.70		
	<i>Number of Species</i>			26					
	<i>Number of Hybrids</i>			1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 107.60	Location:	Date Range: 08/08/2006
Time Fished: 4537 sec	Drainage: 4863.0 sq mi	Thru: 09/28/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	2	2.00	0.36	3.15	2.05	1,575.00
Gizzard Shad		O	M	6	6.00	1.07	0.83	0.54	137.83
Quillback	C	O	M	3	3.00	0.53	2.10	1.37	700.00
Highfin Carpsucker	C	O	M	1	1.00	0.18	0.65	0.42	650.00
Silver Redhorse	R	I	S M	7	7.00	1.24	10.15	6.60	1,450.00
Golden Redhorse	R	I	S M	23	23.00	4.09	3.17	2.06	137.83
River Redhorse [S]	R	I	S I	2	2.00	0.36	5.30	3.45	2,650.00
Northern Hog Sucker	R	I	S M	16	16.00	2.84	0.55	0.36	34.54
Smallmouth Redhorse	R	I	S M	15	15.00	2.66	7.73	5.03	515.60
Common Carp	G	O	M T	22	22.00	3.91	66.47	43.23	3,021.14
Bigeye Chub	N	I	S I	7	7.00	1.24	0.02	0.02	3.43
Gravel Chub	N	I	S M	1	1.00	0.18	0.01	0.00	7.00
Silver Shiner	N	I	S I	2	2.00	0.36	0.02	0.01	10.00
Spotfin Shiner	N	I	M	173	173.00	30.73	0.57	0.37	3.31
Sand Shiner	N	I	M M	69	69.00	12.26	0.13	0.09	1.93
Mimic Shiner	N	I	M I	47	47.00	8.35	0.09	0.06	1.89
Bluntnose Minnow	N	O	C T	58	58.00	10.30	0.16	0.11	2.79
Central Stoneroller	N	H	N	2	2.00	0.36	0.01	0.01	5.00
Channel Catfish	F		C	29	29.00	5.15	35.63	23.17	1,228.62
Flathead Catfish	F	P	C	1	1.00	0.18	2.75	1.79	2,750.00
Stonecat Madtom		I	C I	1	1.00	0.18	0.01	0.01	10.00
Black Crappie	S	I	C	2	2.00	0.36	0.20	0.13	101.00
Rock Bass	S	C	C	3	3.00	0.53	0.13	0.09	44.33
Smallmouth Bass	F	C	C M	23	23.00	4.09	3.45	2.24	150.00
Green Sunfish	S	I	C T	1	1.00	0.18	0.01	0.01	12.00
Bluegill Sunfish	S	I	C P	9	9.00	1.60	0.25	0.16	27.44
Orangespotted Sunfish	S	I	C	1	1.00	0.18	0.01	0.01	10.00
Blackside Darter	D	I	S	1	1.00	0.18	0.00	0.00	4.00
Logperch	D	I	S M	20	20.00	3.55	0.21	0.14	10.50
Johnny Darter	D	I	C	3	3.00	0.53	0.01	0.00	2.00
Greenside Darter	D	I	S M	4	4.00	0.71	0.01	0.01	2.00
Banded Darter	D	I	S I	1	1.00	0.18	0.00	0.00	2.00
Sauger X Walleye	E	P		1	1.00	0.18	0.77	0.50	770.00
Freshwater Drum			M P	7	7.00	1.24	9.20	5.98	1,314.29
<i>Mile Total</i>				563	563.00		153.76		
<i>Number of Species</i>				33					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 105.00	Location: Twp. Rd. 1182	Date Range: 08/08/2006
Time Fished: 3942 sec	Drainage: 4873.0 sq mi	Thru: 09/28/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

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	11	11.00	1.91	1.03	0.96	93.82
Quillback	C	O	M	7	7.00	1.22	7.60	7.09	1,085.71
Highfin Carpsucker	C	O	M	1	1.00	0.17	0.58	0.54	583.00
Silver Redhorse	R	I	S M	11	11.00	1.91	14.73	13.75	1,339.09
Golden Redhorse	R	I	S M	10	10.00	1.74	4.59	4.29	459.30
River Redhorse [S]	R	I	S I	2	2.00	0.35	5.55	5.18	2,775.00
Northern Hog Sucker	R	I	S M	21	21.00	3.65	4.36	4.07	207.81
Smallmouth Redhorse	R	I	S M	30	30.00	5.21	21.11	19.70	703.60
Common Carp	G	O	M T	6	6.00	1.04	19.90	18.57	3,316.67
Bigeye Chub	N	I	S I	3	3.00	0.52	0.02	0.01	5.33
Streamline Chub	N	I	S R	2	2.00	0.35	0.02	0.02	11.00
Gravel Chub	N	I	S M	10	10.00	1.74	0.05	0.05	5.25
Silver Shiner	N	I	S I	4	4.00	0.69	0.04	0.04	10.00
Striped Shiner	N	I	S	1	1.00	0.17	0.00	0.00	2.00
Spotfin Shiner	N	I	M	93	93.00	16.15	0.27	0.25	2.88
Sand Shiner	N	I	M M	240	240.00	41.67	0.42	0.39	1.73
Mimic Shiner	N	I	M I	48	48.00	8.33	0.08	0.08	1.71
Bluntnose Minnow	N	O	C T	16	16.00	2.78	0.06	0.05	3.53
Channel Catfish	F		C	11	11.00	1.91	13.01	12.14	1,182.27
Flathead Catfish	F	P	C	2	2.00	0.35	3.08	2.87	1,537.50
Rock Bass	S	C	C	1	1.00	0.17	0.06	0.05	55.00
Smallmouth Bass	F	C	C M	5	5.00	0.87	0.44	0.41	87.00
Green Sunfish	S	I	C T	2	2.00	0.35	0.05	0.04	22.50
Bluegill Sunfish	S	I	C P	7	7.00	1.22	0.22	0.21	31.43
Logperch	D	I	S M	5	5.00	0.87	0.05	0.05	10.20
Greenside Darter	D	I	S M	2	2.00	0.35	0.01	0.01	4.50
Banded Darter	D	I	S I	10	10.00	1.74	0.03	0.03	3.40
Variagate Darter	D	I	S I	7	7.00	1.22	0.05	0.04	6.86
Sauger X Walleye	E	P		4	4.00	0.69	6.03	5.62	1,506.25
Freshwater Drum			M P	4	4.00	0.69	3.75	3.50	937.50
<i>Mile Total</i>				576	576.00		107.17		
<i>Number of Species</i>				29					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 101.80	Location: 2.5 mi. upst. Wills Creek	Date Range: 08/08/2006
Time Fished: 4896 sec	Drainage: 4883.0 sq mi	Thru: 10/10/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Bowfin		P	C	1	1.00	0.14	1.10	0.88	1,100.00
Gizzard Shad		O	M	23	23.00	3.12	2.85	2.28	123.96
Quillback	C	O	M	2	2.00	0.27	1.96	1.56	977.50
Silver Redhorse	R	I	S M	5	5.00	0.68	7.85	6.27	1,570.00
Golden Redhorse	R	I	S M	9	9.00	1.22	3.80	3.04	422.44
River Redhorse [S]	R	I	S I	1	1.00	0.14	2.00	1.60	2,000.00
Northern Hog Sucker	R	I	S M	20	20.00	2.71	3.62	2.89	180.90
Smallmouth Redhorse	R	I	S M	20	20.00	2.71	7.91	6.32	395.60
Common Carp	G	O	M T	9	9.00	1.22	28.73	22.94	3,191.67
Bigeye Chub	N	I	S I	3	3.00	0.41	0.01	0.00	1.67
Streamline Chub	N	I	S R	1	1.00	0.14	0.01	0.01	11.00
Gravel Chub	N	I	S M	3	3.00	0.41	0.01	0.01	2.67
Suckermouth Minnow	N	I	S	1	1.00	0.14	0.00	0.00	1.00
Silver Shiner	N	I	S I	1	1.00	0.14	0.01	0.00	6.00
Striped Shiner	N	I	S	2	2.00	0.27	0.00	0.00	1.50
Spotfin Shiner	N	I	M	178	178.00	24.15	0.47	0.37	2.63
Sand Shiner	N	I	M M	140	140.00	19.00	0.23	0.18	1.61
Mimic Shiner	N	I	M I	105	105.00	14.25	0.15	0.12	1.45
Bullhead Minnow	N	O	C	1	1.00	0.14	0.00	0.00	3.00
Bluntnose Minnow	N	O	C T	84	84.00	11.40	0.20	0.16	2.34
Central Stoneroller	N	H	N	4	4.00	0.54	0.01	0.01	3.50
Grass Carp	E		M	2	2.00	0.27	23.70	18.93	11,850.00
Channel Catfish	F		C	24	24.00	3.26	25.71	20.53	1,071.25
Flathead Catfish	F	P	C	2	2.00	0.27	10.25	8.19	5,125.00
Mountain Madtom [E]		I	C R	3	3.00	0.41	0.01	0.00	2.00
Smallmouth Bass	F	C	C M	6	6.00	0.81	0.73	0.59	122.17
Spotted Bass	F	C	C	4	4.00	0.54	0.34	0.27	83.75
Green Sunfish	S	I	C T	4	4.00	0.54	0.03	0.03	8.00
Bluegill Sunfish	S	I	C P	1	1.00	0.14	0.01	0.01	8.00
Orangespotted Sunfish	S	I	C	1	1.00	0.14	0.01	0.01	10.00
Logperch	D	I	S M	6	6.00	0.81	0.06	0.05	10.33
Johnny Darter	D	I	C	4	4.00	0.54	0.01	0.01	2.25
Greenside Darter	D	I	S M	17	17.00	2.31	0.03	0.02	1.82
Banded Darter	D	I	S I	30	30.00	4.07	0.06	0.05	2.07
Variegate Darter	D	I	S I	4	4.00	0.54	0.01	0.01	2.50
Bluebreast Darter [T]	D	I	S R	12	12.00	1.63	0.05	0.04	4.33
Fantail Darter	D	I	C	1	1.00	0.14	0.00	0.00	3.00
Freshwater Drum			M P	3	3.00	0.41	3.30	2.64	1,100.00
<i>Mile Total</i>				737	737.00		125.22		
<i>Number of Species</i>				38					
<i>Number of Hybrids</i>				0					

Species List

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River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 97.40	Location:	Date Range: 08/09/2006
Time Fished: 5259 sec	Drainage: 5747.0 sq mi	Thru: 09/28/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	1	1.00	0.16	1.20	0.84	1,200.00
Gizzard Shad		O	M	27	27.00	4.33	1.03	0.72	38.15
Quillback	C	O	M	5	5.00	0.80	6.10	4.25	1,220.00
Highfin Carpsucker	C	O	M	1	1.00	0.16	0.98	0.68	975.00
Silver Redhorse	R	I	S M	15	15.00	2.40	22.01	15.34	1,467.50
Golden Redhorse	R	I	S M	3	3.00	0.48	1.86	1.30	620.67
River Redhorse [S]	R	I	S I	2	2.00	0.32	5.36	3.74	2,680.00
Northern Hog Sucker	R	I	S M	8	8.00	1.28	0.60	0.42	74.63
Smallmouth Redhorse	R	I	S M	22	22.00	3.53	13.20	9.20	600.12
Common Carp	G	O	M T	14	14.00	2.24	46.78	32.60	3,341.07
Bigeye Chub	N	I	S I	2	2.00	0.32	0.01	0.01	5.00
Gravel Chub	N	I	S M	30	30.00	4.81	0.17	0.12	5.60
Western Blacknose Dace	N	G	S T	1	1.00	0.16	0.00	0.00	3.00
Emerald Shiner	N	I	M	1	1.00	0.16	0.00	0.00	3.00
Silver Shiner	N	I	S I	1	1.00	0.16	0.01	0.00	7.00
Spotfin Shiner	N	I	M	186	186.00	29.81	0.53	0.37	2.87
Sand Shiner	N	I	M M	113	113.00	18.11	0.22	0.15	1.96
Mimic Shiner	N	I	M I	43	43.00	6.89	0.07	0.05	1.65
Bullhead Minnow	N	O	C	1	1.00	0.16	0.01	0.00	5.00
Bluntnose Minnow	N	O	C T	32	32.00	5.13	0.10	0.07	3.16
Central Stoneroller	N	H	N	1	1.00	0.16	0.00	0.00	3.00
Channel Catfish	F		C	35	35.00	5.61	26.72	18.62	763.29
Flathead Catfish	F	P	C	3	3.00	0.48	2.54	1.77	846.00
Brook Silverside		I	M M	3	3.00	0.48	0.01	0.01	3.00
White Bass	F	P	M	1	1.00	0.16	0.41	0.29	410.00
White Crappie	S	I	C	1	1.00	0.16	0.12	0.08	120.00
Rock Bass	S	C	C	1	1.00	0.16	0.06	0.04	55.00
Smallmouth Bass	F	C	C M	2	2.00	0.32	0.55	0.38	272.50
Spotted Bass	F	C	C	1	1.00	0.16	0.10	0.07	103.00
Largemouth Bass	F	C	C	1	1.00	0.16	0.02	0.01	18.00
Bluegill Sunfish	S	I	C P	2	2.00	0.32	0.04	0.03	21.00
Greenside Darter	D	I	S M	4	4.00	0.64	0.01	0.01	2.25
Banded Darter	D	I	S I	40	40.00	6.41	0.07	0.05	1.70
Variegate Darter	D	I	S I	10	10.00	1.60	0.06	0.04	5.80
Bluebreast Darter [T]	D	I	S R	1	1.00	0.16	0.00	0.00	4.00
Sauger X Walleye	E	P		3	3.00	0.48	4.73	3.29	1,575.00
Freshwater Drum			M P	7	7.00	1.12	7.84	5.46	1,120.00
<i>Mile Total</i>				624	624.00		143.50		
<i>Number of Species</i>				36					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 92.20	Location: upst. St. Rt. 208	Date Range: 08/09/2006
Time Fished: 4713 sec	Drainage: 5993.0 sq mi	Thru: 09/18/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

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	22	22.00	3.20	1.90	0.96	86.50
Northern Pike	F	P	M	1	1.00	0.15	0.19	0.10	190.00
Highfin Carpsucker	C	O	M	1	1.00	0.15	0.88	0.45	882.00
Silver Redhorse	R	I	S M	12	12.00	1.75	2.78	1.40	231.67
Golden Redhorse	R	I	S M	40	40.00	5.82	8.36	4.22	209.08
Northern Hog Sucker	R	I	S M	30	30.00	4.37	1.15	0.58	38.25
Smallmouth Redhorse	R	I	S M	43	43.00	6.26	3.78	1.91	87.86
Common Carp	G	O	M T	26	26.00	3.78	124.23	62.71	4,778.21
Bigeye Chub	N	I	S I	1	1.00	0.15	0.01	0.00	5.00
Gravel Chub	N	I	S M	16	16.00	2.33	0.11	0.06	7.00
Silver Shiner	N	I	S I	4	4.00	0.58	0.07	0.03	17.00
Rosyface Shiner	N	I	S I	1	1.00	0.15	0.01	0.00	5.00
Spotfin Shiner	N	I	M	243	243.00	35.37	0.85	0.43	3.51
Sand Shiner	N	I	M M	125	125.00	18.20	0.26	0.13	2.05
Mimic Shiner	N	I	M I	16	16.00	2.33	0.03	0.02	2.06
Bullhead Minnow	N	O	C	1	1.00	0.15	0.01	0.00	5.00
Bluntnose Minnow	N	O	C T	4	4.00	0.58	0.03	0.02	7.50
Grass Carp	E		M	1	1.00	0.15	3.00	1.51	3,000.00
Channel Catfish	F		C	52	52.00	7.57	40.14	20.26	771.83
Flathead Catfish	F	P	C	3	3.00	0.44	1.25	0.63	416.67
Brook Silverside		I	M M	1	1.00	0.15	0.00	0.00	3.00
White Crappie	S	I	C	3	3.00	0.44	0.50	0.25	165.33
Black Crappie	S	I	C	3	3.00	0.44	0.31	0.16	104.00
Smallmouth Bass	F	C	C M	13	13.00	1.89	1.24	0.63	95.38
Spotted Bass	F	C	C	3	3.00	0.44	0.24	0.12	78.67
Largemouth Bass	F	C	C	2	2.00	0.29	0.17	0.08	82.50
Warmouth Sunfish	S	C	C	1	1.00	0.15	0.01	0.01	14.00
Green Sunfish	S	I	C T	1	1.00	0.15	0.01	0.00	8.00
Bluegill Sunfish	S	I	C P	6	6.00	0.87	0.10	0.05	16.00
Yellow Perch			M	1	1.00	0.15	0.02	0.01	15.00
Logperch	D	I	S M	3	3.00	0.44	0.04	0.02	14.00
Greenside Darter	D	I	S M	2	2.00	0.29	0.01	0.00	4.00
Sauger X Walleye	E	P		1	1.00	0.15	1.65	0.83	1,650.00
Freshwater Drum			M P	5	5.00	0.73	4.80	2.42	960.00
<i>Mile Total</i>				687	687.00		198.12		
<i>Number of Species</i>				33					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001 River Mile: 87.00 Time Fished: 2297 sec Dist Fished: 0.55 km	Stream: Muskingum River Location: Drainage: 6036.0 sq mi Basin: Muskingum River	Sample Date: 2006 Date Range: 08/09/2006 No of Passes: 1 Sampler Type: A
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Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Silver Redhorse	R	I	S	M	14	25.46	7.69	3.90	9.14	153.07
Golden Redhorse	R	I	S	M	4	7.27	2.20	0.30	0.71	41.50
Smallmouth Redhorse	R	I	S	M	2	3.64	1.10	0.27	0.63	74.00
Common Carp	G	O	M	T	7	12.73	3.85	24.82	58.19	1,950.00
Spotfin Shiner	N	I	M		127	230.91	69.78	0.59	1.39	2.57
Mimic Shiner	N	I	M	I	1	1.82	0.55	0.00	0.01	2.00
Bluntnose Minnow	N	O	C	T	2	3.64	1.10	0.01	0.02	2.50
Channel Catfish	F		C		3	5.46	1.65	2.62	6.14	480.00
Rock Bass	S	C	C		2	3.64	1.10	0.14	0.33	39.00
Smallmouth Bass	F	C	C	M	8	14.55	4.40	1.53	3.59	105.13
Spotted Bass	F	C	C		4	7.27	2.20	0.60	1.42	83.00
Bluegill Sunfish	S	I	C	P	4	7.27	2.20	0.33	0.78	45.50
Redear Sunfish	E	I	C		1	1.82	0.55	0.03	0.08	18.00
Sauger X Walleye	E	P			1	1.82	0.55	2.77	6.50	1,525.00
Freshwater Drum			M	P	2	3.64	1.10	4.73	11.08	1,300.00
<i>Mile Total</i>					182	330.91		42.65		
<i>Number of Species</i>					14					
<i>Number of Hybrids</i>					1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 84.60	Location:	Date Range: 08/09/2006
Time Fished: 5225 sec	Drainage: 6042.0 sq mi	Thru: 09/18/2006
Dist Fished: 1.00 km	Basin: Muskingum River	Sampler Type: A
	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
Longnose Gar		P	M	2	2.00	0.21	0.88	0.52	440.00
Bowfin		P	C	2	2.00	0.21	3.55	2.11	1,775.00
Gizzard Shad		O	M	44	44.00	4.73	5.90	3.50	134.00
Quillback	C	O	M	8	8.00	0.86	7.11	4.22	888.75
Highfin Carpsucker	C	O	M	1	1.00	0.11	0.65	0.39	650.00
Silver Redhorse	R	I	S M	5	5.00	0.54	6.55	3.89	1,310.00
Golden Redhorse	R	I	S M	22	22.00	2.36	3.80	2.26	172.82
River Redhorse [S]	R	I	S I	15	15.00	1.61	29.03	17.24	1,935.56
Northern Hog Sucker	R	I	S M	12	12.00	1.29	0.60	0.36	50.00
Smallmouth Redhorse	R	I	S M	26	26.00	2.79	3.76	2.23	144.74
Common Carp	G	O	M T	17	17.00	1.83	47.07	27.95	2,768.95
Bigeye Chub	N	I	S I	2	2.00	0.21	0.00	0.00	1.50
Gravel Chub	N	I	S M	7	7.00	0.75	0.02	0.01	3.43
Suckermouth Minnow	N	I	S	1	1.00	0.11	0.01	0.00	5.00
Emerald Shiner	N	I	M	422	422.00	45.33	0.65	0.39	1.55
Spotfin Shiner	N	I	M	79	79.00	8.49	0.16	0.09	2.00
Sand Shiner	N	I	M M	63	63.00	6.77	0.06	0.04	0.94
Mimic Shiner	N	I	M I	14	14.00	1.50	0.02	0.01	1.14
Bullhead Minnow	N	O	C	1	1.00	0.11	0.01	0.00	6.00
Bluntnose Minnow	N	O	C T	19	19.00	2.04	0.05	0.03	2.37
Central Stoneroller	N	H	N	4	4.00	0.43	0.01	0.00	1.25
Channel Catfish	F		C	51	51.00	5.48	20.02	11.89	392.55
Flathead Catfish	F	P	C	2	2.00	0.21	1.09	0.65	545.00
Brook Silverside		I	M M	1	1.00	0.11	0.00	0.00	4.00
White Bass	F	P	M	1	1.00	0.11	0.31	0.18	310.00
Str. Bass X Wh. Bass	E			1	1.00	0.11	0.43	0.25	425.00
White Crappie	S	I	C	1	1.00	0.11	0.09	0.05	85.00
Rock Bass	S	C	C	5	5.00	0.54	0.39	0.23	78.60
Smallmouth Bass	F	C	C M	9	9.00	0.97	0.97	0.57	107.56
Spotted Bass	F	C	C	4	4.00	0.43	0.66	0.39	164.75
Largemouth Bass	F	C	C	5	5.00	0.54	1.07	0.63	213.40
Bluegill Sunfish	S	I	C P	13	13.00	1.40	0.30	0.18	22.69
Logperch	D	I	S M	20	20.00	2.15	0.19	0.11	9.55
Eastern Sand Darter [S]	D	I	S R	2	2.00	0.21	0.01	0.00	3.00
Freshwater Drum			M P	50	50.00	5.37	33.01	19.60	660.19
<i>Mile Total</i>				931	931.00		168.40		
<i>Number of Species</i>				34					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 80.20	Location:	Date Range: 08/23/2006
Time Fished: 2083 sec	Drainage: 6063.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	2	4.00	0.28	2.12	5.86	530.00
Gizzard Shad		O	M	5	10.00	0.70	1.58	4.38	158.40
Quillback	C	O	M	10	20.00	1.39	1.14	3.15	57.00
Silver Redhorse	R	I	S M	3	6.00	0.42	8.70	24.05	1,450.00
Golden Redhorse	R	I	S M	11	22.00	1.53	3.36	9.30	152.91
Smallmouth Redhorse	R	I	S M	3	6.00	0.42	0.40	1.11	66.67
Common Carp	G	O	M T	1	2.00	0.14	3.60	9.95	1,800.00
Emerald Shiner	N	I	M	547	1,094.00	76.29	1.33	3.69	1.22
Spotfin Shiner	N	I	M	27	54.00	3.77	0.11	0.30	2.00
Mimic Shiner	N	I	M I	14	28.00	1.95	0.06	0.15	2.00
Ghost Shiner	N	I	M	6	12.00	0.84	0.02	0.07	2.00
Bullhead Minnow	N	O	C	13	26.00	1.81	0.06	0.17	2.33
Bluntnose Minnow	N	O	C T	16	32.00	2.23	0.09	0.25	2.81
Channel Catfish	F		C	12	24.00	1.67	2.24	6.19	93.33
Flathead Catfish	F	P	C	1	2.00	0.14	0.94	2.60	470.00
Rock Bass	S	C	C	1	2.00	0.14	0.10	0.28	51.00
Smallmouth Bass	F	C	C M	14	28.00	1.95	2.80	7.74	100.00
Spotted Bass	F	C	C	2	4.00	0.28	0.42	1.16	105.00
Largemouth Bass	F	C	C	4	8.00	0.56	0.72	2.00	90.50
Bluegill Sunfish	S	I	C P	7	14.00	0.98	0.62	1.71	44.29
Orangespotted Sunfish	S	I	C	1	2.00	0.14	0.02	0.04	8.00
Logperch	D	I	S M	10	20.00	1.39	0.16	0.44	8.00
Freshwater Drum			M P	7	14.00	0.98	5.57	15.40	397.86
<i>Mile Total</i>				717	1,434.00		36.17		
<i>Number of Species</i>				23					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 77.60	Location:	Date Range: 08/23/2006
Time Fished: 2400 sec	Drainage: 6066.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

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	2.00	0.43	0.07	0.07	35.00
Quillback	C	O	M	2	4.00	0.87	0.30	0.30	75.00
Silver Redhorse	R	I	S M	5	10.00	2.16	11.95	11.87	1,195.00
Golden Redhorse	R	I	S M	3	6.00	1.30	0.14	0.14	24.00
Common Carp	G	O	M T	11	22.00	4.76	81.40	80.82	3,700.00
Emerald Shiner	N	I	M	109	218.00	47.19	0.32	0.32	1.48
Spotfin Shiner	N	I	M	1	2.00	0.43	0.01	0.01	3.00
Ghost Shiner	N	I	M	1	2.00	0.43	0.00	0.00	2.00
Bullhead Minnow	N	O	C	36	72.00	15.58	0.15	0.15	2.06
Bluntnose Minnow	N	O	C T	7	14.00	3.03	0.06	0.06	4.00
Channel Catfish	F		C	11	22.00	4.76	1.45	1.44	66.00
Flathead Catfish	F	P	C	1	2.00	0.43	0.47	0.47	236.00
Rock Bass	S	C	C	1	2.00	0.43	0.06	0.06	32.00
Smallmouth Bass	F	C	C M	3	6.00	1.30	0.79	0.79	132.00
Spotted Bass	F	C	C	16	32.00	6.93	2.89	2.87	90.31
Green Sunfish	S	I	C T	1	2.00	0.43	0.12	0.12	61.00
Bluegill Sunfish	S	I	C P	18	36.00	7.79	0.43	0.42	11.89
Orangespotted Sunfish	S	I	C	4	8.00	1.73	0.09	0.09	11.50
<i>Mile Total</i>				231	462.00		100.71		
<i>Number of Species</i>				18					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 75.80	Location:	Date Range: 08/10/2006
Time Fished: 5018 sec	Drainage: 6850.0 sq mi	Thru: 09/29/2006
Dist Fished: 1.10 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	3	2.73	0.34	3.34	1.79	1,225.00
Gizzard Shad		O	M	76	69.09	8.59	7.47	3.99	108.07
Smallmouth Buffalo	C	I	M	13	11.82	1.47	29.09	15.55	2,461.54
Quillback	C	O	M	9	8.18	1.02	6.74	3.60	824.00
Silver Redhorse	R	I	S M	11	10.00	1.24	10.87	5.81	1,086.67
Golden Redhorse	R	I	S M	6	5.45	0.68	2.04	1.09	373.83
River Redhorse [S]	R	I	S I	23	20.91	2.60	40.55	21.68	1,939.13
Northern Hog Sucker	R	I	S M	2	1.82	0.23	0.70	0.38	386.00
Smallmouth Redhorse	R	I	S M	25	22.73	2.82	11.84	6.33	520.91
Common Carp	G	O	M T	27	24.55	3.05	49.45	26.44	2,014.67
Gravel Chub	N	I	S M	1	0.91	0.11	0.01	0.00	7.00
Emerald Shiner	N	I	M	578	525.45	65.31	0.79	0.42	1.51
Spotfin Shiner	N	I	M	15	13.64	1.69	0.05	0.03	3.93
Sand Shiner	N	I	M M	5	4.55	0.56	0.01	0.00	2.00
Mimic Shiner	N	I	M I	20	18.18	2.26	0.03	0.02	1.75
Central Stoneroller	N	H	N	1	0.91	0.11	0.02	0.01	23.00
Channel Catfish	F		C	8	7.27	0.90	3.22	1.72	442.38
Flathead Catfish	F	P	C	2	1.82	0.23	1.04	0.56	574.50
Stonecat Madtom		I	C I	1	0.91	0.11	0.02	0.01	20.00
White Bass	F	P	M	1	0.91	0.11	0.40	0.21	435.00
White Crappie	S	I	C	2	1.82	0.23	0.33	0.18	180.00
Black Crappie	S	I	C	2	1.82	0.23	0.33	0.18	181.00
Smallmouth Bass	F	C	C M	11	10.00	1.24	0.73	0.39	72.73
Spotted Bass	F	C	C	15	13.64	1.69	1.20	0.64	87.87
Bluegill Sunfish	S	I	C P	3	2.73	0.34	0.03	0.02	12.00
Logperch	D	I	S M	2	1.82	0.23	0.02	0.01	12.00
Banded Darter	D	I	S I	4	3.64	0.45	0.01	0.01	2.75
Variagate Darter	D	I	S I	2	1.82	0.23	0.03	0.01	15.00
Freshwater Drum			M P	17	15.45	1.92	16.69	8.92	1,080.09
<i>Mile Total</i>				885	804.55		187.04		
<i>Number of Species</i>				29					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 72.40	Location:	Date Range: 08/24/2006
Time Fished: 2579 sec	Drainage: 7159.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Smallmouth Buffalo	C	I	M	2	4.00	0.59	11.30	9.45	2,825.00
Quillback	C	O	M	4	8.00	1.18	2.92	2.44	364.50
Silver Redhorse	R	I	S M	13	26.00	3.82	1.58	1.32	60.62
Golden Redhorse	R	I	S M	7	14.00	2.06	0.62	0.52	44.14
Smallmouth Redhorse	R	I	S M	2	4.00	0.59	0.57	0.48	142.50
Common Carp	G	O	M T	13	26.00	3.82	70.33	58.79	2,704.89
Emerald Shiner	N	I	M	115	230.00	33.82	0.34	0.29	1.50
Spotfin Shiner	N	I	M	3	6.00	0.88	0.02	0.02	3.00
Mimic Shiner	N	I	M I	8	16.00	2.35	0.02	0.02	1.50
Ghost Shiner	N	I	M	10	20.00	2.94	0.03	0.03	1.50
Bullhead Minnow	N	O	C	8	16.00	2.35	0.05	0.04	3.00
Bluntnose Minnow	N	O	C T	6	12.00	1.76	0.04	0.03	3.00
Channel Catfish	F		C	5	10.00	1.47	1.25	1.04	124.80
Flathead Catfish	F	P	C	2	4.00	0.59	2.00	1.67	500.00
Rock Bass	S	C	C	4	8.00	1.18	0.19	0.16	24.00
Smallmouth Bass	F	C	C M	10	20.00	2.94	2.50	2.09	125.10
Spotted Bass	F	C	C	61	122.00	17.94	16.42	13.72	134.56
Green Sunfish	S	I	C T	3	6.00	0.88	0.11	0.09	18.00
Bluegill Sunfish	S	I	C P	40	80.00	11.76	1.15	0.96	14.43
Orangespotted Sunfish	S	I	C	15	30.00	4.41	0.22	0.18	7.29
Redear Sunfish	E	I	C	2	4.00	0.59	0.20	0.17	50.50
Logperch	D	I	S M	1	2.00	0.29	0.02	0.02	11.00
Freshwater Drum			M P	6	12.00	1.76	7.76	6.49	646.67
<i>Mile Total</i>				340	680.00		119.63		
<i>Number of Species</i>				23					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 67.30	Location:	Date Range: 08/10/2006
Time Fished: 4197 sec	Drainage: 7196.0 sq mi	Thru: 10/10/2006
Dist Fished: 1.00 km	Basin: Muskingum River	Sampler Type: A
	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
Longnose Gar		P	M	22	22.00	1.87	14.38	7.35	653.41
Gizzard Shad		O	M	135	135.00	11.50	17.42	8.90	129.06
Smallmouth Buffalo	C	I	M	1	1.00	0.09	2.40	1.23	2,400.00
Quillback	C	O	M	10	10.00	0.85	8.30	4.24	830.00
Silver Redhorse	R	I	S M	1	1.00	0.09	1.70	0.87	1,700.00
Golden Redhorse	R	I	S M	6	6.00	0.51	3.75	1.92	625.17
River Redhorse [S]	R	I	S I	19	19.00	1.62	45.63	23.32	2,401.32
Northern Hog Sucker	R	I	S M	6	6.00	0.51	0.47	0.24	78.00
Smallmouth Redhorse	R	I	S M	33	33.00	2.81	10.43	5.33	316.01
Common Carp	G	O	M T	13	13.00	1.11	34.16	17.46	2,627.54
Streamline Chub	N	I	S R	1	1.00	0.09	0.01	0.00	6.00
Gravel Chub	N	I	S M	4	4.00	0.34	0.03	0.01	6.50
Emerald Shiner	N	I	M	773	773.00	65.84	1.10	0.56	1.42
Spotfin Shiner	N	I	M	31	31.00	2.64	0.07	0.04	2.29
Sand Shiner	N	I	M M	13	13.00	1.11	0.03	0.01	2.23
Mimic Shiner	N	I	M I	9	9.00	0.77	0.02	0.01	2.33
Ghost Shiner	N	I	M	1	1.00	0.09	0.00	0.00	2.00
Bullhead Minnow	N	O	C	1	1.00	0.09	0.00	0.00	1.00
Channel Catfish	F		C	22	22.00	1.87	18.22	9.31	828.30
Flathead Catfish	F	P	C	4	4.00	0.34	5.49	2.80	1,371.25
White Bass	F	P	M	1	1.00	0.09	0.02	0.01	15.00
White Crappie	S	I	C	1	1.00	0.09	0.16	0.08	156.00
Black Crappie	S	I	C	1	1.00	0.09	0.30	0.15	300.00
Smallmouth Bass	F	C	C M	3	3.00	0.26	0.97	0.50	324.33
Spotted Bass	F	C	C	6	6.00	0.51	0.59	0.30	98.00
Bluegill Sunfish	S	I	C P	4	4.00	0.34	0.12	0.06	29.25
Redear Sunfish	E	I	C	1	1.00	0.09	0.05	0.02	48.00
Slenderhead Darter	D	I	S R	12	12.00	1.02	0.04	0.02	3.58
Logperch	D	I	S M	5	5.00	0.43	0.07	0.04	13.80
Banded Darter	D	I	S I	1	1.00	0.09	0.00	0.00	2.00
Sauger X Walleye	E	P		18	18.00	1.53	15.14	7.74	841.11
Freshwater Drum			M P	16	16.00	1.36	14.63	7.48	914.31
<i>Mile Total</i>				1,174	1,174.00		195.67		
<i>Number of Species</i>				31					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 63.70	Location:	Date Range: 08/24/2006
Time Fished: 2309 sec	Drainage: 7350.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	4	8.00	0.37	5.36	6.06	670.25
Gizzard Shad		O	M	2	4.00	0.19	0.25	0.29	63.50
Smallmouth Buffalo	C	I	M	17	34.00	1.59	43.72	49.40	1,285.76
Silver Redhorse	R	I	S M	2	4.00	0.19	2.13	2.41	533.50
Golden Redhorse	R	I	S M	7	14.00	0.65	0.77	0.87	55.14
Smallmouth Redhorse	R	I	S M	2	4.00	0.19	0.40	0.45	99.50
Common Carp	G	O	M T	2	4.00	0.19	13.60	15.37	3,400.00
Emerald Shiner	N	I	M	829	1,658.00	77.33	1.65	1.87	1.00
Spotfin Shiner	N	I	M	22	44.00	2.05	0.05	0.06	1.14
Sand Shiner	N	I	M M	4	8.00	0.37	0.01	0.01	1.50
Mimic Shiner	N	I	M I	64	128.00	5.97	0.19	0.21	1.47
Ghost Shiner	N	I	M	43	86.00	4.01	0.13	0.14	1.49
Bullhead Minnow	N	O	C	2	4.00	0.19	0.01	0.01	2.00
Bluntnose Minnow	N	O	C T	18	36.00	1.68	0.05	0.06	1.50
Channel Catfish	F		C	11	22.00	1.03	3.17	3.58	144.00
Flathead Catfish	F	P	C	5	10.00	0.47	3.03	3.42	302.60
Smallmouth Bass	F	C	C M	13	26.00	1.21	3.33	3.76	128.08
Spotted Bass	F	C	C	4	8.00	0.37	1.57	1.77	196.00
Bluegill Sunfish	S	I	C P	3	6.00	0.28	0.29	0.33	48.33
Orangespotted Sunfish	S	I	C	1	2.00	0.09	0.02	0.02	10.00
Sauger	F	P	S	1	2.00	0.09	0.94	1.07	472.00
Slenderhead Darter	D	I	S R	8	16.00	0.75	0.04	0.05	2.75
Logperch	D	I	S M	3	6.00	0.28	0.09	0.10	14.33
Freshwater Drum			M P	5	10.00	0.47	7.70	8.70	770.00
<i>Mile Total</i>				1,072	2,144.00		88.50		
<i>Number of Species</i>				24					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 56.40	Location: dst. Rokeby Lock dam	Date Range: 08/10/2006
Time Fished: 4667 sec	Drainage: 7386.0 sq mi	Thru: 10/10/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	8	8.00	0.81	5.35	3.19	668.75
Gizzard Shad		O	M	386	386.00	38.95	32.78	19.52	84.92
Smallmouth Buffalo	C	I	M	28	28.00	2.83	60.45	36.00	2,159.03
Quillback	C	O	M	3	3.00	0.30	2.80	1.67	933.33
Silver Redhorse	R	I	S M	1	1.00	0.10	1.00	0.60	1,000.00
Golden Redhorse	R	I	S M	4	4.00	0.40	1.60	0.96	401.00
River Redhorse [S]	R	I	S I	7	7.00	0.71	9.81	5.84	1,400.71
Northern Hog Sucker	R	I	S M	2	2.00	0.20	0.07	0.04	33.50
Smallmouth Redhorse	R	I	S M	7	7.00	0.71	4.48	2.66	639.29
Common Carp	G	O	M T	11	11.00	1.11	26.68	15.88	2,425.00
Emerald Shiner	N	I	M	400	400.00	40.36	0.57	0.34	1.42
Spotfin Shiner	N	I	M	24	24.00	2.42	0.05	0.03	2.17
Sand Shiner	N	I	M M	3	3.00	0.30	0.01	0.00	2.33
Mimic Shiner	N	I	M I	1	1.00	0.10	0.00	0.00	2.00
Bluntnose Minnow	N	O	C T	2	2.00	0.20	0.01	0.00	3.50
Flathead Catfish	F	P	C	6	6.00	0.61	3.08	1.84	513.83
White Bass	F	P	M	3	3.00	0.30	0.14	0.08	46.67
Black Crappie	S	I	C	1	1.00	0.10	0.09	0.05	90.00
Smallmouth Bass	F	C	C M	18	18.00	1.82	2.93	1.74	162.78
Spotted Bass	F	C	C	10	10.00	1.01	1.36	0.81	136.10
Largemouth Bass	F	C	C	13	13.00	1.31	1.12	0.67	86.46
Green Sunfish	S	I	C T	1	1.00	0.10	0.03	0.02	32.00
Bluegill Sunfish	S	I	C P	9	9.00	0.91	0.39	0.23	42.89
Orangespotted Sunfish	S	I	C	11	11.00	1.11	0.13	0.08	11.73
Redear Sunfish	E	I	C	1	1.00	0.10	0.05	0.03	45.00
Green Sf X Bluegill Sf				2	2.00	0.20	0.13	0.08	64.00
Slenderhead Darter	D	I	S R	8	8.00	0.81	0.03	0.02	3.38
Logperch	D	I	S M	1	1.00	0.10	0.04	0.03	42.00
Greenside Darter	D	I	S M	1	1.00	0.10	0.01	0.00	6.00
Banded Darter	D	I	S I	2	2.00	0.20	0.01	0.00	4.00
Sauger X Walleye	E	P		2	2.00	0.20	0.74	0.44	367.50
Freshwater Drum			M P	15	15.00	1.51	12.03	7.16	802.20
<i>Mile Total</i>				991	991.00		167.95		
<i>Number of Species</i>				30					
<i>Number of Hybrids</i>				2					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 52.10	Location:	Date Range: 08/24/2006
Time Fished: 2804 sec	Drainage: 7414.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	1	2.00	0.18	1.04	1.10	520.00
Gizzard Shad		O	M	6	12.00	1.06	1.96	2.07	163.33
Smallmouth Buffalo	C	I	M	21	42.00	3.71	18.01	19.05	428.86
Quillback	C	O	M	5	10.00	0.88	2.60	2.75	260.00
Silver Redhorse	R	I	S M	2	4.00	0.35	4.44	4.69	1,109.00
Golden Redhorse	R	I	S M	4	8.00	0.71	0.38	0.40	47.00
Smallmouth Redhorse	R	I	S M	10	20.00	1.77	2.10	2.22	105.11
Common Carp	G	O	M T	8	16.00	1.41	38.30	40.51	2,393.75
Emerald Shiner	N	I	M	241	482.00	42.58	0.66	0.70	1.38
Spotfin Shiner	N	I	M	45	90.00	7.95	0.17	0.18	1.86
Mimic Shiner	N	I	M I	6	12.00	1.06	0.03	0.03	2.50
Ghost Shiner	N	I	M	4	8.00	0.71	0.01	0.01	1.00
Bluntnose Minnow	N	O	C T	33	66.00	5.83	0.15	0.16	2.24
Channel Catfish	F		C	13	26.00	2.30	0.45	0.47	17.15
Flathead Catfish	F	P	C	7	14.00	1.24	8.20	8.67	585.71
Rock Bass	S	C	C	1	2.00	0.18	0.12	0.12	59.00
Smallmouth Bass	F	C	C M	2	4.00	0.35	0.75	0.79	187.50
Spotted Bass	F	C	C	30	60.00	5.30	6.99	7.40	116.53
Green Sunfish	S	I	C T	4	8.00	0.71	0.10	0.11	13.00
Bluegill Sunfish	S	I	C P	70	140.00	12.37	3.26	3.45	23.27
Orangespotted Sunfish	S	I	C	45	90.00	7.95	0.55	0.58	6.11
Green Sf X Bluegill Sf				1	2.00	0.18	0.07	0.07	35.00
Freshwater Drum			M P	7	14.00	1.24	4.22	4.46	301.33
<i>Mile Total</i>				566	1,132.00		94.55		
<i>Number of Species</i>				22					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 48.80	Location: dst. McConnellsville dam	Date Range: 08/10/2006
Time Fished: 4155 sec	Drainage: 7422.0 sq mi	Thru: 10/11/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	9	9.00	1.34	6.45	3.33	716.67
Gizzard Shad		O	M	177	177.00	26.26	24.17	12.47	136.56
Smallmouth Buffalo	C	I	M	37	37.00	5.49	57.65	29.74	1,558.11
Quillback	C	O	M	19	19.00	2.82	17.13	8.84	901.53
Highfin Carpsucker	C	O	M	4	4.00	0.59	3.43	1.77	857.50
Silver Redhorse	R	I	S M	1	1.00	0.15	0.09	0.05	90.00
Golden Redhorse	R	I	S M	2	2.00	0.30	0.16	0.08	77.50
River Redhorse [S]	R	I	S I	8	8.00	1.19	20.95	10.81	2,618.75
Northern Hog Sucker	R	I	S M	3	3.00	0.45	0.39	0.20	130.00
Smallmouth Redhorse	R	I	S M	17	17.00	2.52	7.04	3.63	414.00
Common Carp	G	O	M T	4	4.00	0.59	9.70	5.00	2,425.00
Emerald Shiner	N	I	M	229	229.00	33.98	0.37	0.19	1.60
Spotfin Shiner	N	I	M	17	17.00	2.52	0.03	0.01	1.59
Ghost Shiner	N	I	M	1	1.00	0.15	0.00	0.00	1.00
Bullhead Minnow	N	O	C	1	1.00	0.15	0.00	0.00	3.00
Bluntnose Minnow	N	O	C T	1	1.00	0.15	0.00	0.00	4.00
Central Stoneroller	N	H	N	3	3.00	0.45	0.04	0.02	11.67
Channel Catfish	F		C	12	12.00	1.78	6.99	3.61	582.50
Flathead Catfish	F	P	C	3	3.00	0.45	2.38	1.23	791.67
White Bass	F	P	M	1	1.00	0.15	0.57	0.30	572.00
Str. Bass X Wh. Bass	E			1	1.00	0.15	0.34	0.17	335.00
White Crappie	S	I	C	3	3.00	0.45	0.81	0.42	270.00
Black Crappie	S	I	C	2	2.00	0.30	0.62	0.32	310.00
Smallmouth Bass	F	C	C M	7	7.00	1.04	1.27	0.65	181.00
Spotted Bass	F	C	C	18	18.00	2.67	2.40	1.24	133.22
Largemouth Bass	F	C	C	3	3.00	0.45	1.72	0.88	571.67
Green Sunfish	S	I	C T	3	3.00	0.45	0.09	0.04	28.33
Bluegill Sunfish	S	I	C P	14	14.00	2.08	0.40	0.20	28.21
Orangespotted Sunfish	S	I	C	4	4.00	0.59	0.05	0.02	11.75
Slenderhead Darter	D	I	S R	13	13.00	1.93	0.07	0.04	5.62
Logperch	D	I	S M	2	2.00	0.30	0.04	0.02	19.00
Greenside Darter	D	I	S M	2	2.00	0.30	0.02	0.01	10.00
Banded Darter	D	I	S I	1	1.00	0.15	0.00	0.00	2.00
Sauger X Walleye	E	P		11	11.00	1.63	9.25	4.77	840.45
Freshwater Drum			M P	41	41.00	6.08	19.27	9.94	470.05
<i>Mile Total</i>				674	674.00		193.85		
<i>Number of Species</i>				33					
<i>Number of Hybrids</i>				2					

Species List

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River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 43.20	Location:	Date Range: 08/25/2006
Time Fished: 2647 sec	Drainage: 7441.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

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	11	22.00	2.81	1.50	3.38	68.00
Smallmouth Buffalo	C	I	M	13	26.00	3.32	24.29	54.95	934.38
Quillback	C	O	M	3	6.00	0.77	0.52	1.17	86.00
Highfin Carpsucker	C	O	M	1	2.00	0.26	0.11	0.25	55.00
Silver Redhorse	R	I	S M	3	6.00	0.77	5.88	13.30	980.00
Golden Redhorse	R	I	S M	2	4.00	0.51	0.20	0.46	51.00
Common Carp	G	O	M T	2	4.00	0.51	6.06	13.71	1,515.00
Emerald Shiner	N	I	M	198	396.00	50.51	0.49	1.10	1.23
Spotfin Shiner	N	I	M	45	90.00	11.48	0.14	0.31	1.51
Mimic Shiner	N	I	M I	10	20.00	2.55	0.04	0.09	2.00
Ghost Shiner	N	I	M	4	8.00	1.02	0.01	0.02	1.25
Bullhead Minnow	N	O	C	6	12.00	1.53	0.02	0.05	2.00
Bluntnose Minnow	N	O	C T	12	24.00	3.06	0.07	0.15	2.83
Channel Catfish	F		C	13	26.00	3.32	0.46	1.03	17.54
Flathead Catfish	F	P	C	1	2.00	0.26	0.31	0.69	153.00
Spotted Bass	F	C	C	14	28.00	3.57	3.02	6.84	108.00
Green Sunfish	S	I	C T	1	2.00	0.26	0.01	0.02	5.00
Bluegill Sunfish	S	I	C P	10	20.00	2.55	0.50	1.14	25.10
Orangespotted Sunfish	S	I	C	42	84.00	10.71	0.53	1.19	6.25
Freshwater Drum			M P	1	2.00	0.26	0.06	0.14	32.00
<i>Mile Total</i>				392	784.00		44.21		
<i>Number of Species</i>				20					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 39.50	Location: dst. Stockport dam	Date Range: 08/22/2006
Time Fished: 4523 sec	Drainage: 7457.0 sq mi	Thru: 10/11/2006
Dist Fished: 1.06 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	6	5.66	0.81	2.84	1.25	501.60
Mooneye		I	M R	1	0.94	0.14	0.06	0.03	62.00
Gizzard Shad		O	M	144	135.85	19.54	16.18	7.12	119.07
Smallmouth Buffalo	C	I	M	74	69.81	10.04	106.04	46.67	1,518.89
Quillback	C	O	M	7	6.60	0.95	5.80	2.55	878.57
Highfin Carpsucker	C	O	M	4	3.77	0.54	2.99	1.32	792.75
Silver Redhorse	R	I	S M	1	0.94	0.14	1.04	0.46	1,100.00
Golden Redhorse	R	I	S M	1	0.94	0.14	0.65	0.29	692.00
River Redhorse [S]	R	I	S I	2	1.89	0.27	2.55	1.12	1,350.00
Northern Hog Sucker	R	I	S M	2	1.89	0.27	0.14	0.06	75.50
Smallmouth Redhorse	R	I	S M	16	15.09	2.17	4.42	1.95	292.81
Common Carp	G	O	M T	15	14.15	2.04	42.11	18.53	2,975.83
Emerald Shiner	N	I	M	227	214.15	30.80	0.43	0.19	2.00
Striped Shiner	N	I	S	1	0.94	0.14	0.00	0.00	2.00
Spotfin Shiner	N	I	M	88	83.02	11.94	0.18	0.08	2.19
Sand Shiner	N	I	M M	1	0.94	0.14	0.00	0.00	4.00
Mimic Shiner	N	I	M I	2	1.89	0.27	0.00	0.00	2.00
Ghost Shiner	N	I	M	1	0.94	0.14	0.00	0.00	1.00
Bluntnose Minnow	N	O	C T	23	21.70	3.12	0.04	0.02	2.00
Central Stoneroller	N	H	N	1	0.94	0.14	0.00	0.00	5.00
Channel Catfish	F		C	14	13.21	1.90	8.53	3.75	645.50
Flathead Catfish	F	P	C	3	2.83	0.41	9.63	4.24	3,403.33
Brook Silverside		I	M M	2	1.89	0.27	0.00	0.00	1.50
White Bass	F	P	M	1	0.94	0.14	0.28	0.12	297.00
White Crappie	S	I	C	1	0.94	0.14	0.22	0.09	228.00
Black Crappie	S	I	C	1	0.94	0.14	0.25	0.11	265.00
Rock Bass	S	C	C	1	0.94	0.14	0.16	0.07	165.00
Smallmouth Bass	F	C	C M	7	6.60	0.95	1.56	0.69	235.76
Largemouth Bass	F	C	C	1	0.94	0.14	0.19	0.09	205.00
Green Sunfish	S	I	C T	4	3.77	0.54	0.10	0.04	25.25
Orangespotted Sunfish	S	I	C	3	2.83	0.41	0.04	0.02	13.33
Green Sf X Bluegill Sf				1	0.94	0.14	0.11	0.05	118.00
Slenderhead Darter	D	I	S R	46	43.40	6.24	0.17	0.07	3.83
Logperch	D	I	S M	6	5.66	0.81	0.12	0.05	21.17
Banded Darter	D	I	S I	1	0.94	0.14	0.00	0.00	3.00
Sauger X Walleye	E	P		6	5.66	0.81	3.33	1.47	588.50
Freshwater Drum			M P	22	20.75	2.99	17.04	7.50	821.14
<i>Mile Total</i>				737	695.28		227.20		
<i>Number of Species</i>				35					
<i>Number of Hybrids</i>				2					

Species List

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River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 36.20	Location:	Date Range: 08/30/2006
Time Fished: 2338 sec	Drainage: 7463.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

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	9	18.00	3.80	1.66	1.65	92.44
Smallmouth Buffalo	C	I	M	28	56.00	11.81	66.68	66.25	1,190.64
Silver Redhorse	R	I	S M	1	2.00	0.42	0.20	0.19	98.00
Golden Redhorse	R	I	S M	4	8.00	1.69	0.60	0.59	74.50
Common Carp	G	O	M T	2	4.00	0.84	8.75	8.69	2,187.50
Spotfin Shiner	N	I	M	99	198.00	41.77	0.42	0.41	2.10
Mimic Shiner	N	I	M I	2	4.00	0.84	0.01	0.01	2.00
Bluntnose Minnow	N	O	C T	10	20.00	4.22	0.09	0.09	4.50
Channel Catfish	F		C	14	28.00	5.91	0.56	0.56	20.14
Flathead Catfish	F	P	C	8	16.00	3.38	8.11	8.05	506.63
Smallmouth Bass	F	C	C M	4	8.00	1.69	0.94	0.94	118.00
Spotted Bass	F	C	C	20	40.00	8.44	4.55	4.52	113.75
Warmouth Sunfish	S	C	C	1	2.00	0.42	0.02	0.02	10.00
Green Sunfish	S	I	C T	6	12.00	2.53	0.32	0.32	26.67
Bluegill Sunfish	S	I	C P	6	12.00	2.53	0.30	0.30	25.33
Orangespotted Sunfish	S	I	C	15	30.00	6.33	0.23	0.23	7.67
Freshwater Drum			M P	8	16.00	3.38	7.20	7.16	450.25
<i>Mile Total</i>				237	474.00		100.64		
<i>Number of Species</i>				17					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 33.50	Location: dst. Luke Chute dam	Date Range: 08/22/2006
Time Fished: 4816 sec	Drainage: 7470.0 sq mi	Thru: 10/11/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	8	8.00	1.02	4.19	1.83	523.75
Mooneye		I	M R	3	3.00	0.38	0.30	0.13	100.67
Gizzard Shad		O	M	213	213.00	27.24	14.51	6.32	68.12
Smallmouth Buffalo	C	I	M	54	54.00	6.91	106.67	46.48	1,975.34
Quillback	C	O	M	15	15.00	1.92	8.17	3.56	544.56
River Carpsucker	C	O	M	1	1.00	0.13	0.76	0.33	758.00
Highfin Carpsucker	C	O	M	4	4.00	0.51	1.15	0.50	286.25
Silver Redhorse	R	I	S M	4	4.00	0.51	2.30	1.00	573.75
Golden Redhorse	R	I	S M	10	10.00	1.28	1.30	0.57	129.80
River Redhorse [S]	R	I	S I	9	9.00	1.15	18.50	8.06	2,055.56
Northern Hog Sucker	R	I	S M	7	7.00	0.90	0.36	0.16	52.00
Smallmouth Redhorse	R	I	S M	16	16.00	2.05	6.14	2.68	383.69
Common Carp	G	O	M T	8	8.00	1.02	28.70	12.51	3,587.50
Suckermouth Minnow	N	I	S	1	1.00	0.13	0.01	0.00	5.00
Emerald Shiner	N	I	M	196	196.00	25.06	0.36	0.16	1.85
Spotfin Shiner	N	I	M	84	84.00	10.74	0.14	0.06	1.67
Sand Shiner	N	I	M M	11	11.00	1.41	0.02	0.01	1.73
Mimic Shiner	N	I	M I	1	1.00	0.13	0.00	0.00	2.00
Ghost Shiner	N	I	M	1	1.00	0.13	0.00	0.00	2.00
Bullhead Minnow	N	O	C	2	2.00	0.26	0.00	0.00	2.00
Bluntnose Minnow	N	O	C T	34	34.00	4.35	0.06	0.02	1.65
Central Stoneroller	N	H	N	1	1.00	0.13	0.00	0.00	2.00
Channel Catfish	F		C	17	17.00	2.17	9.80	4.27	576.24
Flathead Catfish	F	P	C	4	4.00	0.51	3.35	1.46	837.50
Brook Silverside		I	M M	1	1.00	0.13	0.00	0.00	2.00
White Bass	F	P	M	4	4.00	0.51	0.37	0.16	92.50
White Crappie	S	I	C	1	1.00	0.13	0.37	0.16	370.00
Black Crappie	S	I	C	1	1.00	0.13	0.16	0.07	162.00
Spotted Bass	F	C	C	18	18.00	2.30	2.01	0.88	111.89
Largemouth Bass	F	C	C	4	4.00	0.51	0.88	0.39	221.00
Bluegill Sunfish	S	I	C P	5	5.00	0.64	0.21	0.09	42.00
Orangespotted Sunfish	S	I	C	2	2.00	0.26	0.04	0.02	19.00
Slenderhead Darter	D	I	S R	6	6.00	0.77	0.02	0.01	3.17
Logperch	D	I	S M	2	2.00	0.26	0.03	0.01	16.00
Banded Darter	D	I	S I	4	4.00	0.51	0.01	0.00	1.75
Sauger X Walleye	E	P		10	10.00	1.28	12.57	5.48	1,256.50
Freshwater Drum			M P	20	20.00	2.56	6.02	2.62	301.15
<i>Mile Total</i>				782	782.00		229.47		
<i>Number of Species</i>				36					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 29.20	Location:	Date Range: 08/31/2006
Time Fished: 2781 sec	Drainage: 7624.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

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	18	36.00	3.96	3.34	5.30	92.89
Smallmouth Buffalo	C	I	M	15	30.00	3.30	10.93	17.33	364.27
Quillback	C	O	M	1	2.00	0.22	0.24	0.38	120.00
Highfin Carpsucker	C	O	M	6	12.00	1.32	1.01	1.61	84.50
Silver Redhorse	R	I	S M	11	22.00	2.42	1.41	2.23	64.00
Golden Redhorse	R	I	S M	46	92.00	10.13	11.47	18.19	124.67
Smallmouth Redhorse	R	I	S M	10	20.00	2.20	1.84	2.92	92.10
Common Carp	G	O	M T	2	4.00	0.44	9.40	14.91	2,350.00
Emerald Shiner	N	I	M	49	98.00	10.79	0.15	0.24	1.57
Spotfin Shiner	N	I	M	65	130.00	14.32	0.22	0.36	1.72
Sand Shiner	N	I	M M	6	12.00	1.32	0.02	0.03	1.67
Mimic Shiner	N	I	M I	12	24.00	2.64	0.03	0.05	1.25
Ghost Shiner	N	I	M	2	4.00	0.44	0.01	0.01	1.50
Bullhead Minnow	N	O	C	32	64.00	7.05	0.17	0.26	2.61
Bluntnose Minnow	N	O	C T	2	4.00	0.44	0.01	0.01	2.00
Channel Catfish	F		C	13	26.00	2.86	0.48	0.76	18.54
Flathead Catfish	F	P	C	4	8.00	0.88	3.25	5.15	406.00
Spotted Bass	F	C	C	29	58.00	6.39	9.68	15.36	166.96
Bluegill Sunfish	S	I	C P	14	28.00	3.08	1.23	1.94	43.79
Orangespotted Sunfish	S	I	C	98	196.00	21.59	1.01	1.61	5.17
Sauger	F	P	S	1	2.00	0.22	0.55	0.88	276.00
Slenderhead Darter	D	I	S R	8	16.00	1.76	0.07	0.12	4.63
Logperch	D	I	S M	4	8.00	0.88	0.14	0.22	17.00
Sauger X Walleye	E	P		2	4.00	0.44	2.41	3.82	601.50
Freshwater Drum			M P	4	8.00	0.88	3.98	6.32	498.00
<i>Mile Total</i>				454	908.00		63.06		
<i>Number of Species</i>				24					
<i>Number of Hybrids</i>				1					

Species List

River Code: 17-001 River Mile: 26.20 Time Fished: 2991 sec Dist Fished: 0.50 km	Stream: Muskingum River Location: Drainage: 7711.0 sq mi Basin: Muskingum River	Sample Date: 2006 Date Range: 08/30/2006 No of Passes: 1 Sampler Type: N
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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	12	24.00	4.23	1.41	4.62	58.83
Smallmouth Buffalo	C	I	M	12	24.00	4.23	6.63	21.71	276.25
Silver Redhorse	R	I	S M	4	8.00	1.41	0.40	1.30	49.50
Golden Redhorse	R	I	S M	14	28.00	4.93	1.13	3.69	40.21
Emerald Shiner	N	I	M	21	42.00	7.39	0.10	0.32	2.33
Spotfin Shiner	N	I	M	25	50.00	8.80	0.12	0.41	2.48
Bullhead Minnow	N	O	C	9	18.00	3.17	0.03	0.09	1.50
Channel Catfish	F		C	23	46.00	8.10	1.81	5.93	39.35
Flathead Catfish	F	P	C	14	28.00	4.93	9.76	31.96	348.50
White Crappie	S	I	C	1	2.00	0.35	0.18	0.58	89.00
Smallmouth Bass	F	C	C M	2	4.00	0.70	0.06	0.21	16.00
Spotted Bass	F	C	C	27	54.00	9.51	4.02	13.18	74.52
Largemouth Bass	F	C	C	1	2.00	0.35	0.44	1.43	218.00
Green Sunfish	S	I	C T	8	16.00	2.82	0.29	0.96	18.25
Bluegill Sunfish	S	I	C P	65	130.00	22.89	3.22	10.55	24.79
Orangespotted Sunfish	S	I	C	41	82.00	14.44	0.44	1.44	5.37
Freshwater Drum			M P	5	10.00	1.76	0.50	1.62	49.60
<i>Mile Total</i>				284	568.00		30.53		
<i>Number of Species</i>				17					
<i>Number of Hybrids</i>				0					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 24.70	Location:	Date Range: 08/11/2006
Time Fished: 4896 sec	Drainage: 7713.0 sq mi	Thru: 10/11/2006
Dist Fished: 1.04 km	Basin: Muskingum River	Sampler Type: A
	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
Longnose Gar		P	M	15	14.42	2.59	13.29	7.59	921.67
Mooneye		I	M R	3	2.88	0.52	0.17	0.10	60.00
Gizzard Shad		O	M	106	101.92	18.28	6.64	3.79	65.16
Smallmouth Buffalo	C	I	M	36	34.62	6.21	54.13	30.91	1,563.89
Quillback	C	O	M	3	2.88	0.52	2.29	1.31	795.00
Highfin Carpsucker	C	O	M	6	5.77	1.03	0.85	0.48	146.67
Silver Redhorse	R	I	S M	2	1.92	0.34	2.64	1.51	1,375.00
Golden Redhorse	R	I	S M	4	3.85	0.69	0.17	0.10	44.50
River Redhorse [S]	R	I	S I	2	1.92	0.34	3.03	1.73	1,575.00
Northern Hog Sucker	R	I	S M	4	3.85	0.69	0.27	0.16	70.75
Smallmouth Redhorse	R	I	S M	7	6.73	1.21	2.65	1.51	393.14
Common Carp	G	O	M T	16	15.38	2.76	43.47	24.82	2,825.78
Gravel Chub	N	I	S M	1	0.96	0.17	0.01	0.00	5.00
Suckermouth Minnow	N	I	S	3	2.88	0.52	0.01	0.01	3.67
Emerald Shiner	N	I	M	177	170.19	30.52	0.31	0.18	1.82
Spotfin Shiner	N	I	M	23	22.12	3.97	0.04	0.02	1.74
Sand Shiner	N	I	M M	4	3.85	0.69	0.01	0.01	2.75
Mimic Shiner	N	I	M I	2	1.92	0.34	0.00	0.00	2.00
Ghost Shiner	N	I	M	1	0.96	0.17	0.00	0.00	1.00
Bluntnose Minnow	N	O	C T	3	2.88	0.52	0.01	0.00	2.00
Channel Catfish	F		C	16	15.38	2.76	15.43	8.81	1,003.00
Flathead Catfish	F	P	C	7	6.73	1.21	2.61	1.49	388.43
Brook Silverside		I	M M	7	6.73	1.21	0.01	0.00	1.00
White Bass	F	P	M	61	58.65	10.52	12.68	7.24	216.18
White Crappie	S	I	C	1	0.96	0.17	0.23	0.13	242.00
Smallmouth Bass	F	C	C M	1	0.96	0.17	0.34	0.19	350.00
Spotted Bass	F	C	C	16	15.38	2.76	1.12	0.64	72.63
Largemouth Bass	F	C	C	4	3.85	0.69	0.51	0.29	131.25
Bluegill Sunfish	S	I	C P	14	13.46	2.41	0.63	0.36	46.64
Green Sf X Bluegill Sf				1	0.96	0.17	0.03	0.02	32.00
Sauger	F	P	S	1	0.96	0.17	0.28	0.16	290.00
Slenderhead Darter	D	I	S R	3	2.88	0.52	0.01	0.01	4.67
Logperch	D	I	S M	2	1.92	0.34	0.02	0.01	11.00
Sauger X Walleye	E	P		3	2.88	0.52	2.22	1.27	770.00
Freshwater Drum			M P	25	24.04	4.31	9.03	5.16	375.70
<i>Mile Total</i>				580	557.69		175.15		
<i>Number of Species</i>				33					
<i>Number of Hybrids</i>				2					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 20.90	Location:	Date Range: 08/31/2006
Time Fished: 3433 sec	Drainage: 7950.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	11	22.00	6.15	10.18	7.43	462.91
Gizzard Shad		O	M	22	44.00	12.29	5.69	4.15	129.40
Smallmouth Buffalo	C	I	M	34	68.00	18.99	85.44	62.32	1,256.45
Quillback	C	O	M	1	2.00	0.56	0.39	0.28	195.00
Silver Redhorse	R	I	S M	1	2.00	0.56	0.11	0.08	53.00
Golden Redhorse	R	I	S M	2	4.00	1.12	0.52	0.38	130.50
Common Carp	G	O	M T	3	6.00	1.68	13.40	9.77	2,233.33
Emerald Shiner	N	I	M	3	6.00	1.68	0.01	0.01	2.33
Spotfin Shiner	N	I	M	15	30.00	8.38	0.08	0.06	2.54
Bullhead Minnow	N	O	C	7	14.00	3.91	0.04	0.03	3.14
Bluntnose Minnow	N	O	C T	1	2.00	0.56	0.01	0.00	3.00
Channel Catfish	F		C	9	18.00	5.03	1.34	0.97	74.22
Flathead Catfish	F	P	C	12	24.00	6.70	13.80	10.07	575.00
White Bass	F	P	M	1	2.00	0.56	0.19	0.14	96.00
Str. Bass X Wh. Bass	E			2	4.00	1.12	1.12	0.82	280.00
Black Crappie	S	I	C	1	2.00	0.56	0.86	0.63	432.00
Rock Bass	S	C	C	1	2.00	0.56	0.02	0.01	8.00
Spotted Bass	F	C	C	7	14.00	3.91	1.01	0.73	71.86
Bluegill Sunfish	S	I	C P	34	68.00	18.99	2.14	1.56	31.47
Orangespotted Sunfish	S	I	C	8	16.00	4.47	0.13	0.09	8.00
Sauger X Walleye	E	P		1	2.00	0.56	0.27	0.20	135.00
Freshwater Drum			M P	3	6.00	1.68	0.36	0.26	60.00
<i>Mile Total</i>				179	358.00		137.11		
<i>Number of Species</i>				20					
<i>Number of Hybrids</i>				2					

Species List

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River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 13.90	Location:	Date Range: 08/11/2006
Time Fished: 4859 sec	Drainage: 7995.0 sq mi	Thru: 10/16/2006
Dist Fished: 1.00 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	14	14.00	3.60	10.43	4.69	744.88
Mooneye		I	M R	2	2.00	0.51	0.15	0.07	73.00
Skipjack Herring		P	M	1	1.00	0.26	0.26	0.12	264.00
Gizzard Shad		O	M	73	73.00	18.77	10.31	4.64	141.23
Blue Sucker [E]	R	I	S R	4	4.00	1.03	15.07	6.78	3,766.67
Smallmouth Buffalo	C	I	M	40	40.00	10.28	69.50	31.26	1,737.61
Quillback	C	O	M	14	14.00	3.60	7.00	3.15	499.64
River Carpsucker	C	O	M	9	9.00	2.31	9.91	4.46	1,101.11
Highfin Carpsucker	C	O	M	2	2.00	0.51	0.10	0.04	49.00
Silver Redhorse	R	I	S M	2	2.00	0.51	2.30	1.03	1,150.00
Golden Redhorse	R	I	S M	1	1.00	0.26	0.10	0.05	103.00
River Redhorse [S]	R	I	S I	2	2.00	0.51	6.35	2.86	3,175.00
Northern Hog Sucker	R	I	S M	2	2.00	0.51	0.07	0.03	33.50
Smallmouth Redhorse	R	I	S M	12	12.00	3.08	2.85	1.28	237.08
Common Carp	G	O	M T	4	4.00	1.03	11.55	5.19	2,887.50
Gravel Chub	N	I	S M	1	1.00	0.26	0.01	0.00	8.00
Suckermouth Minnow	N	I	S	4	4.00	1.03	0.03	0.01	7.00
Emerald Shiner	N	I	M	18	18.00	4.63	0.03	0.01	1.67
Spotfin Shiner	N	I	M	14	14.00	3.60	0.02	0.01	1.46
Sand Shiner	N	I	M M	2	2.00	0.51	0.00	0.00	2.00
Channel Catfish	F		C	31	31.00	7.97	26.86	12.08	866.35
Flathead Catfish	F	P	C	10	10.00	2.57	13.38	6.02	1,337.70
White Bass	F	P	M	41	41.00	10.54	6.76	3.04	164.96
Str. Bass X Wh. Bass	E			1	1.00	0.26	1.50	0.67	1,500.00
White Crappie	S	I	C	4	4.00	1.03	0.94	0.42	235.75
Black Crappie	S	I	C	1	1.00	0.26	0.21	0.09	205.00
Spotted Bass	F	C	C	7	7.00	1.80	1.19	0.54	170.57
Largemouth Bass	F	C	C	2	2.00	0.51	0.41	0.18	202.50
Bluegill Sunfish	S	I	C P	11	11.00	2.83	0.78	0.35	70.64
Redear Sunfish	E	I	C	1	1.00	0.26	0.11	0.05	112.00
Sauger	F	P	S	2	2.00	0.51	0.33	0.15	163.50
Logperch	D	I	S M	4	4.00	1.03	0.06	0.03	15.50
Banded Darter	D	I	S I	1	1.00	0.26	0.00	0.00	2.00
Sauger X Walleye	E	P		6	6.00	1.54	3.17	1.43	528.50
Freshwater Drum			M P	46	46.00	11.83	20.64	9.28	448.77
<i>Mile Total</i>				389	389.00		222.37		
<i>Number of Species</i>				33					
<i>Number of Hybrids</i>				2					

Species List

River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 9.40	Location:	Date Range: 09/01/2006
Time Fished: 2932 sec	Drainage: 8009.0 sq mi	
Dist Fished: 0.50 km	Basin: Muskingum River	No of Passes: 1
		Sampler Type: N

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Longnose Gar		P	M	4	8.00	1.35	2.27	2.24	283.33
Gizzard Shad		O	M	13	26.00	4.39	3.36	3.32	129.17
Smallmouth Buffalo	C	I	M	15	30.00	5.07	28.17	27.83	938.93
River Carpsucker	C	O	M	1	2.00	0.34	2.05	2.03	1,025.00
Highfin Carpsucker	C	O	M	8	16.00	2.70	1.15	1.13	71.75
Golden Redhorse	R	I	S M	3	6.00	1.01	0.46	0.45	76.67
Smallmouth Redhorse	R	I	S M	1	2.00	0.34	0.23	0.23	114.00
Common Carp	G	O	M T	5	10.00	1.69	29.55	29.19	2,955.00
Emerald Shiner	N	I	M	16	32.00	5.41	0.09	0.09	2.81
Spotfin Shiner	N	I	M	17	34.00	5.74	0.09	0.08	2.53
Bullhead Minnow	N	O	C	8	16.00	2.70	0.04	0.04	2.50
Bluntnose Minnow	N	O	C T	1	2.00	0.34	0.01	0.01	6.00
Channel Catfish	F		C	3	6.00	1.01	0.79	0.78	131.67
Flathead Catfish	F	P	C	19	38.00	6.42	16.21	16.02	426.67
White Bass	F	P	M	5	10.00	1.69	0.98	0.97	98.40
Smallmouth Bass	F	C	C M	2	4.00	0.68	1.29	1.27	322.50
Spotted Bass	F	C	C	16	32.00	5.41	1.62	1.60	50.63
Largemouth Bass	F	C	C	2	4.00	0.68	0.46	0.45	114.00
Green Sunfish	S	I	C T	6	12.00	2.03	0.27	0.26	22.17
Bluegill Sunfish	S	I	C P	104	208.00	35.14	5.78	5.71	27.78
Orangespotted Sunfish	S	I	C	22	44.00	7.43	0.39	0.39	8.90
Sauger X Walleye	E	P		8	16.00	2.70	1.87	1.85	116.75
Freshwater Drum			M P	17	34.00	5.74	4.11	4.06	120.88
<i>Mile Total</i>				296	592.00		101.22		
<i>Number of Species</i>				22					
<i>Number of Hybrids</i>				1					

Species List

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River Code: 17-001	Stream: Muskingum River	Sample Date: 2006
River Mile: 5.60	Location: dst. Devola dam	Date Range: 08/11/2006
Time Fished: 5504 sec	Drainage: 8041.0 sq mi	Thru: 10/16/2006
Dist Fished: 1.06 km	Basin: Muskingum River	No of Passes: 2
		Sampler Type: A

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
Silver Lamprey		P	N	1	0.94	0.23	0.04	0.02	40.00
Longnose Gar		P	M	24	22.64	5.52	8.40	3.42	371.10
Gizzard Shad		O	M	68	64.15	15.63	9.85	4.02	153.58
Smallmouth Buffalo	C	I	M	19	17.92	4.37	40.09	16.34	2,236.84
Quillback	C	O	M	29	27.36	6.67	19.72	8.04	720.83
Highfin Carpsucker	C	O	M	2	1.89	0.46	0.94	0.38	500.00
River Redhorse [S]	R	I	S I	3	2.83	0.69	6.32	2.58	2,233.33
Northern Hog Sucker	R	I	S M	5	4.72	1.15	0.29	0.12	61.00
Smallmouth Redhorse	R	I	S M	13	12.26	2.99	7.62	3.11	621.65
Common Carp	G	O	M T	14	13.21	3.22	43.67	17.79	3,306.17
Emerald Shiner	N	I	M	88	83.02	20.23	0.12	0.05	1.43
Spotfin Shiner	N	I	M	8	7.55	1.84	0.01	0.00	1.50
Mimic Shiner	N	I	M I	3	2.83	0.69	0.01	0.00	2.00
Bullhead Minnow	N	O	C	3	2.83	0.69	0.01	0.00	2.67
Channel Catfish	F		C	33	31.13	7.59	36.75	14.98	1,180.45
Flathead Catfish	F	P	C	5	4.72	1.15	22.19	9.04	4,703.40
White Bass	F	P	M	42	39.62	9.66	6.56	2.67	165.62
Str. Bass X Wh. Bass	E			3	2.83	0.69	1.24	0.50	437.33
White Crappie	S	I	C	1	0.94	0.23	0.04	0.02	42.00
Spotted Bass	F	C	C	2	1.89	0.46	0.26	0.10	136.50
Largemouth Bass	F	C	C	6	5.66	1.38	0.86	0.35	152.00
Bluegill Sunfish	S	I	C P	1	0.94	0.23	0.02	0.01	22.00
Sauger	F	P	S	8	7.55	1.84	0.67	0.27	89.38
Logperch	D	I	S M	1	0.94	0.23	0.02	0.01	20.00
Banded Darter	D	I	S I	1	0.94	0.23	0.00	0.00	3.00
Bluebreast Darter [T]	D	I	S R	1	0.94	0.23	0.00	0.00	2.00
Fantail Darter	D	I	C	1	0.94	0.23	0.00	0.00	1.00
Sauger X Walleye	E	P		4	3.77	0.92	1.48	0.60	393.00
Freshwater Drum			M P	46	43.40	10.57	38.20	15.57	880.22
<i>Mile Total</i>				435	410.38		245.39		
<i>Number of Species</i>				27					
<i>Number of Hybrids</i>				2					

Appendix Table 10. Invertebrate Community Index (ICI) metrics and scores for the Muskingum River, 2006.
A - Mid Channel sample; B - Edge of Channel sample. Page A68

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			
Muskingum River (17-001)													
Year: 2006													
105.00	4873	53(6)	14(6)	8(6)	21(6)	55.0(6)	11.5(2)	7.0(4)	25.2(0)	0.6(6)	26(6)	4	48
101.80	4883	40(6)	10(6)	11(6)	11(6)	50.2(6)	23.3(4)	14.9(6)	11.3(4)	0.4(6)	27(6)	4	56
92.20	5993	46(6)	11(6)	8(6)	16(6)	70.5(6)	2.4(0)	3.4(2)	22.1(0)	1.1(6)	22(6)	4	44
87.00 A	6036	31(6)	10(6)	5(4)	6(4)	47.0(6)	1.9(0)	32.4(6)	18.1(0)	0.0(6)	12(4)	4	42
87.00 B	6036	26(4)	10(6)	3(2)	6(4)	74.1(6)	0.4(0)	0.3(2)	24.9(0)	0.0(6)	12(4)	4	34
84.60	6042	48(6)	14(6)	10(6)	14(6)	35.7(6)	11.1(2)	28.2(6)	23.8(0)	1.7(4)	22(6)	4	48
80.20 A	6063	31(6)	11(6)	6(4)	6(4)	36.5(6)	4.5(0)	43.0(6)	15.2(2)	0.0(6)	7(2)	4	42
80.20 B	6063	31(6)	10(6)	5(4)	11(6)	38.1(6)	1.7(0)	38.5(6)	21.7(0)	0.0(6)	7(2)	4	42
77.60 B	6070	36(6)	8(6)	1(0)	18(6)	9.9(4)	0.3(0)	5.5(4)	82.3(0)	6.8(0)	4(0)	4	26
75.80	6850	44(6)	11(6)	11(6)	13(6)	30.4(6)	20.5(2)	34.5(6)	13.9(2)	1.9(4)	20(6)	4	50
72.40 A	7159	39(6)	13(6)	5(4)	13(6)	34.8(6)	6.4(2)	31.0(6)	27.5(0)	1.0(6)	4(0)	4	42
72.40 B	7159	42(6)	9(6)	1(0)	17(6)	8.6(4)	4.1(0)	1.4(2)	83.7(0)	32.0(0)	4(0)	4	24
67.30	7196	38(6)	9(6)	11(6)	10(6)	8.8(4)	8.1(2)	67.4(6)	15.7(0)	0.4(6)	23(6)	4	48
63.70 A	7350	38(6)	10(6)	7(4)	11(6)	21.0(6)	4.6(0)	60.9(6)	12.8(2)	0.4(6)	4(2)	4	44
63.70 B	7350	36(6)	9(6)	4(4)	14(6)	14.6(6)	1.0(0)	42.5(6)	41.7(0)	0.2(6)	4(2)	4	42
56.40	7386	39(6)	8(6)	1(0)	14(6)	26.4(6)	1.0(0)	3.4(2)	65.9(0)	0.9(6)	18(6)	4	38
52.10 A	7414	38(6)	8(6)	8(6)	12(6)	5.0(2)	8.3(2)	47.7(6)	38.2(0)	4.9(0)	3(0)	4	34
52.10 B	7414	23(4)	7(6)	2(2)	8(6)	4.6(2)	3.9(0)	9.9(6)	81.5(0)	2.7(2)	3(0)	4	28
48.80	7422	37(6)	11(6)	6(4)	11(6)	18.6(6)	6.3(2)	35.5(6)	39.6(0)	2.8(2)	21(6)	4	44
43.20 B	7441	40(6)	13(6)	9(6)	10(6)	6.1(4)	9.1(2)	34.4(6)	50.4(0)	1.5(4)	10(4)	4	44
39.50	7457	40(6)	11(6)	8(6)	12(6)	13.6(6)	12.3(2)	42.7(6)	30.2(0)	1.7(4)	17(6)	4	48
36.20 A	7463	34(6)	10(6)	6(4)	8(6)	3.8(2)	29.1(4)	37.7(6)	29.3(0)	0.3(6)	3(0)	4	40
36.20 B	7463	33(6)	7(6)	4(4)	12(6)	2.2(2)	6.2(2)	6.9(4)	84.4(0)	1.9(4)	3(0)	4	34
33.50	7470	36(6)	9(6)	9(6)	11(6)	4.8(2)	17.8(2)	52.7(6)	24.8(0)	1.3(4)	22(6)	4	44
29.20 A	7624	24(4)	7(6)	5(4)	7(6)	12.8(6)	60.3(6)	16.2(6)	10.7(4)	0.0(6)	5(2)	4	50
29.20 B	7624	28(4)	5(4)	3(2)	13(6)	20.0(6)	1.9(0)	2.0(2)	76.0(0)	1.2(6)	5(2)	4	32
26.20 A	7711	39(6)	8(6)	5(4)	17(6)	24.5(6)	46.6(6)	9.6(6)	19.0(0)	2.4(4)	7(2)	4	46
26.20 B	7711	34(6)	5(4)	6(4)	13(6)	5.3(2)	12.6(2)	2.2(2)	79.4(0)	12.6(0)	7(2)	4	28
24.70	7713	38(6)	8(6)	7(4)	13(6)	14.2(6)	27.6(4)	26.5(6)	31.3(0)	2.4(4)	16(6)	4	48
20.90 A	7950	30(4)	7(6)	6(4)	11(6)	7.0(4)	70.2(6)	12.5(6)	10.2(4)	1.0(6)	8(4)	4	50
20.90 B	7950	34(6)	8(6)	6(4)	12(6)	26.7(6)	31.3(4)	6.4(4)	34.9(0)	1.2(6)	8(4)	4	46
13.90	7995	39(6)	8(6)	7(4)	13(6)	8.6(4)	51.8(6)	13.3(6)	26.0(0)	7.4(0)	11(4)	4	42
9.40 A	8009	34(6)	5(4)	4(4)	18(6)	7.3(4)	56.8(6)	3.6(4)	32.0(0)	5.2(0)	5(2)	4	36
9.40 B	8009	35(6)	5(4)	4(4)	18(6)	16.1(6)	9.1(2)	0.7(2)	73.1(0)	12.3(0)	5(2)	4	32
5.60	8041	40(6)	9(6)	8(6)	12(6)	16.0(6)	55.0(6)	4.3(4)	24.7(0)	1.7(4)	16(6)	4	50

Appendix Table 11. Ohio EPA macroinvertebrate results from the Muskingum River, 2006.

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/11/2006 River Code: 17-001 RM: 110.70 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	+	85625	<i>Rheotanytarsus sp</i>	+
05800	<i>Caecidotea sp</i>	+	85800	<i>Tanytarsus sp</i>	+
06810	<i>Gammarus fasciatus</i>	+	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
08260	<i>Orconectes (Crockerinus) sanbornii sanbornii</i>	+	93900	<i>Elimia sp</i>	+
11125	<i>Pseudocloeon frondale</i>	+	96900	<i>Ferrissia sp</i>	+
11130	<i>Baetis intercalaris</i>	+			
11620	<i>Paracloeodes sp 2</i>	+	No. Quantitative Taxa: 0		Total Taxa: 48
12200	<i>Isonychia sp</i>	+	No. Qualitative Taxa: 48		ICI:
12956	<i>Heptagenia marginalis</i>	+	Number of Organisms: 0		Qual EPT: 22
13000	<i>Leucrocuta sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13510	<i>Maccaffertium exiguum</i>	+			
13540	<i>Maccaffertium mediopunctatum</i>	+			
13550	<i>Maccaffertium mexicanum integrum</i>	+			
13561	<i>Maccaffertium pulchellum</i>	+			
13570	<i>Maccaffertium terminatum</i>	+			
16700	<i>Tricorythodes sp</i>	+			
17200	<i>Caenis sp</i>	+			
22300	<i>Argia sp</i>	+			
25620	<i>Stylurus spiniceps</i>	+			
34700	<i>Agnatina capitata complex</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52510	<i>Hydropsyche aerata</i>	+			
52550	<i>Hydropsyche frisoni</i>	+			
52570	<i>Hydropsyche simulans</i>	+			
52620	<i>Macrostemum zebratum</i>	+			
59407	<i>Nectopsyche candida</i>	+			
67800	<i>Tropisternus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
74100	<i>Simulium sp</i>	+			
74650	<i>Atrichopogon sp</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	+			
80410	<i>Cricotopus (C.) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	+			
82220	<i>Tvetenia discoloripes group</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84460	<i>Polypedilum (P.) fallax group</i>	+			

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/11/2006 River Code: 17-001 RM: 107.60 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	74100	<i>Simulium sp</i>	+
01801	<i>Turbellaria</i>	+	80310	<i>Cardiocladius obscurus</i>	+
03600	<i>Oligochaeta</i>	+	82141	<i>Thienemanniella xena</i>	+
05800	<i>Caecidotea sp</i>	+	82730	<i>Chironomus (C.) decorus group</i>	+
05900	<i>Lirceus sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	+
06201	<i>Hyaella azteca</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
06810	<i>Gammarus fasciatus</i>	+	85625	<i>Rheotanytarsus sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	85800	<i>Tanytarsus sp</i>	+
11130	<i>Baetis intercalaris</i>	+	93900	<i>Elimia sp</i>	+
11200	<i>Callibaetis sp</i>	+	95100	<i>Physella sp</i>	+
12200	<i>Isonychia sp</i>	+	97601	<i>Corbicula fluminea</i>	+
12956	<i>Heptagenia marginalis</i>	+	97710	<i>Dreissena polymorpha</i>	+
13000	<i>Leucrocota sp</i>	+			
13400	<i>Stenacron sp</i>	+	No. Quantitative Taxa: 0		Total Taxa: 56
13510	<i>Maccaffertium exiguum</i>	+	No. Qualitative Taxa: 56		ICI:
13540	<i>Maccaffertium mediopunctatum</i>	+	Number of Organisms: 0		Qual EPT: 21
13550	<i>Maccaffertium mexicanum integrum</i>	+			
13561	<i>Maccaffertium pulchellum</i>	+			
13570	<i>Maccaffertium terminatum</i>	+			
16700	<i>Tricorythodes sp</i>	+			
21200	<i>Calopteryx sp</i>	+			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+			
34410	<i>Paragnetina media</i>	+			
34700	<i>Aagnetina capitata complex</i>	+			
42700	<i>Belostoma sp</i>	+			
43300	<i>Ranatra sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
47600	<i>Sialis sp</i>	+			
48410	<i>Corydalus cornutus</i>	+			
51300	<i>Neureclipsis sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52510	<i>Hydropsyche aerata</i>	+			
52550	<i>Hydropsyche frisoni</i>	+			
52570	<i>Hydropsyche simulans</i>	+			
52620	<i>Macrostemum zebratum</i>	+			
63900	<i>Laccophilus sp</i>	+			
68075	<i>Psephenus herricki</i>	+			
68201	<i>Scirtidae</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			

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

Collection Date: 09/11/2006 River Code: 17-001 RM: 105.00 Site: Muskingum River Twp. Rd. 1182

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	1	80310	<i>Cardiocladius obscurus</i>	+
01801	<i>Turbellaria</i>	166 +	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	132 +
03360	<i>Plumatella sp</i>	+	80410	<i>Cricotopus (C.) sp</i>	3 +
03600	<i>Oligochaeta</i>	8 +	80420	<i>Cricotopus (C.) bicinctus</i>	3 +
06810	<i>Gammarus fasciatus</i>	38 +	80430	<i>Cricotopus (C.) tremulus group</i>	+
11110	<i>Acentrella parvula</i>	26	80440	<i>Cricotopus (C.) trifascia</i>	3 +
11119	<i>Plauditus dubius or P. virilis</i>	+	81200	<i>Nanocladius sp</i>	3
11130	<i>Baetis intercalaris</i>	278 +	81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	13
11503	<i>Heterocloeon curiosum</i>	+	82130	<i>Thienemanniella similis</i>	4 +
12200	<i>Isonychia sp</i>	44 +	82141	<i>Thienemanniella xena</i>	24 +
12924	<i>Heptagenia flavescens</i>	4	82220	<i>Tvetenia discoloripes group</i>	+
13000	<i>Leucrocuta sp</i>	12 +	82730	<i>Chironomus (C.) decorus group</i>	3
13400	<i>Stenacron sp</i>	150 +	82820	<i>Cryptochironomus sp</i>	6 +
13510	<i>Maccaffertium exiguum</i>	166 +	84300	<i>Phaenopsectra obediens group</i>	6
13540	<i>Maccaffertium mediopunctatum</i>	2 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	74 +
13550	<i>Maccaffertium mexicanum integrum</i>	95 +	84460	<i>Polypedilum (P.) fallax group</i>	+
13561	<i>Maccaffertium pulchellum</i>	491 +	84470	<i>Polypedilum (P.) illinoense</i>	+
13570	<i>Maccaffertium terminatum</i>	11 +	84520	<i>Polypedilum (Tripodura) halterale group</i>	3 +
15501	<i>Ephemerellidae</i>	4	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	13
16700	<i>Tricorythodes sp</i>	11 +	84700	<i>Stenochironomus sp</i>	6
17200	<i>Caenis sp</i>	7 +	84790	<i>Tribelos fuscicorne</i>	3
18100	<i>Anthopotamus sp</i>	+	85625	<i>Rheotanytarsus sp</i>	150 +
22300	<i>Argia sp</i>	+	85800	<i>Tanytarsus sp</i>	16 +
24501	<i>Gomphidae</i>	+	87540	<i>Hemerodromia sp</i>	25
34700	<i>Agnatina capitata complex</i>	5 +	93900	<i>Elimia sp</i>	37 +
48410	<i>Corydalus cornutus</i>	2 +	96900	<i>Ferrissia sp</i>	+
51300	<i>Neureclipsis sp</i>	3 +	97601	<i>Corbicula fluminea</i>	7 +
52200	<i>Cheumatopsyche sp</i>	204 +			
52430	<i>Ceratopsyche morosa group</i>	13 +	No. Quantitative Taxa: 53		Total Taxa: 71
52510	<i>Hydropsyche aerata</i>	3 +	No. Qualitative Taxa: 56		ICI: 48
52520	<i>Hydropsyche bidens</i>	+	Number of Organisms: 2365		Qual EPT: 26
52540	<i>Hydropsyche dicantha</i>	+			
52550	<i>Hydropsyche frisoni</i>	34 +			
52560	<i>Hydropsyche orris</i>	+			
52570	<i>Hydropsyche simulans</i>	3 +			
52620	<i>Macrostemum zebratum</i>	5 +			
53800	<i>Hydroptila sp</i>	8			
59407	<i>Nectopsyche candida</i>	+			
60300	<i>Dineutus sp</i>	+			
68708	<i>Dubiraphia vittata group</i>	1			
68901	<i>Macronychus glabratus</i>	20 +			
69400	<i>Stenelmis sp</i>	+			
74100	<i>Simulium sp</i>	6 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	10			

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

Collection Date: 09/11/2006 River Code: 17-001 RM: 101.80 Site: Muskingum River 2.5 mi. upst. Wills Creek

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	2 +	67800	<i>Tropisternus sp</i>	+
03600	<i>Oligochaeta</i>	16 +	68901	<i>Macronychus glabratus</i>	12 +
04683	<i>Placobdella multilineata</i>	+	69400	<i>Stenelmis sp</i>	1 +
05800	<i>Caecidotea sp</i>	+	74100	<i>Simulium sp</i>	66 +
06810	<i>Gammarus fasciatus</i>	2 +	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	112 +
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	80410	<i>Cricotopus (C.) sp</i>	109 +
11014	<i>Acentrella turbida</i>	+	80420	<i>Cricotopus (C.) bicinctus</i>	18 +
11110	<i>Acentrella parvula</i>	1	80440	<i>Cricotopus (C.) trifascia</i>	73
11125	<i>Pseudocloeon frondale</i>	+	81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	18
11130	<i>Baetis intercalaris</i>	2323 +	82141	<i>Thienemanniella xena</i>	56
11200	<i>Callibaetis sp</i>	+	82220	<i>Tvetenia discoloripes group</i>	272
11503	<i>Heterocloeon curiosum</i>	2	82730	<i>Chironomus (C.) decorus group</i>	+
11670	<i>Procloeon viridoculare</i>	+	84300	<i>Phaenopsectra obediens group</i>	+
12200	<i>Isonychia sp</i>	339 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	254 +
13000	<i>Leucrocota sp</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
13100	<i>Nixe sp</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
13400	<i>Stenacron sp</i>	27 +	84700	<i>Stenochironomus sp</i>	18
13510	<i>Maccaffertium exiguum</i>	235 +	85625	<i>Rheotanytarsus sp</i>	1342 +
13540	<i>Maccaffertium mediopunctatum</i>	7 +	85800	<i>Tanytarsus sp</i>	+
13550	<i>Maccaffertium mexicanum integrum</i>	143 +	93900	<i>Elimia sp</i>	+
13561	<i>Maccaffertium pulchellum</i>	1330 +	95100	<i>Physella sp</i>	+
13570	<i>Maccaffertium terminatum</i>	+	97601	<i>Corbicula fluminea</i>	1 +
16700	<i>Tricorythodes sp</i>	132 +			
18100	<i>Anthopotamus sp</i>	+			
22300	<i>Argia sp</i>	+			
23909	<i>Boyeria vinosa</i>	+	No. Quantitative Taxa: 40	Total Taxa: 66	
30800	<i>Pteronarcys sp</i>	+	No. Qualitative Taxa: 56	ICI: 56	
34140	<i>Acroneuria internata</i>	+	Number of Organisms: 9035	Qual EPT: 27	
34700	<i>Agetina capitata complex</i>	11 +			
43300	<i>Ranatra sp</i>	+			
44300	<i>Pelocoris sp</i>	+			
45400	<i>Trichocorixa sp</i>	+			
48410	<i>Corydalus cornutus</i>	7 +			
51300	<i>Neureclipsis sp</i>	1 +			
52200	<i>Cheumatopsyche sp</i>	613 +			
52430	<i>Ceratopsyche morosa group</i>	307 +			
52510	<i>Hydropsyche aerata</i>	202 +			
52520	<i>Hydropsyche bidens</i>	56			
52550	<i>Hydropsyche frisoni</i>	144			
52560	<i>Hydropsyche orris</i>	115 +			
52570	<i>Hydropsyche simulans</i>	584 +			
52620	<i>Macrostemum zebratum</i>	26 +			
53800	<i>Hydroptila sp</i>	26 +			
54160	<i>Ochrotrichia sp</i>	32			

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

Collection Date: 09/11/2006 River Code: 17-001 RM: 97.40 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	84790	<i>Tribelos fuscicorne</i>	+
01801	<i>Turbellaria</i>	+	85263	<i>Cladotanytarsus vanderwulpi group Type 3</i>	+
03600	<i>Oligochaeta</i>	+	93900	<i>Elimia sp</i>	+
05800	<i>Caecidotea sp</i>	+	95100	<i>Physella sp</i>	+
05900	<i>Lirceus sp</i>	+	97601	<i>Corbicula fluminea</i>	+
06810	<i>Gammarus fasciatus</i>	+	99240	<i>Lasmigona complanata</i>	+
08260	<i>Orconectes (Crokerinus) sanbornii sanbornii</i>	+	99400	<i>Quadrula quadrula</i>	+
11119	<i>Plauditus dubius or P. virilis</i>	+			
11130	<i>Baetis intercalaris</i>	+	No. Quantitative Taxa: 0		Total Taxa: 51
11200	<i>Callibaetis sp</i>	+	No. Qualitative Taxa: 51		ICI:
12200	<i>Isonychia sp</i>	+	Number of Organisms: 0		Qual EPT: 22
13000	<i>Leucrocuta sp</i>	+			
13100	<i>Nixe sp</i>	+			
13400	<i>Stenacron sp</i>	+			
13510	<i>Maccaffertium exiguum</i>	+			
13540	<i>Maccaffertium mediopunctatum</i>	+			
13550	<i>Maccaffertium mexicanum integrum</i>	+			
13561	<i>Maccaffertium pulchellum</i>	+			
13570	<i>Maccaffertium terminatum</i>	+			
16700	<i>Tricorythodes sp</i>	+			
22300	<i>Argia sp</i>	+			
25620	<i>Stylurus spiniceps</i>	+			
34600	<i>Perlinella sp</i>	+			
34700	<i>Agneta capitata complex</i>	+			
43570	<i>Neoplea sp</i>	+			
48410	<i>Corydalus cornutus</i>	+			
52200	<i>Cheumatopsyche sp</i>	+			
52430	<i>Ceratopsyche morosa group</i>	+			
52510	<i>Hydropsyche aerata</i>	+			
52550	<i>Hydropsyche frisoni</i>	+			
52570	<i>Hydropsyche simulans</i>	+			
52620	<i>Macrostemum zebratum</i>	+			
52801	<i>Potamyia flava</i>	+			
63300	<i>Hydroporus sp</i>	+			
68601	<i>Ancyronyx variegata</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
72700	<i>Anopheles sp</i>	+			
80310	<i>Cardiocladius obscurus</i>	+			
80430	<i>Cricotopus (C.) tremulus group</i>	+			
82130	<i>Thienemanniella similis</i>	+			
82220	<i>Tvetenia discoloripes group</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	+			

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

Collection Date: 09/11/2006 River Code: 17-001 RM: 92.20 Site: Muskingum River upst. St. Rt. 208

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	42
01320	<i>Hydra sp</i>	4			
01801	<i>Turbellaria</i>	161	80410	<i>Cricotopus (C.) sp</i>	8 +
03360	<i>Plumatella sp</i>	+	82730	<i>Chironomus (C.) decorus group</i>	12
03600	<i>Oligochaeta</i>	13	82820	<i>Cryptochironomus sp</i>	4
06810	<i>Gammarus fasciatus</i>	1 +	83040	<i>Dicrotendipes neomodestus</i>	32 +
11110	<i>Acentrella parvula</i>	9	83310	<i>Glyptotendipes (Trichotendipes) amplus</i>	+
11125	<i>Pseudocloeon frondale</i>	+	84300	<i>Phaenopsectra obediens group</i>	144 +
11130	<i>Baetis intercalaris</i>	44 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	12
12200	<i>Isonychia sp</i>	39 +	84470	<i>Polypedilum (P.) illinoense</i>	+
12956	<i>Heptagenia marginalis</i>	+	84520	<i>Polypedilum (Tripodura) halterale group</i>	4
13000	<i>Leucrocuta sp</i>	48 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	28
13400	<i>Stenacron sp</i>	362 +	84700	<i>Stenochironomus sp</i>	4
13510	<i>Maccaffertium exiguum</i>	166 +	85263	<i>Cladotanytarsus vanderwulpi group Type 3</i>	4 +
13550	<i>Maccaffertium mexicanum integrum</i>	96 +	85625	<i>Rheotanytarsus sp</i>	4 +
13561	<i>Maccaffertium pulchellum</i>	482 +	85800	<i>Tanytarsus sp</i>	68 +
13570	<i>Maccaffertium terminatum</i>	183 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	4 +
16700	<i>Tricorythodes sp</i>	99 +	93900	<i>Elimia sp</i>	23 +
17200	<i>Caenis sp</i>	137 +	96900	<i>Ferrissia sp</i>	+
18100	<i>Anthopotamus sp</i>	+	97601	<i>Corbicula fluminea</i>	14
22300	<i>Argia sp</i>	3 +	97710	<i>Dreissena polymorpha</i>	+
27400	<i>Neurocordulia sp</i>	+			
34410	<i>Paragnetina media</i>	+	No. Quantitative Taxa: 46		Total Taxa: 64
34700	<i>Agnetina capitata complex</i>	16 +	No. Qualitative Taxa: 46		ICI: 44
48410	<i>Corydalus cornutus</i>	+	Number of Organisms: 2362		Qual EPT: 22
51206	<i>Cyrmellus fraternus</i>	1			
51300	<i>Neureclipsis sp</i>	10 +			
52200	<i>Cheumatopsyche sp</i>	17 +			
52510	<i>Hydropsyche aerata</i>	+			
52550	<i>Hydropsyche frisoni</i>	+			
52570	<i>Hydropsyche simulans</i>	1 +			
52620	<i>Macrostemum zebratum</i>	12 +			
53800	<i>Hydroptila sp</i>	13			
59407	<i>Nectopsyche candida</i>	2 +			
59500	<i>Oecetis sp</i>	1			
63300	<i>Hydroporus sp</i>	+			
63900	<i>Laccophilus sp</i>	+			
67800	<i>Tropisternus sp</i>	+			
68601	<i>Ancyronyx variegata</i>	1			
68901	<i>Macronychus glabratus</i>	9 +			
69400	<i>Stenelmis sp</i>	9 +			
74650	<i>Atrichopogon sp</i>	+			
77115	<i>Ablabesmyia janta</i>	8			
77120	<i>Ablabesmyia mallochi</i>	8			

Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/2006 River Code: 17-001 RM: 87.00 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	8	82730	<i>Chironomus (C.) decorus group</i>	+
01801	<i>Turbellaria</i>	84 +	82820	<i>Cryptochironomus sp</i>	+
03600	<i>Oligochaeta</i>	+	84315	<i>Phaenopsectra flavipes</i>	+
05800	<i>Caecidotea sp</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
06700	<i>Crangonyx sp</i>	+	84700	<i>Stenochironomus sp</i>	+
06810	<i>Gammarus fasciatus</i>	10 +	85500	<i>Paratanytarsus sp</i>	9
08260	<i>Orconectes (Crokerinus) sanbornii sanbornii</i>	+	85625	<i>Rheotanytarsus sp</i>	677
11130	<i>Baetis intercalaris</i>	98	87540	<i>Hemerodromia sp</i>	4
11200	<i>Callibaetis sp</i>	+	93900	<i>Elimia sp</i>	+
11670	<i>Procloeon viridoculare</i>	+	97601	<i>Corbicula fluminea</i>	+
12200	<i>Isonychia sp</i>	38	97710	<i>Dreissena polymorpha</i>	+
12956	<i>Heptagenia marginalis</i>	5	99380	<i>Quadrula pustulosa pustulosa</i>	+
13000	<i>Leucrocota sp</i>	+	99400	<i>Quadrula quadrula</i>	+
13400	<i>Stenacron sp</i>	16 +			
13510	<i>Maccaffertium exiguum</i>	78 +	No. Quantitative Taxa: 31		Total Taxa: 56
13550	<i>Maccaffertium mexicanum integrum</i>	147 +	No. Qualitative Taxa: 36		ICI: 42
13561	<i>Maccaffertium pulchellum</i>	263 +	Number of Organisms: 2115		Qual EPT: 12
13570	<i>Maccaffertium terminatum</i>	339 +			
15501	<i>Ephemerellidae</i>	1			
16700	<i>Tricorythodes sp</i>	+			
17200	<i>Caenis sp</i>	9 +			
18100	<i>Anthopotamus sp</i>	+			
22300	<i>Argia sp</i>	+			
24501	<i>Gomphidae</i>	+			
26700	<i>Macromia sp</i>	+			
27404	<i>Neurocordulia molesta</i>	1 +			
34140	<i>Acroneuria internata</i>	1			
34700	<i>Agneta capitata complex</i>	1			
45100	<i>Palmacorixa sp</i>	+			
48410	<i>Corydalus cornutus</i>	1			
51300	<i>Neureclipsis sp</i>	1 +			
52200	<i>Cheumatopsyche sp</i>	28			
52570	<i>Hydropsyche simulans</i>	3			
52620	<i>Macrostemum zebratum</i>	7			
59407	<i>Nectopsyche candida</i>	1			
60300	<i>Dineutus sp</i>	1			
68130	<i>Helichus sp</i>	+			
68901	<i>Macronychus glabratus</i>	7 +			
69400	<i>Stenelmis sp</i>	1			
77130	<i>Ablabesmyia rhamphe group</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	26			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	234			
82121	<i>Thienemanniella lobapodema</i>	16			

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

Collection Date: 09/12/2006 River Code: 17-001 RM: 87.00 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	1			
01801	<i>Turbellaria</i>	18			
06810	<i>Gammarus fasciatus</i>	170			
11125	<i>Pseudocloeon frondale</i>	2			
11130	<i>Baetis intercalaris</i>	11			
13000	<i>Leucrocuta sp</i>	34			
13400	<i>Stenacron sp</i>	267			
13510	<i>Maccaffertium exiguum</i>	91			
13550	<i>Maccaffertium mexicanum integrum</i>	136			
13561	<i>Maccaffertium pulchellum</i>	116			
13570	<i>Maccaffertium terminatum</i>	81			
14950	<i>Leptophlebia sp or Paraleptophlebia sp</i>	1			
16700	<i>Tricorythodes sp</i>	50			
27404	<i>Neurocordulia molesta</i>	1			
51300	<i>Neureclipsis sp</i>	2			
52200	<i>Cheumatopsyche sp</i>	1			
59407	<i>Nectopsyche candida</i>	1			
68901	<i>Macronychus glabratus</i>	2			
69400	<i>Stenelmis sp</i>	1			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	51			
80410	<i>Cricotopus (C.) sp</i>	2			
82141	<i>Thienemanniella xena</i>	1			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	2			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	2			
85625	<i>Rheotanytarsus sp</i>	3			
93900	<i>Elimia sp</i>	18			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 26 Total Taxa: 27
 No. Qualitative Taxa: 1 ICI: **34**
 Number of Organisms: 1065 Qual EPT:

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

Collection Date: 09/12/2006 River Code: 17-001 RM: 84.60 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	26	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	32 +
03600	<i>Oligochaeta</i>	9 +	80410	<i>Cricotopus (C.) sp</i>	268 +
06810	<i>Gammarus fasciatus</i>	2 +	80420	<i>Cricotopus (C.) bicinctus</i>	80 +
11110	<i>Acentrella parvula</i>	3	80430	<i>Cricotopus (C.) tremulus group</i>	80
11125	<i>Pseudocloeon frondale</i>	+	82130	<i>Thienemanniella similis</i>	24
11130	<i>Baetis intercalaris</i>	427 +	82141	<i>Thienemanniella xena</i>	16
11650	<i>Procloeon sp (w/ hindwing pads)</i>	1	83040	<i>Dicrotendipes neomodestus</i>	294 +
11651	<i>Procloeon sp (w/o hindwing pads)</i>	+	84300	<i>Phaenopsectra obediens group</i>	27
11670	<i>Procloeon viridoculare</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	187 +
12200	<i>Isonychia sp</i>	110 +	84460	<i>Polypedilum (P.) fallax group</i>	+
12956	<i>Heptagenia marginalis</i>	60 +	84470	<i>Polypedilum (P.) illinoense</i>	+
13000	<i>Leucrocuta sp</i>	22 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	+
13400	<i>Stenacron sp</i>	300 +	84700	<i>Stenochironomus sp</i>	+
13510	<i>Maccaffertium exiguum</i>	149 +	85265	<i>Cladotanytarsus vanderwulpi group Type 5</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	1	85625	<i>Rheotanytarsus sp</i>	1204 +
13550	<i>Maccaffertium mexicanum integrum</i>	46 +	85800	<i>Tanytarsus sp</i>	134 +
13561	<i>Maccaffertium pulchellum</i>	303 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	161
13570	<i>Maccaffertium terminatum</i>	139 +	87540	<i>Hemerodromia sp</i>	146
16700	<i>Tricorythodes sp</i>	259 +	93900	<i>Elimia sp</i>	8 +
17200	<i>Caenis sp</i>	78	97601	<i>Corbicula fluminea</i>	10 +
22300	<i>Argia sp</i>	+	97710	<i>Dreissena polymorpha</i>	+
27404	<i>Neurocordulia molesta</i>	+	98600	<i>Sphaerium sp</i>	+
27409	<i>Neurocordulia yamaskanensis</i>	+	99380	<i>Quadrula pustulosa pustulosa</i>	+
34410	<i>Paragnetina media</i>	1 +	99400	<i>Quadrula quadrula</i>	+
34700	<i>Aagnetina capitata complex</i>	4 +	99580	<i>Obliquaria reflexa</i>	+
47600	<i>Sialis sp</i>	+	99680	<i>Leptodea fragilis</i>	+
48410	<i>Corydalus cornutus</i>	6 +			
51206	<i>Cyrnellus fraternus</i>	1	No. Quantitative Taxa: 48 Total Taxa: 70		
51300	<i>Neureclipsis sp</i>	61 +	No. Qualitative Taxa: 54 ICI: 48		
52200	<i>Cheumatopsyche sp</i>	199 +	Number of Organisms: 5312 Qual EPT: 22		
52430	<i>Ceratopsyche morosa group</i>	6 +			
52510	<i>Hydropsyche aerata</i>	45 +			
52570	<i>Hydropsyche simulans</i>	87 +			
52620	<i>Macrostemum zebratum</i>	13 +			
52801	<i>Potamyia flava</i>	36			
53800	<i>Hydroptila sp</i>	106			
54160	<i>Ochrotrichia sp</i>	36			
57900	<i>Pycnopsyche sp</i>	+			
68601	<i>Ancyronyx variegata</i>	4			
68901	<i>Macronychus glabratus</i>	48 +			
69400	<i>Stenelmis sp</i>	+			
74100	<i>Simulium sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	53 +			

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

Collection Date: 09/12/2006 River Code: 17-001 RM: 80.20 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	17	99680	<i>Leptodea fragilis</i>	+
03600	<i>Oligochaeta</i>	+			
05800	<i>Caecidotea sp</i>	+	No. Quantitative Taxa: 31		Total Taxa: 45
06700	<i>Crangonyx sp</i>	+	No. Qualitative Taxa: 25		ICI: 42
06810	<i>Gammarus fasciatus</i>	3	Number of Organisms: 3996		Qual EPT: 7
11130	<i>Baetis intercalaris</i>	22			
11670	<i>Procloeon viridoculare</i>	+			
12200	<i>Isonychia sp</i>	102			
12956	<i>Heptagenia marginalis</i>	3			
13000	<i>Leucrocuta sp</i>	2			
13400	<i>Stenacron sp</i>	202			
13510	<i>Maccaffertium exiguum</i>	85			
13550	<i>Maccaffertium mexicanum integrum</i>	281			
13561	<i>Maccaffertium pulchellum</i>	347			
13570	<i>Maccaffertium terminatum</i>	296			
16700	<i>Tricorythodes sp</i>	52			
17200	<i>Caenis sp</i>	68			
22300	<i>Argia sp</i>	16			
24501	<i>Gomphidae</i>	+			
26700	<i>Macromia sp</i>	+			
27404	<i>Neurocordulia molesta</i>	6			
34700	<i>Agnatina capitata complex</i>	4			
48410	<i>Corydalus cornutus</i>	+			
51300	<i>Neureclipsis sp</i>	56			
52200	<i>Cheumatopsyche sp</i>	76			
52510	<i>Hydropsyche aerata</i>	2			
52570	<i>Hydropsyche simulans</i>	15			
52620	<i>Macrostemum zebratum</i>	8			
59407	<i>Nectopsyche candida</i>	24			
68601	<i>Ancyronyx variegata</i>	1			
68901	<i>Macronychus glabratus</i>	1			
69400	<i>Stenelmis sp</i>	+			
70501	<i>Tipulidae</i>	+			
77130	<i>Ablabesmyia rhamphe group</i>	24			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	384			
83040	<i>Dicrotendipes neomodestus</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	97			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	48			
85625	<i>Rheotanytarsus sp</i>	1719			
85821	<i>Tanytarsus glabrescens group sp 7</i>	+			
87540	<i>Hemerodromia sp</i>	24			
93900	<i>Elimia sp</i>	+			
97601	<i>Corbicula fluminea</i>	11			
99580	<i>Obliquaria reflexa</i>	+			

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

Collection Date: 09/12/2006 River Code: 17-001 RM: 80.20 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	16			
03360	<i>Plumatella sp</i>	6			
06810	<i>Gammarus fasciatus</i>	19			
11130	<i>Baetis intercalaris</i>	54			
12956	<i>Heptagenia marginalis</i>	16			
13000	<i>Leucrocuta sp</i>	40			
13400	<i>Stenacron sp</i>	131			
13510	<i>Maccaffertium exiguum</i>	65			
13550	<i>Maccaffertium mexicanum integrum</i>	118			
13561	<i>Maccaffertium pulchellum</i>	161			
13570	<i>Maccaffertium terminatum</i>	230			
16700	<i>Tricorythodes sp</i>	298			
17200	<i>Caenis sp</i>	36			
51206	<i>Cyrmellus fraternus</i>	1			
52200	<i>Cheumatopsyche sp</i>	48			
52570	<i>Hydropsyche simulans</i>	1			
53501	<i>Hydroptilidae</i>	1			
59407	<i>Nectopsyche candida</i>	1			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	31			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	304			
82121	<i>Thienemanniella lobapodema</i>	8			
83002	<i>Dicrotendipes modestus</i>	15			
83040	<i>Dicrotendipes neomodestus</i>	46			
84300	<i>Phaenopsectra obediens group</i>	31			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	155			
85625	<i>Rheotanytarsus sp</i>	1115			
85800	<i>Tanytarsus sp</i>	31			
85821	<i>Tanytarsus glabrescens group sp 7</i>	15			
87540	<i>Hemerodromia sp</i>	8			
93900	<i>Elimia sp</i>	6			
97601	<i>Corbicula fluminea</i>	9			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 31 Total Taxa: 32
 No. Qualitative Taxa: 1 ICI: 42
 Number of Organisms: 3016 Qual EPT:

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

Collection Date: 09/12/2006 River Code: 17-001 RM: 77.60 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	18			
01801	<i>Turbellaria</i>	1			
03360	<i>Plumatella sp</i>	1			
03600	<i>Oligochaeta</i>	12 +			
05800	<i>Caecidotea sp</i>	+			
06700	<i>Crangonyx sp</i>	1			
06810	<i>Gammarus fasciatus</i>	30 +			
11670	<i>Procloeon viridoculare</i>	+			
13000	<i>Leucrocuta sp</i>	6			
13400	<i>Stenacron sp</i>	18 +			
13510	<i>Maccaffertium exiguum</i>	1 +			
13550	<i>Maccaffertium mexicanum integrum</i>	24 +			
13561	<i>Maccaffertium pulchellum</i>	7			
13570	<i>Maccaffertium terminatum</i>	11			
16700	<i>Tricorythodes sp</i>	52			
17200	<i>Caenis sp</i>	13			
22300	<i>Argia sp</i>	22 +			
24501	<i>Gomphidae</i>	+			
51206	<i>Cyrnellus fraternus</i>	4			
68901	<i>Macronychus glabratus</i>	4 +			
77115	<i>Ablabesmyia janta</i>	15			
78140	<i>Labrundinia pilosella</i>	5			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	550			
80410	<i>Cricotopus (C.) sp</i>	10			
80420	<i>Cricotopus (C.) bicinctus</i>	15			
80430	<i>Cricotopus (C.) tremulus group</i>	5			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	5			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	102			
83050	<i>Dicrotendipes lucifer</i>	160			
83300	<i>Glyptotendipes (G.) sp</i>	39			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	15			
84470	<i>Polypedilum (P.) illinoense</i>	19 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	5			
84700	<i>Stenochironomus sp</i>	15			
84790	<i>Tribelos fuscicorne</i>	10 +			
85625	<i>Rheotanytarsus sp</i>	39			
85821	<i>Tanytarsus glabrescens group sp 7</i>	34			
87540	<i>Hemerodromia sp</i>	18			
95100	<i>Physella sp</i>	44 +			
97601	<i>Corbicula fluminea</i>	+			

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/12/2006 River Code: 17-001 RM: 75.80 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	16	80420	<i>Cricotopus (C.) bicinctus</i>	+
01801	<i>Turbellaria</i>	33	80440	<i>Cricotopus (C.) trifascia</i>	+
03360	<i>Plumatella sp</i>	1	81240	<i>Nanocladius (N.) distinctus</i>	27
03451	<i>Urnatella gracilis</i>	16	81770	<i>Pseudosmittia sp</i>	27
03600	<i>Oligochaeta</i>	80	83300	<i>Glyptotendipes (G.) sp</i>	27
06810	<i>Gammarus fasciatus</i>	1 +	84300	<i>Phaenopsectra obediens group</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	215
11130	<i>Baetis intercalaris</i>	1117 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	54
12200	<i>Isonychia sp</i>	12 +	85625	<i>Rheotanytarsus sp</i>	1937 +
12956	<i>Heptagenia marginalis</i>	37 +	85800	<i>Tanytarsus sp</i>	27 +
13000	<i>Leucrocuta sp</i>	4 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	27
13400	<i>Stenacron sp</i>	27 +	87540	<i>Hemerodromia sp</i>	179
13510	<i>Maccaffertium exiguum</i>	52 +	97601	<i>Corbicula fluminea</i>	+
13550	<i>Maccaffertium mexicanum integrum</i>	56 +			
13561	<i>Maccaffertium pulchellum</i>	124 +	No. Quantitative Taxa: 44		Total Taxa: 56
13570	<i>Maccaffertium terminatum</i>	99 +	No. Qualitative Taxa: 36		ICI: 50
16700	<i>Tricorythodes sp</i>	131 +	Number of Organisms: 5775		Qual EPT: 20
17200	<i>Caenis sp</i>	98 +			
21300	<i>Hetaerina sp</i>	+			
24900	<i>Gomphus sp</i>	+			
26700	<i>Macromia sp</i>	+			
27400	<i>Neurocordulia sp</i>	+			
34140	<i>Acroneuria internata</i>	+			
34410	<i>Paragnetina media</i>	+			
34700	<i>Aagnetina capitata complex</i>	+			
48410	<i>Corydalus cornutus</i>	20 +			
51206	<i>Cyrnellus fraternus</i>	17			
52200	<i>Cheumatopsyche sp</i>	246 +			
52430	<i>Ceratopsyche morosa group</i>	58 +			
52510	<i>Hydropsyche aerata</i>	137 +			
52520	<i>Hydropsyche bidens</i>	41			
52560	<i>Hydropsyche orris</i>	166			
52570	<i>Hydropsyche simulans</i>	137 +			
52620	<i>Macrostemum zebratum</i>	214 +			
52801	<i>Potamyia flava</i>	7			
53800	<i>Hydroptila sp</i>	147 +			
54160	<i>Ochrotrichia sp</i>	16			
68901	<i>Macronychus glabratus</i>	2 +			
69400	<i>Stenelmis sp</i>	18 +			
74100	<i>Simulium sp</i>	1 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	81			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16			
80410	<i>Cricotopus (C.) sp</i>	27			

Ohio EPA/DW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/12/2006 River Code: 17-001 RM: 72.40 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	84700	<i>Stenochironomus sp</i>	15
01320	<i>Hydra sp</i>	9	85625	<i>Rheotanytarsus sp</i>	506
01801	<i>Turbellaria</i>	14	85821	<i>Tanytarsus glabrescens group sp 7</i>	7
03360	<i>Plumatella sp</i>	6	87540	<i>Hemerodromia sp</i>	12
03600	<i>Oligochaeta</i>	16 +	93900	<i>Elimia sp</i>	+
05800	<i>Caecidotea sp</i>	+	97601	<i>Corbicula fluminea</i>	+
06810	<i>Gammarus fasciatus</i>	8 +	97710	<i>Dreissena polymorpha</i>	+
11125	<i>Pseudocloeon frondale</i>	1			
11670	<i>Procloeon viridoculare</i>	+	No. Quantitative Taxa: 39		Total Taxa: 49
12200	<i>Isonychia sp</i>	2	No. Qualitative Taxa: 20		ICI: 42
12900	<i>Heptagenia sp</i>	6	Number of Organisms: 1657		Qual EPT: 4
13000	<i>Leucrocuta sp</i>	17			
13400	<i>Stenacron sp</i>	80 +			
13510	<i>Maccaffertium exiguum</i>	59			
13540	<i>Maccaffertium mediopunctatum</i>	6			
13550	<i>Maccaffertium mexicanum integrum</i>	90			
13561	<i>Maccaffertium pulchellum</i>	159			
13570	<i>Maccaffertium terminatum</i>	106 +			
13590	<i>Maccaffertium vicarium</i>	6			
16700	<i>Tricorythodes sp</i>	29 +			
17200	<i>Caenis sp</i>	16			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	2 +			
27404	<i>Neurocordulia molesta</i>	3 +			
47600	<i>Sialis sp</i>	+			
51206	<i>Cyrnellus fraternus</i>	90			
52200	<i>Cheumatopsyche sp</i>	13			
52550	<i>Hydropsyche frisoni</i>	1			
52570	<i>Hydropsyche simulans</i>	1			
52620	<i>Macrostemum zebratum</i>	1			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	1 +			
77115	<i>Ablabesmyia janta</i>	7 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	15			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	216			
80370	<i>Corynoneura lobata</i>	4			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	7			
81825	<i>Rheocricotopus (Psilocricotopus) robacki</i>	7			
83002	<i>Dicrotendipes modestus</i>	52			
83300	<i>Glyptotendipes (G.) sp</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	30 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	37			

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

Collection Date: 09/12/2006 River Code: 17-001 RM: 72.40 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01200	<i>Cordylophora lacustris</i>	4			
01320	<i>Hydra sp</i>	12			
01801	<i>Turbellaria</i>	59			
03360	<i>Plumatella sp</i>	5			
03600	<i>Oligochaeta</i>	12			
06810	<i>Gammarus fasciatus</i>	20			
13000	<i>Leucrocuta sp</i>	6			
13400	<i>Stenacron sp</i>	13			
13510	<i>Maccaffertium exiguum</i>	1			
13550	<i>Maccaffertium mexicanum integrum</i>	10			
13561	<i>Maccaffertium pulchellum</i>	26			
13570	<i>Maccaffertium terminatum</i>	11			
13590	<i>Maccaffertium vicarium</i>	1			
16700	<i>Tricorythodes sp</i>	18			
17200	<i>Caenis sp</i>	3			
21200	<i>Calopteryx sp</i>	1			
22300	<i>Argia sp</i>	15			
51206	<i>Cyrnellus fraternus</i>	43			
68601	<i>Ancyronyx variegata</i>	1			
68901	<i>Macronychus glabratus</i>	4			
69400	<i>Stenelmis sp</i>	1			
77115	<i>Ablabesmyia janta</i>	4			
77120	<i>Ablabesmyia mallochi</i>	4			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	12			
80370	<i>Corynoneura lobata</i>	2			
80420	<i>Cricotopus (C.) bicinctus</i>	4			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	7			
83040	<i>Dicrotendipes neomodestus</i>	18			
83050	<i>Dicrotendipes lucifer</i>	47			
83300	<i>Glyptotendipes (G.) sp</i>	232			
84000	<i>Parachironomus sp</i>	29			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	7			
84520	<i>Polypedilum (Tripodura) halterale group</i>	4			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	4			
84790	<i>Tribelos fuscicorne</i>	54			
85625	<i>Rheotanytarsus sp</i>	4			
85800	<i>Tanytarsus sp</i>	4			
85821	<i>Tanytarsus glabrescens group sp 7</i>	7			
95100	<i>Physella sp</i>	315			
96100	<i>Menetus (Micromenetus) sp</i>	12			
96900	<i>Ferrissia sp</i>	1			
97601	<i>Corbicula fluminea</i>	2			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/2006 River Code: 17-001 RM: 67.30 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	66		<i>Bode, 1980)</i>	
03360	<i>Plumatella sp</i>	4	80410	<i>Cricotopus (C.) sp</i>	802
03600	<i>Oligochaeta</i>	128	80420	<i>Cricotopus (C.) bicinctus</i>	+
05800	<i>Caecidotea sp</i>	+	82130	<i>Thienemanniella similis</i>	96
06810	<i>Gammarus fasciatus</i>	+	83040	<i>Dicrotendipes neomodestus</i>	+
11123	<i>Pseudocloeon dardanum</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	200
11130	<i>Baetis intercalaris</i>	458 +	84450	<i>Polypedilum (Uresipedilum) flavum</i>	2205 +
11200	<i>Callibaetis sp</i>	+	84700	<i>Stenochironomus sp</i>	200
12200	<i>Isonychia sp</i>	96 +	85625	<i>Rheotanytarsus sp</i>	20046 +
12956	<i>Heptagenia marginalis</i>	2 +	87540	<i>Hemerodromia sp</i>	97 +
13000	<i>Leucrocota sp</i>	+	93900	<i>Elimia sp</i>	1 +
13400	<i>Stenacron sp</i>	+	95100	<i>Physella sp</i>	+
13510	<i>Maccaffertium exiguum</i>	171 +	97601	<i>Corbicula fluminea</i>	+
13550	<i>Maccaffertium mexicanum integrum</i>	332 +	99380	<i>Quadrula pustulosa pustulosa</i>	+
13561	<i>Maccaffertium pulchellum</i>	412 +	99400	<i>Quadrula quadrula</i>	+
13570	<i>Maccaffertium terminatum</i>	452 +	99580	<i>Obliquaria reflexa</i>	+
16700	<i>Tricorythodes sp</i>	546 +	99680	<i>Leptodea fragilis</i>	+
17200	<i>Caenis sp</i>	162 +	99700	<i>Potamilus alatus</i>	+
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	+	No. Quantitative Taxa: 38		Total Taxa: 61
23909	<i>Boyeria vinosa</i>	+	No. Qualitative Taxa: 47		ICI: 48
27404	<i>Neurocordulia molesta</i>	2 +	Number of Organisms: 29757		Qual EPT: 23
30800	<i>Pteronarcys sp</i>	+			
34410	<i>Paragnetina media</i>	+			
34600	<i>Perlinella sp</i>	+			
34700	<i>Aagnetina capitata complex</i>	+			
48410	<i>Corydalus cornutus</i>	3 +			
50315	<i>Chimarra obscura</i>	1			
51206	<i>Cyrnellus fraternus</i>	34			
52200	<i>Cheumatopsyche sp</i>	135 +			
52430	<i>Ceratopsyche morosa group</i>	89			
52510	<i>Hydropsyche aerata</i>	307 +			
52520	<i>Hydropsyche bidens</i>	46			
52560	<i>Hydropsyche orris</i>	348 +			
52570	<i>Hydropsyche simulans</i>	433 +			
52620	<i>Macrostemum zebratum</i>	110 +			
52801	<i>Potamyia flava</i>	222 +			
53800	<i>Hydroptila sp</i>	680			
68130	<i>Helichus sp</i>	+			
68901	<i>Macronychus glabratus</i>	2			
69400	<i>Stenelmis sp</i>	2 +			
74100	<i>Simulium sp</i>	1 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	802 +			
80360	<i>Corynoneura "celeripes" (sensu Simpson &</i>	64			

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/13/2006 River Code: 17-001 RM: 63.70 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
01801	<i>Turbellaria</i>	129 +	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	62 +
03360	<i>Plumatella sp</i>	1	85625	<i>Rheotanytarsus sp</i>	4970
03451	<i>Urnatella gracilis</i>	+	85800	<i>Tanytarsus sp</i>	62
03600	<i>Oligochaeta</i>	32	85821	<i>Tanytarsus glabrescens group sp 7</i>	62
05800	<i>Caecidotea sp</i>	+	87540	<i>Hemerodromia sp</i>	65
06810	<i>Gammarus fasciatus</i>	+	93900	<i>Elimia sp</i>	+
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	97601	<i>Corbicula fluminea</i>	1 +
11130	<i>Baetis intercalaris</i>	18	97710	<i>Dreissena polymorpha</i>	+
12200	<i>Isonychia sp</i>	11			
12956	<i>Heptagenia marginalis</i>	2	No. Quantitative Taxa: 38		Total Taxa: 52
13400	<i>Stenacron sp</i>	74 +	No. Qualitative Taxa: 22		ICI: 44
13510	<i>Maccaffertium exiguum</i>	2	Number of Organisms: 8365		Qual EPT: 4
13521	<i>Stenonema femoratum</i>	+			
13550	<i>Maccaffertium mexicanum integrum</i>	367 +			
13561	<i>Maccaffertium pulchellum</i>	150			
13570	<i>Maccaffertium terminatum</i>	646			
16700	<i>Tricorythodes sp</i>	258			
17200	<i>Caenis sp</i>	230			
22300	<i>Argia sp</i>	33			
24501	<i>Gomphidae</i>	1			
27404	<i>Neurocordulia molesta</i>	25 +			
34700	<i>Agnatina capitata complex</i>	1			
48410	<i>Corydalus cornutus</i>	1			
51206	<i>Cyrnellus fraternus</i>	136			
52200	<i>Cheumatopsyche sp</i>	10			
52510	<i>Hydropsyche aerata</i>	3			
52560	<i>Hydropsyche orris</i>	146			
52570	<i>Hydropsyche simulans</i>	62			
52620	<i>Macrostemum zebratum</i>	13			
52801	<i>Potamyia flava</i>	11			
57900	<i>Pycnopsyche sp</i>	+			
63300	<i>Hydroporus sp</i>	+			
68130	<i>Helichus sp</i>	+			
68901	<i>Macronychus glabratus</i>	2 +			
74501	<i>Ceratopogonidae</i>	+			
77130	<i>Ablabesmyia rhamphe group</i>	62			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	124			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	96			
80410	<i>Cricotopus (C.) sp</i>	62			
83040	<i>Dicrotendipes neomodestus</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	124			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	311 +			

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

Collection Date: 09/13/2006 River Code: 17-001 RM: 63.70 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	105			
03600	<i>Oligochaeta</i>	4			
06810	<i>Gammarus fasciatus</i>	181			
13000	<i>Leucrocuta sp</i>	10			
13400	<i>Stenacron sp</i>	64			
13510	<i>Maccaffertium exiguum</i>	15			
13550	<i>Maccaffertium mexicanum integrum</i>	51			
13561	<i>Maccaffertium pulchellum</i>	27			
13570	<i>Maccaffertium terminatum</i>	28			
14950	<i>Leptophlebia sp or Paraleptophlebia sp</i>	8			
16700	<i>Tricorythodes sp</i>	125			
17200	<i>Caenis sp</i>	11			
22300	<i>Argia sp</i>	1			
27404	<i>Neurocordulia molesta</i>	1			
51206	<i>Cyrnellus fraternus</i>	7			
52200	<i>Cheumatopsyche sp</i>	13			
52801	<i>Potamyia flava</i>	1			
53501	<i>Hydroptilidae</i>	2			
68901	<i>Macronychus glabratus</i>	1			
69400	<i>Stenelmis sp</i>	1			
77120	<i>Ablabesmyia mallochi</i>	15			
77130	<i>Ablabesmyia rhamphe group</i>	15			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	40			
80410	<i>Cricotopus (C.) sp</i>	15			
82130	<i>Thienemanniella similis</i>	4			
83040	<i>Dicrotendipes neomodestus</i>	195			
83050	<i>Dicrotendipes lucifer</i>	90			
83300	<i>Glyptotendipes (G.) sp</i>	120			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	120			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	15			
84790	<i>Tribelos fuscicorne</i>	15			
85625	<i>Rheotanytarsus sp</i>	898			
85821	<i>Tanytarsus glabrescens group sp 7</i>	90			
87540	<i>Hemerodromia sp</i>	32			
93900	<i>Elimia sp</i>	2			
97601	<i>Corbicula fluminea</i>	1			
99998	<i>NO QUALITATIVE SAMPLE COLLECTED</i>	+			

No. Quantitative Taxa: 36 Total Taxa: 37
 No. Qualitative Taxa: 1 ICI: 42
 Number of Organisms: 2323 Qual EPT:

Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/2006 River Code: 17-001 RM: 56.40 Site: Muskingum River dst. Rokeby Lock dam

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	29	81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	+
01801	<i>Turbellaria</i>	91 +	81240	<i>Nanocladius (N.) distinctus</i>	+
03121	<i>Paludicella articulata</i>	1 +	82820	<i>Cryptochironomus sp</i>	+
03360	<i>Plumatella sp</i>	1 +	83040	<i>Dicrotendipes neomodestus</i>	37 +
03451	<i>Urnatella gracilis</i>	5	83050	<i>Dicrotendipes lucifer</i>	212
03600	<i>Oligochaeta</i>	16 +	83300	<i>Glyptotendipes (G.) sp</i>	637 +
05800	<i>Caecidotea sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	12
06810	<i>Gammarus fasciatus</i>	12 +	84470	<i>Polypedilum (P.) illinoense</i>	+
11125	<i>Pseudocloeon frondale</i>	+	84520	<i>Polypedilum (Tripodura) halterale group</i>	13
11130	<i>Baetis intercalaris</i>	+	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	13
12956	<i>Heptagenia marginalis</i>	+	84700	<i>Stenochironomus sp</i>	13 +
13000	<i>Leucrocuta sp</i>	+	84790	<i>Tribelos fuscicorne</i>	13
13400	<i>Stenacron sp</i>	68 +	85625	<i>Rheotanytarsus sp</i>	62 +
13510	<i>Maccaffertium exiguum</i>	1 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	+	87540	<i>Hemerodromia sp</i>	12
13550	<i>Maccaffertium mexicanum integrum</i>	44 +	93900	<i>Elimia sp</i>	1 +
13561	<i>Maccaffertium pulchellum</i>	38 +	96100	<i>Menetus (Micromenetus) sp</i>	1
13570	<i>Maccaffertium terminatum</i>	108 +	97601	<i>Corbicula fluminea</i>	2
16700	<i>Tricorythodes sp</i>	89 +	97710	<i>Dreissena polymorpha</i>	+
17200	<i>Caenis sp</i>	130	98001	<i>Sphaeriidae</i>	+
18750	<i>Hexagenia limbata</i>	1	99580	<i>Obliquaria reflexa</i>	+
22300	<i>Argia sp</i>	3 +			
24501	<i>Gomphidae</i>	1			
27404	<i>Neurocordulia molesta</i>	9 +	No. Quantitative Taxa: 39	Total Taxa: 64	
34410	<i>Paragnetina media</i>	+	No. Qualitative Taxa: 46	ICI: 38	
34700	<i>Agnatina capitata complex</i>	+	Number of Organisms: 1816	Qual EPT: 18	
48410	<i>Corydalis cornutus</i>	+			
51206	<i>Cyrnellus fraternus</i>	19 +			
52200	<i>Cheumatopsyche sp</i>	+			
52570	<i>Hydropsyche simulans</i>	+			
52620	<i>Macrostemum zebratum</i>	+			
52801	<i>Potamyia flava</i>	+			
60300	<i>Dineutus sp</i>	+			
68130	<i>Helichus sp</i>	+			
68601	<i>Ancyronyx variegata</i>	43			
68901	<i>Macronychus glabratus</i>	1 +			
69400	<i>Stenelmis sp</i>	2 +			
77115	<i>Ablabesmyia janta</i>	12			
77120	<i>Ablabesmyia mallochi</i>	12			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	+			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	48			
80370	<i>Corynoneura lobata</i>	4			
80410	<i>Cricotopus (C.) sp</i>	+			

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

Collection Date: 09/13/2006 River Code: 17-001 RM: 52.10 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	17			
01801	<i>Turbellaria</i>	131 +			
03221	<i>Pectinatella magnifica</i>	1			
03360	<i>Plumatella sp</i>	4 +			
03600	<i>Oligochaeta</i>	144			
05800	<i>Caecidotea sp</i>	+			
06700	<i>Crangonyx sp</i>	+			
06810	<i>Gammarus fasciatus</i>	1 +			
11130	<i>Baetis intercalaris</i>	3			
13400	<i>Stenacron sp</i>	3 +			
13510	<i>Maccaffertium exiguum</i>	17 +			
13550	<i>Maccaffertium mexicanum integrum</i>	112 +			
13561	<i>Maccaffertium pulchellum</i>	47			
13570	<i>Maccaffertium terminatum</i>	84			
16700	<i>Tricorythodes sp</i>	131			
17200	<i>Caenis sp</i>	141			
22300	<i>Argia sp</i>	3 +			
27404	<i>Neurocordulia molesta</i>	11			
51206	<i>Cyrnellus fraternus</i>	551			
52200	<i>Cheumatopsyche sp</i>	4			
52510	<i>Hydropsyche aerata</i>	1			
52520	<i>Hydropsyche bidens</i>	13			
52560	<i>Hydropsyche orris</i>	262			
52570	<i>Hydropsyche simulans</i>	13			
52620	<i>Macrostemum zebratum</i>	1			
52801	<i>Potamyia flava</i>	43			
68901	<i>Macronychus glabratus</i>	75			
69400	<i>Stenelmis sp</i>	3			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	76			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	144			
81240	<i>Nanocladius (N.) distinctus</i>	76			
83040	<i>Dicrotendipes neomodestus</i>	76 +			
83051	<i>Dicrotendipes simpsoni</i>	305			
83300	<i>Glyptotendipes (G.) sp</i>	2825 +			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	76			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	76			
84700	<i>Stenochironomus sp</i>	76			
85625	<i>Rheotanytarsus sp</i>	5039			
85821	<i>Tanytarsus glabrescens group sp 7</i>	76			
87540	<i>Hemerodromia sp</i>	64			
93900	<i>Elimia sp</i>	+			
97710	<i>Dreissena polymorpha</i>	+			

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

Collection Date: 09/13/2006 River Code: 17-001 RM: 52.10 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	66			
03360	<i>Plumatella sp</i>	1			
03600	<i>Oligochaeta</i>	176			
13400	<i>Stenacron sp</i>	136			
13510	<i>Maccaffertium exiguum</i>	2			
13550	<i>Maccaffertium mexicanum integrum</i>	65			
13561	<i>Maccaffertium pulchellum</i>	2			
13570	<i>Maccaffertium terminatum</i>	12			
16700	<i>Tricorythodes sp</i>	71			
17200	<i>Caenis sp</i>	141			
22300	<i>Argia sp</i>	6			
27404	<i>Neurocordulia molesta</i>	1			
51206	<i>Cyrnellus fraternus</i>	345			
52801	<i>Potamyia flava</i>	17			
68901	<i>Macronychus glabratus</i>	1			
77115	<i>Ablabesmyia janta</i>	211			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	112			
81240	<i>Nanocladius (N.) distinctus</i>	70			
83050	<i>Dicrotendipes lucifer</i>	632			
83300	<i>Glyptotendipes (G.) sp</i>	6042			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	141			
84700	<i>Stenochironomus sp</i>	70			
85625	<i>Rheotanytarsus sp</i>	913			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 23 Total Taxa: 24
 No. Qualitative Taxa: 1 ICI: **28**
 Number of Organisms: 9233 Qual EPT:

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

Collection Date: 09/13/2006 River Code: 17-001 RM: 48.80 Site: Muskingum River dst. McConnelsville dam

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	548 +	81240	<i>Nanocladius (N.) distinctus</i>	131
03360	<i>Plumatella sp</i>	2 +	81250	<i>Nanocladius (N.) minimus</i>	44
03600	<i>Oligochaeta</i>	80	82820	<i>Cryptochironomus sp</i>	+
06700	<i>Crangonyx sp</i>	+	83040	<i>Dicrotendipes neomodestus</i>	307
06810	<i>Gammarus fasciatus</i>	51 +	83300	<i>Glyptotendipes (G.) sp</i>	1139 +
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	44 +
11125	<i>Pseudocloeon frondale</i>	+	85625	<i>Rheotanytarsus sp</i>	2585 +
11130	<i>Baetis intercalaris</i>	57 +	85800	<i>Tanytarsus sp</i>	44
12200	<i>Isonychia sp</i>	19 +	87540	<i>Hemerodromia sp</i>	306 +
12956	<i>Heptagenia marginalis</i>	1	93900	<i>Elimia sp</i>	61 +
13000	<i>Leucrocuta sp</i>	37 +	97601	<i>Corbicula fluminea</i>	+
13400	<i>Stenacron sp</i>	92 +	97710	<i>Dreissena polymorpha</i>	+
13510	<i>Maccaffertium exiguum</i>	30 +	98600	<i>Sphaerium sp</i>	+
13550	<i>Maccaffertium mexicanum integrum</i>	212 +			
13561	<i>Maccaffertium pulchellum</i>	139 +	No. Quantitative Taxa: 37		Total Taxa: 56
13570	<i>Maccaffertium terminatum</i>	252 +	No. Qualitative Taxa: 44		ICI: 44
16700	<i>Tricorythodes sp</i>	323 +	Number of Organisms: 7405		Qual EPT: 21
17200	<i>Caenis sp</i>	213 +			
22300	<i>Argia sp</i>	1 +			
24501	<i>Gomphidae</i>	+			
27404	<i>Neurocordulia molesta</i>	2			
34410	<i>Paragnetina media</i>	+			
34600	<i>Perlinella sp</i>	+			
34700	<i>Aagnetina capitata complex</i>	1			
48410	<i>Corydalus cornutus</i>	+			
51300	<i>Neureclipsis sp</i>	2			
51600	<i>Polycentropus sp</i>	+			
52200	<i>Cheumatopsyche sp</i>	34 +			
52510	<i>Hydropsyche aerata</i>	+			
52560	<i>Hydropsyche orris</i>	+			
52570	<i>Hydropsyche simulans</i>	+			
52620	<i>Macrostemum zebratum</i>	1 +			
52801	<i>Potamyia flava</i>	17 +			
53800	<i>Hydroptila sp</i>	408 +			
59407	<i>Nectopsyche candida</i>	1			
60300	<i>Dineutus sp</i>	+			
68901	<i>Macronychus glabratus</i>	2			
69400	<i>Stenelmis sp</i>	+			
77115	<i>Ablabesmyia janta</i>	44 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	131 +			
80410	<i>Cricotopus (C.) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	44			

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

Collection Date: 09/13/2006 River Code: 17-001 RM: 43.20 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	16	83040	<i>Dicrotendipes neomodestus</i>	170
01801	<i>Turbellaria</i>	275	83300	<i>Glyptotendipes (G.) sp</i>	4327 +
03360	<i>Plumatella sp</i>	1	84450	<i>Polypedilum (Uresipedilum) flavum</i>	424 +
03600	<i>Oligochaeta</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
04510	<i>Hirudinea</i>	+	85625	<i>Rheotanytarsus sp</i>	3903
05800	<i>Caecidotea sp</i>	1 +	87540	<i>Hemerodromia sp</i>	48
06810	<i>Gammarus fasciatus</i>	5 +	93900	<i>Elimia sp</i>	15 +
11123	<i>Pseudocloeon dardanum</i>	1	99640	<i>Truncilla donaciformis</i>	+
11130	<i>Baetis intercalaris</i>	2			
11670	<i>Procloeon viridoculare</i>	+	No. Quantitative Taxa: 40		Total Taxa: 50
12200	<i>Isonychia sp</i>	1	No. Qualitative Taxa: 24		ICI: 44
12956	<i>Heptagenia marginalis</i>	2	Number of Organisms: 11358		Qual EPT: 10
13000	<i>Leucrocota sp</i>	3 +			
13400	<i>Stenacron sp</i>	18 +			
13510	<i>Maccaffertium exiguum</i>	22			
13550	<i>Maccaffertium mexicanum integrum</i>	231 +			
13561	<i>Maccaffertium pulchellum</i>	24			
13570	<i>Maccaffertium terminatum</i>	111 +			
16700	<i>Tricorythodes sp</i>	196 +			
17200	<i>Caenis sp</i>	67 +			
18100	<i>Anthopotamus sp</i>	16 +			
22300	<i>Argia sp</i>	+			
24501	<i>Gomphidae</i>	+			
27404	<i>Neurocordulia molesta</i>	1			
51206	<i>Cyrnellus fraternus</i>	71			
51300	<i>Neureclipsis sp</i>	1			
52200	<i>Cheumatopsyche sp</i>	9			
52510	<i>Hydropsyche aerata</i>	3			
52560	<i>Hydropsyche orris</i>	667			
52570	<i>Hydropsyche simulans</i>	16			
52620	<i>Macrostemum zebratum</i>	+			
52801	<i>Potamyia flava</i>	266 +			
53800	<i>Hydroptila sp</i>	1			
59407	<i>Nectopsyche candida</i>	1			
68901	<i>Macronychus glabratus</i>	2			
69400	<i>Stenelmis sp</i>	+			
77115	<i>Ablabesmyia janta</i>	+			
77120	<i>Ablabesmyia mallochi</i>	85 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	85			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	85			
81240	<i>Nanocladius (N.) distinctus</i>	170			

Ohio EPA/DSW Ecological Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/2006 River Code: 17-001 RM: 39.50 Site: Muskingum River dst. Stockport dam

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00653	<i>Eunapius fragilis</i>	+	80310	<i>Cardiocladius obscurus</i>	+
01801	<i>Turbellaria</i>	258 +	80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16
03360	<i>Plumatella sp</i>	1 +	80410	<i>Cricotopus (C.) sp</i>	+
03451	<i>Urnatella gracilis</i>	18 +	80420	<i>Cricotopus (C.) bicinctus</i>	+
03600	<i>Oligochaeta</i>	48 +	81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	32
04687	<i>Placobdella parasitica</i>	+	81240	<i>Nanocladius (N.) distinctus</i>	31 +
05800	<i>Caecidotea sp</i>	+	83040	<i>Dicrotendipes neomodestus</i>	126
06700	<i>Crangonyx sp</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	504 +
06810	<i>Gammarus fasciatus</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	157
08250	<i>Orconectes (Procericambarus) rusticus</i>	+	84700	<i>Stenochironomus sp</i>	+
11123	<i>Pseudocloeon dardanum</i>	1	85625	<i>Rheotanytarsus sp</i>	1890 +
11130	<i>Baetis intercalaris</i>	+	85800	<i>Tanytarsus sp</i>	31 +
12200	<i>Isonychia sp</i>	3	85821	<i>Tanytarsus glabrescens group sp 7</i>	95
12956	<i>Heptagenia marginalis</i>	3 +	87540	<i>Hemerodromia sp</i>	96
13000	<i>Leucrocuta sp</i>	8	93900	<i>Elimia sp</i>	1 +
13400	<i>Stenacron sp</i>	+	97601	<i>Corbicula fluminea</i>	4 +
13510	<i>Maccaffertium exiguum</i>	21 +	97710	<i>Dreissena polymorpha</i>	+
13550	<i>Maccaffertium mexicanum integrum</i>	214 +	98600	<i>Sphaerium sp</i>	+
13561	<i>Maccaffertium pulchellum</i>	87 +			
13570	<i>Maccaffertium terminatum</i>	118 +			
16700	<i>Tricorythodes sp</i>	65 +			
17200	<i>Caenis sp</i>	119 +	No. Quantitative Taxa: 40	Total Taxa: 62	
17600	<i>Baetisca sp</i>	+	No. Qualitative Taxa: 48	ICI: 48	
18750	<i>Hexagenia limbata</i>	2	Number of Organisms: 4717	Qual EPT: 17	
22300	<i>Argia sp</i>	+			
27404	<i>Neurocordulia molesta</i>	+			
34700	<i>Agnatina capitata complex</i>	1			
49101	<i>Sisyridae</i>	+			
51206	<i>Cyrnellus fraternus</i>	48			
51300	<i>Neureclipsis sp</i>	1 +			
52200	<i>Cheumatopsyche sp</i>	67 +			
52510	<i>Hydropsyche aerata</i>	11 +			
52560	<i>Hydropsyche orris</i>	315 +			
52570	<i>Hydropsyche simulans</i>	26			
52620	<i>Macrostemum zebratum</i>	+			
52801	<i>Potamyia flava</i>	64 +			
53800	<i>Hydroptila sp</i>	50 +			
68901	<i>Macronychus glabratus</i>	1 +			
69400	<i>Stenelmis sp</i>	50 +			
74100	<i>Simulium sp</i>	+			
74501	<i>Ceratopogonidae</i>	8			
77115	<i>Ablabesmyia janta</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	126 +			

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 36.20 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
00401	<i>Spongillidae</i>	+	96100	<i>Menetus (Micromenetus) sp</i>	+
01200	<i>Cordylophora lacustris</i>	16	97601	<i>Corbicula fluminea</i>	16
01320	<i>Hydra sp</i>	1	97710	<i>Dreissena polymorpha</i>	+
01801	<i>Turbellaria</i>	385 +			
03360	<i>Plumatella sp</i>	1 +	No. Quantitative Taxa: 34		Total Taxa: 46
03600	<i>Oligochaeta</i>	32	No. Qualitative Taxa: 20		ICI: 40
05800	<i>Caecidotea sp</i>	+	Number of Organisms: 9428		Qual EPT: 3
06810	<i>Gammarus fasciatus</i>	+			
08250	<i>Orconectes (Procericambarus) rusticus</i>	+			
12200	<i>Isonychia sp</i>	1			
12956	<i>Heptagenia marginalis</i>	1			
13000	<i>Leucrocuta sp</i>	1			
13400	<i>Stenacron sp</i>	27 +			
13510	<i>Maccaffertium exiguum</i>	4			
13550	<i>Maccaffertium mexicanum integrum</i>	78 +			
13561	<i>Maccaffertium pulchellum</i>	50			
13570	<i>Maccaffertium terminatum</i>	49			
16700	<i>Tricorythodes sp</i>	115 +			
17200	<i>Caenis sp</i>	34			
22001	<i>Coenagrionidae</i>	+			
22300	<i>Argia sp</i>	1 +			
27404	<i>Neurocordulia molesta</i>	1			
34700	<i>Agnatina capitata complex</i>	2			
49101	<i>Sisyridae</i>	+			
51206	<i>Cyrnellus fraternus</i>	325			
51300	<i>Neureclipsis sp</i>	2			
52200	<i>Cheumatopsyche sp</i>	130			
52560	<i>Hydropsyche orris</i>	1980			
52570	<i>Hydropsyche simulans</i>	38			
52801	<i>Potamyia flava</i>	265			
68708	<i>Dubiraphia vittata group</i>	+			
68901	<i>Macronychus glabratus</i>	+			
69400	<i>Stenelmis sp</i>	+			
77115	<i>Ablabesmyia janta</i>	119			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	59			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	119			
83002	<i>Dicrotendipes modestus</i>	59			
83050	<i>Dicrotendipes lucifer</i>	119			
83300	<i>Glyptotendipes (G.) sp</i>	1601 +			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	237			
84470	<i>Polypedilum (P.) illinoense</i>	+			
85625	<i>Rheotanytarsus sp</i>	3559			
93900	<i>Elimia sp</i>	1 +			

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 36.20 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	257			
03360	<i>Plumatella sp</i>	14			
03600	<i>Oligochaeta</i>	8			
06810	<i>Gammarus fasciatus</i>	1			
12956	<i>Heptagenia marginalis</i>	1			
13400	<i>Stenacron sp</i>	41			
13550	<i>Maccaffertium mexicanum integrum</i>	8			
13561	<i>Maccaffertium pulchellum</i>	23			
13570	<i>Maccaffertium terminatum</i>	3			
16700	<i>Tricorythodes sp</i>	51			
17200	<i>Caenis sp</i>	2			
22300	<i>Argia sp</i>	2			
27404	<i>Neurocordulia molesta</i>	1			
48410	<i>Corydalus cornutus</i>	1			
51206	<i>Cyrnellus fraternus</i>	230			
52200	<i>Cheumatopsyche sp</i>	48			
52560	<i>Hydropsyche orris</i>	72			
52801	<i>Potamyia flava</i>	8			
68901	<i>Macronychus glabratus</i>	10			
77115	<i>Ablabesmyia janta</i>	99			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	8			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	49			
81240	<i>Nanocladius (N.) distinctus</i>	99			
83040	<i>Dicrotendipes neomodestus</i>	148			
83050	<i>Dicrotendipes lucifer</i>	593			
83300	<i>Glyptotendipes (G.) sp</i>	3362			
84040	<i>Parachironomus frequens</i>	99			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	49			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	49			
85625	<i>Rheotanytarsus sp</i>	346			
85821	<i>Tanytarsus glabrescens group sp 7</i>	49			
93900	<i>Elimia sp</i>	4			
97710	<i>Dreissena polymorpha</i>	8			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 33 Total Taxa: 34
 No. Qualitative Taxa: 1 ICI: 34
 Number of Organisms: 5743 Qual EPT:

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 33.50 Site: Muskingum River dst. Luke Chute dam

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	17 +	77120	<i>Ablabesmyia mallochi</i>	+
03337	<i>Hyalinella punctata</i>	3 +	77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	363 +
03360	<i>Plumatella sp</i>	8 +	80310	<i>Cardiocladius obscurus</i>	+
03600	<i>Oligochaeta</i>	224 +	80410	<i>Cricotopus (C.) sp</i>	242 +
04682	<i>Placobdella montifera</i>	+	80420	<i>Cricotopus (C.) bicinctus</i>	+
05800	<i>Caecidotea sp</i>	+	81200	<i>Nanocladius sp</i>	121
06700	<i>Crangonyx sp</i>	+	82130	<i>Thienemanniella similis</i>	+
06810	<i>Gammarus fasciatus</i>	+	83040	<i>Dicrotendipes neomodestus</i>	242
11125	<i>Pseudocloeon frondale</i>	+	83300	<i>Glyptotendipes (G.) sp</i>	2057 +
11130	<i>Baetis intercalaris</i>	+	83310	<i>Glyptotendipes (Trichotendipes) amplus</i>	121
12200	<i>Isonychia sp</i>	4	83670	<i>Lipiniella sp</i>	+
12956	<i>Heptagenia marginalis</i>	7 +	84060	<i>Parachironomus pectinatellae</i>	121
13000	<i>Leucrocota sp</i>	+	84300	<i>Phaenopsectra obediens group</i>	+
13100	<i>Nixe sp</i>	+	84450	<i>Polypedilum (Uresipedilum) flavum</i>	363 +
13400	<i>Stenacron sp</i>	+	84470	<i>Polypedilum (P.) illinoense</i>	+
13510	<i>Maccaffertium exiguum</i>	7 +	84520	<i>Polypedilum (Tripodura) halterale group</i>	+
13540	<i>Maccaffertium mediopunctatum</i>	2	85625	<i>Rheotanytarsus sp</i>	8713 +
13550	<i>Maccaffertium mexicanum integrum</i>	16	85800	<i>Tanytarsus sp</i>	+
13561	<i>Maccaffertium pulchellum</i>	223 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	121
13570	<i>Maccaffertium terminatum</i>	5 +	87540	<i>Hemerodromia sp</i>	274
16700	<i>Tricorythodes sp</i>	258 +	89716	<i>Limnophora discreta</i>	+
17200	<i>Caenis sp</i>	278 +	93900	<i>Elimia sp</i>	2
18100	<i>Anthopotamus sp</i>	+	95100	<i>Physella sp</i>	+
22001	<i>Coenagrionidae</i>	+	97601	<i>Corbicula fluminea</i>	+
23909	<i>Boyeria vinosa</i>	+	97710	<i>Dreissena polymorpha</i>	+
27404	<i>Neurocordulia molesta</i>	+	99240	<i>Lasmigona complanata</i>	+
34600	<i>Perlinella sp</i>	+	99400	<i>Quadrula quadrula</i>	+
34700	<i>Aagnetina capitata complex</i>	+	99420	<i>Amblema plicata plicata</i>	+
48410	<i>Corydalus cornutus</i>	+	99600	<i>Actinonaias ligamentina carinata</i>	+
51206	<i>Cyrnellus fraternus</i>	53 +	99640	<i>Truncilla donaciformis</i>	+
51300	<i>Neureclipsis sp</i>	2			
52200	<i>Cheumatopsyche sp</i>	268 +	No. Quantitative Taxa: 36 Total Taxa: 74		
52510	<i>Hydropsyche aerata</i>	2 +	No. Qualitative Taxa: 61 ICI: 44		
52520	<i>Hydropsyche bidens</i>	54	Number of Organisms: 16778 Qual EPT: 22		
52560	<i>Hydropsyche orris</i>	1629 +			
52570	<i>Hydropsyche simulans</i>	11 +			
52620	<i>Macrostemum zebratum</i>	+			
52801	<i>Potamyia flava</i>	945 +			
53800	<i>Hydroptila sp</i>	20 +			
63900	<i>Laccophilus sp</i>	+			
68901	<i>Macronychus glabratus</i>	1			
69400	<i>Stenelmis sp</i>	1 +			
70502	<i>Limoniinae</i>	+			
74100	<i>Simulium sp</i>	+			

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/14/2006 River Code: 17-001 RM: 29.20 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01200	<i>Cordylophora lacustris</i>	+	<hr/> No. Quantitative Taxa: 24 Total Taxa: 43 No. Qualitative Taxa: 26 ICI: 50 Number of Organisms: 9849 Qual EPT: 5		
01801	<i>Turbellaria</i>	68 +			
01900	<i>Nemertea</i>	+			
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	+			
05800	<i>Caecidotea sp</i>	+			
06810	<i>Gammarus fasciatus</i>	1 +			
11670	<i>Procloeon viridoculare</i>	+			
12200	<i>Isonychia sp</i>	4			
13400	<i>Stenacron sp</i>	+			
13510	<i>Maccaffertium exiguum</i>	3			
13550	<i>Maccaffertium mexicanum integrum</i>	876 +			
13561	<i>Maccaffertium pulchellum</i>	83			
13570	<i>Maccaffertium terminatum</i>	28			
16700	<i>Tricorythodes sp</i>	38 +			
17200	<i>Caenis sp</i>	230			
22300	<i>Argia sp</i>	+			
26700	<i>Macromia sp</i>	+			
27404	<i>Neurocordulia molesta</i>	1			
51206	<i>Cyrnellus fraternus</i>	204			
51300	<i>Neureclipsis sp</i>	2			
52200	<i>Cheumatopsyche sp</i>	21			
52560	<i>Hydropsyche orris</i>	5299			
52801	<i>Potamyia flava</i>	412			
59407	<i>Nectopsyche candida</i>	+			
68130	<i>Helichus sp</i>	+			
69400	<i>Stenelmis sp</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77130	<i>Ablabesmyia rhamphe group</i>	+			
77140	<i>Ablabesmyia peleensis</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	145			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16			
81240	<i>Nanocladius (N.) distinctus</i>	+			
83002	<i>Dicrotendipes modestus</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	550 +			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	116			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	30			
85625	<i>Rheotanytarsus sp</i>	1592			
87540	<i>Hemerodromia sp</i>	97			
93900	<i>Elimia sp</i>	+			
97601	<i>Corbicula fluminea</i>	16 +			
97710	<i>Dreissena polymorpha</i>	17 +			

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 29.20 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01200	<i>Cordylophora lacustris</i>	1			
01320	<i>Hydra sp</i>	154			
01801	<i>Turbellaria</i>	88			
06810	<i>Gammarus fasciatus</i>	37			
13400	<i>Stenacron sp</i>	82			
13550	<i>Maccaffertium mexicanum integrum</i>	67			
13570	<i>Maccaffertium terminatum</i>	9			
16700	<i>Tricorythodes sp</i>	49			
17200	<i>Caenis sp</i>	6			
22300	<i>Argia sp</i>	1			
51206	<i>Cyrnellus fraternus</i>	8			
52500	<i>Hydropsyche sp</i>	6			
59407	<i>Nectopsyche candida</i>	6			
77115	<i>Ablabesmyia janta</i>	27			
77120	<i>Ablabesmyia mallochi</i>	13			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	4			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	7			
81240	<i>Nanocladius (N.) distinctus</i>	13			
83002	<i>Dicrotendipes modestus</i>	13			
83040	<i>Dicrotendipes neomodestus</i>	20			
83300	<i>Glyptotendipes (G.) sp</i>	396			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	13			
85625	<i>Rheotanytarsus sp</i>	7			
85800	<i>Tanytarsus sp</i>	7			
85821	<i>Tanytarsus glabrescens group sp 7</i>	7			
87540	<i>Hemerodromia sp</i>	2			
93900	<i>Elimia sp</i>	17			
97710	<i>Dreissena polymorpha</i>	4			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 28 Total Taxa: 29

No. Qualitative Taxa: 1 ICI: 32

Number of Organisms: 1064 Qual EPT:

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/14/2006 River Code: 17-001 RM: 26.20 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	45	85800	<i>Tanytarsus sp</i>	7
03360	<i>Plumatella sp</i>	1	85821	<i>Tanytarsus glabrescens group sp 7</i>	15
03600	<i>Oligochaeta</i>	16 +	93900	<i>Elimia sp</i>	+
05800	<i>Caecidotea sp</i>	+	97601	<i>Corbicula fluminea</i>	1
11670	<i>Procloeon viridoculare</i>	+	97710	<i>Dreissena polymorpha</i>	8 +
12200	<i>Isonychia sp</i>	8			
13400	<i>Stenacron sp</i>	337 +	No. Quantitative Taxa: 39		Total Taxa: 47
13550	<i>Maccaffertium mexicanum integrum</i>	144 +	No. Qualitative Taxa: 21		ICI: 46
13561	<i>Maccaffertium pulchellum</i>	27	Number of Organisms: 2530		Qual EPT: 7
13570	<i>Maccaffertium terminatum</i>	77 +			
14950	<i>Leptophlebia sp or Paraleptophlebia sp</i>	4			
16700	<i>Tricorythodes sp</i>	4 +			
17200	<i>Caenis sp</i>	18			
22300	<i>Argia sp</i>	3 +			
24900	<i>Gomphus sp</i>	1 +			
27404	<i>Neurocordulia molesta</i>	4			
51206	<i>Cyrnellus fraternus</i>	508 +			
51300	<i>Neureclipsis sp</i>	1			
52200	<i>Cheumatopsyche sp</i>	9			
52560	<i>Hydropsyche orris</i>	626 +			
52801	<i>Potamyia flava</i>	34			
69400	<i>Stenelmis sp</i>	1 +			
77115	<i>Ablabesmyia janta</i>	+			
77120	<i>Ablabesmyia mallochi</i>	+			
77130	<i>Ablabesmyia rhamphe group</i>	59			
77470	<i>Coelotanypus sp</i>	15			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	59			
78140	<i>Labrundinia pilosella</i>	7			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	4			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	15			
81240	<i>Nanocladius (N.) distinctus</i>	44			
83002	<i>Dicrotendipes modestus</i>	15			
83040	<i>Dicrotendipes neomodestus</i>	+			
83050	<i>Dicrotendipes lucifer</i>	22			
83300	<i>Glyptotendipes (G.) sp</i>	133 +			
84000	<i>Parachironomus sp</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	7			
84470	<i>Polypedilum (P.) illinoense</i>	+			
84520	<i>Polypedilum (Tripodura) halterale group</i>	15			
84700	<i>Stenochironomus sp</i>	7 +			
84790	<i>Tribelos fuscicorne</i>	7			
85625	<i>Rheotanytarsus sp</i>	222			

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 26.20 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	1			
01801	<i>Turbellaria</i>	3			
03337	<i>Hyalinella punctata</i>	1			
03360	<i>Plumatella sp</i>	2			
03451	<i>Urnatella gracilis</i>	8			
03600	<i>Oligochaeta</i>	24			
11001	<i>Baetidae</i>	1			
13550	<i>Maccaffertium mexicanum integrum</i>	90			
13570	<i>Maccaffertium terminatum</i>	2			
16700	<i>Tricorythodes sp</i>	41			
17200	<i>Caenis sp</i>	11			
22300	<i>Argia sp</i>	11			
27404	<i>Neurocordulia molesta</i>	3			
51206	<i>Cyrnellus fraternus</i>	212			
51300	<i>Neureclipsis sp</i>	9			
52200	<i>Cheumatopsyche sp</i>	2			
52560	<i>Hydropsyche orris</i>	66			
52801	<i>Potamyia flava</i>	53			
59500	<i>Oecetis sp</i>	1			
77115	<i>Ablabesmyia janta</i>	258			
80410	<i>Cricotopus (C.) sp</i>	20			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	40			
81240	<i>Nanocladius (N.) distinctus</i>	298			
83002	<i>Dicrotendipes modestus</i>	457			
83040	<i>Dicrotendipes neomodestus</i>	79			
83050	<i>Dicrotendipes lucifer</i>	60			
83300	<i>Glyptotendipes (G.) sp</i>	774			
84000	<i>Parachironomus sp</i>	79			
84470	<i>Polypedilum (P.) illinoense</i>	20			
84520	<i>Polypedilum (Tripodura) halterale group</i>	20			
84700	<i>Stenochironomus sp</i>	20			
85625	<i>Rheotanytarsus sp</i>	60			
95100	<i>Physella sp</i>	1			
97710	<i>Dreissena polymorpha</i>	1			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 34 Total Taxa: 35

No. Qualitative Taxa: 1 ICI: **28**

Number of Organisms: 2728 Qual EPT:

Ohio EPA/DSW Ecological Assessment Section
 Macroinvertebrate Collection

Collection Date: 09/14/2006 River Code: 17-001 RM: 24.70 Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	34 +	85625	<i>Rheotanytarsus sp</i>	1371 +
03073	<i>Lophopodella carteri</i>	1	85800	<i>Tanytarsus sp</i>	69
03360	<i>Plumatella sp</i>	3 +	87540	<i>Hemerodromia sp</i>	145
03600	<i>Oligochaeta</i>	64 +	93900	<i>Elimia sp</i>	1 +
05800	<i>Caecidotea sp</i>	+	95100	<i>Physella sp</i>	+
06810	<i>Gammarus fasciatus</i>	+	97710	<i>Dreissena polymorpha</i>	+
11123	<i>Pseudocloeon dardanum</i>	+	99380	<i>Quadrula pustulosa pustulosa</i>	+
11130	<i>Baetis intercalaris</i>	+	99500	<i>Pleurobema cordatum</i>	+
12956	<i>Heptagenia marginalis</i>	1	99580	<i>Obliquaria reflexa</i>	+
13400	<i>Stenacron sp</i>	1 +	99680	<i>Leptodea fragilis</i>	+
13510	<i>Maccaffertium exiguum</i>	24 +			
13550	<i>Maccaffertium mexicanum integrum</i>	139 +	No. Quantitative Taxa: 38		Total Taxa: 52
13561	<i>Maccaffertium pulchellum</i>	62 +	No. Qualitative Taxa: 39		ICI: 48
13570	<i>Maccaffertium terminatum</i>	151 +	Number of Organisms: 5441		Qual EPT: 16
16700	<i>Tricorythodes sp</i>	51			
17200	<i>Caenis sp</i>	342 +			
18100	<i>Anthopotamus sp</i>	+			
21300	<i>Hetaerina sp</i>	+			
22300	<i>Argia sp</i>	2 +			
27404	<i>Neurocordulia molesta</i>	3 +			
34410	<i>Paragnetina media</i>	1			
51206	<i>Cyrnellus fraternus</i>	195 +			
51300	<i>Neureclipsis sp</i>	1			
52200	<i>Cheumatopsyche sp</i>	32 +			
52560	<i>Hydropsyche orris</i>	989 +			
52570	<i>Hydropsyche simulans</i>	1 +			
52620	<i>Macrostemum zebratum</i>	+			
52801	<i>Potamyia flava</i>	247 +			
53800	<i>Hydroptila sp</i>	34 +			
68901	<i>Macronychus glabratus</i>	19 +			
69400	<i>Stenelmis sp</i>	1 +			
77115	<i>Ablabesmyia janta</i>	69			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	206 +			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	69 +			
81240	<i>Nanocladius (N.) distinctus</i>	69			
83040	<i>Dicrotendipes neomodestus</i>	240			
83300	<i>Glyptotendipes (G.) sp</i>	583 +			
84000	<i>Parachironomus sp</i>	34			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	137			
84700	<i>Stenochironomus sp</i>	34 +			

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 20.90 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	162 +			
03360	<i>Plumatella sp</i>	+			
03600	<i>Oligochaeta</i>	65 +			
13400	<i>Stenacron sp</i>	80 +			
13510	<i>Maccaffertium exiguum</i>	3			
13550	<i>Maccaffertium mexicanum integrum</i>	246 +			
13561	<i>Maccaffertium pulchellum</i>	56			
13570	<i>Maccaffertium terminatum</i>	40 +			
16700	<i>Tricorythodes sp</i>	18 +			
17200	<i>Caenis sp</i>	140 +			
22300	<i>Argia sp</i>	2 +			
24501	<i>Gomphidae</i>	+			
27404	<i>Neurocordulia molesta</i>	2 +			
34700	<i>Agnatina capitata complex</i>	1			
48410	<i>Corydalus cornutus</i>	1			
51206	<i>Cyrnellus fraternus</i>	315			
51300	<i>Neureclipsis sp</i>	11			
52200	<i>Cheumatopsyche sp</i>	47			
52560	<i>Hydropsyche orris</i>	5126 +			
52570	<i>Hydropsyche simulans</i>	43			
52801	<i>Potamyia flava</i>	270 +			
59407	<i>Nectopsyche candida</i>	+			
69400	<i>Stenelmis sp</i>	+			
77115	<i>Ablabesmyia janta</i>	54 +			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	143 +			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16			
81240	<i>Nanocladius (N.) distinctus</i>	18 +			
82820	<i>Cryptochironomus sp</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	107 +			
84040	<i>Parachironomus frequens</i>	+			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	179 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	36			
84700	<i>Stenochironomus sp</i>	36			
85625	<i>Rheotanytarsus sp</i>	1000 +			
85800	<i>Tanytarsus sp</i>	36			
85821	<i>Tanytarsus glabrescens group sp 7</i>	+			
87540	<i>Hemerodromia sp</i>	32			
93900	<i>Elimia sp</i>	+			
97710	<i>Dreissena polymorpha</i>	+			

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

Collection Date: 09/14/2006 River Code: 17-001 RM: 20.90 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	8			
01801	<i>Turbellaria</i>	158			
03600	<i>Oligochaeta</i>	16			
12200	<i>Isonychia sp</i>	1			
13400	<i>Stenacron sp</i>	73			
13510	<i>Maccaffertium exiguum</i>	6			
13550	<i>Maccaffertium mexicanum integrum</i>	156			
13561	<i>Maccaffertium pulchellum</i>	18			
13570	<i>Maccaffertium terminatum</i>	72			
16700	<i>Tricorythodes sp</i>	19			
17200	<i>Caenis sp</i>	147			
22300	<i>Argia sp</i>	7			
51206	<i>Cyrnellus fraternus</i>	56			
52200	<i>Cheumatopsyche sp</i>	4			
52520	<i>Hydropsyche bidens</i>	6			
52560	<i>Hydropsyche orris</i>	416			
52801	<i>Potamyia flava</i>	94			
59407	<i>Nectopsyche candida</i>	1			
60400	<i>Gyrinus sp</i>	4			
74501	<i>Ceratopogonidae</i>	4			
77115	<i>Ablabesmyia janta</i>	28			
80370	<i>Corynoneura lobata</i>	4			
81240	<i>Nanocladius (N.) distinctus</i>	7			
83040	<i>Dicrotendipes neomodestus</i>	21			
83300	<i>Glyptotendipes (G.) sp</i>	251			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	63			
84520	<i>Polypedilum (Tripodura) halterale group</i>	14			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	21			
84790	<i>Tribelos fuscicorne</i>	42			
85625	<i>Rheotanytarsus sp</i>	111			
85800	<i>Tanytarsus sp</i>	7			
93900	<i>Elimia sp</i>	1			
97601	<i>Corbicula fluminea</i>	1			
97710	<i>Dreissena polymorpha</i>	4			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 34 Total Taxa: 35

No. Qualitative Taxa: 1 ICI: **46**

Number of Organisms: 1841 Qual EPT:

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

Collection Date: 09/15/2006 River Code: 17-001 RM: 13.90 Site: Muskingum River dst. Lowell dam

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01801	<i>Turbellaria</i>	186 +	84040	<i>Parachironomus frequens</i>	54
03073	<i>Lophopodella carteri</i>	1	84450	<i>Polypedilum (Uresipedilum) flavum</i>	272 +
03121	<i>Paludicella articulata</i>	1	84540	<i>Polypedilum (Tripodura) scalaenum group</i>	27
03360	<i>Plumatella sp</i>	12 +	85625	<i>Rheotanytarsus sp</i>	1034 +
03451	<i>Urnatella gracilis</i>	1	85800	<i>Tanytarsus sp</i>	27
03600	<i>Oligochaeta</i>	232	87540	<i>Hemerodromia sp</i>	144
05800	<i>Caecidotea sp</i>	+	95100	<i>Physella sp</i>	1 +
11125	<i>Pseudocloeon frondale</i>	+	97601	<i>Corbicula fluminea</i>	1 +
11130	<i>Baetis intercalaris</i>	+	97710	<i>Dreissena polymorpha</i>	53 +
12200	<i>Isonychia sp</i>	16			
12956	<i>Heptagenia marginalis</i>	1	No. Quantitative Taxa: 39		Total Taxa: 52
13510	<i>Maccaffertium exiguum</i>	6	No. Qualitative Taxa: 29		ICI: 42
13550	<i>Maccaffertium mexicanum integrum</i>	111	Number of Organisms: 7959		Qual EPT: 11
13561	<i>Maccaffertium pulchellum</i>	40			
13570	<i>Maccaffertium terminatum</i>	168			
16700	<i>Tricorythodes sp</i>	51			
17200	<i>Caenis sp</i>	293 +			
22300	<i>Argia sp</i>	16 +			
27404	<i>Neurocordulia molesta</i>	2			
34600	<i>Perlinella sp</i>	+			
34700	<i>Agnatina capitata complex</i>	+			
51206	<i>Cyrnellus fraternus</i>	126 +			
51300	<i>Neureclipsis sp</i>	56			
52200	<i>Cheumatopsyche sp</i>	269 +			
52520	<i>Hydropsyche bidens</i>	68			
52560	<i>Hydropsyche orris</i>	1928 +			
52801	<i>Potamyia flava</i>	1601 +			
53800	<i>Hydroptila sp</i>	75 +			
59407	<i>Nectopsyche candida</i>	+			
68130	<i>Helichus sp</i>	+			
74100	<i>Simulium sp</i>	+			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	544			
80410	<i>Cricotopus (C.) sp</i>	+			
80420	<i>Cricotopus (C.) bicinctus</i>	+			
80430	<i>Cricotopus (C.) tremulus group</i>	+			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	54			
81240	<i>Nanocladius (N.) distinctus</i>	299			
81460	<i>Orthocladius (O.) sp</i>	+			
82730	<i>Chironomus (C.) decorus group</i>	+			
83040	<i>Dicrotendipes neomodestus</i>	27 +			
83050	<i>Dicrotendipes lucifer</i>	54			
83051	<i>Dicrotendipes simpsoni</i>	54			
83300	<i>Glyptotendipes (G.) sp</i>	54 +			

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

Collection Date: 09/15/2006 River Code: 17-001 RM: 9.40 A Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01200	<i>Cordylophora lacustris</i>	1 +			
01320	<i>Hydra sp</i>	8			
01801	<i>Turbellaria</i>	9 +			
03600	<i>Oligochaeta</i>	28 +			
11670	<i>Procloeon viridoculare</i>	+			
13400	<i>Stenacron sp</i>	107 +			
13550	<i>Maccaffertium mexicanum integrum</i>	15			
13570	<i>Maccaffertium terminatum</i>	21			
16700	<i>Tricorythodes sp</i>	4 +			
17200	<i>Caenis sp</i>	18			
22300	<i>Argia sp</i>	2 +			
27404	<i>Neurocordulia molesta</i>	5 +			
51206	<i>Cyrnellus fraternus</i>	1008 +			
51300	<i>Neureclipsis sp</i>	3			
52560	<i>Hydropsyche orris</i>	264 +			
52801	<i>Potamyia flava</i>	9			
68901	<i>Macronychus glabratus</i>	+			
77115	<i>Ablabesmyia janta</i>	141 +			
77120	<i>Ablabesmyia mallochi</i>	7			
77470	<i>Coelotanypus sp</i>	15			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	96 +			
78140	<i>Labrundinia pilosella</i>	7			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	7			
81240	<i>Nanocladius (N.) distinctus</i>	74 +			
83040	<i>Dicrotendipes neomodestus</i>	+			
83050	<i>Dicrotendipes lucifer</i>	74 +			
83051	<i>Dicrotendipes simpsoni</i>	15			
83300	<i>Glyptotendipes (G.) sp</i>	119 +			
84000	<i>Parachironomus sp</i>	+			
84300	<i>Phaenopsectra obediens group</i>	7			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	22			
84520	<i>Polypedilum (Tripodura) halterale group</i>	7			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	30			
84700	<i>Stenochironomus sp</i>	22 +			
84790	<i>Tribelos fuscicorne</i>	22 +			
85625	<i>Rheotanytarsus sp</i>	59			
85800	<i>Tanytarsus sp</i>	22			
93900	<i>Elimia sp</i>	+			
97601	<i>Corbicula fluminea</i>	13			
97710	<i>Dreissena polymorpha</i>	+			

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

Collection Date: 09/15/2006 River Code: 17-001 RM: 9.40 B Site: Muskingum River

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01200	<i>Cordylophora lacustris</i>	1			
01320	<i>Hydra sp</i>	45			
03360	<i>Plumatella sp</i>	4			
03600	<i>Oligochaeta</i>	8			
13400	<i>Stenacron sp</i>	191			
13550	<i>Maccaffertium mexicanum integrum</i>	21			
13570	<i>Maccaffertium terminatum</i>	23			
16700	<i>Tricorythodes sp</i>	26			
17200	<i>Caenis sp</i>	51			
22300	<i>Argia sp</i>	18			
51206	<i>Cyrnellus fraternus</i>	163			
52560	<i>Hydropsyche orris</i>	1			
52801	<i>Potamyia flava</i>	9			
59100	<i>Ceraclea sp</i>	4			
68901	<i>Macronychus glabratus</i>	2			
77115	<i>Ablabesmyia janta</i>	203			
77120	<i>Ablabesmyia mallochi</i>	14			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	13			
78140	<i>Labrundinia pilosella</i>	14			
80360	<i>Corynoneura "celeripes" (sensu Simpson & Bode, 1980)</i>	16			
81240	<i>Nanocladius (N.) distinctus</i>	176			
83040	<i>Dicrotendipes neomodestus</i>	230			
83050	<i>Dicrotendipes lucifer</i>	379			
83051	<i>Dicrotendipes simpsoni</i>	41			
83300	<i>Glyptotendipes (G.) sp</i>	108			
84000	<i>Parachironomus sp</i>	13			
84040	<i>Parachironomus frequens</i>	13			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	54			
84470	<i>Polypedilum (P.) illinoense</i>	14			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	27			
84700	<i>Stenochironomus sp</i>	27			
84790	<i>Tribelos fuscicorne</i>	13			
85821	<i>Tanytarsus glabrescens group sp 7</i>	13			
93900	<i>Elimia sp</i>	1			
97601	<i>Corbicula fluminea</i>	1			
99998	NO QUALITATIVE SAMPLE COLLECTED	+			

No. Quantitative Taxa: 35 Total Taxa: 36
 No. Qualitative Taxa: 1 ICI: 32
 Number of Organisms: 1937 Qual EPT:

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

Collection Date: 09/15/2006 River Code: 17-001 RM: 5.60 Site: Muskingum River dst. Devola dam

Taxa Code	Taxa	Quant/Qual	Taxa Code	Taxa	Quant/Qual
01320	<i>Hydra sp</i>	16	84750	<i>Stictochironomus sp</i>	+
01801	<i>Turbellaria</i>	450 +	85625	<i>Rheotanytarsus sp</i>	304
03360	<i>Plumatella sp</i>	6 +	85821	<i>Tanytarsus glabrescens group sp 7</i>	+
03451	<i>Urnatella gracilis</i>	16	87540	<i>Hemerodromia sp</i>	40
03600	<i>Oligochaeta</i>	120 +	93900	<i>Elimia sp</i>	6 +
05800	<i>Caecidotea sp</i>	+	97601	<i>Corbicula fluminea</i>	1 +
11125	<i>Pseudocloeon frondale</i>	+	97710	<i>Dreissena polymorpha</i>	26 +
12200	<i>Isonychia sp</i>	1	99350	<i>Quadrula metanevra</i>	+
13400	<i>Stenacron sp</i>	221 +	99380	<i>Quadrula pustulosa pustulosa</i>	+
13510	<i>Maccaffertium exiguum</i>	5	99400	<i>Quadrula quadrula</i>	+
13521	<i>Stenonema femoratum</i>	2 +	99420	<i>Amblyma plicata plicata</i>	+
13550	<i>Maccaffertium mexicanum integrum</i>	376	99500	<i>Pleurobema cordatum</i>	+
13561	<i>Maccaffertium pulchellum</i>	29 +	99580	<i>Obliquaria reflexa</i>	+
13570	<i>Maccaffertium terminatum</i>	190 +	99610	<i>Ellipsaria lineolata</i>	+
16700	<i>Tricorythodes sp</i>	130 +	99680	<i>Leptodea fragilis</i>	+
17200	<i>Caenis sp</i>	178 +	99700	<i>Potamilus alatus</i>	+
18100	<i>Anthopotamus sp</i>	+	99720	<i>Potamilus ohioensis</i>	+
18750	<i>Hexagenia limbata</i>	+			
48410	<i>Corydalis cornutus</i>	1	No. Quantitative Taxa: 40		Total Taxa: 60
51206	<i>Cyrnellus fraternus</i>	106	No. Qualitative Taxa: 41		ICI: 50
51300	<i>Neureclipsis sp</i>	25	Number of Organisms: 7070		Qual EPT: 16
52200	<i>Cheumatopsyche sp</i>	1392 +			
52510	<i>Hydropsyche aerata</i>	+			
52520	<i>Hydropsyche bidens</i>	87 +			
52560	<i>Hydropsyche orris</i>	1194 +			
52801	<i>Potamyia flava</i>	699 +			
53800	<i>Hydroptila sp</i>	375 +			
59407	<i>Nectopsyche candida</i>	8 +			
63300	<i>Hydroporus sp</i>	+			
68901	<i>Macronychus glabratus</i>	1			
69400	<i>Stenelmis sp</i>	1 +			
74100	<i>Simulium sp</i>	16			
77750	<i>Hayesomyia senata or Thienemannimyia norena</i>	256 +			
80410	<i>Cricotopus (C.) sp</i>	32			
81231	<i>Nanocladius (N.) crassicornus or N. (N.) "rectinervis"</i>	48			
81460	<i>Orthocladius (O.) sp</i>	+			
82130	<i>Thienemanniella similis</i>	8			
83040	<i>Dicrotendipes neomodestus</i>	16			
83250	<i>Gillotia albovidis</i>	+			
83300	<i>Glyptotendipes (G.) sp</i>	80			
84450	<i>Polypedilum (Uresipedilum) flavum</i>	544 +			
84540	<i>Polypedilum (Tripodura) scalaenum group</i>	16			
84700	<i>Stenochironomus sp</i>	48			