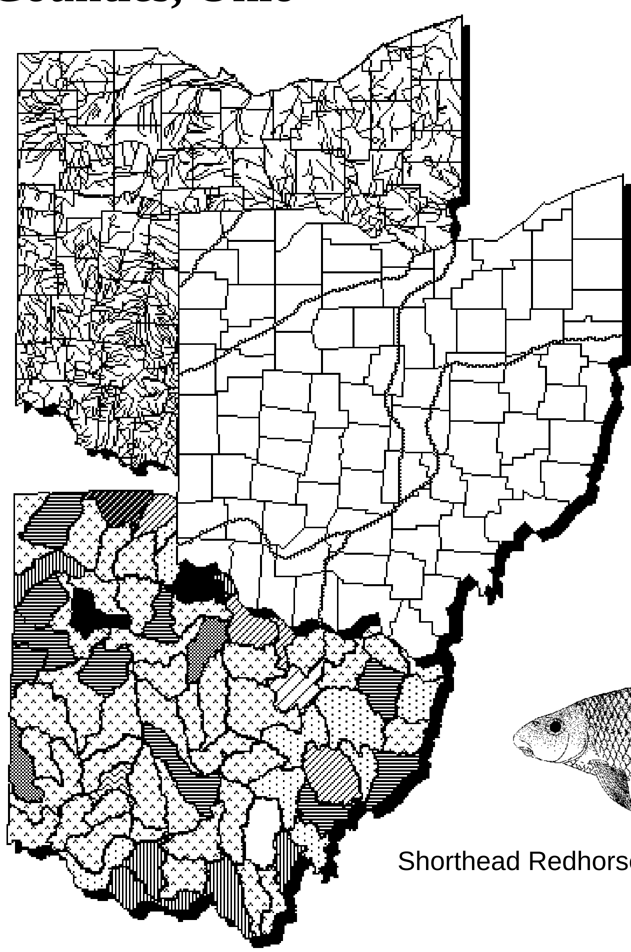
State of Ohio
Environmental Protection Agency

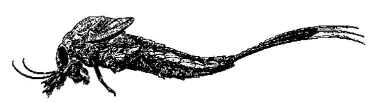
Ecological Assessment
Division of Surface Water

Biological and Water Quality Study of the Middle and Lower Great Miami River and Selected Tributaries, 1995

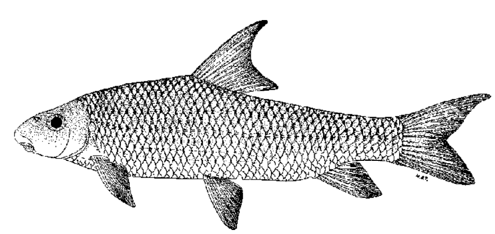
Volume I

Montgomery, Warren, Butler, and Hamilton Counties, Ohio





Mayfly *(Isonychia sp.)*



Shorthead Redhorse *(Moxostoma macrolepidotum)*

December 30, 1997

P.O. Box 1049, 1800 WaterMark Dr., Columbus, Ohio 43266-1049

Biological and Water Quality Study of the Middle to Lower Great Miami River and Selected Tributaries, 1995

(Montgomery, Warren, Butler, & Hamilton Counties, Ohio)

Volume I

OEPA Technical Report MAS/1996-12-8

State of Ohio Environmental Protection Agency
Division of Surface Water
Monitoring and Assessment Section
1685 Westbelt Drive
Columbus, Ohio 43228-3809
and
Nonpoint Source Program
1800 WaterMark Drive
Columbus, Ohio 43266-0149
and
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911

TABLE OF CONTENTS

Volume I:

<u>List of Tables</u>

Volume II: Appendices

NOTICE TO USERS

Ohio EPA incorporated biological criteria into the Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1) regulations in February 1990 (effective May 1990). These criteria consist of numeric values for the Index of Biotic Integrity (IBI) and Modified Index of Well-Being (MIwb), both of which are based on fish assemblage data, and the Invertebrate Community Index (ICI), which is based on macroinvertebrate assemblage data. Criteria for each index are specified for each of Ohio's five ecoregions (as described by Omernik 1987), and are further organized by organism group, index, site type, and aquatic life use designation. These criteria, along with the existing chemical and whole effluent toxicity evaluation methods and criteria, figure prominently in the monitoring and assessment of Ohio’s surface water resources.

The following documents support the use of biological criteria by outlining the rationale for using biological information, the methods by which the biocriteria were derived and calculated, the field methods by which sampling must be conducted, and the process for evaluating results:

Ohio Environmental Protection Agency. 1987a. Biological criteria for the protection of aquatic life: Volume I. The role of biological data in water quality assessment. Div. Water Qual. Monit. & Assess., Surface Water Section, Columbus, Ohio.

Ohio Environmental Protection Agency. 1987b. Biological criteria for the protection of aquatic life: Volume II. Users manual for biological field assessment of Ohio surface waters. Div. Water Qual. Monit. & Assess., Surface Water Section, Columbus, Ohio.

Ohio Environmental Protection Agency. 1989b. Addendum to Biological criteria for the protection of aquatic life: Volume II. Users manual for biological field assessment of Ohio surface waters. Div. Water Qual. Plan. & Assess., Ecological Assessment Section, Columbus, Ohio.

Ohio Environmental Protection Agency. 1989c. Biological criteria for the protection of aquatic life: Volume III. Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities. Div. Water Quality Plan. & Assess., Ecol. Assess. Sect., Columbus, Ohio.

Ohio Environmental Protection Agency. 1990. The use of biological criteria in the Ohio EPA surface water monitoring and assessment program. Div. Water Qual. Plan. & Assess., Ecol. Assess. Sect., Columbus, Ohio.

Rankin, E.T. 1989. The qualitative habitat evaluation index (QHEI): rationale,methods, and application. Div. Water Qual. Plan. & Assess., Ecol. Assess. Sect., Columbus, Ohio.

Since the publication of the preceding guidance documents new publications by Ohio EPA have become available. The following publications should also be consulted as they represent the latest information and analyses used by Ohio EPA to implement the biological criteria.

DeShon, J.D. 1995. Development and application of the invertebrate community index (ICI), pp. 217-243. in W.S. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Risk-based Planning and Decision Making. Lewis Publishers, Boca Raton, FL.

Rankin, E. T. 1995. The use of habitat assessments in water resource management programs, pp. 181-208. in W. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making. Lewis Publishers, Boca Raton, FL.

Yoder, C.O. and E.T. Rankin. 1995. Biological criteria program development and implementation in Ohio, pp. 109-144. in W. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making. Lewis Publishers, Boca Raton, FL.

Yoder, C.O. and E.T. Rankin. 1995. Biological response signatures and the area of degradation value: new tools for interpreting multimetric data, pp. 263-286. in W. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making. Lewis Publishers, Boca Raton, FL.

Yoder, C.O. 1995. Policy issues and management applications for biological criteria, pp. 327-344. in W. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making. Lewis Publishers, Boca Raton, FL.

Yoder, C.O. and E.T. Rankin. 1995. The role of biological criteria in water quality monitoring, assessment, and regulation. Environmental Regulation in Ohio: How to Cope With the Regulatory Jungle. Inst. of Business Law, Santa Monica, CA. 54 pp.

These documents and this report can be obtained by writing to:

Ohio EPA, Division of Surface Water
Monitoring and Assessment Section
1685 Westbelt Drive
Columbus, Ohio 43228-3809
(614) 728-3377

ACKNOWLEDGEMENTS

The following persons are acknowledged for their significant contributions to this report.

Study Area - Hugh Trimble and David Altfater
Facility Writeups - MaryAnne Mahr, John Spitler, Mary Osika, Ned Sarle, and Joe Bartoszek
Pollutant Loadings - MaryAnne Mahr and Joe Bartoszek
Sediment Chemistry - Louise T. Snyder and Joe Bartoszek
Ambient Chemical Water Quality - Louise T. Snyder and Joe Bartoszek
Fish Tissue - Kelly M. Capuzzi and Joe Bartoszek
Biological Assessment:
  Physical Habitat for Aquatic Life - Kelly M. Capuzzi and Randall E. Sanders
  Macroinvertebrate Community - Mike Bolton
  Fish Community - Kelly M. Capuzzi and Randall E. Sanders
Data Management - Dennis Mishne, Edward T. Rankin, Charlie Staudt, Louise T. Snyder, Keith Orr, Laurie Moore, and Randy Crowell
TSD Coordinator - Kelly M. Capuzzi
Reviewers - Chris O. Yoder, Marc A. Smith, Jeff DeShon, David Altfater, and Diana Zimmerman

This evaluation and report would not have been possible without the assistance of the study team and numerous full and part time staff in the field and offices. The chemistry analyses (laboratory) were conducted by the Ohio EPA, Division of Environmental Services. Datasonde results were provided by the Water Quality Modeling Unit. The following college interns provided support during field sampling activities: Chris Tarr, Matt Palmer, Joe Sudomir, Anthony Minamyer, Donald Wilker, David Carlin, Brad Gallant, Linda Ours, Kenyon Meadows, Laurie Moore, and Carlos Lynch. Ohio EPA would also like to thank the numerous land owners within the Great Miami River study area who provided stream access as well as the many NPDES permit holders for providing updated information for their facilities.

FOREWORD

What is a Biological and Water Quality Survey?

A biological and water quality survey, or “biosurvey”, is an interdisciplinary monitoring effort coordinated on a waterbody specific or watershed scale. This effort may involve a relatively simple setting focusing on one or two small streams, one or two principal stressors, and a handful of sampling sites or a much more complex effort including entire drainage basins, multiple and overlapping stressors, and tens of sites. Each year Ohio EPA conducts biosurveys in 10-15 different study areas with an aggregate total of 250-300 sampling sites.

Ohio EPA employs biological, chemical, and physical monitoring and assessment techniques in biosurveys in order to meet three major objectives: 1) determine the extent to which use designations assigned in the Ohio Water Quality Standards (WQS) are either attained or not attained; 2) determine if use designations assigned to a given water body are appropriate and attainable; and 3) determine if any changes in key ambient biological, chemical, or physical indicators have taken place over time, particularly before and after the implementation of point source pollution controls or best management practices. The data gathered by a biosurvey is processed, evaluated, and synthesized in a biological and water quality report. Each biological and water quality study contains a summary of major findings and recommendations for revisions to WQS, future monitoring needs, or other actions which may be needed to resolve existing impairment of designated uses. While the principal focus of a biosurvey is on the status of aquatic life uses, the status of other uses such as recreation and water supply, as well as human health concerns, are also addressed.

The findings and conclusions of a biological and water quality study may factor into regulatory actions taken by Ohio EPA (*e.g.*, NPDES permits, Director’s Orders, the Ohio Water Quality Standards [OAC 3745-1]), and are eventually incorporated into Water Quality Permit Support Documents (WQPSDs), State Water Quality Management Plans, the Ohio Nonpoint Source Assessment, and the Ohio Water Resource Inventory (305[b] report).

Hierarchy of Indicators

A carefully conceived ambient monitoring approach, using cost-effective indicators comprised of ecological, chemical, and toxicological measures, can ensure that all relevant pollution sources are judged objectively on the basis of environmental results. Ohio EPA relies on a tiered approach in attempting to link the results of administrative activities with true environmental measures. This integrated approach is outlined in Figure 1 and includes a hierarchical continuum from administrative to true environmental indicators. The six “levels” of indicators include: 1) actions taken by regulatory agencies (permitting, enforcement, grants); 2) responses by the regulated community (treatment works, pollution prevention); 3) changes in discharged quantities (pollutant loadings); 4) changes in ambient conditions (water quality, habitat); 5) changes in

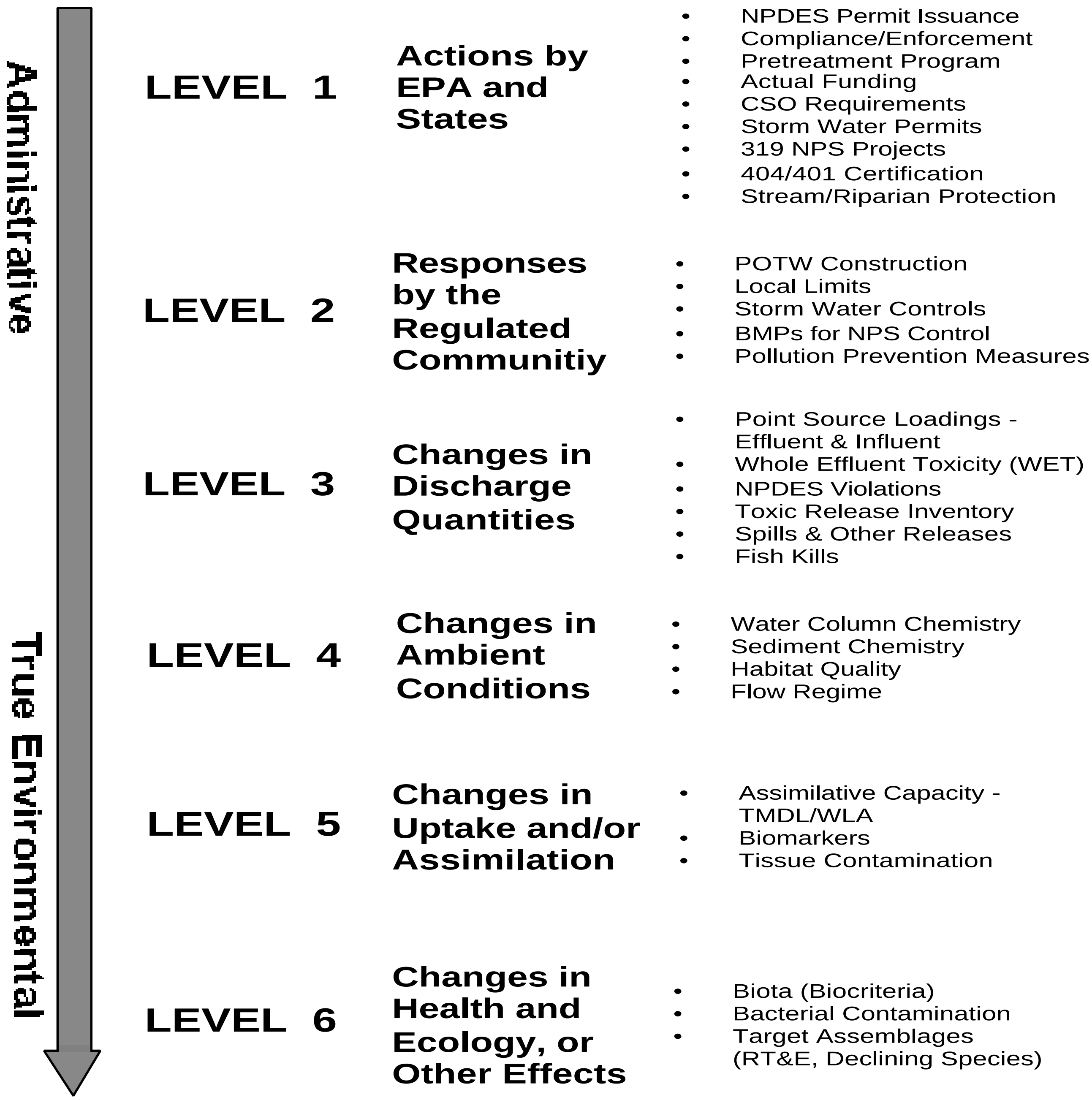


Figure 1. Hierarchy of administrative and environmental indicators which can be used for water quality management activities such as monitoring and assessment, reporting, and the evaluation of overall program effectiveness. This is patterned after a model developed by U.S. EPA (1995).

uptake and/or assimilation (tissue contamination, biomarkers, wasteload allocation); and, 6) changes in health, ecology, or other effects (ecological condition, pathogens). In this process the results of administrative activities (levels 1 and 2) can be linked to efforts to improve water quality (levels 3, 4, and 5) which should translate into the environmental "results" (level 6). Thus, the aggregate effect of billions of dollars spent on water pollution control since the early 1970s can now be determined with quantifiable measures of environmental condition.

Superimposed on this hierarchy is the concept of stressor, exposure, and response indicators. *Stressor* indicators generally include activities which have the potential to degrade the aquatic environment such as pollutant discharges (permitted and unpermitted), land use effects, and habitat modifications. *Exposure* indicators are those which measure the effects of stressors and can include whole effluent toxicity tests, tissue residues, and biomarkers, each of which provides evidence of biological exposure to a stressor or bioaccumulative agent. *Response* indicators are generally composite measures of the cumulative effects of stress and exposure and include the more direct measures of community and population response that are represented here by the biological indices which comprise Ohio's biological criteria. Other response indicators could include target assemblages, *i.e.,* rare, threatened, endangered, special status, and declining species or bacterial levels which serve as surrogates for the recreational uses. These indicators represent the essential technical elements for watershed-based management approaches. The key, however, is to use the different indicators *within* the roles which are most appropriate for each.

Describing the causes and sources associated with observed impairments revealed by the biological criteria and linking this with pollution sources involves an interpretation of multiple lines of evidence including water chemistry data, sediment data, habitat data, effluent data, biomonitoring results, land use data, and biological response signatures within the biological data itself. Thus the assignment of principal causes and sources of impairment represents the association of impairments (defined by response indicators) with stressor and exposure indicators. The principal reporting venue for this process on a watershed or subbasin scale is a biological and water quality report. These reports then provide the foundation for aggregated assessments such as the Ohio Water Resource Inventory (305[b] report), the Ohio Nonpoint Source Assessment, and other technical bulletins.

Ohio Water Quality Standards: Designated Aquatic Life Uses

The Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1) consist of designated uses and chemical, physical, and biological criteria designed to represent measurable properties of the environment that are consistent with the goals specified by each use designation. Use designations consist of two broad groups, aquatic life and non-aquatic life uses. In applications of the Ohio WQS to the management of water resource issues in Ohio's rivers and streams, the aquatic life use criteria frequently result in the most stringent protection and restoration requirements, hence their emphasis in biological and water quality reports. Also, an emphasis on protecting for aquatic life generally results in water quality suitable for all uses. The five different aquatic life uses currently defined in the Ohio WQS are described as follows:

1) *Warmwater Habitat (WWH)* - this use designation defines the "typical" warmwater assemblage of aquatic organisms for Ohio rivers and streams; *this use represents the principal restoration target for the majority of water resource management efforts in Ohio.*

2) *Exceptional Warmwater Habitat (EWH)* - this use designation is reserved for waters which support "unusual and exceptional" assemblages of aquatic organisms which are characterized by a high diversity of species, particularly those which are highly intolerant and/or rare, threatened, endangered, or special status (*i.e.*, declining species); *this designation represents a protection goal for water resource management efforts dealing with Ohio's best water resources.*

3) *Coldwater Habitat (CWH)* - this use is intended for waters which support assemblages of cold water organisms and/or those which are stocked with salmonids with the intent of providing a put-and-take fishery on a year round basis which is further sanctioned by the Ohio DNR, Division of Wildlife; this use should not be confused with the Seasonal Salmonid Habitat (SSH) use which applies to the Lake Erie tributaries which support periodic "runs" of salmonids during the spring, summer, and/or fall.

4) *Modified Warmwater Habitat (MWH)* - this use applies to streams and rivers which have been subjected to extensive, maintained, and essentially permanent hydromodifications such that the biocriteria for the WWH use are not attainable *and where the activities have been sanctioned and permitted by state or federal law;* the representative aquatic assemblages are generally composed of species which are tolerant to low dissolved oxygen, silt, nutrient enrichment, and poor quality habitat.

5) *Limited Resource Water (LRW)* - this use applies to small streams (usually <3 $mi.^2$ drainage area) and other water courses which have been irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported; such waterways generally include small streams in extensively urbanized areas, those which lie in watersheds with extensive drainage modifications, those which completely lack water on a recurring annual basis (*i.e.*, true ephemeral streams), or other irretrievably altered waterways.

Chemical, physical, and/or biological criteria are generally assigned to each use designation in accordance with the broad goals defined by each. As such the system of use designations employed in the Ohio WQS constitutes a "tiered" approach in that varying and graduated levels of protection are provided by each. This hierarchy is especially apparent for parameters such as dissolved oxygen, ammonia-nitrogen, temperature, and the biological criteria. For other parameters such as heavy metals, the technology to construct an equally graduated set of criteria has been lacking, thus the same water quality criteria may apply to two or three different use designations.

Ohio Water Quality Standards: Non-Aquatic Life Uses

In addition to assessing the appropriateness and status of aquatic life uses, each biological and water quality survey also addresses non-aquatic life uses such as recreation, water supply, and human health concerns as appropriate. The recreation uses most applicable to rivers and streams are the Primary Contact Recreation (PCR) and Secondary Contact Recreation (SCR) uses. The criterion for designating the PCR use is simply having a water depth of at least one meter over an area of at least 100 square feet or where canoeing is a feasible activity. If a water body is too small and shallow to meet either criterion the SCR use applies. The attainment status of PCR and SCR is determined using bacterial indicators (*e.g.,* fecal coliforms, *E. coli)* and the criteria for each are specified in the Ohio WQS.

Water supply uses include Public Water Supply (PWS), Agricultural Water Supply (AWS), and Industrial Water Supply (IWS). Public Water Supplies are simply defined as segments within 500 yards of a potable water supply or food processing industry intake. The Agricultural Water Supply (AWS) and Industrial Water Supply (IWS) use designations generally apply to all waters unless it can be clearly shown that they are not applicable. An example of this would be an urban area where livestock watering or pasturing does not take place, thus the AWS use would not apply. Chemical criteria are specified in the Ohio WQS for each use and attainment status is based primarily on chemical-specific indicators. Human health concerns are additionally addressed with fish tissue data, but any consumption advisories are issued by the Ohio Department of Health are detailed in other documents.

1995 Biological and Water Quality Study of the Middle and Lower Great Miami River and Selected Tributaries

Montgomery, Warren, Butler, and Hamilton Counties (Ohio)

State of Ohio Environmental Protection Agency
Division of Surface Water
1800 WaterMark Drive
Columbus, Ohio 43216-3669

INTRODUCTION

As part of Ohio EPA's Five-year Basin Approach for Monitoring and National Pollutant Discharge Elimination System (NPDES) Permit Reissuance, water column chemical, sediment, ambient biological, and bioassay sampling was conducted in the Middle and Lower Great Miami River and selected tributaries during the summer of 1995. The principal objectives of this study were to:

1) evaluate the physical habitat, surface water and sediment quality, and the biological integrity of the Great Miami River study area,

2) assess impacts from all relevant point source dischargers, non point sources of pollution, and habitat alterations.

3) determine attainment status of aquatic life and non-aquatic use designations, and recommend changes where appropriate, and

4) evaluate any additional improvements in the biological and water quality conditions since the 1989 Ohio EPA biosurvey, evaluate existing use designations, and expand the Ohio EPA database for long-term trend analysis (e.g., 305[b] reporting).

Similar to the previous surveys conducted in 1980 and 1989, standardized methods were used throughout the study area to collect quantitative and qualitative biological, chemical, and physical data. Point source discharges were directly evaluated including analyses of pollutant loading trends based on monthly operating reports [MORs], NPDES permit violations, combined sewer overflows, and whole effluent toxicity tests. Other relevant information indicative of potential environmental impacts within the Great Miami River watershed (*e.g.,* spills, sewer overflows, bypasses, unauthorized releases of pollutants, Ohio Department of Natural Resources fish kill reports, and other biological data) was also reviewed and summarized.

The findings of this evaluation may factor into regulatory actions taken by the Ohio EPA (e.g., NPDES permits, Director's Orders, or the Ohio Water Quality Standards (OAC 3745-1)), and may eventually be incorporated into State Water Quality Management Plans, the Ohio Nonpoint Source Assessment, and the biennial Ohio Water Resources Inventory (305[b] report).

SUMMARY

Aquatic Life Use Attainment

Middle and Lower Great Miami River Mainstem

Approximately 90 miles of the Great Miami River mainstem were assessed as part of the 1995 survey (Table 1, Figure 1a, 1b, and 1c.). The sampling effort included 164 biological, chemical, and physical sampling stations, evaluating the river from upstream of Dayton at approximately river mile (RM) 90.0 to the mouth (RM 0.0). Of the 90 mainstem miles evaluated in 1995, 55.3% were in full attainment, 40.3% were in partial attainment, and 4.4% were in non-attainment of the applicable biological criteria. The majority of partial and non-attainment in the segment between Dayton and Middletown was due to habitat alterations caused by the numerous low-head dams. However, partial and non-attainment in the lower reach from Middletown to the Ohio River was due to a combination of CSO impacts, contaminated sediment, and inadequately treated effluent from numerous point source discharges.

The WWH use attainment status in the Great Miami River from the city of Dayton to Middletown (RM 90.0 to 55.0) has improved markedly since 1980 and 1989 due to the numerous WWTP upgrades and subsequent reductions in loadings of oxygen demanding wastes and ammonia-N. A total of 29.9 miles were in full attainment, 3.6 miles were in partial attainment, and 1.5 were in non attainment of the WWH criterion in 1995. Within the upper half of the mainstem, all of the free flowing sites were in full attainment of the existing WWH use designation with the exception of one site immediately downstream from Owl Creek. Two paper companies (Fraser Paper and West Carrollton Parchment) discharge directly to Owl Creek. The macroinvertebrate community performance in Owl Creek was very poor and was indicative of highly toxic instream conditions. Most of the impounded segments were in partial or non attainment of the WWH use designation with the exception of the DP&L Tait dam pool and the Monument Avenue dam pool (Figure 1a). The partial or non attainment corresponded to an increased incidence of deformities, erosions, lesions, and tumor (DELT) anomalies which occurred within the dam pools indicating sublethal stresses to the fish community. The sublethal stresses were principally nutrient enrichment and marginal dissolved oxygen (D.O.) levels, which are associated with the many WWTPs and other discharges of organic wastes. The WWTP upgrades have substantially advanced aquatic life use attainment within the free flowing sections of the middle Great Miami River. The public interest groups and local government agencies are accredited for the measurable and meaningful environmental improvements realized through WWTP upgrades.

Table 1. Aquatic life use attainment status for applicable use designations (existing and recommended) in the middle and lower Great Miami River study area. Attainment status is based on data collected between June and October 1995 (bold RM denotes a reference site; mixing zone sampling locations are italicized).

RIVER MILE Fish/Invert.	IBI	Modified Iwb	ICI[a]	QHEI[b]	Use Attain-ment Status[c]	Comments
Great Miami River (1995)						
Eastern Corn Belt Plains - WWH/EWH Use Designation (Existing/Recommended)						
87.3[B]/87.7	47[ns/EWH]	9.3[ns/EWH]	E	84.5	FULL/FULL	ust. Needmore Rd.
85.2[B]/85.9	54	9.4[ns/EWH]	46	82.5	FULL/FULL	dst MCD N. Reg. WWTP
Eastern Corn Belt Plains - WWH Use Designation (Existing)						
83.3M[B]/ --	32*	8.5	--	44.0	[PART]	ust. Steele Dam, impounded
82.0[B]/82.0	52	9.9	42	66.0	FULL	dst. Steele Dam
80.7R[B]/80.7	51	9.5	38	74.0	FULL	dst. Monument Ave.
79.9[B]/80.0	55	9.1	38	71.5	FULL	Fifth St., dst. Wolf Creek
78.1[B]/ --	42	8.3[ns]	--	42.5	[FULL]	dst. industrial discharges, imp.
77.1M[B]/ --	38[ns]	8.9	--	44.0	[FULL]	ust. Tait Dam, imp.
76.9[B]/76.4	45	9.0	44	75.0	FULL	dst. DP&L Tait Dam
76.10[B]/76.00	*41*	*9.8*	*42*	*71.0*	*NA*	*Dayton WWTP mixing zone*
75.9[B]/75.7	51	9.5	42	74.0	FULL	dst. Dayton WWTP
74.8[B]/ --	32*	7.9*	--	64.0	[**NON**]	ust. Holes Creek, impounded
73.3[B]/ --	30*	8.5	--	62.0	[PART]	dst. Holes Creek, impounded
-- /72.4	--	--	50	--	[FULL]	ust. Appleton Paper
-- /72.3	--	--	*VG,F*	--	*NA*	*Appleton Paper WWTP m zone*
71.6[B]/71.7	47	9.6	38	85.5	FULL	dst. Appleton Paper
71.45[B]/71.45	*32*	*8.5*	*G,G*	*73.5*	*NA*	*W. Reg. WWTP mix zone*
69.9[B]/70.5	43	8.6	46	81.0	FULL	dst. Western Reg. WWTP
69.3[B]/69.3	34*	8.0[ns]	48	77.0	PART.	dst. Owl Creek.
69.20[B]/69.20	*21*	*7.0*	*G,VG*	*69.0*	*NA*	*W Carrollton WWTP mix zone*
69.0[B]/68.8	44	8.9	44	82.5	FULL	dst. W. Carrollton WWTP
-- /66.9	--	--	46	--	[FULL]	ust. Mound

Table 1 Continued.

RIVER MILE Fish/Invert.	IBI	Modified Iwb	ICI[a]	QHEI[b]	Use Attain- ment Status[c]	Comments
Great Miami River (1995)						
65.9[B]/ --	30*	8.1[ns]	--	57.0	[PART]	Adj. Mound, imp.
65.0[B]/ --	*34*	*8.7*	--	*46.5*	*NA*	*M'burg WWTP mix zone, imp.*
64.8[B]/ --	33*	8.3[ns]	--	46.0	[PART]	dst. M'burg WWTP,imp.
64.3[B]/64.35	*40*	*8.9*	*VG,G*	*60.5*	*NA*	*DP&L Hutchings EGS m. zone*
-- /64.3	--	--	50	--	[FULL]	dst. *Hutchings EGS* Dam
64.0[B]/64.1	41[ns]	9.5	52	85.5	FULL	dst. DP&L Hutchings EGS
63.3[B]/62.6	50	9.6	G	81.0	FULL	Old Chautauqua dam
62.1[B]/62.6	40[ns]	8.6	G	83.5	FULL	ust. Franklin WWTP
60.2[B]/60.2	41[ns]	9.0	44	69.0	FULL	ust. Franklin WWTP
59.65[B]/59.65	*39*	*9.2*	*G,G*	*85.5*	*NA*	*Franklin WWTP mixing zone*
59.4[B]/59.1	39[ns]	9.3	48	80.0	FULL	dst. Franklin WWTP
58.4[B]/58.3	46	8.9	48	88.0	FULL	dst. Clear Creek
55.1[B]/55.0	44	9.8	46	83.0	FULL	SR 4
52.4[B]/ --	29*	7.1*	--	56.5	[**NON**]	SR 122, impounded
52.0[B]/51.5	39[ns]	9.5	44	78.5	FULL	dst. new Middletown Dam
51.40[B]/51.40	*35*	*6.2*	*8*	*51.0*	*NA*	*AK Steel 001 mixing zone*
51.3[B]/51.3	33*	7.5*	38	52.5	PART.	dst. AK Steel
51.0[B]/50.9	28*	8.4[ns]	38	60.5	PART.	ust. Elk Creek
49.1[B]/49.3	35*	7.8*	40	75.5	PART.	SR 73
48.20[B]/48.20	*31*	*6.6*	*G,G*	*81.5*	*NA*	*Middletown WWTP mix zone*
48.0[B]/47.7	33*	7.9*	44	73.5	PART.	dst. Middletown WWTP
47.5[B]/47.5	44	9.0	40	86.0	FULL	dst. Dicks Creek
45.65[B]/45.65	*35*	*8.5*	*MG,MG*	*67.5*	*NA*	*LeSourdsville WWTP mix zone*
45.5[B]/45.5	32*	8.0[ns]	44	82.5	PART.	dst. LeSourdsville WWTP
43.4[B]/43.3	32*	8.0[ns]	40	83.0	PART.	dst. Miller Brewing
40.6[B]/38.5	37*	9.0	42	84.0	PART.	ust./dst. old Armco 001

Table 1. continued.

RIVER MILE Fish/Invert.	IBI	Modified Iwb	ICI[a]	QHEI[b]	Use Attain-ment Status[c]	Comments
Great Miami River (1995)						
38.3B/38.2	35*	8.6	40	60.5	PART.	dst. Fourmile Creek, imp.
36.9B/37.0	48	9.1	46	67.5	FULL	dst. Ham. Municipal EGS
34.6B/ --	40ns	8.6	--	45.5	[FULL]	dst. SR 128, imp.
34.2B/34.3	50	10.5	44	72.5	FULL	dst. Hamilton Rec. Dam
33.99B/ --	*38*	*10.1*	--	*67.5*	*NA*	*Hamilton WWTP mixing zone*
33.6B/33.6	38ns	10.8	42	81.5	FULL	dst. Ham. WWTP & CSOs
31.6B/31.6	*36*	*9.3*	*MG*	*61.0*	*NA*	*Fairfield WWTP mixing zone*
31.4B/ --	28*	8.9	--	84.0	[PART.]	dst. Fairfield WWTP
30.0B/29.9	33*	9.9	46	76.5	PART.	American Aggregate bridge
28.8B/ --	36*	9.8	--	78.5	[PART.]	Adj. East River Rd.
25.8B/27.1	31*	9.2	46	58.5	PART.	SR 126, SR 27
		Interior Plateau - WWH Use Designation (Existing)				
24.7B/24.7	*32*	*8.7*	*G*	*78.0*	*NA*	*Fernald mixing zone*
23.4B/22.5	33*	10.2	42	84.0	PART.	Adj. East River Road
21.1B/ --	30*	9.6	--	75.5	[PART.]	ust. Paddys Run
20.0B/ --	30*	8.9	--	54.0	[PART.]	dst. Paddys Run
16.9B/17.9	30*	9.2	42	74.0	PART.	Adj. East Miami River Rd.
14.8B/14.8	35ns	10.0	42	80.0	FULL	dst. Taylor Creek, I-275
11.4B/9.5	36ns	9.9	44	81.5	FULL	ust. Chevron Chemical
8.4B/8.4	36ns	10.2	38	79.5	FULL	dst. SR 50
5.6B/5.7	31*	9.3	42	75.0	PART.	Lost Br., dst. Whitewater R.
3.9B/ --	30*	8.1*	--	46.5	[**NON**]	Shawnee boat ramp, imp.
1.8B/ --	36ns	8.0*	--	57.5	[PART.]	ust. Mouth, Ohio River infl.
Wolf Creek (1995)						
		Eastern Corn Belt Plains - WWH Use Designation(Existing)				
16.7H/16.6	34*	NA	MGns	56.0	PART.	Upper Lewisburg Salem Rd.

Table 1. continued.

RIVER MILE Fish/Invert.	**IBI**	**Modified Iwb**	**ICI[a]**	**QHEI[b]**	**Use Attain-ment Status[c]**	**Comments**
Wolf Creek (1995)						
15.0H/15.0	30*	NA	P*	63.5	**NON**	ust. Brookville WWTP
14.9H/14.9	38ns	NA	P*	81.0	**NON**	dst. Brookville WWTP
10.4H/10.4	44	NA	F*	82.5	PART.	Nolan Road
6.1W/6.1	36ns	7.7*	F*	69.0	PART.	Olive Road
0.2W/0.1	39ns	8.4	MGns	53.5	FULL	ust. mouth
Dry Run (1995 - tributary to Wolf Creek)						
	Eastern Corn Belt Plains - WWH Use Designation (Existing)					
0.2H/ --	50	NA	--	73.5	[FULL]	Free Drive
Holes Creek (1995)						
	Eastern Corn Belt Plains - WWH Use Designation (Existing)					
-- /5.6	--	--	F*	--	[**NON**]	Normandy School
4.3H/4.3	42	NA	MGns	63.0	FULL	McEwen Road
0.6W/0.6	30*	7.5*	F*	54.0	**NON**	SR 741
Owl Creek (1995)						
	Eastern Corn Belt Plains - LRW Use Designation (Existing)					
0.1H/0.1	36	NA	VP*	69.0	**NON**	ust. mouth
Bear Creek (1995)						
	Eastern Corn Belt Plains - WWH Use Designation (Existing)					
12.1H/**12.1**	50	NA	38	77.0	FULL	Old Dayton & ClaytonRd.
9.9H/9.9	52	NA	F*	79.5	PART.	dst. New Lebanon WWTP
5.2W/5.2	46	8.9	VG	66.5	FULL	Germantown-Liberty Rd.
2.1W/2.1	40	8.0ns	E	71.0	FULL	Farmersville Road
0.1W/0.2	40	7.5*	VG	46.0	PART.	dst. RR tracks, ust. mouth

Table 1. continued.

RIVER MILE Fish/Invert.	**IBI**	**Modified Iwb**	**ICI**[a]	**QHEI**[b]	**Use Attain-ment Status**[c]	**Comments**
Elk Creek (1995)						
	Eastern Corn Belt Plains - EWH Use Designation (Existing)					
3.7R^{W}/3.7	46^{ns}	9.0^{ns}	52	84.0	FULL	ust. Dry Run, Elk Cr. Rd.
***Dry Run (1995** - Tributary to Elk Creek*; ECBP; no existing use designation)						
-- / 0.1	--	--	F*	--	[**NON**]	ust. mouth
Dicks Creek (1995)						
	Eastern Corn Belt Plains - MWH Use Designation (Existing)					
-- /5.2	--	NA	VP*	--	[**NON**]	ust. North Branch
5.0^{H}/4.7	43	NA	6*	44.0	**NON**	dst. N. Branch & AK 004
4.4^{W}/4.1	41	9.7	P*	58.5	**NON**	dst. Shakers Cr., ust. AK 005
-- /3.9	--	--	8*	--	[**NON**]	dst. AK 005
3.0^{W}/3.7	30/22*[d]	5.8/5.6*[d]	12*	40.0	**NON/NON**	ust. AK 002, dst. AK 003
-- /2.8	--	--	12*	40.0	[**NON**]	ust. AK 006, dst. AK 002
2.6^{W}/2.6	34/14*[d]	7.7/4.1*[d]	8*	52.0	**NON/NON**	dst. AK 002 & AK 006
	Eastern Corn Belt Plains - WWH Use Designation (Existing)					
2.4^{W}/1.7	28*/12*[d]	4.4*/2.1*[d]	16*	62.5	**NON**	dst. Union Oil
0.4^{W}/0.2	30*/12*[d]	6.9*/1.5*[d]	20*	72.5	**NON**	ust. mouth
North Branch Dicks Creek (1995)						
	Eastern Corn Belt Plains - MWH Use Designation (Existing)					
1.0^{H}/1.0	45	NA	8*	42.0	**NON**	dst. culvert, ust AK 004
0.1^{H}/0.1	48	NA	VP*	52.5	**NON**	dst. AK Steel 004
Mound Overflow Creek (1995)						
	Eastern Corn Belt Plains - MWH Use Designation (Recommended)					
0.2^{H}/0.2	34	NA	F*	51.0	PART.	dst. DOE Mound
Paddys Run (1995)						
	*Interior Plateau - **WWH Use Designation** (Existing)*					
4.7/4.9	44	NA	28^{ns}	71.5	FULL	ust.FEMP 006 stromwater outfall
3.3/3.3	49	NA	42	71.5	FULL	dst.FEMP 006 stromwater outfall

Table 1. continued.

RIVER MILE Fish/Invert.	IBI	Modified Iwb	ICI[a]	QHEI[b]	Use Attain-ment Status[c]	Comments
Paddys Run (1995) Con't						
		Interior Plateau - WWH Use Designation (Existing)				
2.8/ --	38[ns]/12*[e]	NA	--	60.5	[FULL/**NON**]	dst. Pilot Plant drain. ditch
0.2/--	26*/ --	NA	--	67.5	[**NON**]	ust. mouth
Whitewater River (1995)						
		Interior Plateau - WWH/EWH Use Designation (Existing/Recommended)				
7.7[B]/8.1	48	10.6	52	83.0	FULL/FULL	ust. Harrison WWTP
7.2[B]/7.0	50	10.9	52	82.0	FULL/FULL	dst. Harrison WWTP
4.7[B]/3.8	50	11.4	52	85.0	FULL/FULL	Adj. Kilby Road
0.8[B]/1.5	48	10.6	56	77.5	FULL/FULL	ust. Mouth, Susp.Br.Rd.

* Significant departure from applicable biocriterion (>4 IBI or ICI units, >0.5 MIwb units);poor and very poor results are underlined.

ns Nonsignificant departure from biological criterion (≤4 IBI, ≤4 ICI, ≤0.5 Miwb units). NS/EWH is based on nonsignificant departure from the recommended EWH criteria.

a Narrative evaluation used in lieu of ICI (E=Exceptional; VG= Very Good; G=Good; MG=Marginally good; F=Fair; P=Poor; VP=Very Poor).

b Qualitative Habitat Evaluation Index (QHEI) values based on Rankin (1989).

c Attainment status based on one organism group is parenthetically expressed.

d IBI and MIwb scores before and after the AK Steel 003 outfall spill during the 1995 field season in Dicks Creek.

e IBI score in Paddys Run during normal flows / and intermediate to dry conditions

B Fish sampled using the Boat Method.

H Headwater site (drainage area < 20 square miles) fish sampling was conducted using a wadeable method.

W Fish sampled using the Wading Method.

R Regional reference site.

M Modified reference site.

Ecoregional Biological Criteria: (From OAC 3745-1-07, Table 7-14)

	E. Corn Belt Plains (ECBP)				***Interior Plateau (IP)***		
INDEX - Site Type	WWH	EWH	MWH[f]	LRW[g]	WWH	EWH	MWH[f]
IBI - Headwaters	40	50	24/NA	18	40	50	24/NA
IBI - Wading	40	50	24/NA	18	40	50	24/NA
IBI - Boat	42	48	24/30	16	38	48	24/30
Mod. Iwb - Wading	8.3	9.4	6.2/NA	4.5	8.1	9.4	6.2/NA
Mod. Iwb - Boat	8.5	9.6	5.8/6.6	5.0	8.7	9.6	5.8/6.6
ICI	36	46	22/NA	14	30	46	22/NA

f MWH (Modified Warmwater Habitat) for channelized habitats/impounded habitats.

g Interim Criteria for Limited Resource Water.

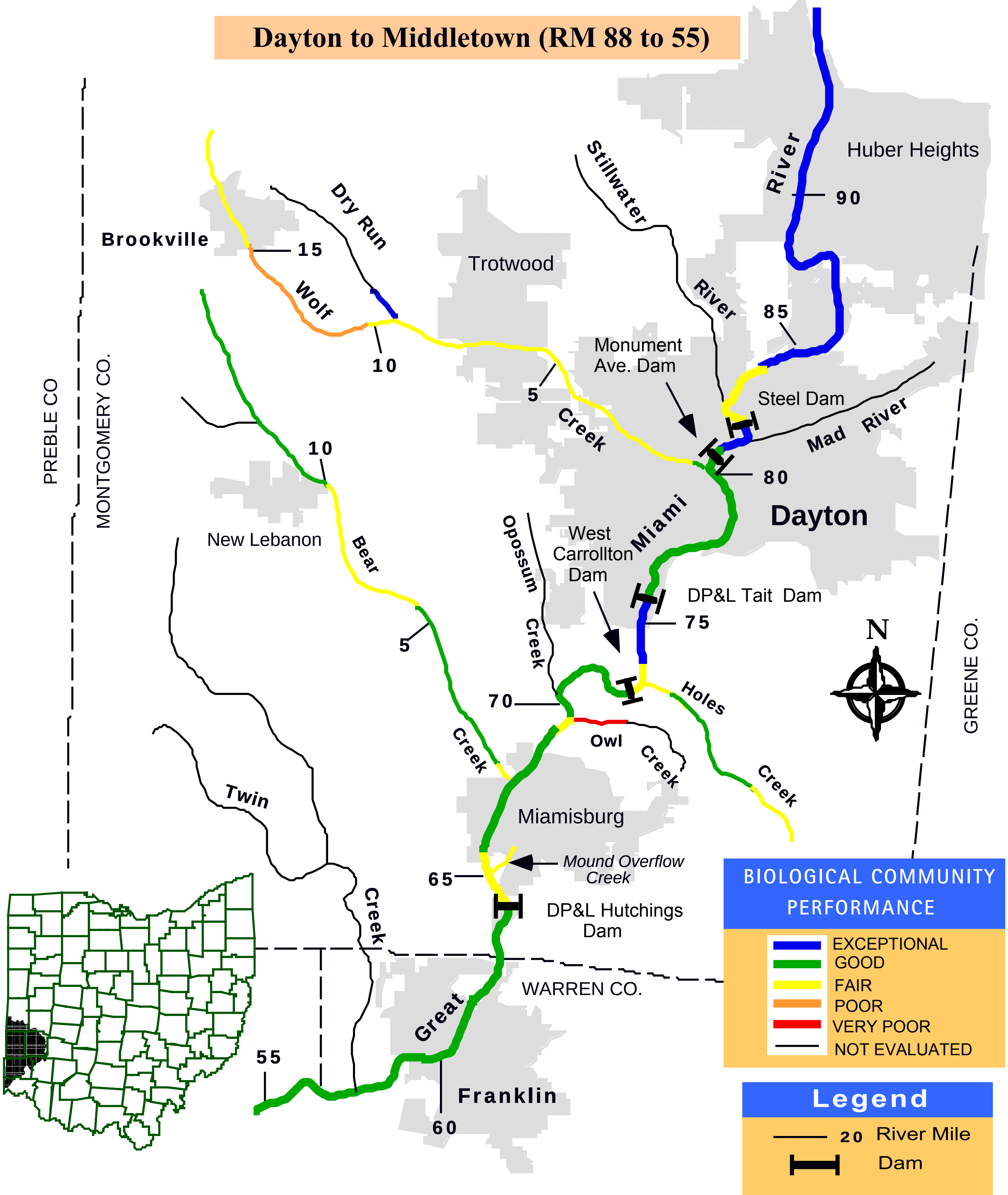


Figure 1a. Map of the upper third of the 1995 Great Miami River study area showing principal streams and narrative biological attainment status.

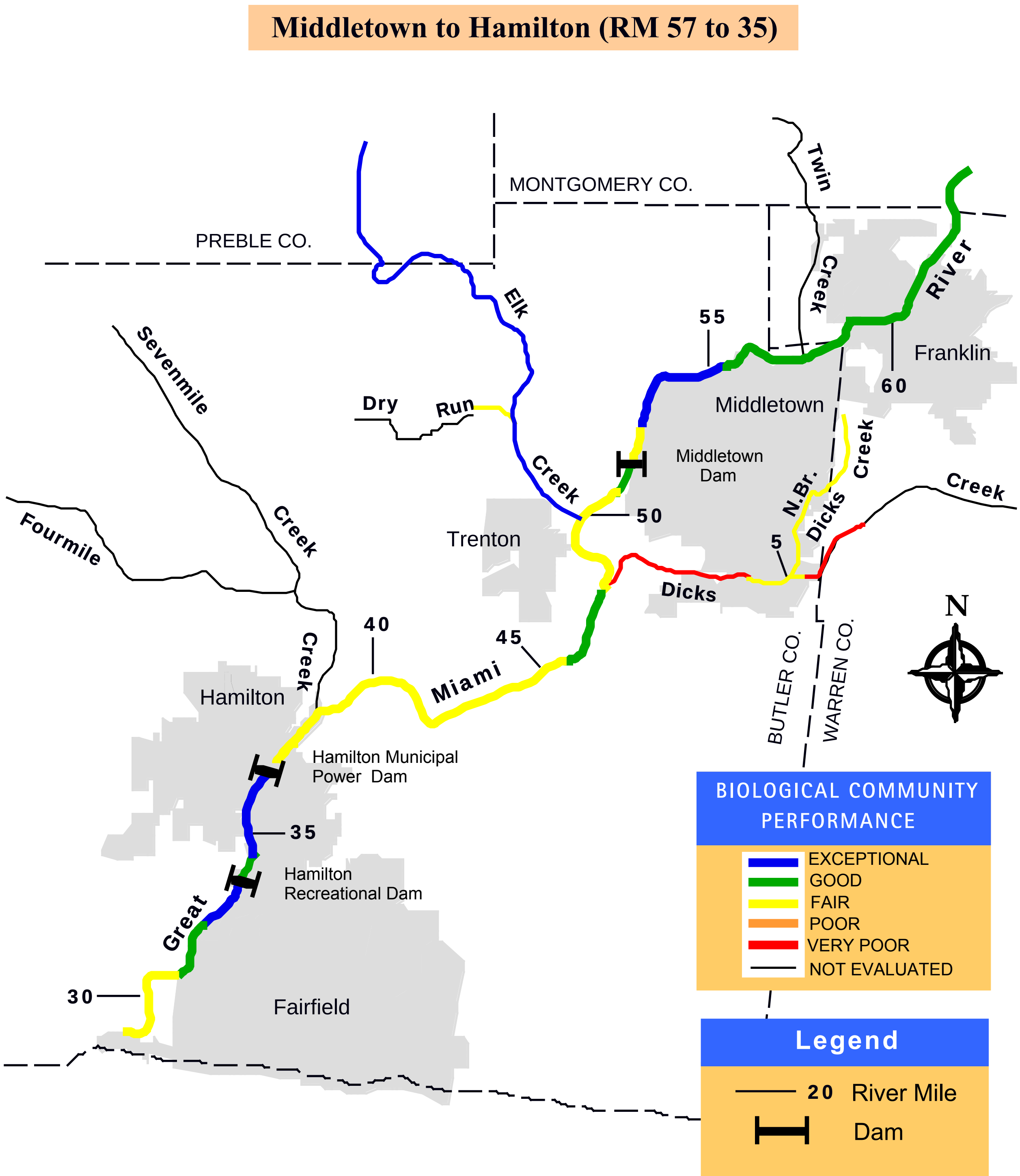


Figure 1b. Map of the middle third of the 1995 Great Miami River study area showing principal streams and narrative biological attaiment.

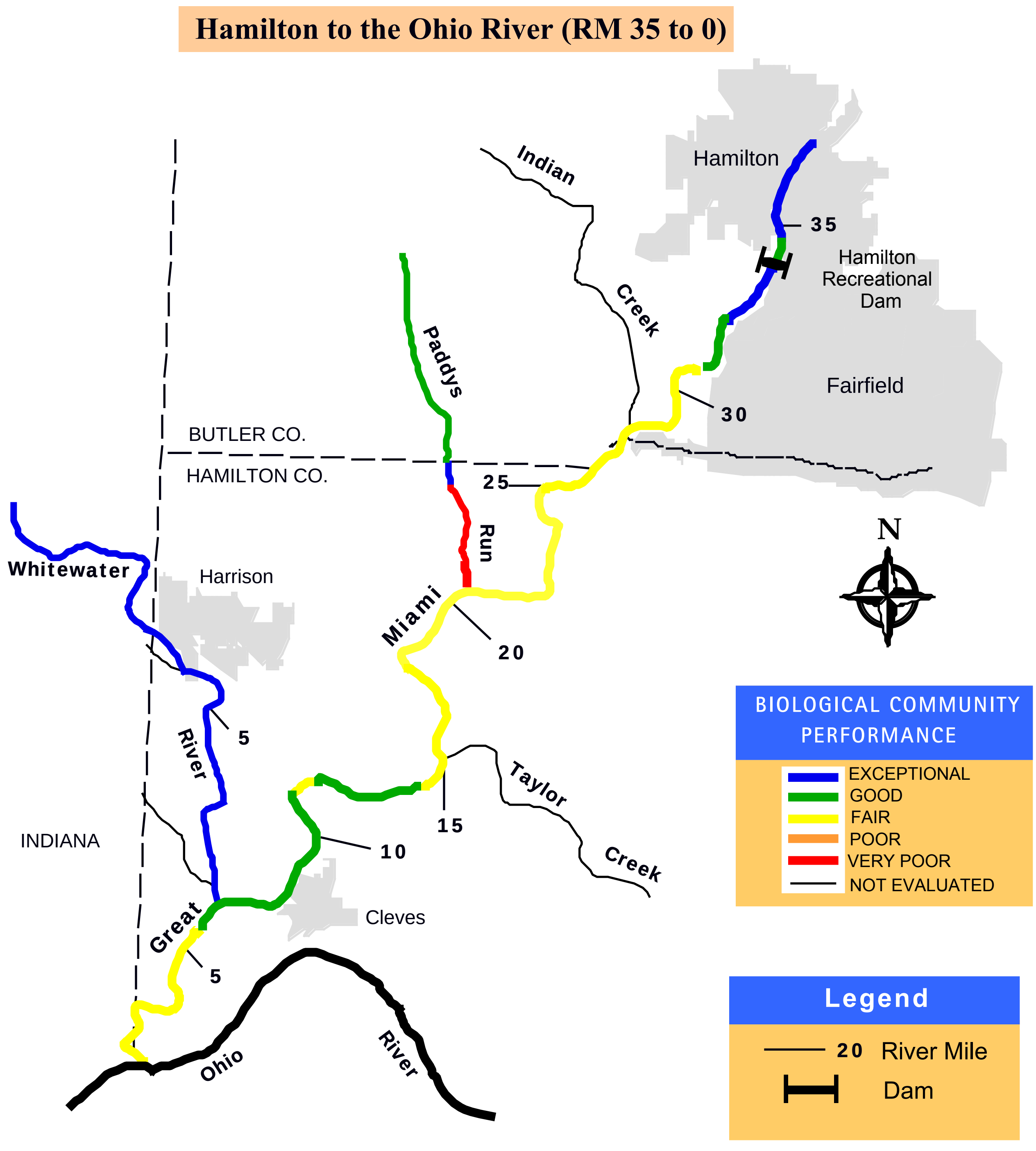


Figure 1c. Map showing the principal streams and narrative biological attainment within the lower third of the 1995 Great Miami River study area.

Aquatic life use attainment status in the Great Miami River from Middletown to the Ohio River has also improved markedly since the 1980 and 1989 surveys due to the numerous WWTP upgrades and subsequent reductions in loadings of oxygen demanding wastes and ammonia-N, although recovery is not yet complete. Within the Middletown to Hamilton segment (RM 55.0 - 35.0) a total of 7.2 miles were in full attainment, 12.8 miles were in partial attainment and 0.4 miles were in non-attainment of the WWH criteria in 1995 (Figure 1b). Non-attainment occurred in the Middletown Dam pool at RM 52.4 due to habitat alterations and nutrient enrichment exacerbated by the hydromodification. Most of the segment from RM 51.3 (downstream from the AK Steel 011 outfall) to RM 38.3 (downstream from Fourmile Creek) was in partial attainment due to numerous sources of stress including contaminated sediment, combined sewer overflow (CSO) impacts from Middletown, habitat alterations caused by the Hamilton Municipal EGS dam, and inefficiently treated effluent from various point source discharges. The response of the macroinvertebrate community within the AK Steel 011 mixing zone (RM 51.4) was indicative of highly toxic conditions. Partial attainment occurred from downstream of the AK Steel 011 outfall to downstream of the Middletown WWTP (RMs 51.3 to 48.0) due mostly to fish community impairment. Full attainment occurred downstream from Dicks Creek but declined to partial attainment downstream from the Butler County LeSourdesville WWTP (RM 45.5). Compared with the other entities evaluated in the 1995 survey, the Butler County LeSourdesville WWTP contributed very little conduit flow (3% of the total flow) to the Great Miami River, but contributed the highest ammonia-nitrogen load (29% of the total load). The high ammonia-nitrogen loads corresponded to a decline in fish community integrity downstream from the Butler County WWTP outfall. Partial attainment of the WWH criteria occurred from downstream of the Butler County LeSourdesville WWTP to the Hamilton Municipal EGS dam (RMs 45.5 to 38.3) due to fish community impairment.

Aquatic life use attainment status from Hamilton to the Ohio River (RMs 35.0-0.0) has improved since 1980 and 1989, but recovery is not yet complete due mostly to fish community impairment. In 1995, a total of 12.8 mainstem miles were in full attainment, 20.1 miles were in partial attainment, and 2.1 miles were in non-attainment of the WWH criteria (Figure 1c). Associated impacts were from numerous sources including municipal and industrial wastewater discharges, urban runoff, contaminated sediments, spills, CSO impacts from the city of Hamilton, unauthorized releases, and instream gravel mining. Partial attainment occurred from downstream of the Fairfield WWTP to East Miami River Road (RMs 31.4 to 16.9). The Hamilton WWTP contributed 13% of the annual conduit flow of all the point source discharges evaluated in the 1995 survey and was the second highest contributor of ammonia-N (16% of the total load). The elevated ammonia-N loads correspond with fish community impairment measured downstream from the Hamilton and Fairfield WWTPs. Several CSOs located in the City of Hamilton are contributing additional loads to the mainstem. Numerous instream gravel mining operations have had localized impacts to habitat quality. Partial attainment occurred at RM 20.0 downstream from Paddys Run due to marginal habitat quality from an old dredging operation which resulted in sparse instream cover and no riffle run complexes. Dredging activity at RM 5.6 may have also resulted in partial attainment of the WWH criteria. Nonattainment and partial attainment occurred at RMs 3.9 to 1.8, respectively, due to hydromodifications from the Ohio River Markland Dam pool. Marginal habitat quality, which included slow current velocity and no riffle run complexes, contributed to the non and partial attainment from RM 3.9 to the mouth.

Selected Tributaries

A total of 57.7 river miles consisting of twelve tributaries were evaluated during the 1995 survey. Of the 57.7 miles, 25.1 miles were in full attainment, 16.9 miles were in partial attainment, and 15.7 miles were in non-attainment of existing and recommended aquatic life use designation criteria (Table 1). All sampling locations on the Whitewater River exhibited exceptional fish and macroinvertebrate communities and warranted a recommendation for redesignation to exceptional warm water habitat (EWH). Nonattainment occurred at all sampling locations in Dicks Creek and the North Branch of Dicks Creek during the 1995 survey due to poor and very poor macroinvertebrate and fish communities. Aquatic life use attainment status in Dicks Creek and the North Branch of Dicks Creek has declined since 1987 and in some cases since 1974. Macroinvertebrate communities in Dicks Creek and the North Branch were severely impacted by the various AK Steel discharges. Very poor performance downstream from the AK Steel 004 discharge (located on the North Branch of Dicks Creek) at RM 0.03 indicated a toxic response. The poor community performance exhibited by the macroinvertebrates in Dicks Creek from RMs 4.7 to 2.6 was also attributed to toxic instream conditions created by AK Steel discharges. During the 1995 survey, a spill of flushing liquor occurred from AK Steel outfall 003 resulting in a total fish kill extending to the confluence of the Great Miami River (RM 3.8 to 0.0). Non-attainment also occurred in Owl Creek during the 1995 survey due to water quality impacts from West Carrollton Parchment and Fraser Paper. The very poor macroinvertebrate community in Owl Creek was indicative of highly toxic instream conditions. Non-attainment in the lower reach of Paddys Run was due to natural intermittent flow conditions caused by the highly permeable channel bottom of the stream in the area of the Great Miami Aquifer.

Biological Community Performance

Macroinvertebrate Community

Macroinvertebrate community performance met or exceeded the applicable Invertebrate Community Index (ICI) criterion at 100% of the sites sampled on the Great Miami River (excluding mixing zones and impoundments), and 40% of the tributary locations. ICI scores and qualitative evaluations were indicative of exceptional to good quality at all of the mainstem sites (RMs 7.7 to 5.7), and at Elk Creek (RM 3.7), Bear Creek (RMs 5.2 to 0.2), Paddys Run (RM 3.3), and the Whitewater River (RMs 8.1 to 1.5). Poor or very poor macroinvertebrate assemblages were found in Wolf Creek (RMs 15.0 to 14.9), Owl Creek (RM 0.1), Dicks Creek

(RMs 5.2 to 2.6), and the North Branch of Dicks Creek (RMs 1.0 to 0.1).

Fish Community

Fish community performance met or exceeded the applicable Index of Biotic Integrity (IBI) and Modified Index of Well-Being (MIwb) criteria at 54% and 87%, respectively, of the mainstem sites and 73% and 53%, respectively, of the tributary locations sampled. Fish assemblages were indicative of exceptional to fair quality in the mainstem from Dayton to the mouth (RM 90.0 to 0.0) (excluding mixing zones and impoundments). Impounded segments in the mainstem performed mostly in the fair range. Exceptional to very good quality fish assemblages were found in the Whitewater River (RMs 7.7 to 0.8). Exceptional to good quality fish assemblages were found in Paddys Run (RMs 4.7 to 3.3), Elk Creek (RM 3.7), Dry Run (RM 0.2), Bear Creek (RMs 12.1 to 0.1), Wolf Creek (RM 10.4), Dicks Creek (RMs 5.0 to 4.4), and the North Branch of Dicks Creek (RMs 1.0 to 0.1) Fair to very poor fish assemblages were found in Wolf Creek (RMs 16.7 to 15.0), Holes Creek (RM 0.6), Mound Overflow Creek (RM 0.2), Dicks Creek (RMs 3.0 to 0.2), and Paddys Run (RM 0.2).

Although significant improvements have occurred in the mainstem since the 1980 and 1989 surveys, biological recovery was not complete in 1995. Evidence of adverse impacts included lower than expected biological index scores, elevated numbers of fish with DELT anomalies, and a predominance of tolerant species. This was associated with habitat modifications caused by low-head dams (impoundments) and the direct and secondary effects of organic and nutrient loadings discharged by point sources.

Physical Habitat for Aquatic Life

The physical habitat of the Great Miami River mainstem and most tributaries generally exhibited good to exceptional quality attributes including coarse substrates comprised of mixed glacial till and/or limestone fragments, abundant instream cover, and in some segments wooded riparian corridors. However the quality of physical habitats within both the mainstem and tributaries has been locally impacted by dams, unrestricted livestock access, channelization, removal of woody riparian vegetation, and excessive sedimentation. Qualitative Habitat Evaluation Index (QHEI) scores in the relatively homogenous free-flowing segments were distinctly higher than impounded segments. The mean QHEI for the free flowing segments was 77.0 (range 51.0 - 88.0) compared to a mean of 53.9 (range 44.0 - 64.0) for predominantly impounded segments. The implementation ofmeasures such as maintaining natural flow regimes, the protection and restoration of wooded riparian zones, bank stabilization, and upland soil erosion control throughout the watershed is critical to the future protection and maintenance of physical habitats conducive to high quality aquatic faunas.

Chemical Water Quality

Chemical sampling (daytime grabs) indicated relatively good water quality throughout most of the study area. Approximately 98% of the total possible parameter tests were within Ohio WQS criteria or guidelines. A total of 235 parameter values did not meet criteria or recommended guidelines. Numerous chemical exceedences were observed in Dicks Creek downstream from the AK Steel 003 outfall.

Dissolved oxygen (D.O.) concentrations were above the WWH criteria (minimum and average) at most sampling locations within the study area. Only one exceedence of the average WWH D.O. criterion occurred in the mainstem downstream from Wolf Creek (RM 79.95). Other D.O. exceedences occurred in Wolf Creek (RMs 16.61 and 14.14) and Paddys Run (RM 0.25).

Ambient ammonia-nitrogen (NH_3-N) concentrations were generally low and longitudinally stable throughout the mainstem. Exceedences of water quality criteria occurred downstream from the AK Steel 001 outfall (RM 51.3), Crystal Tissue (RM 48.1), and the Middletown WWTP (RM 47.9). Stations bracketing most of the WWTPs in the mainstem indicated comparable NH_3-N concentrations upstream and downstream. Grossly elevated and acutely toxic NH_3-N concentrations (209 mg/l and 19 mg/l) were found in Dicks Creek (RMs 3.0 and 2.5 respectively) following a spill that occurred in the AK Steel 003 outfall. This spill resulted in a massive fish kill from the 003 outfall to the mouth of Dicks Creek.

The highest concentrations of nitrate+nitrite-N (NO_3+NO_2-N) were found in the Great Miami River mainstem downstream from the Dayton WWTP at RM 75.86 (mean and maximum concentrations of 6.32 mg/l and 7.77 mg/l, respectively). The highest phosphorus (3.9 mg/l) and total suspended solids (TSS) (467 mg/l) concentrations in the entire survey (found in Dayton at RM 77.24) coincided with the highest flow recorded during the survey reflecting inputs from both urban and agricultural non-point sources. The lower mainstem reach (Hamilton to the mouth) experienced the highest overall average TSS concentration (68 mg/l).

Priority pollutant scans of the water column detected one or more organic compounds at 36 of 37 locations (Appendix Table A-3). Gamma-hexachlorocyclohexane (lindane) was the most frequently observed compound and exceeded water quality criteria nine times. Dieldrin, an insecticide no longer manufactured in the U.S, was measured at 30 locations exceeding the water quality criterion. Other pesticides detected included aldrin, endrin, heptachlor, endosulfan I, endosulfan II, methoxychlor, and mirex, each exceeded water quality criteria on several occasions. There appeared to be no obvious link between thses observations and impairments of designated uses.

Chemical Sediment Quality

The chemical quality of bottom sediment was based on three classification schemes. The Kelly and Hite (1984) and the Ohio EPA classification system for metals rank sediment concentrations from low concentrations (non-elevated) measured at regional reference sites to higher concentrations (e.g., slightly, highly, or extremely elevated) based on increasing statistical deviation from reference. The Ontario guidelines (Persaud 1994) are based on the chronic, long-term effects of contaminants on benthic organisms and ranks sediment quality at no effect, lowest effect, and severe effect levels.

Middle and Lower Great Miami River

Fifty-eight percent of metal concentrations in the middle and lower Great Miami River mainstem were ranked as non-elevated or slightly elevated by all applicable guidelines. Sediment sampling results for heavy metals from eleven sites in the middle mainstem from Dayton to Middletown (RM 90.0 to 55.0) showed only one site downstream from the Dayton WWTP (RM 75.86) with highly elevated concentrations of chromium and zinc. Polycyclic aromatic hydrocarbon (PAHs) were detected at seven of nine sites. One or more pesticides (dieldrin, methoxychlor, and delta-BHC) were detected at four locations including highly or extremely elevated levels of dieldrin. Polychlorinated biphenyls (PCBs) were detected at five of nine sites with extremely elevated levels occurring downstream from the West Carrollton WWTP (68.30). There appeared to be no obvious link between these observations and impairment of designated uses.

Sediment sampling results for heavy metals from thirteen sites in the lower Great Miami River from Middletown to the mouth (RM 55.0 to 0.0) revealed non-elevated to extremely elevated levels according to the Ohio EPA system and Kelly and Hite (1984) as well as exceeding severe effect levels (Persaud 1994). Highly elevated levels of zinc were found at six of the thirteen sites. Highly and extremely elevated concentrations of one or more metals including chromium, arsenic, cadmium, aluminum, copper, and barrium were found at ten of the thirteen sites. Extremely elevated concentrations and/or severe effect levels of arsenic, chromium, copper, cadmium, iron, mercury, zinc, and lead were collected at RM 51.3, downstream from the AK Steel 011 outfall and the Middletown CSOs. Numerous PAH compounds were detected at RM 51.3 with anthracene and fluorene exceeding the severe effect level. One or more pesticides were detected at six of the thirteen sites including alpha-BHC, delta-BHC, gamma-BHC, DDT-Total, dieldrin, and mirex. PCBs detected in the lower reach at RMs 10.7 and 8.52 exceeded the lowest effect level. The observed contaminated sediments correspond with a decline in the fish community performance at RM 51.3 which resulted in partial attainment of the WWH use designation.

Mainstem Tributaries

Seventy-one percent of the heavy metal concentrations in the tributaries ranked from non to slightly elevated by all applicable criteria. Sediment sampling results for heavy metals revealed highly or extremely elevated levels of zinc at all five sites on Dicks Creek and chromium at three of the five sites. Highly or extremely elevated levels of one or more metals including arsenic, nickel, and cadmium were observed at three of the five Dicks Creek sites. Highly elevated levels of zinc was detected in the North Branch of Dicks Creek downstream from the AK Steel 004 outfall. Paddys Run had highly to extremely elevated cadmium levels coinciding with impaired fish communities; however, intermittent and low flows seemed to be the most likely cause of fish community impairment. PAHs were below the detection limit in Bear Creek, but were detected in Wolf Creek, Owl Creek, Dicks Creek, and the North Branch of Dicks Creek. Several pesticides were detected at six of the eleven sites. Highly or extremely elevated levels (Kelly and Hite 1984) of dieldrin were detected in Wolf Creek and the North Branch of Dicks Creek. PCBs were not detected in Wolf Creek, Bear Creek, or the North Branch of Dicks Creek, but were detected in Owl Creek as highly elevated (greater than the lowest effect level). Extremely elevated levels (greater than the severe effect level) of PCBs were detected in Dicks Creek at RMs 2.51 and 0.93. The observed contaminated sediments correspond with a significant impairment of the macroinvetebrate community performance in Dicks Creek, North Branch of Dicks Creek, Wolf Creek, and Owl Creek. The contaminated sediments also corresponded to a significant impairment to the fish community in Dicks Creek (RMs 2.4 and 0.4) and Wolf Creek (RMs 16.7 and 15.0).

Trend Analysis

Great Miami River

During the past decade, significant progress has been made towards restoring the chemical, physical, and biological integrity of the middle and lower reaches of the Great Miami River (RM 90.0 to 0.0). Based on comparisons with previous biological surveys conducted by Ohio EPA in 1980 and 1989, the 1995 results showed a continued improvement in the middle and lower Great Miami River. In 1980, most sites failed to attain the existing WWH use designation (i.e., full - 1.6 miles, partial - 5.9 miles, and non - 82.5 miles). By 1989, many sites improved to partial attainment (i.e., full - 6.6 miles, partial - 63.5 miles, and non - 19.9 miles) and further to full attainment by 1995 (i.e., full - 49.7 miles, partial - 36.3 miles, and non - 4.0 miles). Improvements are due primarily to the improved treatment of sewage by county and municipal WWTPs. Complete recovery was not evident in 1995, however, because 40.3 miles were in partial or non-attainment due primarily to a failure of fish assemblages to meet the IBI criterion. Non-attainment was mostly associated with habitat alterations caused by impoundments as well as impacts from point source discharges.

A relatively new approach developed by Ohio EPA to visualize the extent to which a particular site or entire river or stream reach is or is not attaining the goals set forth in the Ohio WQS is the use of Biological Integrity Equivalents (BIE). These involve using the information compiled in the use attainment table by summing the available indices at each sampling location and dividing

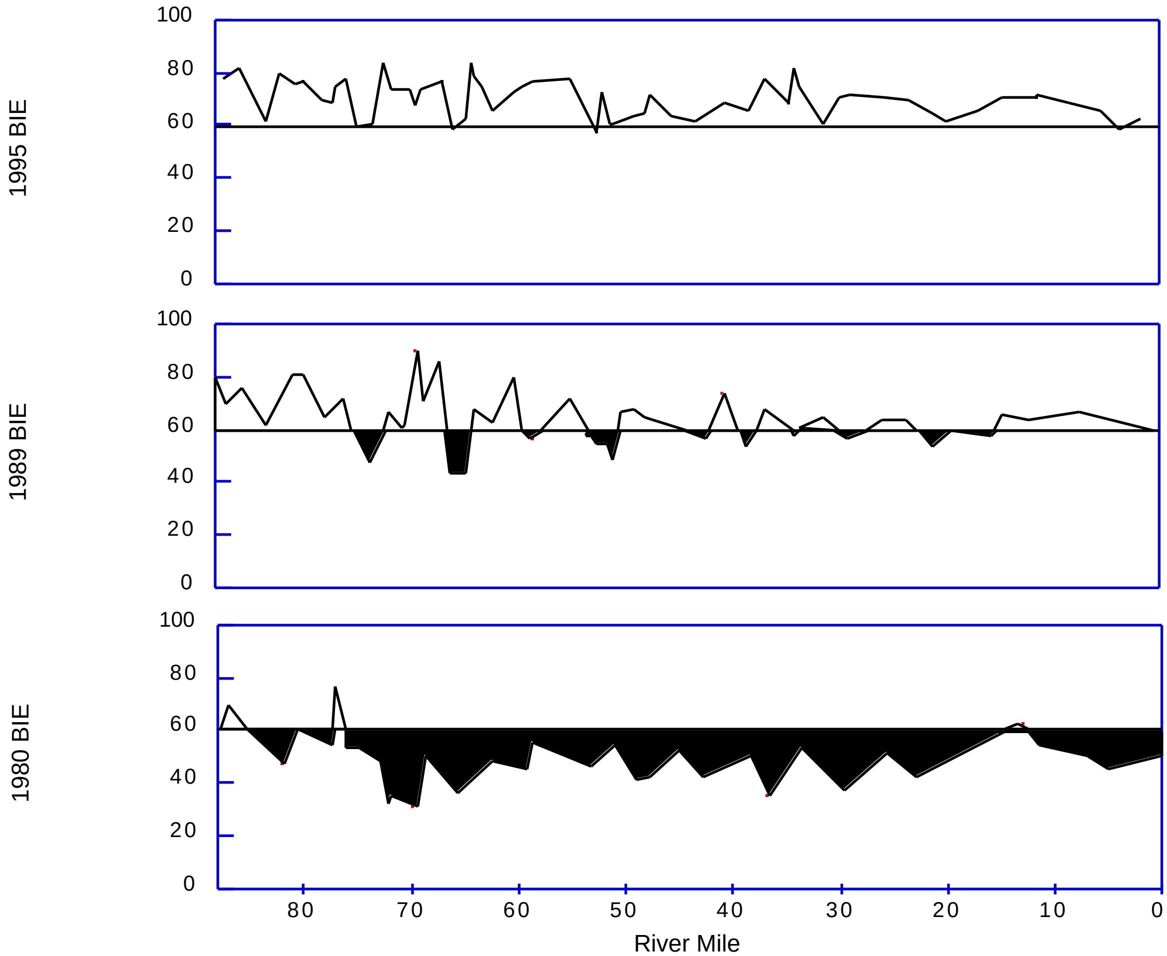


Figure 1d. Longitudinal trend of the Biological Integrity Equivalents (BIE) for the Middle and Lower Great Miami River from 1980, 1989, and 1995.

by the total maximum possible for each index (see Methods Section). The longitudinal trend of the BIE for the Middle and Lower Great Miami River from 1980, 1989, and 1995 dramatically illustrate the improvements that have occurred throughout the mainstem (Figure 1d). The area above 60 represents a narrative range of exceptional to marginally good and the area below 60 represents a narrative range of fair to very poor.

Dicks Creek and the North Branch of Dicks Creek

Aquatic life use attainment status in Dicks Creek and the North Branch of Dicks Creek has declined since 1987 and in some cases since 1974. Similar to results from 1987, all segments sampled in Dicks Creek and the North Branch of Dicks Creek remain in nonattainment of the designated use criteria. From 1987 to 1995, fish community scores have shown an improvement in the North Branch of Dicks Creek, but the macroinvertebrate community continues to be degraded with scores indicative of poor and very poor quality. Fish and macroinvertebrate community scores in Dicks Creek indicated fair to poor quality in 1987 but declined to scores indicative of poor and very poor quality in 1995. This trend is contrary to what is generally being observed in many other Ohio rivers and streams (Ohio EPA 1997).

Bear Creek

The fish community showed modest improvements in Bear Creek from 1981 to 1995. The macroinvertebrate community was not sampled in 1981 but was in full attainment of the WWH use designation criterion at four of the five sites in 1995. In 1981, when only the fish community was sampled, 9.4 miles were in full attainment and 2.7 miles were in nonattainment of the WWH criteria. In 1995, when both fish and macroinvertebrates were sampled, 7.3 miles were in full attainment and 4.8 were in partial attainment of the WWH criteria.

Wolf Creek

In 1987 and 1995, the fish community was sampled upstream and downstream from the Brookville WWTP (RMs 15.0 and 14.9 respectively) and at Nolan Road (RM 10.4). In 1987, when only the fish community was sampled, 0.5 miles were in full attainment and 4.6 miles were in nonattainment of the WWH criteria. In 1995, when both fish and macroinvertebrates were sampled, 0.5 miles were in partial attainment and 4.6 were in nonattainment of the WWH criteria. The fish community showed some improvement in Wolf Creek from 1987 to 1995, particularly downstream from the Brookville WWTP where no fish were found in the 1987 survey. In 1995, the fish community had recovered downstream from the Brookville WWTP to a narrative of marginally good quality (IBI=38). However, the macroinvertebrate community was severely impacted upstream and downstream from the Brookville WWTP resulting in nonattainment of the WWH use designation at both locations in 1995. Additional samples collected in 1995 at RMs 16.7 (Upper Lewisburg Salem Road) and RM 6.1 (Olive Road) resulted in partial attainment of the WWH criterion and full attainment upstream from the mouth (RM 0.2).

Elk Creek

The 1995 fish community in Elk Creek showed a slight decline since the 1987 survey. IBI and MIwb scores went from exceptional (IBI = 50, MIwb = 10.4) in 1987 to good (IBI=46, MIwb = 9.0) in 1995. However, the 1995 scores were still in full attainment of the EWH use designation.

Whitewater River

Based on comparisons with previous biological surveys conducted by Ohio EPA in 1980 and 1989, the 1995 results showed a complete recovery in the Whitewater River. In 1980, 8.1 miles were in nonattainment of the recommended EWH criteria, but recovered somewhat in 1989 with 2.7 miles in partial attainment and 5.4 in nonattainment. In 1995, 8.1 river miles were in full attainment of the recommended EWH criteria with narratives of very good to exceptional quality.

Point Source Discharge Summaries

The following are general summaries of information about the major point source discharges which were evaluated during the 1995 survey, arranged longitudinally from upstream to downstream. These summaries also provide the basis for the section one part of Water Quality Permit Support Documents (WQPSDs) which provides a discharge specific analysis.

Brookville WWTP

The Brookville WWTP discharges to the headwaters of Wolf Creek at river mile (RM) 14.93. The Brookville WWTP was constructed in 1965 and upgraded in 1988 to a vertical loop reactor plant with a design flow of 0.645 MGD. The treatment system includes screening, grit removal, vertical loop reactor, aeration, settling, ultraviolet (UV) disinfection, aerobic sludge digestion, and land application. The system receives no industrial inputs and consists entirely (100%) of separate sewers with two lift stations and no bypasses or overflows. An inflow/infiltration (I/I) analysis was recommended due to extensive I/I problems. During the past five years, the facility reported a few NPDES permit limit violations for $CBOD_5$, ammonia-N, and fecal coliform bacteria. A sewage overflow at the plant was also observed by Ohio EPA personnel during the summer of 1995 following a heavy rain (*i.e.*, sludge was being flushed from the parking lot). Sewage sludge deposits were observed along the pool margins in Wolf Creek downstream from the WWTP in 1995, but were not as extensive as those observed previously in 1987. No bioassay tests have been performed on the WWTP effluent. Land uses along Wolf Creek downstream from Brookville consist of a mixture of residential, agricultural and park lands, becomes increasingly urbanized in the cities of Trotwood and Dayton to the confluence with the Great Miami River (RM 80.25).

The fish assemblage in Wolf Creek immediately downstream from the Brookville WWTP has significantly improved since 1987 due to the facility upgrade. However, macroinvertebrates continued to indicate rather severe impacts resulting in the non-attainment status. The poor quality of both the fish and macroinvertebrate assemblages immediately upstream from the WWTP (RM 15.0) indicates serious problems in Wolf Creek within Brookville. The probable causes and sources of this impairment are urban stormwater and possibly undocumented point sources. Follow-up investigations are needed to ascertain the sources responsible for the observed impairment of the WWH use. The three elevated phosphorus values above 1.0 mg/l and the dense patches of algae observed in Wolf Creek downstream from the WWTP indicated that nutrient enrichment contributes to the impairment of the WWH use downstream. However, recovery (albeit incomplete) was noted at the most downstream site within Dayton indicating that urban runoff is not a substantially limiting factor.

Dayton WWTP

The Dayton WWTP, the largest municipal wastewater treatment facility within the basin, discharges directly to the Great Miami River at river mile (RM 76.1). The WWTP was originally constructed in 1929 and has subsequently been upgraded a number of times. In 1938, a secondary treatment facility (two anaerobic digesters, four new aerobic digesters) was added. In 1950, primary clarifiers were added. In the 1970s, a secondary clarifier and chlorine contact tank were added. New installations from 1983 through 1986 included a hydraulic expansion with new headworks, two new grit basins, four new primary settling basins, new trickling filter media, four anaerobic digesters, new chlorine contact basins, and the Bio-Gro company (privatization of the sludge application program, dewatering for biosolids) came on line. In 1987 the Administrative Lab Building was expanded and a new maintenance building was erected. Additional installations from 1987 through 1991 included a cogeneration facility for production of electricity and heat, an upgrade to an advanced wastewater treatment plant, an activated sludge basin (eight aeration basins, eight final clarifiers, 20 effluent filters), post aeration, and dechlorination. Upgrades from 1989 through 1991 included improvements in several pump stations (Broadway and Westwood) and an odor control facility utilizing sodium hypochlorite and sodium hydroxide (*i.e.,* hydrogen peroxide was added to the collection system). In 1993 a larger odor control facility was built which used the same chemicals. In 1996, the sludge digester improvement project was completed. The following summary was compiled from information in the Biological and Water Quality Study of the Middle and Lower Great Miami River and Selected Tributaries, Ohio EPA Technical Report MAS/1996-12-8 (in progress) and Ohio EPA files. As part of this study, chemical and biological sampling was conducted at 70 sites in the Great Miami River from Dayton to the Ohio River during June-October 1995. Similar sampling was also conducted by the Ohio EPA during 1980 and 1989.

The Dayton WWTP is an advanced treatment plant with a hydraulic design capacity of 72 MGD (60 MGD prior to 1986). The treatment processes consists of grit removal, primary settling, odor control, trickling filters, intermediate settling, activated sludge (nitrification), final settling, tertiary filtration, chlorination, dechlorination, anaerobic digestion, cogeneration of electricity and heat, and land application of sludge. The collection system consists of separate sanitary sewers with 90% of the service area being sewered and encompassing 160 mi^2 (city of Dayton, parts of Kettering, 50% of Oakwood, 80-90% of WPAFB, 50% of Moraine, parts of Englewood, Trotwood, Riverside, Northridge, and 75% of Harrison Township). Fourteen lift stations exist (Montgomery Co. is separate), five of which can bypass untreated wastewater (3 have bypass capabilities; Broadway, Lucille and Westwood, two are strictly bypass pump stations; Eastmont and Lynnhurst). The service population is approximately 300,000 with modest growth expected. Significant industrial contributors include electroplaters, metal finishers, corn processing (highest BOD load), foundries, chemical manufacturers, pulp and paper, laundries, and others. The city of Dayton has an Ohio EPA approved pretreatment program.

The city of Dayton eliminated approximately 90 overflow design structures around 1988 that had cross connections between the sanitary and storm sewers leaving approximately five active overflow locations (Broadway, Westwood, Lynnhurst Rd., Eastmont, Lucille). The manhole overflow at MacGregor Park off Woodman Drive frequently overflows due to sewer line blockages. The WWTP reported 25 unauthorized sewer overflows which discharged approximately 144 MG (primarily to the GMR) between 1990 and 1996. The majority of the releases occurred prior to 1994 (eight in 1990, six in 1991, and six in 1993). No overflows were reported in 1994 or 1995; however, five events occurred in 1996. The primary cause of these events were weather related pump station overflows. The second most significant cause was human error.

Biological assemblages in the free-flowing segment of the Great Miami River immediately downstream from the Dayton WWTP were indicative of very good to exceptional quality with no indications of impacts from acute toxicity. These marked improvements corresponded to the substantial reductions in loadings of oxygen demanding wastes, ammonia-N, and other pollutants discharged by the Dayton WWTP. The Dayton WWTP contributed the greatest amount of annual flow of all the entities discharging directly to the Great Miami River but only contributed 3.7% of the annual ammonia-N load. As a result of treatment process upgrades to the Dayton WWTP, significant improvements in the overall environmental conditions of the middle Great Miami River (chemical and biological) have been realized. The 1995 intensive survey indicated near complete biolgical recovery from the degraded conditions (non and partial attainment) documented in previous investigations. These positive changes were directly linked to reduced pollutant loads from the major permitted discharges to the middle Great Miami River.

However, the fish assemblage in the West Carrollton dam pool, 1.1 miles downstream from the Dayton WWTP, declined to fair quality with highly elevated DELT anomalies indicative of poor fish health and chronic chemical impacts. Associated causes and sources of fish community impairment were attributed to a combination of physical habitat (impoundment) and chemical related (organic enrichment, marginal D.O. regime) problems.

Appleton Paper

Constructed in the early 1960s, the Appleton Paper wastewater treatment plant was a primary treatment facility with a hydraulic design capacity of 6.5 MGD. Upgrades in the 1970s included the addition of secondary clarifiers, and straightening the once curved aeration lagoon to twice its original size in order to eliminate an odor problem. Appleton Papers purchased the mill in 1985 and began further modernization and improvements including converting to a secondary biological treatment plant. In the mid-1980s, new bar screens were added, a ferric sulfate tank was installed to control the formation of hydrogen sulfide, and the use of hydrogen sulfide for pH control was discontinued. Due to an increase in mosquito populations, Appleton also shortened the aeration lagoon and removed the baffle from a polishing lagoon. In 1994 a second aeration tank was added at the final discharge to assure adequate dissolved oxygen in the discharged water. Additionally, a bypass was added at the lift station to bypass the primary clarifier and discharge to the aeration lagoon for treatment before final discharge.

The Appleton Paper mill wastewater treatment plant discharges via three outfall locations: 001 consists of treated industrial wastewater from the mill production process and power plant discharging to a side channel of the Great Miami River at RM 72.34; 002 is well water and storm water; and 003 is storm water runoff and well water discharging to Owl Creek. Appleton Paper manufactures carbonless based, coated and uncoated, non-integrated and de-inked paper. The major raw materials used in the production facility includes virgin pulp, calcium carbonate, recycled stock, clay, and starch. The plant produces an average of 400 tons of paper per day. The wastewater treatment process currently consists of primary clarification, aeration, secondary clarification, a polishing basin, and post aeration of industrial wastewater. Wastewater is generated by de-inking, bleaching, paper making, coating, and stock blending process.

Biological assemblages in the Great Miami River immediately downstream from Appleton Paper were indicative of marginally good to exceptional quality; however, the discharge (RM 72.3) was significantly impacting the macroinvertebrate community. The impact to the macroinvertebrate community was indicative of nutrient or organic enrichment rather than to acute toxicity. The fish assemblage downstream from Appleton Paper had a slightly elevated incidence of external DELT anomalies (compared to least impacted expectations) which was also indicative of nutrient/organic enrichment.

Montgomery Co. Western Regional WWTP

The Montgomery County Western Regional WWTP discharges directly to the Great Miami River at RM 71.4. The WWTP began operation in November 1979 and currently operates as a tertiary treatment plant with a design capacity of 20 MGD. The Montgomery County Western Regional WWTP replaced the existing Moraine WWTP which was hydraulically overloaded and not capable of meeting discharge limitations. The treatment process includes screening (fine and coarse screens located at the pretreatment pumping facility on Dryden Road), modified two-stage activated sludge process, mixed media sand filtration, chlorination, dechlorination, and post aeration (cascade). Permanent dechlorination facilities were added in 1995. The collection system consists of separate sanitary sewers, with all of the service area being sewered (other customers served include Miamisburg, Moraine, Kettering, Miami Township, Jefferson Township, Washington Township and City of Dayton). The system contains 12 lift stations, none of which have bypasses. The system also has several sanitary sewer overflows that are addressed in Director's Findings and Orders which call for their elimination. The service population is approximately 100,000 with modest growth expected.

Biological assemblages in the Great Miami River immediately downstream from the Montgomery County Western Regional WWTP were indicative of good quality with no indication of acute toxicity. The fish assemblage in the mixing zone had a highly elevated incidence of external DELT anomalies (21%) which were indicative of poor health and sublethal chronic chemical impacts. The cumulative effect of the Appleton Paper effluent (located 0.85 miles upstream) and the Montgomery County Western Regional WWTP effluent were negatively impacting the fish community. The percentage of DELT anomalies downstream from the mixing zone declined to 8.0% but still indicated sublethal chemical stress on the fish community.

West Carrollton Parchment Company and Fraser Paper, Inc. (formerly Miami Paper)
The West Carrollton Parchment Company discharges directly to Owl Creek at RM 0.37. Owl Creek, a small headwater stream with a 3.8 square mile drainage area, also receives effluent from Fraser Paper Incorporated (RM 0.52) before directly discharging to the Great Miami River at RM 69.55, approximately 0.7 miles upstream from the West Carrollton WWTP. During droughts, the flow in Owl Creek consists of 100% effluent from the two paper industries. Stormwater drainage from both paper facilities also intermittently discharge to Owl Creek. Owl Creek is currently designated as a Limited Resource Water (LRW).

Constructed in 1971, with an upgrade in 1989, the West Carrollton Parchment wastewater treatment system has a design capacity of 0.69 MGD. West Carrollton Parchment manufactures genuine vegetable parchment and painted waxed papers. The wastewater generated includes non-contact cooling water and acid rinse water. The treatment process used is neutralization of the wastewater prior to discharging from the 001 outfall. The facility also discharges stormwater runoff from outfalls 002 and 003 at the Elm Street and Central Ave. storm sewers, respectively. These storm sewers eventually discharge to the Great Miami River mainstem. West Carrollton Parchment operates on a 24 hours/day, 5 day/week production schedule during the winter months. Orders usually increase during the remainder of the year which initiates a 6-7 day/week production schedule. The annual average discharge volume for outfall 001 was 0.624 MGD in 1995.

Fraser Paper Inc. makes fine papers (non-integrated and de-inked). The plant on average produces 309 tons per day of fine paper which is used in the premium writing, printing, and text of cover industries. Constructed in 1963, the Fraser Paper wastewater treatment plant is a secondary treatment facility with a hydraulic design capacity of 5.0 MGD. The treatment process includes: primary clarification, aeration, and secondary clarification. Process wastewater is generated by deinking, blending, color stripping (minimal bleaching), paper making, air scrubber, boiler blowdown, softener regeneration. Historical upgrades to the treatment facility include an aeration basin in 1967, the addition of a secondary clarifier in 1974, and the addition of a sludge dewatering treatment system in 1981. Recent upgrades consist of the addition of a second secondary clarifier in 1989 and the installation of internal clarifiers in 1992. Sludge handling facilities were also upgraded in 1992 or 1993 with the installation of a new belt filter press. The wastewater treatment plant computer system was upgraded in 1994 and in 1995 and a step feed to the aeration system was added. Containment for the ammonia and phosphorus tanks which were in place at the facility in 1995 was also added. Monitoring stations include outfall 001 (process wastewater at weir prior to discharge through Parshall flume to Owl Creek), outfall 002 (storm runoff-roof drainage from the pulp storage facility to Owl Creek), outfall 003 (storm runoff-roof drainage from office buildings and driveway runoff to the city storm sewer), and outfall 004 (parking lot runoff to the city storm sewer and sanitary wastewater to the West Carrollton WWTP).

The poor biological communities in Owl Creek during 1995 was apparently due to water quality impacts from the two industrial discharges. Biological assemblages in Owl Creek downstream from the two paper industries in 1995 ranged from marginally good quality for the fish assemblage to very poor quality for macroinvertebrates. The very poor macroinvertebrate community in Owl Creek was indicative of highly toxic instream conditions. Probable causes and sources of the existing impairment are attributed to a combination of upstream effluent related problems including acute toxicity in the West Carrollton Parchment effluent. Attainment of the LRW aquatic life use is expected to occur with the elimination of the toxicity to macroinvertebrates and reduced loadings of oxygen consuming pollutants which will result in higher dissolved oxygen levels.

Miamisburg WWTP

The Miamisburg WWTP discharges directly to the Great Miami River at river mile (RM) 65.0 and operates as a secondary treatment facility with a hydraulic design flow of 3.0 MGD. The original wastewater treatment plant (built in 1954) reached 95% of the hydraulic design capacity

(1.0 MGD) in 1962, and it became necessary to expand the plant to include secondary treatment as required by the Ohio Water Pollution Control Board. The plant site was unable to accommodate an expansion so a new site on the east side of the river was selected. The relocated Miamisburg WWTP was built in November 1967 and had a hydraulic design flow of 2.2 MGD and a peak hydraulic capacity of 4.0 MGD.

Upgrades completed in 1987 included an expanded aeration chamber (six additional tanks), an expanded chlorine contact tank, two primary clarifiers, a secondary clarifier (75’ circular), belt filter press (vacuum filter removed), and two thickening tanks. One additional chlorine contact basin was added and the capacity of the east side pump station was doubled. An additional 24 inch force main was installed along the Great Miami River, a new return sludge building was constructed, and three RAS pumps were added . Residual treatment was modified slightly by the addition of five plastic media sludge drying beds. In 1995 the floating cover of the primary digester was removed and replaced with a Westec floating cover equipped with a mechanical sludge mixing system. Currently the Miamisburg WWTP has a hydraulic design flow of 3.0 MGD and a peak hydraulic capacity of 6.88 MGD. The treatment train consists of influent screening and grit removal, primary settling, activated sludge aeration, secondary clarification, jet chlorination, and dechlorination. The Miamisburg WWTP is a Class III WWTP that serves a population of approximately 17,800 people with moderate growth. Approximately 90% of the service area has separate sewer systems while the other 10% of the area has no sewer system. The collection system has one main lift station and many pump stations throughout the city. No bypasses or overflows are present in the system. The facility is not currently required to have an industrial pretreatment program, however the plant does receive wastewater from several minor industrial dischargers.

The 1995 fish sampling in the Great Miami River downstream from the Miamisburg WWTP (RM 64.8) was indicative of marginally good to fair quality. Sampling showed elevated percentages of fish with DELT anomalies which are indicative of sublethal chemical stresses. Biological scores markedly declined in this section of the Great Miami River mainstem due to an impoundment caused by the DP & L Hutchings Power Plant dam. The lower biological scores are typical for impounded segments, however, the poorer fish health and the increase in pollution tolerant fish (common carp and green sunfish) was indicative of chemical stresses exacerbated by the deeper slower flowing pooled habitat. The quality of fish assemblages in the dam pools should improve with further reduction in nutrient loadings. However, the WWH attainment status may not fully improve to due to the habitat modifications created by the DP & L Hutchings Power Plant dam. Macroinvertebrate community performance could not be evaluated directly downstream of the Miamisburg WWTP due to the impoundment effect but samples downstream of the dam were not indicative of any water quality impact. The station located on the river left at RM 64.3 was performing in the exceptional range (ICI=50). Increased overall density (3595/ft^2 compared to 2498/ft^2 at RM 66.9 upstream of the impoundment) and slightly increased percent tolerant taxa (1.4% compared to 0.6% at RM 66.9) indicate a mild enrichment effect from upstream sources. The macroinvertebrate community performance within the DP&L Hutchings EGS mixing zone (at RM 64.35 on the river right) was meeting WWH expectations with narrative evaluations of good to very good. The station located at RM 64.1 on river right was performing at the exceptional level (ICI=52). The overall density (3815/ft^2) and percent predominance of tolerant taxa (1.7%) were elevated at this station similar to RM 64.3, likewise indicating mild enrichment from upstream sources.

U.S. DOE Mound

The U.S. DOE Mound Lab manufactured components for the nuclear weapons program, stable isotopes, and conducted research for other Department of Energy programs. Industrial and sanitary wastewaters were and still are generated by this facility. The treatment process for sanitary wastewater (outfall 001) consists of bar screening, fine screening, grit removal, aeration, settling, tertiary filtration, chlorination and dechlorination. The 001 treatment plant also receives wastewater from the metal finishing shop. Outfall 002 is comprised of wastewater from the radioactive waste disposal building (treatment consists of pH adjustment, clarification, carbon addition, sand filtration, bone char column and I micron filtration), non-contact cooling water, boiler blowdown, softener backwash, and storm water runoff treated in retention basins. The design capacity of the sanitary treatment plant is 0.120 MGD. Improvements made to the sanitary waste disposal plant include a new bar screen , grit removal, and the addition of a circular clarifier which replaced the existing clarifiers.

The U.S. DOE Mound facility has three wastewater discharge locations. Outfall 001 discharges sanitary wastewater directly to the Great Miami River at RM 65.9 and outfall 002 and 003 discharges to the Miami-Erie Canal. The Mound Overflow Creek is a small headwater stream (approximately 0.4 miles long) which provides a conveyance for overflow water from the Miami-Erie Canal to the Great Miami River at RM 65.08. The stream flow in the Mound Overflow Creek is comprised partly of effluent from the Mound 002 outfall and 003 outfall which discharges from a pump ant treat groundwater remediation.

The QHEI score for the Mound Overflow Creek at RM 0.2 was 51.0, with modified habitat attributes predominating. The fish community (evaluated upstream from the mouth at RM 0.2) performed in the fair range, and was below WWH criterion. The use designation of Mound Overflow Creek is currently unlisted but the modified habitat conditions indicated that the appropriate use designation should be MWH. The 1995 biological results showed partial attainment of the recommended MWH use designation in Mound Overflow Creek and full attainment of the existing WWH use designation in the Great Miami River mainstem downstream from the 001 outfall.

Dayton Power and Light O.H Hutchings Station (001, 002, 003, 004)
The Dayton Power & Light Company O.H. Hutchings Electric Generating Station (EGS) has four outfalls which discharge directly to the Great Miami River. The main outfall (001) discharges both above and below a low head dam at RM 64.37. The Hutchings EGS is a six unit 360 megawatt hours (1 unit= 60 MWH), coal fired EGS built in 1946. Formerly a baseload plant it is now used to provide electricity during times of peak electrical demand primarily during the period of June through August and December through February. A 32 MWH gas turbine was installed in 1968. The majority of the wastewater produced from the DP&L Hutchings Station is once-through, non-contact condenser cooling water used in the steam surface condenser cooling units. The station also produces wastewater from the fly ash filters and a sanitary wastewater treatment plant. No treatment is provided for the once-through cooling water, the ash is settled and filtered, and the sanitary wastewater is treated by extended aeration followed by settling, tablet chlorination, and tablet dechlorination. The permitted outfalls include 001 (non-contact condenser cooling water), 002 (ash pond, bearing cooling water pond, coal pile run-off pond), 003 (storm water runoff), and 004 (sanitary activated sludge package WWTP plant).

Raw materials used by the Hutchings EGS are coal, oil, and gas with a total daily peak electric power production rate of 9408 megawatts. Upgrades to the facility occurred in the 1980s with a sewage treatment plant expansion (outfall 004) that included the addition of aeration and resulted in extending the sediment settling time. In addition a filter building at ash pond (002) was installed. In 1993 dechlorination was added to the WWTP. The total estimated annual wastewater flow is 107.25 MGD (cooling, storm, and wastewater flows combined).

In 1995, The segment downstream from the DP&L Hutchings EGS was in full attainment of the WWH use at all of the free flowing sites. Biological assemblages in the Great Miami River immediately downstream from the DP&L Hutchings EGS were indicative of marginally good to exceptional quality with no indications of thermal impacts or acute toxicity. The fish and macroinvertebrate assemblages one mile downstream from DP&L Hutchings EGS both reflected exceptional community quality. This is a significant improvement since 1988 when a massive fish kill occured due to extreme thermal loadings from the Hutchings EGS during a period of extended low flows and high ambient temperatures. Temperatures exceeding 40° C were observed immediately downstream and exceedences of the WWH temperature criteria were evident downstream to Middletown. No fish (IBI = 12, very poor) were found in sampling conducted downstream of the Hutchings EGS on July 14, 1988 (RM 63.5). No fish were found again on August 17, 1988 at RM 64.0 (downstream of the dam) and at RM 62.5 (upstream of the Wheelabrator/Franklin WWTP). Macroinvertebrate community performance was fair (ICI=18 at RM 64.3) indicating a significant impact to the macroinvertebrates. Thousands of crayfish were also killed by the elevated water temperatures. The fish community began to recover in

September 1988, but was predominated by highly tolerant species such as green sunfish and goldfish and community condition remained poor to very poor. Since that time the Hutchings EGS has been operating within a thermal load management plan designed to prevent similar impacts.

Franklin WWTP (U.S. Filter/EOS)
The Franklin WWTP is located in Franklin, Ohio and discharges directly to the Great Miami River at RM 59.6 in Warren County. The Franklin WWTP has a design flow of 4.5 MGD and a peak hydraulic capacity of 9.0 MGD and serves surrounding areas including Franklin, Germantown, Carlisle and unincorporated areas of Montgomery and Warren Counties. The treatment process consists of influent screening, primary settling, activated sludge aeration (fine bubble-aerated lagoons), secondary clarification, chlorination, dechlorination, and post aeration. Biosolids are thickened with a gravity belt thickener prior to being discharged into a nine million gallon biosolids storage lagoon outfitted with mechanical aerators. The biosolids are then aerobically stabilized in the storage lagoon and land applied on area farms in accordance with an approved Sludge Management Plan. Approximately 95% of the service area has a separate sewer system while the other 5 % is unsewered. The collection system has two lift stations operated by WEOS, four lift stations operated by Germantown and seven operated by Warren Co. The total population served is 22,000 with moderate growth expected. The facility currently has an industrial pretreatment program in which industrial wastewater accounts for approximately 30% of the influent flow and 60% of the influent loading. Four of the local industries have dedicated force mains discharging to the influent mixing box. Significant industrial contributors include paper mills, a metal finisher, a pharmaceutical plant, and an industrial laundry.

Biological assemblages in the Great Miami River immediately downstream from the Franklin WWTP were indicative of marginally good to exceptional quality with no indication of acute toxicity. A high percentage of fish with DELT anomalies were found in the mixing zone and downstream from the WWTP indicating moderate sublethal chemical stress on the fish community.

Bay West Paper Corporation
Bay West Paper discharges directly to the Great Miami River at RM 52.17 on a continuous basis. The plant is located in the city of Middletown and became operational in 1994. The wastewater treatment facility is designed to treat 3.7 MGD of wastewater generated from the manufacturing of toilet paper and paper towels. The treatment process consists of a thickener, a primary clarifier, two aeration basins, and two secondary clarifiers. Solids removed in the treatment process are dewatered with a sludge press and then disposed of at a sanitary landfill. Bay West Paper can divert wastewater to the Middletown WWTP in the event of a plant upset or during extreme low flow conditions in the Great Miami River. Sanitary wastewater generated

from the 114 employees is treated by the Middletown WWTP.

In 1995, the macroinvertebrate and fish community performance downstream from the Bay West Corporation (RM 51.5) was in the marginally good to very good range (ICI=44; IBI=39; MIwb=9.5). Fish community performance, however, significantly declined downstream from the AK Steel 011 outfall (RM 51.3). This impairment was likely associated with the AK Steel discharge (RM 51.4) and PAH contamination of the bottom sediments. Recovery to full attainment of WWH biocriteria occurred downstream from Dicks Creek (RM 47.5) which was an improvement over the conditions observed in previous years.

AK Steel: 011 (monitored under 001), 002, 003, 004, and 015(monitored under 005)
AK Steel discharges to one location on the Great Miami River (outfall 011) at RM 51.4, three locations on Dicks Creek (outfall 002, 003, and 015) at RM 2.92, 3.80, and 4.15, respectively, and one to the North Branch of Dicks Creek (outfall 004) at RM 0.22. The plant produces flat rolled steel and intermediate products of pig iron and coke in addition to steel finishing and coating.

Outfall 011 (discharge to the Great Miami River at RM 51.4) consists of effluents from the north terminal treatment plant, the blast furnace/sinter plant, non-contact cooling water, and storm water runoff. The north terminal treatment plant (monitored under station 614) was installed in 1979 and was designed for 1.7 MGD. It provides flocculation, clarification, neutralization, and aeration to the wastewaters generated from cold forming, acid pickling, alkaline cleaning, hot coating, metal finishing, coal coating, inorganic chemicals, and oxygen and nitrogen production processes. The average discharge volume for station 614 was 0.691 MGD in 1995. The blast furnace/sinter plant treatment (monitored under station 613) was installed in 1978 and modified in 1986. It provides chemical precipitation, flocculation, and sedimentation to the wastewaters generated from the iron making and sintering processes and was designed for 2.16 MGD. The average discharge volume for station 613 was 1.15 MGD in 1995. The total average discharge volume for outfall 011 was 7.73 MGD in 1995.

Fish community indices declined from full attainment of WWH biocriteria upstream from the AK Steel 011 outfall (IBI=39, MIwb=9.5) to non-attainment downstream (IBI=33, MIwb=7.5). The lower end biological scores, due mostly to a decrease in the percentage of round-bodied suckers and clean gravel spawners (simple lithophilic), and an increase in the percentage of omnivores and tolerant fish species, were most likely caused from a combination of poor quality effluent, contaminated sediments, poor quality habitat, and impacts from the Middletown CSOs. Macroinvertebrate communities were in full attainment of the WWH use designation downstream from outfall 011 (ICI = 38) but were characteristic of a toxic impact response within the mixing zone (ICI = 8).

Outfall 002 (discharge to Dicks Creek at RM 2.92) consists of untreated coke plant cooling water (river and well water) and storm water runoff. The yearly average discharge volume in 1995 was 0.794 MGD. Outfall 003 (discharge to Dicks Creek at RM 3.80) consists of treated basic oxygen furnace (BOF) effluent, cooling tower blowdown, and storm water runoff. The BOF treatment plant was installed in 1969 and modified in 1979. Treatment consists of flocculation and clarification for the BOF gas cleaning system and was designed to treat 6.48 MGD with 98% recycle. The BOF wastewater treatment system is monitored at station 631 which had a yearly average discharge volume of 0.095 MGD in 1995. The yearly average discharge volume for outfall 003 was 1.12 MGD in 1995.

Outfall 015 (discharge to Dicks Creek at RM 4.15) consists of hot strip mill plant clarification effluent, non-contact cooling water, and storm water runoff. The treatment system provides flocculation, clarification, and cooling to process wastewater from the hot strip mill, continuous caster, vacuum degassing, slab reheat furnaces, and cold mill cooling tower areas and is monitored under station 005. The hot strip mill clarification plant was installed in 1968 and was designed to treat 100 MGD with 99.5% recycle. The average discharge volume in 1995 for station 005 was 0.653 MGD. The average discharge volume in 1995 for outfall 015 was 0.651 MGD.

Outfall 004 (discharge to the North Branch of Dicks Creek at RM 0.22) consists of effluents from the south terminal treatment plant, the no. 2 electrogalvanizing treatment plant, non-contact cooling water, and storm water runoff. The south terminal treatment plant (monitored under station 641) was installed in 1970 and modified in 1990. It provides lime neutralization, aeration, flocculation, and clarification to the wastewaters generated from hot coating, acid pickling, and cold forming processes and was designed to discharge a volume of 2.89 MGD. The average discharge volume for station 641 was 1.697 MGD. The no. 2 electrogalvanizing treatment plant (monitored under station 642) was installed in 1990 and was expanded in 1995. It provides aeration flocculation and clarification to the wastewater generated from metal finishing processes and was designed to discharge a volume of 0.288 MGD. The average discharge volume for station 642 was 0.217 MGD. The total average discharge volume in 1995 for outfall 004 was 2.175 MGD.

Aquatic life use attainment status in Dicks Creek and the North Branch of Dicks Creek has declined since 1987 and in some cases since 1974. The 1995 results indicated non-attainment of the applicable MWH and WWH use designations at all sampling locations due to poor and very poor macroinvertebrate and fish communities. Macroinvertebrate communities in Dicks Creek and the North Branch were severely impacted by the various AK Steel discharges. Very poor performance downstream from the AK Steel 004 discharge (located on the North Branch of Dicks Creek) at RM 0.03 indicated a toxic response. The fish community, however, performed in the very good range indicating that the 004 discharge was not adversely impacting fish. The differential response by the fish and macroinvertebrate communities indicates a specific influence peculiar to the invertebrates.

The poor community performance exhibited by the macroinvertebrates in Dicks Creek from RMs 4.7 to 2.6 was also attributed to toxic instream conditions created by AK Steel discharges. Community performance improved into the fair range at the two downstream stations due primarily to modest increases in diversity. However, the percent predominance of tolerant organisms remained highly elevated at these downstream stations. Outfall 003 (located on Dicks Creek at RM 3.8) was significantly impacting the fish community. Upstream sampling yielded good to exceptional fish communities but downstream from outfall 003, fish communities were in the fair to poor range. During the 1995 survey, a spill of flushing liquor occurred from outfall 003 resulting in a total fish kill extending to the confluence of the Great Miami River (RM 3.8 to 0.0). Sampling prior to the spill showed an impairment downstream from the AK Steel 003 and 015 outfall at RM 3.0 for the fish community (IBI = 30; MIwb = 5.8), but further degraded fish communities (IBI = 22) occured after the spill. Prior to the 003 outfall spill, sampling downstream from the 002 outfall (RM 2.6) resulted in attainment of the MWH use designation for the fish community (IBI = 30; MIwb =5.8) but showed severe impairment after the spill (IBI = 14; MIwb = 4.1). The lowest possible IBI score (12) occurred downstream from the spill at RMs 2.4 and 0.4.

Middletown WWTP

The Middletown WWTP discharges directly to the Great Miami River at RM 48.29. The plant has a permitted bypass discharging at RM 48.18 which has not been used for approximately 10 years. The Middletown WWTP became operational in 1958 providing primary treatment. The plant consisted of two primary settling tanks, two-stage digestion, and one vacuum filter for sludge dewatering. The plant flow was 8.0 MGD and removed 60% of the sewage solids.

In 1972, the plant was upgraded to a secondary treatment facility which included the addition of one primary settling tank, three aeration tanks, three secondary clarifiers, three chlorine contact tanks, and a complete sludge dewatering and incineration facility. This upgrade increased the hydraulic design capacity to 23 MGD and removed 85% of the sewage solids. The plant also added aeration chambers and vacuum filters in 1981, a 60 MGD effluent pump station in 1994, and a grit chamber and dechlorination facility in 1995. Currently the hydraulic design flow is 26 MGD with a peak hydraulic capacity of 48 MGD. The removal of solids is between 95% and 98%. The treatment process consists of influent screening and grit removal, primary settling, activated sludge aeration, secondary clarification, chlorination, dechlorination, and sludge dewatering. The Middletown WWTP has been using land application for its sludge disposal since 1978. The facility currently uses approximately 30 farms comprising 2500 acres for application. The tonnage (amount of sludge) applied is between 18,000 and 21,000 wet tons per year. The Middletown WWTP serves approximately 52,000 people with moderate growth expected. There are 15 significant industrial users which contribute about 65% of daily influent flow. Approximately 62% of the service area has combined sewers and the remaining 35% of the service area has separate sewers. The collection system has 10 lift stations without bypasses or overflows. Eight permitted combined sewer overflows (CSOs) exist in the system discharging between RM 52.17 to 51.0. The facility currently has an industrial pretreatment program for 15 significant industrial users. Some of the industrial contributors include an integrated steel mill, paper mills, and electroplating shops. Of these 15 industries, 4 are sampled on a daily basis while the other 11 are sampled quarterly and inspected biennially. This program has been evaluated by both Ohio EPA and the U.S. EPA and has received satisfactory ratings from both.

In 1995, macroinvertebrate community performance was in the very good range (ICI = 44) downstream from the Middletown WWTP (RM 47.7). Within the mixing zone (RM 48.2), the macroinvertebrate community performance had narrative evaluations of good with no discernable indication of effluent toxicity. The fish community, however, performed below ecoregional expectations both upstream and downstream fromthe WWTP. The below WWH biological index scores resulted from a decreased percentage of round-bodied suckers and simple lithophils and an increase in the percentage of omnivores and tolerant fish species. As a result, only partial attainment of the WWH use designation was observed. The Middletown combined sewer overflow (CSO) system discharges are a significant source of organic enrichment in this segment. Black septic plunge pools located beneath a Middletown CSO (between RM 51.5 and 51.4) were observed by field staff indicating periodic discharges typical of CSOs which includes sewage solids and other sanitary wastes. These CSOs along with contaminated sediments found downstream from the AK Steel 011 outfall are likely correlated with the observed decline in fish community performance. Biological impacts to the macroinvertebrate community were also observed downstream from the Middletown CSOs in the form of increased organism density at RM 52.17 and a slightly elevated percentage of tolerant organisms. Fish community performance did improve to the very good range (IBI = 44) at the sampling location downstream from Dicks Creek (RM 47.5) but declined again downstream from the LeSourdsville WWTP.

Butler County LeSourdsville WWTP

The Butler County LeSourdesville WWTP discharges directly to the Great Miami River at RM 45.65. The WWTP was constructed in 1977 with a hydraulic design flow of 4 MGD. Upgrades were initiated in 1990 with the addition of a 2 MGD oxidation ditch and a gravity belt thickener which increased the hydraulic design flow to 6 MGD. In 1992 another expansion included a new sludge processing facility, two post aerobic digestors, a sludge blending tank, a belt filter press, a sludge storage pad, three clarifiers, a cascade aerator, and UV disinfection. An upgrade in 1994 increased the hydraulic design flow to 12 MGD (expanding the oxidation ditch to 6 MGD) and added a new influent pump station and preliminary treatment building. The WWTP was last upgraded in 1995 and currently has a hydraulic design flow of 12.0 MGD with a hydraulic capacity of 28.0 MGD. The treatment process includes mechanical screening, grit removal, activated sludge digestion, secondary clarification, and UV disinfection. Primary clarification and tertiary filtration is also present for the rotating biological contact treatment system. Solids removed from the WWTP are land applied. The collection system consists of separate sewers, with 95 % of the service area sewered. The service population is approximately 35,000 with moderate growth expected.

The sample downstream from the Butler County LeSourdsville WWTP has improved from non-attainment in 1980 to partial attainment in 1989 and 1995. The macroinvertebrate community was indicative of very good quality (ICI = 44) with no discernible indication of effluent toxicity. The fish community, however, performed below regional expectations downstream from the treatment plant. As a result, only partial attainment of the WWH use designation status was achieved. Low biological fish scores resulted from a decrease in the percent of round-bodied suckers, top carnivores, and lithophilic species, and an increase in the percent of tolerant fish. The low index scores correllated to an increase in the amount of ammonia-N, TSS, and $CBOD_5$ that was discharged from the treatment plant. The Butler County LeSourdsville WWTP was the highest point source contributor of ammonia-N in the basin during 1995. From 1990 to 1995, 65 violations of the NPDES permit were reported to the Ohio EPA for outfall 001. Most of the violations occurred in 1993 and 1995 during WWTP upgrades.

Miller Brewery Company

The Miller Brewing Company discharges directly to the Great Miami River at RM 43.7 on a continuous basis. The plant is located in St. Clair township near the city of Trenton and became operational in 1991. The treatment facility is designed to treat 6.1 MGD of wastewater generated from the production of malt beverages and consists of mechanical screening, grit removal, six aeration basins, four secondary clarifiers, and two polishing lagoons. Solids removed in the treatment process are dewatered with a sludge press and are either land applied or disposed at a sanitary landfill. Sanitary wastewater generated from the employees is treated by the Butler County LeSourdesville WWTP.

The Miller Brewery Company WWTP began production in 1991. During the 1980 and 1989 survey, this section of the stream (RMs 43.0 to 40.9) was found to be in non-attainment of the WWH use designation status. Even with the addition of the Miller Brewery Company in 1991, the 1995 survey showed an improvement to partial attainment downstream from the plant at RM 43.40. The Miller Brewery Company had two violations of its NPDES permit in 1993 for ammonia-N and pH but demonstrated good water quality downstream from the plant in 1995 (with the exception of one pH violation). The macroinvertebrate community was indicative of good quality (ICI = 40) with no discernible indication of effluent toxicity. The fish community, however, performed below regional expectations downstream from the treatment plant due to a decrease in the abundance of round-bodied suckers and simple lithophilic spawners, and an increase in the proportion of omnivores and tolerant species. Even though the fish community scores were below WWH expectations downstream from the Miller Brewery Company, they were consistent with upstream results which also showed impairment of the fish community. Some of the impairment is likely associated with the Butler County LeSourdsville WWTP discharge (RM 45.5).

Hamilton Municipal Power Plant

The Hamilton Municipal Electric Plant has been operated by the city of Hamilton since July, 1895. The electric plant is composed of three steam boiler/generator units and two gas turbine generators with a capacity of 122 mega-watts and an average annual net generation of 227 million kilowatt-hours. Daily production rates are 135 mega-watts in the summer and 75 mega-watts in the winter. Approximately 25,000 tons of coal are used per year as well as 3,263,300 million ft^3 per year of gas and 18,000 gallons per year of fuel oil. The facility uses once-through cooling water provided by the Hamilton-Rossville hydraulic canal (54 MGD) and city water wells (annual average of 855,000 gallons per day (GPD)) for a total average withdraw volume of 55 MGD. The power plant maintains four outfalls (003, 005, 006, 007) which discharge to the Hamilton-Rossville hydraulic canal and the Great Miami River mainstem.

Outfall 003 discharges approximately 33 MGD directly to the Great Miami River at RM 37.1 from several condenser units utilizing once-through cooling water to reduce water temperature to a suitable discharge level. Chlorine is added to control algae growth in the facility distribution lines. Outfall 005 discharges treated, non contact cooling water to the Hamilton-Rossville hydraulic canal through a submerged pipe, located upstream of the cooling water intake, and is the uppermost electric plant outfall. Outfall 005 receives runoff from a coal pile which drains to a central location and discharges an average of one time per month. Treatment of the coal pile runoff is through settling only. Coal pile area water is primarily lost to groundwater. One or more groundwater monitoring wells, in place for a hazardous waste site (Chem Dyne), are located in the coal pile area. Outfall 006 discharges primarily ash wastewater to the Hamilton-Rossville hydraulic canal downstream from outfall 005. The outfall receives non contact cooling water from the oil coolers, bearing seal water, and floor drains (annual average 20,000 GPD). Condensate and cooling water from the ash vacuum system contributes an approximate annual average of 76,000 GPD The ash water is treated by the Hamilton WWTP while waste fly ash and bottom ash is taken to a beneficial reuse site by contract with the City of Cincinnati. Additional annual average discharge quantities for outfall 006 include boiler blowdown (2,000 GPD), evaporator blow down (1,500 GPD) and bearing seal water (500 GPD). Outfall 007 discharges non contact cooling water from turbine unit #5 to the Hamilton-Rossville hydraulic canal downstream from outfall 006.

The 1995 biological sampling in the Great Miami River downstream from the Hamilton Municipal Power Plant indicated full attainment of the WWH use designation. This is an improvement from 1980 and 1989 when this segment of the river was in partial or non-attainment of the WWH criteria due to fish community impairment. The Hamilton Municipal Power discharge (003 discharge at RM 37.12) was not significantly impacting the fish or macroinvertebrate community. Macroinvertebrate community performance was in the exceptional range (ICI=46) at the downstream station (RM 37.0). The fish assemblage was indicative of very good to exceptional quality (IBI=48, MIwb=9.1).

Hamilton WWTP

The Hamilton WWTP was last upgraded in 1988 and is designed for 32.0 MGD. Champion Paper accounts for approximately 40% of the wastewater treated at the Hamilton WWTP. Treatment consists of grit removal, primary clarification, activated sludge digestion, secondary clarification, chlorination, and dechlorination. Solids removed from the WWTP are either land applied or composted. The collection system consists of separate sewers, with 95% of the service area sewered. Eighteen overflow locations are known to be active for the collection system, all of which discharge to the Great Miami River. The service population is approximately 65,000 with moderate growth expected.

The 1995 biological sampling in the Great Miami River downstream from the Hamilton WWTP indicated full attainment of the WWH use designation. This is an improvement from 1980 and 1989 when this segment of the river was in partial or non-attainment of the WWH criteria. The fish community was indicative of marginally good to exceptional quality (IBI=38, MIwb=10.8). While fully meeting the WWH criteria, IBI scores declined downstream from the Hamilton WWTP (IBI=38) compared to upstream sampling at RM 34.2 (IBI=50) indicating a significant impact to the fish community from the Hamilton WWTP and numerous CSOs. The invertebrate community performance was in the very good range (ICI=42) at the downstream station (RM 34.0) indicating no significant impact from the Hamilton WWTP. However, slightly elevated percent predominance of tolerant organisms (3.2% compared to 0.3% at RM 34.3) indicated mild enrichment from the WWTP.

Fairfield WWTP

The Fairfield WWTP discharges directly to the Great Miami River at approximately RM 32.0. The facility was last upgraded in 1988 to meet secondary treatment requirements. The WWTP is currently designed for 6.0 MGD with a hydraulic capacity (peak daily flow rate) of 10.0 MGD. The Fairfield WWTP has requested an expansion in the design capacity increasing conduit flow to 10.0 MGD. Treatment consists of mechanical screening, grit removal, primary clarification, activated sludge digestion, secondary clarification, tertiary filtration, chlorination and dechlorination. Solids removed from the WWTP are land applied. The collection system consists of separate sewers, with all of the service area sewered. Three overflow locations are known to exist for the sewage collection system. These include the Crystal I and II pump stations adjacent to Crystal Drive and the Goodyear manhole adjacent to Dixie Highway. Overflows from the Crystal I and II pump station discharge to the Great Miami River via Pleasant Run. Overflows from the Goodyear manhole flow to Mill Creek by an unnamed tributary. Fairfield is currently constructing relief sewers and flow equalization basins at the WWTP to eliminate these events. The service population is approximately 40,000 with moderate growth expected.

The 1995 biological sampling in the Great Miami River downstream from the Fairfield WWTP indicated partial attainment of the WWH use designation due mostly to fish community impairment. This is a slight improvement since 1980 and 1989 when this segment was in non-attainment of the WWH criteria. The fish assemblage in the Great Miami River downstream from the Fairfield WWTP was indicative of good to fair quality (IBI=28, MIwb=8.9). Similar results were found upstream in the mixing zone indicating no avoidance or toxic effect from the Fairfield WWTP effluent. IBI and MIwb scores were lower downstream (IBI=28, MIwb=8.9) from the Fairfield WWTP compared to upstream sampling (IBI=38, MIwb=10.8) indicating a significant impact to the fish community from the Fairfield WWTP. The Fairfield WWTP (RM 31.6) was not significantly impacting the macroinvertebrate community. Community performance was in the exceptional range (ICI=46) at the downstream station (RM 29.9). The macroinvertebrate community performance within the Fairfield WWTP mixing zone (at RM 31.6) was meeting WWH expectations with a narrative evaluation of marginally good and no discernible indication of effluent toxicity.

USDOE Fernald

The Fernald Environmental Management Project (FEMP) is a 1050 acre government owned, contractor operated facility. The facility began operations in 1951 for the processing of feed materials to produce high purity uranium metal for use in the nation's weapons program. Production peaked in 1960 at approximately 12,000 metric tons of uranium and reached a low in 1975 of about 1230 metric tons. Production ceased in 1989 and the focus was shifted to environmental cleanup in 1991. The waste water treatment system discharges to the Great Miami River at River Mile (RM) 24.73 through outfall 001. Outfall 001 consists of treated wastewaters from the contaminated south plume, sanitary sewage, former production area stormwater, sludge pond decant, coal pile runoff, boiler blowdown, cooling water, biodenitrification effluent, investigation derived wastewater, perched groundwater, and sand filter backwash. The sanitary wastewater treatment plant (WWTP) was designed for an average flow of 0.35 MGD. The system currently processes an average of 0.16 MGD. The other flow components of outfall 001 (remediation wastewater, dewatering, groundwater treatment) combined with sanitary wastewater flow contributes an average of 2.775 MGD to the Great Miami River. FEMP has a proposal to increase the flow of outfall 001 to 6.173 MGD. Outfall 002 is a stormwater outfall to an unnamed tributary (at RM 0.50) which flows into Paddys Run at RM 1.90. Stormwater passing through this outfall has historically been a major contributor to the south plume of contaminated ground water. Two stormwater retention basins have been constructed to retain stormwater prior to treatment at the Advanced Wastewater Treatment Plant. In extremely wet weather the stormwater retention basins overflow some runoff without treatment to Paddys Run. Other permitted outfalls from the FEMP facility include stormwater runoff to Paddys Run from outfalls 003 (stormwater retention basin overflow tributary - RM 1.90), 004 (RM 2.25), 005 (Pilot Plant ditch - RM 2.84), and 006 (RM 3.40).

The 1995 biological sampling in the Great Miami River upstream and downstream from the Fernald 001 outfall indicated partial attainment of the WWH use designation due to fish community impairment. This is an improvement from 1980 when this segment was in non-attainment of the WWH criteria. The fish community was indicative of fair to exceptional quality (IBI=33, MIwb=10.2) and the invertebrate community was indicative of very good quality (ICI=42).

Hamilton County Taylor Creek Regional WWTP

The Taylor Creek WWTP discharges to the Great Miami River downstream from the confluence of Taylor Creek at RM 14.95 near Miamitown. The design capacity is 5.5 MGD with a daily peak hydraulic capacity of 13.8 MGD. Construction of the treatment facility was completed in 1993 however the collection system was not in place until 1997. Fifteen public package plants and a number of private plants were tied into the collection system beginning in late winter and early spring, 1997. Treatment consists of screening, grit removal, grease removal, extended aeration, secondary settling, ultraviolet light disinfection, cascade post-aeration, and aerated sludge holding tanks. Sludge is transported for incineration and disposal. The population of the service area is 48,900 with moderately high growth predicted. The service area is 100% separate sewers with 10% of the service area with sewers. Four lift stations exist with one overflow at White Oak Estates.

The Taylor Creek sewer project was initiated in the mid 1970s and was resurrected in the mid 1980s as a means for the Metropolitan Sewer District (MSD) to comply with a Consent Order for several small facilities in the upper region of the watershed. Detailed plans for the sewer were submitted by MSD and later challenged by the Ohio EPA resulting in a longstanding disagreement between agencies over the sewer alignment. Issues relating to the potential threat to the biological and physical integrity of the stream were raised by the Ohio EPA, much of the difficulty arising from concerns relating to the unique geology dominating much of Hamilton County. MSD elected to continue with the construction of the wastewater treatment facility despite the absence of a collection system or a permit to install (PTI) for the collection system. MSD eventually agreed to reevaluate the sewer alignment issue and movement within the project ensued. The treatment facility received wastewater from the package plants by February, 1997.

The 1995 biological sampling in the Great Miami River downstream from the Taylor Creek WWTP, before it began operation, indicated full attainment of the WWH criteria which is an improvement from previous years. The fish community was indicative of marginally good to exceptional quality (IBI=35, MIwb=10.0), and the macroinvertebrate community was indicative of very good quality (ICI=42). Future monitoring will be necessary to determine if the Taylor Creek WWTP has an impact on the aquatic community.

Harrison WWTP

The Harrison WWTP discharges directly to the Whitewater River at approximately RM 7.4. Upgraded in 1990, the Harrison WWTP is a secondary treatment plant with a design capacity of 1.15 MGD. The treatment processes consist of grit removal, oxidation ditches, final settling, chlorination and dechlorination. The collection system consists of separate sanitary sewers with 90% of the service area sewered. Five lift stations exist with no bypass or overflow structures. The service population is approximately 8,000 with moderate growth expected. The City of Harrison has an approved pretreatment program. The biological integrity of the Whitewater River appeared unimpacted by treated wastewater discharged from the Harrison WWTP. The fish and macroinvertebrate communities were in the exceptional range and indicated full attainment of the EWH aquatic life use designation.

Chevron U.S.A Inc. Refinery

The Chevron U.S.A. Inc. refinery in Hooven, Ohio is situated on two-hundred and fifty acres of land approximately twenty miles west of Cincinnati near U.S. 50 and SR 128. The refinery overlies the Great Miami River Buried Valley Aquifer composed primarily of sand, gravel and discontinuous clay lenses. The refinery was built and operated by Gulf Oil Company in 1931 and acquired by Chevron in 1985. Chevron operated this site as a gasoline refinery until May, 1986. The Chevron refinery technology became obsolete by 1986 due to its inability to refine various types of crude oil.

The Ohio EPA first became aware of this site through notification of hazardous waste management issues in 1981. Gasoline had accumulated in the aquifer as a result of previous spills on site. Gasoline releases to the subsurface resulted from small and large tank leakages and line leaks, line breaks and poor management practices over fifty years. The Chevron refinery owners installed approximately 48 monitoring wells within the refinery property and adjacent boundaries. Leaded gasoline (~80% of plume contaminant) and diesel fuel has leached into surrounding soils during the 55 years of refinery operations.

Chevron U.S.A. Inc. installed a hydrocarbon recovery system on January 21, 1985 at the refinery in response to discovery of hydrocarbon seepage into the Great Miami River. As of April, 1990 an estimated three million gallons of free product have been recovered. The hydrocarbon recovery system consists of three production wells which produce water from twenty to thirty feet below the water table. The recovered hydrocarbons are pumped from the well system to an oil/water separator. Water from the separator is discharged to the Oily Water Sewer System and the oil is pumped to storage as product. The product is shipped off-site to customers and is manifested as a petroleum product.

Clean-up operations continue at the refinery site in Hooven. Chevron U.S.A. Inc. currently operates under an Ohio EPA National Pollutant Discharge Elimination System (NPDES) permit at an estimated average of 4.0 million gallon per day (MGD). The extracted groundwater at the site is treated and discharged to the Great Miami River . The facility monitors and reports data for 14 NPDES parameters including metals, conventional and organic compounds. Operating reports for 1997 revealed detection limit exceedences for concentrations of lead and TSS (nonfilterable, suspended solids).

The Chevron U.S.A. Inc. refinery is located on the Great Miami River at RM 9.07. The macroinvertebrate community was indicative of very good quality (ICI=44) upstream from the Chevron Chemical refinery but slightly decreased to good quality (ICI=38) downstream from the refinery. The fish community was indicative of fair quality (IBI=33) upstream from the Chevron Chemical refinery but improved to marginally good quality (IBI=36) downstream from the refinery (RM 8.4). Partial attainment of the WWH criterion occured upstream from the refinery due to fish community impairment but full attainment occured downstream from the Chevron Chemical refinery indicating no significant impact to the biological community.

RECOMMENDATIONS

Status of Aquatic Life Uses

Ohio EPA is under obligation by a 1981 public notice to review and evaluate all aquatic life use designations outside of the WWH use prior to basing any permitting actions on the existing, unverified use designations. Thus some of the following aquatic life use recommendations constitute a fulfillment of that obligation. While some of the changes may appear to constitute "downgrades" (*i.e.* EWH to WWH, WWH to MWH, etc.) or "upgrades" (*i.e.* LWH to WWH, WWH to EWH, etc.), any changes should not be construed as such because this constitutes the first use of an objective and robust use evaluation system and database. Based on the 1995 survey results, the following aquatic life use designation changes are recommended for streams within the Great Miami River basin study area.

Middle and Lower Great Miami River (RM 90.0 to 0.0)

The Middle and Lower Great Miami River is currently designated Warmwater Habitat (WWH) from the city of Dayton to the mouth. The Upper Great Miami River report (DSW/EAU 1995-12-13) recommended the use designation change from WWH to EWH from RM 90.0 to 84.5 due to the performance of the biological communities. Many of the impounded segments of the mainstem technically meet a criterion for the Modified Warmwater Habitat (MWH); however, no recommendations are being made for revising the existing WWH use designation at this time. Future restoration plans for the mainstem should include considerations for breaching and/or removal of selected dams. Once this is determined any changes to the existing WWH use can then be reconsidered.

Selected Great Miami River Tributaries

The Whitewater River is currently designated WWH but the performance of the biological communities warrents a recommendation of EWH. The use designation of MWH is recommended for the Mound Overflow Creek (currently undesignated) due to the modified characteristics of the channel and the performance of the biological communities.

No changes are recommended for the following tributaries:

Wolf Creek (WWH - existing)
Dry Run (WWH - existing)
Holes Creek (WWH - existing)
Owl Creek (LRW - existing)
Bear Creek (WWH - existing)
Elk Creek (EWH - existing)
Dicks Creek (MWH from Cincinnati-Dayton Rd (RM 5.4) to Yankee Rd (RM 2.4) - existing;
WWH from RM 2.4 to 0.0 - existing)
North Branch Dicks Creek (WWH - headwaters to Breiel Blvd. (RM 1.0) - existing;
MWH - Breiel Blvd. (RM 1.0) to mouth - existing)
Paddys Run - (WWH - existing)

Status of Non-Aquatic Life Uses

Results of the present study support the existing non-aquatic life uses (Industrial Water Supply, Primary Contact Recreation, and Secondary Contact Recreation) currently designated for the Great Miami River and selected tributaries.

Future Monitoring

The next opportunity for a complete survey of the watershed will occure in the year 2000 according to the Five-Year Basin Monitoring Approach. Streams within the middle and lower

Great Miami River basin which were not evaluated in 1995 should receive a higher priority for reassessment in 2000. Biological and water quality sampling should occur by at least the 2000 cycle in the Great Miami River basin to assess threats from pollution loadings, suburban development, and spills. In addition to resampling the mainstem, biological and chemical monitoring should also be conducted in tributaries with reoccurring spills, fish kills, and other unauthorized releases. Bear Creek should be reassessed to determine if a redesignation to EWH is warranted. Owl Creek should be resampled upstream from Fraser Paper and West Carrollton Parchment to determine if a WWH fauna could be supported.

Other Recommendations

A variety of stream protection techniques should be widely implemented throughout the watershed to significantly reduce the impacts of habitat degradation and soil erosion and should include (but not be limited to) bank stabilization, restoration of adequate wooded riparian buffers, and best management practices for stormwater and soil erosion at construction sites.

The number and quantity of spills and other unauthorized releases should be reduced and eliminated. Actions should be taken against on-going sources of spills, overflows, and other unauthorized releases. SSO and CSO discharges should be eliminated, or controlled by treatment, particularly those that discharge during dry weather and under minimal precipitation events.

STUDY AREA DESCRIPTION

The Great Miami River drainage basin covers 5,385 mi^2 in Ohio and Indiana (1,437 mi^2 in Indiana) (ODNR, 1960) (Figure 2a, Figure 2b, and Figure 2c). The mainstem of the river is 170.3 miles in length with an average gradient of 3.9 feet per mile (ODNR 1960). The section from the Great Miami River mainstem examined during the summer of 1995 extends from the Taylorsville Dam near Vandalia (RM 92.6) in northern Montgomery County to just upstream of the confluence with the Ohio River (RM 0.9) in Hamilton County. It flows through portions of Montgomery, Warren, Butler, and Hamilton Counties. Major tributaries include the Stillwater, Mad, and Whitewater Rivers, as well as Twin, Wolf, Seven Mile, and Four Mile Creeks. Several of these tributaries as well as the Upper Great Miami study area have been assessed in separate studies from the 1995 assessment (OEPA 1995, OEPA 1992, OEPA 1991a). Additional tributary reports (Mad River, Whitewater River, Four Mile Creek, and Twin Creek) should be forthcoming in 1998.

The aquatic life use designation for much of the Great Miami River is Warmwater Habitat (WWH). One section (RMs 95.7-84.5) of the river has a recommended use designated as Exceptional Warmwater Habitat (EWH) and State Resource Waters (SRW). The river is also designated as Agricultural and Industrial Water Supply and Primary Contact Recreation. Land use along the river ranges from urban/industrial to rural/agricultural (Table 2). In Montgomery

County the river flows through or is adjacent to the cities of Huber Heights, Dayton, Moraine, West Carrollton, Vandalia and Miamisburg (total population 408,367). In Warren County the river flows through Carlisle and Franklin (total population 15,898). In Butler county the river flows through the boundaries of Middletown, Trenton, New Miami, Hamilton, and Fairfield (total population 205,678). In Hamilton County the only incorporated area adjacent to the river is Cleves (population 2,208). This portion of the Great Miami River is developed with urban areas and industrial sites. Most industries and municipalities utilize groundwater as a principal water source but discharge treated wastewater to the river. Surface runoff from agricultural or urban areas and industries along the river is not treated or impeded prior to entering the river.

In Ohio the majority of the Great Miami River watershed lies within the Eastern Corn Belt Plains ecoregion. Landforms have been shaped by glaciation which left flat to gently rolling terrain, glacial till, and in some places exposed limestone. Soils in the watershed tend to be neutral to slightly alkaline and drainage varies from well drained to very poorly drained depending on parent material and topography. The river lies within a broad valley with a wide floodplain. The lower portion of the watershed flows through the Interior Plateau ecoregion and becomes more hilly as the river progresses to the confluence with the Ohio River.

Sections of the river have been channelized, stabilized and had vegetation (canopy) removed to prevent flooding and erosion with an attentant reduction in natural sinuosity of the channel and loss of protective vegetative cover. Several lowhead dams have been built along the mainstem of the river for recreational, water supply or industrial usage.

The entire length of the lower Great Miami River overlies the Great Miami River Buried Valley Aquifer System. This aquifer consists of an ancient river valley which was filled with sand, gravel and clay till deposited by glaciers. These deposits are as much as 200 feet thick and provide the principal source of water supply for residents and industries of the area. The Great Miami River is the primary recharge system for these wells. For this reason the aquifer was designated as a Sole Source Aquifer by USEPA in 1988. This designation provides for review of any federally funded projects over the aquifer which may impact the quality of the water. In addition to this protection, many communities have enacted or are considering enactment of wellhead protection legislation.

There are currently two watershed protection projects in the watershed. In the Indian Creek watershed a Section 319 funded project is focused on restoring and preventing bank erosion by means of willow posting and tree revetments. Another protection project, initiated by Miami Valley Regional Planning Commission’s Lower Great Miami Basin Council, is now underway in the Dayton area. Although unfunded at this time this project is attempting to draw together all interested parties to design and implement a program for urban runoff control.

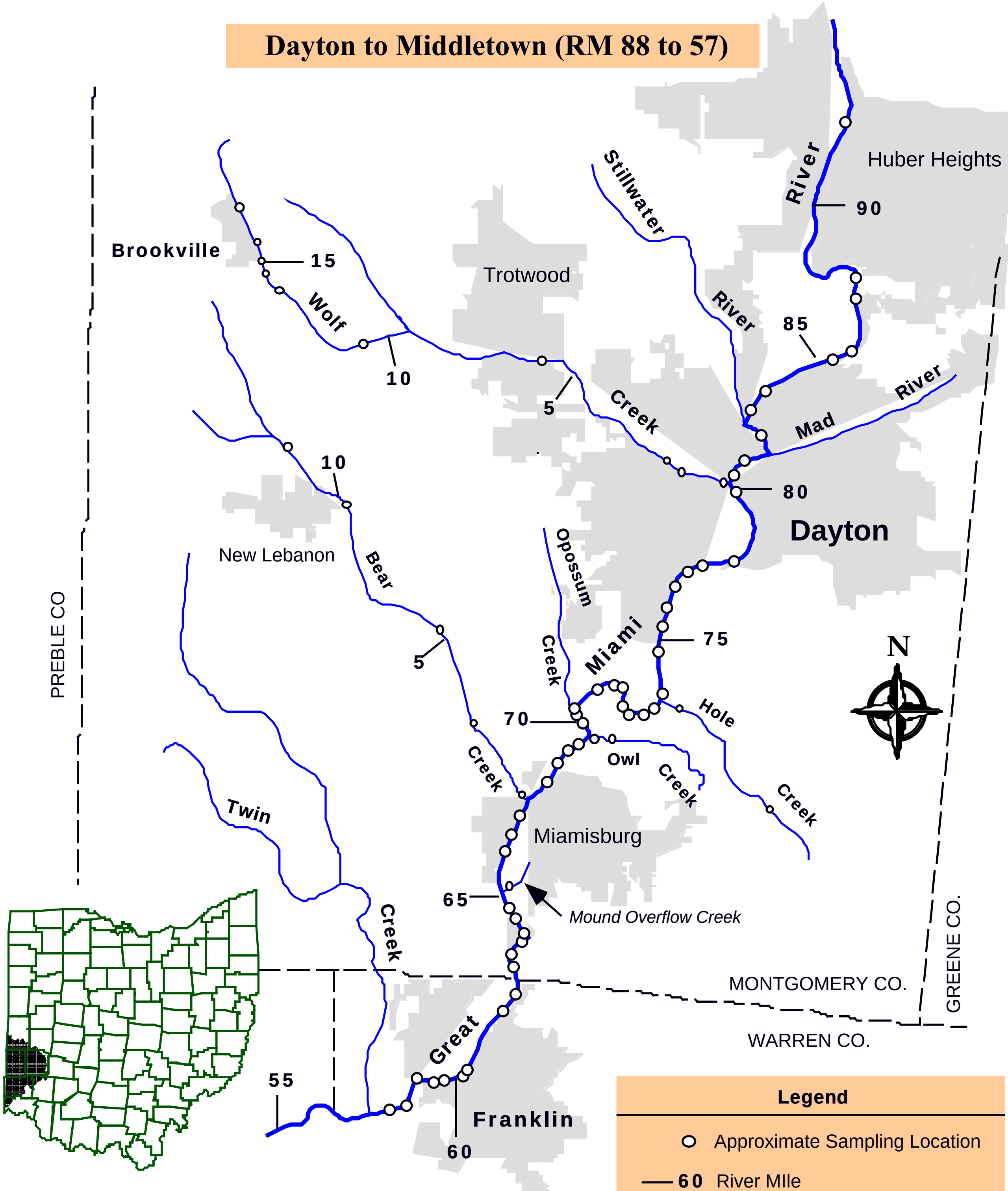


Figure 2a. Map of the upper third of the 1995 Great Miami River study area showing principal streams, approximate sampling locations and municipalities.

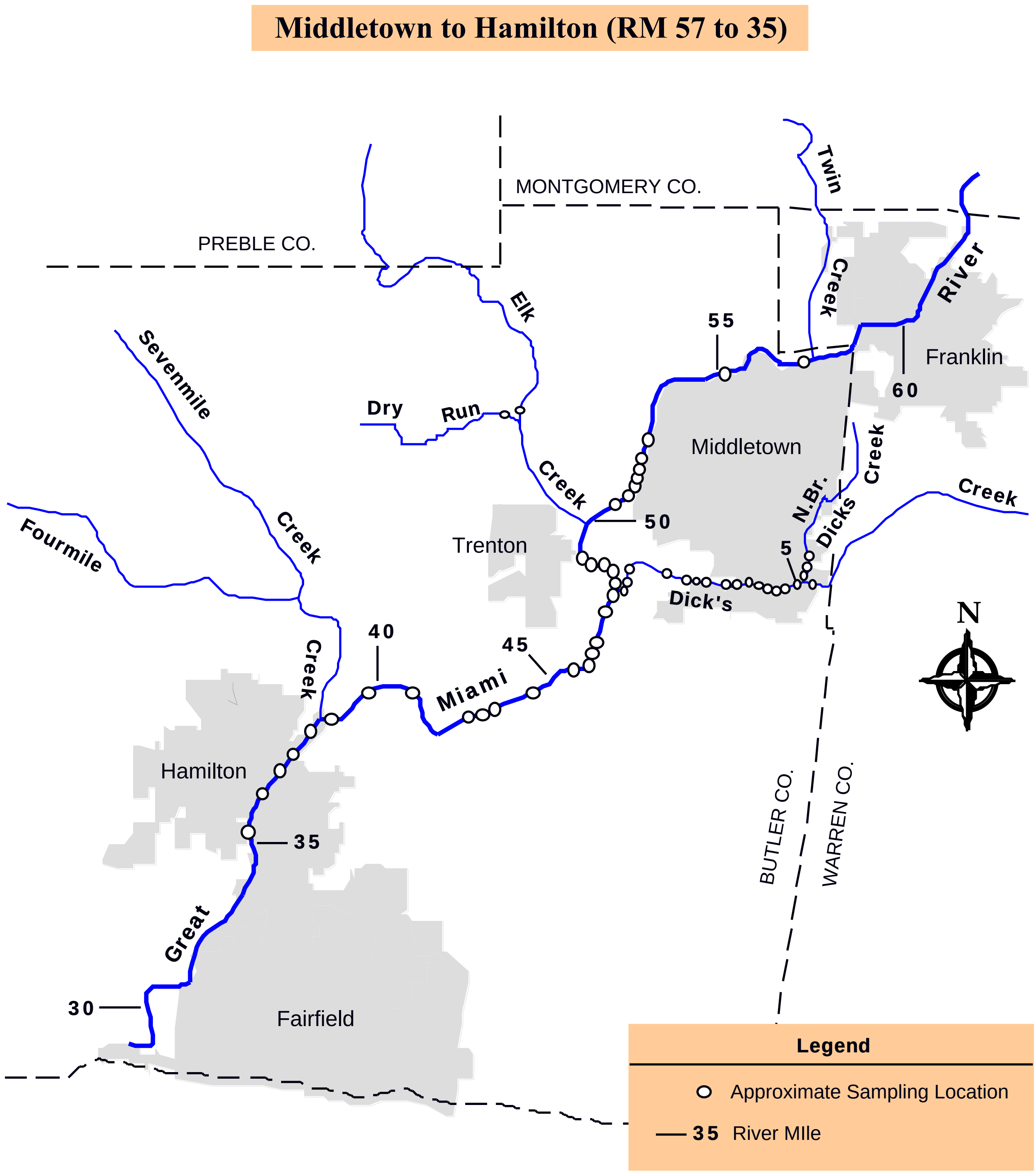


Figure 2b. Map of the middle third of the 1995 Great Miami River study area showing principal streams, approximate sampling locations and municipalities.

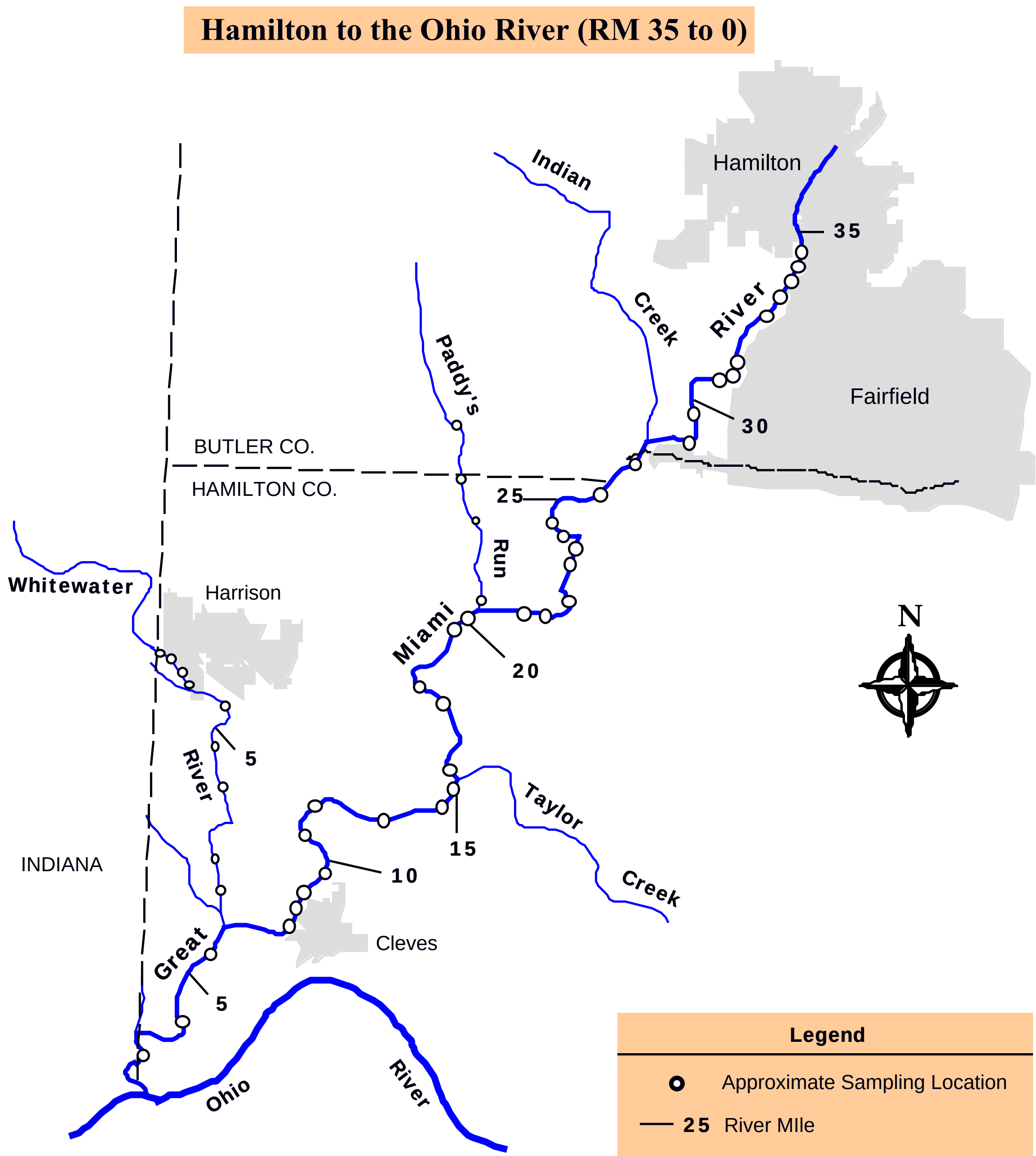


Figure 2a. Map showing the principal streams, approximate sampling locations and municipalities within the lower third of the 1995 Great Miami River study area.

Table 2. Stream characteristics and significant identified pollution sources in the Middle and Lower Great Miami River study area, 1995.

Stream Name	Length (Miles)	Average Fall (Ft/Mile)	Drainage Area Mi2)	Nonpoint Source Pollution Categories	Point Sources Evaluated
Great Miami River	92.6		2907.1	Agriculture, Urban, Hydromodification, Land Disposal, In-place Pollutants, In-stream Sand & Gravel Mining	Dayton WWTP Appleton Paper Mont. Co. - W. Regional WWTP Fraser Paper W. Carrollton Parch. W. Carrollton WWTP U.S. DOE - Mound Miamisburg WWTP DP&L - Hutchings EGS Franklin WWTP Bay West AK (Armco) Steel - Middletown Crystal Tissue Middletown WWTP Butler Co. - LeSourdsville WWTP Miller Brewing Armco - New Miami (closed) Hamilton Municipal Power Hamilton WWTP Fairfield WWTP U.S. DOE - Fernald Hamilton Co. MSD Taylor Cr. WWTP Chevron Chemical /Oil
Wolf Creek	16.7	16.9	71.8	Agriculture, Urban, Land Disposal In-place Pollutants	Brookville WWTP
Dry Run (Trib. to Wolf Creek)	3.2	21.2	7.84	Agriculture, Urban, Land Disposal	-
Holes Creek	9.0	22.7	28.08	Agriculture, Urban, Land Disposal	-
Owl Creek	3.3		3.8		Fraser Paper, West Carrollton Parchment

Table 2. continued.

Stream Name	Length (Miles)	Average Fall (Ft/Mile)	Drainage Area (Mi^2)	Nonpoint Source Pollution Categories	Point Sources Evaluated
Bear Creek	14.4	20.7	53.7	Agriculture, Urban, Land Disposal	New Lebanon WWTP
Elk Creek	12.6	26.7	48.0	-	-
Dry Run (Trib. to Elk Creek)	4.64	54.74	6.0	-	-
Dicks Creek	10.5	23.0	47.6	-	AK Steel
North Branch-Dicks Creek	5.6	29.8	8.0	-	AK Steel Moraine Materials
Mound Overflow Creek	0.4		3.1	-	Mound DOE
Paddys Run	6.4	20.1	16.08	-	DOE Fernald
Whitewater River	7.3	1.9	1483 (1340 Ind.)	-	Harrison WWTP

Table 3. List of sampling locations (effluent sample - E, conventional water chemistry - C, organic water chemistry - CO, sediment metals chemistry - SM, sediment organics - SO, datasonde - D, modeling - M, flow - Q (USGS), benthos - B, fish - F, fish tissue - FT) in the Great Miami River study area, 1995. Italics denote effluent mixing zone sampling locations.

River/Stream RM	Type of Sampling	Latitude/Longitude	Landmark	U.S.G.S. Quad. Map
Great Miami River				
92.65	C,CO,SM,SO,Q	39° 52'29"/84° 09'42"	Ust. Taylorsville Dam	Tipp City
87.7	B	39° 49'49"/84° 09'14"	Ust. Needmore Rd.`	Dayton North
87.3	F	39° 49'22"/84° 09'12"	Ust. Needmore Rd.	Dayton North
87.05	D	39° 49'13"/84° 09'23"	Needmore Rd.	Dayton North
85.9	B	39° 48'19"/84° 09'11"	Dst. MCD N. Reg. WWTP	Dayton North
85.2	F	39° 47'56"/84° 09'48"	Dst. MCD N. Reg. WWTP	Dayton North
83.57	C,SM,D	39° 47'28"/84° 11'30"	Keowee St. / North Dixie Dr..	Dayton North
83.3	F	39° 47'03"/84° 11'56"	Ust. Stillwater River	Dayton North
82.0	B,F	39° 46'25"/84° 11'30"	Dst. Steel Dam	Dayton North
80.90	Q	39° 45'55"/84° 11'51"	Ust. Monument Ave.	Dayton North
80.7	B,F	39° 45'42"/84° 12'17"	Dst. Monument Ave. Dam	Dayton North
80.65	C,CO,SM,SO,D	39° 45'55"/84° 11'51"	Monument Ave.	Dayton North
80.0	B	39° 45'20"/84° 12'14"	Fifth St., Dst Wolf Creek	Dayton North
79.95	C,CO,SM,SO	39° 45'17"/84° 12'08"	Fifth St., dst. Wolf Creek	Dayton North
79.9	F	39° 45'09"/84° 11'58"	Fifth St., dst. Wolf Creek	Dayton North
78.1	F	39° 43'49"/84° 12'13"	Dst. Industrial Discharges	Dayton South
77.24	C,SM,D	39° 43'52"/84° 12'57"	Broadway Ave., ust. Dayton WWTP	Dayton South
77.1	F	39° 43'50"/84° 13'18"	Ust. Tait Dam	Dayton South
76.9	F	39° 43'52"/84° 12'51"	Dst. DP&L Tait Dam	Dayton South
76.4	B	39° 43'28"/84° 13'39"	Dst. DP&L Tait Dam	Dayton South
76.21	D	39° 43'18"/84° 13'41"	Ust. Dayton WWTP	Dayton South
76.10	*F*	39° 43'11"/84° 13'43"	*Dayton WWTP mixing zone*	Dayton South
76.00	*B*	39° 43'04"/84° 13'39"	*Dayton WWTP mixing zone*	Dayton South
75.9	F	39° 43'01"/84° 13'42"	Dst. Dayton WWTP	Dayton South
75.86	C,CO,SM,SO	39° 42'58"/84° 13'42"	Dst. Dayton WWTP, adj. West River Rd.	Dayton South
75.7	B	39° 42'50"/84° 13'43"	Dst. Dayton WWTP	Dayton South
75.31	D	39° 42'33"/84° 13'54"	Dst. Dayton WWTP, adj. West River Rd.	Dayton South
74.8	F	39° 41'23"/84° 13'56"	Ust. Holes Creek	Dayton South
73.77	C,D	39° 41'15"/84° 13'52"	Sellars Rd.	Dayton South
73.3	F	39° 40'47"/84° 14'28"	Dst. Holes Creek	Dayton South
72.80	D	39° 40'48"/84° 14'32"	Ust. Appleton Paper WWTP	Dayton South
72.4	B	39° 40'57"/84° 14'56"	Ust. Appleton Paper	Dayton South
72.3	*B*	39° 41'00"/84° 14'58"	*Appleton Paper WWTP mixing zone*	Dayton South
72.10	C,CO,SM,SO	39° 41'08"/84° 14'51"	Dst. Appleton Paper WWTP (dst side channel)	Dayton South
71.85	D	39° 41'20"/84° 14'48"	Dst. Appleton Paper WWTP (river right)	Dayton South
71.7	B	39° 41'22"/84° 14'59"	Dst. Appleton Paper WWTP	Dayton South
71.6	F	39° 41'23"/84° 15'16"	Dst. Appleton Paper WWTP	Miamisburg
71.45	*B,F*	39° 41'22"/84° 15'17"	*Mont. Co. W. Reg. WWTP Mixing Zone*	Miamisburg
70.5	B	39° 40'52"/84° 16'04"	Dst. Western Regional WWTP	Miamisburg
70.10	D	39° 40'35"/84° 15'53"	Ust. Farmersville-West Carrollton Pike	Miamisburg
69.9	F	39° 40'29"/84° 15'43"	Dst. Western Regional WWTP	Miamisburg
69.87	C,CO	39° 40'28"/84° 15'42"	Farmersville-West Carrollton Pike	Miamisburg
69.3	B,F	39° 40'03"/84° 15'58"	Dst. Owl Creek	Miamisburg
69.20	*B,F*	39° 40'00"/84° 16'07"	*West Carrollton WWTP mixing zone*	Miamisburg
69.0	F	39° 39'56"/84° 16'22"	Dst. W. Carrollton WWTP	Miamisburg

Table 3. continued.

River/Stream RM	Type of Sampling	Latitude/Longitude	Landmark	U.S.G.S. Quad. Map
Great Miami River, continued				
68.8	B	39˚ 39'43"/84˚ 16'27"	Dst. W. Carrollton WWTP	Miamisburg
68.30	C,CO,SM,SO,D	39˚ 39'27"/84˚ 16'42"	Dst. West Carrollton WWTP	Miamisburg
67.33	D	39˚ 38'40"/84˚ 17'23"	SR 725	Miamisburg
67.20	Q	39˚ 38'40"/84˚ 17'23"	Ust. Linden Ave.	Miamisburg
66.90	C,SM,SO,B	39˚ 38'26"/84˚ 17'32"	Linden Ave.	Miamisburg
66.00	C,CO,SM,SO	39˚ 37'48"/84˚ 17'53"	Dst. Mound 001, ust. Miamisburg WWTP	Miamisburg
65.9	F	39˚ 37'27"/84˚ 17'55"	Adj. Mound	Miamisburg
65.0	*F*	39˚ 36'54"/84˚ 17'37"	*Miamisburg WWTP mixing zone*	Franklin
64.8	F	39˚ 36'43"/84˚ 17'33"	Dst. Miamisburg WWTP, RL	Franklin
64.72	C,CO,SM,SO,D	39˚ 33'47"/84˚ 18'18"	Chautauqua Rd., dst. Miamisburg WWTP	Franklin
64.36	D,Q	39˚ 36'24"/84˚ 17'12"	Dst DP&L Hutchings dam (river right)	Franklin
64.36	D	39˚ 36'26"/84˚ 17'09"	Dst DP&L Hutchings dam (river left)	Franklin
64.35	*B*	39˚ 36'24"/84˚ 17'09"	*DP&L Huthchings EGS mixing zone*	Franklin
64.3	*F,*	39˚ 36'20"/84˚ 17'08"	*DP&L Huthchings mixing zone River Right*	Franklin
64.3	B	39˚ 36'20"/84˚ 17'08"	Dst. DP&L Hutching dam River Left	Franklin
64.1	B	39˚ 36'13"/84˚ 17'10"	Dst. DP&L Hutchings EGS	Franklin
64.0	F	39˚ 36'09"/84˚ 17'18"	Dst. DP&L Hutchings EGS	Franklin
63.42	D	39˚ 35'50"/84˚ 17'27"	Dst DP&L Hutchings dam @ 13th Ave.	Franklin
63.3	F	39˚ 35'42"/84˚ 17'31"	Ust. and @ the old Chautauqua dam	Franklin
62.6	B	39˚ 35'15"/84˚ 17'14"	Ust. and @ the old Chautauqua dam	Franklin
62.58	C	39˚ 35'15"/84˚ 17'18"	Old Chautauqua Dam, dst DP&L Hutchings	Franklin
62.1	F	39˚ 34'53"/84˚ 17'35"	Ust. Franklin WWTP	Franklin
60.58	C,D	39˚ 33'47"/84˚ 18'18"	SR 123, ust. Franklin WWTP	Franklin
60.2	B.F	39˚ 33'31"/84˚ 18'32"	Ust. Franklin WWTP	Franklin
59.65	*B,F*	39˚ 33'26"/84˚ 19'08"	*Franklin WWTP mixing zone*	Franklin
59.4	F	39˚ 33'25"/84˚ 19'25"	Dst. Franklin WWTP	Franklin
59.1	B	39˚ 33'24"/84˚ 19'46"	Dst. Franklin WWTP	Franklin
58.4	F	39˚ 32'54"/84˚ 20'01"	Dst. Clear Creek	Franklin
58.3	B	39˚ 32'52"/84˚ 20'10"	Dst. Clear Creek	Franklin
58.00	C,CO	39˚ 32'48"/84˚ 20'27"	Adj. SR 73, ust. Twin Creek & RR bridge	Franklin
57.55	C	39˚ 32'41"/84˚ 20'55"	Dst. Twin Creek, old county park boat ramp	Franklin
57.05	Q	39˚ 32'31"/84˚ 21'27"	Dst. Twin Creek	Franklin
55.14	C,D	39˚ 32'23"/84˚ 23'02"	SR 4	Middletown
55.1	F	39˚ 32'22"/84˚ 23'06"	SR 4, dst. old hydraulic dam	Middletown
55.0	B	39˚ 32'19"/84˚ 23'11"	SR 4, dst. old hydraulic dam	Middletown
52.64	C,CO,SM,SO	39˚ 31'13"/84˚ 24'46"	SR 122, ust. AK Steel	Middletown
52.4	F	39˚ 31'02"/84˚ 24'52"	SR 122, ust. AK Steel	Middletown
52.0	F	39˚ 30'43"/84˚ 25'03"	Dst. new Middletown Dam	Middletown
51.5	B	39˚ 30'18"/84˚ 25'06"	Dst. new Middletown Dam	Middletown
51.50	D	39˚ 30'18"/84˚ 25'06"	Ust. AK Steel 0utfall 011 (river right)	Middletown
51.40	*B,F*	39˚ 30'13"/84˚ 25'03"	*AK Steel outfall 011 mixing zone*	Middletown
51.30	C,CO,SM,SO,B,F	39˚ 30'09"/84˚ 25'09"	Dst. AK Steel 0utfall 011, between CSOs	Middletown
51.13	D	39˚ 30'01"/84˚ 25'12"	Dst. AK Steel 0utfall 011 (river left)	Middletown
51.0	F	39˚ 29'48"/84˚ 25'28"	Ust. Elk Creek	Trenton
50.9	B	39˚ 29'19"/84˚ 25'24"	Ust. Elk Creek	Trenton

Table 3. continued.

River/Stream RM	Type of Sampling	Latitude/Longitude	Landmark	U.S.G.S. Quad. Map
Great Miami River, continued				
49.3	B	39˚ 28'46"/84˚ 26'30"	SR 73	Trenton
49.1	F	39˚ 28'50"/84˚ 26'32"	SR 73	Trenton
49.27	C	39˚ 28'53"/84˚ 26'34"	SR 73, ust. Middlet'n & Crys. Tiss. WWTPs	Trenton
48.30	D	39˚ 28'42"/84˚ 25'42"	Ust. Middletown and Crystal Tissue WWTPs	Trenton
48.20	*B,F*	39˚ 28'40"/84˚ 25'36"	*Middletown WWTP mixing zone*	Trenton
48.0	F	39˚ 28'30"/84˚ 25'29"	Dst. Middletown WWTP	Trenton
47.7	B	39˚ 28'15"/84˚ 25'32"	Dst. Middletown WWTP	Trenton
47.5	B,F	39˚ 28'07"/84˚ 25'31"	Dst. Dicks Creek	Trenton
47.91	C,CO,D	39˚ 28'26"/84˚ 25'32"	Dst. Middletown and Crystal Tissue WWTPs	Trenton
46.05	D	39˚ 26'52"/84˚ 26'02"	Dst. Dicks Creek	Trenton
45.85	C	39˚ 26'42"/84˚ 26'05"	Ust. But. Co. LeSourd. WWTP & Gregory Cr.	Trenton
45.65	*B,F*	39˚ 26'37"/84˚ 26'14"	*Butler Co. LeSourdsville WWTP mixing zone*	Trenton
45.5	B,F	39˚ 26'40"/84˚ 26'18"	Dst. Butler Co. LeSourdsville WWTP	Trenton
44.51	C,CO,SM,SO,D	39˚ 26'12"/84˚ 27'15"	Dst. Butler Co. LeSourdsville WWTP	Trenton
43.4	B,F	39˚ 25'47"/84˚ 28'25"	Dst. Miller Brewery	Trenton
43.23	C,D	39˚ 25'30"/84˚ 28'30'	Liberty Fairfield Rd., dst. Miller Brewing	Trenton
40.6	F	39˚ 26'07"/84˚ 30'40"	Ust. old Armco 001	Hamilton
39.95	C	39˚ 26'11"/84˚ 31'20"	Ust. old Armco 001, adj. Augsberger Rd.	Hamilton
38.55	C,D	39˚ 25'30"/84˚ 32'25"	SR 127, near New Miami, ust. Four Mile Cr.	Hamilton
38.5	B	39˚ 25'31"/84˚ 32'28"	Dst. old Armco 001	Hamilton
38.3	F	39˚ 25'30"/84˚ 32'43"	Dst. Fourmile Creek	Hamilton
38.2	B	39˚ 25'27"/84˚ 32'47"	Dst. Fourmile Creek	Hamilton
37.35	C,D	39˚ 24'49"/84˚ 33'16"	Ust. Hamilton Power & dam	Hamilton
37.0	B	39˚ 24'36"/84˚ 33'30"	Dst. Hamilton Municipal Power	Hamilton
36.9	F	39˚ 24'33"/84˚ 33'30"	Dst. Hamilton Municipal Power	Hamilton
36.95	C,D	39˚ 24'34"/84˚ 33'32"	Black St., dst. Hamilton Power & canal	Hamilton
35.69	C	39˚ 23'40"/84˚ 34'17"	Pershing Ave. (SR 128)	Hamilton
35.48	D,Q	39˚ 23'28"/84˚ 34'19"	Ust. Hamilton WWTP and dam @ USGS gage	Hamilton
34.68	C,CO,SM,SO	39˚ 22'48"/84˚ 34'04"	Ust. Hamilton WWTP and dam	Hamilton
34.6	F	39˚ 22'41"/84˚ 34'02"	Dst. SR 128	Greenhills
34.3	B	39˚ 22'29"/84˚ 34'04"	Dst. new Hamilton Recreational Dam	Greenhills
34.2	F	39˚ 22'24"/84˚ 34'07"	Dst. new Hamilton Recreational Dam	Greenhills
33.99	*F*	39˚ 22'15"/84˚ 34'15"	*Hamilton WWTP mixing zone*	Greenhills
33.6	B,F	39˚ 21'59"/84˚ 34'31"	Dst. Hamilton WWTP and CSOs	Greenhills
33.05	C,CO,SM,SO,D	39˚ 21'31"/84˚ 34'54"	Dst. Hamilton WWTP; Joyce Park	Greenhills
31.6	*B,F*	39˚ 20'33"/84˚ 35'29"	*Fairfield WWTP mixing zone*	Greenhills
31.4	F	39˚ 20'25"/84˚ 35'34"	Dst. Fairfield WWTP	Greenhills
31.19	C,CO,SM,SO,D	39˚ 20'19"/84˚ 35'47"	Dst. Fairfield WWTP, adj. East River Rd.	Greenhills
30.0	F	39˚ 19'55"/84˚ 36'41"	American Aggregate bridge	Greenhills
29.9	F	39˚ 19'53"/84˚ 36'40"	American Aggregates	Greenhills
29.97	C	39˚ 19'59"/84˚ 36'40"	American Aggregates old RR bridge	Greenhills
28.82	C,D	39˚ 19'02"/84˚ 36'28"	Adj. East River Rd., dst. Amer. Aggregates	Greenhills
28.8	F	39˚ 19'02"/84˚ 36'27"	Adj. East River Rd.	Greenhills

Table 3. continued

Stream RM	Type of Sampling	Latitude/Longitude	Landmark	U.S.G.S. Quad. Map
Great Miami River, continued				
27.15	C,D	39˚ 18'44"/84˚ 37'52"	Dst. SR 27	Shandon
27.1	B	39˚ 18'40"/84˚ 37'57"	SR 126, SR 27	Shandon
26.21	C,SM,SO	39˚ 18'12"/84˚ 38'35"	SR 126, ust. Fernald	Shandon
25.8	F	39˚ 18'07"/84˚ 38'39"	SR 126, SR 27	Shandon
24.7	*B,F*	39˚ 17'40"/84˚ 39'56"	*Fernald Mixing Zone*	Shandon
24.55	C,SM,SO	39˚ 17'33"/84˚ 39'58"	Dst. Fernald	Shandon
23.65	C	39˚ 17'08"/84˚ 39'17"	Ust. Paddys Run, adj. E. Miami River Rd.	Shandon
23.4	F	39˚ 17'08"/84˚ 39'16"	Adj. East River Road	Shandon
22.5	B	39˚ 16'07"/84˚ 39'25"	Adj. East River Road	Shandon
21.44	C,CO,SM,SO,D	39˚ 15'47"/84˚ 40'04"	Blue Rock Rd., ust. Paddys Run	Shandon
21.1	F	39˚ 15'52"/84˚ 40'24"	Blue Rock Rd., ust. Paddys Run	Shandon
20.0	F	39˚ 18'44"/84˚ 37'52"	Dst. Paddys Run, adj. gravel quarry	Shandon
19.90	C,CO,SM,SO,D	39˚ 15'46"/84˚ 41'44"	Adj. SR 128, dst. Paddys Run	Shandon
17.9	B	39˚ 14'30"/84˚ 43'01"	Adj. East Miami River Road	Addyston
16.9	F	39˚ 13'58"/84˚ 42'12"	Adj. East Miami River Road	Addyston
15.49	C,D	39˚ 12'58"/84˚ 42'12"	Harrison Rd., ust. Taylor Creek WWTP	Addyston
14.93	C	39˚ 12'35"/84˚ 41'50"	Dst. Taylor Creek, US 52	Addyston
14.8	B,F	39˚ 12'29"/84˚ 41'50"	Dst. Taylor Creek, I-275`	Addyston
14.65	D	39˚ 12'23"/84˚ 41'56"	Dst. Taylor Creek	Addyston
13.05	C	39˚ 11'51"/84˚ 43'30"	Dirt drive opposite Crowell Rd.	Addyston
11.6	F	39˚ 11'33"/84˚ 45'32"	Ust. Chevron Chemical	Addyston
11.4	F	39˚ 11'10"/84˚ 44'58"	Ust. Chevron Chemical	Hooven
10.70	C,CO,SM,SO	39˚ 11'29"/84˚ 45'29"	Adj. SR 128, ust. Chevron Chemical	Hooven
9.5	B	39˚ 10'47"/84˚ 44'53"	Ust. Chevron Chemical	Addyston
8.52	C,CO,SM,SO	39˚ 10'12"/84˚ 45'29"	SR 50, dst. Chevron Chemical	Hooven
8.4	B,F	39˚ 10'06"/84˚ 45'33"	Dst. SR 50	Hooven
8.07	C	39˚ 09'50"/84˚ 45'41"	Valley-Junction Rd., ust. Whitewater River	Hooven
5.7	B	39˚ 09'17"/84˚ 47'37"	Lost Bridge, dst. Whitewater River	Hooven
5.6	F	39˚ 09'12"/84˚ 47'04"	Lost Bridge, dst. Whitewater River	Hooven
5.56	D	39˚ 09'10"/84˚ 47'44"	Lost Bridge	Hooven
3.9	F	39˚ 07'55"/84˚ 48'13"	Adj. Shawnee boat ramp	Hooven
1.8	F	39˚ 07'15"/84˚ 49'08"	Ust. Ohio River	Lawrenceburg
1.75	C,CO,SM,SO	39˚ 07'16"/84˚ 49'08"	Adj. Lawrenceburg Rd.	Lawrenceburg
Wolf Creek				
16.7	F	39˚ 50'48"/84˚ 25'27"	Ust. Upper Lewisburg Salem Road	Brookville
16.61	C,CO,SM,SO	39˚ 50'45"/84˚ 25'27"	Upper Lewisburg Salem Rd.	Brookville
16.6	B	39˚ 50'44"/84˚ 25'27"	Ust. Upper Lewisburg Salem Road	Brookville
15.32	C	39˚ 49'54"/84˚ 24'43"	Westbrook Rd., ust. Brookville WWTP	Brookville
15.0	B,F	39˚ 49'36"/84˚ 24'42"	Ust. Brookville WWTP	Brookville
14.9	B,F	39˚ 49'33"/84˚ 24'38"	Dst. Brookville WWTP	Brookville
14.14	C,CO	39˚ 49'04"/84˚ 24'25"	Airhill Rd., dst. Brookville WWTP	Brookville
10.4	B,F	39˚ 48'05"/84˚ 21'23"	Nolan Road	Trotwood
6.1	B,F	39˚ 47'41"/84˚ 17'37"	Olive Road	Trotwood
6.08	C	39˚ 47'42"/84˚ 17'34"	Olive Rd.	Trotwood
1.80	Q	39˚ 46'00"/84˚ 14'10"	West Riverview Ave.	Dayton North

Table 3. continued.

River/Stream RM	Type of Sampling	Latitude/Longitude	Landmark	U.S.G.S. Quad. Map
Wolf Creek, continued				
1.10	D	39˚ 45'39"/84˚ 13'35"	Rosedale Dr.	Dayton North
0.2	F	39˚ 45'33"/84˚ 12'35"	Ust. mouth	Dayton North
0.1	B	39˚ 45'31"/84˚ 12'30"	Ust. mouth	Dayton North
0.01	C,CO,SO	39˚ 45'31"/84˚ 12'28"	Dst. Edwin Moses Blvd., @ mouth	Dayton North
Dry Run (Trib to Wolf Creek)				
0.2	F	39˚ 47'53"/84˚ 16'54"	Free Drive	Trotwood
Holes Creek				
5.6	B	39˚ 38'30"/84˚ 10'27"	Normandy School	Dayton South
4.3	B,F	39˚ 39'03"/84˚ 11'11"	McEwen Road	Dayton South
4.28	C	39˚ 39'04"/84˚ 11'11"	McEwen Rd.	Dayton South
0.6	B,F	39˚ 40'53"/84˚ 13'17"	SR 741	Dayton South
0.59	C	39˚ 40'53"/84˚ 13'17"	SR 741	Dayton South
Owl Creek				
0.17	C,CO,SM,SO	39˚ 40'04"/84˚ 15'45"	Central Ave.	Miamisburg
0.1	B,F	39˚ 40'05"/84˚ 15'40"	Ust. mouth	Miamisburg
0.01	D	39˚ 40'11"/84˚ 15'46"	Ust. mouth	Miamisburg
Bear Creek				
12.1	B,F	39˚ 45'50"/84˚ 23'42"	Old Dayton and Clayton Rd.	Brookville
12.09	C	39˚ 45'52"/84˚ 23'42"	Ust. Clayton Rd., ust. New Lebanon WWTP	Brookville
9.9	B,F	39˚ 44'51"/84˚ 22'13"	Dst. New Lebanon WWTP, US 35	Miamisburg
9.75	C,CO	39˚ 44'45"/84˚ 22'11"	US 35, dst. New Lebanon WWTP	Miamisburg
5.20	C,B,F	39˚ 42'27"/84˚ 19'41"	Germantown Liberty Rd.	Miamisburg
2.1	B,F	39˚ 40'23"/84˚ 18'38"	Farmersville Road	Miamisburg
0.2	B	39˚ 39'11"/84˚ 17'22"	Dst. RR tracks, ust. mouth	Miamisburg
0.1	F	39˚ 39'02"/84˚ 17'18"	Dst. RR tracks, ust. mouth	Miamisburg
0.01	C,CO,SM,SO	39˚ 38'59"/84˚ 17'13"	Dst. RR bridge near mouth	Miamisburg
Elk Creek				
3.7	B,F	39˚ 31'12"/84˚ 28'00"	Ust. Dry Run, Elk Creek Road	Miamisburg
3.65	C,SM	39˚ 31'39"/84˚ 28'03"	Ust. Dry Run	Middletown
Dry Run (Trib. To Elk Run)				
0.01	C	39˚ 31'40"/84˚ 28'05"	@ mouth, dst. Elk Creek Rd.	Middletown
0.1	B	39˚ 31'41"/84˚ 28'08"	Ust. of the mouth	Miamisburg
North Branch Dicks Creek				
1.0	B,F	39˚ 29'14"/84˚ 20'58"	Dst. Culvert, ust AK 004	Monroe
0.75	C,CO,SM,SO	39˚ 29"38"/84˚ 20'55"	Ust. AK Steel 004, adj. Breiel Rd.	Monroe
0.03	F,B	39˚ 28'26"/84˚ 20'58"	Dst. AK Steel 004, ust mouth	Monroe
0.01	C,CO,SM,SO	39˚ 28'26"/84˚ 20'59"	Dst. AK Steel 004 @ mouth	Monroe

Table 3. continued.

River/Stream RM	Type of Sampling	Latitude/Longitude	Landmark	U.S.G.S. Quad. Map
Dicks Creek				
5.21	C,CO,SM,SO	39˚ 28'24"/84˚ 20'53"	Ust. N. Branch Dicks Cr., dst. Moraine Mat.	Monroe
5.2	B	39˚ 28'24"/84˚ 20'53"		Monroe
5.0	F	39˚ 28'26"/84˚ 21'06"	Dst. N. Branch and AK 004	Monroe
4.7	C,CO,SM,SO,D,B	39˚ 28"22"/84˚ 21'31"	Dst. North Branch, ust. Shakers Creek	Monroe
4.4	F	39˚ 28'16"/84˚ 21'42"	Dst. Shakers Cr., ust. AK 005	Monroe
4.1	B	39˚ 28'24"/84˚ 21'59"	Dst. Shakers Cr., ust. AK 005	Monroe
3.9	B	39˚ 28'28"/84˚ 22'13"	Dst. AK 005	Monroe
3.7	B	39˚ 28'25"/84˚ 22'24"	Ust. AK 002, dst. AK 003	Monroe
3.57	D	39˚ 28'22"/84˚ 22'33"	Dst. AK Steel 003 / 015, ust. 002	Trenton
3.00	C,CO,SM,SO,F	39˚ 28'23"/84˚ 23'10"	Dst. AK Steel 003 / 015, ust. 002	Trenton
2.8	B	39˚ 28'25"/84˚ 23'28"	Ust. RR Tracks and AK 006, dst. 002	Trenton
2.6	B,F	39˚ 28'25"/84˚ 23'36"	Ust. Yankee Rd., dst. AK 002 and AK 006	Trenton
2.51	C,CO,SM,SO,D	39˚ 28'26"/84˚ 23'51"	Yankee Rd. / Dst. AK Steel 002	Trenton
2.4	F	39˚ 28'25"/84˚ 23'42"	Dst. Union Oil	Trenton
1.7	B	39˚ 28'41"/84˚ 24'35"	Dst. Union Oil	Trenton
0.93	C,CO,SM,SO	39˚ 28'39"/84˚ 25'12"	Hamilton-Middletown Rd., near Excello	Trenton
0.4	F	39˚ 28'38"/84˚ 25'18"	Ust. mouth	Trenton
0.2	B	39˚ 28'17"/84˚ 25'24"	Ust. mouth	Trenton
0.01	D	39˚ 28'10"/84˚ 25'30"	Near mouth	Trenton
Mound Overflow Creek				
0.2	B,F	39˚ 37'07"/84˚ 17'33"	Ust. mouth	Franklin
0.10	C,CO	39˚ 37'02"/84˚ 17'36"	Ust. mouth	Franklin
Paddys Run				
4.9	B	39˚ 19'10"/84˚ 42'16"	Ust.FEMP 006 stromwater outfall	Shandon
4.73	C,SM	39˚ 19'09"/84˚ 42'12"	Morgan-Ross Rd	Shandon
4.7	F	39˚ 29'12"/84˚ 42'07"	Ust.FEMP 006 stromwater outfall	Shandon
3.3	B,F	39˚ 18'12"/84˚ 42'01"	Dst.FEMP 006 stromwater outfall	Shandon
3.27	C,SM	39˚ 18'11"/84˚ 41'57"	Dst. old RR bridge, dst 006 outfall	Shandon
2.82	SM	39˚ 17'49"/84˚ 41'51"	Dst. Pilot plant drainage ditch	Shandon
2.8	F	39˚ 17'47"/84˚ 41'53"	Dst. Pilot plant drainage ditch	Shandon
0.25	C,CO	39˚ 16'00"/84˚ 41'24"	Ust. mouth	Shandon
0.2	F	39˚ 15'59"/84˚ 41'24"	Ust. mouth	Shandon
Whitewater River				
8.1	B	39˚ 14'50"/84˚ 49'06"	Ust. Harrison WWTP	Hooven
7.7	F	39˚ 14'44"/84˚ 48'39"	Ust. Harrison WWTP	Hooven
7.63	C,D	39˚ 14'53"/84˚ 49'07"	Ust. Harrison WWTP	Hooven
7.2	F	39˚ 14'21"/84˚ 48'24"	Dst. Harrison WWTP	Hooven
7.0	B	39˚ 14'10"/84˚ 48'25"	Dst. Harrison WWTP	Hooven
6.04	D	39˚ 13'59"/84˚ 47'28"	@ gas line~ 2 miles dst. Harrison WWTP	Hooven
4.7	F	39˚ 13'25"/84˚ 47'49"	Adj. Kilby Road	Hooven
3.8	B	39˚ 12'36"/84˚ 47'36"	Adj. Kilby Road	Hooven
1.50	C,D,B	39˚ 10'59"/84˚ 47'34"	Suspension Bridge Rd.	Hooven
0.8	F	39˚ 10'25"/84˚ 47'25"	Ust. mouth, Suspension Bridge Rd.	Hooven

METHODS

All chemical, physical, and biological field, laboratory, data processing, and data analysis methodologies and procedures adhere to those specified in the Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices (Ohio Environmental Protection Agency 1989a) and Biological Criteria for the Protection of Aquatic Life, Volumes I-III (Ohio Environmental Protection Agency 1987a, 1987b, 1989b, 1989c), and The Qualitative Habitat Evaluation Index (QHEI): Rationale, Methods, and Application (Rankin 1989, 1995). Chemical, physical and biological sampling locations are listed in Table 3.

Determining Use Attainment Status

The attainment status of aquatic life uses (*i.e.*, full, partial, and non-attainment) is determined by using the biological criteria codified in the Ohio Water Quality Standards (WQS; Ohio Administrative Code [OAC] 3745-1-07, Table 7-14). The biological community performance measures which are used include the Index of Biotic Integrity (IBI) and Modified Index of Well-Being (MIwb), based on fish community characteristics, and the Invertebrate Community Index (ICI) which is based on macroinvertebrate community characteristics. The IBI and ICI are multimetric indices patterned after an original IBI described by Karr (1981) and Fausch *et al.* (1984). The ICI was developed by Ohio EPA (1987b) and further described by DeShon (1995). The MIwb is a measure of fish community abundance and diversity using numbers and weight information and is a modification of the original Index of Well-Being originally applied to fish community information from the Wabash River (Gammon 1976; Gammon *et al.* 1981).

Performance expectations for the principal aquatic life uses in the Ohio WQS (Warmwater Habitat [WWH], Exceptional Warmwater Habitat [EWH], and Modified Warmwater Habitat [MWH]) were developed using the regional reference site approach (Hughes *et al.* 1986; Omernik 1987). This fits the practical definition of biological integrity as the biological performance of the natural habitats within a region (Karr and Dudley 1981). Attainment of the aquatic life use is full if all three indices (or those available) meet the applicable biocriteria, partial if at least one of the indices does not attain and performance at least fair, and non-attainment if all indices fail to attain or any index indicates poor or very poor performance. Partial and non-attainment indicate that the receiving water is impaired and does not meet the designated use criteria specified by the Ohio WQS.

Biological Integrity Equivalents

The results of each of the biological indices are graphically and individually portrayed in a longitudinal format (*i.e.*, upstream to downstream) by sampling location each of which is demarked by the river mile designation assigned to each site. If results from multiple years are available this method is also used to visually portray changes or trends through time. In addition, the results may be shown on a map of the study area drainage network using a color scheme developed to portray the five narrative ratings used by Ohio EPA (*i.e.*, exceptional, good, fair, poor, and very poor).

A relatively new approach developed by Ohio EPA to visualize the extent to which a particular site or entire river or stream reach is or is not attaining the goals set forth in the Ohio WQS is the use of Biological Integrity Equivalents (BIE). These involve using the information compiled in the use attainment table by summing the available indices at each sampling location and dividing by the total maximum possible for each index as follows:

$$BIE = IBI + MIwb\ (x\ 5^{a}) + ICI \div 180^{b} \times 100$$

[a] index value multiplied times 5 to normalize with IBI and ICI.
[b] divisor changes to 120 for two indices, 60 for one index.

The BIE value is expressed numerically as a percentage equivalent and graphed longitudinally. This allows the numerical visualization of the use attainment table on a standardized theoretical scale of 0 to 100. Different symbols can be used to indicate full attainment, nonsignificant departures from the numerical biocriteria, partial attainment, and non-attainment.

Habitat Assessment

Physical habitat was evaluated using the Qualitative Habitat Evaluation Index (QHEI) developed by the Ohio EPA for streams and rivers in Ohio (Rankin 1989, 1995). Various attributes of the habitat are scored based on the overall importance of each to the maintenance of viable, diverse, and functional aquatic faunas. The type(s) and quality of substrates, amount and quality of instream cover, channel morphology, extent and quality of riparian vegetation, pool, run, and riffle development and quality, and gradient are some of the metrics used to determine the QHEI score which generally ranges from 20 to less than 100. The QHEI is used to evaluate the characteristics of a stream segment, as opposed to the characteristics of a single sampling site. As such, individual sites may have poorer physical habitat due to a localized disturbance yet still support aquatic communities closely resembling those sampled at adjacent sites with better habitat, provided water quality conditions are similar. QHEI scores from hundreds of segments around the state have indicated that values greater than 60 are *generally* conducive to the existence of warmwater faunas whereas scores less than 45 generally cannot support a warmwater assemblage consistent with the WWH biological criteria. Scores greater than 75 frequently typify habitat conditions which have the ability to support exceptional warmwater faunas.

Macroinvertebrate Community Assessment

Macroinvertebrates were sampled quantitatively using multiple-plate, artificial substrate samplers (modified Hester/Dendy) in conjunction with a qualitative assessment of the available natural substrates.

Fish Community Assessment

Fish were sampled using wading or boat method pulsed DC electrofishing gear. The wading method was used at a frequency of one or two samples at each site. The boat method was used at a frequency of two samples at each site except for RM 58.4 and RM 20.0 where only one pass was collected.

Area of Degradation Value (ADV)

An Area Of Degradation Value (ADV; Rankin and Yoder 1991; Yoder and Rankin 1995) was calculated for the study area based on the longitudinal performance of the biological community indices. The ADV portrays the length or "extent" of degradation to aquatic communities and is simply the distance that the biological index (IBI, MIwb, or ICI) departs from the applicable biocriterion or the upstream level of performance (Figure 3). The “magnitude” of impact refers to the vertical departure of each index below the biocriterion or the upstream level of performance. The total ADV is represented by the area beneath the biocriterion (or upstream level) when the results for each index are plotted against river mile. The results are expressed as ADV/mile to normalize comparisons between segments, sampling years, and other streams and rivers.

Causal Associations

Using the results, conclusions, and recommendations of this report requires an understanding of the methodology used to determine the use attainment status and assigning probable causes and sources of impairment. The identification of impairment in rivers and streams is straightforward - the numerical biological criteria are the principal arbiter of aquatic life use attainment and impairment (partial and non-attainment). The rationale for using the biological criteria in the role of principal arbiter within a weight of evidence framework has been extensively discussed elsewhere (Karr *et al.* 1986; Karr 1991; Ohio EPA 1987a,b; Yoder 1989; Miner and Borton 1991; Yoder 1991; Yoder 1995). Describing the causes and sources associated with observed impairments relies on an interpretation of multiple lines of evidence including water chemistry data, sediment data, habitat data, effluent data, biomonitoring results, land use data, and biological response signatures (Yoder and Rankin 1995). Thus the assignment of principal causes and sources of impairment in this report represent the association of impairments (based on response indicators) with stressor and exposure indicators with linkages to the biosurvey data being based on previous experience with strata of analogous situations and impacts. The reliability of the identification of probable causes and sources is increased where many such prior associations have been identified. The process is similar to making a medical diagnosis in which a doctor relies on multiple lines of evidence concerning patient health. Such diagnoses are based on previous research which experimentally or statistically links symptoms and test results to specific diseases or pathologies. Thus a doctor relies on previous experiences in interpreting symptoms (*i.e.*, multiple lines from test results) to establish a diagnosis, potential causes and/or sources of the malady, a prognosis, and a strategy for alleviating the symptoms of the disease or condition. As in medical science, where the ultimate arbiter of success is the eventual recovery and well-being of the patient, the ultimate measure of success in water resource management is the restoration of lost or damaged ecosystem attributes including aquatic community structure and function. While there have been criticisms of misapplying the metaphor of ecosystem “health” compared to human patient “health” (Suter 1993) we are here referring to the process for evaluating biological integrity and causes/sources associated with observed impairments, not whether human health and ecosystem health are analogous concepts.

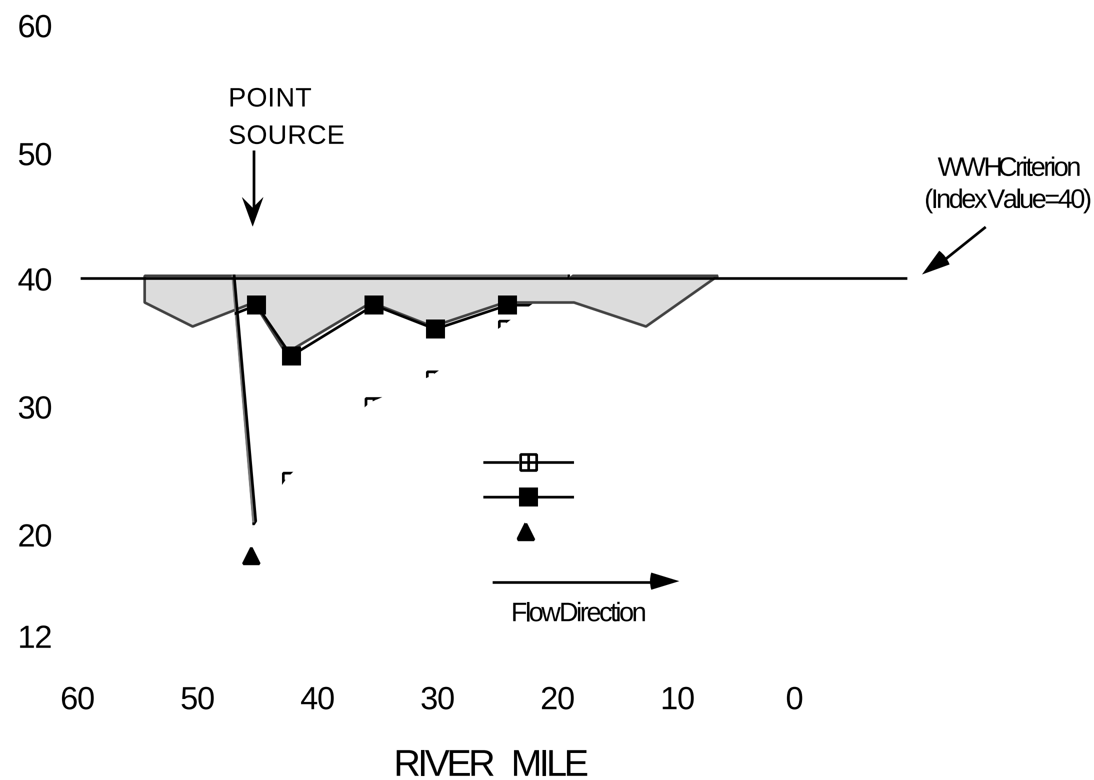


Figure 3. Graphic illustration of the Area of Degradation Value (ADV) based on the ecoregion biocriterion (WWH in this example). The index value trend line indicated by the unfilled boxes and solid shading (area of departure) represents a typical response to a point source impact (mixing zone appears as a solid triangle); the filled boxes and dashed shading (area of departure) represent a typical response to a nonpoint source or combined sewer overflow impact. The blended shading represents the overlapping impact of the point and nonpoint sources.

RESULTS AND DISCUSSION

Pollutant Loadings: 1976 - 1995 (Figures 4 - 23)
Monthly effluent loadings are reported to the Ohio EPA by all NPDES (National Pollution Discharge Elimination System) permitted discharging entities. Annual Monthly Operating Report (MOR) data provided the quantity and character of pollutant loadings through the period of record for each entity evaluated within the 1995 Middle and Lower Great Miami River study area. Pollutant loadings trends analyses typically include: Ammonia-nitrogen (NH_3-N), Five-day Biochemical Oxygen Demand (BOD_5), Carbonaceous Five-day Biochemical Oxygen Demand ($cBOD_5$), Total Suspended Solids (TSS), Nitrate+Nitrite-nitrogen (NO_3-NO_2-N), and Annual Discharge (MGD). Additionally, bioassay results and other relevant compliance information are included, where available.

Great Miami River

Dayton WWTP (RM 76.1)
The Dayton WWTP, the largest municipal wastewater treatment facility within the basin, discharges directly to the Great Miami River at river mile (RM 76.1). The WWTP was originally constructed in 1929 and has subsequently been upgraded a number of times. In 1938, a secondary treatment facility (two anaerobic digesters, four new aerobic digesters) was added. In 1950, primary clarifiers were added. In the 1970s, a secondary clarifier and chlorine contact tank were added. New installations from 1983 through 1986 included a hydraulic expansion with new headworks, two new grit basins, four new primary settling basins, new trickling filter media, four anaerobic digesters, new chlorine contact basins, and the Bio-Gro company (privatization of the sludge application program, dewatering for biosolids) came on line. In 1987 the Administrative Lab Building was expanded and a new maintenance building was erected. Additional installations from 1987 through 1991 included a cogeneration facility for production of electricity and heat, an upgrade to an advanced wastewater treatment plant, an activated sludge basin (eight aeration basins, eight final clarifiers, 20 effluent filters), post aeration, and dechlorination. Upgrades from 1989 through 1991 included improvements in several pump stations (Broadway and Westwood) and an odor control facility utilizing sodium hypochlorite and sodium hydroxide (*i.e.,* hydrogen peroxide was added to the collection system). In 1993 a larger odor control facility was built which used the same chemicals. In 1996, the sludge digester improvement project was completed.

The facility is an advanced treatment plant with a design flow of 72 MGD. The current treatment process consists of grit removal, primary settling, odor control, trickling filters, intermediate settling, activated sludge (nitrification), final settling, tertiary filtration, chlorination, dechlorination, anaerobic digestion, and land application of sludge. The collection system consists of separate sanitary sewers with 90% of the service area being sewered and encompassing 160 mi^2 (city of Dayton, parts of Kettering, 50% of Oakwood, 80-90% of WPAFB, 50% of Moraine, parts of

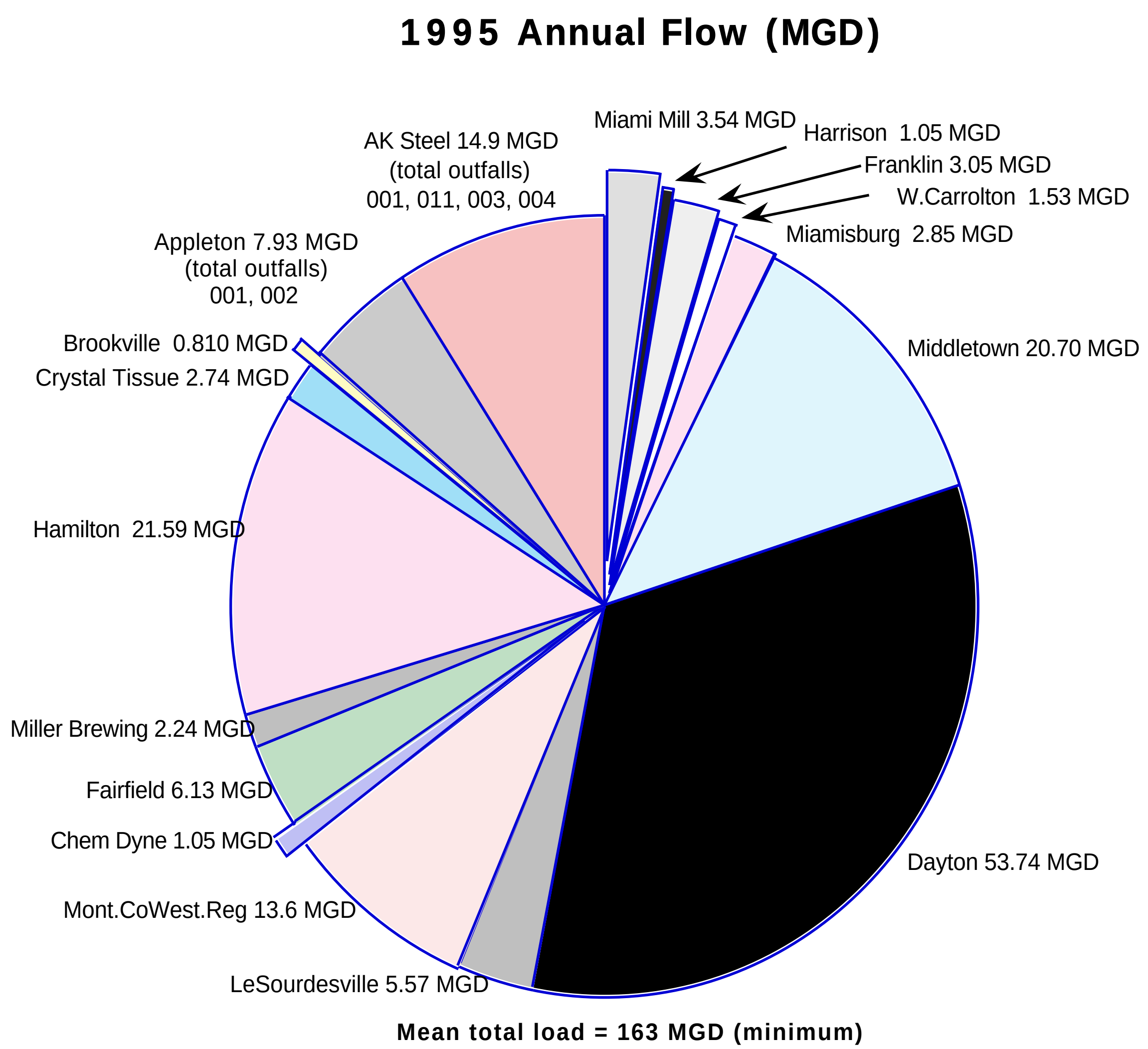


Figure 4. Relative contribution to the aggregate conduit flow (MGD) from entities discharging directly to the Great Miami River, 1995.

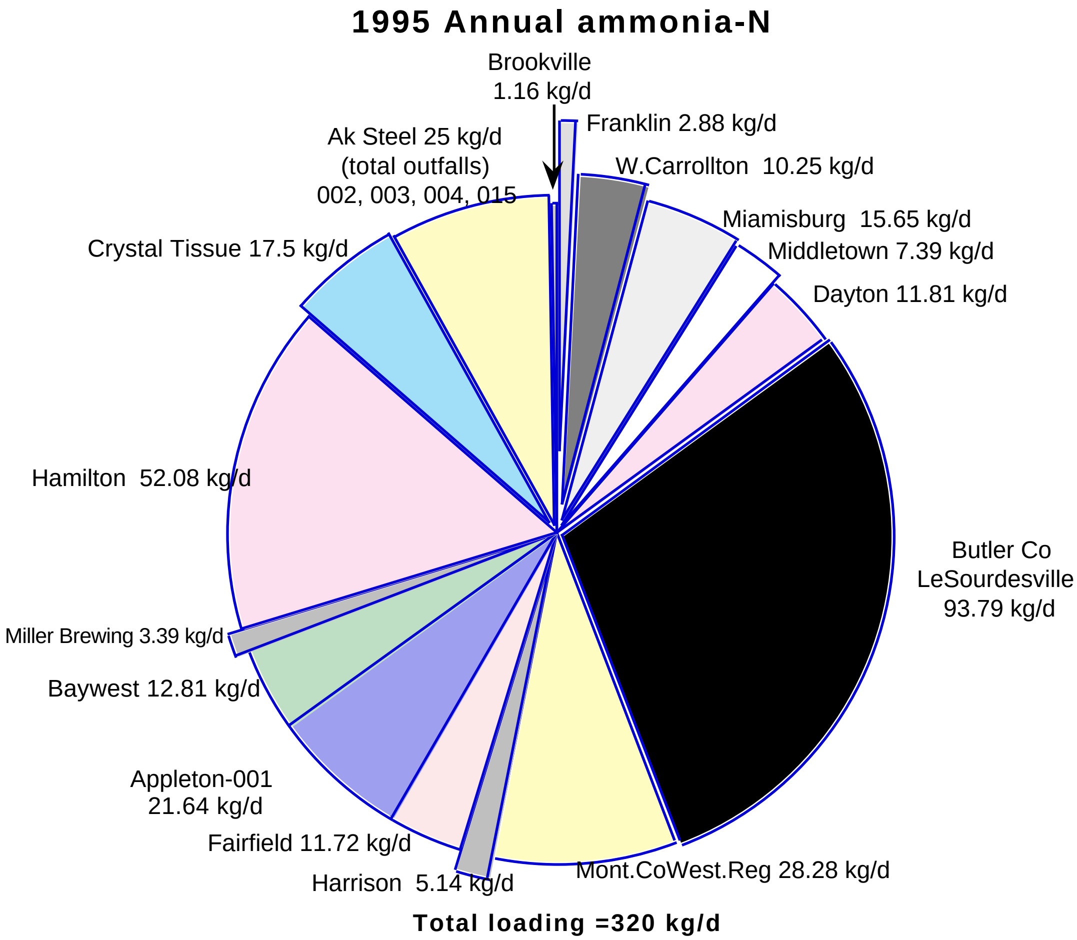


Figure 5. Relative contribution to the aggregate ammonia-nitrogen (kg/day) loads from the entities discharging directly to the middle and lower Great Miami River.

Englewood, Trotwood, Riverside, Northridge, and 75% of Harrison Township). The service population is approximately 300,000 with modest growth expected. Significant industrial contributors include electroplaters, metal finishers, corn processing (highest BOD load), foundries, chemical manufacturers, pulp and paper manufacturers, laundries, and others. Fourteen lift stations exist (Montgomery County is separate), five of which can bypass untreated wastewater. The city of Dayton eliminated approximately 90 overflow design structures around 1988 that had cross connections between the sanitary and storm sewers leaving approximately five active overflow locations (Broadway, Westwood, Lynnhurst Rd., Eastmont, Lucille). The WWTP reported 25 unauthorized sewer overflows which discharged approximately 144 MG (primarily to the Great Miami River) between 1990 and 1996.

Conduit flows showed only slight variability throughout the period of record (1979-1995) declining somewhat after 1989. The 95th percentile conduit flow between 1989 and 1995 showed greater variability following the WWTP upgrade of 1988. From 1979 until 1995 95th percentile conduit flows were generally in excess of the 72 MGD hydraulic design capacity (with the exceptions of 1981, 1987, and 1994). This indicates that inflows to the Dayton WWTP were exceeding the hydraulic design capacity and that WWTP performance may have been periodically affected.

Annual median flows remained well below the hydraulic design capacity of 72 MGD (60 MGD, historically) (Figure 6). Loadings of ammonia-nitrogen have been reduced significantly since the upgrade in 1988. In 1995, the Dayton WWTP reported an annual average ammonia-N loading of 12 kg/day which comprised only 4% of the total load for all point source discharges assessed (Figure 5). The upgrade effectively reduced the acutely toxic ammonia-N impacts, however ambient water chemistry data for the 1995 survey revealed the highest average and maximum nitrate+nitrite-N levels in the Great Miami River mainstem downstream from the Dayton WWTP.

Median BOD_5 loading through the period of record declined significantly in 1987 and continued declining after the plant upgrade of 1988. Prior to the upgrade no discernable trends were evident as the 95th percentile values nearly doubled that of the medians through 1986. Mean annual loadings of $cBOD_5$ during 1993-1995 indicated a reported three year total load of 493 kg/day, comprising 7% of the aggregate load for all point source discharges evaluated.

Annual median TSS loads exhibited a stable trend from 1979 to 1986, but the 95th percentile loadings were erratic through this same time period. This is indicative of WWTP upsets caused primarily by conduit flows exceeding the hydraulic design capacity. Following the WWTP upgrade of 1988, the differences between the median and 95th percentile loadings decreased markedly from 1989 through 1995.

Ten violations of the NPDES permit limitations were reported to Ohio EPA for outfall 001

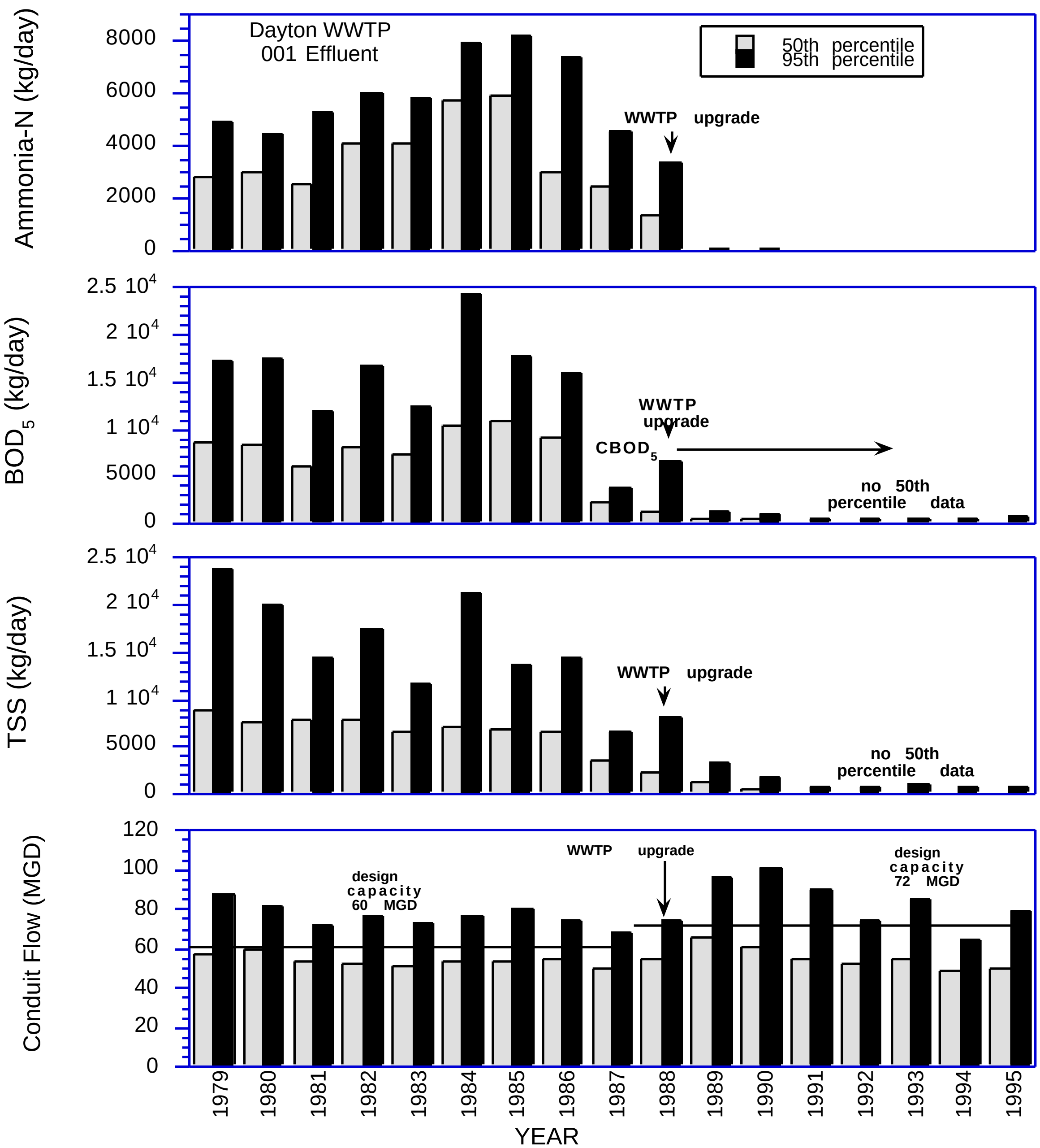


Figure 6. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Dayton WWTP.

between 1990-1995. The violations were, in declining order of frequency, limited to four parameters: residual chlorine, mercury, dissolved oxygen, and fecal coliform bacteria. Most of the violations occurred in 1990 (mostly residual chlorine) with only two violations in 1994 (residual chlorine, dissolved oxygen) and one in 1995 (mercury).

Four chronic bioassay tests conducted by Dayton in the winter, spring and summer of 1992 and 1993 revealed no exceedences of the allowable effluent toxicity (AET) for either of two test organisms (i.e. *P. promelas* and *C. dubia)*. Significant mortality was noted in the mixing zone sample for fathead minnows; however, the upstream samples also exhibited significant mortality which indicates a source other than the Dayton WWTP. Five acute bioassay tests were conducted by the Ohio EPA in 1981, 1982, and 1990. Three tests in the spring and summer of 1981 and 1982 indicated significant adverse effects to both test organisms. Two bioassay tests in the fall of 1990 indicated no acute toxicity to either test organism in either the effluent or river samples.

Appleton Paper (RM 72.34)

The Appleton Paper mill wastewater treatment plant discharges via three outfall locations: 001 consists of treated industrial wastewater from the mill production process and power plant discharging to a side channel of the Great Miami River at RM 72.34; 002 is well water and storm water; and 003 is storm water runoff and well water discharging to Owl Creek. Appleton Paper manufactures carbonless based, coated and uncoated, non-integrated and de-inked paper. The major raw materials used in the production facility includes virgin pulp, calcium carbonate, recycled stock, clay, and starch. The plant produces an average of 400 tons of paper per day. The wastewater treatment process currently consists of primary clarification, aeration, secondary clarification, a polishing basin, and post aeration of industrial wastewater. Wastewater is generated by de-inking, bleaching, paper making, coating, and stock blending process.

In 1995, Appleton Paper reported an annual median ammonia-N loading for outfall 001 of 21.6 kg/day which comprised 7% of the aggregate load for all point sources evaluated in the 1995 study area (Figure 5). Ammonia-N loadings data for the period of record (1978-1995) exhibited a high degree of variability in annual loading values and between the median and 95th percentile values (Figure 7). In the early 1980s peak discharge flows corresponded to the highest loading values which tapered off somewhat by the late 1980s. Variability between the median and 95th percentile values occurred throughout the period of record which suggests greater variability in effluent quality as well as treatment plant upsets. Annual median and 95th percentile BOD_5 loadings also varied greatly throughout the period of record. The BOD_5 loadings from 1979 to 1984 exhibited wide annual variability and percentile variances. Both median and 95th percentile values generally stabilized from 1985 to 1995 increasing slightly during 1992 and 1993. A three year comparison of $cBOD_5$ values showed a total mean load of 1369 kg/day comprising 20% of the aggregate load for all point sources evaluated. Annual median TSS loads exhibited low variability in percentile trends from 1985 to 1995. Annual 95th percentiles from 1986-1995 showed similar variability and the peak annual loading of 2554 kg/day occurred in 1993. Annual median and 95th percentile differences also suggested possible treatment irregularities or treatment plant upsets. A mean annual conduit flow of 7.9 MGD for outfalls 001 and 002 combined comprised 5% of the total flow discharged by point sources to the study area in 1995 (Figure 4). Except for 1981 to 1983, annual median and 95th percentile conduit flows for outfall 001 showed little variability throughout the period with the highest median and 95th percentile flows occurring in 1995.

Twenty-five (25) violations of NPDES permit limitations were reported for outfall 001 between 1990 and 1995. The violations were limited to four parameters: ammonia-N, BOD_5, 2,4,6 trichlorophenol, and dissolved oxygen (D.O.), in declining order of frequency. Ammonia-N and BOD_5 accounted for two-thirds of the violations. The ammonia-N violations were correlated with the peak loadings that occurred in 1994. Numerous violations of the 2,4,6 trichlorophenol effluent limit occurred at outfall 001 comprising nearly one-quarter of the exceedences during 1990-1995. Eight violations were reported for outfalls 002 and 003 collectively between 1990 and 1995. Residual chlorine for 1993 and 1994 accounted for five of the eight violations. Upsets at the treatment facility also contributed to violations of $cBOD_5$, suspended solids, and ammonia-N.

Appleton Paper was required to perform acute and chronic bioassays as a permit requirement based on acute toxicity reported in a series of bioassays performed by the Ohio EPA in 1989 and 1990. Bioassays conducted by the entity from December 1992 to September 1993 resulted in 1.3, 1.4, 1.5, and 2.04 TU_a to *Ceriodaphnia dubia* and no significant acute toxicity to fathead minnows *(Pimephales promelas)*. The effluent discharges to a side channel of the Great Miami River and consequently has no rapid or complete mixing with the mainstem flow.

From 1990-1995 ten unauthorized discharge incidents were reported totaling approximately 3.1 MG. All of the unauthorized discharges took place during 1991-1994 and were to a ditch. Nine of the incidents occurred at lift stations, and one at a manhole. One-half of the events were due to equipment failures while the remainder were due to power outages, possibly weather related. No incidents were reported for 1995.

Montgomery County Western Regional WWTP

The Montgomery County Western Regional WWTP discharges directly to the Great Miami River at RM 71.4. The WWTP began operation in November 1979 and currently operates as a tertiary treatment plant with a design capacity of 20 MGD. The treatment process includes screening (fine and coarse screens located at the pretreatment pumping facility on Dryden Road), modified two-stage activated sludge process, mixed media sand filtration, chlorination, dechlorination, and post aeration (cascade). Permanent dechlorination facilities were added in 1995. The collection system consists of separate sanitary sewers, with all of the service area being sewered (other customers served include Miamisburg, Moraine, Kettering, Miami Township, Jefferson Township, Washington Township and City of Dayton). The system contains 12 lift stations, none of which have bypasses and a total of 12 sanitary sewer overflows (SSOs) which all discharge to North Holes Creek. The service population is approximately 100,000 with modest growth expected.

Annual median and 95th percentile conduit flows demonstrated a fairly stable trend throughout the period of record (1979 - 1995) (Figure 8). A mean annual conduit flow of 14 MGD was reported which comprised 9% of the total effluent flow discharged by point sources to the study area in 1995 (Figure 4). Peak flows (95th percentile) occurred in 1989 and 1990 exceeding plant hydraulic design of 20 MGD in both years.

Ammonia-N loadings data for both 50th (median) and 95th percentiles were highly variable throughout the period of record with some median-95th percentile differences as much as 400%. Annual median loads remained fairly stable and exhibited an overall decline through 1995. Upstream (801) and downstream (901) monitoring locations during 1982 to 1995 showed fairly stable ammonia-N concentrations. The Montgomery County Western Regional WWTP currently discharges approximately 28 kg/day of ammonia-nitrogen, comprising 9% of the aggregate load for all point source dischargers evaluated in the 1995 survey (Figure 5).

Median BOD_5 loadings through the period of record also remained stable with low variability an indication of minimal treatment problems or plant upsets. Annual median TSS loads exhibited an erratic trend from 1989 through 1995. Peak loads occurred in 1989 and 1990 when conduit flows exceeded the hydraulic design capacity, suggesting a relationship. Median and 95th percentile differences were significant in the late 1980s to early 1990s, but were minimal by 1994 and 1995.

Six violations of the NPDES permit limitations were reported to Ohio EPA for outfall 001 between 1990-1995. The violations, in declining order of frequency, were limited to three parameters: zinc, residual chlorine, and fecal coliform bacteria.

Five acute bioassay tests conducted by the Ohio EPA in 1987, 1990, 1991 and 1995 indicated no significant toxicity to either of two test organisms exposed to effluent or river samples. Six entity generated chronic bioassay tests were performed from December 1992 to September 1993 and showed no exceedences above allowable effluent toxicity (AET) limits; however, three of six chronic bioassays resulted in 1.4 TU_c to *Ceriodaphnia dubia.*

From 1990 to 1995, 106 unauthorized discharge events were reported from 21 locations totaling an estimated 34 MG of untreated effluent discharged. Indian Hill, Southmoore Circle, and Eaglecreek Rd. reported the highest in volume with all events occurring prior to 1994. The Indian Hill location discharged year-round in 1992 and had reportable events for more than half of the year during 1991 and 1993. In 1994 and 1995, discharges from SSOs were reported at Westhaven Rd., and Rossmore Ct. both discharging into North Holes Creek. Most of the effluent amounts from these locations were undeterminable.

DOE Mound

The U.S Department of Energy Mound Research Lab was established in 1946 to manufacture components for the weapons program and to conduct research for other Department of Energy programs. The U.S. DOE Mound plant, located on 306 acres in southwest Miamisburg, is currently owned by EG&G Mound Applied Technologies, but was originally owned and operated by Monsanto from 1946 to 1988. The Mound Plant was placed on the National Priorities List in 1989 due to historical waste disposal practices and releases. Cleanup efforts were initiated under the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA) also known as “Superfund”. U.S. DOE Mound operations at the facility are to be phased out in the next few years. Joint efforts by Ohio EPA, U.S. EPA Region V, and DOE Mound have resulted in a cleanup strategy called the Mound 2000 program.

Historically, raioactive materials were processed at the *special metallurgical/plutonium processing hill*. The tritium processing and radioacitve waste operations were located on the northwestern hill (Main Hill). Releases of radioactive materials (i.e. plutonium, thorium and other radionuclides) have occured in connection with several waste storage operations, resulting in contaminated soil and air. The western edge of the plant overlies a Buried Valley Aquifier (BVA) which provides drinking water to the Mound Plant and the surrounding commnity of Miamisburg. The possibility of the BVA being contaminated with volitile organic compounds (VOCs) has been a great concern. A section of the old Miami-Erie canal, which runs for approximately one mile along the western boundary of the plant, contains sediments contaminated with plutonium ^{238} from a 1969 waste line break. Heavy rains carried the contaminated soil to the canal. In 1996, 26,000 cubic yards of contaminated soil and sediment were removed from the Miami-Erie canal.

Industrial and sanitary wastewater are generated from the Mound facility. The treatment process for sanitary wastewater (outfall 601) consists of bar screen, fine screen, grit removal, aeration, settling, tertiary filtration, chlorination, and dechlorination. Outfall 601 also recieves wastewater from a metal finishing shop. Outfall 602 recieves wastewater from the radioactive waste disposal building, as well as non-contact cooling water, boiler blowdown, softener backwash, and storm water. Treatment for outfall 602 consists of pH adjustment, clarification, carbon addition , sand filtration, bone char column, and I micron filtering. Outfall 002 receives non-contact cooling water, softener backwash, and storm water and the treatment consists of retention basins. Total wastewater design of the sanitary wastewater treatment plant is 0.120 MGD. Outfall 001 discharges continuously to the Great Miami River via a storm sewer and outfall 002 discharges

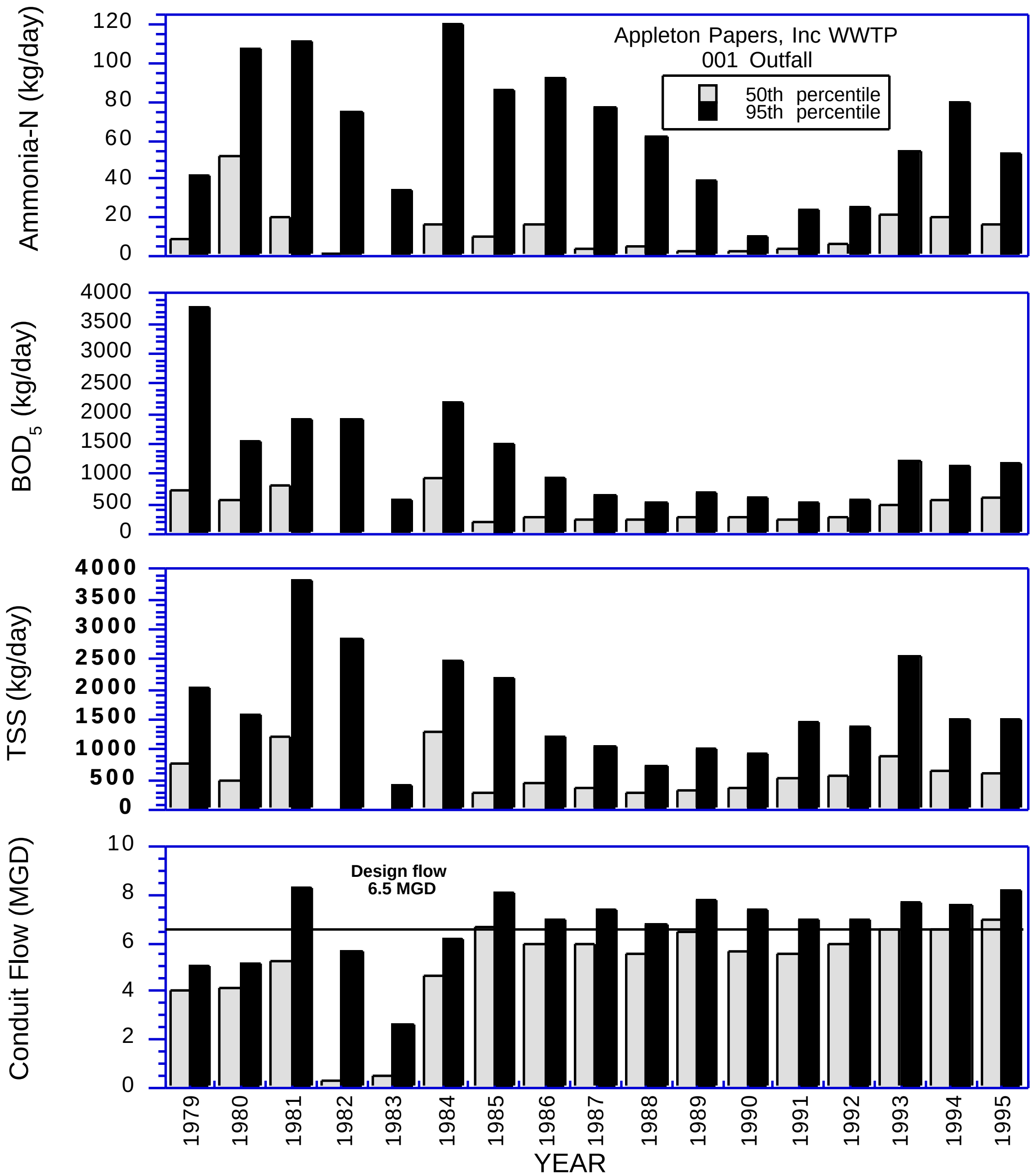


Figure 7. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from Appleton Papers, Inc. WWTP.

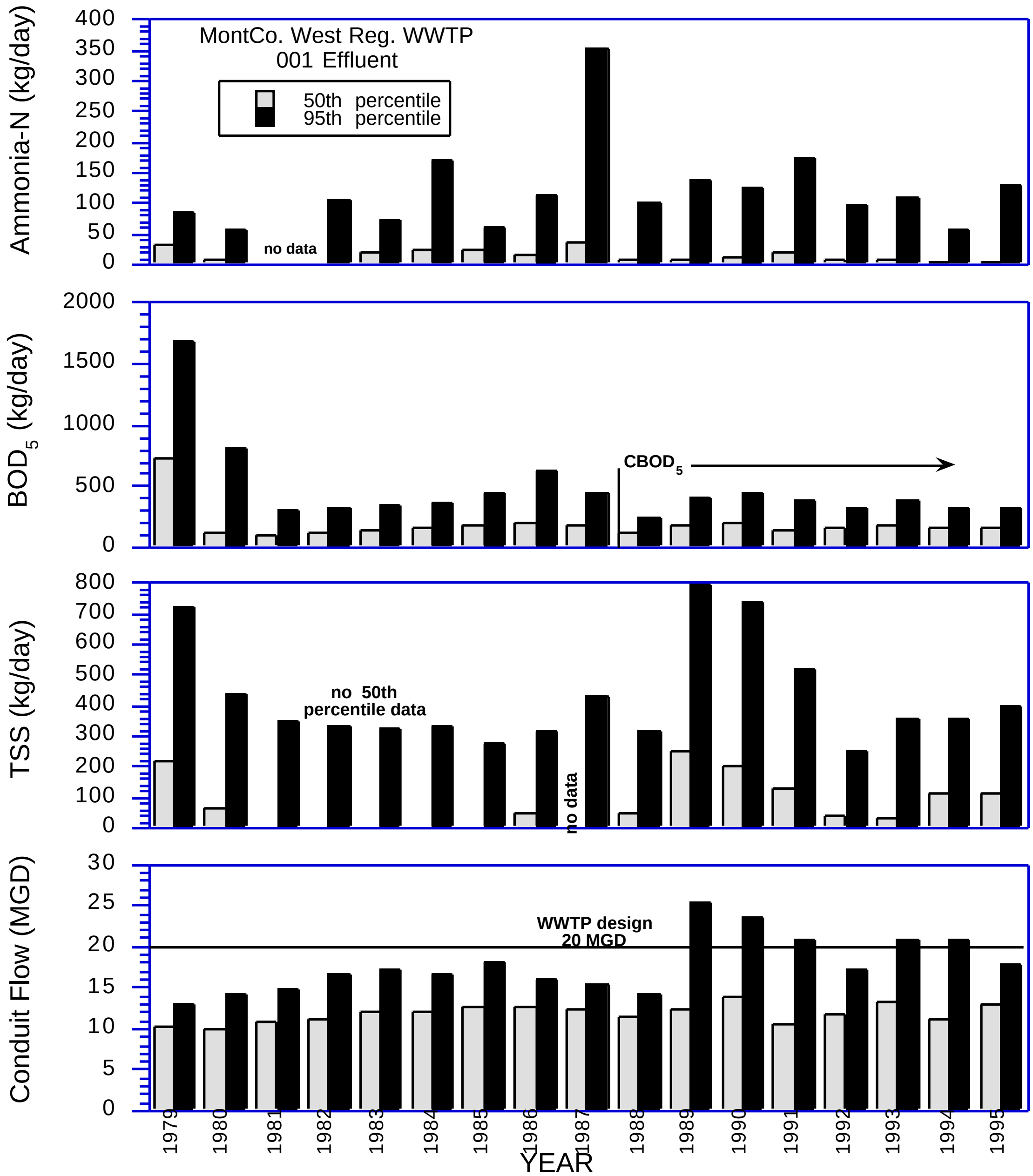


Figure 8. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Montgomery County Western Regional WWTP.

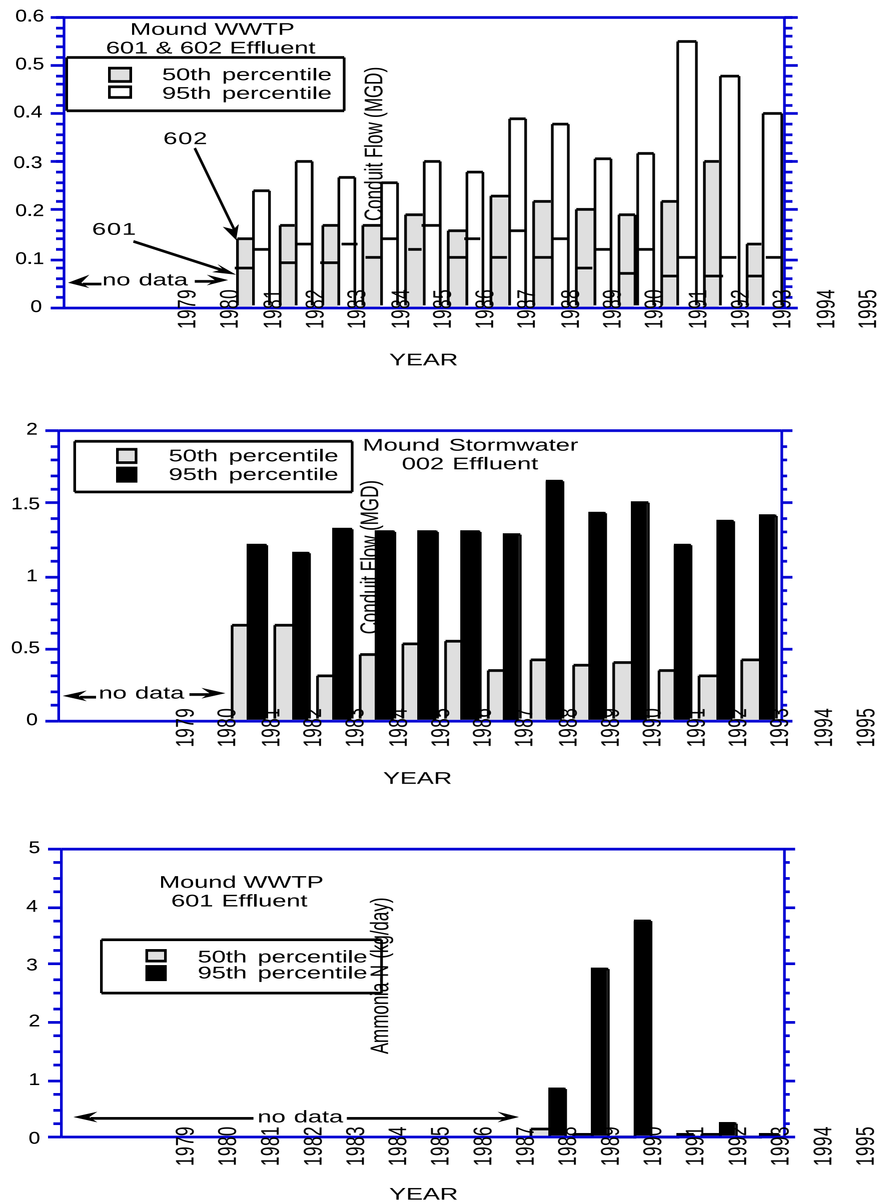


Figure 9. Median and 95th percentile loadings of flow (MGD) for Mound plant outfalls 601 and 602 (flows from 601 are below the horizontal bar, from 602 are above), 002, and ammonia-N (kg/day) for outfall 601.

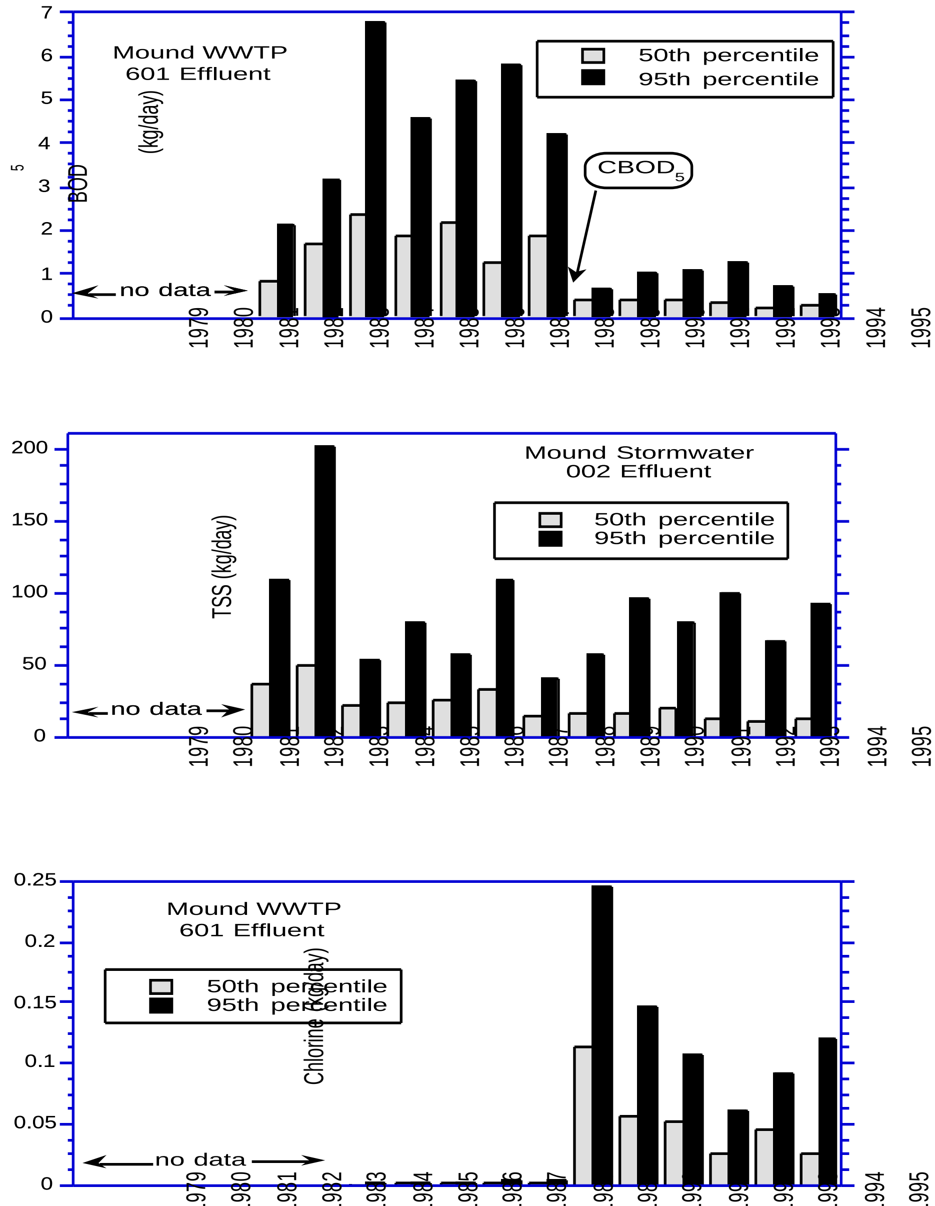


Figure 10. Median and 95th percentile annual loadings (kg/day) of BOD_5 and $CBOD_5$, total suspended solids (TSS), and chlorine from the Mound plant 601 and 002 outfalls.

continuously to the Miami-Erie canal, overflowing into the Mound Overflow Creek which eventually discharges to the Great Miami River at RM 65.08. Improvements made to the sanitary waste disposal plant include the new bar screen, grit removal and the addition of a circular clarifier which replaced the existing clarifiers.

Flow at 001 is a calculation based on the combined flows from internal monitoring stations 601 and 602. Median flow at the WWTP (internal monitoring station 601) has decreased slightly since 1990 due to a reduction in the work force. Flow at 602 showed an increase in 1989 and additional increases in 1993 and 1994. During 1995 flow from 602 returned to pre-1989 levels (Figure 9). Median levels of loadings of ammonia-N have remained low (less than 0.2 kg/day). The 95th percentile loadings showed a sharp increase during 1990-1992 (0.8, 2.9, and 3.8 kg/day respectively) with levels dropping back to 0.04 kg/day in 1993. The 601 effluent was monitored for BOD_5 from 1983 until 1990 at which time monitoring for $CBOD_5$ was required. Greater fluctuations in loading of BOD_5 were seen than for $CBOD_5$. These BOD_5 fluctuations may reflect fluctuations in nitrogenous demand from ammonia-nitrogen. Median levels of total suspended solids from the outfall 002 effluent have shown a decline over the monitoring period of 1983-1995 (Figure 10). Chlorine levels increased sharply at internal monitoring station 601 in 1990 when chlorine levels were increased in the drinking water system. Dechlorination has recently been installed to control effluent chlorine levels.

Seven violations of the NPDES permit were reported to Ohio EPA for outfall 001 and 601 between 1990-1995. The violations were limited to copper, chlorine residual, and BOD_5. Violations of the chlorine residual limit (the only parameter in violation for 1993 and 1994) occurred three times in two years.

Miamisburg WWTP (RM 65.0)

Built in 1954, the Miamisburg WWTP was upgraded several times and eventually moved in 1967 to its current location on the Great Miami River at RM 65.0. Currently the Miamisburg WWTP operates as a secondary treatment facility with a hydraulic design flow of 3.0 MGD and a peak hydraulic capacity of 6.88 MGD. Upgrades completed in 1987 included an expanded aeration chamber (6 additional tanks), expanded chlorine contact tank, two primary clarifiers, a secondary clarifier, a belt filter press (vacuum filter removed), and two thickening tanks. One additional chlorine contact basin was added and the capacity of the east side pump station was doubled. An additional 24 inch force main was installed along the Great Miami River, and a new return sludge building was constructed with three pumps. Residual treatment was modified slightly by the addition of five plastic media sludge drying beds. In 1995 the floating cover of the primary digester was removed and replaced with a Westec floating cover equipped with a mechanical sludge mixing system.

Treatment consists of influent screening and grit removal, primary settling, activated sludge aeration, secondary clarification, jet chlorination, and dechlorination. The Miamisburg WWTP is a Class III WWTP that serves a population of approximately 17,800 people with moderate growth expected. Approximately 90% of the service area has separate sewer systems while the other 10% of the area has no sewer system. The collection system has one main lift station and many pump stations throughout the city. No bypasses or overflows are present in the system. The facility is not currently required to have an industrial pretreatment program, however the plant does receive wastewater from several minor industrial dischargers.

Annual median percentile conduit flows exhibited stable trends throughout the period of record (1979-1995). Variability between median and 95th percentiles increased dramatically in 1989 through 1995 after the upgrade of 1987 (twice the median value). Median conduit flows remained below hydraulic design (3 MGD) however for the majority of years, the 95th percentile loads exceeded that design flow (Figure 11). Annual mean total load reported for 1995 was 2.85 MGD comprising 2% of the aggregate load for dischargers evaluated in the basin survey (Figure 4).

Notable reductions of ammonia-nitrogen loads were noted during the period of record (1979-1995) following the upgrade of 1987; however, variability between percentiles increased modestly after the upgrade. For the entire period of record, ammonia-N values declined steadily with the lowest median load recorded in 1995. Annual mean total load reported for 1995 was 16 kg/day comprising 5% of the aggregate load for dischargers evaluated in the basin survey (Figure 5). Upstream and downstream monitoring (801 and 901 respectively) for ammonia-N indicated upstream concentrations exceeded downstream concentrations until 1989. From 1989 to 1995, upstream and downstream ammonia-N concentrations were nearly equal demonstrating a shift toward higher levels downstream from the WWTP. This corresponds to the 1995 instream water quality survey which revealed elevated ammonia-N concentrations downstream from the Miamisburg WWTP.

The BOD_5 loadings demonstrated significant variability in percentiles from 1979-1987. Decreasing trends in percentile differences occurred by 1988 through 1995. Maximum BOD_5 loads occurred in the mid 1980s. A three year composite of annual mean loads (1993-1995) indicated Miamisburg reporting a value of 102 kg/day, comprising 1% of the total load from dischargers evaluated in the basin survey. The median and 95th percentile TSS loadings were stable throughout the period of record. Both median and 95th percentiles demonstrate gradual declines following the WWTP upgrade in 1987.

Twelve violations of the NPDES permit were reported to Ohio EPA for outfall 001 between 1990-1995. All violations were limited to three parameters: TSS, fecal coliform and ammonia-N. Violations of the NPDES permit in 1990 and 1992 were limited to fecal coliform. One violation was reported in 1993 for ammonia-N, and three TSS violations occured in 1995.

Acute bioassay tests conducted by the Ohio EPA in 1994 and 1995 exhibited no toxicity to fathead minnows *(Pimephales promelas)* or *Ceriodaphnia dubia* in effluent or instream samples. The entity conducted nine acute and chronic bioassay tests from December 1992 to December 1994. Three of the nine acute bioassay tests resulted in TU_a values between 1.25 and 1.70 for fathead minnows. Four of the nine chronic tests resulted in TU_c values from 4.17 to >10 for *C. dubia* and four of the tests reported TU_c values from 1.12 to 2.36 for fathead minnows. Descriptions of the outfall suggests that there is no rapid mixing of the effluent to the Great Miami River.

Dayton Power and Light O.H Hutchings EGS (001 - RM 64.37, 002, 003, 004)
The Dayton Power and Light Company O.H. Hutchings Electric Generating Station is a six unit (1 unit = 60 megawatt hours) coal fired peaking station built in 1946. Formerly a baseload plant, it is now used to provide electricity during times of peak electrical demand primarily during the period of June through August and December through February. The DP&L Hutchings EGS has four outfalls which discharge directly to the Great Miami River. Outfall 001(non-contact condenser cooling water) discharges just above and below the dam at river mile (RM) 64.37. The other outfalls include 002 (ash pond, bearing cooling water pond, coal pile run-off pond), 003 (storm water run-off from facility), and 004 (sanitary activated sludge package WWTP plant). The annual wastewater flow is 107.25 MGD with cooling, storm, and wastewater flows combined.

The majority of the wastewater produced from the DP&L Hutchings Station is once-through, non-contact condenser cooling water used in the steam surface condenser cooling units. The station also produces wastewater from the fly ash filters and a sanitary wastewater treatment plant. No treatment is provided for the once-through cooling water; the fly ash is settled and filtered; and the sanitary wastewater is treated by extended aeration followed by settling, tablet chlorination, and tablet dechlorination. Raw materials used by the Hutchings EGS are coal, oil, and gas with a total daily peak electric power production rate of 9408 megawatts. Upgrades to the facility occurred in the 1980s with a sewage treatment plant expansion (outfall 004) that included the addition of aeration and resulted in extending the sediment settling time. In addition, a filter building at the ash pond (002) was installed. In 1993 dechlorination was added to the WWTP.

Annual median and 95th percentile conduit flows for outfall 001 revealed high variability from 1979 to 1995 and also exhibited the highest annual wastewater volume output of all four outfalls (Figure 12). Annual median and 95th percentile conduit flows for outfall 002 exhibited high variability from 1979 to 1995 but remained fairly stable from year to year. Outfall 004 demonstrated the lowest percentile variance and volume discharge for the period of record (1979 - 1995).

Ten violations of the DP&L Hutching's NPDES permit limits were reported to Ohio EPA for outfalls 001, 002, and 004 between 1990 to 1995. All violations were limited to three parameters: total residual chlorine, $BOD_{5,}$ and temperature. No violations have been reported since 1992 with the exception of a thermal parameter violation in 1994 which exceeded the permit limit by 1.4° F. From 1990-1995, two incidences of unauthorized discharges (totaling a volume of 0.006 MG) were reported in 1990 and 1995 both due to equipment failure.

Franklin WWTP (U.S. Filter/EOS) RM 59.6

The Franklin WWTP is located in Franklin, Ohio and discharges directly to the Great Miami River at RM 59.6. The Franklin WWTP was originally commissioned in 1971 and upgraded to a secondary treatment facility that became operational in July 1989. The MCD Franklin WWTP has a design flow of 4.5 MGD with a peak hydraulic capacity of 9.0 MGD and serves surrounding areas including Franklin, Germantown, Carlisle and unincorporated areas of Montgomery and Warren Counties. The treatment process consists of influent screening, primary settling, activated sludge aeration (fine bubble-aerated lagoons), secondary clarification, chlorination, dechlorination, and post aeration. Approximately 95% of the service area has a separate sewer system while the other 5% is unsewered. The collection system has two lift stations operated by U.S. Filter/EOS, four lift stations operated by Germantown, and seven operated by Warren County. The total population served is 22,000 with moderate growth expected. The facility currently has an industrial pretreatment program in which industrial wastewater accounts for approximately 30% of the influent flow and 60% of the influent loading. Four of the local industries have dedicated force mains discharging to the influent mixing box. Significant industrial contributors include paper mills, a metal finisher, a pharmaceutical plant, and an industrial laundry.

In 1995, the Franklin WWTP reported a mean discharge flow of 3.0 MGD which comprised 2% of the total effluent discharged by point sources to the study area in 1995 (Figure 4). Conduit flows showed only slight variability throughout the period of record (1979-1995). Variability between the median and 95th percentile values was relatively low throughout the period of record except during 1989-1991 when the 95th percentile flow exceeded the hydraulic design of 4.5 MGD following the major upgrade in 1989. For the majority of years both the median and 95th percentiles remained below the plant design flow (Figure 13).

Long-term effluent quality monitoring showed significant reductions in the loadings of ammonia-N for the period of record (1979-1995). This was due to increased nitrification from process improvements associated with the 1989 upgrade. While the upgrade effectively reduced the previous ammonia-N impacts, there were subsequent increases in loadings of nitrate-nitrite-N. In 1995 an annual mean load of 3.0 kg/day of ammonia-N was reported which comprised only 1% of the total load of ammonia-N for all point source dischargers evaluated in the 1995 survey (Figure 5).

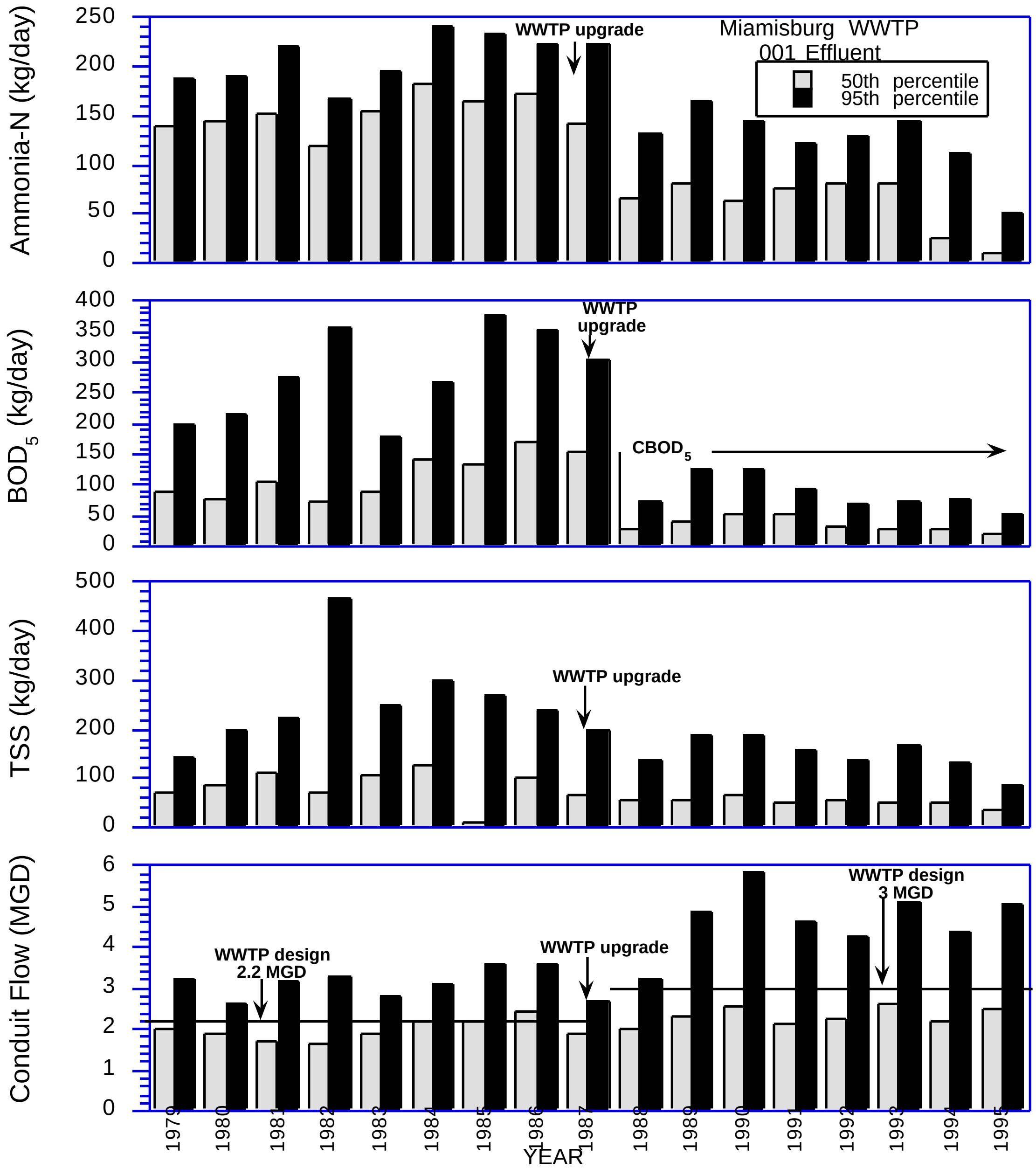
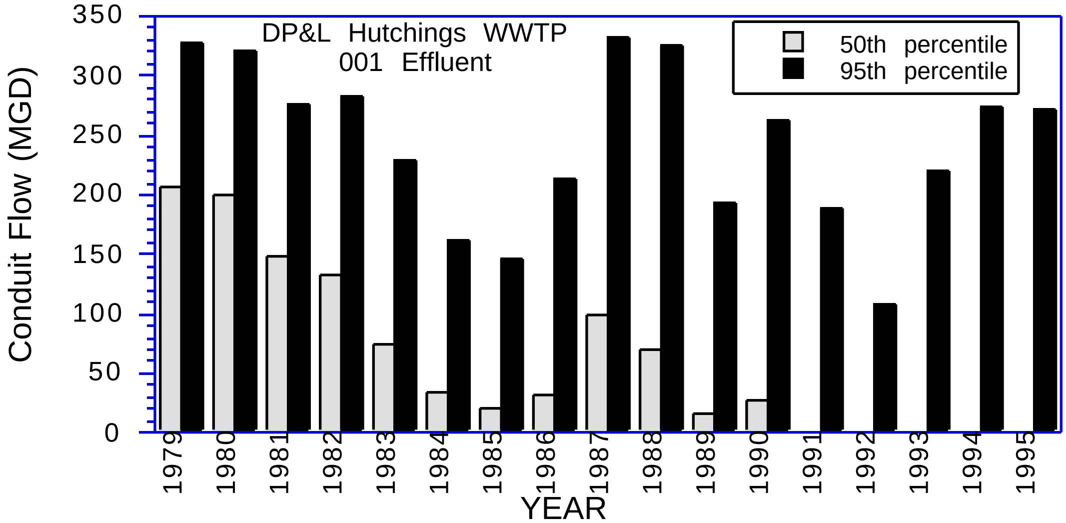


Figure 11 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Miamisburg WWTP.



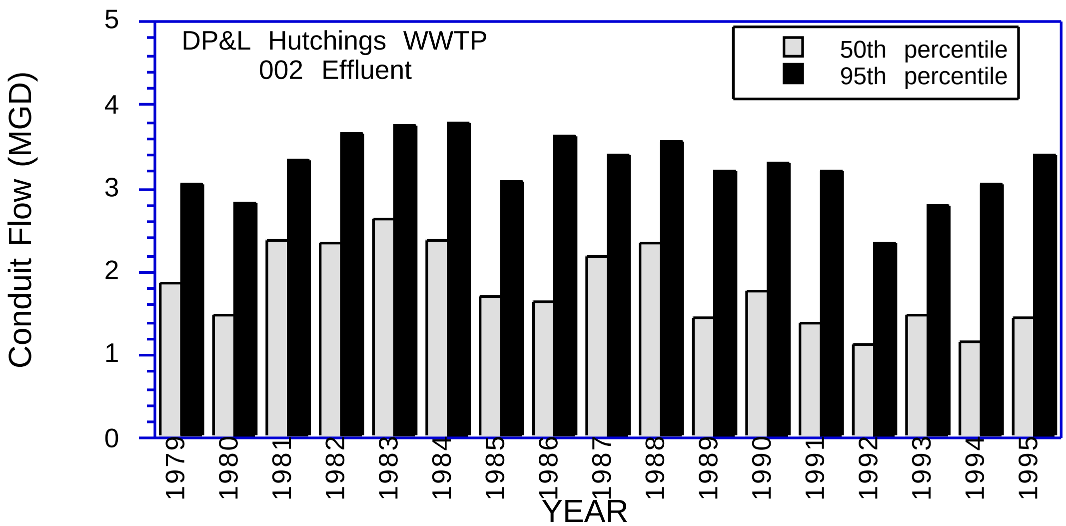


Figure 12 Annual median and 95th percentile conduit flow (MGD) from the DP&L Hutchings WWTP (outfalls 001 and 002).

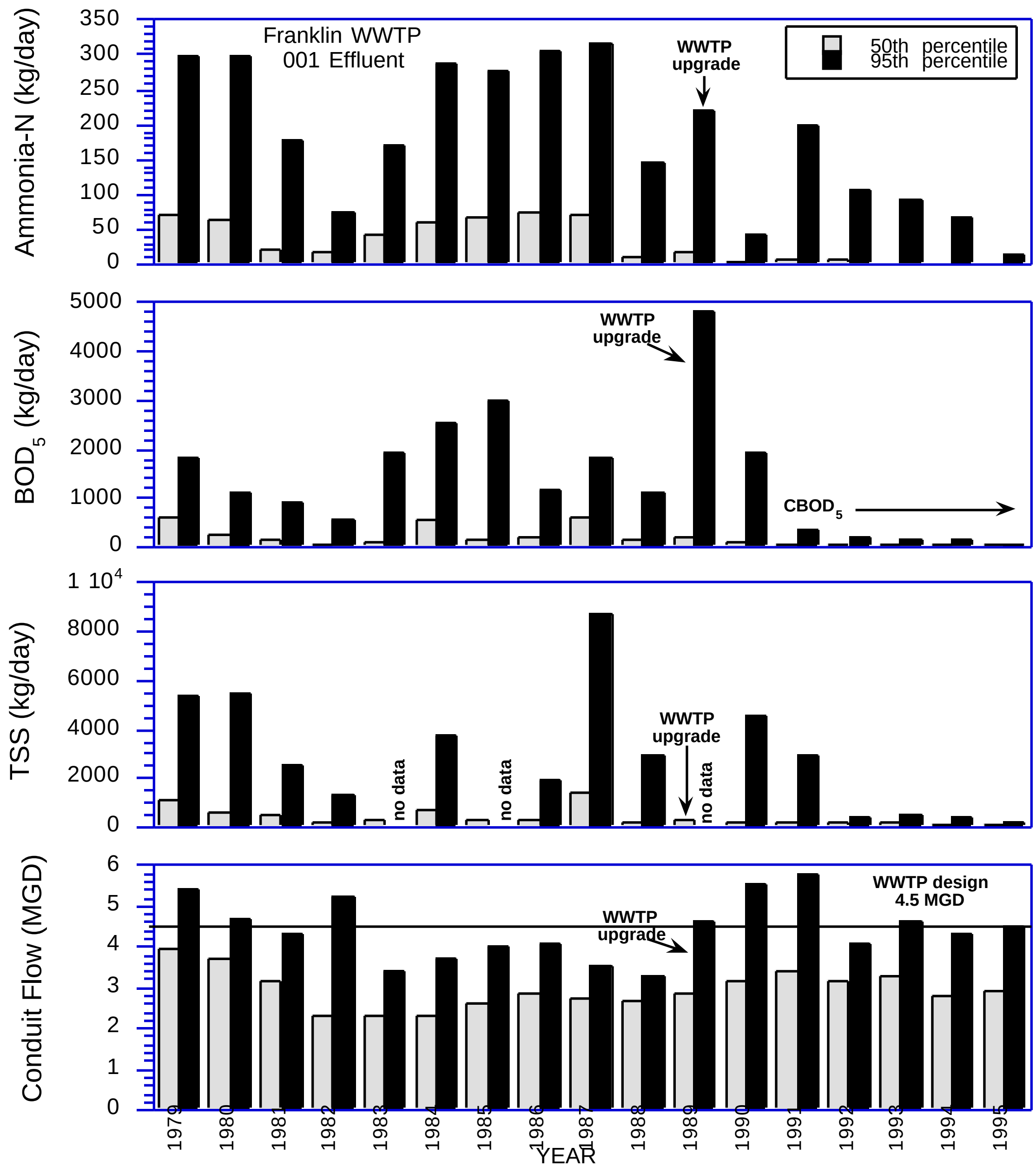


Figure 13 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Franklin WWTP.

Median BOD_5 loadings remained fairly stable through the period of record, but declined after 1987. The 95th percentile loadings exhibited significant variability reaching a peak of 4,829 kg/day in 1989 suggesting treatment irregularities associated with the plant upgrade. Differences between the median and the 95th percentile BOD_5 loadings decreased markedly from 1990 to 1995 (Figure 12). Mean annual loadings of $cBOD_5$ during 1993-1995 equaled 152 kg/day which comprised 2% of the load for all point source dischargers evaluated in the 1995 survey.

Annual median total suspended solids (TSS) loadings exhibited a stable trend from 1979 to 1995. Differences between the median and 95th percentile values indicated a great deal of variability until 1991. During 1979-1991 the annual 95th percentile values were generally 100% higher than the median, but differences between the median and the 95th percentile loadings decreased markedly from 1992 to 1995 (Figure 13).

Twenty-one (21) violations of NPDES permit limitations were reported to Ohio EPA for outfall 001 between 1990-1995. The violations were limited to four parameters; TSS, BOD_5, residual chlorine , and dissolved oxygen (D.O.). Forty-seven percent (47%) of the violations occurred in 1990 (60% of which were TSS), and 23% occurred in 1991 and 1992. No violations were reported after May 1993. From 1990-1995, five unauthorized releases were reported for the MCD Franklin Area WWTP. Three of the five events were weather related and four of the events occurred in 1995 primarily as overflows to Clear Creek from lift stations.

Four acute and chronic bioassay tests were conducted by the entity in the winter, spring and summer of 1994-1995. All four entity generated bioassay tests indicated no acute toxicity to either *Ceriodaphnia dubia or Pimephales promelas*. One chronic bioassay test resulted in an exceedence of the allowable effluent toxicity (AET) for reproduction in *C. dubia* as well as an exceedence of the AET for growth in fathead minnows *(P. promelas)*. Four acute bioassay tests were conducted by Ohio EPA in the summer and early fall of 1989 and 1995. The June 1989 test resulted in marginal toxicity to fathead minnows in two effluent samples and was lethal to *C. dubia* in one effluent grab sample.

Bay West Paper Corp. RM 52.17

Bay West Paper discharges directly to the Great Miami River at RM 52.17. The plant is located in the city of Middletown and became operational in 1994. The Bay West Paper facility is designed to treat 3.7 MGD of wastewater generated from the manufacturing of toilet paper and paper towels. The treatment process consists of a thickener, a primary clarifier, two aeration basins, and two secondary clarifiers. Solids removed in the treatment process are dewatered with a sludge press and then disposed of at a sanitary landfill. Bay West Paper can divert wastewater to the Middletown WWTP in the event of a plant upset or during extreme low flow conditions in the Great Miami River.

Annual median and 95th percentile conduit flow was below the hydraulic plant design of 3.7 MGD for 1994 and 1995. Variability between the median and 95th percentile values was minimal for the two years reported. Annual median and 95th percentile ammonia-nitrogen loadings were significantly higher in 1995 than 1994. The $cBOD_5$ and total suspended solids (TSS) loads similar both years with variability between the median and 95th percentiles indicative of treatment inconsistency (Figure 14).

Twelve (12) violations of NPDES permit limitations were reported to Ohio EPA between 1994 and 1995. The violations, in declining order of frequency, were limited to three parameters: TSS, $cBOD_5$, and dissolved oxygen (D.O.). Nearly all (92%) of the violations occurred in 1995. Bay West Paper reported one unauthorized discharge of 48,000 gallons of untreated effluent to the mainstem due to a broken sewer line in April 1994.

AK Steel (RM 51.4, Dicks Creek and the North Branch of Dicks Creek)

AK Steel discharges to five locations on the Great Miami River, Dicks Creek, and the North Branch of Dicks Creek. Outfalls 002, 003, and 015 discharge to Dicks Creek at river miles (RM) 2.92, 3.80, and 4.15, respectively; outfall 004 discharges to the North Branch of Dicks Creek at RM 0.22; and outfall 011 discharges directly to the Great Miami River at RM 51.4. The plant produces flat rolled steel and intermediate products of pig iron and coke in addition to steel finishing and coating. For more information regarding AK Steel outfalls 002, 003, 004, and 015, on Dicks Creek and the North Branch of Dicks Creek, see page 97 (loading section for The Great Miami River Tributaries).

Outfall 011 consists of effluents from the north terminal treatment plant (NTTP), the blast furnace/sinter plant WWTP, non-contact cooling water, and storm water runoff. The NTTP (monitored under station 614) was installed in 1979 and was designed for 1.7 MGD. It provides flocculation, clarification, neutralization, and aeration to the wastewaters generated from cold forming, acid pickling, alkaline cleaning, hot coating, metal finishing, coal coating, inorganic chemicals, and oxygen and nitrogen production processes. The average discharge volume for station 614 was 0.691 MGD in 1995. The blast furnace/sinter plant treatment (monitored under station 613) was installed in 1978 and modified in 1986. It provides chemical precipitation, flocculation, and sedimentation to the wastewaters generated from the iron making and sintering processes and was designed for 2.16 MGD. The average discharge volume for station 613 was 1.15 MGD in 1995. The total average discharge volume for outfall 011 was 7.73 MGD in 1995. Additional AK Steel outfalls are located in Dicks Creek (002, 003, and 015) and the North Branch of Dicks Creek (004).

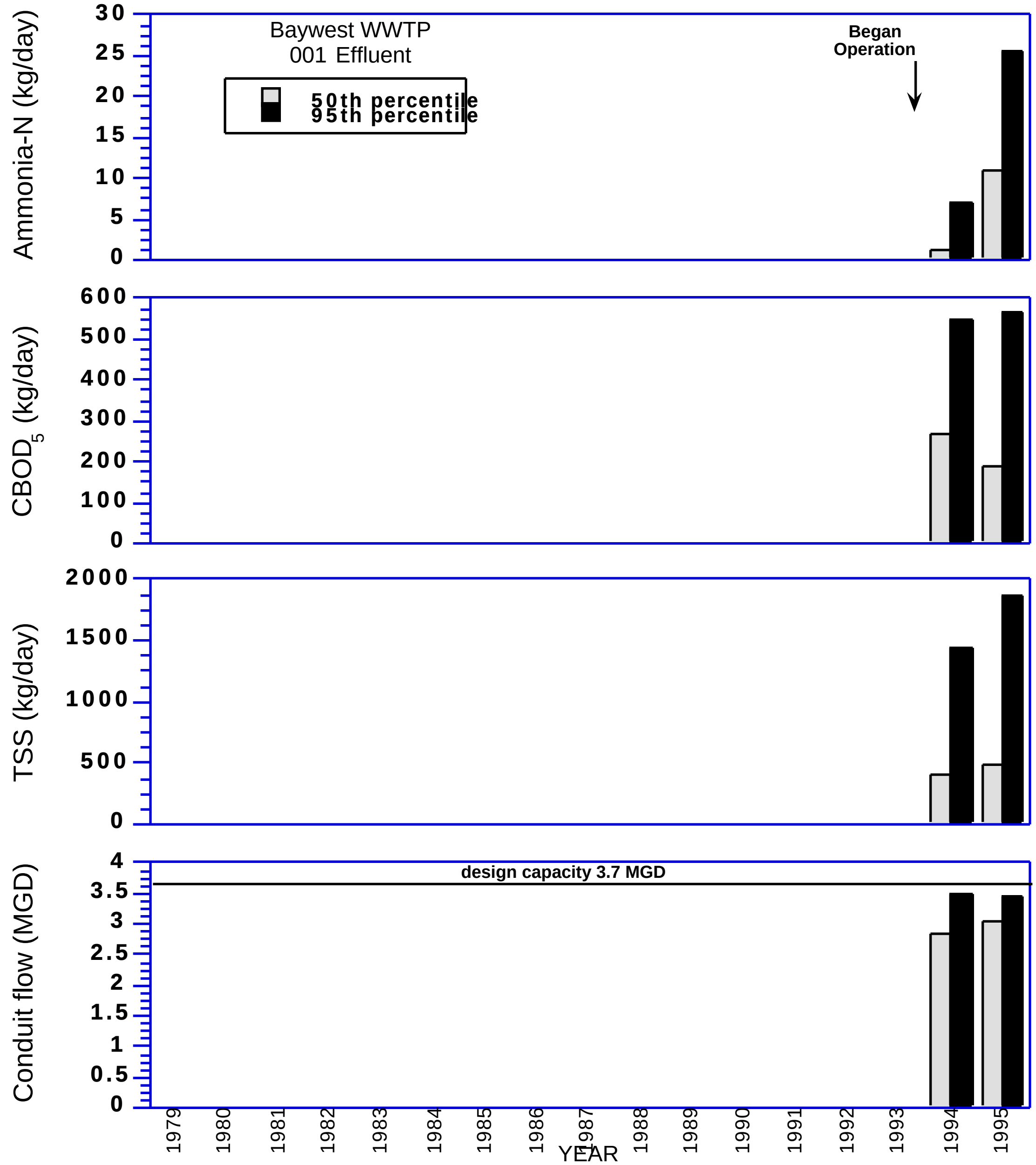


Figure 14. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from theBaywest WWTP.

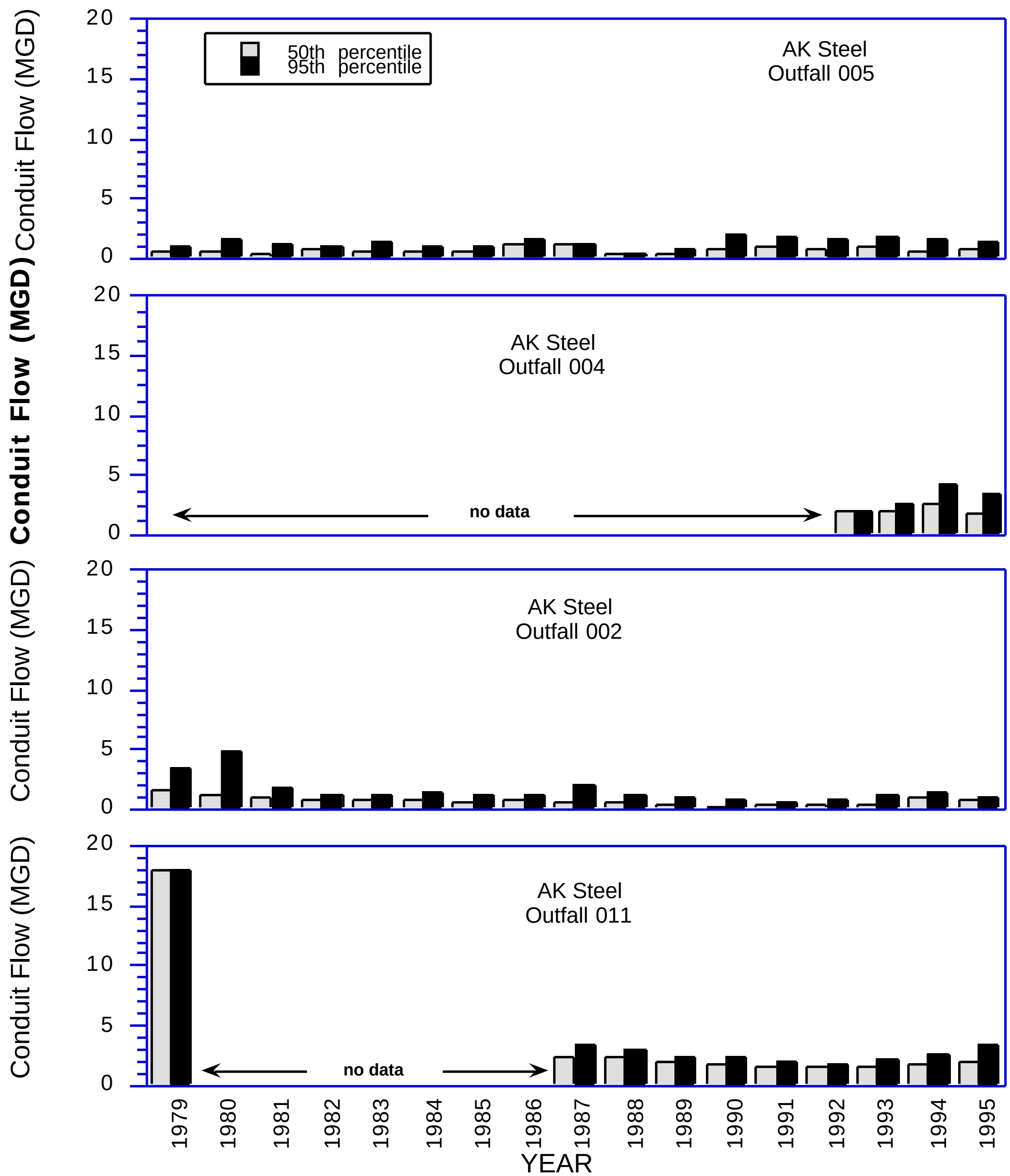


Figure 15. Annual median and 95th percentile conduit flow (MGD) from AK Steel for outfalls 011, 002, 004 and 005.

Outfall 011 demonstrated the lowest variability of annual median and 95th percentile conduit flows for all of the outfalls (Figure 15). Mean ammonia-N loadings in 1995 for outfalls 002, 003, 004, and 015 totaled 25 kg/day comprising 8% of the aggregate load for the point source dischargers evaluated in the 1995 survey (Figure 5).

A total of 136 violations of NPDES permit limitations were reported to Ohio EPA between 1990-1995 for the following outfalls and internal monitoring stations: 001, 002, 003, 005, 011, 015, 613, 631 and 642. Ninety-four (94) percent of the violations, in declining order of frequency, were limited to the following parameters: zinc, phenol, total suspended solids (TSS), free cyanide, flow, ammonia-N, and nickel. Forty (40) percent of the NPDES violations that occurred in 1994 and 1995 alone included free cyanide, zinc, phenolic, ammonia-N, and flow. Thirty-five (35) percent of the NPDES violations were reported from internal monitoring station 642 (zinc, TSS, flow) and 29% of the violations were from internal monitoring station 613 (phenol and ammonia-N). The TSS violations were caused by a blower problem to the clarifier carryover and elevated pH caused $CaSO_4$ to precipitate. The cyanide violations were blast furnace related. Flow violations were caused by a flow meter malfunction, flow restriction in-line, and anti-foam problems. The ammonia-N violations were caused by a restriction in the discharge line to the Great Miami River. Zinc violations resulted from several sources including an electrical problem in the sand filter cycle, a solids problem at the basic oxygen furnace (BOF), low flows, lab errors, and by a leak of non-contact cooling water.

Four chronic bioassays for outfall 011 conducted by the entity from June 1993 to March 1994 resulted in chronic toxicity units of 3.53, 2.0, 2.04, and 3.54 TU_c to fathead minnows and one test resulted in a 1.12 TU_c to *Ceriodaphnia.* A November 1994 Ohio EPA bioassay reported no acute toxicity to either test organism, however, a May 1995 Ohio EPA bioassay reported an acute toxicity unit of 2.6 TU_a to *Ceriodaphnia* and significant toxicity to fathead minnows. Macroinvertebrate communities sampled in the 011 mixing zone during the 1995 survey were characteristic of a toxic impact. Fish community indices decreased from full attainment of WWH biocriteria upstream from AK Steel (IBI = 39, MIwb = 9.5) to non-attainment downstream (IBI = 33, MIwb = 7.5).

Ohio EPA Emergency Response spill records from 1978 to 1991 include 58 reported spills to Dicks Creek or the Great Miami River that were attributed to AK Steel. The Ohio EPA spill records from 1992 to 1995 contained 23 reported incidences attributable to AK Steel. The Ohio Department of Natural Resources fish kill records from 1965 to 1991 included 18 fish kill investigations believed to have been caused by the AK Steel facility.

Middletown WWTP (RM 48.29)

The Middletown WWTP discharges directly to the Great Miami River at river mile (RM) 48.29.

The Middletown WWTP became operational in 1958 providing primary treatment. In 1972, the plant was upgraded to a secondary treatment facility which included the addition of one primary settling tank, three aeration tanks, three secondary clarifiers, three chlorine contact tanks, and a complete sludge dewatering and incineration facility. This upgrade increased the hydraulic design capacity to 23 MGD and removed 85% of the sewage solids. The plant also added aeration chambers and vacuum filters in 1981, a 60 MGD effluent pump station in 1994, and a grit chamber and dechlorination facility in 1995. Currently the hydraulic design flow is 26 MGD with a peak hydraulic capacity of 48 MGD. The treatment process presently consists of influent screening and grit removal, primary settling, activated sludge aeration, secondary clarification, chlorination, dechlorination, and sludge dewatering. Approximately 62% of the service area has combined sewers and the remaining 35% of the service area has separate sewers. The collection system has 10 lift stations without bypasses or overflows. Eight permitted combined sewer overflows (CSOs) exist in the system discharging between RM 52.17 to 51.0. The facility currently has an industrial pretreatment program for 15 significant industrial users which contribute 65% of the daily influent flow. Some of the industrial contributors include an integrated steel mill, paper mills, and electroplating shops.

Annual median conduit flow was relatively stable throughout the period of record (1979-1995) exceeding the hydraulic design of 26 MGD only once in 1993. Variability between the median and 95th percentile values was low throughout the period of record (1979-1995) indicating more stable treatment processes (Figure 16). The annual mean flow reported for 1995 was 21 MGD comprising 13% of the aggregate flow discharged by all point source dischargers evaluated in the 1995 survey (Figure 4). Median ammonia-nitrogen loadings for the period of record exhibited declining trends through 1995. Variability between the median and 95th percentile values showed no discernable trend as variability declined in the early 1980s and increased to the most significant differences in 1986 and 1989. The loads became less variable during 1991-1995 with little variance between the median and 95th percentile values indicating more consistent WWTP performance. Annual mean total ammonia-nitrogen load reported for 1995 was 7.4 kg/day which comprised 2% of the aggregate load for all point source dischargers evaluated in the 1995 survey (Figure 5).

The median BOD_5 loadings remained fairly stable through the period of record (Figure 16). Maximum BOD_5 loads occurred during the mid 1980s, but by 1992 median and 95th percentile values appeared to stabilize. Annual $cBOD_5$ mean total loadings reported from 1993-1995 was 1158 kg/day which comprised 17% of the aggregate load for all point source dischargers evaluated in the 1995 survey.

Annual median total suspended solids (TSS) loadings exhibited a stable trend throughout the period of record. The 95th percentile TSS loads were erratic and significantly higher than the median loadings from 1979 to 1991, but the relationship stabilized after 1992 (Figure 16).

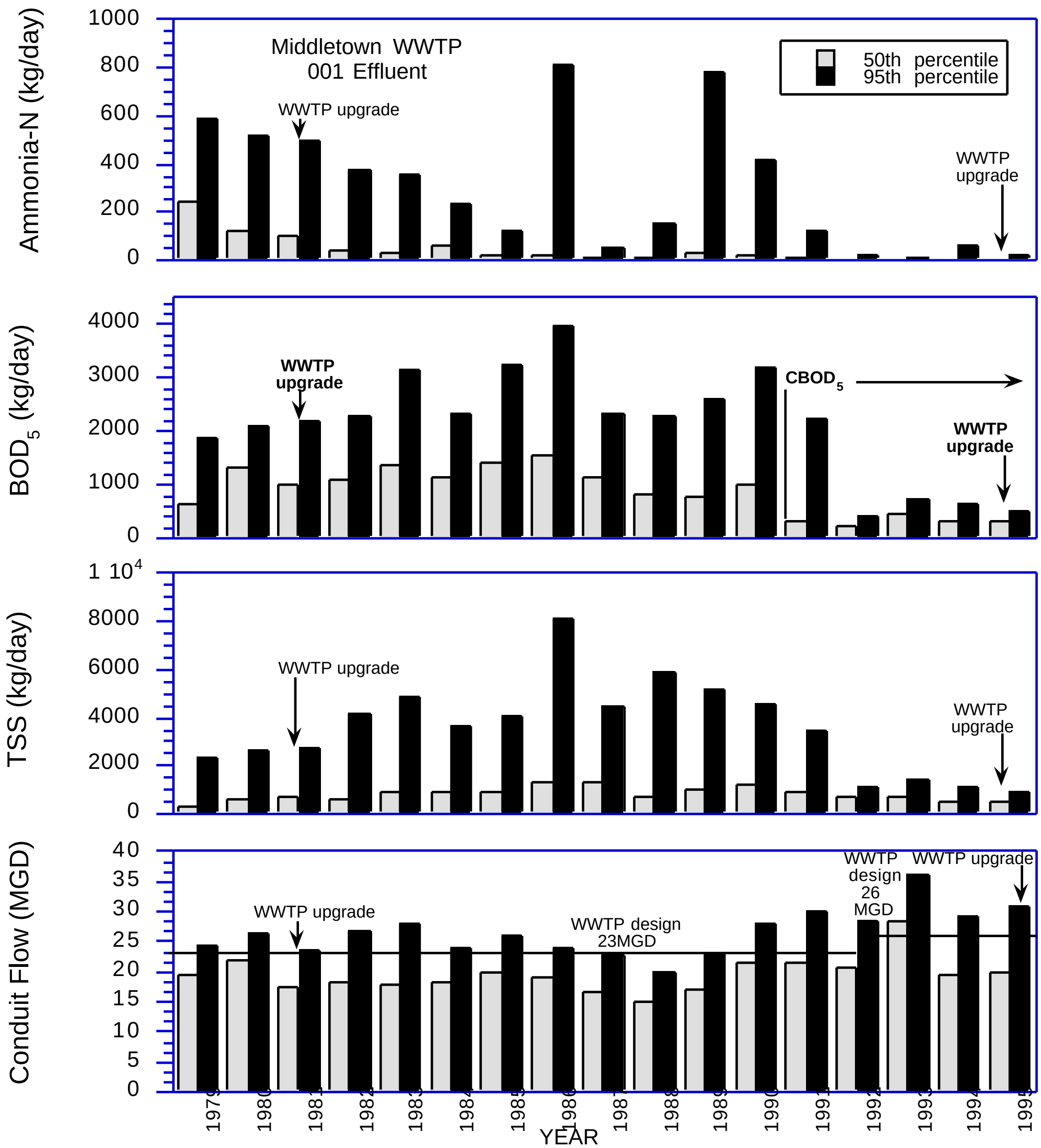


Figure 16 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Middletown WWTP.

From 1990-1995, 210 discharge events were reported from eight CSO locations. Five of the eight CSOs discharge directly to the Great Miami River mainstem while the other three locations discharge to the Middletown Hydraulic Canal. An estimated 1372 MG of untreated effluent hasbeen discharged to the waterways in the period from 1990-1995. The overflow point with the greatest estimated volume was CSO 007 which discharges directly to the Great Miami River. CSO 010 and 009 (both discharging to the Hydraulic Canal) were the second and third highest in total volume of effluent.

Fifty (50) violations of the NPDES permit were reported to Ohio EPA for outfall 001 between 1990-1995. The violations, in declining order of frequency, were limited to three parameters: selenium, cyanide, and TSS. From 1990 to 1993, 17 reported NPDES violations occurred. In 1994 twenty-six (26) violations were reported with selenium (54%) and cyanide (46%) the most frequent. Seven (7) violations were reported in 1995 of which 57% were cyanide exceedences.

Acute bioassay tests conducted by the Ohio EPA in 1991 and 1994 indicated no toxicity to *P. promelas* or *C. dubia* in effluent or instream samples. Four acute and four chronic entitygenerated bioassay tests were performed in the winter, spring, and summer of 1992 and 1993. None of these tests resulted in an exceedence above the allowable effluent toxicity (AET) limit and no significant mortality, reproductive effects, or growth effects were noted. Four chronic bioassay tests conducted by the entity from 1992-1994 revealed no effects to fathead minnows for growth or reproduction. The four tests also revealed no effects to *C. dubia* for survival, but two of the four tests resulted in a TU_c of 7.45 for reproduction.

Butler County LeSourdsville WWTP (RM 45.65)

The Butler County LeSourdsville WWTP discharges directly to the Great Miami River at RM 45.65. The WWTP was constructed in 1977 with a hydraulic design flow of 4 MGD. An upgrade in 1994 increased the hydraulic design flow to 12 MGD (expanding the oxidation ditch to 6 MGD) and added a new influent pump station and preliminary treatment building. The WWTP was last upgraded in 1995 and currently has a hydraulic design flow of 12 MGD with a hydraulic capacity of 28 MGD. The treatment process includes mechanical screening, grit removal, activated sludge digestion, secondary clarification, and UV disinfection. Primary clarification and tertiary filtration is also present for the rotating biological contact treatment system. Solids removed from the WWTP are land applied. The collection system consists of separate sewers, with 95 % of the service area sewered. The service population is approximately 35,000 with moderate growth expected.

Annual median and 95th percentile conduit flows demonstrated an overall increase through the period of record (1979-1995). Annual median flows remained below the hydraulic design (except in 1990), but 95th percentile flows exceeded the design capacity in most years. Variability between the median and 95th percentile flows remained low throughout the period of record with the exception of 1993 to 1995 when variability nearly doubled (Figure 17). The mean annual conduit flow to the mainstem for 1995 was 5.57 MGD which comprised 3.4% of the aggregate flow from all point source dischargers evaluated in the 1995 survey (Figure 4).

Ammonia-nitrogen loadings for the period of record exhibited high variability indicative of inconsistent plant performance (Figure 17). A marked decline in loadings occurred following the plant upgrade of 1990, but overall loadings and variability between the median and 95th percentile values have steadily increased. Peak loadings were subsequently noted prior to each upgrade year (1989, 1990, 1993, 1994). Median values which exceeded 30 kg/day in the mid-1980s were apparent again following the plant upgrade of 1990. Violations of NPDES permit limits were noted in 1990 and 1993 while a slight increase in ammonia-N was observed in the mainstem just downstream of the WWTP. In 1995, the median ammonia-N load to the mainstem was 94 kg/day which comprised 30% of the aggregate load for all point source dischargers evaluated in the 1995 survey (the largest source of ammonia-N) (Figure 5). Median BOD_5 loadings were fairly stable through the period of record. Variability between median and 95th percentile values was low until 1989 when differences more than doubled and tripled through 1995. Ambient water chemistry data revealed a slight reduction in BOD_5 values downstream from the WWTP, however, 10 violations of the NPDES permit limit for $cBOD_5$ occurred in 1994 and 1995. Between 1993 and 1995, the WWTP discharged a $cBOD_5$ loading of 534 kg/day which comprised 8% of the aggregate load for all point source dischargers evaluated in the 1995 survey.

Annual median and 95th percentile total suspended solids (TSS) loadings exhibited a fairly stable trend from 1979 to 1990, but began to increase following the subsequent plant upgrades. Variability between the median and 95th percentile TSS loadings also sharply increased following the 1990 plant upgrade. The variability between annual median and 95th percentile loads were the highest from 1993 to 1995 suggesting that plant upsets and treatment variability were associated with construction during the major WWTP upgrades.Sixty-five (65) violations of NPDES permit limitations were reported to Ohio EPA for outfall 001 between 1990 and 1995. The violations were limited to the following parameters: TSS (35%), ammonia-N (20%) and $cBOD_5$ (12%). The majority of the violations occurred in 1993 and 1995. In 1993 TSS (50%) and ammonia-N (45%) were the most commonly reported violations. The most common NPDES permit violations in 1995 were TSS (35%) and $cBOD_5$.

Four acute and four chronic bioassay tests were conducted on *P. promelas* and *C. dubia* by the entity in the spring and summer of 1993. The acute bioassay tests indicated no exceedences of the allowable effluent toxicity (AET) for either test organisms in effluent samples, but one of four tests resulted in a TU_a of 1.14 to fathead minnows. Four chronic bioassay tests conducted by the entity

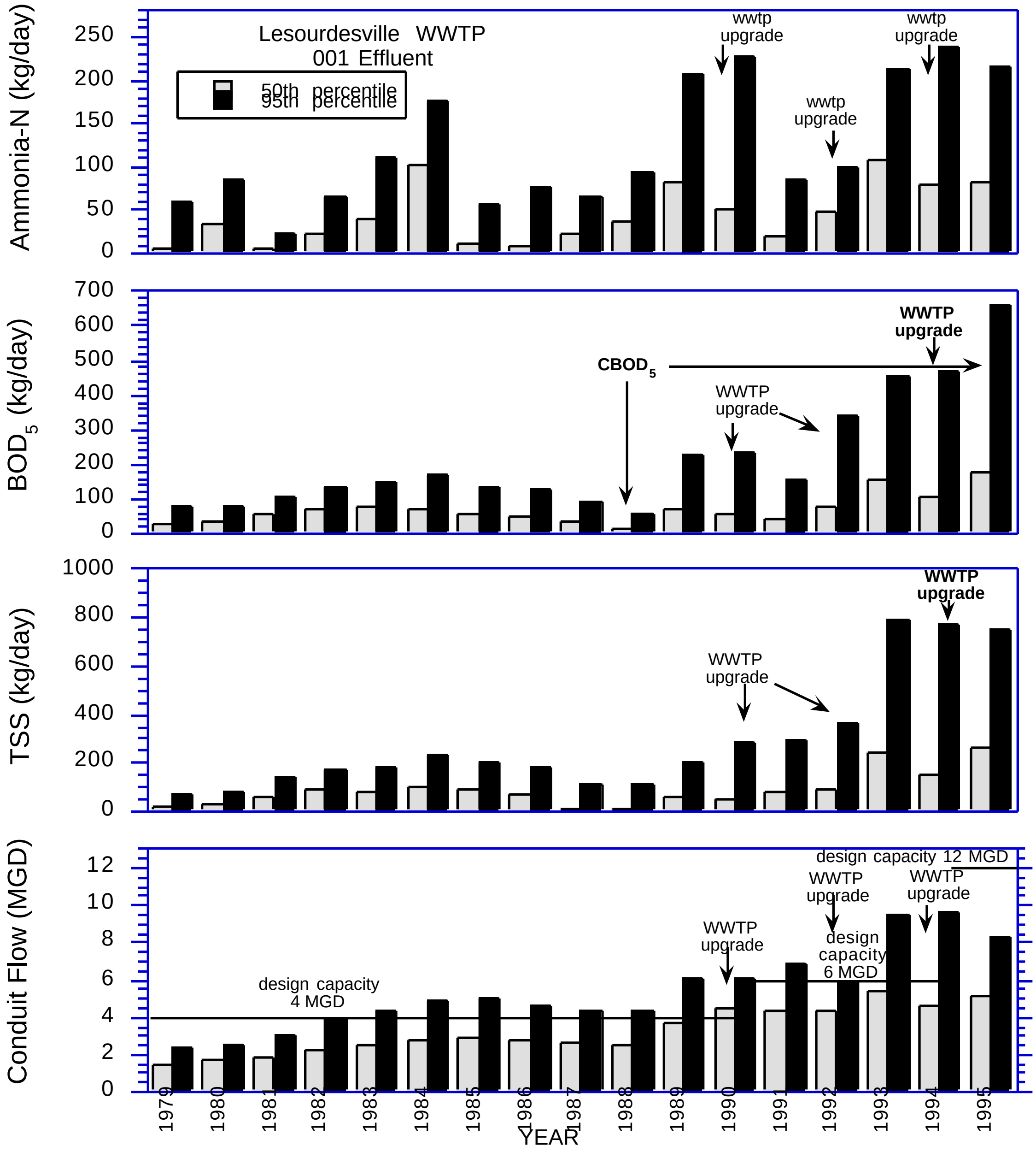


Figure 17 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Butler County LeSourdesville WWTP.

in spring and summer of 1993 resulted in no exceedences of the AET for either test organisms in effluent samples. Two of the four tests, however, resulted in a TU_c of 1.34 to *C. dubia* for reproduction, and one of the four tests resulted in a TU_c of 2.36 to fathead minnows for survival and growth. Four acute bioassay tests were conducted by the Ohio EPA in 1991, 1994, and 1995. One test in 1995 showed acute toxicity to fathead minnows in effluent samples. Mortality was 20, 5, and 30 percent in the March 27, March 28, and composite effluent samples, respectively. No mortality or adverse acute effects were observed for *C. dubia.* Previous tests conducted in 1991 and 1994 indicated no significant adverse effects to either test organism exposed to effluent or river samples.

From 1990-1995, the Butler Co. LeSourdsville WWTP reported 17 unauthorized discharge events with most (47%) occurring in 1995. More than one-half of the overflows were due to weather related events and 24% occurred over a one year period at the Greencrest lift station. Forty-seven (47) percent of the overflows occurred at manholes draining to various tributaries (Deer Creek, Sharon Creek, Gregory Creek, Crawford Creek, Four Mile Creek) to the Great Miami River. Thirty-five (35) percent of overflows were attributed to sewer system blockages and vandalism. The total estimated volume of untreated effluent discharged during 1990-1995 was 543 MG.

Miller Brewery (RM 43.7)

The Miller Brewing Company discharges directly to the Great Miami River at river mile (RM) 43.7 on a continuous basis and became operational in 1991. The treatment facility was designed to treat 6.1 MGD of wastewater generated from the production of malt beverages and consists of mechanical screening, grit removal, six aeration basins, four secondary clarifiers, and two polishing lagoons. Solids removed in the treatment process are dewatered with a sludge press and are either land applied or disposed at a sanitary landfill. Sanitary wastewater generated from the employees is treated by the Butler County LeSourdesville WWTP.

Annual median and 95th percentile conduit flow reported for the operational years (1991-1995) showed low variability and flows well below the hydraulic plant design of 6.1 MGD (Figure 18). Annual median flow reported for 1995 was 2.24 MGD which comprised 1% of the aggregate flow for all point source dischargers evaluated in the 1995 survey (Figure 4). Since production began in 1991, the 95th percentile loadings of ammonia-N were nearly double the median values. The annual median loading for ammonia-N reported for 1995 was 3.39 kg/day which comprised 1% of the aggregate for all point source dischargers evaluated in the 1995 survey (Figure 5). The $cBOD_5$ data demonstrated an increasing trend through the five year period of record with the largest differences between median and 95th percentile values occurring in 1995 when the 95th percentile was five times greater than the median value (Figure 17). Annual median total suspended solids (TSS) loads showed little variability between 1991 and 1995, but 95th percentile values were three to five times greater than the annual median values.

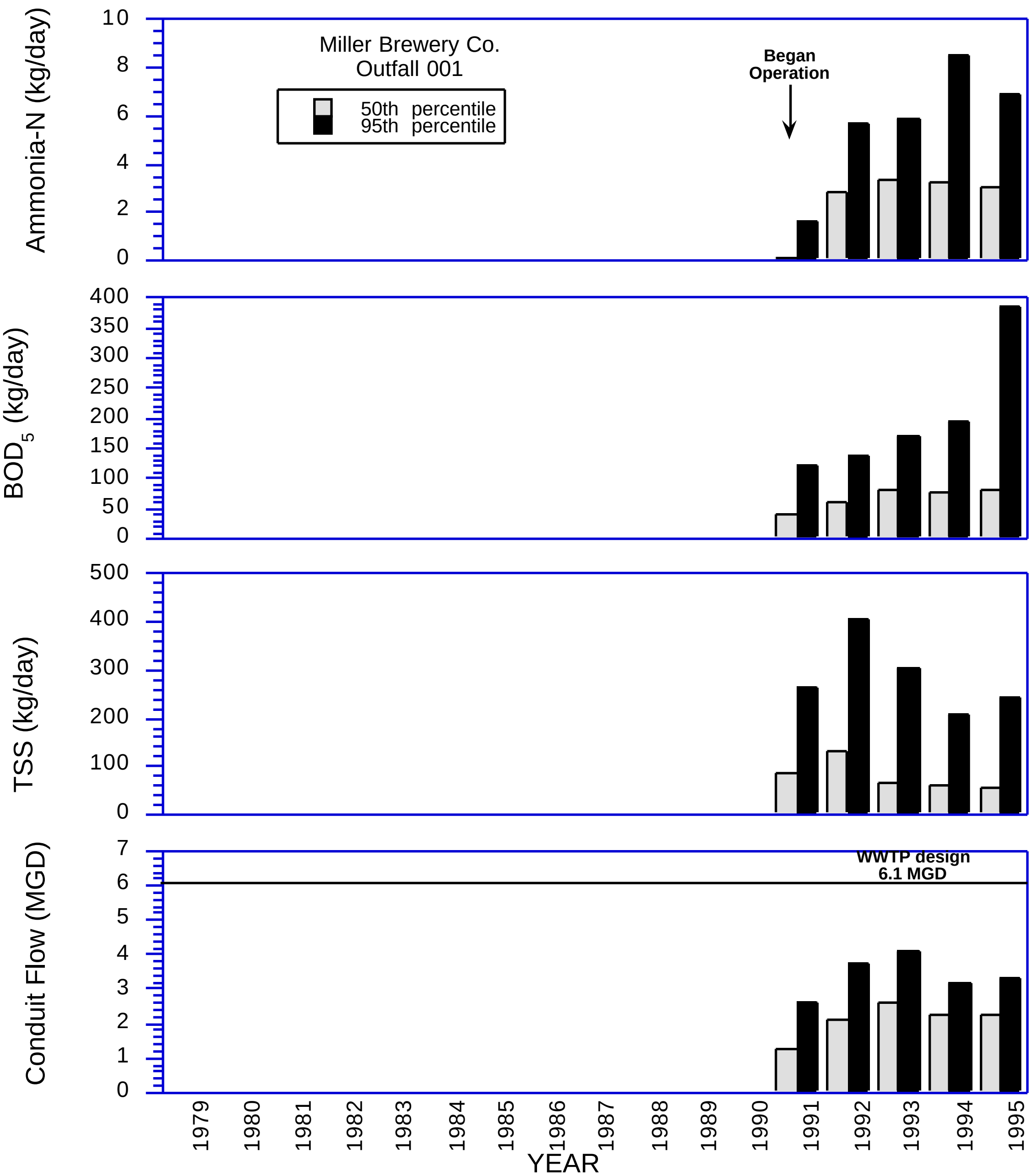


Figure 18. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Miller Brewery Company.

Two violations of the Miller Brewery NPDES permit were reported to Ohio EPA for the period of record (1991-1995). The violations (pH and ammonia-N) occurred in February of 1993 due to awastewater spill of an unknown quantity.

Two acute bioassay tests were conducted by the Ohio EPA in the fall of 1992 and the summer of 1995 using *P. promelas* and *C. dubia* as test organisms. The 1992 bioassay results did not exhibit any significant toxicity to either test organism for effluent or instream samples. The 1995 test resulted in acute toxicity (60% mortality) to *C. dubia* in one effluent grab sample.

Hamilton Municipal Electric Plant

The Hamilton Municipal Electric Plant has been operated by the city of Hamilton since July, 1895. The electric plant is composed of three steam boiler/generator units and two gas turbine generators with a capacity of 122 mega-watts and an average annual net generation of 227 million kilowatt-hours. Daily production rates are 135 megawatts in the summer and 75 megawatts in the winter. Approximately 25,000 tons of coal is used per year as well as 3,263,300 million ft^3 per year of gas and 18,000 gallons per year of fuel oil. The facility uses once-through cooling water provided by the Hamilton-Rossville hydraulic canal (54 MGD) and city water wells (annual average of 855,000 gallons per day (GPD)) for a total average withdraw volume of 55 MGD. The power plant maintains four outfalls (003, 005, 006, 007) which discharge to the Hamilton-Rossville hydraulic canal and the Great Miami River mainstem.

Outfall 003 discharges approximately 33 MGD directly to the Great Miami River at RM 37.1 from several condensor units utilizing once-through cooling water to reduce water temperature to a suitable discharge level. Chlorine is added to control algae growth in the facility distribution lines.

Outfall 005 discharges treated, non contact cooling water to the Hamilton-Rossville hydraulic canal through a submerged pipe, located upstream of the cooling water intake, and is the uppermost electric plant, outfall. Outfall 005 receives runoff from a coal pile which drains to a central location and discharges an average of one time per month. Treatment of the coal pile runoff is through settling only. Coal pile area water is primarily lost to groundwater. One or more groundwater monitoring wells, in place for a hazardous waste site (Chem Dyne), are located in the coal pile area.

Outfall 006 discharges primarily ash wastewater to the Hamilton-Rossville hydraulic canal downstream from outfall 005. The outfall receives non contact cooling water from the oil coolers, bearing seal water, and floor drains (annual average 20,000 GPD). Condensate and cooling water from the ash vacuum system contributes an approximate annual average of 76,000 GPD The ash water is treated by the Hamilton WWTP while waste fly ash and bottom ash is taken to a beneficial reuse site by contract of the City of Cincinnati. Additional annual average discharge quantities for outfall 006 include boiler blowdown (2,000 GPD), evaporator blow down (1,500

GPD) and bearing seal water (500 GPD).

Outfall 007 discharges non contact cooling water from turbine unit #5 to the Hamilton-Rossville hydraulic canal downstream from outfall 006.

Annual 95th percentile conduit flows for outfall 003 were often twice the median value for the period of record (1979-1995) indicating sporadic flows of greater volume in yearly outputs. Median effluent flows in the 1990s fluctuated between 30 and 45 MGD with 95th percentile values exceeding 90 MGD most of the time (Figure 19a).

Temperatures for outfall 003 ranged from 6°C to 43°C throughout the period of record with an average median temperature of 22°C. Ninety-fifth percentiles reached 35°C for much of the period of record. A gradual increase in temperature during the period of record could be attributed to a reduced capability of aged equipment to meet original standards; however, NPDES limits do not reflect a problem.

Two NPDES permit violations were reported for outfall 003 between 1990-1995. The temperature violations occurred in 1991 and 1993 . The September 1991 daily value exceeded the daily maximum permit limit of 39°C by four degrees celcius.

Concentrations of pH at outfall 006 exhibited negligible variability between median and 95th percentiles for the period of record (1979-1995). Both percentiles were consistent in concentration for the eleven years reported with a median value of 7.8 (Figure 19b). Annual median TSS loads for outfall 006 exhibited slight variability, remaining below 2 kg/day for the period of record (1985-1995). Annual 95th percentiles were erratic for the eleven years reported exhibiting no discernable trend (Figure 19b). Variability between percentiles in the early 1980s could be contributed to yard drainage from storm water and ash (coal byproduct) which were both components of the discharge. Annual median loads (outfall 006) for oil and grease exhibited a consistent trend for the period of record (1985-1995) with the greatest reductions in loads occuring in the early 1990s. Annual median and 95th percentiles loads for the period of record were consistant with negligible percentile variance (Figure 19b).

Entity conducted bioassay tests performed in March, 1989 demonstrated no acute toxicity to *D. pulex* or *P. promelas.* Ohio EPA generated bioassay tests performed on May 26, 1992 revealed no acute toxicity to either *C. dubia* or *P. promelas.*

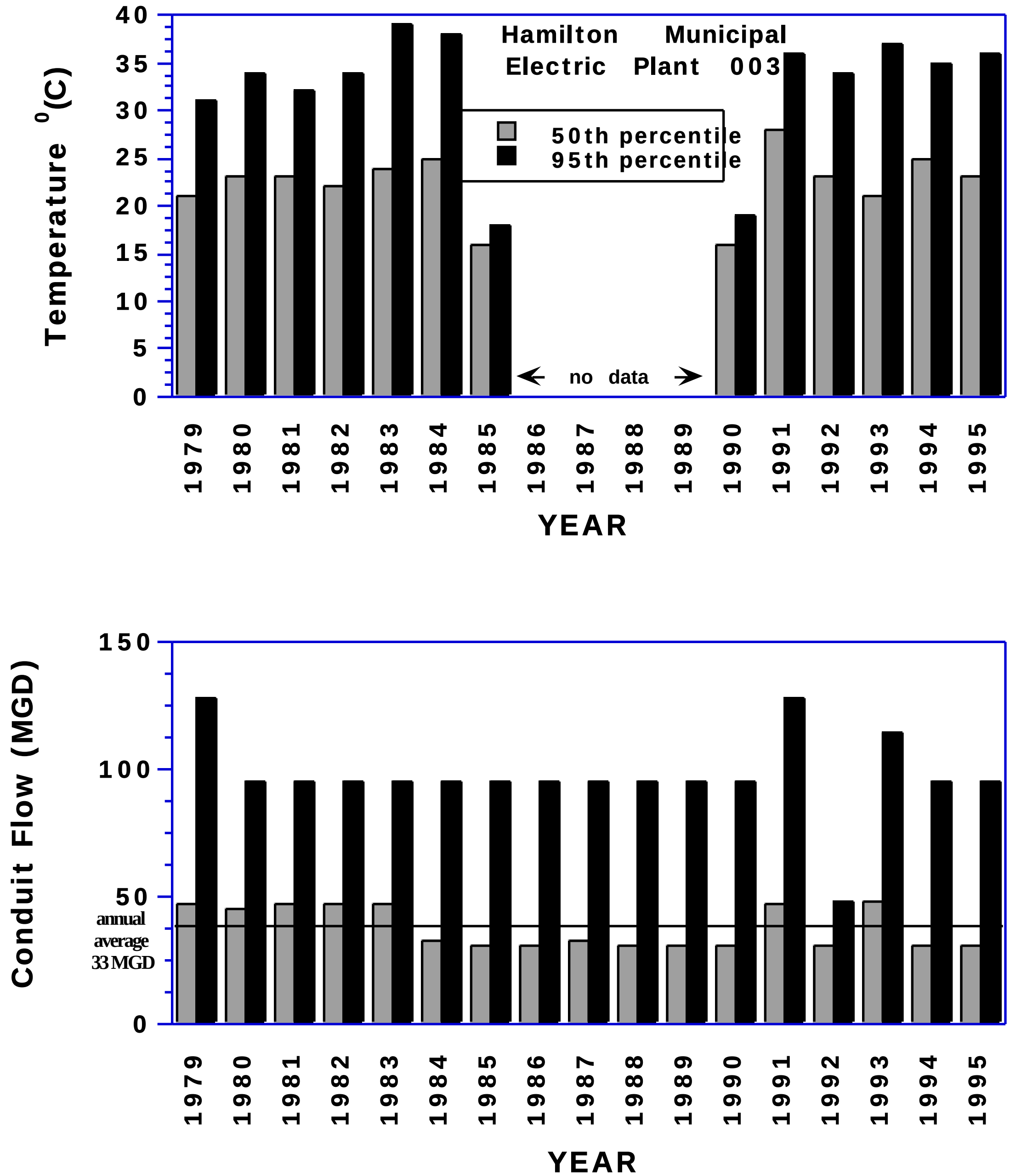


Figure 19a. Annual median and 95th percentile conduit flow (MGD) and temperature from the Hamilton Electric Plant (003 outfall).

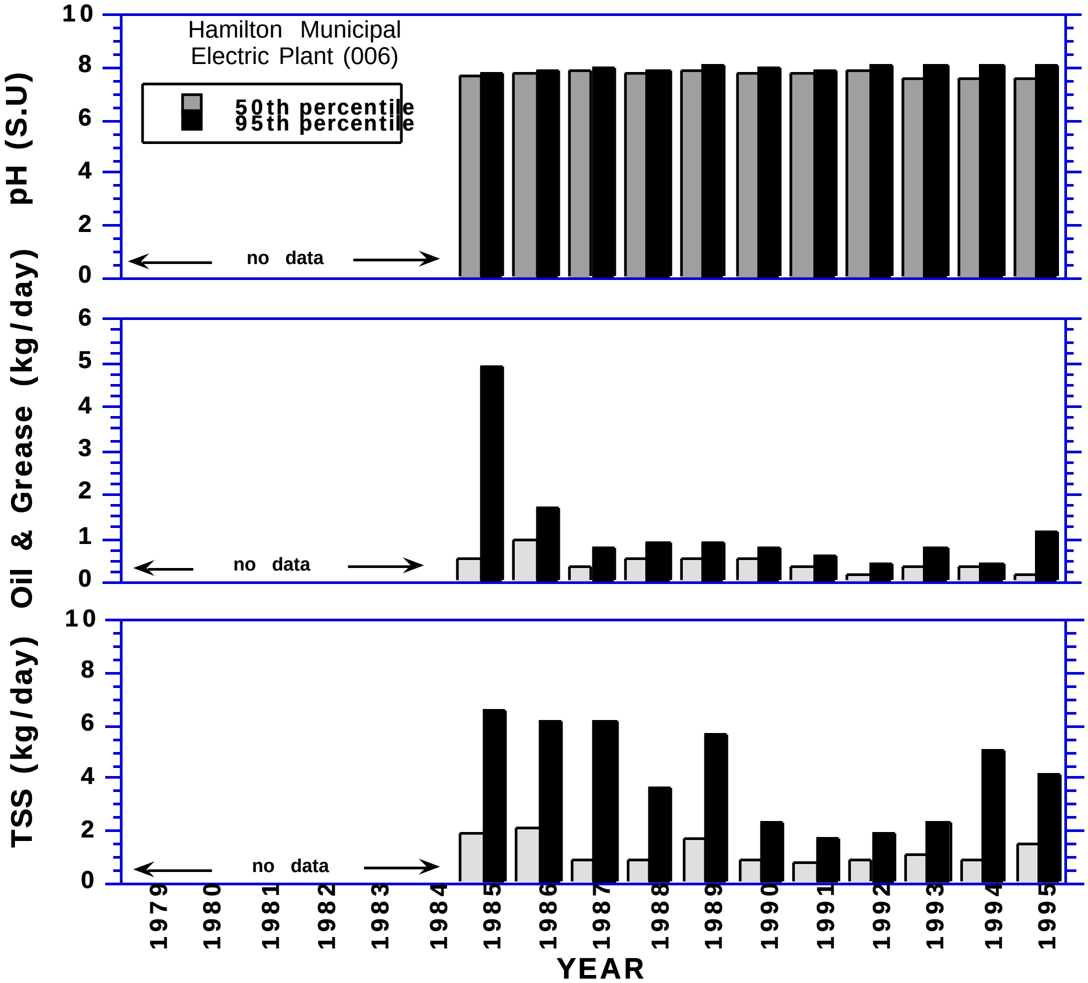


Figure 19b. Annual median and 95th percentile pH concentrations, and pollutant loads (kg/day) of total suspended solids (TSS) and oil and grease from the Hamilton Electric Plant (006 outfall).

Hamilton WWTP (RM 34.0)

The Hamilton WWTP was last upgraded in 1988 and is designed for 32.0 MGD. Champion Paper accounts for approximately 40% of the wastewater treated at the WWTP. Treatment consists of grit removal, primary clarification, activated sludge digestion, secondary clarification, and chlorination. Dechlorination facilities are expected to be operational by November 1, 1997. Solids removed from the WWTP are either land applied or composted. The collection system consists of separate sewers, with 95% of the service area sewered. Eighteen overflow locations are known to be active for the collection system, all of which eventually discharges to the Great Miami River. The service population is approximately 65,000 with moderate growth expected. Annual median percentile conduit flows demonstrated slight variability throughout the period of record with an average near 17.0 MGD. Variability between percentiles remained low throughout most of the record (demonstrating predictable WWTP performance) both exhibiting a steady increase in volume for most years. Both percentiles remained below plant design of 32.0 MGD for the entire period (Figure 20). The Hamilton WWTP currently discharges approximately 52.08 kg/d of ammonia-N which comprised 13 % of the total load for all point source dischargers evaluated in the basin survey (the second highest contributor) (Figure 4).

Ammonia-nitrogen 95th percentile loadings data for the period of record (1979-1995) exhibited steady reductions in loadings through 1988, however the annual median loading data was incomplete from 1988 to 1991. Peak flows were experienced during 1993 through 1995 with the exception of 1979. Significant variability between percentiles continued throughout the period of record. Hamilton reported contributing an annual total load of ammonia-N for 1995 at 52 kg/day (16%) (Figure 5). This is the second highest load (ranking second also in total flow volume to the watershed) next to Butler County LeSourdsville WWTP.

The median BOD_5 remained stable throughout the seventeen year record reducing slightly with $CBOD_5$ values in 1990. Prior to the upgrade, 95th percentile data more than doubled that of median loads through 1987. Maximum BOD_5 loads occurred during the mid 1980s and by 1991 median and 95th percentile loads appeared reduced and stabilized increasing slightly through 1995.

A three year composite of annual mean loads (1993-1995) indicated Hamilton reporting a value of 855 kg/day, comprising 12% (4th highest BOD_5 load) of the total load from dischargers evaluated in the basin survey.

Annual median percentile TSS loads exhibited a fairly stable trend from 1979 to 1995. Peak load and percentile variability occurred in 1979-1982. Percentile discrepancies declined significantly in1983 through 1995**.** Violations of the NPDES permit for TSS also were reduced by 1992 (some violations occurred from 1990-1993).

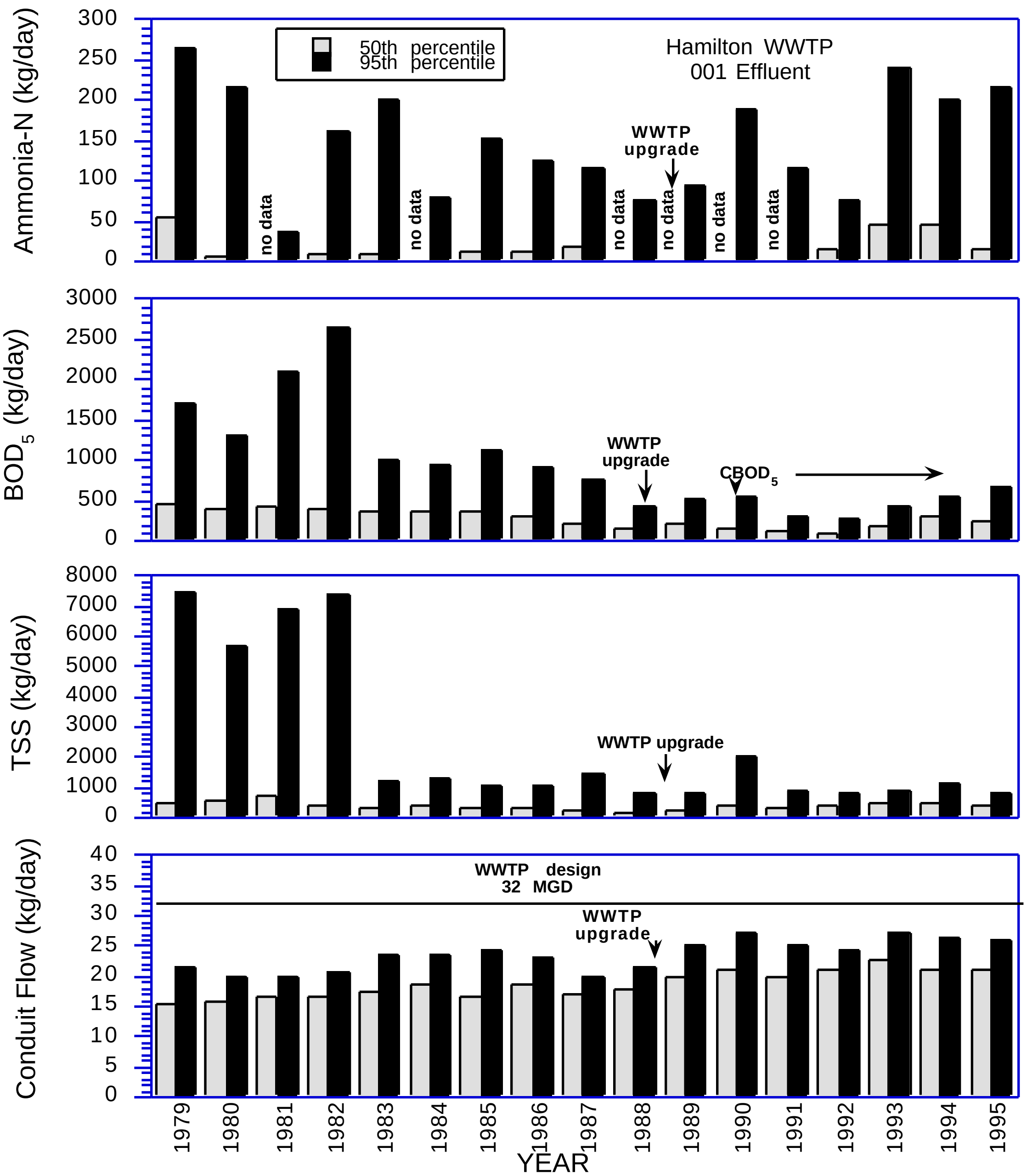


Figure 20. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-N, biochemical oxygen demand (BOD_5), and total suspended solids (TSS) from the Hamilton WWTP (001 outfall).

Four violations of the NPDES permit were reported to Ohio EPA for outfall 001 between 1990-1995. All violations were limited to chlorine residuals. Three of four acute bioassay tests conducted by Ohio EPA in 1989, 1990, 1995 and 1996 revealed no toxicity to either test organism in effluent and river samples (winter and fall testing events). In January, 1996, one acute bioassay test (effluent composite) conducted resulted in toxicity to *C. dubia.*

Fairfield WWTP(RM 32.0)

The Fairfield WWTP discharges directly to the Great Miami River at approximately RM 32.0. The facility was last upgraded in 1988 to meet secondary treatment requirements. The WWTP is currently designed for 6.0 MGD with a hydraulic capacity (peak daily flow rate) of 10.0 MGD. The Fairfield WWTP has requested an expansion in the design capacity increasing conduit flow to 8.0 MGD. Treatment consists of mechanical screening, grit removal, primary clarification, activated sludge digestion, secondary clarification, tertiary filtration, and chlorination. Dechlorination facilities are expected to be operational by November 1, 1997. Solids removed from the WWTP are land applied. The collection system consists of separate sewers, with all of the service area sewered. Three overflow locations are known to exist for the sewage collection system. These include the Crystal I and II pump stations adjacent to Crystal Drive and the Goodyear manhole adjacent to Dixie Highway. Overflows from the Crystal I and II pump station discharge to the Great Miami River via Pleasant Run. Overflows from the Goodyear manhole flow to Mill Creek by an unnamed tributary. Fairfield is currently constructing relief sewers and flow equalization basins at the WWTP to eliminate these events. The service population is approximately 40,000 with moderate growth expected.

Annual median percentile conduit flows demonstrated a modest increase throughout the period of record. Conduit flow for 95th percentile between 1979 and 1995 showed a greater variability in percentiles and continued after the plant upgrade in 1988 with the greatest peak flow occurring two years after the upgrade. Each year within the period of record, except for 1980 and 1987, exceeded the six MGD design capacity (Figure 21). This is suggestive that inflows to the Fairfield WWTP may be exceeding plant capacity hindering plant treatment performance. In 1995, Fairfield WWTP reported a mean annual flow of 6.1 MGD comprising 4% of the total aggregate flow for dischargers evaluated in the basin survey (Figure 4).

Median ammonia-nitrogen values exhibited notable reductions for the period of record (1979-1995) after 1988 (exception 1989) due to increased nitrification resulting from the 1988 upgrade (Figure 21). Prior to the upgrade annual median results were variable. Median and 95th percentile values significantly varied suggestive of plant upsets possibly caused by hydraulic overloads (plant hydraulic capacity was exceeded for the majority of record) or operation and mechanical failures. The upgrade effectively reduced the acutely toxic ammonia-N impacts but subsequently increased nutrient enrichment impacts due to an increase in nitrate loadings. Fairfield WWTP reported a

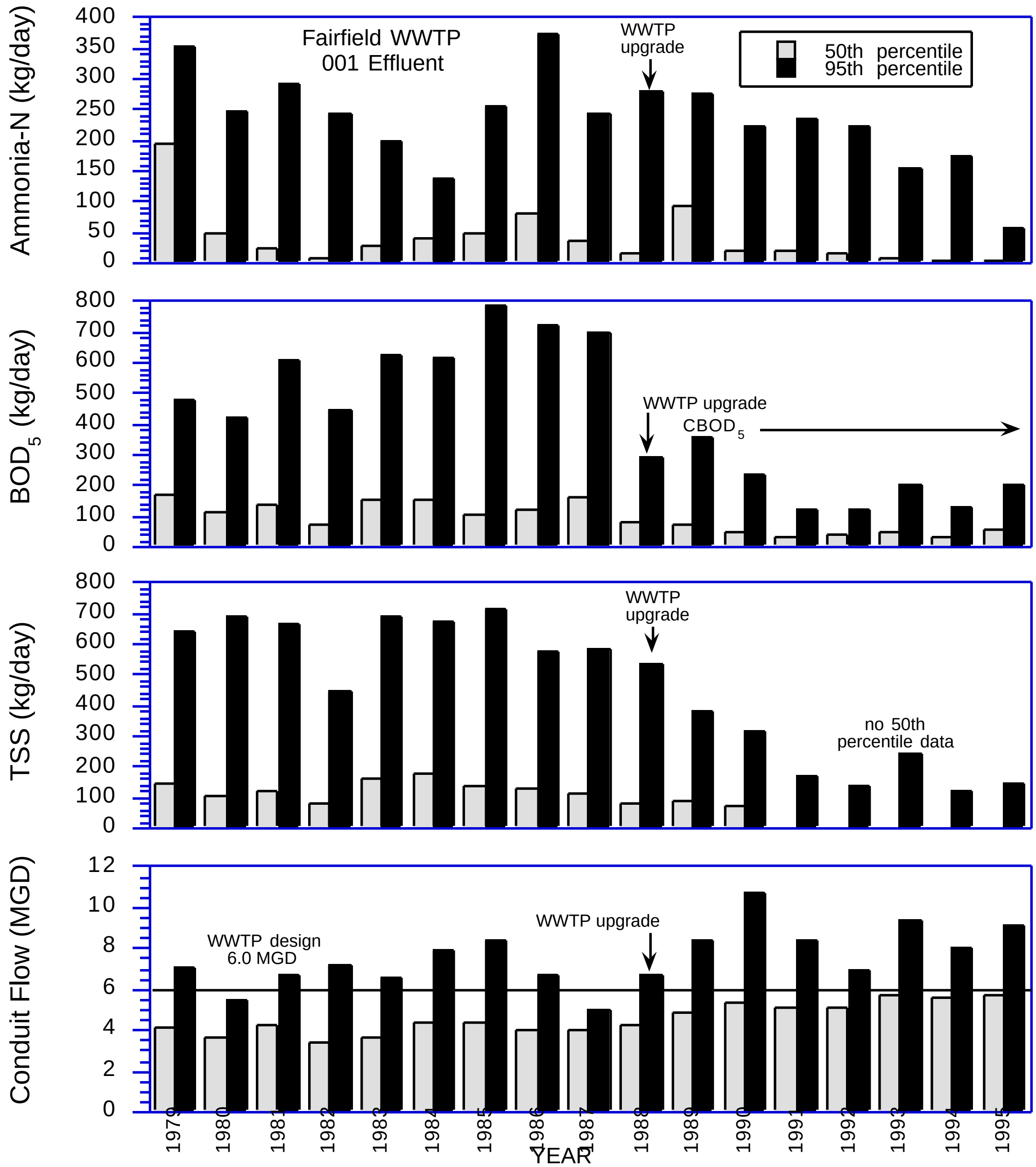


Figure 21. Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Fairfield WWTP.

mean total ammonia-N load for the 1995 survey year of 12 kg/d comprising 4% of the total aggregate load for dischargers evaluated in the basin survey (Figure 5).

The median BOD_5 data available through the period of record declined incrementally from 1988 (post-plant upgrade) (Figure 21). Prior to the upgrade no discernable trend in percentile data could be determined as 95th percentile remained 400-500% greater than that of median loads through 1987. Percentile discrepancies diminished following the major plant upgrade in 1988. The 1995 basin survey water chemistry data revealed a slight elevation of BOD_5 rates in the Great Miami River downstream of the Fairfield WWTP. Fairfield WWTP reported a mean total load of 188 kg/day in 1995, comprising 3% of the aggregate total load for the dischargers evaluated in the basin survey.

Annual median and 95th percentile TSS loads exhibited a fairly consistent trend from 1979 to 1985 declining modestly thereafter for the duration of the period of record (Figure 21). A major plant upgrade in 1988 brought an overall decline in 95th percentile loads reducing them to an average 150 kg/day load (50th percentile data not available). Annual 95th percentiles were dramatically higher than 50th percentile and generally six times the median value. Striking percentile differences show plant treatment/operation irregularities and are exacerbated by conduit flows exceeding plant design (6.0 MGD) for numerous years.

Following a plant upgrade in 1988, mean ammonia-N concentrations upstream exceeded downstream concentrations in two of seven events (data unreported for three years) while in 1993 only downstream concentrations exceeded those upstream. The 1995 basin survey, water chemistry data, reveals mean ammonia-N concentrations downstream of the WWTP at greater concentrations than at sites selected upstream of the WWTP.

Five violations of the NPDES permit were reported to Ohio EPA for outfall 001 between 1990-1995 (all occurring from 1994-1995). All violations were limited to three parameters; ammonia-N, zinc and dissolved oxygen.

Four acute bioassay tests were conducted by the Ohio EPA in winter (one) and spring testing (three) events in 1990 and 1995. Effluents were acutely toxic to *C. dubia* in April and May, 1990.All three spring bioassay tests in 1990 revealed that *P. promelas* were not affected by either the effluent or river samples. December, 1995 bioassay results indicated no significant adverse effects to either test organism exposed to effluent or river samples.

DOE Fernald

The Fernald Environmental Management Project (FEMP) is a 1050 acre government owned, contractor operated facility. The facility began operations in 1951 for the processing of feed materials to produce high purity uranium metal for use in the nation's weapons program. Production peaked in 1960 at approximately 12,000 metric tons of uranium and reached a low in 1975 of about 1230 metric tons. Staffing levels peaked at 2891 in 1956 then declined to 539 in 1979. Production ceased in 1989 and the focus was shifted to environmental cleanup in 1991. The waste water treatment system discharges to the Great Miami River at River Mile (RM) 24.6 through outfall 001.

The sanitary wastewater treatment plant (WWTP) was designed for an average flow of 0.35 MGD. The system currently processes an average of 0.16 MGD (Figure 21a). Outfall 001 consists of treated wastewaters from the contaminated south plume, sanitary sewage, former production area storm water, sludge pond decant, water plant lime sludge blowdown, coal pile runoff, boiler blowdown, sodium zeolite softener regeneration, cooling water, biodenitrification effluent, investigation derived wastewater, perched ground water, soil washings, and sand filter backwash. Water plant lime sludge blowdown, sodium zeolite softener regeneration, and soil washings were once but are no longer part of the waste stream. A new outfall pipe was installed adjacent to and downstream of the former discharge pipe at RM 24.6 and was put in service August, 1993. Outfall 002 is a storm water outfall to Paddys Run. Storm water passing through this outfall has historically been a major contributor to the south plume of contaminated ground water. Two storm water retention basins have been constructed to retain stormwater prior to treatment at the advanced waste water treatment (AWWT). In extremely wet weather the stormwater retention basins will overflow to Paddys Run. In 1983, issuance of NPDES permits transferred from USEPA to Ohio EPA.

Annual average sanitary wastewater flow (internal monitoring station 601) has fluctuated from lows of 0.107 MGD in 1985 and 1990 to a high of 0.231 MGD in 1988 (Figure 21a). Sanitary waste consists of wastewater from various drains, toilets, sinks, showers, and laundry facilities. Fluctuations in flow from the sanitary wastewater treatment plant (601) are primarily dependent upon the size of the workforce.

Total flow through outfall 001 fluctuates with remedial activities and stormwater events which are routed through 001. Total discharge through the new 24 inch outfall line to the Great Miami River increased with the initiation of groundwater pumping in August, 1993. Flow data presented in Figure21 for outfall 001 are under-represented for 1994 and 1995. Rerouting of treated wastewater from groundwater remediation and stormwater treatment beginning March, 1994 and January, 1995 were not captured by the 001 outfall until the 001 outfall location was changed in the November, 1995 NPDES permit renewal. The flow paths were altered to accommodate the installation of the SPIT and initiation of the AWWT operation. Therefore treated wastewater from those sources did not appear in the 001 flow data from March, 1994 through November, 1995.

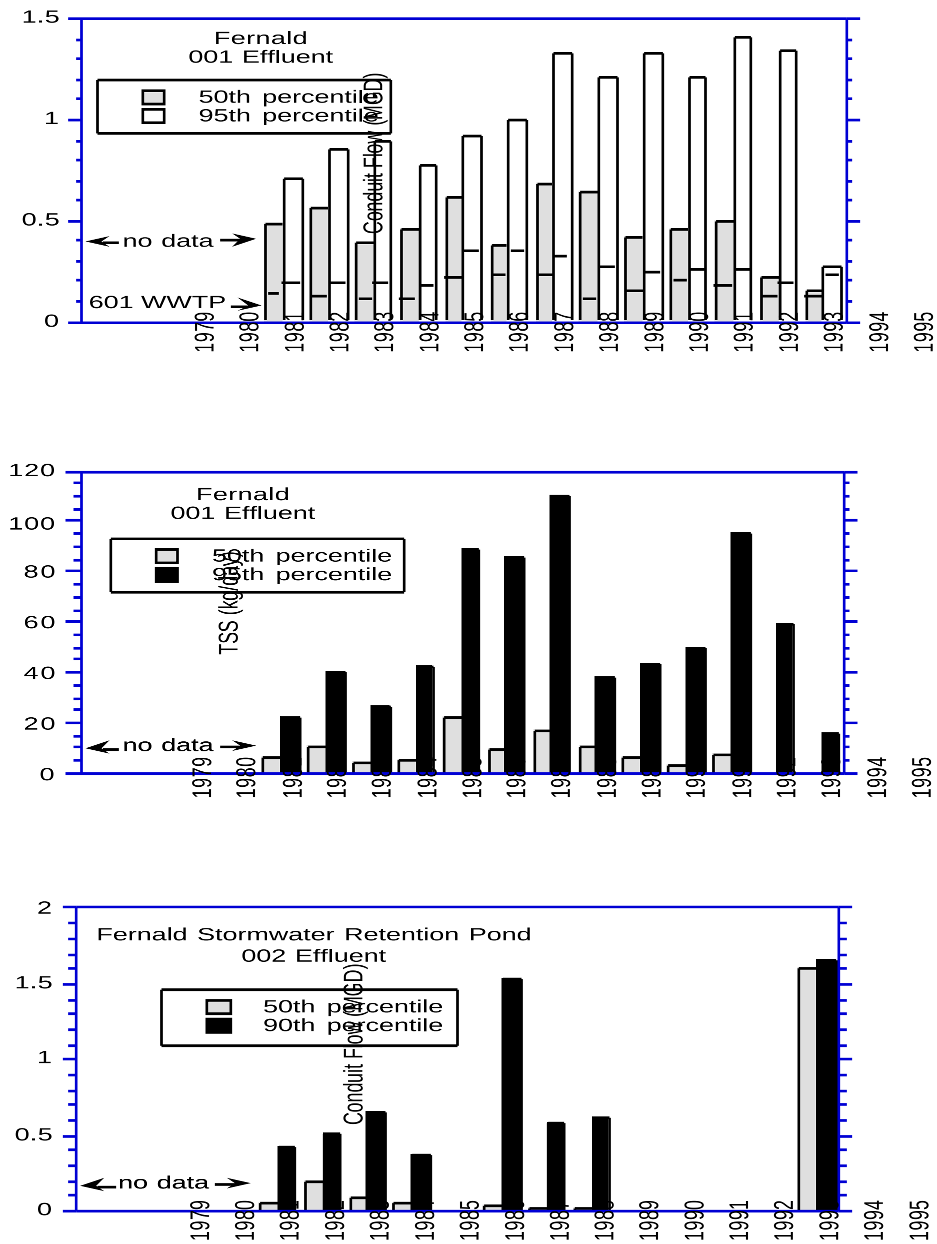


Figure 21a. Annual median and 95th percentile conduit flow (MGD) for Fernald outfalls 001 and 002. Contributing flows to 001 from the sanitary waste plant (601) are below the horizontal bar. Annual median and 95th percentile loadings for total suspended solids (TSS) (kg/day) for outfall 001.

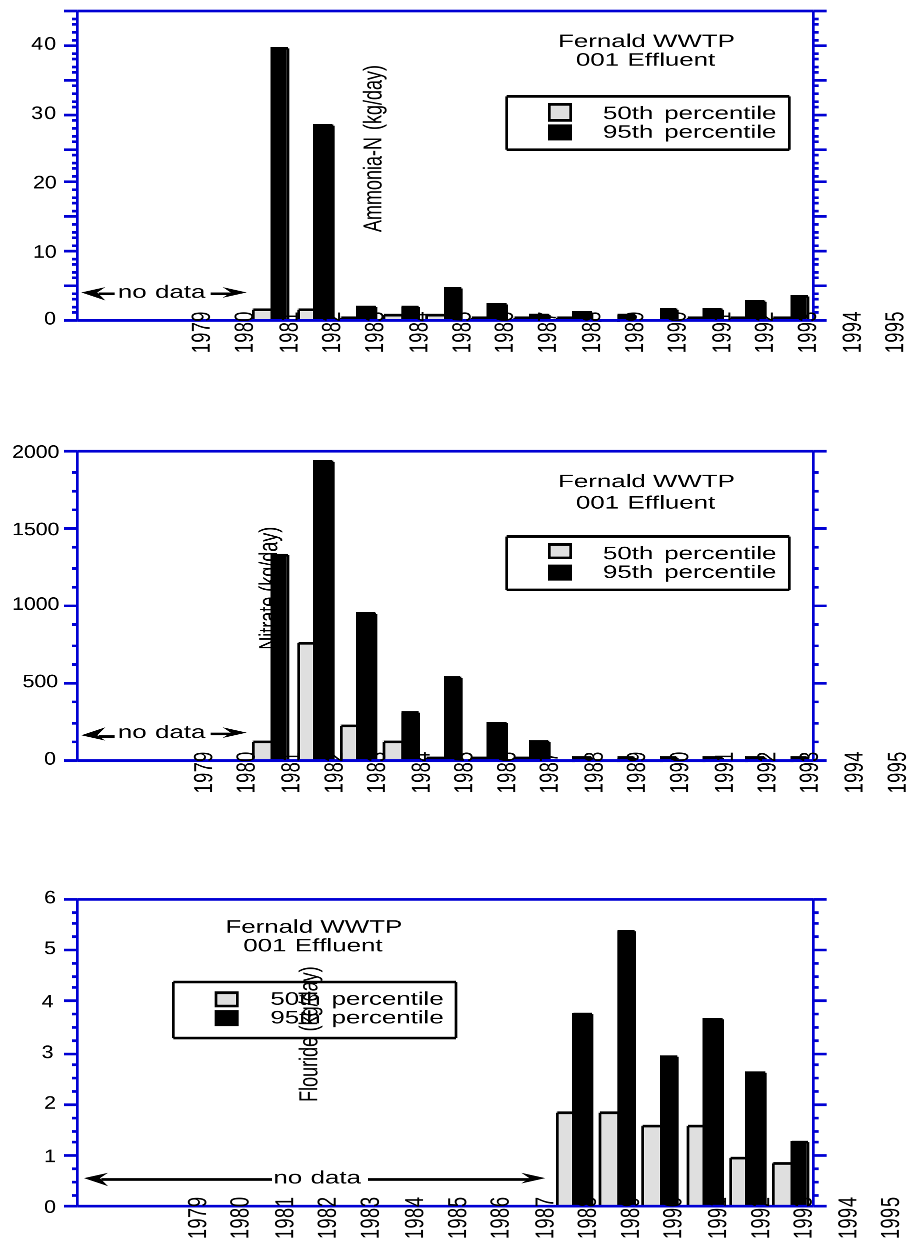


Figure 21b. Median and 95th percentile annual loadings (kg/day) of ammonia-N, nitrate, and flouride from the Fernald WWTP (001).

Flow measurements at outfall 002 prior to November 4, 1986 were located at a weir in the storm sewer system. The weir was located at a point prior to storm water discharging to the storm sewer outfall ditch (SSOD). When the storm water retention basin (SWRB) was placed into operation on November 4, 1986, flow measurements were taken at the overflow from the SWRB into the SSOD. An expansion to the SWRB was completed in 1988. Elevated median levels of flow at 002 in 1995 (Figure 21a) are attributable to the small data set for that year. Three overflows occurred: May 18, 1995 at 1.675 million gallons, May 19, 1995 at 0.428 million gallons, and August 6, 1995 at 1.600 million gallons.

After 1989 a declining trend is seen in the median levels of total suspended solids (TSS) at outfall 001 (Figure 21a). This can be attributed to the change in operation from production to remediation in 1989. The increasing trend in 95th percentile loadings starting in 1990 is associated with the variable nature of remediation waste water streams and the increase in extent of the controlled storm sewer system on site.

The 95th percentile ammonia and nitrate levels peaked in 1983-84 at outfall 001. The daily NPDES maximum limit of 43 kg/day ammonia was not exceeded (the daily maximum limit prior to 10/31/80 was 374 kg/day). The daily NPDES maximum limit for nitrate of 3,180 kg/day also was not exceeded. Although plans for construction of an air stripper to remove ammonia were not completed, nitrate reductions between 1984 and 1989 are a result of the biodenitrification towers. After 1989, the shift from production to remediation contributed to the lowered discharges of ammonia and nitrate. After 1995, nitrate loadings decreased because all remaining high nitrate process waters, including the uranyl nitrate hexahydrate (UNH) waters, had been treated and discharged.

Fluoride bearing wastewaters are byproducts of uranium manufacturing. As the existing inventory of stored wastewaters and manufacturing material on the site have been removed, the levels of fluoride in the 001 effluent have declined (Figure 21a).

Taylor Creek WWTP

The Taylor Creek WWTP discharges to the Great Miami River downstream from the confluence of Taylor Creek at RM 14.95 near Miamitown. The design capacity is 5.5 MGD with a daily peak hydraulic capacity of 13.8 MGD. Construction of the treatment facility was completed in 1993 however the collection system was not in place until 1997. Fifteen public package plants and a number of private plants were put on-line beginning in late winter and early spring, 1997. The treatment train consisited of screening, grit removal, grease removal, extended aeration, secondary settling, ultraviolet light disinfection, cascade post-aeration and aerated sludge holding tanks. Sludge is transported for incineration and disposal. The population of the service area is 48,900 with moderatelt high growth predicted. The service area is 100% separate sewers with 10% of service area with sewers. Four lift stations exist with one overflow at White Oak Estates.

The Taylor Creek sewer project was initiated in the mid 1970s and was resurrected in the mid 1980s as a means for the Metropolitan Sewer District (MSD) to comply with a Consent Order for several small facilities in the upper region of the watershed. Detailed plans for the sewer were submitted by MSD and later challenged by the Ohio EPA resulting in a longstanding diagreement between agencies over the sewer alignment. Issues relating to the potential threat to biological and physical integrity of the stream were raised by the Ohio EPA, much of the difficulty arising from concerns relating to the unique geology dominating much of Hamilton County. MSD elected to continue with the construction of the wastewater treatment facility despite of the absence of a collection system or a permit to install a collection system. MSD eventually agreed to reevaluate the sewer alignment issue and movement within the project ensued. The treatment facility received wastewater from the package plants by February, 1997.

Wolf Creek

Brookville WWTP (RM 14.93)

The Brookville WWTP was constructed in 1965 and upgraded in 1988 to an almost entirely new facility retrofitted to a vertical loop reactor plant. The system receives no industrial inputs and consists entirely of separate sewers with two lift stations and no bypasses or overflows. The treatment system includes: screening, grit removal, vertical loop reactor, aeration, settling, ultraviolet disinfection, aerobic sludge digestion, and land application of sludge. The design capacity is 0.645 MGD with a request by the City of Brookville to expand to 1.25 MGD. The service area is completely sewered (100%) with a population of 4,770 (1988) and an estimated population of 5,000 predicted by the year 2000.

During the past five years, the facility reported several NPDES permit violations for $CBOD_5$, ammonia-N, and fecal coliform bacteria. During the 1995 field season, a sewage overflow at the plant was observed by Ohio EPA personnel following a heavy rain. Sewage sludge deposits were observed along the pool margins in Wolf Creek downstream from the WWTP in 1995, but were not as extensive as those observed previously in 1987. Land uses along Wolf Creek downstream from Brookville consist of a mixture of residential, agricultural, and park lands, becoming increasingly urbanized in the cities of Trotwood and Dayton to the confluence with the Great Miami River (RM 80.25).

The 1995 chemical results indicated relatively good water quality with a few exceedences of WWH criteria. Three dissolved oxygen (D.O.) values slightly below the 5.0 mg/l daily average criterion (*daytime* grab values of 4.7 and 4.8 mg/l at RM 16.61 and a 4.9 mg/l at RM 14.14) showed the potential for D.O. criteria violations. Three total phosphorus concentrations exceeded the 1.0 mg/l water quality guideline for preventing nuisance algal growths (1.29 and 1.01 mg/l at RM 14.14 and

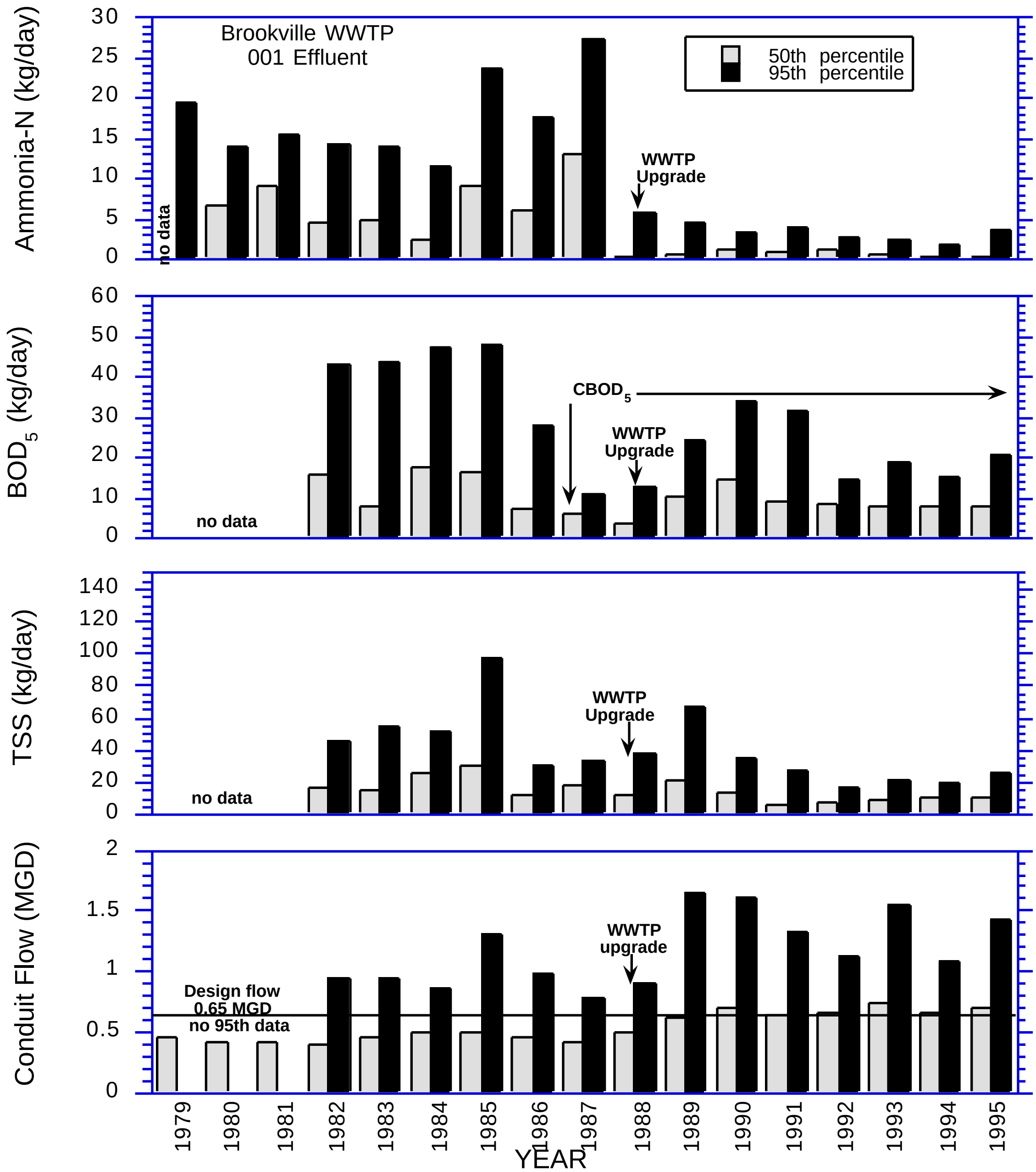


Figure 22 . Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-N, biochemical oxygen demand (BOD_5), and total suspended solids (TSS) from the Brookville WWTP (001 outfall).

2.66 mg/l at RM 0.01). Since the 1988 upgrade, mean ambient ammonia-N concentrations and TSS concentrations have greatly declined downstream from the Brookville WWTP. Annual median flows remained below the hydraulic design from 1979 to 1988 but met or exceeded the 0.65 design capacity from 1989 to 1995. Ninety-fifth percentile flows exceeded the design capacity in all years that data was available (1982-1995) (Figure 22). Ammonia-nitrogen concentrations were reduced significantly after the plant upgrade in 1988 and remained low through 1995. Median and 95th percentile BOD_5 concentrations fluctuated from 1982 to 1995 ($CBOD_5$ after 1987) demonstrating no discernable trend but becoming more consistant after plant modifications. Variance between percentiles of BOD_5 concentrations decreased by 1992 demonstrating consistant plant performance. Annual median TSS loads exhibited a variable trend from 1982 to 1995 with elevated percentiles sometimes two and three times the annual median values. Percentile differences decreased after the plant upgrade of 1988. Inconsistencies in TSS correlate with the sporadic conduit flow values observed throughout the plant history.

Owl Creek

Fraser Paper, Incorporated (formerly Miami Paper) RM 0.52

Owl Creek, a small headwater stream with a 3.8 square mile drainage area, receives effluent from Fraser Paper and West Carrollton Parchment (RM 0.37) before directly discharging to the Great Miami River at RM 69.55. Fraser Paper Incorporated makes fine papers (non-integrated and de-inked). The plant on average produces 309 tons per day of fine paper which is used in the premium writing, printing, and text of cover industries. The Fraser Paper WWTP is a secondary treatment facility with a current hydraulic design capacity of 5.0 MGD. Monitoring stations include: 001-process stormwater at weir prior to discharge through parshall flume to Owl Creek; 002-storm runoff-roof drainage from the pulp storage facility to Owl Creek; 003-storm runoff-roof drainage from office buildings and driveway runoff to the city storm sewer; 004-parking lot runoff to the city storm sewer and sanitary wastewater to city POTW.

While no violations of the NPDES permit conditions have been documented in the past two years, the existence of white deposits or algae have been noted in Owl Creek downstream of the discharge from the wastewater treatment plant. Fraser Paper has submitted a report regarding algae in Owl Creek which does not conclusively link the presence of algae with their discharge. The above mentioned violations were due to plant upsets caused by overloads from the mill and problems with the nitrogen feed system. Median and 95th percentile annual conduit flows demonstrated a modest increasing trend through the period of record. Between 1982 and 1992 (both percentiles) conduit flows were greater than the design capacity of 2.5 MGD. In 1992 design capacity increased to 5.0 MGD where conduit flows remained below this capacity the remainder of the period of record.

Ammonia-nitrogen loadings from 1976 to present have demonstrated relatively stable median values (when reported), but fluctuating 95th percentiles. Between 1990 and 1995 peak loads occurred primarily in 1992 where variance between 50th and 95th percentile was notable. NPDES violations of ammonia-N were reported by the entity for years 1990 and 1993. Loading data for the 50th percentile is missing for years 1993-1995. Discrepancies in both percentiles suggest treatment irregularities or plant upsets. Fraser Paper currently discharges approximately 0.80 kg/day of ammonia-N comprising less than 1% of the aggregate load from all point source dischargers evaluated during the 1995 survey (Figure 5).

High BOD_5 loads occurred in the mid-eighties, but have since declined. Notable variability in percentile data (50th and 95th) occurred throughout the period of record decreasing in 1992 after the plant design capacity increased (Figure 23). Annual median TSS loads declined modestly from 1988 until 1995, however from 1988 until 1992, annual 95th percentiles were erratic and generally three times the median values suggesting inconsistent plant performance. Percentile variability was reduced from 1993-1995.

Twenty-five NPDES violations were reported to the Ohio EPA between 1990 and 1995. Most violations were limited to ammonia-N, TSS and BOD_5 with ammonia-N accounting for 52% and occurring primarily in the winter of 1992 and 1993. The above mentioned violations were due to plant upsets caused by overloads from the mill and problems with the nitrogen feed system.

West Carrollton Parchment (RM 0.37)
Owl Creek, West Carrollton Parchment before directly discharging to the Great Miami River at RM 69.55. Constructed in approximately 1971, and upgraded in 1989, the wastewater treatment system has a current plant design capacity of 0.69 MGD. West Carrollton Parchment Company manufactures genuine vegetable parchment and painted waxed papers. The treatment process used is neutralization of the wastewater prior to discharging from outfall 001. The facility also discharges storm water runoff from outfalls 002 and 003 at the Elm Street and Central Avenue storm sewers. The yearly average discharge volume for outfall 001 was 0.624 mgd in 1995.

Annual median and 95th percentile conduit flow exhibited an erratic pattern throughout the period of record (1979-1995) with only slight variability in percentile data (Figure 24). The median percentile data remained below the plant design of 0.69 MGD for the entire record (with the exception of 1990) while the 95th percentile exceeded design by 58% of the record primarily between 1983 and 1991. Ammonia-nitrogen loadings data for the typical period of record (1976-1995) was mostly incomplete with only two years reporting both percentile data. From 1991 and 1992, high variability occurred in the 50th and 95th percentile suggesting treatment irregularities.

Median and 95th $CBOD_5$ percentile loading data for the period of record was vastly incomplete providing loading data for years 1989-1995. While reported median percentile data remained fairly

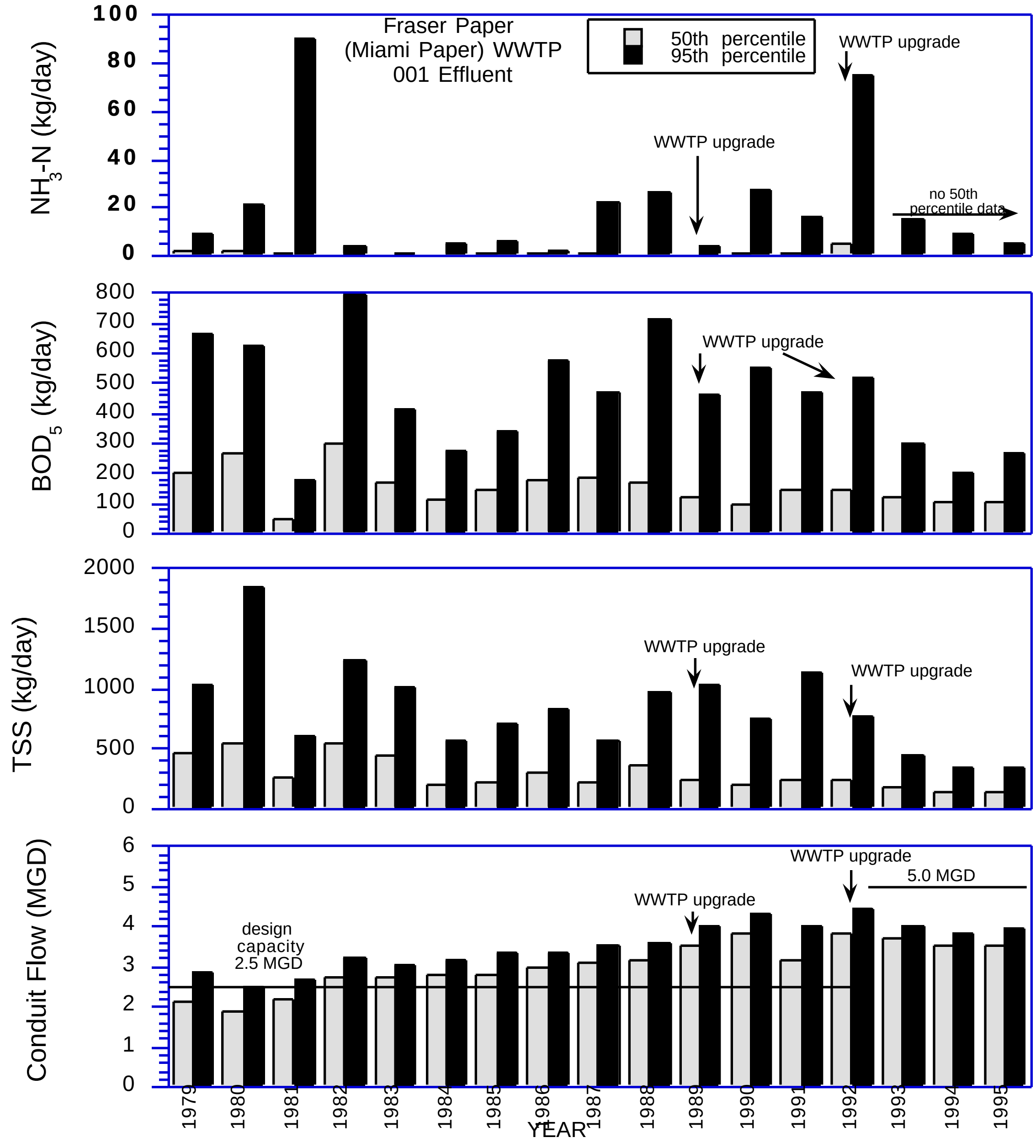


Figure 23 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Fraser Paper WWTP.

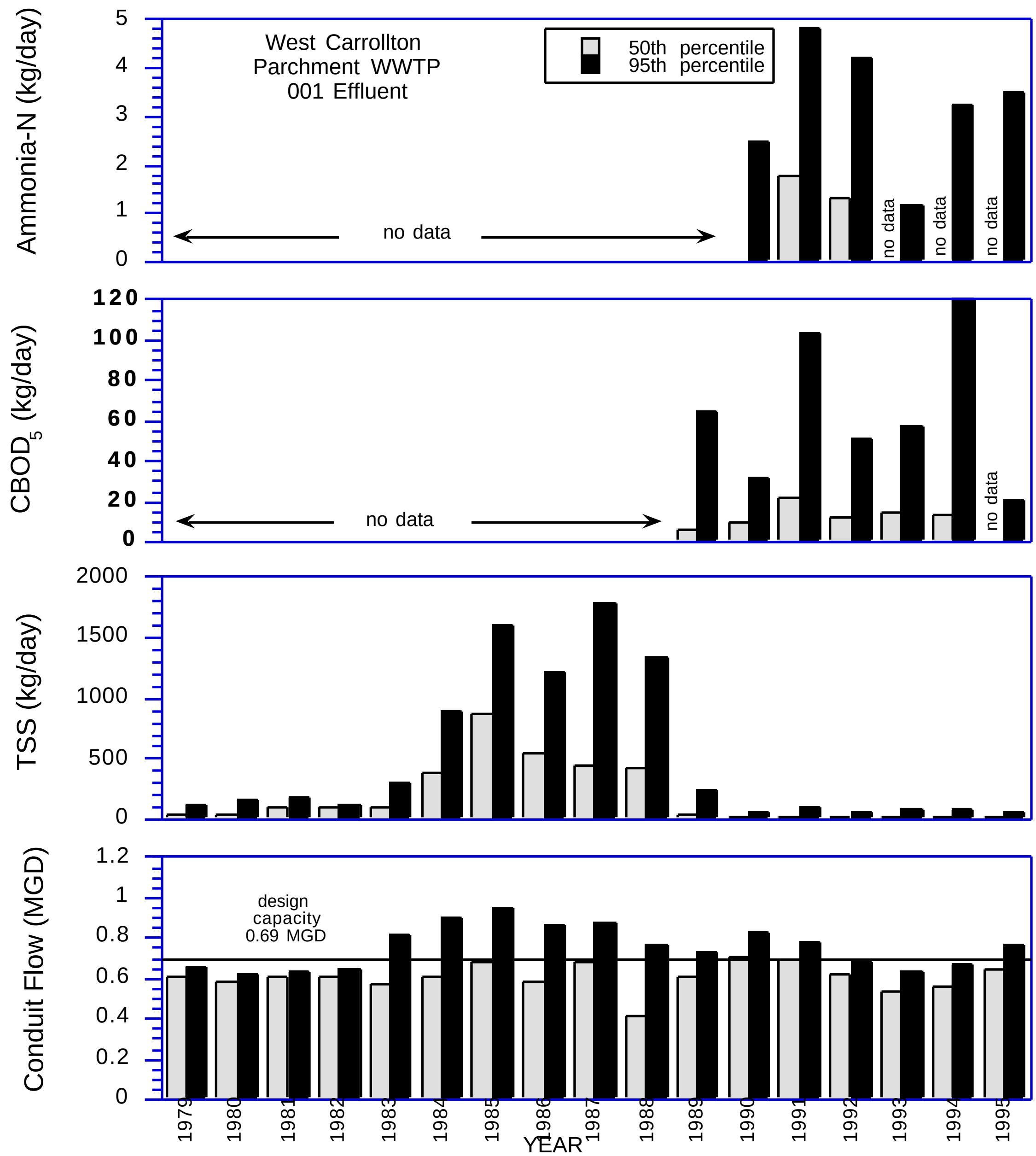


Figure 24 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the West Carrollton Parchment WWTP.

stable for reported years a marked deviation between 50th and 95th percentiles is exhibited demonstrating variability as much as 400-500 % with an average discrepancy of 300%.

Annual median TSS loads revealed maximum loads during the mid 1980s however by 1989 median and 95th percentile loads were reduced significantly stabilizing for the remainder of the period of record. The obvious pattern of increased and erratic TSS loads in the mid-1980s mimics that of conduit flow for the same time period suggesting a possible relationship.

Sixty-nine violations of the NPDES permit were reported to OEPA between 1990 and 1995. The most frequent number of violations occurred in 1993 carrying near 36% of the total violations for West Carrollton Parchment. Copper was the most repeated violation in 1993 appearing in 1992 but not in subsequent years. Six violations of cyanide and TSS occurred in 1995 (lowest violation percentage year). Silver and cyanide appeared frequently in violations all other years. Silver and copper violations were presumably caused by a paper color coating process involving dyes while cyanide violations were related to an acid reclaiming system. Total suspended solid (TSS) violations were linked to caustic soda loading.

Bear Creek

New Lebanon WWTP

The Village of New Lebanon WWTP discharges directly to Bear Creek at RM 10.43. The wastewater treatment plant was originally constructed in 1953, with upgrades in 1965, 1990, 1995, and 1996. The present treatment system has a design capacity of 0.8 MGD. The treatment process includes: screening (bar screen and static screens), influent pumping, oxidation ditch aeration, clarification, chlorination, and dechlorination. The collection system consits of separate sewers. In 1995, bypassing at the wastewater treatment plant occurred when the influent pumping capacity was exceeded. Sewage overflowed the bar screen chamber and flowed around the influent pumping and static screen building directly into Bear Creek. On September 3, 1997, Director’s Final Findings and Orders were issued to the Village to construct facilities to eliminate the bypasses by December 30, 1998.

Mound Overflow Creek

U.S. DOE Mound

The U.S. DOE Mound facility has two wastewater discharge locations: outfall 001 (comprised of effluent from internal outfalls 601 and 602) discharges sanitary wastewater directly to the Great Miami River at RM 65.9 and outfall 002 discharges to the Miami-Erie Canal. Mound Overflow Creek is a small stream which provides a conveyance for overflow water from the Miami-Erie Canal to the Great Miami River at RM 65.08. Mound Overflow Creek is 0.4 miles long with the lower 0.1 mile impounded by the Great Miami River.

The U.S. DOE Mound Lab manufactured components for the nuclear weapons program, stable isotopes, and conducted research for other Department of Energy programs. Industrial and sanitary wastewaters were and still are generated by this facility. The treatment process for sanitary wastewater (outfall 601) consists of bar screening, fine screening, grit removal, aeration, settling, tertiary filtration, chlorination and dechlorination. The 601 treatment plant also receives wastewater from the metal finishing shop. Outfall 602 is comprised of wastewater from the radioactive waste disposal building (treatment consists of pH adjustment, clarification, carbon addition, sand filtration, bone char column and I micron filtration), non-contact cooling water, boiler blowdown, softener backwash, and storm water runoff treated in retention basins. The design capacity of the sanitary treatment plant is 0.120 MGD. Improvements made to the sanitary waste disposal plant include a new bar screen , grit removal, and the addition of a circular clarifier which replaced the existing clarifiers. Outfall 002 recieves non-contact cooling water, softener backwash and storm water and the treatment consists of retention basins.

Annual median and 95th percentile effluent data was reviewed from outfalls 001 and 002 for the period of 1991 - 1996. Median conduit flow from each outfall was less than 0.50 MGD, with both outfalls totalling 0.55 MGD (Figure 10). The flows from these two outfalls combined represent less than 0.4 percent of the flow of the Great Miami River under summer extreme low flow conditions. Of the numerous parameters measured in internal monitoring stations and at outfalls 601 and 602 (excluding radiological parameters), most parameters were present in relatively low concentrations. Total recoverable copper was moderately elevated, with outfall 001 median and 95th percentile values of 52 ug/l and 105 ug/l, respectively. The minimum pH measurement recorded for outfall 002 between 1991 and 1996 was 3.4 S.U. with median and 95th percentile values of 8.3 S.U. and 8.8 S.U., respectively.

Ten acute and seven chronic bioassay tests were conducted using effluent from the U.S. DOE Mound 001 outfall between January 13, 1993 and September 8, 1994. Both types of tests were conducted using fathead minnows and *Ceriodaphnia dubia* as test organisms. Fathead minnow acute toxicity tests showed 8 of 9 tests with 5% or less toxicity; one test showed 20% mortality. *C. dubia* acute toxicity tests showed higher mortality rates - 3 samples documented 95-100% mortality in 100 percent (undiluted) effluent. Chronic toxicity testing revealed all fathead minnow tests with chronic toxicity units (TU_c) less than 1.0 TU_c and four of seven *C. dubia* tests less than 1.0 TU_c. Three of the *C. dubia* chronic tests reported TU_c values between 1.8 and 2.8 TU_c. These values are considered negligible due to the high dilution volume of the Great Miami River.

Dicks Creek

AK Steel (outfall 002, 003 and 005)

Outfall 002 (discharge to Dicks Creek at RM 2.92) consists of untreated coke plant cooling water (river and well water) and storm water runoff. The average discharge for outfall 002 in 1995 was

0.794 MGD. Outfall 003 (discharge to Dicks Creek at RM 3.80) consists of treated basic oxygen furnace (BOF) effluent (internal monitoring station 631), cooling tower blowdown, and storm water runoff. The BOF treatment process consists of flocculation and clarification for the BOF gas cleaning system, and was designed to treat 6.48 MGD with 98% recycle. In 1995, the average discharge for station 631 was 0.095 MGD, and the average discharge for outfall 003 was 1.12 MGD. Outfall 015 (discharge to Dicks Creek at RM 4.15) consists of non-contact cooling water, storm water runoff, and effluent from the hot strip mill clarification plant (internal monitoring station 005). The hot strip mill treatment system provides flocculation, clarification, and cooling to process wastewater from the hot strip mill, continuous caster, vacuum degassing, slab reheat furnaces, and cold mill cooling tower areas. The hot strip mill clarification plant was designed to treat 100 MGD with 99.5% recycle. The average discharge for station 005 in 1995 was 0.653 MGD and the average discharge for outfall 015 in 1995 was 0.651 MGD.

Outfall 003 exhibited percentile differences generally twice the median value beginning in 1990 through 1994. Conduit flow for outfall 003 exhibited a greater variability in volume and percentile variance than the other AK Steel outfalls indicating peak flows in 1990-1994. Peak 95th percentile flows such as those occurring in 003 are indicative of treatment plant upsets possibly due to infiltration or operational practices. Outfall 002 demonstrated low variability in percentile variance throughout the period of record (Figure 15).

From 1987 to 1995, annual median and 95th percentile ammonia-N loading concentrations for outfall 002 demonstrated marked variability. Median values remained fairly stable through the period of record, but 95th percentile loadings were elevated and erratic indicating possible treatment process irregularities. The pattern of anomalous 95th percentile values appear similar to deviations of stability noted for the conduit flow for outfall 002 from 1987-1993 (except 1991 and 1992) suggesting a possible relationship. Mean ammonia-N loadings in 1995 for outfalls 002, 003, 004, and 015 totaled 25 kg/day comprising 8% of the aggregate load for the point source dischargers evaluated in the 1995 survey (Figure 5).

Bioassay tests conducted by AK Steel and Ohio EPA showed variable acute and chronic toxicity to *P. promelas* and *C. dubia.* The specific results are summarized as follows:

Outfall 002: One of nine entity generated acute bioasssays resulted in a 1.31 TU_a to *C. dubia* and one of four chronic bioassays resulted in 3.54 TU_c to both *C. dubia* and *P. promelas*. No significant toxicity was reported in two Ohio EPA bioassays conducted in November 1994 and May 1995.

Outfall 015: No significant toxicity to either test organism was reported in nine acute and four chronic bioassays conducted by the entity from May 1993 to May 1994. Two acute bioassay conducted by Ohio EPA in November 1994 and May 1995 also reported no significant acute toxicity in the 015 effluent.

Outfall 003: Four chronic bioassays conducted by the entity from June 1993 to March 1994 resulted in no significant toxicity to test organisms. The Ohio EPA conducted three sets of acute bioassays in November 1994, May 1995, and September 1995. A 1.6 TU_a to *C. dubia* was reported in the September test. The first grab sample collected in May 1995 was toxic to both *C. dubia* and *P. promelas*, but the grab sample collected the following day was not toxic to either test organism. On July 26, 1995, a spill from outfall 003 resulted in a fish kill downstream from the outfall. The fish community indices in 1995 declined from full WWH attainment upstream in Dicks Creek at RM 4.4 (IBI = 41, MIwb = 9.7) to values in the fair and poor range downstream from outfall 003.

A total of 136 violations of NPDES permit limitations were reported to Ohio EPA between 1990-1995 for the following outfalls and internal monitoring stations: 001, 002, 003, 005, 011, 015, 613, 631 and 642. Ninety-four (94) percent of the violations, in declining order of frequency, were limited to the following parameters: zinc, phenol, total suspended solids (TSS), free cyanide, flow, ammonia-N, and nickel. Forty (40) percent of the NPDES violations that occurred in 1994 and 1995 alone included free cyanide, zinc, phenolic, ammonia-N, and flow. Thirty-five (35) percent of the NPDES violations were reported from internal monitoring station 642 (zinc, TSS, flow) and 29% of the violations were from internal monitoring station 613 (phenol and ammonia-N). The TSS violations were caused by a blower problem to the clarifier carryover and elevated pH caused $CaSO_4$ to precipitate. The cyanide violations were blast furnace related. Flow violations were caused by a flow meter malfunction, flow restriction in-line, and anti-foam problems. The ammonia-N violations were caused by a restriction in the discharge line to the Great Miami River. Zinc violations resulted from several sources including an electrical problem in the sand filter cycle, a solids problem at the BOF, low flows, lab errors, and by a leak of non-contact cooling water.

North Branch Dicks Creek

AK Steel (outfall 004)

Outfall 004 (discharge to the North Branch of Dicks Creek at RM 0.22) consists of effluents from the south terminal treatment plant (STTP), the no. 2 electrogalvanizing WWTP (internal monitoring station 642), non-contact cooling water, and storm water runoff. The STTP (monitored under station 641) was installed in 1970, modified in 1990, and was designed for 2.89 MGD. The STTP provides lime neutralization, aeration, flocculation, and clarification to the wastewaters generated from hot coating, acid pickling, and cold forming process. The average discharge for sation 641 was 0.653 MGD in 1995. The no. 2 electrogalvanizing WWTP was installed in 1990 and provides aeration, flocculation, and clarification to the wastewater generated from metal finishing process. Station 642 had an average discharge of 0.217 MGD for 1995. The average discharge for outfall 004 in 1995 was 2.17 MGD.

Loading information from outfall 004 for the period of record (1979-1995) was incomplete with only four years of data available (1992-1995). Outfall 004 had the highest flow volume, for the four years reported, with an average of more than 2 MGD. Mean ammonia-N loadings in 1995 for outfalls 004, 002, 003, and 015 totaled 25 kg/day comprising 8% of the aggregate load for the point source dischargers evaluated in the 1995 survey (Figure 5).

Entity generated bioasays conducted for outfall 004 between May 1993 and May 1994 reported a 1.9 TU_a to *C. dubia* in one of nine acute tests. Four chronic bioassays conducted by the entity in 1993 resulted in 1.44 TU_c to >5.0 TU_c. A November 1994 Ohio EPA bioassay resulted in a 2.8 TU_a to *C. dubia*. There was no significant toxicity to *P. promelas* in either the entity or Ohio EPA bioassays. These results supported the 1995 biosurvey data which showed a toxic response to macroinvertebrates in the North Branch of Dicks Creek downstream from outfall 004, whereas the fish community indices were in the very good to exceptional range upstream and downstream from the discharge.

Whitewater River

Harrison WWTP

The Harrison WWTP discharges directly to the Whitewater River at approximately RM 7.4. Upgraded in 1990, the Harrison WWTP is a secondary treatment plant with a design capacity of 1.15 MGD. The treatment processes consist of grit removal, oxidation ditches, final settling, chlorination and dechlorination. The collection system consists of separate sanitary sewers with 90% of the service area sewered. Five lift stations exist with no bypass or overflow structures. The service population is approximately 8,000 with moderate growth expected. The City of Harrison has an approved pretreatment program.

Annual median and 95th percentile conduit flows demonstrated slight variability throughout the period of record with an average near 0.70 MGD. Conduit flow for 95th percentile revealed peak flows in 1986, 1991 and 1995. Variability between percentiles remained low throughout most of the record indicating predictable plant performance and treatment (Figure 25). Ninety-fifth percentile flow exceeded the 1.2 MGD design capacity in 1986, 1991 and 1995. Median percentiles for the period remained below plant design.

Ammonia-nitrogen loadings data for the period of record (1979-1995) exhibited dramatic variability for both 50th and 95th percentiles. Variability between percentile data remained sporadic immediately following the plant upgrade (1990) varying at times by nearly 400% in 1994 and 1995. Annual median percentile data became more uniformly predictable following the upgrade (Figure 23).

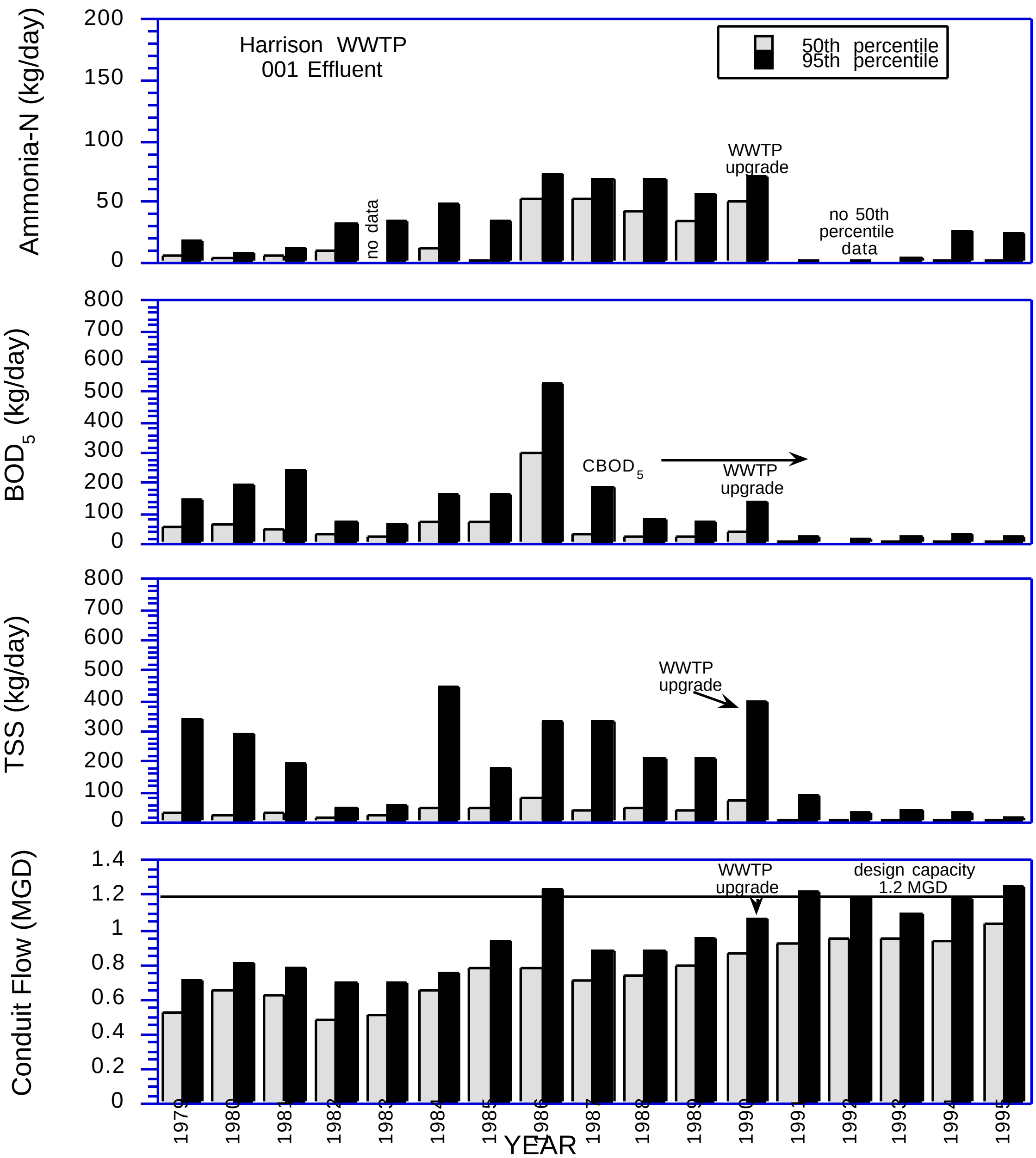


Figure 25 Annual median and 95th percentile conduit flow (MGD) and pollutant loads (kg/day) of ammonia-nitrogen, biochemical oxygen demand (BOD), and total suspended solids (TSS) from the Harrison WWTP.

The median BOD_5 data available through the period of record (1979-1995) remained fairly unchanged except for 1986. Prior to the upgrade no discernable trend in percentile data could be determined as 95th percentile more than tripled that of median loads through 1990. Maximum BOD_5 loads occurred during the mid 1980s. By 1991 median and 95th percentile loads appeared reduced and stabilized after the introduction of more advanced treatment in 1990.

Annual median TSS loads exhibited a fairly stable trend from 1979 to 1995 (exceptions in 1986 and 1990) while 95th percentile loadings were erratic (sometimes eight times the median loading value). This is usually indicative of plant upsets and treatment variability. Median percentiles stabilized most notably after the plant upgrade of 1990. Percentile data variability reduced significantly in 1992 through 1995.

Sixteen violations of the NPDES permit were reported to Ohio EPA for outfall 001 between 1990-1995. All violations were limited to five parameters; residual chlorine, pH, dissolved oxygen, ammonia-N and suspended solids.

Two acute bioassay tests were conducted by the Ohio EPA in winter and spring testing events in 1992 and 1995. Bioassay results indicated no significant adverse effects to either test organism exposed to effluent or river samples for both test years.

Spills, Overflows, and Unauthorized Releases

Pollutant discharges from spills, overflows, permit violations and other unauthorized releases are a significant source of lethal and sublethal stresses for aquatic communities in the middle and lower Great Miami River. Approximately 3,414 incidents have been recorded by the Ohio EPA Emergency Response Section during the eleven year period between 1985 to 1995. During the ten year period, the cumulative spill release quantity totaled approximately 119,921,146 gallons and 462,280 pounds of pollutants (Appendix Table A-2). Sewage spills accounted for the majority of pollutants into the watershed (95%) however six million gallons and over 400,000 lbs of other pollutants were also spilled to the Great Miami River watershed.

Agricultural related spills (i.e fertilizer, pesticides, herbicides and manure) accounted for nearly 1% of the total unauthorized events. By volume, fertilizer and other agricultural products and chemicals accounted for more than 32,895 gallons and 25,194 lbs of pollutants. Lawn Care companies accounted for 22% of the spills of agri-chemicals to the basin collectively totaling over 9,326 gallons. Superior Lawn Care reported six spills which occurred in the latter 1980s, totalling 570 gallons (primarily fertilizer). These releases migrated primarily to storm sewers in the Dayton, Centerville, and Cincinnati areas. Greenlawn reported the second most frequent number of spill events (7,081 gallons total) in ten years with five incidents in Warren and Hamilton Counties.

Most agricultural chemical spills that occurred in the 1990s drained into roadside ditches in Cincinnati and Springboro and totaled 7,156 gallons. Mid-Ohio Chemical Company and the GreenThumb Company reported two events in ten years. Other entities comprising 78% of the spill events were divided among chemical companies and fertilizer companies for all five counties.

Petroleum related spills released 228,454 gallons and accounted for less than 1% (923 events) spilled material. Diesal fuel was the most common petroleum contaminant spilled. Montogomery County had the highest incidence of gasoline or diesel fuel spills with 388 reports. Occurrences in Hamilton County ranked second with 296 reported incidents. Unauthorized spill events in Butler County amounted to 146 occurrences. Most of the entities reporting incidents, for the five counties were trucking companies and industries.

Chemical spills released 77,233 gallons of pollutants (less than 1% of the total spilled pollutants). Significant spill quantities (i.e. >1000 lbs) involving dry material were reported in eight incidents totalling 240,246 lbs. Forty-four percent of the chemical spills were reported in Hamilton County and 38% were reported for Montgomery County.

Paper companies located in Butler County, collectively reported 59 spill incidents over eleven years (1985-1995). These spills totaled 34,080 gallons of wastewater (paper waste and sludge) and 1840 lbs of sludge. Beckett Paper and Champion Paper Companies reported the most numerous spills for a combined total of 75% of the incidents. Most of these spills migrated to the GMR watershed. Sorg Paper Company reported 13 incidents totalling 22,150 gallons of paper wastewater (945 gallons of “other” materials). Champion Paper Company reported 13 incidents of which 19% of which involved sulfuric acid. Beckett Paper Company reported 32 unauthorized spill event incidents of which 6% involved reportable quantities (7,180 gallons of wastewater).

The largest spill reported for dry material was for 173,000 lbs of polyvinyl chloride. It occured in September, 1989 by CSX Transportation in Simms, Township, Hamilton County. All significant quantities of dry material spilled for all five counties in the study area occurred prior to 1991.

Entities having ten or more reported spills between 1985-1995, are described below (recoverable quantities not determined):

Ashland Chemical Companies reported 19 spills in Hamilton, Montgomery and Warren Counties over ten years, 1985-1995. Materials included 13 ammonia spills in the early 1990s and petroleum materials. Gasoline and methyl alcohol totaled 6,709 gallons while ammonia materials totaled 856 lbs.

AK Steel (Butler County.) reported 97 spills totalling a minimum of 407,294 gallons over a ten year period from 1985 - 1995. Wastewater was the most common material spilled throughout the ten years (18 reports totaling 59,215 gallons minimum-several quantities unreported). Flushing liquor was the most commonly reported spill in the 1990s (5 reports totaling 55,300 gallon). Other materials commonly reported were oil (17 reports totaling a minimum of 7,242 gallons), sulfuric acid (10 reports totaling 16,930 gallons), benzene, and pickle liquor (6 reports at 220,600 gallons). Additional reported spilled material include coal tar and coke oven waste, fuel (4 reports totaling 43,000 gallon minimum), sodium hydroxide (one report totaling 5000 gallons) and PCBs (one report totaling seven gallons).

British Petroleum (BP) (Hamilton, Montgomery, Butler Counties) reported 27 spills totalling 415 gallons over ten years. The spills most frequently occurred in Hamilton County (16 incidents or 60%). Gasoline, fuel oil and diesel fuel (in decending order of frequency) were the most common reported spilled materials.

Cargill Company (Montgomery County) reported 11 incidents between 1985 and 1990s. Nearly 50% of the calls were petroleum product materials. Other materials included corn starch and wastewater for a combined total of all reported materials of 11,955 gallons.

Cincinnati Gas and Electric (CG&E) reported 45 incidents from Hamilton, Butler, and Warren Co.'s , (in decending order of frequency). Materials included mineral oil, transformer oil, mercury and polychlorinated biphenyl (PCB) oil. Forty-four percent of the spills were reported in the 1980s while 36% were reported between 1990s and 1993. Most incidents migrated to storm sewers in Hamilton Co. Other spill migration routes were unidentified.

CSX Transportation reported 18 incidents between years, 1982-1992 (11 of 18 in Cincinnati, exact locations and watershed undetermined). Other spill locations included two in Miamisburg, two in Dayton and two in Middletown. Sixty-one percent of the reports occurred in Hamilton County. Twenty-five percent occurred in the late 1980s to early 1990s. Spilled materials included; diesel fuel, white phosphorus spill (12,000 gallons into Bear Creek, Montgomery County, 1987), benzene, polyvinyl chloride (173,000 lbs, Hamilton County, 1989) and methyl ethyl ketone, totaling 15,690 gal. Most waterway locations went unreported (16% reported).

D.O.E Fernald reported 34 calls for Hamilton and Butler Counties. The materials reported varied with very few materials reported more than once. Thirty-two percent of spill quantities were reported with a collective total of 287 gallons and 7766 lbs of material. Twenty-seven percent of waterways recorded included the Great Miami River, Paddys Run and a tributary of the Great Miami River.

Dayton Power and Light (DP&L) reported 197 spill incidents in Montgomery County over the ten years between 1985-1995. Most reports were related to PCBs, transformer oil, and fuel oil. Thirty-eight percent of the incidents were reported in the 1990s. Total spillage was 4,842 gallons for all materials. Oil, described as PCB material, totaled 527 gallons and 65 lbs. Most waterway migration routes went unreported with only 4% noted to storm sewers, Holes Creek (Montgomery County), and Great Miami River tributaries.

The Dayton WWTP (Mont. Co.) reported 24 incidents of spills with the majority of calls occurring between 1985 and 1991 (89% collectively). Most calls were related to wastewater. A total spill quantity reached 91,778,000 gallons with most reportable waterway migration to the Great Miami River and Opossum Creek.

General Motors (Montgomery County) reported 98 calls from the Delco Products Harrison Radiator, Delco Chassis (leading facilities in Toxics Release Inventory for Mont. Co.) and Inland Divisions. Most reported spills were to the Great Miami River and Wolf Creek waterways and totaled 1,376,602 gallons. All reported spills to Wolf Creek occurred at Home Avenue (James McGee Blvd) and consisted primarily of cutting oils or other oils. Other common materials reported leading to both waterways included chromium (trivalent) and PCB oil.

The Metropolitan Sewer District (MSD) in Hamilton county reported 68 spill incidents from 1989-1995 with a total quantity reported of 2,635 gallons. Seventy-five percent of initial reports had no associated quantities. Many spill locations were unidentified and the exact watershed migratory route of the discharged materials were undetermined.

Miami Paper Co. (Presently Fraser Paper Co.) reported 25 incidents over the ten year period, 1985-1995, discharging primarily to Owl Creek. Years 1988, 1989, and 1991 shared the greatest frequency of unauthorized releases totalling nearly 60% of the spills reported for Miami Paper. Wastewater and paper waste totalling 313,250 gallons and 5,324 lbs of kaolin clay and paper stock were reported spilled.

Montgomery County Sanitary Dept. reported 40 incidents over the five year period, 1990-1995, totaling 107,415 gallons. Eighty-five percent of the reported spills had no reported quantity. Incident reports in 1990 and 1991 commanded 55% of the total calls while spills reported in 1994 and 1995 significantly declined.

Procter and Gamble Company (Cincinnati and Dayton) reported 10 incidents over the ten year period, 1985-1995, totaling 18,300 gallons of primarily petroleum products such as fuel oil, jet fuel (18,000 gallon spill in 1989), and heating fuel. Fifty percent of the incidents occurred in the 1980s while the remaining half occurred evenly distributed throughout the 1990s.

Rumpke Trucking Co.- reported 14 incidents over the eleven year period, 1985-1995, totaling 920 gallons (50% of reports had no reported quantity) with the remaining 50% of calls occurring in the 1980s. Spills were reported as primarily oil (diesel, hydraulic, waste) diesel fuel and leachate and occurred frequently in Colerain Twp., Cincinnati.

Shell Oil Co-reported 16 incidents (primarily in Montgomery County. and, Hamilton Co. respectively) over the ten year period, 1985-1995, totaling 23,126 gallons. Fifty-six percent of the spills occurred in the 1980s and migration routes were most frequently documented to storm sewers. Most spill incidents in Montgomery County occurred in Dayton at various locations.

Sanitary Sewer Overflows (SSOs) and Combined Sewer Overflows (CSOs)
Sewage released through unauthorized bypasses, SSOs and CSOs events, was the leading spilled pollutant (95%) discharged to the middle and lower Great Miami River by volume (113,049,595 gallons) and frequency (213 events). These releases accounted for 77% of the total unauthorized spill material and totaled 91,778,000 gallons (two releases in 1985 totaled 60,000,000 gallons). In 1990, sewage spills totaled 21,850,000 gallons. In 1991 sewage spills totaled approximately 9,928,000 gallons. The Dayton WWTP reported the highest frequency of sewage spills between 1990 and 1996 with 25 reported events which discharged approximately 144 MG.

The middle and lower Great Miami River as well as Holes Creek receives periodic discharges of untreated sewage and other pollutants through SSOs. These are raw sewage overflows direct from sanitary sewers, and are usually caused by blockage at pump stations or inverted siphon dams. In addition to SSO discharges, the middle and lower Great Miami River basin also receives periodic discharges of untreated wastewater from numerous Combined Sewer Overflows (CSOs). The City of Middletown has eight CSOs with five discharging directly to the GMR and three discharging to the Hydraulic Canal. Several CSOs are also located in the City of Hamilton.

Unothauthorized Sewage Relases Within County Boundries
Montgomery County had eighty-five incidents of unauthorized discharges of untreated sewage reported from 1985-1995 totaling 96,885,000 gallons.

Warren County had fifteen incidents of unauthorized discharge of untreated sewage reported from 1985-1995. One event had a quantity totalling 3000 gallons.

Preble County had eight incidents of unauthorized discharges of untreated sewage reported from 1985-199, however no quantities were reported for the eight events.

Hamilton County had seventy incidents of unauthorized discharges of untreated sewage reported from 1985-1995 totaling 15,960 gallons. Most frequently reported spills in Hamilton County included 68 unauthorized sewage releases at various locations over ten years (1985-1995) from the Cincinnati Metropolitan Sewer District (MSD). Only 25% of the spills had quantities associated with the reports totalling 2,635 gallons. In review of the ten years of unauthorized discharges for Cincinnati MSD, 87% of the events occurred from 1990-1993.

Butler County-Thirty incidents of unauthorized discharges of untreated sewage were reported. Six quantities were reported for the events from 1985-1995, totalling 16,143,000 gallons. Butler County Sewer District reported five of the 30 incidents while the remaining incidents were divided amongst numerous entities.

Chemical Water Quality (Figures 26 -56, Table 4 , Appendix Tables A-1, A-3, and A-6)

Great Miami River (Dayton to Middletown: RMs 92.65 - 57.55)

Stream flows from May through September 1995 (Figure 26a and 26b) as measured by four USGS gage stations in this section of the Great Miami River exceeded 7 Q_{10} values (USGS 1981 and 1996). Flows, somewhat below normal at the beginning of May, increased dramatically later in the month as a result of widespread heavy precipitation, and remained well above normal throughout June. Flows declined steadily throughout the first half of July before increasing again during the latter part of the month and into August, with peak flows for the five month period occurring during the second week of August. Several gages recorded mean monthly discharges which approached or exceeded record levels for August as a result of excessive rainfall in this week. Subsequent stream flows steadily declined with lows at all gages recorded the last week of September. On specific water sampling days during the 1995 survey, the four gage stations (RMs 92.65, 80.90, 67.20 and 64.36) recorded lows on September 19 of 224 cfs,537 cfs, 661 cfs, and 720 cfs respectively; corresponding highs of 5850 cfs, 9980cfs, 8690 cfs, and 9650 cfs respectively, were recorded on July 27.

The USGS monitored dissolved oxygen (D.O.), pH, temperature, and conductivity in the Great Miami River near Linden Avenue at Miamisburg (USGS 1996). Mean daily values from May through September 1995 are presented in Figure 27. Dissolved oxygen mean values ranged from 6.0 mg/l on August 5 to 11.8 mg/l on July 14. Mean daily temperature values ranged from 13.0 °C (May 2) to 28.5 °C (July 15) while mean daily pH values recorded ranged from 7.4 SU (June 25) to 8.8 SU (July 12). Conductivity daily means ranged from a low of 258 µmhos/cm on August 9 to a high of 946 µmhos/cm on September 30. Values were at levels characteristic of good water quality.

Datasonde continuous monitors recorded hourly D.O., temperature, pH and conductivity in 1995 at seventeen sites (RMs 87.05-60.58) from September 11-14 in the Dayton to Middletown section of the mainstem (Figures 28 - 31, Appendix Table A-6). All D.O. values recorded remained above the WWH minimum criterion of 4.0 mg/l. The lowest values in the mainstem occurred at RMs 64.72 and 72.80 with concentrations ranging from 4.44 mg/l to 8.02 mg/l and from 4.66 mg/l to 8.83 mg/l, respectively. Both sites were located in impounded areas just upstream of lowhead dams. The highest mean temperature (22.39˚C) and conductivity (1086 µmhos/cm) were recorded at RM 75.31, three-quarters of a mile downstream of the Dayton WWTP. Mean pH values remained relatively stable ranging from 7.82 SU (RM 71.85) to 8.33 SU (RMs 77.24 and 60.58).

All daytime D.O. concentrations (grab samples) recorded in the Great Miami River from Dayton to Middletown were above minimum water quality criteria (Figure 32). The lowest concentration measured in the mainstem (4.7 mg/l) occurred at RM 79.95, downstream of Wolf Creek. Mean concentrations and percent saturations, relatively stable throughout the reach, increased sharply two miles downstream of the DP&L Hutchings dam at RM 62.58 to 11.02 mg/l and 136%, respectively, from corresponding values of 7.48 mg/l and 89%, respectively, recorded at RM 64.72. (Relative saturation, expressed as a percentage, is the relation of the existing oxygen solubility to the equilibrium content of the gas expected at the same temperature and partial pressure.) Higher D.O. levels continued throughout the remainder of the reach. While only 35% of D.O. concentrations reached supersaturated levels at the first thirteen sites (RMs 92.65-64.72), the majority (96%) of percent saturation values recorded at the last four sites (RMs 62.58-57.55) exceeded 100%.

The majority (71%) of five-day biochemical oxygen demand (BOD_5) concentrations in this reach exceeded the minimum detection limit (2.0 mg/l) with mean values ranging from 2.7 mg/l downstream of the Dayton WWTP (RM 75.86) to 10.3 mg/l downstream of Appleton Paper (RM 72.10). Relatively higher values (mean concentration of 9.6 mg/l) also occurred downstream of Mound at RM 66.00.

No exceedences of ammonia-N water quality criteria were recorded in the Dayton to Middletown reach of the mainstem with the majority (84%) of the values at or below the minimum detection limit of 0.05 mg/l. The highest concentration (0.46 mg/l) occurred downstream of the Appleton Paper WWTP at RM 72.10.

The Dayton to Middletown reach of the mainstem generally exhibited higher concentrations of nitrate+nitrite-N than the two downstream reaches. The highest levels in the mainstem (mean and maximum concentrations of 6.32 mg/l and 7.77 mg/l, respectively) occurred downstream of the Dayton WWTP at RM 75.86, reflecting the influence of point sources in the basin.

Virtually all total phosphorus concentrations (98%) in the Dayton to Middletown reach were greater than the minimum detection limit of 0.05 mg/l. Coinciding with the highest flow day (July 27) of the survey, RM 77.24, reflecting the nutrient loading impact of numerous City of Dayton storm sewers in the area, recorded the highest concentration (3.9 mg/l) of total phosphorus of the entire survey. Concentrations at this site on other sampling days averaged 0.14 mg/l. RM 75.86, downstream of the Dayton WWTP, experienced the most consistently elevated phosphorus levels in this reach with respective mean and maximum values of 0.98 mg/l and 1.55 mg/l. The remaining fifteen sites recorded mean values ranging from 0.14 mg/l (RM 79.95) to 0.40 mg/l (RM 73.77). Excluding the atypical value at RM 77.24, the average phosphorus concentration calculated for all values recorded in the entire upper reach was 0.30 mg/l.

All recorded concentrations of total suspended solids (TSS) in the entire mainstem were greater than the minimum detection limit of 5 mg/l. The highest values in the mainstem were recorded at the eight sites in the upper reach (RMs 92.65-72.10) sampled on July 27, the highest flow day of the 1995 survey, with maximum values ranging from 206 mg/l at RM 79.95 to a survey high of 467 mg/l at RM 77.24. Mean concentrations at the remaining nine sites within this segment (RMs 69.87-57.55) ranged from 34 mg/l at RM 68.30 to 56 mg/l at RM 58.00 with respective corresponding maximum values of 54 mg/l and 114 mg/l. The average TSS concentration for all values recorded in the entire upper reach (excluding the excessive values recorded on July 27) equalled 46 mg/l.

The Dayton to Middletown reach of the mainstem recorded one exceedence of water quality criteria for lead (37 µg/l) at RM 79.95 and two exceedences for mercury (0.09 µg/l and 0.04 µg/l) at RM 66.00. (Samples collected at RM 66.00, analyzed by a contract laboratory, accounted for four of the nine samples in the entire mainstem analyzed for mercury.) In addition, conductivity and total filterable residue, frequently elevated downstream of the Appleton WWTP at RM 72.10, exceeded water quality criteria on September 21. Chemical oxygen demand (COD) was also elevated at the site on this date. While within water quality criteria, elevated values of conductivity and total filterable residue were also recorded frequently downstream of the Dayton WWTP at RM 75.86.

Ten of the seventeen water chemistry sites in the Dayton to Middletown reach were sampled for organic compounds (volatiles, semivolatiles, organochlorine pesticides and PCBs) during the 1995 survey. Organochlorine pesticides accounted for the majority (73%) of values recorded in this reach exceeding minimum detection limits. The most frequently observed compound, gamma-hexachlorocyclohexane (Lindane), was detected in 68% of the samples but exceeded water quality criteria only twice (once each at RMs 79.95 and 75.86). Dieldrin concentrations, however, exceeded water quality criteria in 45% of the samples collected in the reach. Concentrations of aldrin, endrin, heptachlor, endosulfan I, endosulfan II, methoxychlor, and mirex exceeded water quality criteria on several occasions. In addition, one exceedence of water quality criteria for 2,4,6-trichlorophenol (7.5 µg/l) occurred downstream of Appleton WWTP at RM 72.10. Polychlorinated biphenyls (PCBs) were not detected in the water column at any site (mainstem or tributary) during the 1995 survey (Table 4 , Appendix Table A-3).

Great Miami River (Middletown to Hamilton: RMs 55.14 - 34.68)
Flows measured by the two USGS gage stations (RMs 57.05 and 35.48) in this reach of the mainstem generally followed the same pattern as flows in the Dayton to Middletown section with peak flows recorded during the second week of August and lows the last week of September (Figure 26c). On specific water sampling days during the 1995 survey, the two gages recorded lows on September 19 with respecitve mean daily flows of 708 cfs and 901 cfs; corresponding highs of 10400 cfs and 9010 cfs, respectively, were recoreed on July 27.

Datasonde continuous monitors recorded hourly D.O., temperature, pH and conductivity at twelve sites from RMs 55.14-35.48 from September 5-7 (Figures 28-31, Appendix Table A-6). While dissolved oxygen data was unavailable at the majority of sites, RMs 43.23 and 36.95 experienced the greatest fluctuations in the entire survey with values ranging from 5.44 mg/l to 17.56 mg/l and from 4.78 mg/l to 16.77 mg/l, respectively. Many sites in this reach also recorded much greater variation in diurnal pH with one exceedence of water quality criterion (9.19 SU) occurring at RM 44.51, downstream of the Butler County LeSourdsville WWTP. Significant algal growth was observed in this reach and the lower section (Hamilton to the Ohio River) of the river during the survey. Mean temperatures from September 5-7 were stable varying only from 24.77˚C (RM 37.35) to 25.84˚C (RM 35.48). Mean conductivity values at sites measured from September 5-7 ranged from 595 µmhos/cm (RM 44.51) to 819 µmhos/cm (RM 35.48).

All daytime D.O. concentrations (grab samples) recorded in the mainstem from Middletown to Hamilton were above minimum water quality criteria (Figure 32). This middle reach generally experienced higher D.O. values than the Dayton to Middletown reach with mean concentrations and percent saturations ranging from 8.33 mg/l and 101%, respectively, at RM 39.95 to 11.43 mg/l and 144%, respectively, at RM 34.68. Accelerated algal growth, especially apparent in the dam pools (RMs 37.35 and 34.68), frequently pushed dissolved oxygen concentrations to supersaturated levels due to excessive algal photosynthesis. The majority (63%) of all daytime D.O. percent saturations recorded in this middle reach exceeded 100%.

This reach experienced relatively stable BOD_5 concentrations with mean values ranging from 3.8 mg/l (RM 51.30) to 6.55 mg/l (RM 37.35). The majority (80%) of values recorded were greater than the minimum detection limit (2.0 mg/l).

While seventy-five percent (75%) of ammonia-N values in this reach were at or below the minimum detection limit of 0.05 mg/l, consistently elevated concentrations were recorded downstream of AK Steel (outfall 011) at RM 51.30, including three exceedences of water quality criteria. Values at this site ranged from 0.42 mg/l to 1.68 mg/l. (No flow was observed on survey sampling days from a CSO just upstream of AK Steel's outfall.) One additional exceedence (0.44 mg/l) of ammonia-N water quality criteria was reported in the mainstem downstream of Middletown WWTP and Crystal Tissue at RM 47.91 on July 12. Field investigators observed a bright red discharge from the Crystal Tissue outfall on this date; however, no samples were collected by the entity. The NPDES permit for Crystal Tissue has no limits for ammonia-N or color, requiring only that the entity monitor ammonia-N once every two weeks and color once a month. Monthly operating reports (MORs) for the Middletown WWTP indicate an effluent ammonia-N concentration of only 0.05 mg/l on July 12.

The middle reach experienced relatively stable concentrations of nitrate+nitrite-N with mean values ranging only from 2.76 mg/l (RM 51.30) to 3.22 mg/l (RM 44.51).

All recorded concentrations of total phosphorus in the middle reach of the mainstem were greater than the minimum detection limit of 0.05 mg/l. Values were relatively stable throughout the segment with mean concentrations ranging from 0.21 mg/l at RM 36.95 to 0.31 mg/l downstream of the Butler County LeSourdsville WWTP at RM 44.51. The average concentration calculated for all phosphorus values in this reach was 0.23 mg/l. Reflecting the combined impact of continued nutrient loading from both point sources and non-point runoff in the basin, excessive algal growth was observed at several locations throughout this segment as well as the lower reaches of the mainstem (Hamilton to the Ohio River).

This segment of the mainstem exhibited elevated levels of TSS with an average concentration of 60 mg/l for all values recorded in the reach. Mean concentrations ranged from 50 mg/l (RM 35.69) to 85 mg/l (RM 45.85) with the highest concentrations coinciding with periods of high flow in late June and July.

Selenium concentrations exceeded water quality criteria on September 20 downstream of the Middletown and Crystal Tissue WWTPs at RM 47.91 (7 µg/l) and again at RM 45.85 (6 µg/l). The middle reach of the mainstem also experienced numerous exceedences of water quality criteria for pH. These elevated daytime pH values, generally coinciding with supersaturated dissolved oxygen concentrations, may be reflective of the effects of nutrient loading on algal growth and photosynthesis in the reach.

Organochlorine pesticides accounted for the majority (95%) of values exceeding minimum detection limits at the five sites sampled for organic compounds in the Middletown to Hamilton reach of the mainstem. Gamma-hexachlorocyclohexane (Lindane), detected in all samples collected in the reach, exceeded water quality criteria only at RM 52.64. Four of the five sites, however, recorded frequent exceedences of water quality criteria for dieldrin. Water quality criteria exceedences for aldrin, endrin, heptachlor, and endosulfan II were also observed in this reach (Table 4, Appendix

Tables A-1 and A-3).

Great Miami River (Hamilton to the Ohio River: RMs 33.05 - 1.75)
While all D.O. values at the nine sites monitored from September 5-7 by datasondes in this section of the mainstem remained above the WWH minimum criterion of 4.0 mg/l, the majority of sites experienced significant diurnal fluctuations. The greatest variations in this reach for both D.O. (5.40 mg/l to 16.81 mg/l) and pH (7.58 SU to 8.66 SU) occurred at RM 19.90, downstream of Paddys Run. Mean temperatures and conductivity levels in this lower reach were relatively stable, ranging from 25.58˚C (RM 5.56) to 26.11˚C (RM 33.05) and from 639 µmhos/cm (RM 5.56) to 772 µmhos/cm (RM 31.19), respectively.

The majority (68%) of D.O. concentrations (daytime grab samples) reached supersaturation levels in this section of the mainstem. Higher D.O. concentrations and percent saturations were the norm in the lower reaches with the highest mean values (12.57 mg/l and 157 %, respectively) of the entire survey recorded at RM 31.19, approximately three-quarters of a mile downstream of the Fairfield WWTP. Relatively shallow with little overhead canopy, this site appeared to be impacted by an inordinate amount of algae as the summer progressed. Higher D.O. levels persisted longitudinally through RM 27.15, decreased through RM 21.44, and then again began a gradual increase through RM 10.70. The last two sites, RMs 8.07 and 1.75, experienced the lowest D.O. values in the reach with mean concentrations of 7.28 mg/l and 7.86 mg/l, respectively, and corresponding percent saturations of 92% and 94%.

The highest BOD_5 concentrations in the mainstem occurred in this lower reach with mean values ranging from 4.1 mg/l (RM 14.93) to 15.5 mg/l (RM 24.55). Longitudinally, RMs 33.05-24.55 generally experienced the highest maximum values with concentrations recorded during the first week of September ranging from 10 mg/l at RM 26.21 to 39 mg/l at RM 24.55. The majority (76%) of BOD_5 values in this reach exceeded the minimum detection limit (2.0 mg/l).

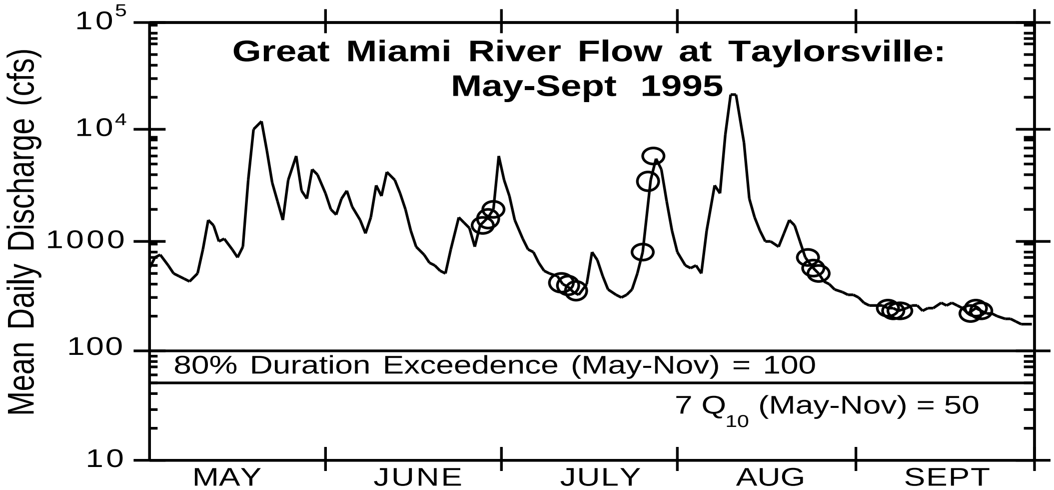
No exceedences of ammonia-N water quality criteria were recorded in the lower reaches of the mainstem with the majority (91%) of values at or below the minimum detection limit of 0.05 mg/l. Concentrations of nitrate+nitrite-N in the lower reaches of the mainstem remained relatively stable with peaks (mean and maximum values of 3.87 mg/l and 7.38 mg/l, respectively) occurring downstream of Fernald at RM 24.55. The lowest values in the mainstem occurred at RM 8.07 (mean of 0.82 mg/l) where 83% of the recorded values were at or below the minimum detection limit of 0.1 mg/l.

The average of all phosphorus concentrations recorded in this lower reach equalled 0.21 mg/l with the majority (95%) of values exceeding the minimum detection limit of 0.05 mg/l. Mean values ranged from 0.13 mg/l at RM 8.07 to 0.41 mg/l at RM 33.05, downstream of the Hamilton WWTP.

The lower reach experienced the highest overall average TSS concentration of the three mainstem segments with a mean value of 68 mg/l for all recorded values. Mean concentrations ranged from 54 mg/l at RM 8.07 to 90 mg/l at RM 8.52 while maximum values varied from 80 mg/l at RM 34.68 to 227 mg/l at RM 8.07. Again, the highest values generally coincided with high flow days reflecting the impact of non-point runoff in the basin.

Five samples in the lower reach were analyzed for mercury by a contract laboratory (four samples at RM 24.55 and one sample at RM 19.90). Concentrations exceeded water quality criteria at RM 19.90 (0.06 µg/l) and on three occasions at RM 24.55 (0.04 µg/l, 0.06 µg/l and 0.09 µg/l). Additionally, daytime pH values in the lower reach exceeded criteria at three locations (RMs 31.19, 28.82, and 27.15). One temperature exceedence was recorded at RM 8.07.

Seven of the seventeen water chemistry sites in the Hamilton to Ohio River reach were sampled for organic compounds during the 1995 survey. As in the two upper reaches, the majority (95%) of values exceeding minimum detection limits were organochlorine pesticides with the most commonly observed compound, gamma-hexachlorocyclohexane (Lindane), detected in 90% of the samples with 19% of values exceeding water quality criteria. Six of the seven sites (and 43% of the samples) recorded dieldrin concentrations which exceeded water quality criteria. Concentrations of endrin and endosulfan II exceeded water quality criteria on several occasions. In addition, bis (2-ethylhexyl) phthalate concentrations exceeded water quality criteria downstream of the Hamilton WWTP at RM 33.05 on one occasion (Table 4, Appendix Tables A-1).



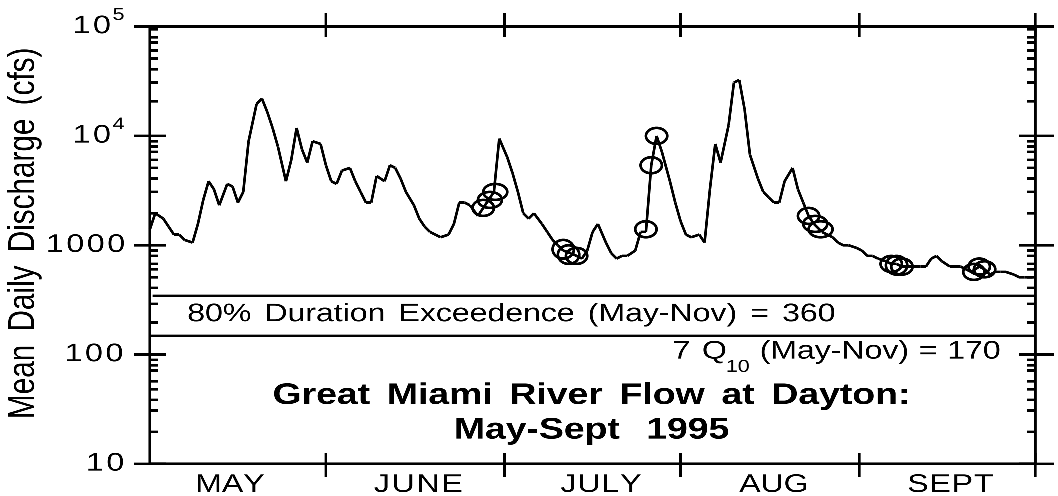


Figure 26a May through September, 1995 flow hydrographs for the Great Miami River at Taylorsville (RM 92.65) and the Great Miami River at Dayton (RM 80.90). Low flow conditions ($7Q_{10}$) and 80% duration exceedence flows at Taylorsville and Dayton are based on the USGS gage stations #03263000 (period of record: 1922-1978) and #03270500 (period of record: 1913-1978), respectively. Open circles indicate river discharge on water chemistry sampling days.

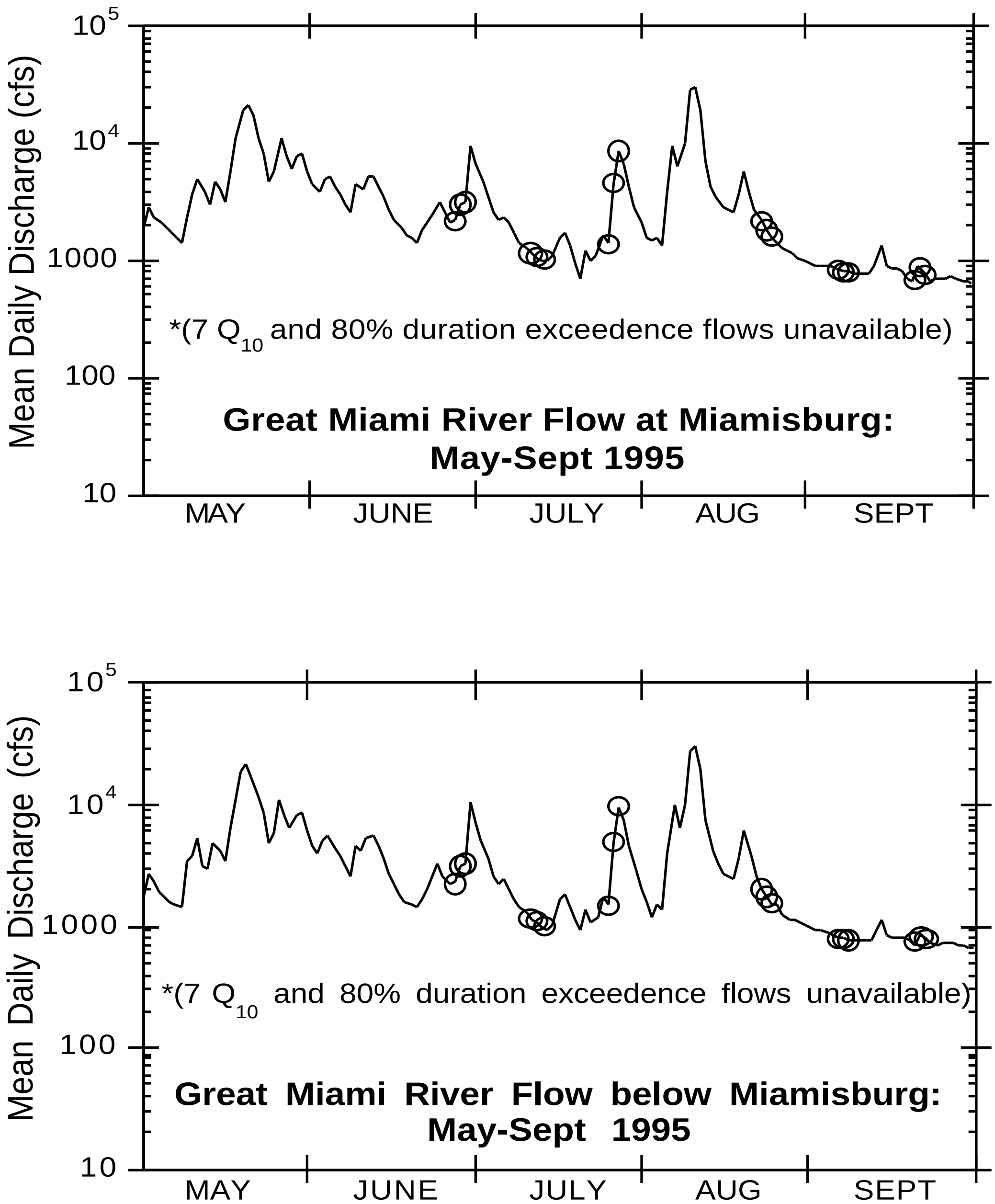


Figure 26b. May through September, 1995 flow hydrographs for the Great Miami River at Miamisburg (RM 67.20) and the Great Miami River below Miamisburg (RM 64.36) based on USGS stations #03271500 and #03271601, respectively. Open circles indicate river discharge on water chemistry sampling days.

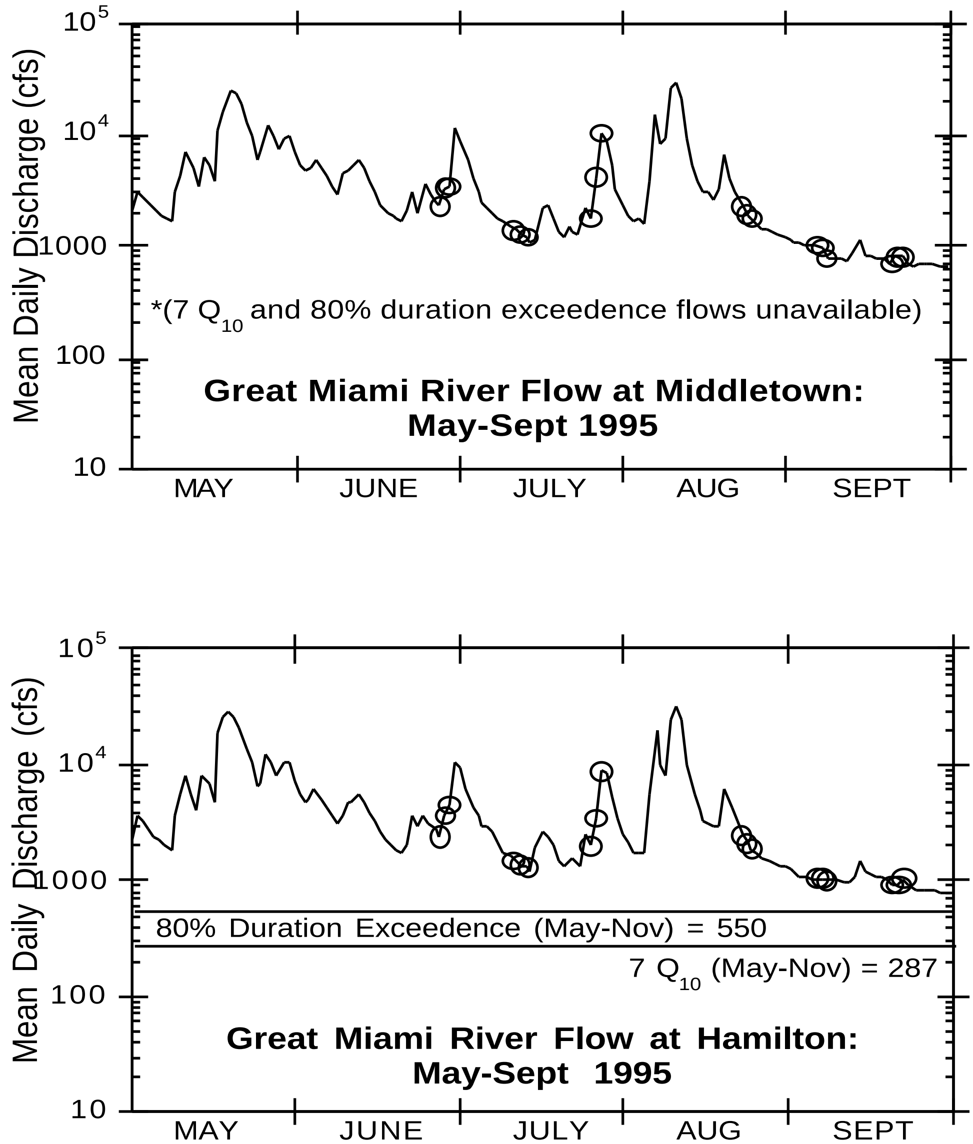


Figure 26c. May through September, 1995 flow hydrographs for the Great Miami River at Middletown (RM 57.05) and the Great Miami River at Hamilton (RM 35.48) based on USGS stations #03272100 and #03274000, respectively. Low flow conditions ($7Q_{10}$) and 80% duration exceedence flows at Hamilton reflect a period of record from 1930-1976. Open circles indicate river discharge on water chemistry sampling days.

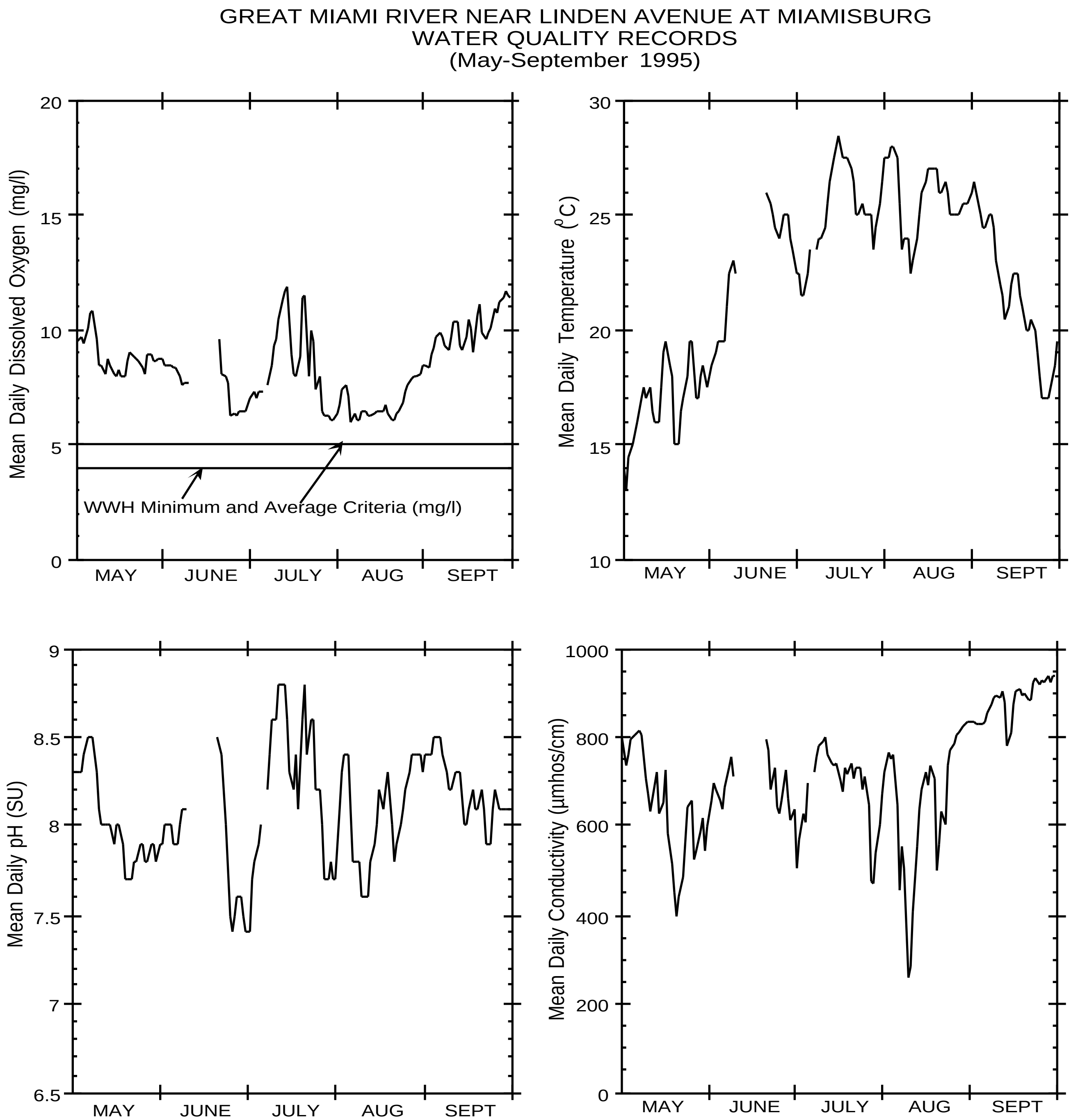


Figure 27 May through September, 1995 water quality records (mean daily dissolved oxygen, temperature, pH, and conductivity) for the Great Miami River near Linden Avenue at Miamisburg (RM 66.60, USGS gage station #03271510). Data unavailable June 10-19 and July 6, 1995. 1995.

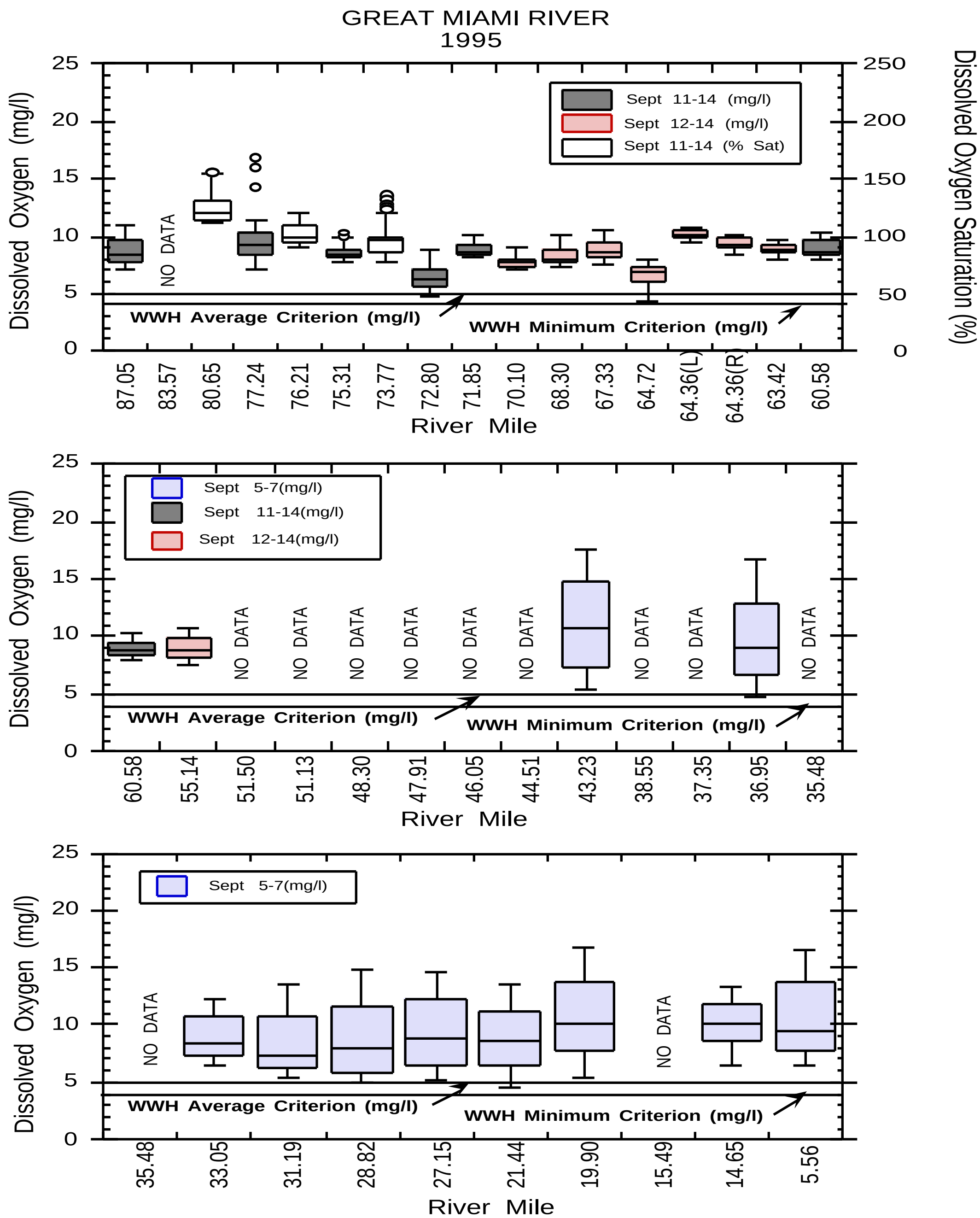


Figure 28. Longitudinal summary of dissolved oxygen (D.O.) recorded with Datasonde™ continuous monitors in the Great Miami River during September, 1995.

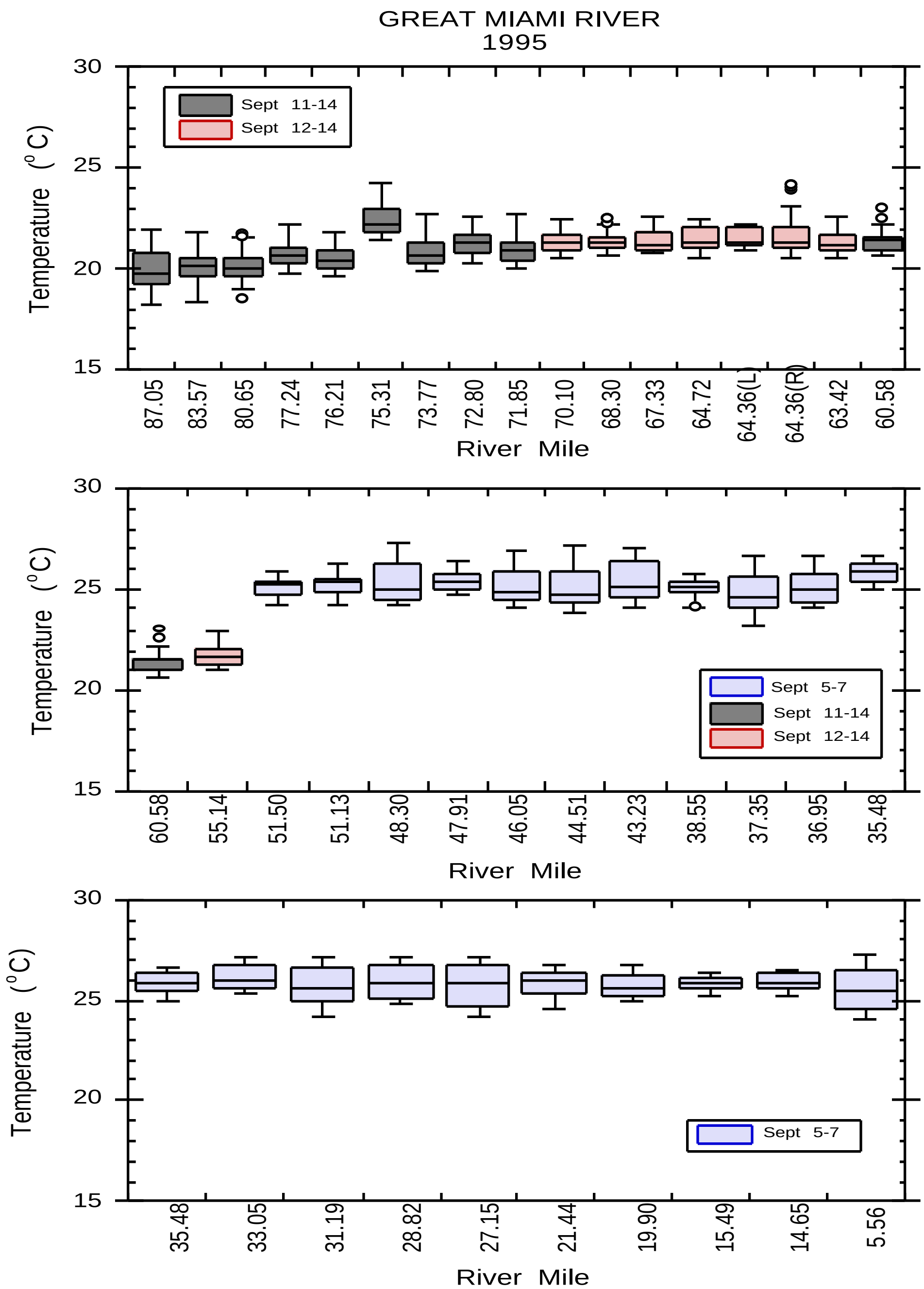


Figure 29. Longitudinal summary of temperature recorded with Datasonde™ continuous monitors in the Great Miami River during September, 1995.

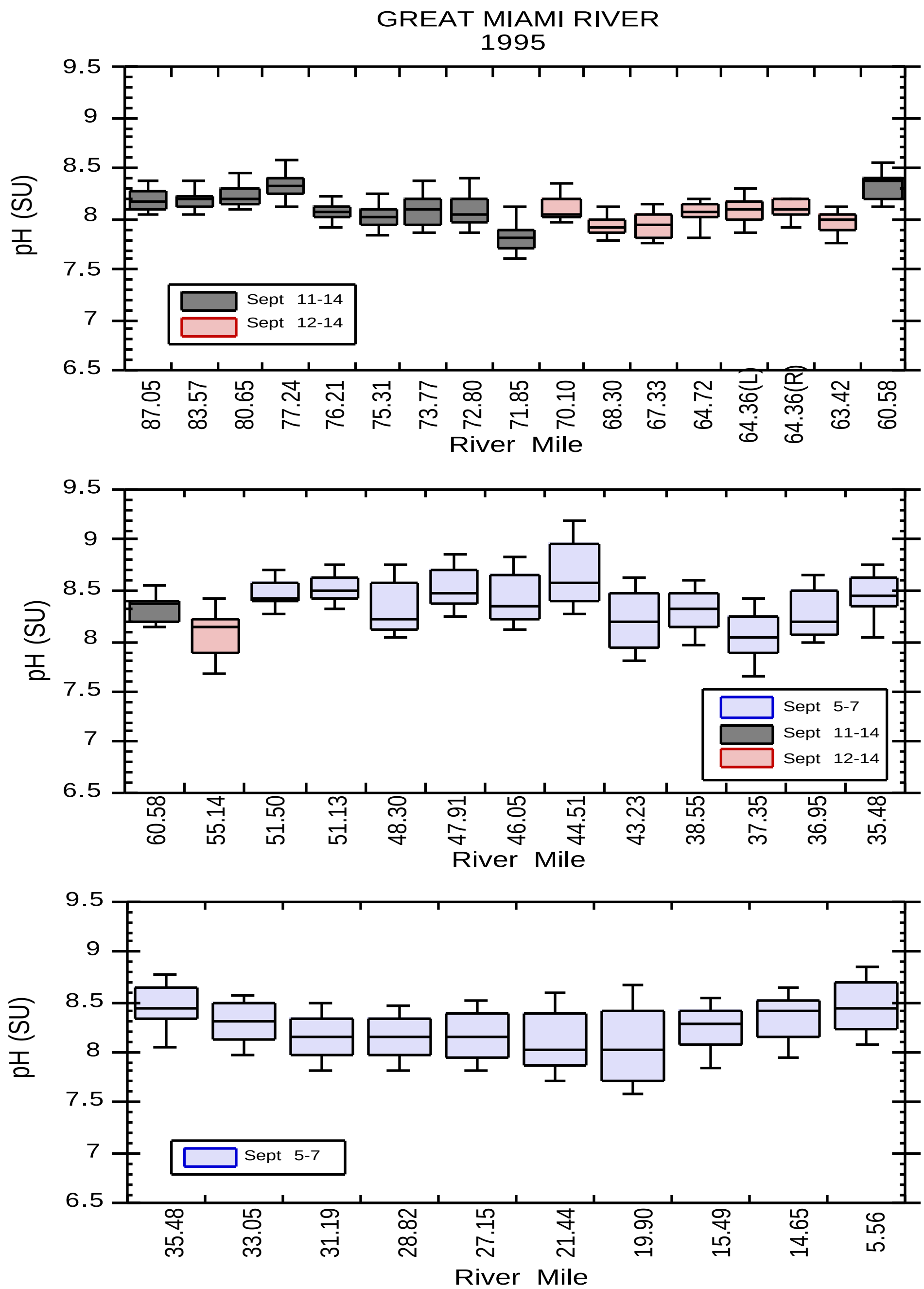


Figure 30. Longitudinal summary of pH recorded with Datasonde™ continuous monitors in the Great Miami River during September, 1995.

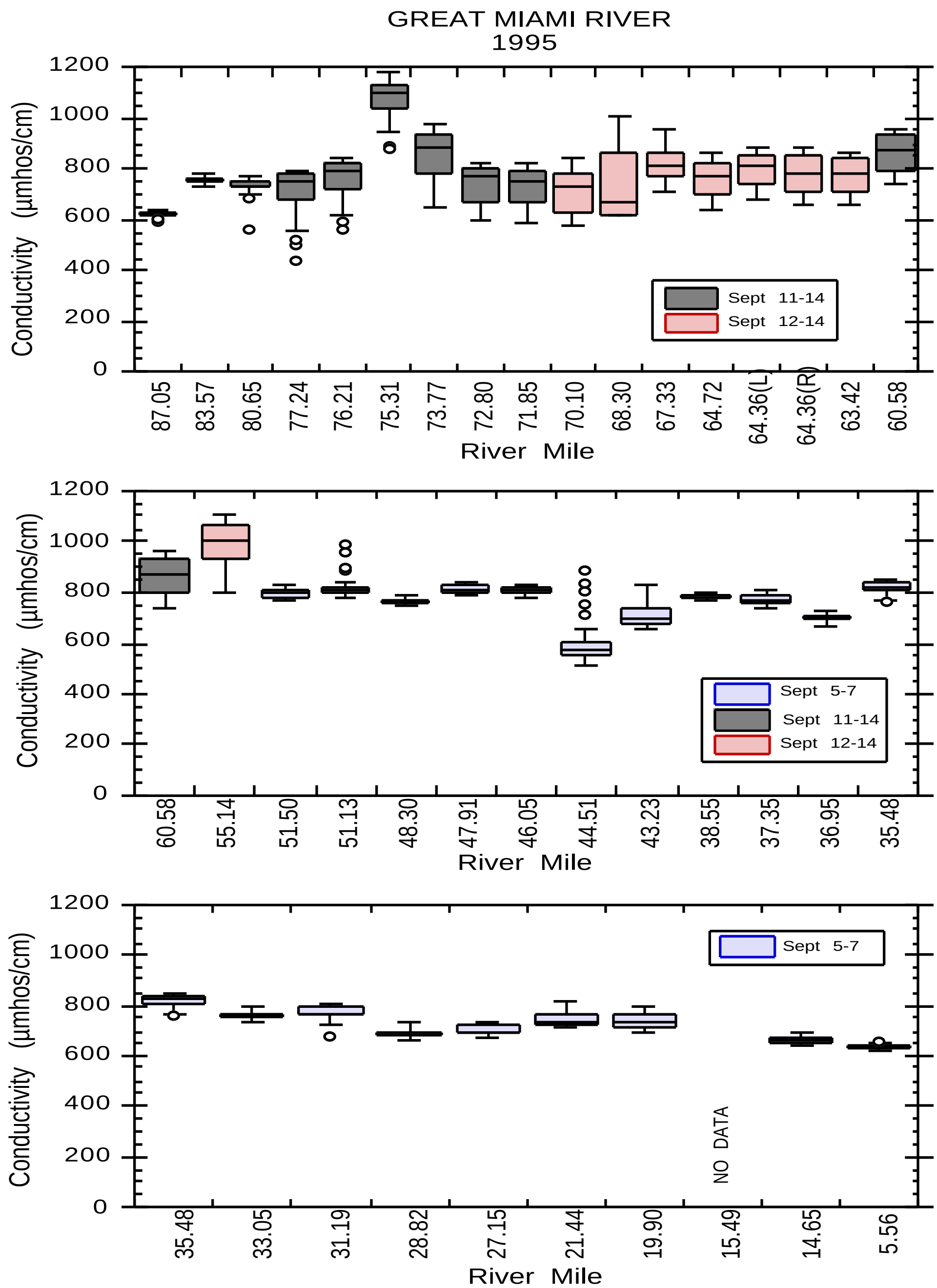


Figure 31. Longitudinal summary of conductivity recorded with Datasonde™ continuous monitors in the Great Miami River during September, 1995.

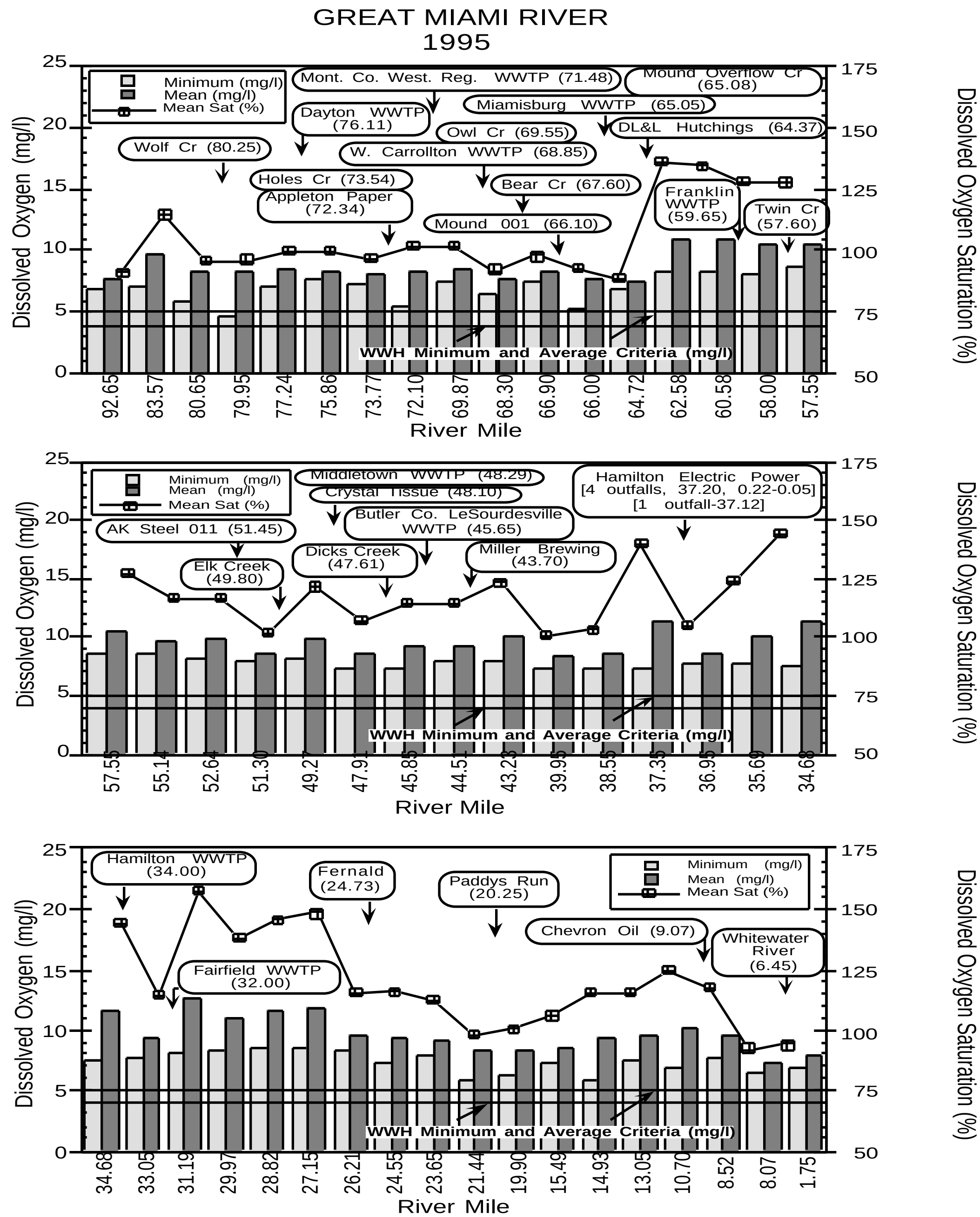


Figure 32. Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations) in the Great Miami River during the 1995 survey.

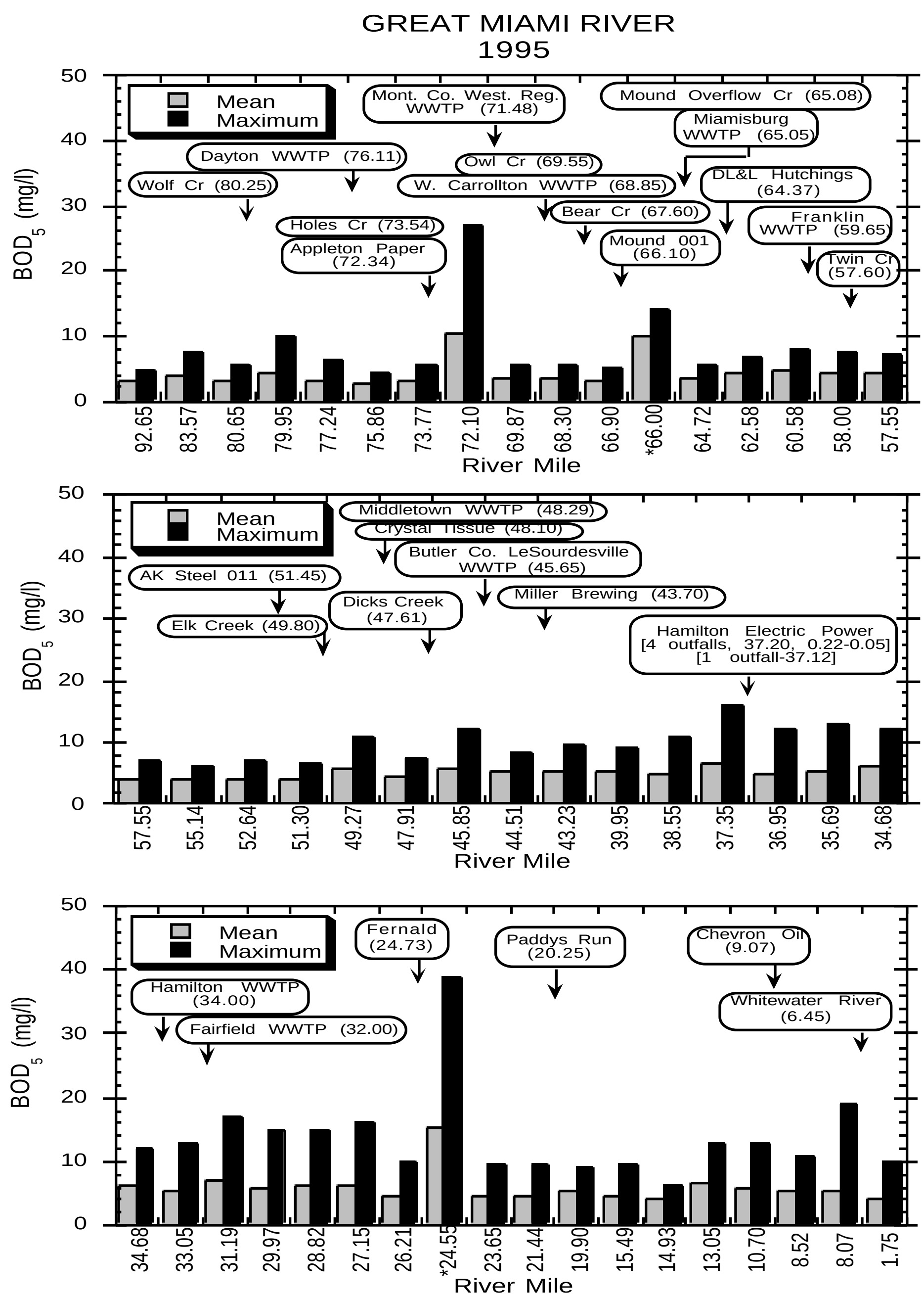


Figure 33. Longitudinal summary of BOD_5 concentrations (mean and maximum values) in the Great Miami River during the 1995 survey. (*Samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services.)

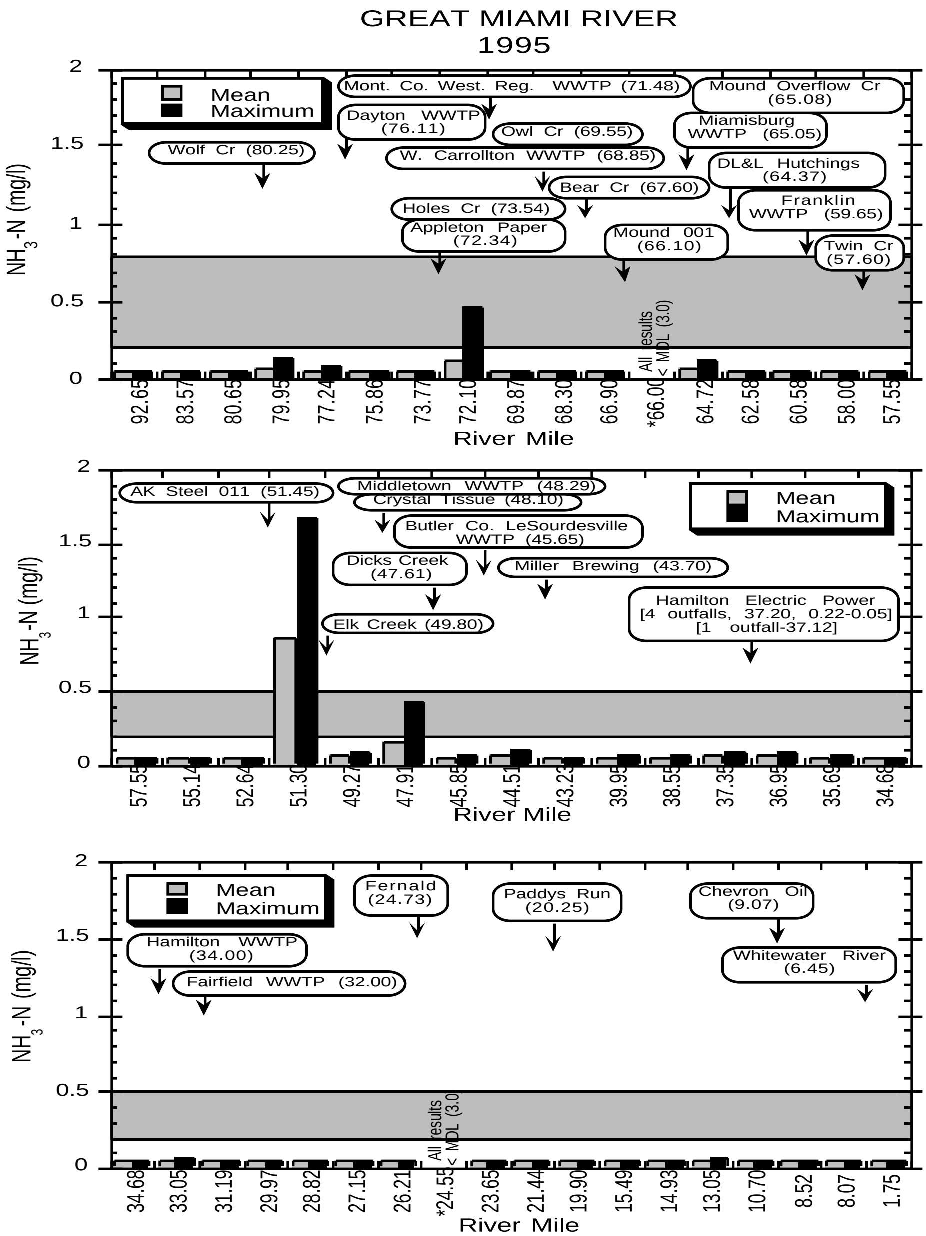


Figure 34. Longitudinal summary of ammonia-N concentrations (mean and maximum values) in the Great Miami River during the 1995 survey (*shaded area is the ammonia-N water quality criteria range between the 25th and 90th percentile pH and temperature recorded during sample collection*). *Samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services.

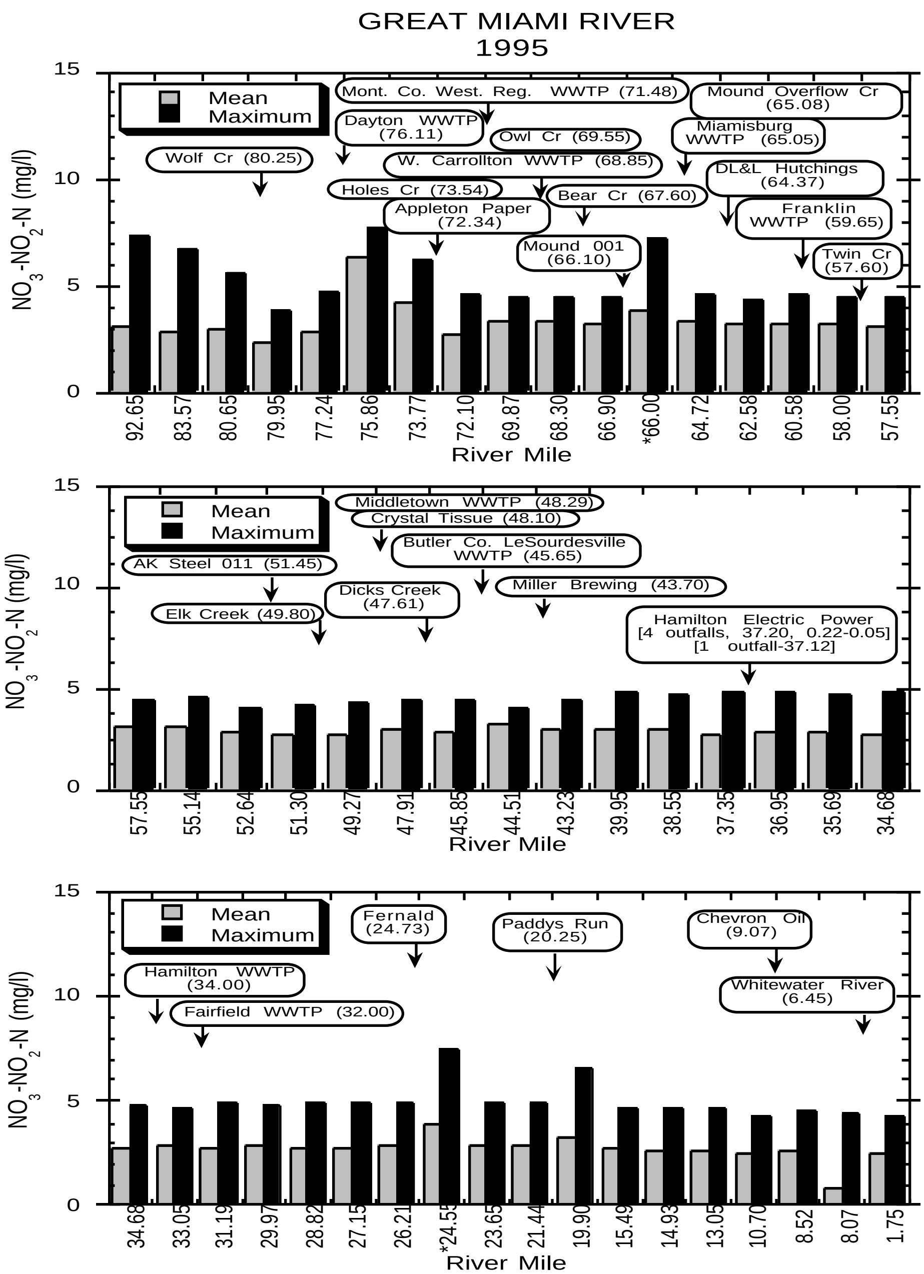


Figure 35. Longitudinal summary of nitrate-nitrite-N concentrations (mean and maximum values) in the Great Miami River during the 1995 survey. (*Samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services, and are nitrate-N only.)

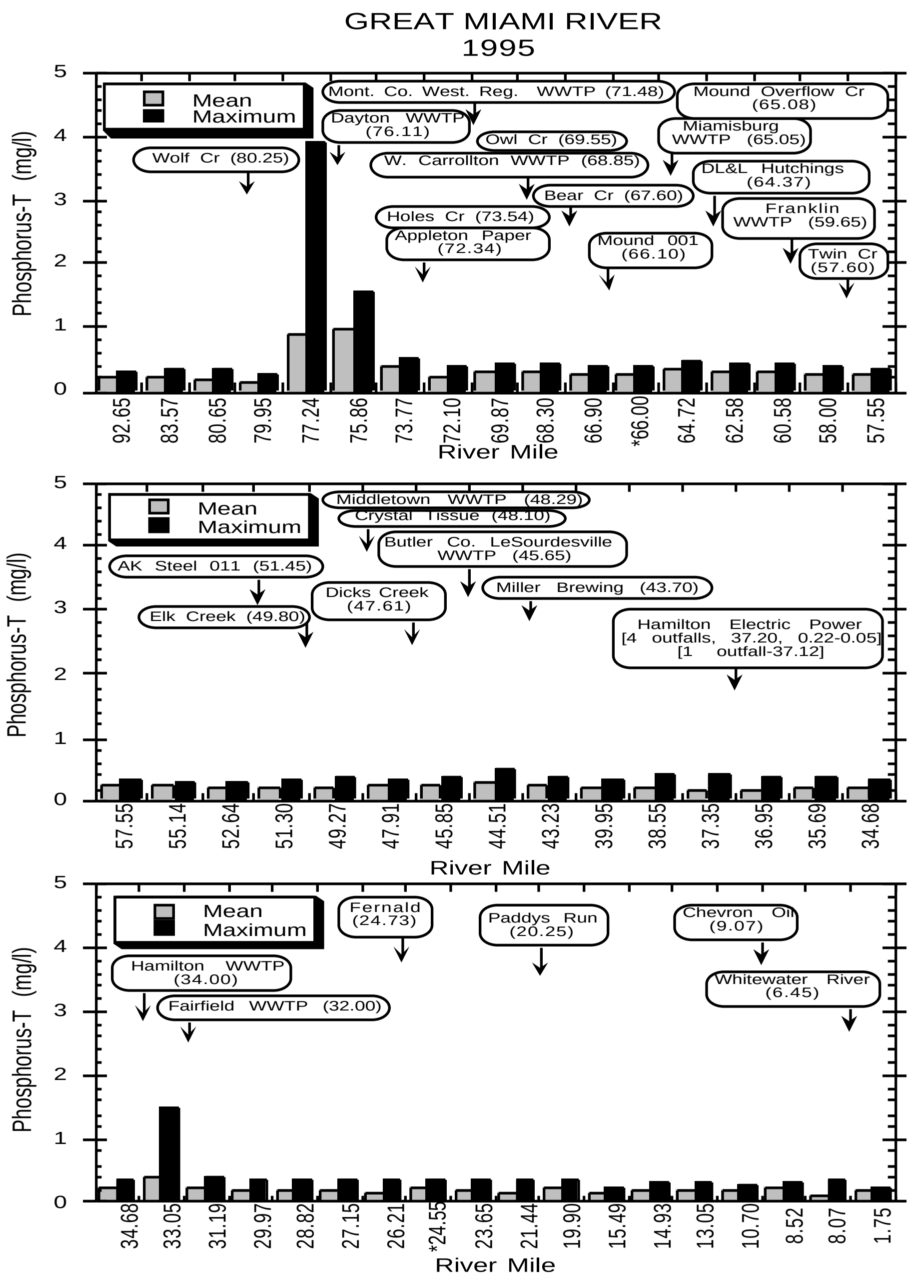


Figure 36. Longitudinal summary of total phosphorus concentrations (mean and maximum values) in the Great Miami River during the 1995 survey. (*Samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services.)

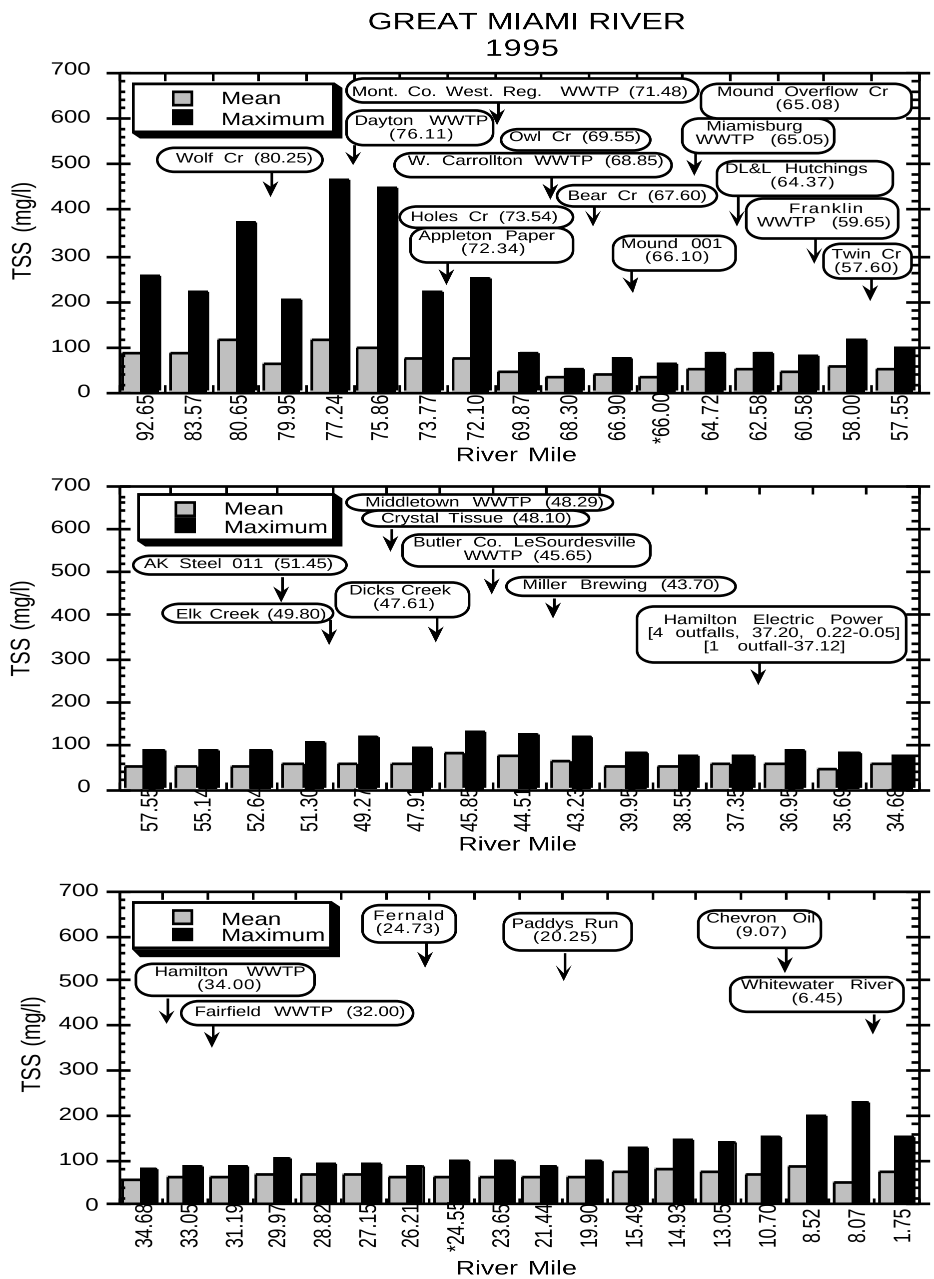


Figure 37. Longitudinal summary of total suspended solids (TSS) concentrations (mean and maximum values) in the Great Miami River during the 1995 survey. (*Samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services.)

Wolf Creek (Figures 38 - 41, Table 4, Appendix Tables A-1, A-3, and A-6)
Stream flow was measured in Wolf Creek from May through September 1995 (Figure 38) by a USGS gage station at RM 1.80 (USGS 1996). Peak flow for the period occurred during the third week of May. After declining steadily throughout June, flows increased markedly the last two days of the month in response to localized precipitation. While flows recorded in July were relatively normal, mean monthly discharge for August (155 cfs) exceeded record levels as a result of excessive rainfall during the second week of the month. Subsequent stream flows declined steadily with lows recorded the last week of September. On specific water sampling days during the 1995 survey, the gage recorded a mean daily high of 218 cfs on June 29 and mean daily lows on both September 7 and 21 of 16 cfs.

A Datasonde continuous monitor recorded hourly (70) measurements of temperature, pH and conductivity from September 11-14 in Wolf Creek at RM 1.10 (Figure 39, Appendix Table A-6). (Dissolved oxygen data was unavailable.) All values recorded were within WWH water quality criteria. Temperatures during the period ranged from 17.58˚C to 22.84˚C. Monitors measured a mean conductivity of 841 µmhos/cm with hourly values ranging from 253 µmhos/cm to 912 µmhos/cm. Recorded pH values ranged from 7.74 SU to 8.08 SU.

Mean daytime D.O. concentrations (grab samples) measured in Wolf Creek ranged from 6.3 mg/l downstream of the Brookville WWTP at RM 14.14 to 12.3 mg/l at the mouth (RM 0.01) (Figure 44). Corresponding mean percent saturations ranging from 72% to a supersaturated 150% at the mouth, reflect the shallowness, open canopy and substantial algae noted at this downstream site during the survey. Dissolved oxygen dropped below the WWH average criterion (5.0 mg/l) at RM 14.14 on one occasion. Additionally, concentrations at RM 16.61, the headwater site, fell below WWH average criterion on September 9 and 21, coinciding with the lowest flow days of the survey.

The majority (83%) of the five-day biochemical oxygen demand (BOD_5) concentrations recorded in Wolf Creek were at or below the minimum detection limit of 2.0 mg/l. Maximum values at all sites occurred on June 29, the highest flow day of the survey, and ranged from 2 mg/l at RM 6.08 to 7.5 mg/l at RM 15.32 (Figure 40).

No exceedences of ammonia-N water quality criteria were recorded in Wolf Creek; the majority (73%) of values were at or below the minimum detection limit of 0.05 mg/l. The highest concentrations occurred downstream of the Brookville WWTP at RM 14.14 (mean and maximum values of 0.15 mg/l and 0.37 mg/l, respectively) (Figure 40).

With the exception of values recorded on July 27, concentrations of nitrate+nitrite-N were not typically elevated (Figure 41). Maximum values were recorded at all sites on July 27, the second

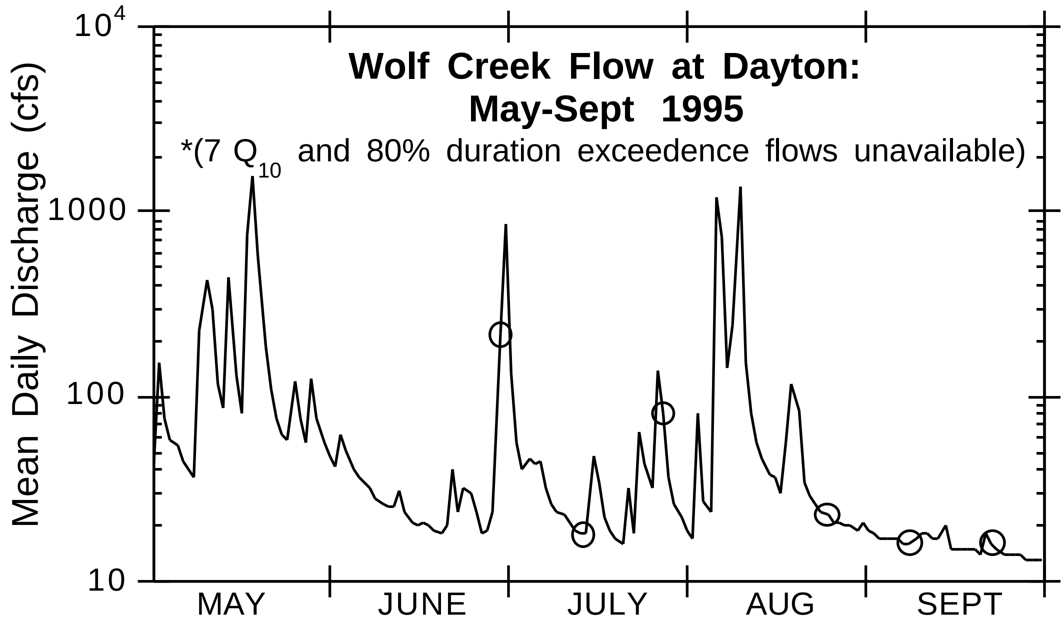


Figure 38 May through September, 1995 flow hydrograph for Wolf Creek at Dayton (RM 1.80) based on the USGS gage station #03271000. Open circles indicate river discharge on water chemistry sampling days in Wolf Creek.

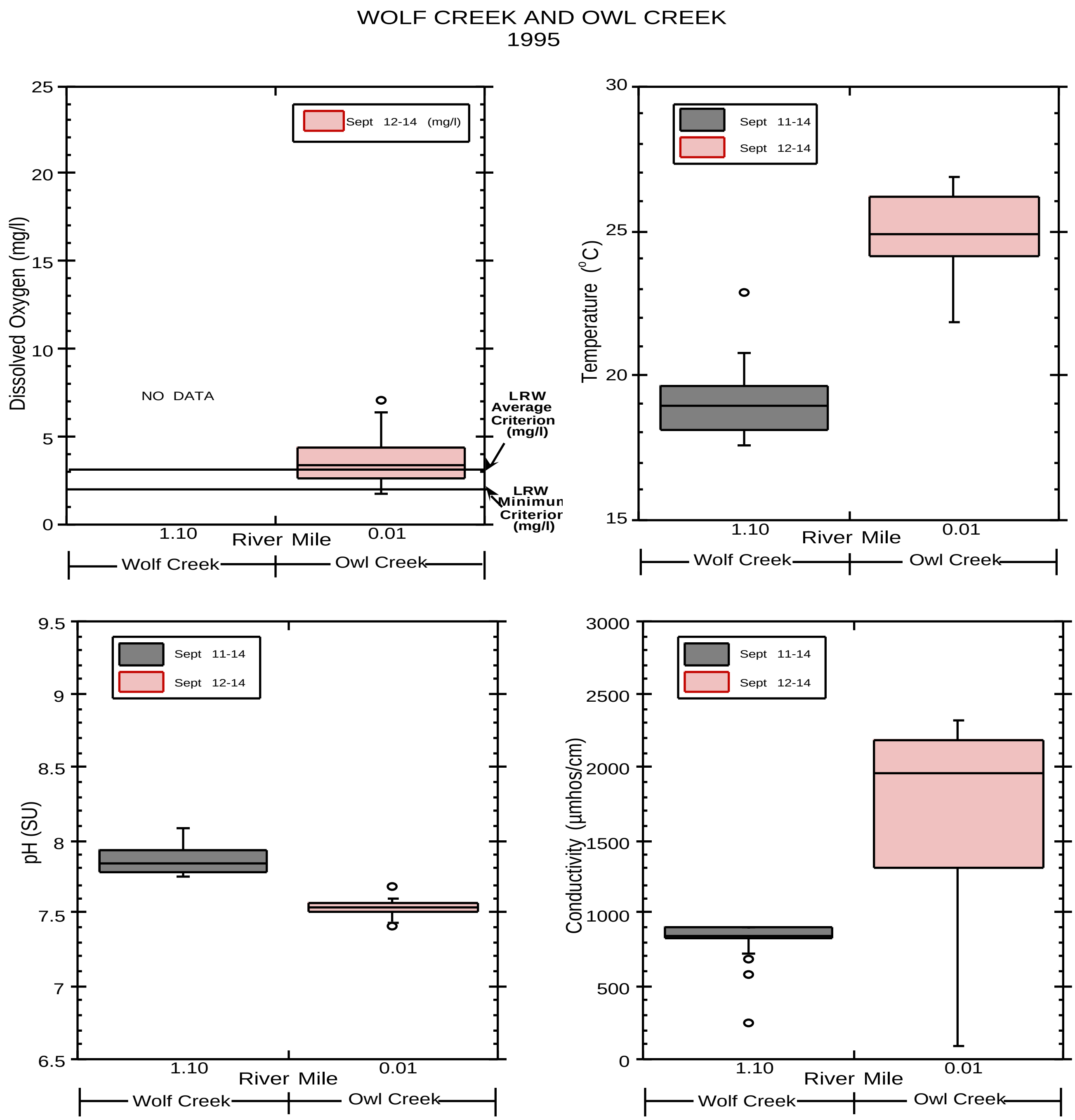


Figure 39 Dissolved oxygen (D.O.), temperature, pH and conductivity recorded with Datasonde continuous monitors in Wolf Creek and Owl Creek during the 1995 survey.

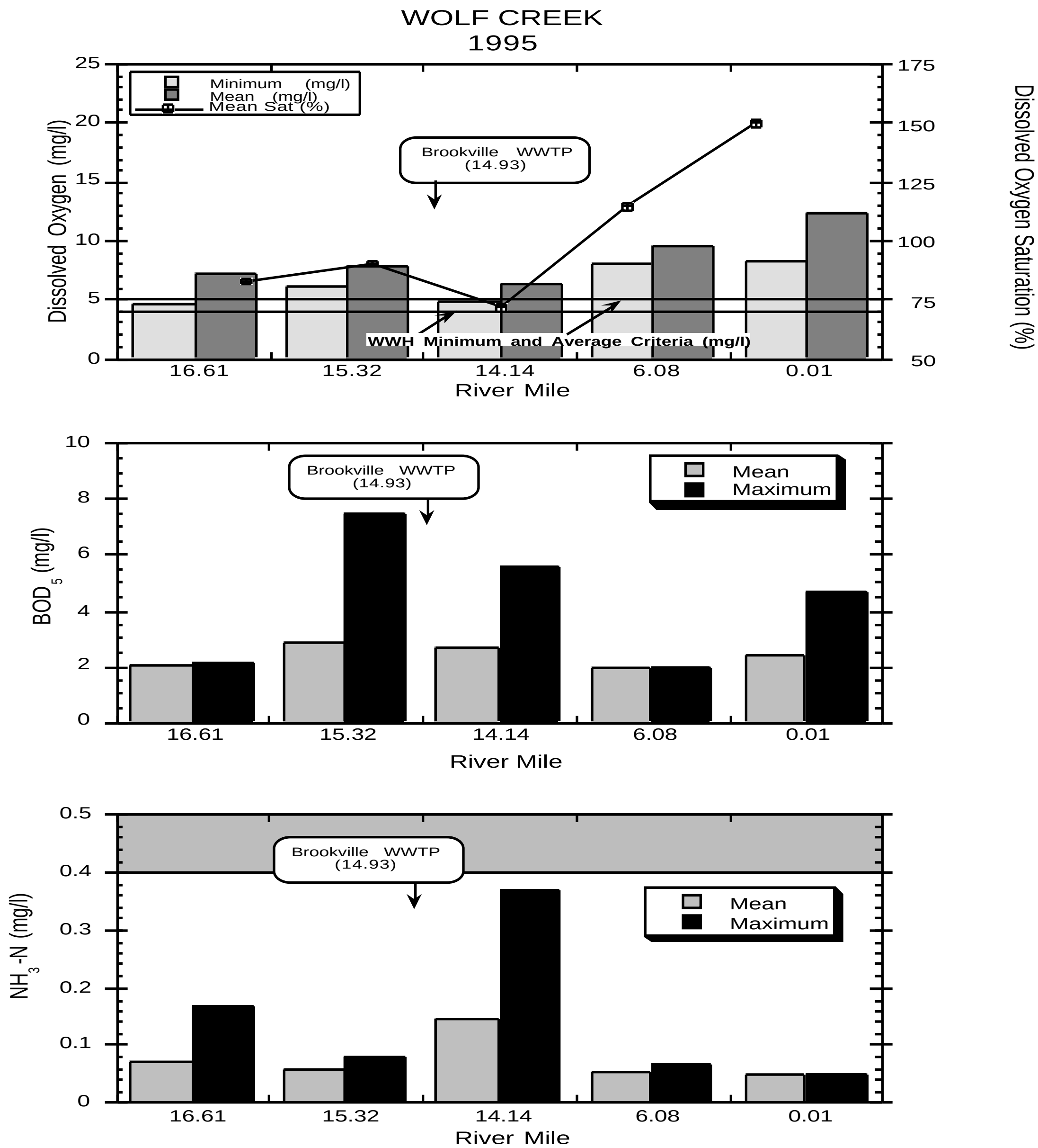


Figure 40 Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), BOD_5, and ammonia-N concentrations (mean and maximum values) in Wolf Creek during the 1995 survey (*shaded area is the ammonia-N water quality criteria range between the 25th and 90th percentile pH and temperature recorded during sample collection*).

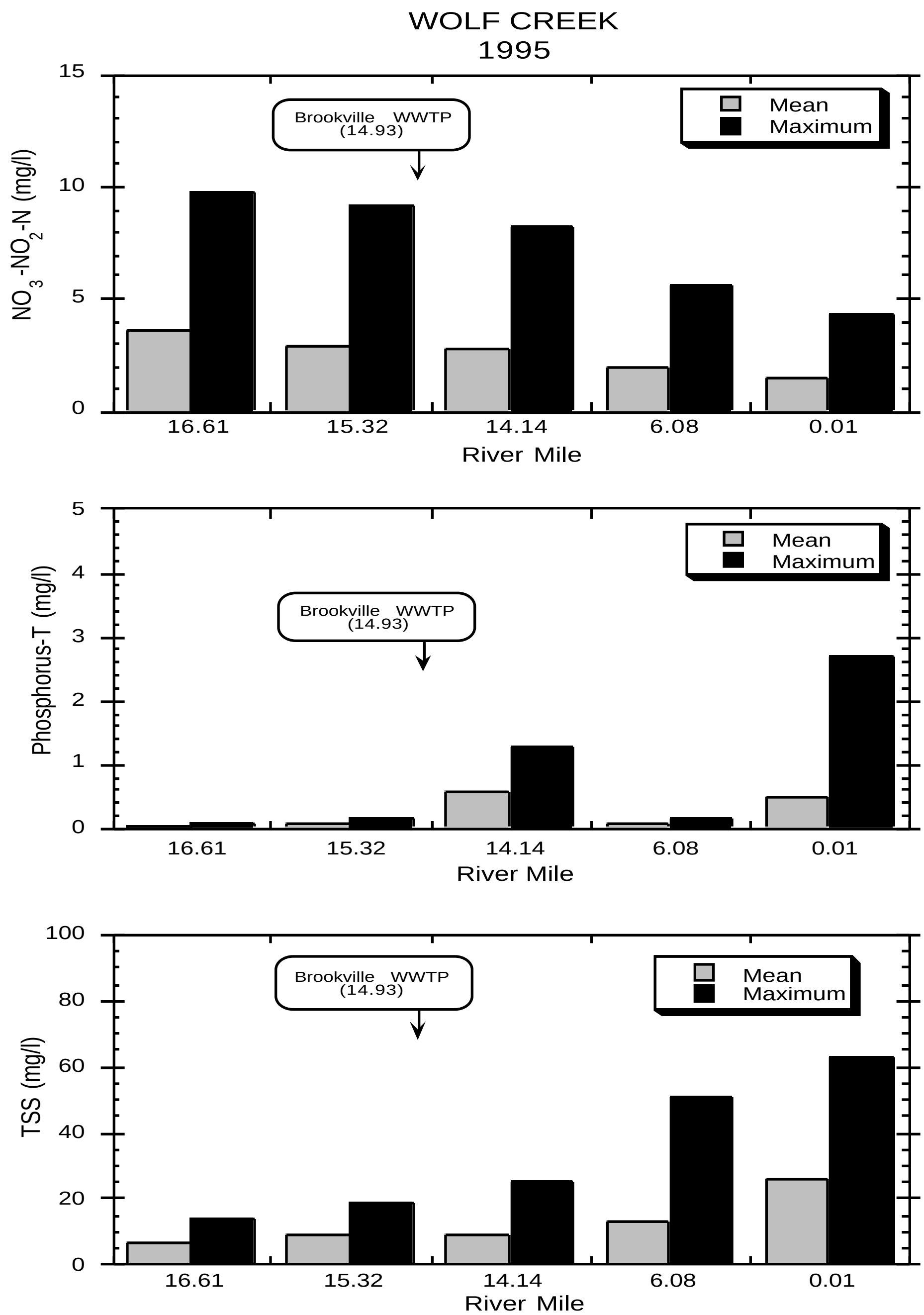


Figure 41 Longitudinal summary of nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in Wolf Creek during the 1995 survey.

highest flow day of the survey, declining longitudinally from 9.71 mg/l at RM 16.61 to 4.3 mg/l at RM 0.01. Additionally, values recorded on this day at the three uppermost sampling sites (RMs 16.61-14.14) were the highest nitrate+nitrite-N levels of the entire survey, perhaps reflecting the combined influence of point and non-point sources in this subbasin.

Concentrations of total phosphorus measured in Wolf Creek exceeded the minimum detection limit of 0.05 mg/l in 60% of the samples. Predictably, the most consistently elevated values occurred downstream of the Brookville WWTP at RM 14.14 (mean and maximum values of 0.56 mg/l and 1.29 mg/l, respectively) (Figure 41). Additionally, while no other elevated phosphorus values were recorded at the mouth of Wolf Creek (RM 0.01), the second highest phosphorus concentration (2.66 mg/l) of the entire survey occurred at this site on August 24 (a day of nominal flow). Field investigators observed an extensive algae bloom on this day and recorded excessive D.O. levels at the site (19.8 mg/l and 247 % saturation). The source of the phosphorus loading is unknown.

Over half of the TSS concentrations measured in Wolf Creek were greater than the minimum detection limit of 5 mg/l (Figure 41). Elevated concentrations coincided with higher flow periods, increasing longitudinally from RM 16.61 to RM 0.01. Mean concentrations ranged from 7 mg/l at RM 16.61 to 25.5 mg/l at RM 0.01 with corresponding maximums of 14 mg/l and 63 mg/l. One exceedence of water quality criteria for temperature was recorded at the mouth of Wolf Creek (RM 0.01) on July 13.

Organochlorine pesticides accounted for the majority of compounds detected at the three sites in Wolf Creek sampled for organic compounds (RMs 16.61, 14.14 and 0.01). The most frequently observed compound, dieldrin, was detected in 78% of the samples, exceeding water quality criteria at all three locations. Additionally, exceedences of water quality criteria were documented at RM 14.14 for aldrin, endrin, and endosulfan II (Table 4, Appendix Table A-3).

Holes Creek (Figures 42 and 43, Table 4, Appendix Tables A-1)
Holes Creek enters the Great Miami River at RM 73.54 near West Carrollton and Moraine. Two water chemistry sites (RMs 4.28 and 0.59) were sampled in this tributary during the 1995 survey.

Dissolved oxygen measured in Holes Creek (daytime grab samples) remained stable with mean concentrations and percent saturations of 8.2 mg/l and 98% recorded at both sites. All values were above WWH water quality criteria. Additionally, the majority (75%) of BOD_5 concentrations were below the minimum detection limit of 2.0 mg/l with the highest value (6 mg/l) recorded at RM 0.59 on June 29.

No exceedences of ammonia-N water quality criteria were recorded in Holes Creek with the majority (92%) of values at or below the minimum detection limit of 0.05 mg/l.

While concentrations of both nitrate+nitrite-N and total phosphorus were generally not elevated,

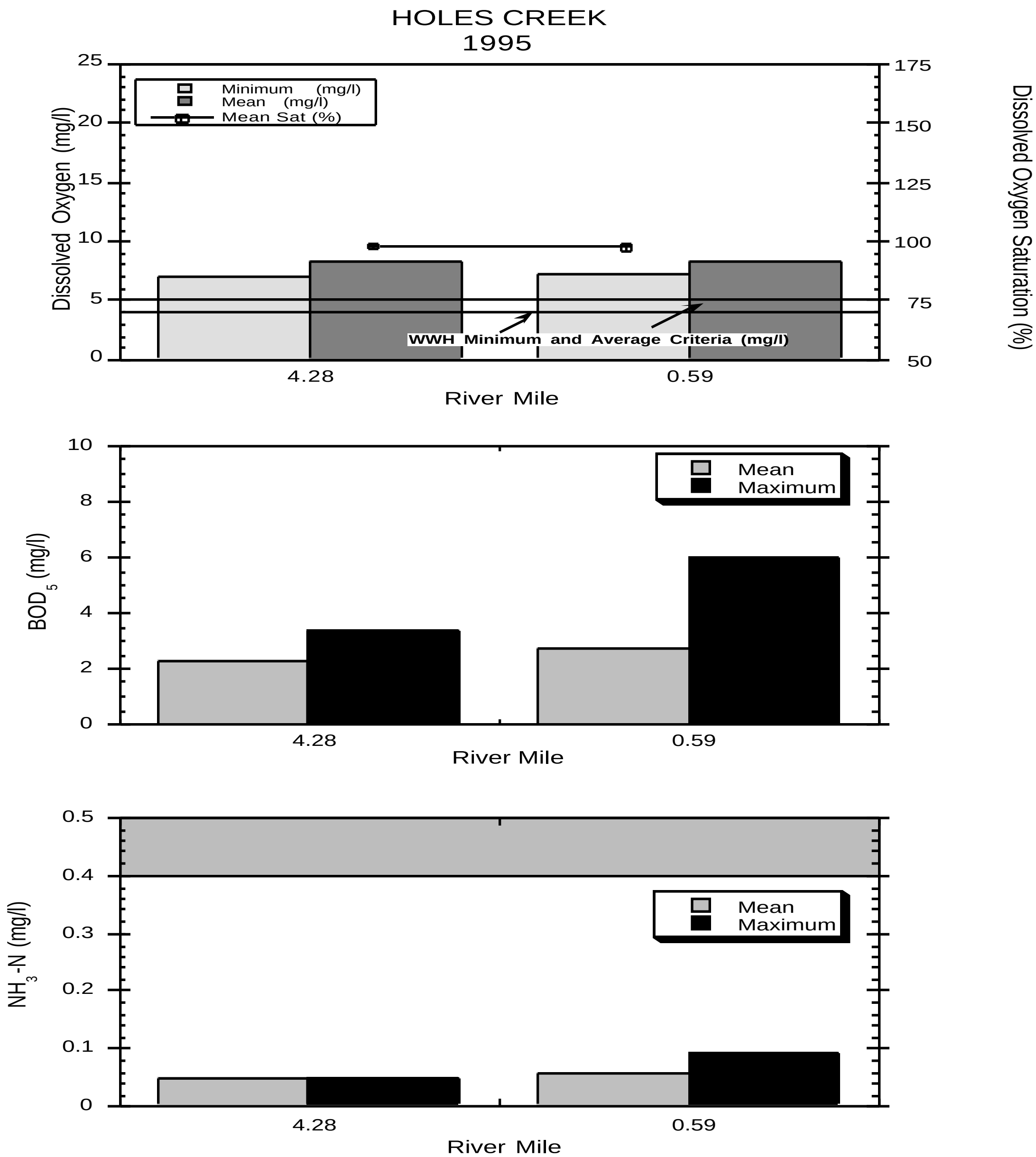


Figure 42 Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), BOD_5, and ammonia-N concentrations (mean and maximum values) in Holes Creek during the 1995 survey (*shaded area is the ammonia-N water quality criteria range between the 25th and 90th percentile pH and temperature recorded during sample collection*).

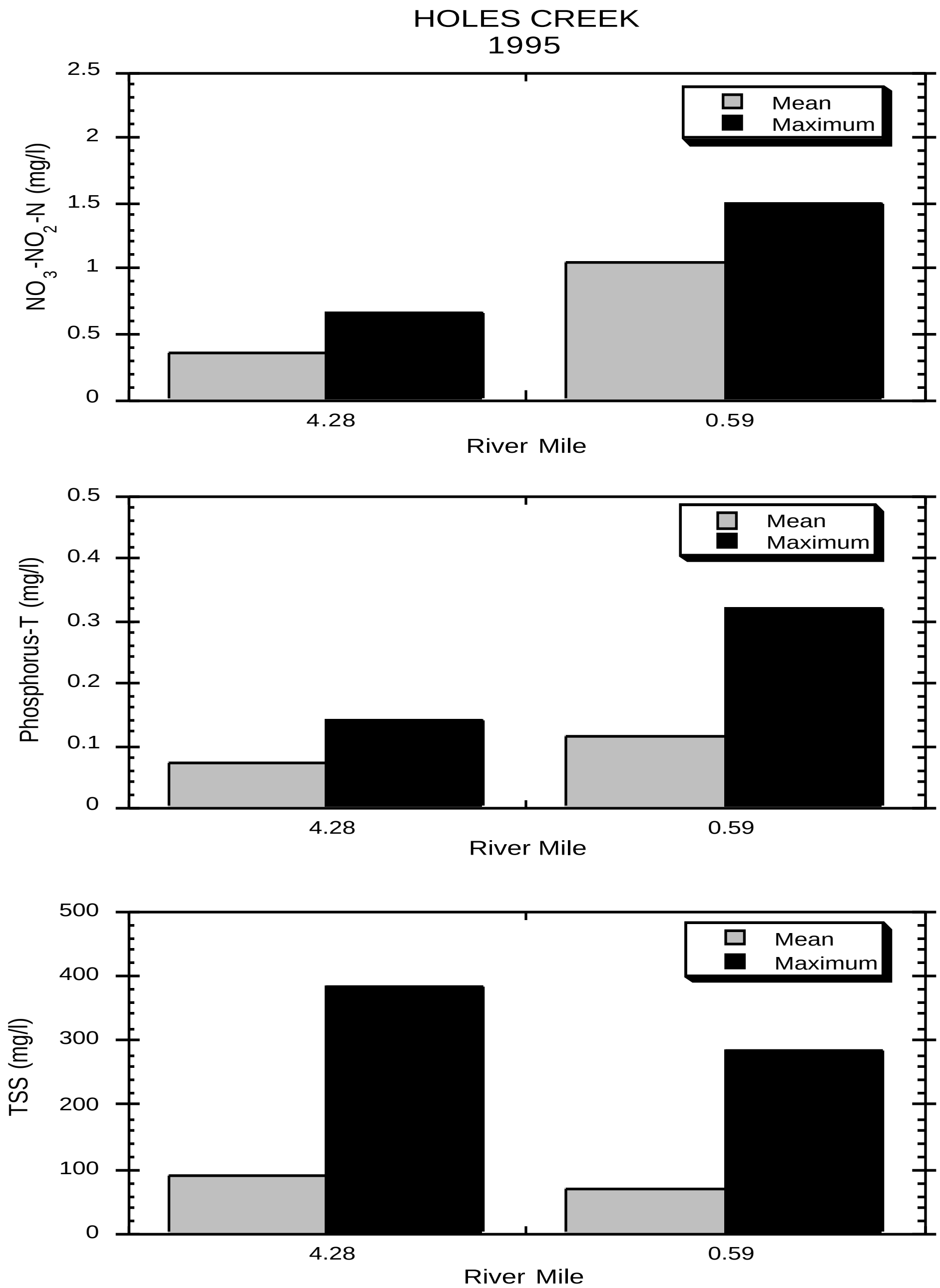


Figure 43 Longitudinal summary of nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in Holes Creek during the 1995 survey.

moderate longitudinal increases in both parameters were observed in Holes Creek during the survey. Mean nitrate+nitrite-N increased from 0.36 mg/l at RM 4.28 to 1.05 mg/l at RM 0.59 while mean phosphorus increased from 0.07 mg/l to 0.12 mg/l, respectively. The highest values for both parameters were recorded at RM 0.59 (nitrate+nitrite-N of 1.49 mg/l and total phosphorus of 0.32 mg/l).

Seventy-five percent (75%) of TSS concentrations measured in this tributary were greater than the minimum detection limit of 5 mg/l. Mean concentrations ranged from 74 mg/l at RM 0.59 to 91 mg/l at RM 4.28. Maximum values were recorded at RM 4.28 (385 mg/l) and RM 0.59 (285 mg/l) on June 29, a period of high flow. Elevated values were again observed at both sites on July 27 during high flows. Poor sediment control practices at construction sites and the resulting runoff contribute to the heavy sediment loads in this watershed.

One exceedence of water quality criteria for lead (18 µg/l) was recorded at RM 0.59 on June 29. No other elevated parameters were recorded in this tributary during the 1995 survey.

Owl Creek (Figures 39, 44 -45, Table 4, Appendix Tables A-1, A-3, and A-6)
Owl Creek enters the Great Miami River at RM 69.55, approximately 0.7 miles upstream of the West Carrollton WWTP. Fraser Papers (formerly Miami Paper) and West Carrollton Parchment discharge to Owl Creek at RMs 0.52 and 0.37, respectively. Hourly dissolved oxygen, temperature, pH and conductivity were measured by a Datasonde continuous monitor at the mouth of Owl Creek (RM 0.01) from September 12-14 (Appendix Table A-6, Figure 39). Datasonde D.O. concentrations, the lowest recorded at any site during the entire 1995 survey, dropped below the limited resource water (LRW) minimum criterion of 2.0 mg/l with values ranging from 1.68 mg/l to 6.94 mg/l. Relative to other sites monitored in the basin during the same time frame, Owl Creek experienced somewhat higher temperatures with values varying from 21.80˚C to 26.86˚C. While pH values remained relatively stable ranging from 7.41 SU to 7.69 SU, conductivity fluctuated widely from 90 µmhos/cm to 2330 µmhos/cm.

Grab water samples collected at RM 0.17, the only water chemistry site sampled in this tributary during the 1995 survey, indicate relatively depressed daytime D.O. concentrations ranging from 4.5 mg/l to 7 mg/l with a mean concentration and corresponding percent saturation of 6.1 mg/l and 75%, respectively (Figure 44). The site experienced moderately elevated five-day biochemical oxygen demand (BOD_5) concentrations, recording respective mean and maximum values of 9.9 mg/l and 15 mg/l. While all ammonia-N values were below the minimum detection limit of 0.05 mg/l and concentrations of nitrate+nitrite-N were also low (mean of 0.65 mg/l and maximum of 0.99 mg/l), phosphorus levels recorded at the site were consistently elevated with respective mean and maximum values of 0.83 mg/l and 1.22 mg/l. Total suspended solids (TSS) concentrations also remained relatively low with mean and maximum values of 9.5 mg/l and 14 mg/l, respectively.

Organic water analyses detected various organochlorine pesticides at the site including gamma-

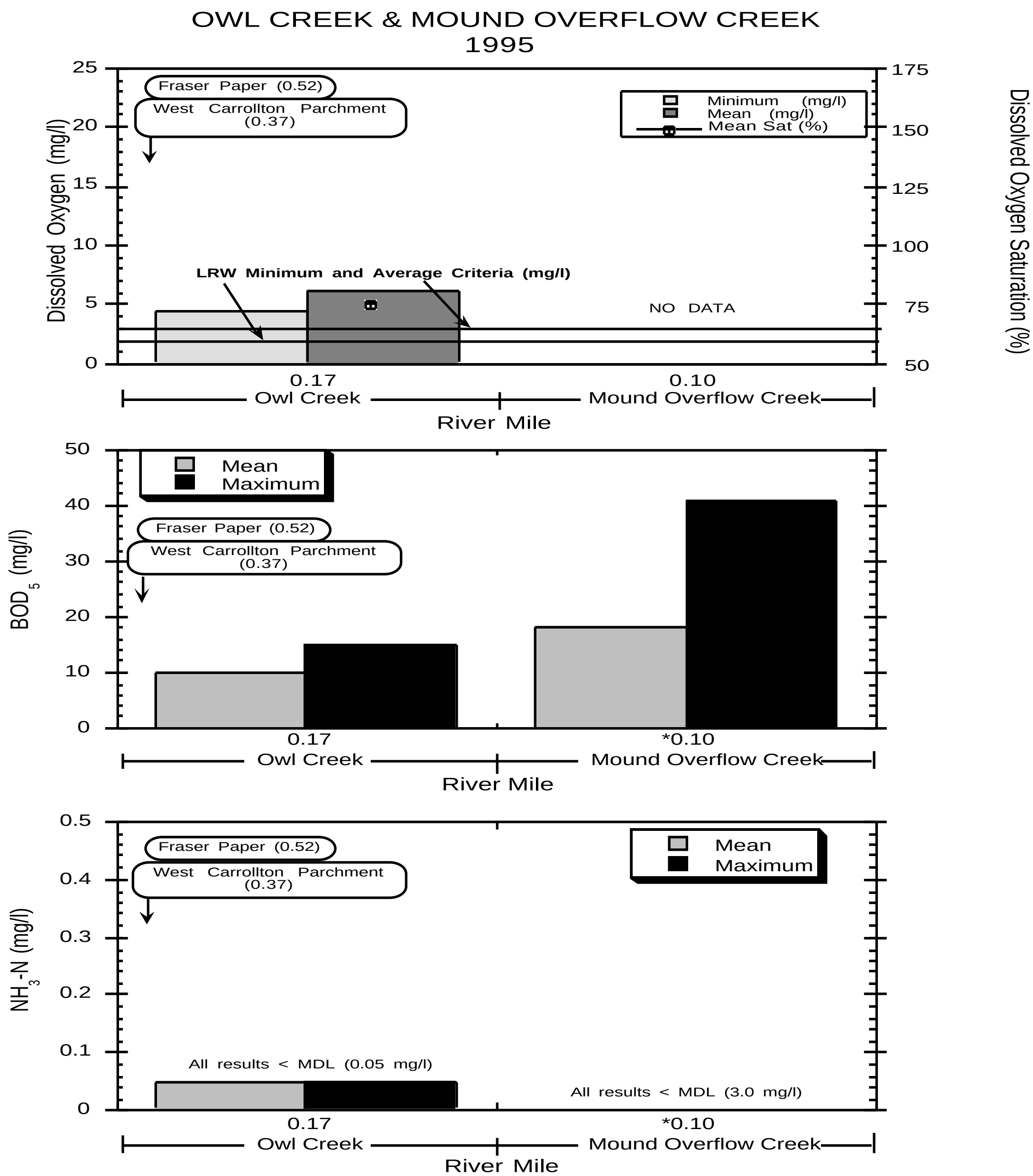


Figure 44 Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), BOD_5, and ammonia-N concentrations (mean and maximum values) in Owl Creek and Mound Overflow Creek during the 1995 survey. (*Samples from Mound Overflow Creek RM 0.10 were analyzed by a contract laboratory, Ross Analytical Services.)

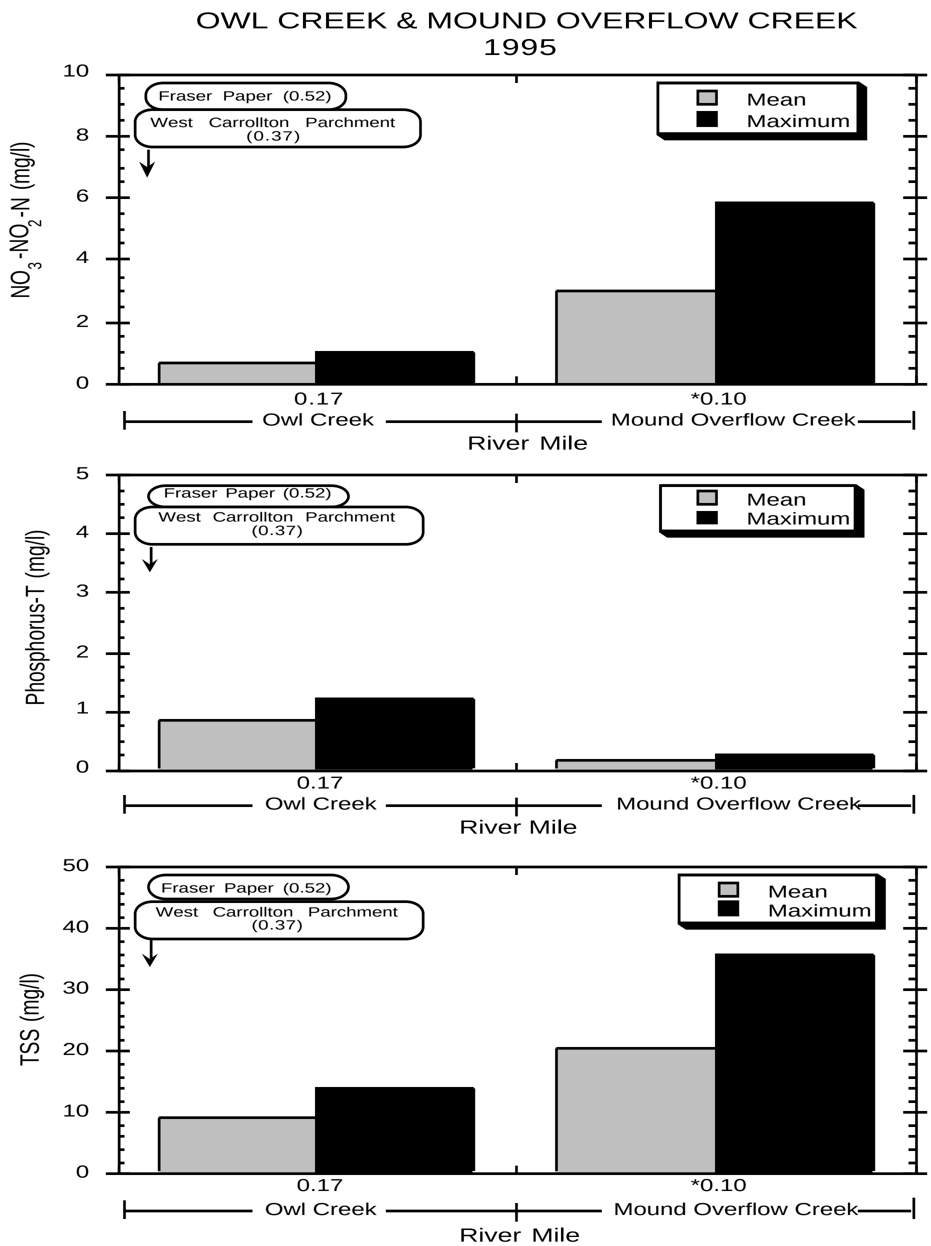


Figure 45 Summary of nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in Owl Creek and Mound Overflow Creek during the 1995 survey. (*Samples from Mound Overflow Creek RM 0.10 were analyzed by a contract laboratory, Ross Analytical Services; the top graph represents nitrate-N only.)

hexachlorocyclohexane (Lindane), delta-hexachlorocyclohexane, dieldrin, endosulfan II, endrin, heptachlor epoxide, and methoxychlor. Dieldrin concentrations exceeded water quality criteria on two occasions. Low concentrations of chloroform and 1,2,4-trimethylbenzene were also detected at the site. In addition, 2,4,6-trichlorophenol (28.4 µg/l) exceeded water quality criteria for prevention of acute toxicity on August 24. No PCBs were detected in the water column at the site (Table 4, Appendix Table A-3).

Given that Owl Creek is designated LRW (i.e. criteria are less stringent), no other exceedences of water quality criteria were recorded at RM 0.17. However, markedly elevated concentrations of several parameters including COD, conductivity, and total filterable residue, were consistently observed at the site. In addition, selenium concentrations were elevated on two occasions.

Bear Creek (Figures 46 and 47, Table 4, Appendix Tables A-1, A-2, and A-3)
Four water chemistry sites were sampled in Bear Creek during the 1995 survey. This tributary receives effluent from the New Lebanon WWTP at RM 10.43 and enters the Great Miami River near Miamisburg at RM 67.60. Mean D.O. concentrations (daytime grab samples) and corresponding percent saturations measured in Bear Creek increased modestly from 7.42 mg/l and 86% at the headwater site (RM 12.09) to 8.77 mg/l and 101% at the mouth (RM 0.01). All values were above WWH water quality criteria. Additionally, all BOD_5 concentrations recorded in Bear Creek were below the minimum detection limit of 2.0 mg/l.

No exceedences of ammonia-N water quality criteria were recorded in Bear Creek with the majority (83%) of values below the minimum detection limit of 0.05 mg/l. The highest concentrations occurred downstream of the New Lebanon WWTP at RM 9.75 (mean and maximum values of 0.2 mg/l and 0.43 mg/l, respectively).

Concentrations of nitrate+nitrite-N and total phosphorus in Bear Creek were not typically elevated. Mean nitrate+nitrite-N values ranged from 1.39 mg/l at RM 5.20 to 2.85 mg/l at RM 9.75. While phosphorus concentrations were less than or equal to the minimum detection limit of 0.05 mg/l in 70% of the samples, concentrations downstream of the New Lebanon WWTP at RM 9.75 ranged from 0.12 mg/l to 1.45 mg/l with a mean of 0.44 mg/l. The highest values for both parameters occurred at this site on September 21 (nitrate+nitrite-N of 6.29 mg/l and total phosphorus of 1.45 mg/l).

Eighty-seven percent (87%) of TSS concentrations measured in Bear Creek were less than the minimum detection limit of 5 mg/l. The highest value (16 mg/l) was recorded on August 24 at RM 0.01.

While within water quality criteria, conductivity and dissolved solids were frequently elevated downstream of the New Lebanon WWTP at RM 9.75 with mean values of 1422 µmhos/cm and 880 mg/l, respectively.

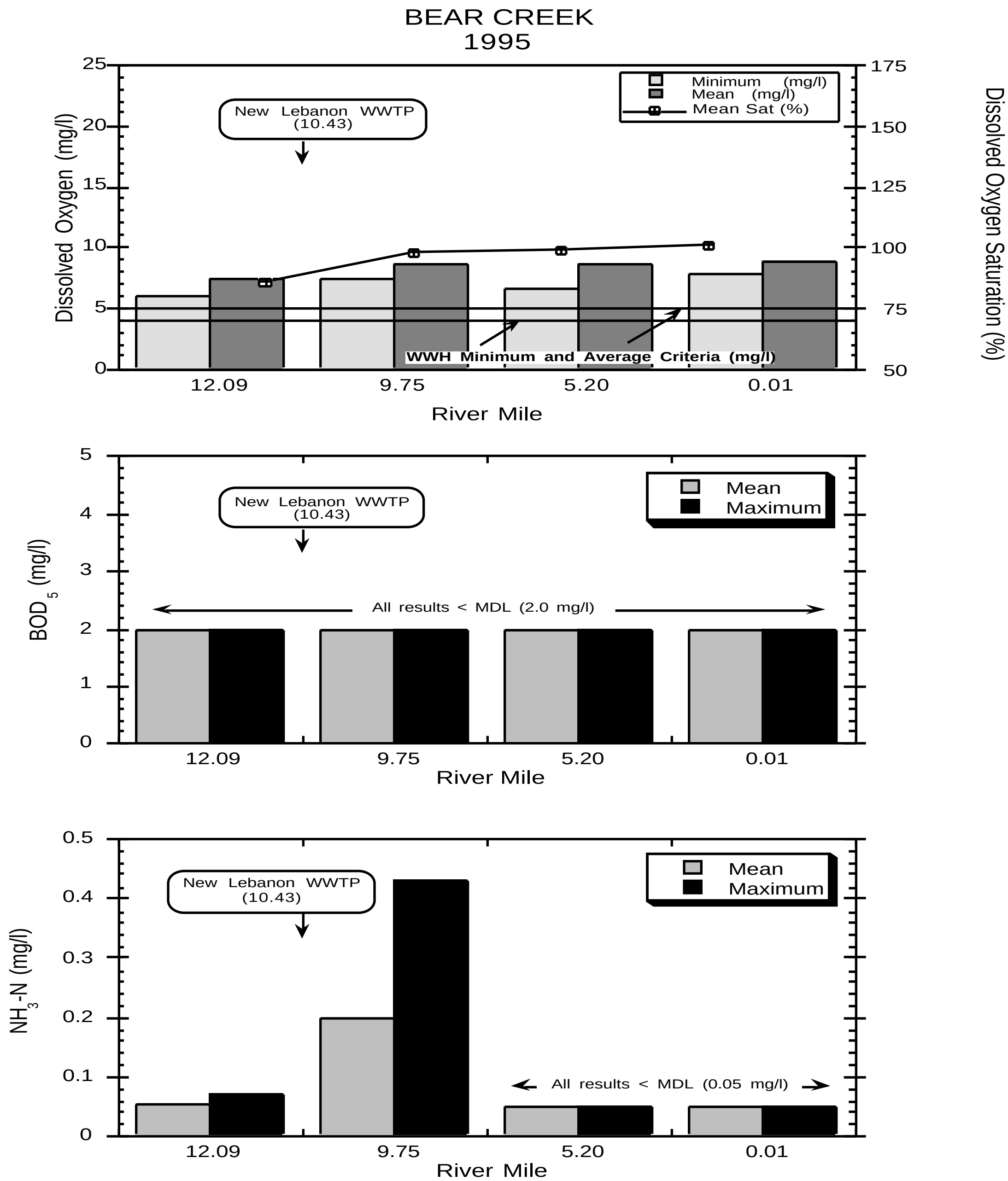


Figure 46. Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), BOD_5, and ammonia-N concentrations (mean and maximum values) in Bear Creek during the 1995 survey.

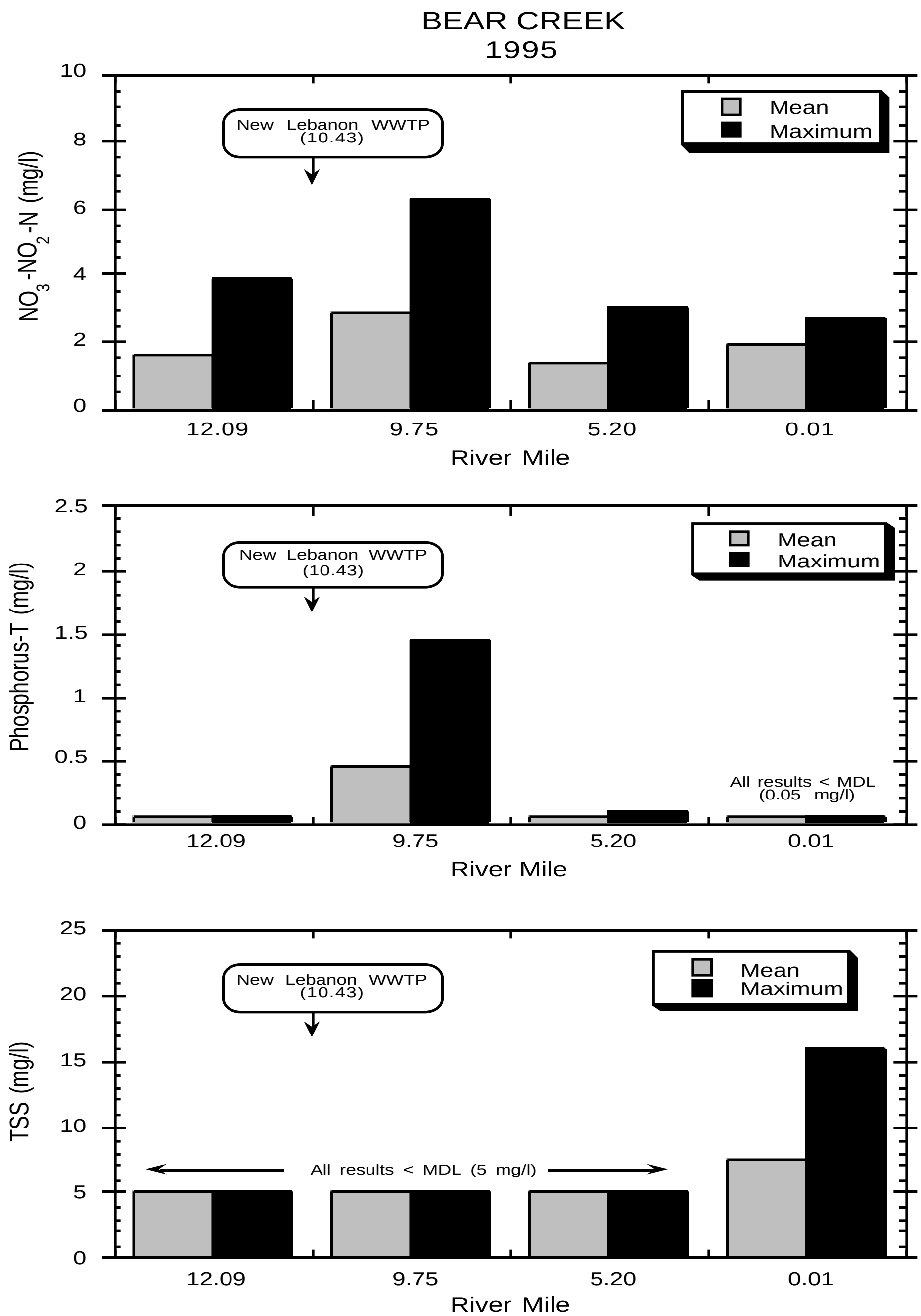


Figure 47 Longitudinal summary of nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in Bear Creek during the 1995 survey.

On September 21, field staff inspecting the Village of New Lebanon WWTP discovered an extensive deposit of sewage sludge in Bear Creek downstream of the facility's outfall, resulting from an overflow of the treatment plant's secondary clarifiers. The Village was required to remove all sludge deposits from the creek promptly. Additionally, hydraulically overloaded during wet weather, the facility frequently bypasses treatment during high flows, diverting flow directly to Bear Creek. Negotiations are currently underway to address this history of noncompliance.

Characteristic of the 1995 study area, organochlorine pesticides accounted for the majority of organic compounds detected in Bear Creek at both organic water chemistry sites (RMs 9.75 and 0.01). While concentrations of dieldrin, endrin, and gamma-hexachlorocyclohexane (Lindane) exceeded water quality criteria at RM 9.75, exceedences for dieldrin and heptachlor were recorded at RM 0.01. Additionally, alpha-hexachlorocyclohexane, delta-hexachlorocyclohexane, 4,4'DDE, heptachlor epoxide, hexachlorobenzene and chloroethane (a volatile organic compound) were detected on occasion. The semivolatile compound bis(2-ethylhexyl) phthalate exceeded criteria at RM 0.01 (20.1 µg/l) on August 24. No other elevated parameters or exceedences were recorded in this tributary during the 1995 survey.

Mound Overflow Creek (Figures 44, 45, and 47a Table 4, Appendix Tables A-1, A-2, and A-3)
One exceedence of water quality criterion for mercury (0.07 µg/l) was recorded at the site. Additionally, while well within water quality criteria, the Mound Overflow Creek site experienced the highest arsenic (34 µg/l) concentration of the 1995 survey. Conductivity levels were also frequently elevated.

Methylene chloride (120 µg/l) was the only organic compound detected in the water column at the site; however, given that quantitation limits used by the contract laboratory in the analyses were significantly higher than OEPA minimum detection limits, results may not be totally reflective of organic compounds present.

Radiological parameters in surface water were compared with the Mound Recreational-Surface Water Guideline Values (GV) and background values. The GV were developed by the Mound plant using the United States Environmental Protection Agency guidance *Risk Assessment Guidance for Superfund (RAGS): Volume 1 - Human Health Evaluation Manual, Part B - Development of Risk-Based Preliminary Remediation Goals* (EPA 1991). These GV represent a Target Excess Individual Lifetime Cancer Risk (TR) of $1X10^{-6}$. Background values were taken from *Characterization of Background Water Quality for Streams and Groundwater* (USDOE Fernald 1994) and *Mound Site Environmental Report for Calendar Year 1994* (USDOE Mound 1995).

Levels of Plutonium 238 and tritium were elevated above background (0.86 pCi/l and 888 pCi/l respectively) in surface water in the Mound Overflow Creek (Figure 47a). No radiological parameters exceeded or approached the Mound Recreational-Surface Water Guideline Value (260

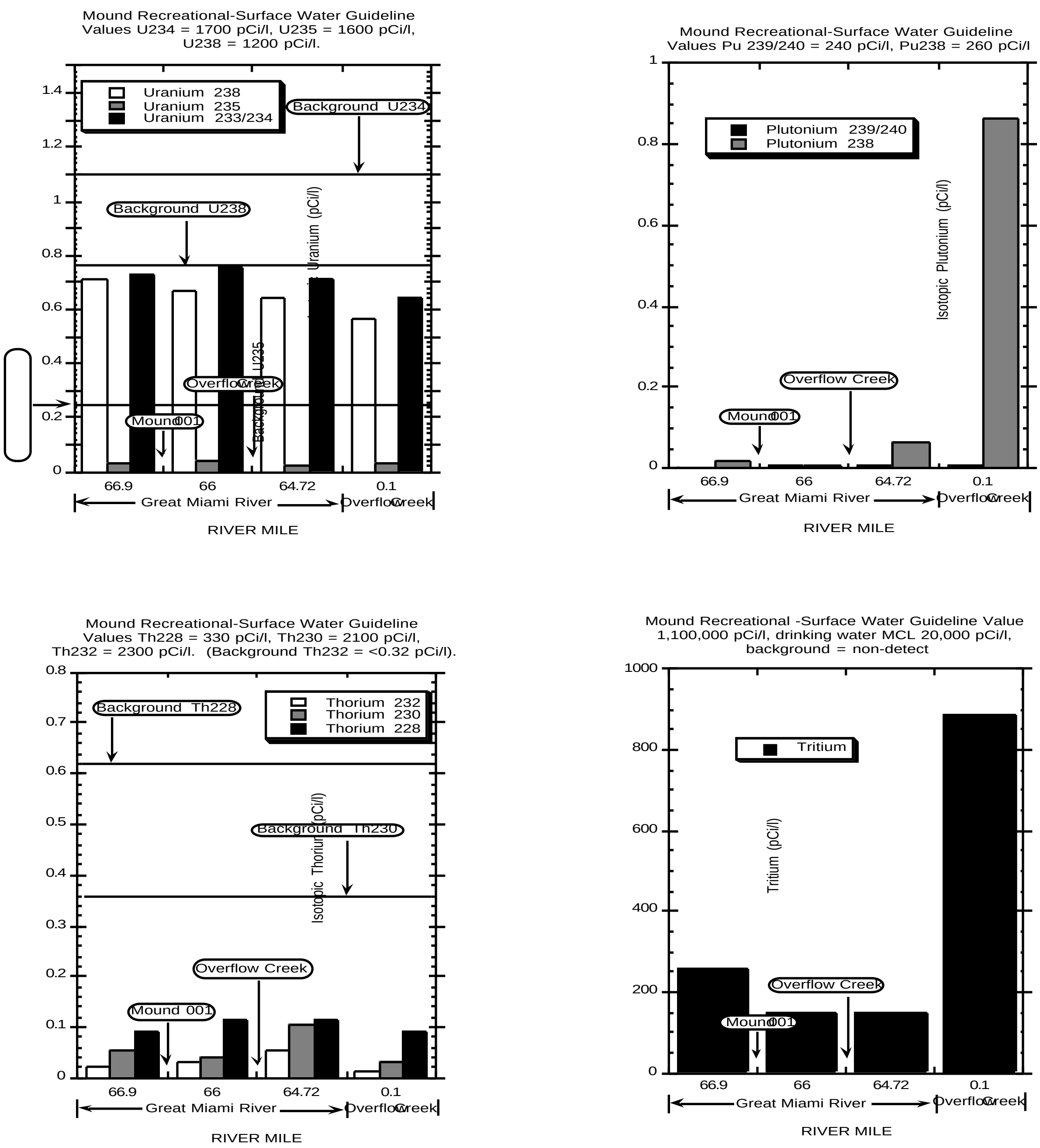


Figure 47a. Isotopic uranium, isotopic plutonium, isotopic thorium, and tritium levels in surface water in the vicinity of the Mound plant.

pCi/l and 1,100,000 pCi/l for Plutonium 238 and Tritium respectively). Levels of isotopic uranium and isotopic thorium were below background levels at all stations.

Elk Creek (Appendix Tables A-1)
Elk Creek enters the Great Miami River at RM 49.80. Grab water samples collected in this tributary at RM 3.65 upstream of the confluence with Dry Run indicate generally good water quality. The site recorded a mean D.O. concentration of 9.7 mg/l and corresponding percent saturation of 107%. All concentrations of BOD_5, ammonia-N, and total phosphorus were below minimum detection limits. Concentrations of nitrate+nitrite-N ranged from 2.21 mg/l to 4.42 mg/l with a mean of 2.97 mg/l. Total suspended solids (TSS) concentrations also remained low with five of six values below the minimum detection limit of 5 mg/l. A maximum value of 32 mg/l occurred on June 28, a period of higher flows. No other elevated parameters were observed in this tributary during the 1995 survey.

Dry Run (Appendix Tables A-1)
Dry Run joins Elk Creek at RM 3.62. Grab samples collected at the mouth (RM 0.01) during the 1995 survey indicate relatively good water quality. (Given that flows in this tributary continuously diminished as the summer progressed, samples could not be collected at the site during the last two sampling periods of the survey.)

Dissolved oxygen concentrations at the site ranged from 8.0 mg/l to 8.8 mg/l with a mean percent saturation of 93%. All concentrations of BOD_5, and ammonia-N were below minimum detection limits. Concentrations of nitrate+nitrite-N, generally somewhat higher than those in Elk Creek, ranged from 0.23 mg/l to 6.82 mg/l with a mean of 3.51 mg/l. Phosphorus and TSS values averaged only 0.07 mg/l and 5.3 mg/l, respectively. No other elevated parameters were observed in this tributary.

Dicks Creek (Figures 48 - 50), Table 4, Appendix Tables A-1, A-3, and A-6)
Dicks Creek, entering the Great Miami River near Middletown at RM 47.61, receives industrial waste from several AK Steel outfalls (015, 003, 002) and is bordered by several landfills (closed and active). At the time of the 1995 survey, the modified warmwater habitat (MWH) aquatic life use designation was in effect for the upper channelized section of the stream through RM 2.4, while the remaining downstream portion was designated WWH. In addition to four Datasonde sampling sites, five water chemistry sites (RMs 5.21-0.93) were sampled in Dick's Creek during the 1995 survey.

On July 26, 1995, field investigators noted a reddish brown discharge emanating from AK Steel Outfall 003 at RM 3.80. Further investigation revealed that an estimated 9200 gallons of flushing liquor spilled from the facility's coke operation was improperly contained and discharged to a storm sewer entering Outfall 003. The spill resulted in a total aquatic (fish) kill extending from Outfall 003 to the confluence of the Great Miami River. (AK Steel has been referred to the Ohio

Attorney General's office for enforcement action concerning NPDES permit violations and fish kills.) In addition to the exceedences of water quality criteria recorded at RM 3.00 for ammonia-N (209 mg/l), conductivity (2960 µmhos/cm), selenium (33 µg/l), naphthalene (420 µg/l), aniline (498 µg/l), fluoranthene (38.8 µg/l), 2-methylphenol (1280 µg/l), and phenol (8900 µg/l), extraordinarily elevated levels of total cyanide (3380 µg/l), BOD_5 (133 mg/l), and COD (238 mg/l) were also documented at the site on this day. Concentrations of dibenzofuran (29.3 µg/l) and 3&4 methylphenol (4810 µg/l) also exceeded toxicity thresholds. Copper (34 µg/l), while within water quality criteria, was the highest recorded during the entire 1995 survey. A multitude of additional organic compounds were detected at RM 3.00 including benzene, 2,4-dimethylphenol, 2-picoline, O-toluidine, acenaphthylene, anthracene, fluorene, phenanthrene, and pyrene. Concentrations of ammonia-N (19.80 mg/l), selenium (16 µg/l), and phenol (754 µg/l) measured downstream at RM 2.51 on this day exceeded water quality criteria as well.

Datasonde continuous monitors in this tributary recorded hourly D.O., temperature, pH, and conductivity at RMs 4.70, 3.57 and 0.01 from September 12-14 and at RM 2.51 from September 11-14 (Figures 48, Appendix Table A-6). Mean D.O. concentrations ranged from 5.18 mg/l at RM 2.51 to 6.64 mg/l at RM 3.57 (D.O. data was unavailable for RM 0.01). Values below the MWH criteria were recorded at both RM 4.70 and RM 2.51. While longitudinal mean temperatures were relatively stable varying only from 23.19˚C (RM 4.70) to 22.22˚C (RM 0.01), the three uppermost sites (RMs 4.70-2.51) experienced the greatest temperature variations observed during the 1995 survey with values above the MWH average temperature criterion of 27.8˚C recorded at RM 3.57, downstream of AK Steel Outfall 003. Mean pH values ranged from 7.46 SU at RM 0.01 to 8.04 SU at RM 2.51. Additionally, RM 4.70 experienced the greatest variation in pH of the 1995 survey with values ranging from 7.30 SU to 8.83 SU. While these results may be partially attributable to the effects of algal photosynthesis, the site is more likely impacted by runoff from an upstream concrete manufacturing facility. (Field staff observed a solid white substance covering the stream substrate upstream of RM 5.21 during the survey. Further investigation revealed that washout from Moraine Materials, a manufacturer of ready mix concrete, had been entering Dicks Creek via storm drains over an extended period of time. The facility was required to excavate the solids and take action to prevent any further discharge to the creek.) Datasonde conductivity values at the three uppermost sites fluctuated widely and were exceptionally elevated, frequently exceeding the MWH average criterion of 2400 µmhos/cm at RM 4.70 and RM 3.57. Values tended to decrease longitudinally from RM 4.70 to RM 0.01 with respective means ranging from 2353 µmhos/cm to 808 µmhos/cm.

All daytime D.O. concentrations (grab samples) recorded in Dicks Creek were above applicable water quality criteria (Figure 49). Mean concentrations and percent saturations ranged from 5.73 mg/l and 68 % at RM 5.21 to 8.25 mg/l and 101 % at RM 2.51. Dissolved oxygen levels were somewhat depressed with the majority (67%) of all daytime D.O. percent saturations less than 100%.

Excluding values recorded at RM 3.00 (133 mg/l) and RM 2.51 (16 mg/l) on July 26, BOD_5 concentrations were relatively stable with mean values ranging from 2.4 mg/l (RM 4.70) to 4.72 mg/l (RM 3.00) (Figure 49). The majority (73%) of values recorded were greater than the minimum detection limit (2.0 mg/l).

The majority (93%) of ammonia-N values in Dicks Creek were elevated above the minimum detection limit of 0.05 mg/l (Figure 49). Excluding the exceptionally elevated values of July 26 at RMs 3.00 and 2.51 (209 mg/l and 19.8 mg/l, respectively), respective mean and maximum concentrations ranged from 0.15 mg/l and 0.2 mg/l at RM 4.70 to 0.88 mg/l and 1.97 mg/l at RM 3.00, downstream of AK Steel Outfall 003. The consistently elevated concentrations at RM 3.00 resulted in numerous exceedences of water quality criteria at this site throughout the survey. One additional exceedence (0.42 mg/l) of ammonia-N water quality criteria was recorded at RM 0.93 on July 12.

Levels of nitrate+nitrite-N in Dicks Creek remained relatively low with mean concentrations ranging only from 0.82 mg/l at RMs 5.21 and 4.70 to 1.81 mg/l at RM 3.00 (Figure 50). Additionally, concentrations of total phosphorus were minimal with the majority (57%) of values less than or equal to the detection limit of 0.05 mg/l. The highest phosphorus concentrations (mean and maximum values of 0.12 mg/l and 0.2 mg/l, respectively) occurred at RM 3.00.

Dicks Creek generally experienced slightly to moderately elevated levels of total suspended solids (Figure 50). One exceptionally high concentration (202 mg/l) observed on September 20 at RM 5.21 is attributed to runoff from Moraine Materials. Excluding this aberrant value, mean TSS concentrations ranged from 9 mg/l at RM 4.70 to 23 mg/l at RM 3.00 with maximum concentrations generally coinciding with periods of higher flow in late June.

Numerous exceedences of water quality criteria (pH, selenium, nickel, conductivity and dissolved solids) were recorded downstream of Moraine Materials at RM 5.21 during the survey. Elevated conductivity, dissolved solids, nickel, and selenium values persisted at RM 4.70, frequently exceeding criteria. Concentrations of zinc at both RMs 5.21 and 4.70, while within water quality criteria, were also frequently elevated (mean values of 168 µg/l and 131 µg/l, respectively). Elevated values and exceedences recorded at RM 4.70 may reflect the combined impact of both Moraine Materials and the AK Steel discharge (Outfall 004) at RM 0.22 of the North Branch of Dicks Creek. In addition to the exceptionally elevated values recorded during the AK Steel spill on July 26, RM 3.00 experienced one exceedence of water quality criteria for lead (16 µg/l) and numerous zinc exceedences (564 µg/l, 206 µg/l, and 447 µg/l). The site also recorded elevated levels of total cyanide (30 µg/l and 16 µg/l) during the survey. Conductivity, dissolved solids, and selenium values at RMs 2.51 and 0.93 also exceeded water quality on occasion.

Excluding values recorded at RMs 3.00 and 2.51 during the July 26 spill, organochlorine pesticides accounted for the majority (91%) of organic compounds detected at the five sampling sites in Dicks

Creek. Concentrations of aldrin, dieldrin, endrin, endosulfan II, and gamma-Hexachlorocyclohexane (Lindane) exceeded water quality criteria at various locations (Table 4, Appendix table A-3).

North Branch Dicks Creek (Figures 49 and 50, Table 4, Appendix Tables A-1 and A-3)
Two sites in the North Branch of Dicks Creek (RMs 0.75 and 0.01) were sampled during the 1995 survey. This tributary, designated MWH, enters Dicks Creek at RM 5.11 and receives effluent from AK Steel Outfall 004 at RM 0.22.

While all daytime D.O. concentrations (grab samples) measured in the North Branch of Dicks Creek were above water quality criteria, significantly lower values were recorded at RM 0.01, downstream of AK Steel Outfall 004. Respective mean concentrations and percent saturations decreased from 8.7 mg/l and 99 % at RM 0.75 to 5.8 mg/l and 69 % at RM 0.01 (Figure 49).

Five-day biochemical oxygen demand (BOD_5) concentrations in the North Branch of Dicks Creek remained low with values at both sites averaging less than 3 mg/l (Figure 49). While 82% of ammonia-N values measured in this tributary were elevated above the minimum detection limit of 0.05 mg/l, no values exceeded or approached water quality criteria. Mean ammonia-N concentrations increased longitudinally from 0.17 mg/l at RM 0.75 to 0.28 mg/l at RM 0.01. Concentrations of both nitrate+nitrite-N and total phosphorus remained low with mean values at both sites approximating 0.9 mg/l and 0.06 mg/l, respectively. Additionally, total suspended solids (TSS) concentrations were stable with mean values ranging from 8.2 mg/l at RM 0.75 to 8.8 mg/l at RM 0.01 (Figure 50).

In addition to the exceedences of water quality criteria for conductivity (2670 µmhos/cm) and dissolved solids (1930 mg/l) recorded on June 28, RM 0.75 experienced somewhat elevated concentrations of copper (19 µg/l), selenium (5 µg/l) and zinc (130 µg/l) on this day. Conductivity and dissolved solids levels, consistently elevated downstream of AK Steel Outfall 004 at RM 0.01, exceeded criteria on numerous occasions. (Some of the most consistently elevated conductivities and dissolved solids levels recorded during the 1995 survey occurred in Dicks Creek and at RM 0.01 in the North Branch of Dicks Creek.) Concentrations of zinc at RM 0.01, frequently elevated, exceeded water quality criteria on July 26 with a value of 795 µg/l, the highest recorded during the entire 1995 survey. In addition to an exceedence (7 µg/l) of water quality criteria for selenium at this downstream site, nickel (153 µg/l) and another selenium concentration (5 µg/l) were elevated on separate occasions.

Organochlorine pesticides accounted for all organic compounds detected at both sampling sites in the North Branch of Dicks Creek. Concentrations of aldrin and heptachlor exceeded water quality criteria at RM 0.75 while criteria exceedences for dieldrin, endrin, and endosulfan II were recorded downstream at RM 0.01 (Table 4, Appendix Table A-3).

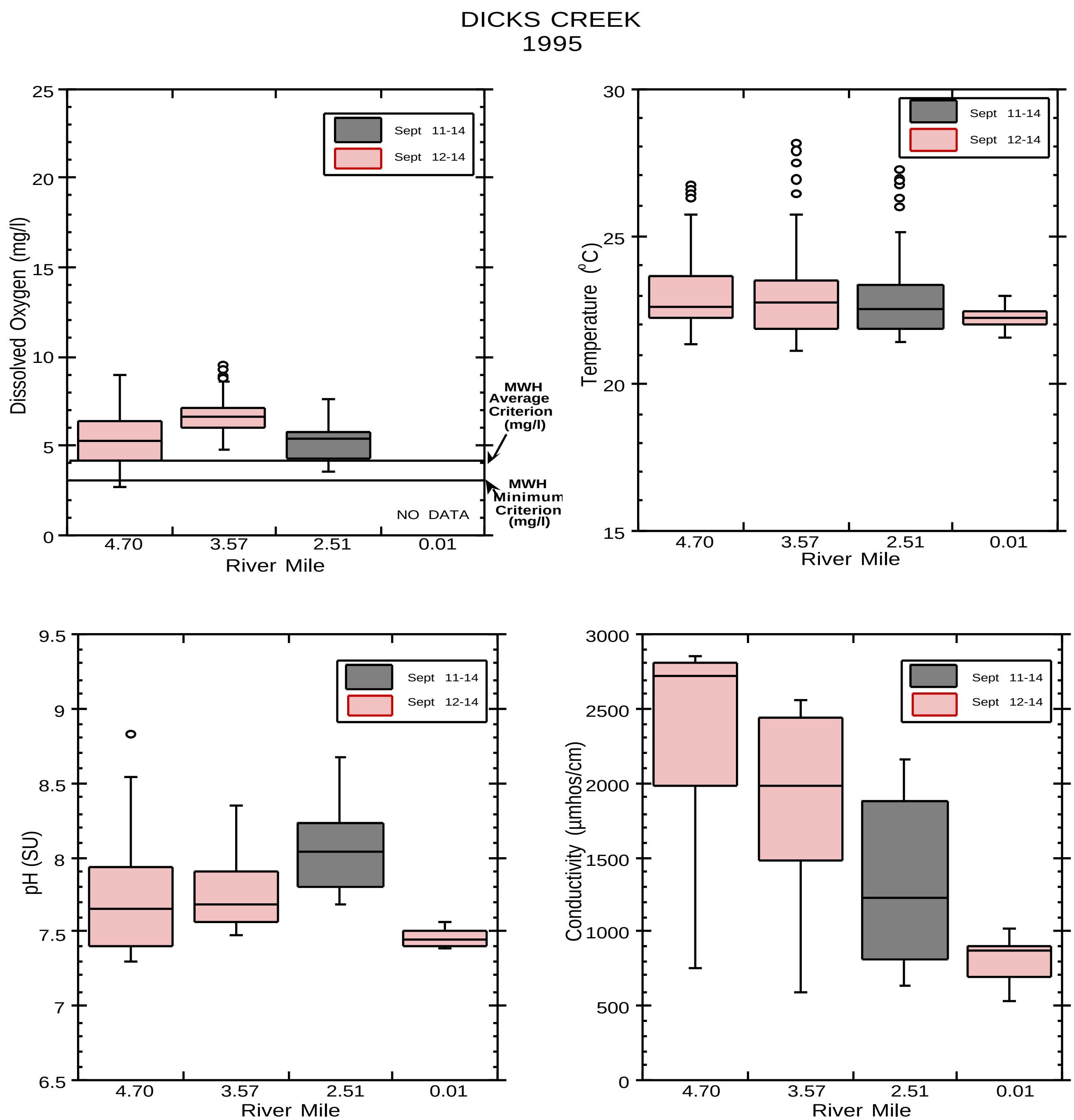


Figure 48 Longitudinal summary of dissolved oxygen (D.O.), temperature, pH and conductivity recorded with Datasonde continuous monitors in Dicks Creek during the 1995 survey.

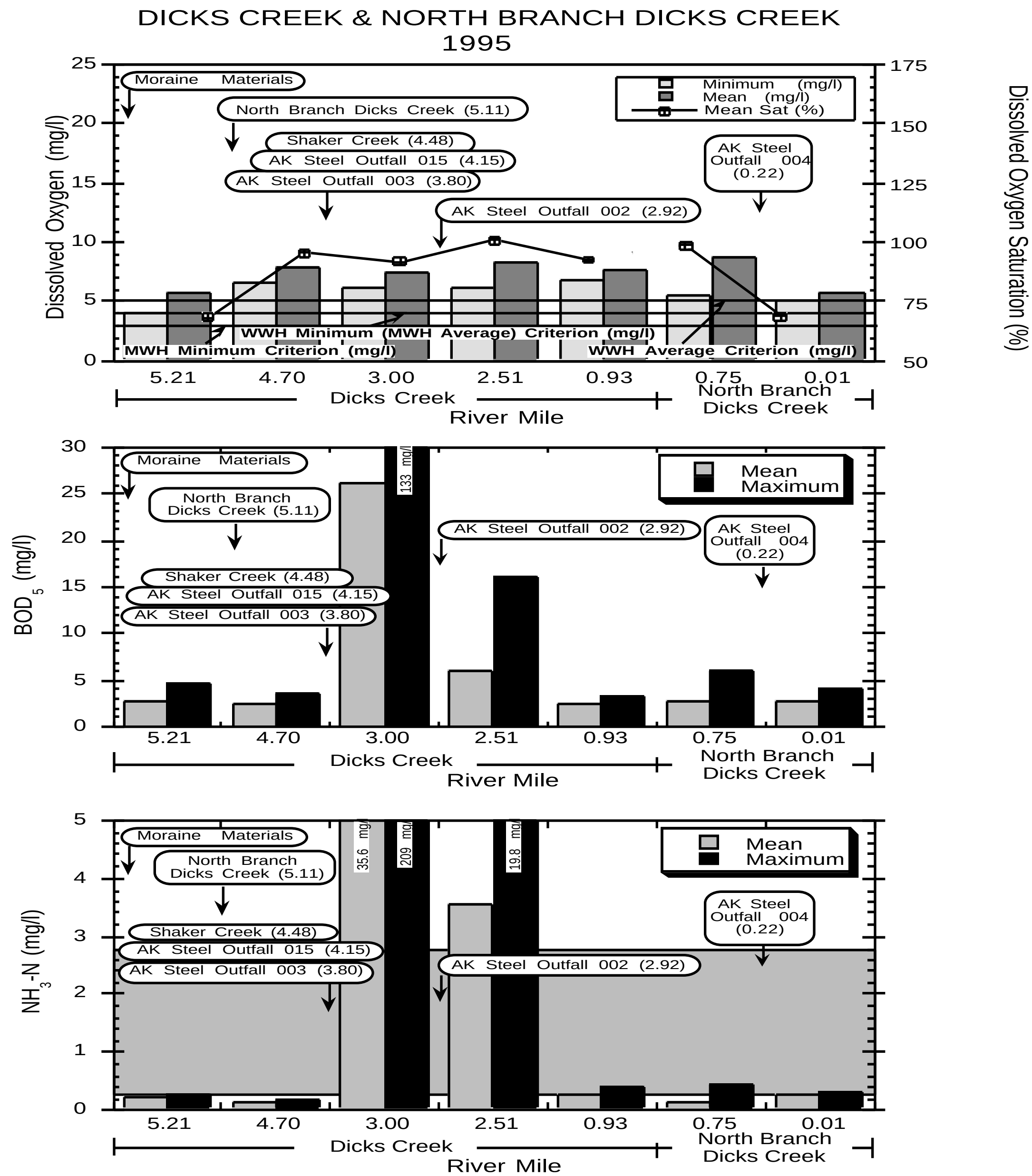


Figure 49 Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), BOD_5, and ammonia-N concentrations (mean and maximum values) in Dicks Creek and North Branch Dicks Creek during the 1995 survey (*shaded area is the ammonia-N water quality criteria range between the 25th and 90th percentile pH and temperature recorded during sample collection*).

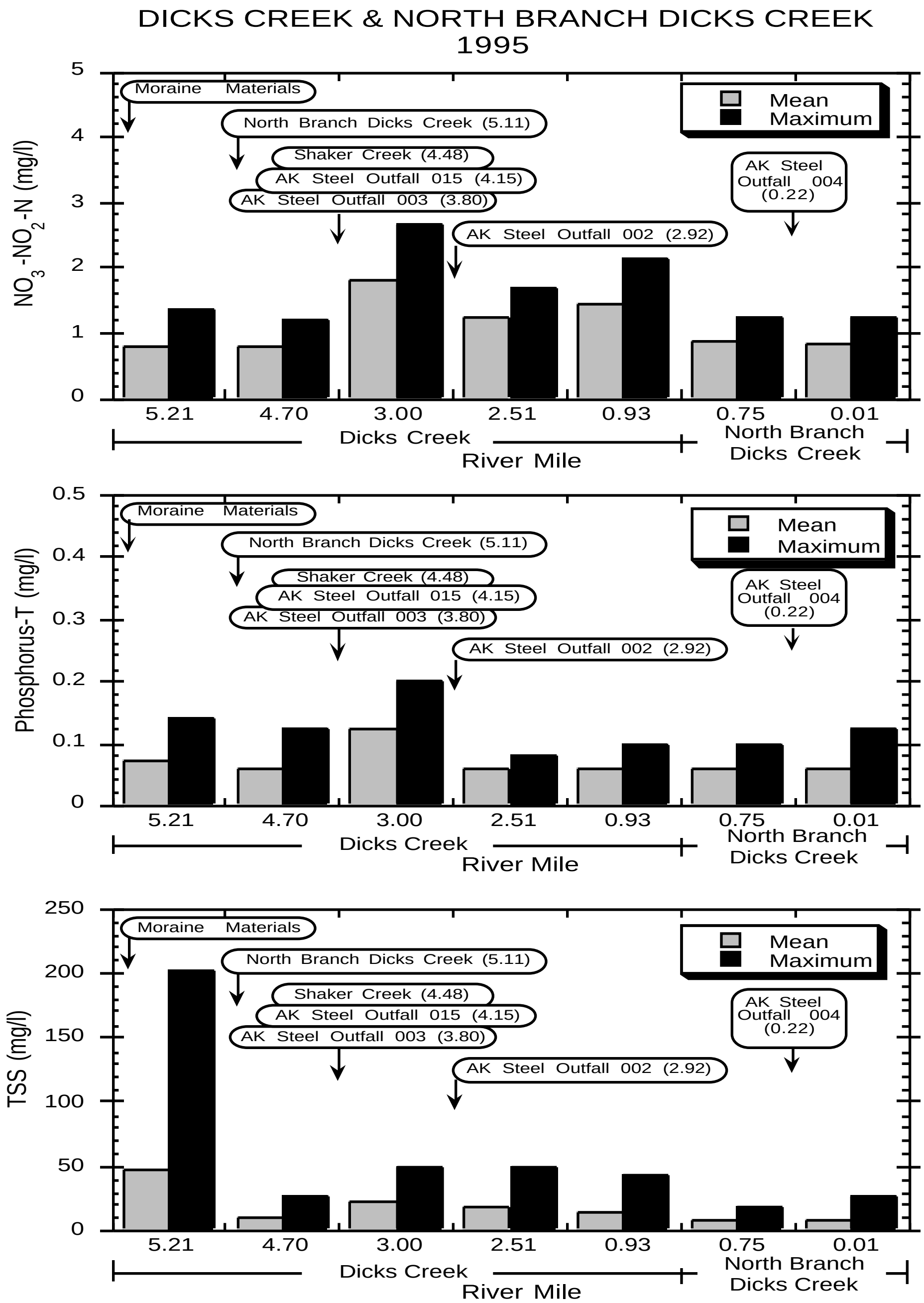


Figure 50 Longitudinal summary of nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in Dicks Creek and North Branch Dicks Creek during the 1995 survey.

Paddys Run (Figures 51 - 53, Table 4, Appendix Tables A-1 and A-3)
Paddys Run, entering the Great Miami River at RM 20.25, receives intermittent stormwater from numerous U.S. Department of Energy Fernald Environmental Management Project outfalls. Water samples collected at three sites during the survey (RMs 4.73, 3.27, and 0.25) were analyzed by a contract laboratory.

Mean D.O. concentrations (daytime grab samples) and corresponding percent saturations measured in Paddys Run ranged from 4.45 mg/l and 46% at RM 0.25 to 9.6 mg/l and 117% at RM 3.27. Mean values recorded at RM 0.25 were the lowest of the 1995 survey with four of six measurements below WWH water quality criteria. This site also experienced significantly lower temperatures (13˚C to 18˚C) and pH values (6.77 SU to 7.47 SU) compared to upstream sites, reflecting the influence of groundwater and the interstitial nature of Paddys Run.

While most (63%) of the BOD_5 concentrations recorded in Paddys Run were less than the contract laboratory detection limit of 6 mg/l, significantly elevated values occurred at all sites on July 11 and September 6, periods of lower flow. Concentrations on July 11 ranged from 12 mg/l at RM 0.25 to 37 mg/l at RM 3.27 while September 6 values ranged from 29 mg/l at RM 0.25 to 40 mg/l at RM 4.73. No other elevated parameters were noted on these dates.

Ammonia-N concentrations were below the contract laboratory’s minimum detection limit of 3.0 mg/l. This detection limit, magnitudes greater than the OEPA minimum detection limit of 0.05 mg/l, may conceal concentrations which exceed water quality criteria, making interpretation of these results somewhat ambiguous.

Concentrations of nitrate-N in Paddys Run were relatively low with mean values ranging from 0.53 mg/l at RM 0.25 to 1.34 mg/l at RM 4.73. While no elevated phosphorus concentrations were observed at upstream sites (RMs 4.73 and 3.27), values at RM 0.25 increased sharply, ranging from 0.37 mg/l to 0.51 mg/l.

Fifty-six percent (56%) of TSS concentrations measured in Paddys Run were less than the contract laboratory minimum detection limit of 10 mg/l. Mean values ranged from 11 mg/l at RMs 4.73 and 0.25 to 17 mg/l at RM 3.27. Maximums of 16 mg/l and 28 mg/l were recorded on August 23 at RMs 4.73 and 3.27, respectively, while a high of 14 mg/l was measured at RM 0.25 on September 6.

Concentrations of mercury exceeded water quality criteria at all three sites on various occasions. (Paddys Run samples accounted for half of the samples in the survey (11 of 22) analyzed for this parameter.)

Water samples collected from RM 0.25 were analyzed by the OEPA laboratory for organic compounds on four occasions. Chloroethane, alpha-hexachlorocyclohexane, and delta-hexachlorocyclohexane were detected in the water column on September 20. Dieldrin was also detected on September 20 at a concentration above water quality criteria. Additionally, low levels of hexachlorobenzene were detected on June 27.

Radiological parameters in surface water were compared with the final remediation levels (FRL) taken from *Operable Unit 5 Record of Decision* (DOE Fernald, December 1995), and background values found in the *Site Environmental Report* (DOE Fernald, June 1996), *Characterization of Background Water Quality for Streams and Groundwater* (DOE Fernald, 1994), and *Remedial Investigation Report for Operable Unit 5* (DOE Fernald, March 1995).

No radiological parameters exceeded or approached the FRL. Levels of total uranium and radium 226 were slightly elevated above background in Paddy's Run on the DOE Fernald site (Figure 53). A drainage ditch that enters Paddys Run on the site has been found to contain elevated levels of uranium and was remediated in 1996. Drainage from the production area is captured in a sump and pumped to the stormwater retention basins for treatment in the Advanced Waste Water Treatment facility.

Whitewater River (Figures 54-56, Appendix Tables A-1, and A-6)
The Whitewater River receives the discharge from the Harrison WWTP at RM 7.62 and enters the Great Miami River at RM 6.45. Two water chemistry sites (RMs 7.63 and 1.50) and three Datasonde sites (RMs 7.63, 6.04, and 1.50) were evaluated in this basin during the 1995 survey.

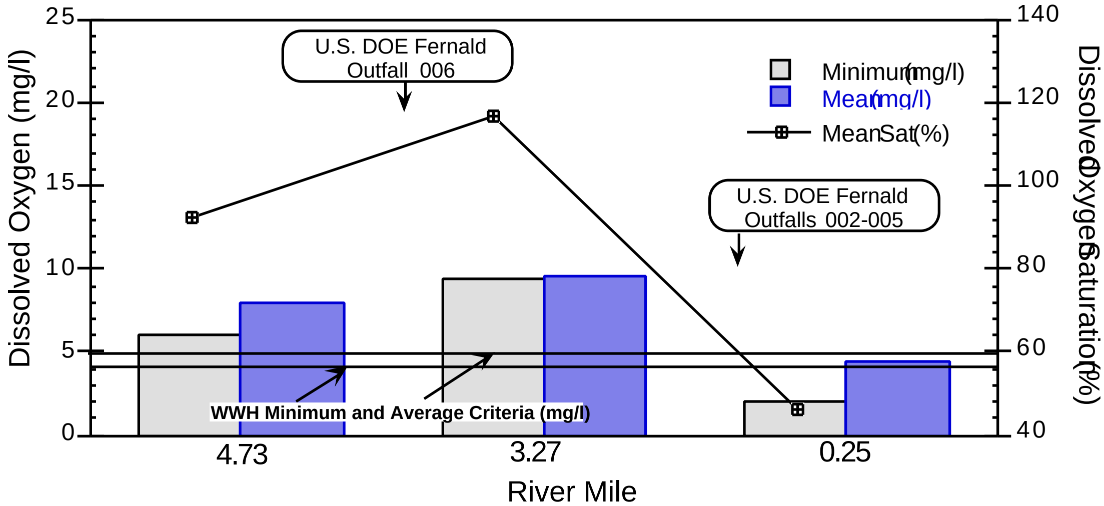
All hourly temperature, pH and conductivity values recorded by Datasonde™ continuous monitors from September 5-7 were within WWH water quality criteria (Figure 54, Appendix Table A-6). (Dissolved oxygen data was unavailable.) Minimal variations in temperature were observed during the period with mean values ranging from 23.21˚C at RM 7.63 to 23.33˚C at RM 6.04, downstream of the Harrison WWTP. Mean pH values ranged from 7.88 SU at RM 6.04 to 8.15 SU at RM 1.50. Monitors recorded minimal hourly fluctuation in conductivities at each of the three sites and relatively stable values longitudinally with means ranging from 558 µmhos/cm at RM 1.50 to 692 µmhos/cm at RM 6.04.

Mean daytime D.O. concentrations (grab samples) and percent saturations measured in the Whitewater River increased slightly from 8.4 mg/l and 96% at RM 7.63 to 8.7 mg/l and 100% at RM 1.50. All values were above WWH criteria. Five-day biochemical oxygen demand (BOD_5) concentrations remained low at both sites with the majority (67%) of values below the minimum detection limit of 2.0 mg/l.

All concentrations of ammonia-N recorded were less than the minimum detection limit of 0.05 mg/l. Additionally, no elevated concentrations of nitrate+nitrite-N or phosphorus were recorded in this basin during the survey with means at both sites below 2.2 mg/l and 0.09 mg/l, respectively, and corresponding maximums below 3.2 mg/l and 0.2 mg/l.

All TSS concentrations measured in the Whitewater River were greater than the minimum detection limit of 5 mg/l. Elevated concentrations coincided with higher flow periods, generally increasing longitudinally from RM 7.63 to RM 1.50. Mean concentrations ranged from 48 mg/l at RM 7.63 to 62 mg/l at RM 1.50 with corresponding maximums of 124 mg/l and 192 mg/l.

While within water quality criteria, elevated concentrations of lead were recorded on June 27 (a higher flow day) at both RM 7.63 (10 µg/l) and RM 1.50 (21 µg/l). Additionally, the concentration of selenium (5 µg/l) at RM 7.63 on September 19 equalled the chronic aquatic criterion (CAC) for this parameter.



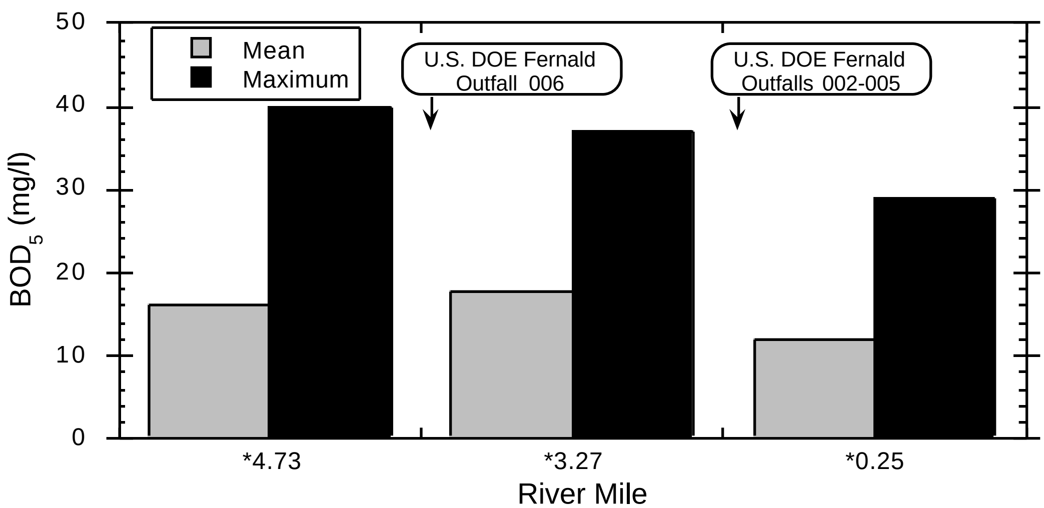


Figure 51 Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), and BOD_5 concentrations (mean and maximum values) in Paddys Run during the 1995 survey. (*Samples from Paddys Run were analyzed by a contract laboratory, Ross Analytical Services.)

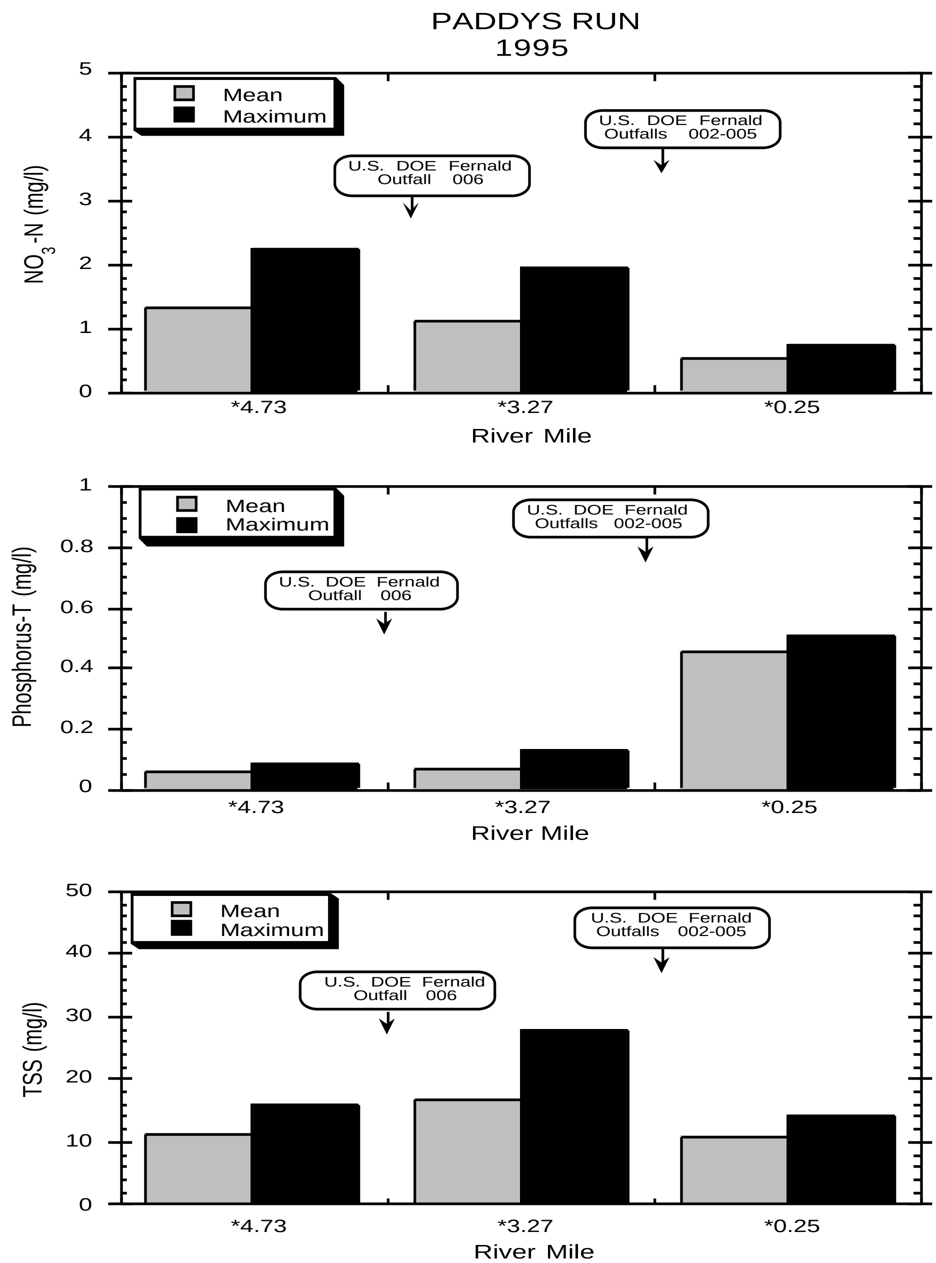


Figure 52 Longitudinal summary of nitrate-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in Paddys Run during the 1995 survey. (*Samples from Paddys Run were analyzed by a contract laboratory, Ross Analytical Services.)

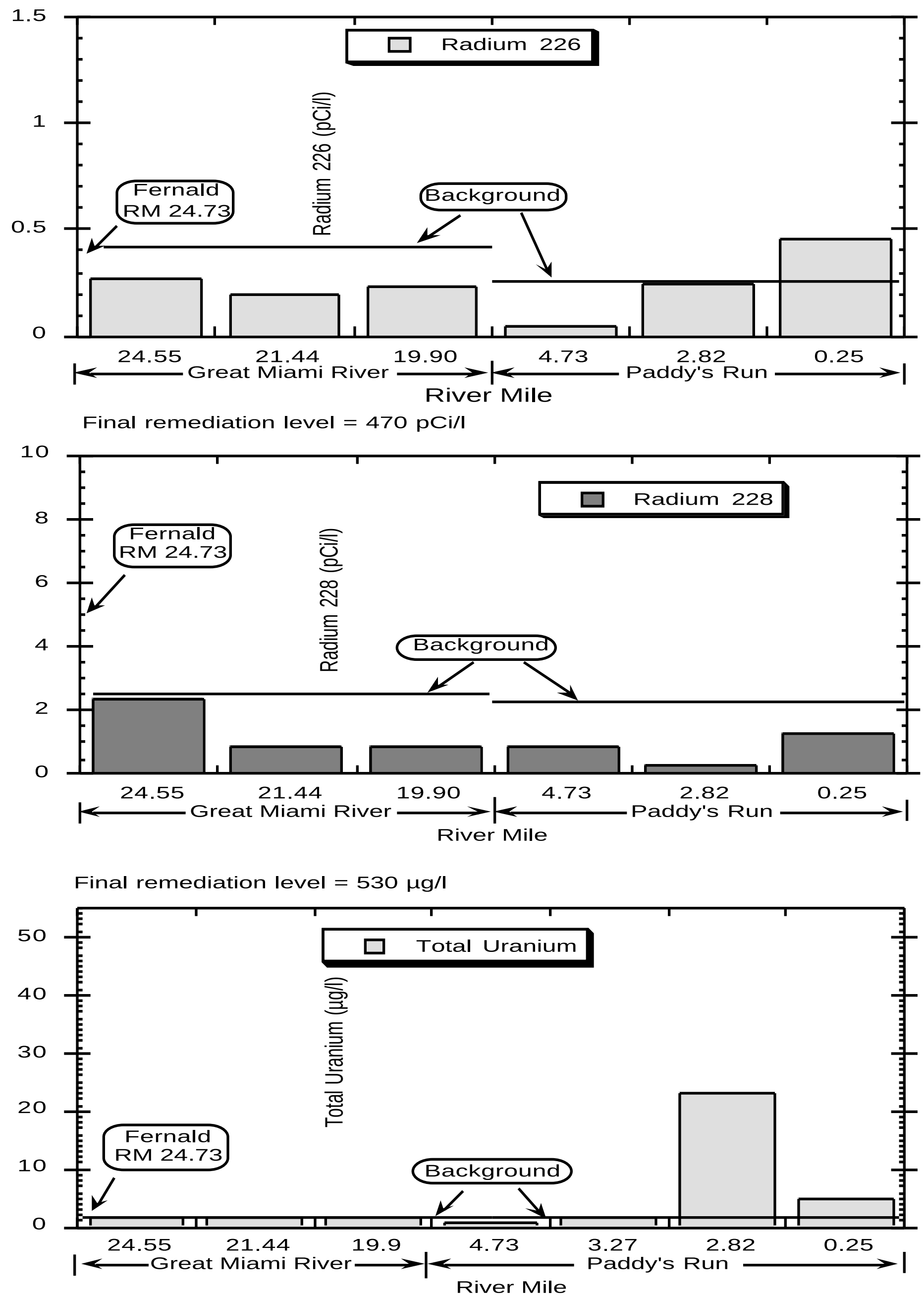


Figure 53 Radium 226, radium 228, and total uranium levels in surface water in the vicinity of the Fernald facility.

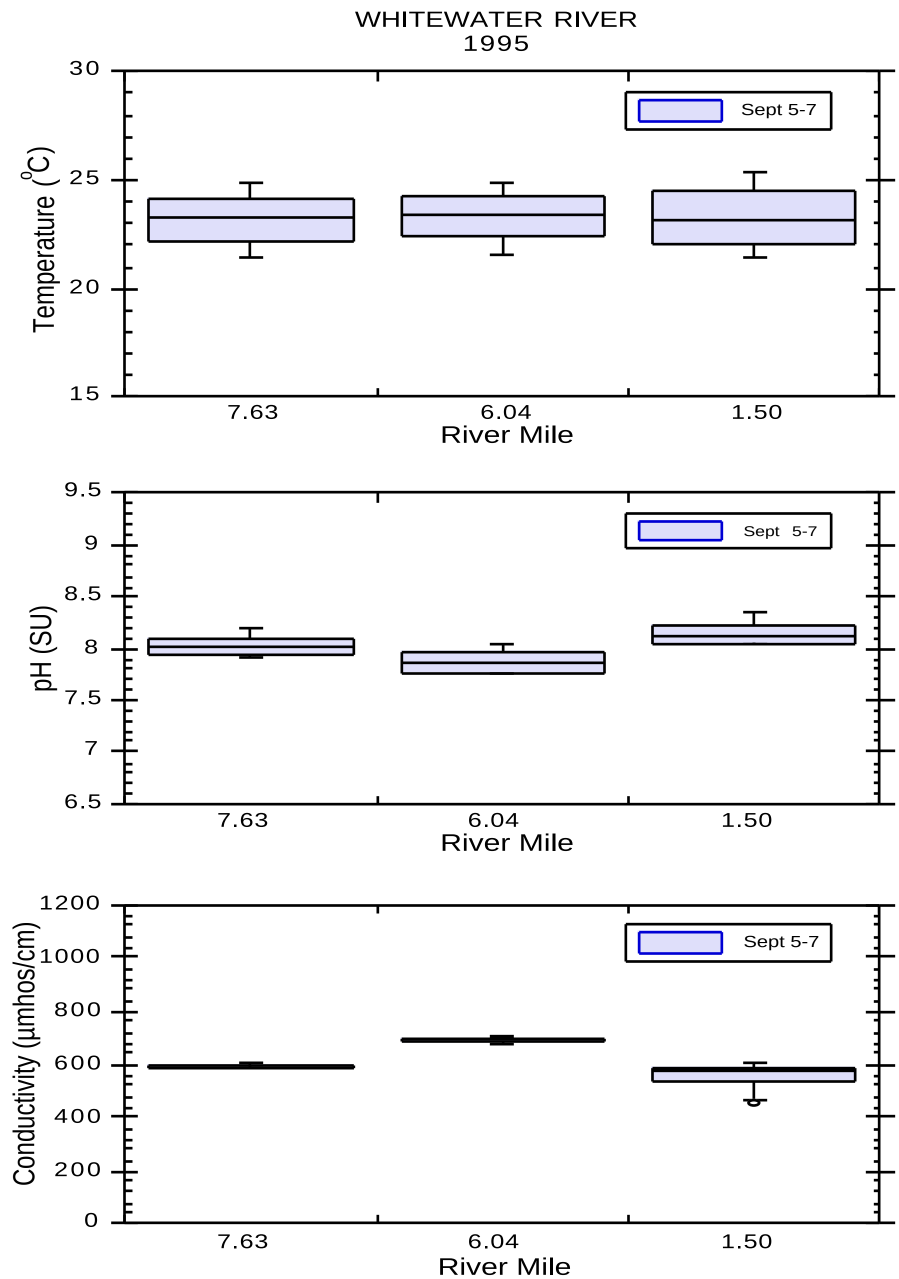


Figure 54 Longitudinal summary of temperature, pH and conductivity recorded with Datasonde™ continuous monitors in the Whitewater River during the 1995 survey (dissolved oxygen data unavailable).

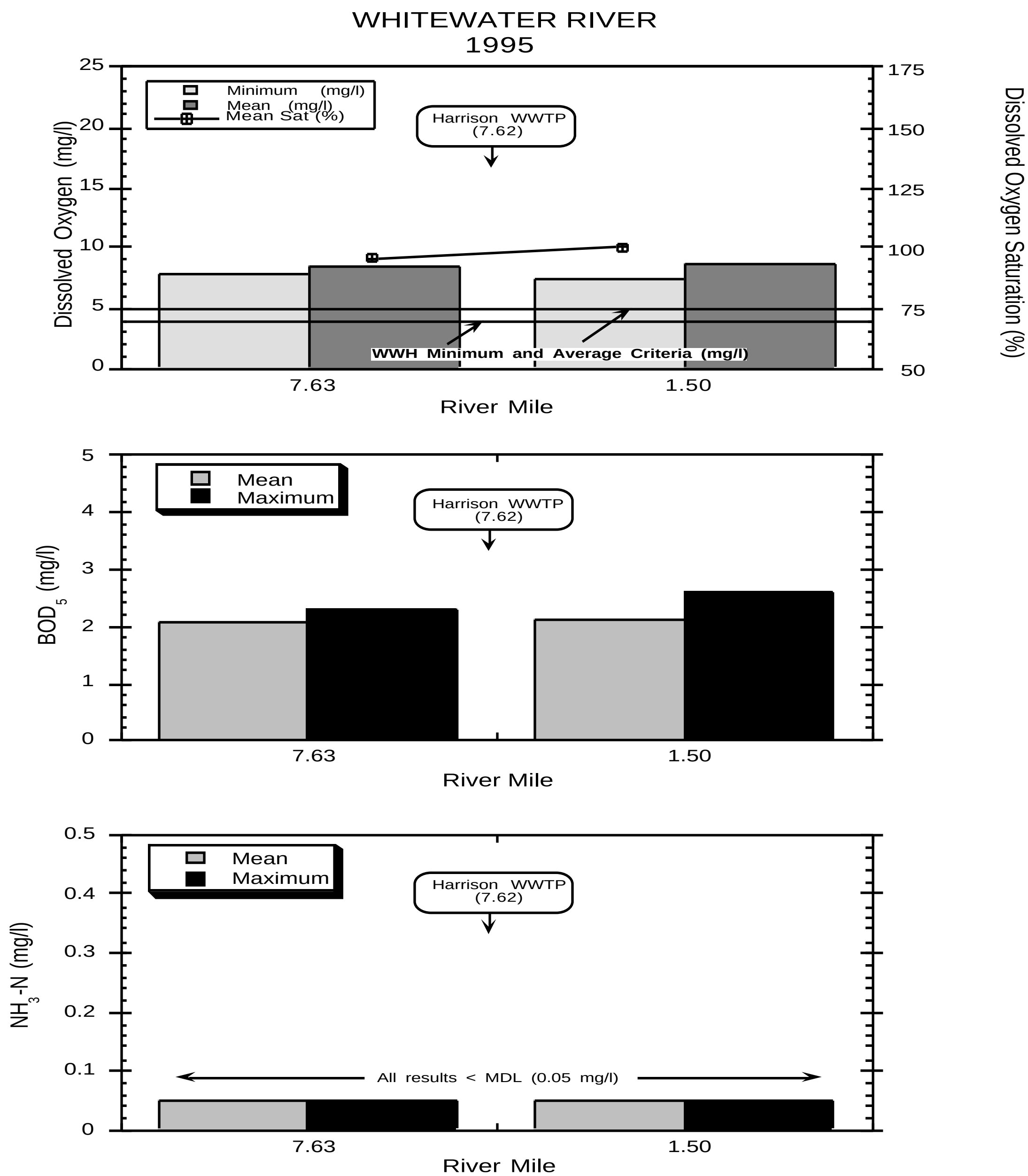


Figure 55. Longitudinal summary of dissolved oxygen (daytime grab minimum and mean concentrations and mean percent saturations), BOD_5, and ammonia-N concentrations (mean and maximum values) in the Whitewater River during the 1995 survey.

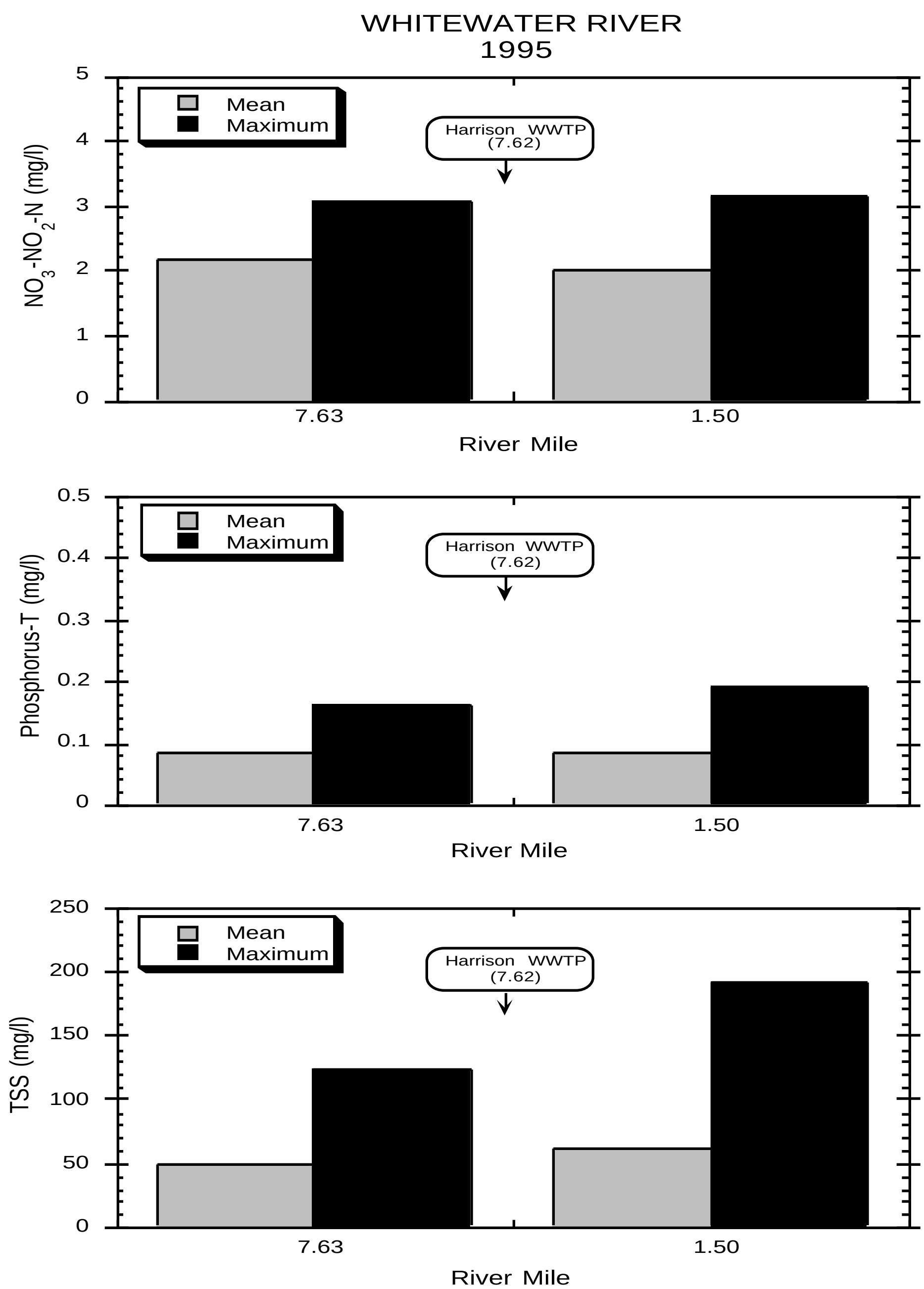


Figure 56 Longitudinal summary of nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations (mean and maximum values) in the Whitewater River during the 1995 survey.

Table 4. Exceedences of Ohio EPA Warmwater Habitat (WWH), Exceptional Warmwater Habitat (EWH), Modified Warmwater Habitat (MWH), and Limited Resource Water (LRW) criteria (OAC 3745-1) (and other chemicals not codified for which toxicity data is available) for chemical/physical water parameters measured in grab samples taken from the Great Miami River study area during 1995 (units are µg/l for metals and organics, µmhos/cm for conductivity, ˚C for temperature, and mg/l for all other parameters).

Stream	River Mile	Parameter (value)
Great Miami River (WWH)	80.65	Dieldrin (0.002#, 0.004#)
	79.95	Dieldrin (0.009*#, 0.003#) Lead (37*); Aldrin (0.003#); gamma-Hexachlorocyclohexane (0.016*);
	75.86	gamma-Hexachlorocyclohexane (0.012*); Dieldrin (0.008*#, 0.008*#, 0.004#); Endrin (0.005*); Heptachlor (0.004*#)
	72.10	Conductivity (3720*); Dissolved solids (2210*); 2,4,6-Trichlorophenol (7.5*); Aldrin (0.003#); Dieldrin (0.006*#, 0.006*#, 0.009*#); Endosulfan I (0.004*); Endosulfan II (0.019*); Endrin (0.012*, 0.008*); Methoxychlor (0.043*)
	69.87	Aldrin (0.002#); Dieldrin (0.002#, 0.004#); Endosulfan II (0.004*, 0.005*); Heptachlor (0.007*#); Methoxychlor (0.014*, 0.083*); Mirex (0.036*)

Table 4. Continued.

Stream	River Mile	Parameter (value)
Great Miami River	68.30	Dieldrin (0.003#); Endosulfan II (0.004*); Heptachlor (0.015*#); Methoxychlor (0.030*); Mirex (0.015*)
	66.00	Mercury-T (0.09#, 0.04#)
	64.72	Endrin (0.003*, 0.005*); Mirex (0.020*)
	58.00	Dieldrin (0.003#)
	52.64	gamma-Hexachlorocyclohexane (0.012*); Dieldrin (0.003#, 0.004#)
	51.30	Ammonia-N (0.58*, 1.50*, 1.68*); Aldrin (0.005#); Dieldrin (0.009*#, 0.005#); Endrin (0.007*)
	49.27	pH (9.28Δ)
	47.91	Ammonia-N (0.44*); Selenium-T (7*); Endosulfan II (0.004*, 0.008*); Endrin (0.004*)
	45.85	pH (9.21Δ); Selenium-T (6*)
	44.51	pH (9.26Δ) Dieldrin (0.003#); Endosulfan II (0.007*); Heptachlor (0.003*#)

Table 4. Continued.

Stream	River Mile	Parameter (value)
Great Miami River	43.23	pH (9.30Δ)
	37.35	pH (9.06Δ)
	34.68	pH (9.05Δ) Dieldrin (0.009*#, 0.004#)
	33.05	Bis (2-ethylhexyl) phthalate (10.6*); gamma-Hexachlorocyclohexane (0.012*); Dieldrin (0.005#, 0.005#); Endosulfan II (0.006*)
	31.19	pH (9.07Δ) gamma-Hexachlorocyclohexane (0.011*); Dieldrin (0.009*#, 0.005#, 0.004#); Endosulfan II (0.008*)
	28.82	pH (9.07Δ)
	27.15	pH (9.07Δ)
	24.55	Mercury-T (0.04#, 0.06#, 0.09#)
	21.44	Dieldrin (0.006*#)
	19.90	Mercury-T (0.06#); gamma-Hexachlorocyclohexane (0.011*); Dieldrin (0.004#)
	10.70	Dieldrin (0.009*#); Endosulfan II (0.007*, 0.006*); Endrin (0.003*, 0.003*)

Table 4. Continued.

Stream	River Mile	Parameter (value)
Great Miami River	8.52	gamma-Hexachlorocyclohexane (0.011*); Endosulfan II (0.009*); Endrin (0.003*, 0.003*)
	8.07	Temperature (29.5*)
	1.75	Dieldrin (0.003#); Endosulfan II (0.008*)
Wolf Creek (WWH)	16.61	Dieldrin (0.007*#, 0.003#, 0.003#);
	14.14	Endosulfan II (0.007*); Aldrin (0.002#); Dieldrin (0.004#, 0.002#); Endrin (0.003*);
	0.01	Temperature (28.9*); Dieldrin (0.005#, 0.004#)
Holes Creek (WWH)	0.59	Lead-T (18*)
Owl Creek (LRW)	0.17	2,4,6-Trichlorophenol (28.4**); Dieldrin (0.003#, 0.003#)
Bear Creek (WWH)	9.75	gamma-Hexachlorocyclohexane (0.017*); Dieldrin (0.005#, 0.002#); Endrin (0.008*, 0.007*, 0.009*, 0.017*)
	0.01	Bis (2-ethylhexyl) phthalate (20.1*); Dieldrin (0.005#, 0.003#); Heptachlor (0.003*#)
Mound Overflow Creek(MWH)	0.10	Mercury-T (0.07#)

Table 4. Continued.

Stream	River Mile	Parameter (value)
Dicks Creek	5.21	pH (10.18[Δ]);
(MWH: Rm 5.4 - 2.4)		Conductivity (2680*, 3020*, 3740*);
(WWH: Rm 2.4 - mouth)		Dissolved solids (1780*, 1980*, 2250*, 2500*);
		Selenium-T (7*, 6*, 7*);
		Nickel-T (320[∞]);
		Dieldrin (0.004[#]);
		Endosulfan II (0.005*);
		Endrin (0.003*)
	4.70	Conductivity (2680*, 3000*, 3740*);
		Dissolved solids (1780*, 2000*, 2210*, 2510*);
		Selenium-T (9*, 7*);
		Nickel-T (261[∞]);
		Dieldrin (0.006*[#]);
		Endosulfan II (0.005*)
	3.00	Ammonia-N (1.10*, 0.79*, 1.97*, 209**);
		Conductivity (2960*);
		Selenium-T (33**);
		Lead-T (16*);
		Zinc-T (564**, 206**, 447**);
		PAH (sum[1]) (615.7[#])
		Naphthalene (420***);
		Aniline (498***);
		Dibenzofuran (29.3*);
		Fluoranthene (38.8*);
		2-Methylphenol (1280***);
		3&4 Methylphenol (4810***);
		Phenol (8900**);
		Aldrin (0.006[#]);
		Dieldrin (0.004[#], 0.049*[#]);
		Endrin (0.009*, 0.005*)

Table 4. Continued.

Stream	River Mile	Parameter (value)
Dicks Creek	2.51	Ammonia-N (19.80**); Conductivity (3020*); Dissolved solids (2030*); Selenium-T (16*, 6*); PAH (sum[1]) (21.0#); Phenol (754*); Aldrin (0.003#); gamma-Hexachlorocyclohexane (0.015*); Dieldrin (0.005#, 0.015*#); Endrin (0.010*)
	0.93	Ammonia-N (0.42*); Conductivity (2840*); Dissolved solids (1860*); Selenium-T (6*, 9*); Aldrin (0.003#); Dieldrin (0.004#); Endosulfan II (0.004*)
North Branch Dicks Creek (MWH)	0.75	Conductivity (2670*); Dissolved solids (1930*); Aldrin (0.002#); Heptachlor (0.003*#, 0.003*#)
	0.01	Conductivity (2690*, 3010*, 3740*); Dissolved solids (1760*, 2020*, 2210*, 2550*); Selenium-T (7*); Zinc-T (795*); Dieldrin (0.004#, 0.004#); Endosulfan II (0.008*); Endrin (0.003*)

Table 4. Continued.

Stream	River Mile	Parameter (value)
Paddys Run (WWH)	4.73	Mercury-T (0.03#, 0.06#)
	3.27	Mercury-T (0.04#, 0.08#)
	0.25	Dissolved Oxygen (3.5‡‡, 2.0‡‡); Mercury-T (0.05#, 0.08#); Dieldrin (0.002#)

* exceedence of numerical criteria for prevention of chronic toxicity (CAC).
** exceedence of numerical criteria for prevention of acute toxicity (AAC).
*** exceedence of numerical criteria for prevention of lethality (FAV).
# exceedence of numerical criteria for human health 30-day average.
‡ value is below the 24-hour average warmwater habitat dissolved oxygen (D.O.) criterion (5.0 mg/l).
‡‡ exceedence of the minimum warmwater habitat dissolved oxygen (D.O.) criterion (4.0 mg/l).
Δ exceedence of the pH criteria (6.5-9.0).
∞ exceedence of agricultural water supply criterion.
1 Polynuclear aromatic hydrocarbon (PAH) criteria apply to the sum of anthracene, benzo (a) anthracene, benzo (k) fluoranthene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (a) pyrene, chrysene, dibenzo (a,h) anthracene, fluorene, indeno (1,2,3-c,d) pyrene, naphthalene, phenanthrene and pyrene.

Chemical Sediment Quality (Figures 57 - 63, Tables 5 & 6 , Appendix Tables A-4 & A-5)
Sediment samples were collected from 39 locations in the 1995 study area to assess levels of contaminants present in stream sediments. In addition to particle size, sediments were typically analyzed for 15 metals, 59 volatile organic compounds (VOCs), 93 semivolatile organic compounds, 19 organochlorine pesticides, and 7 PCB (polychlorinated biphenyl) aroclors. Whenever possible, composite samples from a cross-section of the stream channel were collected with silts and clays comprising at least 30% of the sample. Sediments composed of sand and larger sized particles (> 60 microns) are often stable inorganic silicate minerals and are not usually associated with contaminants. Given that the finer grained silts and clays (< 60 microns) are much more chemically, physically and biologically interactive, collection efforts were biased towards collecting these types of sediments.

Select parameters were ranked based on stream sediment classification guidelines developed by Kelly and Hite (1984), the Persaud (1994), and the Ohio EPA. Both Kelly and Hite and Ohio EPA address relative concentrations rather than direct toxicity, statistically ranking pollutant concentrations from non-elevated to extremely elevated. Based on one, two, four and eight standard deviations from background means, Kelly and Hite developed a five tier classification of Illinois stream sediments for constituents for which adequate data was available (select metals, pesticides, and PCBs) . Ohio EPA metal guidelines, based on ecoregion reference sites, are derived from the median value plus one, two, four, and eight inter-quartile range values. Utilizing biologically based guidelines to protect sediment-dwelling organisms, the Ontario system establishes three ecotoxic effect levels: No Effect Level, Lowest Effect Level (LEL) and the Severe Effect Level (SEL). Concentrations above the LEL are expected to affect sediment use by some benthic organisms, while levels which exceed the SEL are expected to detrimentally affect the majority of benthic organisms. (Given differences in background levels for metals in Ohio versus the Ontario Great Lakes watershed, only the SEL was used for heavy metals analyses in this report.)

Sediment Metals (Figures 57 - 63, Table 5 , Appendix Table A-4)
Great Miami River (Dayton to Middletown: RMs 92.65 - 57.55)
Of the 12 metals included in the various sediment classification systems, the majority (70%) of concentrations recorded at 11 sites in this segment of the Great Miami River were ranked “non-elevated” or “slightly elevated” by all applicable guidelines. Barium and aluminum (55% and 45% of concentrations, respectively) were the metals most frequently ranked “elevated” or higher per Ohio EPA guidelines. While particle size of sediments at 3 of the 11 sites (RMs 75.86, 68.30, and 66.00) fell slightly below the desired composition of at least 30% silt and clay, sediments collected at RMs 92.65 (upstream of the Taylorsville dam) and 72.10 (downstream of the Appleton WWTP) consisted almost entirely of larger sized particles (81% and 96%, respectively).

The highest concentrations observed in this reach for aluminum (33300 mg/kg), arsenic (12.7 mg/kg), barium (219 mg/kg), iron (26200 mg/kg), and manganese (543 mg/kg) occurred at RM 83.57.

Ohio EPA guidelines classify concentrations of aluminum and barium at this site as “highly elevated”, manganese as “elevated” and arsenic and iron as “slightly elevated”. Concentrations of cadmium (0.927 mg/kg), chromium (36.3 mg/kg), copper (36.3 mg/kg) and zinc (144 mg/kg) at the site were also considered “elevated” by Ohio EPA guidelines. Elevated values at this site, located in the vicinity of a large stormwater culvert, may be attributable to urban runoff.

The concentration of copper (40.3 mg/kg) at RM 80.65 was ranked “highly elevated” by Ohio EPA guidelines while levels of aluminum (19800 mg/kg), barium (172 mg/kg), chromium (30.1 mg/kg) and manganese (482 mg/kg) at the site were considered “elevated”.

“Highly elevated” (Ohio EPA guidelines) concentrations of aluminum (24400 mg/kg), cadmium (1.22 mg/kg), chromium (51.8 mg/kg), and zinc (293 mg/kg) were also recorded at RM 75.86, downstream of the Dayton WWTP. Additionally, Ohio EPA guidelines classified concentrations of barium (206 mg/kg) and copper (37.5 mg/kg) at the site as “elevated”, while mercury (0.129 mg/kg) was ranked “elevated” by Kelly and Hite.

Concentrations of aluminum (17200 mg/kg), barium (138 mg/kg), and manganese (477 mg/kg) observed at RM 66.90 were considered “elevated” per Ohio EPA guidelines as were concentrations of barium (146 mg/kg), cadmium (0.756 mg/kg) and copper (36.7 mg/kg) at RM 64.72, downstream of the Miamisburg WWTP and Mound Overflow Creek. Additionally, Ohio EPA guidelines ranked cadmium (1.6 mg/kg) at RM 66.00, downstream of Mound Outfall 001, as “highly elevated” while mercury (0.13 mg/kg) at the site was considered “elevated” by Kelly and Hite.

Other parameters in this segment of the mainstem considered “elevated” per Ohio EPA guidelines included aluminum (18000 mg/kg) and barium (143 mg/kg) at RM 79.95. Additionally, mercury (0.116 mg/kg) at RM 68.30 was ranked as “elevated” by Kelly and Hite.

Great Miami River (Middletown to Hamilton: RMs 55.14 - 34.68)

One-half (50%) of sediment metal concentrations recorded at four sites in this segment of the mainstem were ranked “non-elevated” or “slightly elevated” by all applicable guidelines. Sediments at all but one (RM 52.64) of the four sites attained the desired particle size composition of at least 30% silt and clay.

The highest concentrations of the entire 1995 survey for arsenic (41.4 mg/kg), barium (285 mg/kg), cadmium (5.41 mg/kg), chromium (93.7 mg/kg), copper (613 mg/kg), iron (207000 mg/kg), lead (213 mg/kg), and mercury (1.15 mg/kg) occurred at RM 51.30, downstream of AK Steel Outfall 011 (Figure 59). Concentrations of arsenic, copper, iron, and zinc (1240 mg/kg) exceeded Ontario SELs and were ranked “extremely elevated” by both Ohio EPA and Kelly and Hite guidelines. Barium, cadmium, chromium, lead, mercury, and nickel (69.3 mg/kg) were classified by Ohio EPA and Kelly and Hite as either “highly elevated” or “extremely elevated” while aluminum (17000 mg/kg) at the site was ranked “elevated” by Ohio EPA guidelines.

Ohio EPA guidelines ranked concentrations of cadmium (1.22 mg/kg) and chromium (43.9 mg/kg) as “highly elevated” at RM 44.51 while zinc (202 mg/kg) was ranked “elevated” by Ohio EPA and “highly elevated” by Kelly and Hite. Additionally, concentrations of aluminum (19900 mg/kg), barium (144 mg/kg), and manganese (521 mg/kg) were “elevated” according to Ohio EPA guidelines as was mercury (0.103 mg/kg) per Kelly and Hite. This site, downstream of the Butler County LeSourdsville WWTP, may also be impacted by drainage entering from a small tributary immediately upstream (a variety of rusted metallic objects were observed adjacent to this tributary during the survey).

Sediments collected at RM 34.68, immediately upstream of the Hamilton recreational dam, revealed zinc (192 mg/kg) at a level considered “elevated” by Ohio EPA and ranked “highly elevated” by Kelly and Hite. Additionally, aluminum (28500 mg/kg) at the site was ranked “highly elevated” by Ohio EPA while concentrations of barium (186 mg/kg), chromium (35.8 mg/kg), copper (30.0 mg/kg), and manganese (542 mg/kg) were considered “elevated”. Results may reflect the impact of numerous urban sources.

Great Miami River (Hamilton to the Ohio River: RMs 33.05 - 1.75)
Sediments from nine sites in the lower reach of the mainstem were analyzed for metals with forty-seven percent (47%) of concentrations ranked as “non-elevated” or “slightly elevated” by all applicable guidelines. The most frequently observed metals in this segment of the mainstem with Ohio EPA rankings greater than or equal to “elevated” were barium and cadmium (89% and 67% of concentrations, respectively). Given that Ohio EPA guidelines are based on ecoregions, however, it should be noted that the lower five sites (RMs 21.44 -1.75) in this reach were analyzed based on the more restrictive Interior Plateau (IP) guidelines while the upper four sites (RMs 33.05-24.55) were evaluated according to guidelines for the Eastern Corn Belt Plain (ECBP) ecoregion. Particle size of sediments at all locations but RM 8.52 attained the desired 30% silt and clay composition.

Ohio EPA guidelines indicate “highly elevated” concentrations of aluminum (33300 mg/kg), barium (242 mg/kg), chromium (42.3 mg/kg), copper (42.3 mg/kg), and zinc (272 mg/kg) at RM 33.05, downstream of the Hamilton WWTP. Additionally, cadmium (1.01 mg/kg) and manganese (708 mg/kg) were considered “elevated” at the site (Ohio EPA guidelines).

Aluminum (30400 mg/kg) was ranked “highly elevated” by Ohio EPA guidelines downstream of the Fairfield WWTP at RM 31.19 while zinc (200 mg/kg), ranked “elevated” by Ohio EPA, was classified as “highly elevated” by Kelly and Hite. “Elevated” levels of barium (209 mg/kg), cadmium (0.768 mg/kg), chromium (34.6 mg/kg), copper (32.4 mg/kg), and manganese (668 mg/kg) were also detected at the site (Ohio EPA guidelines).

Per Ohio EPA guidelines, concentrations of aluminum (20200 mg/kg), arsenic (14.1 mg/kg), barium (145 mg/kg), and manganese (541 mg/kg) were “elevated” at RM 26.21. Concentrations of cadmium (2.9 mg/kg) and manganese (516 mg/kg) recorded at RM 24.55, downstream of the Fernald facility, were ranked “extremely elevated” and “elevated”, respectively, by Ohio EPA guidelines.

Barium concentrations measured at both RM 21.44 (212 mg/kg) and RM 19.90 (243 mg/kg) were classified “extremely elevated” by Ohio EPA guidelines. Concentrations of zinc (173 mg/kg) at RM 21.44 and chromium (39.8 mg/kg) at RM 19.90, classified as “elevated” by Ohio EPA guidelines, were ranked “highly elevated” by Kelly and Hite while both classification systems ranked zinc (213 mg/kg) at RM 19.90 as “highly elevated”. Respective concentrations recorded at RMs 21.44 and 19.90 of aluminum (30900 mg/kg and 34400 mg/kg), arsenic (14.1 mg/kg and 16.8 mg/kg), and cadmium (0.567 mg/kg and 0.612 mg/kg) were “elevated” per Ohio EPA guidelines. Additionally, Ohio EPA guidelines indicate “elevated” concentrations of chromium (36.4 mg/kg) at RM 21.44 while Kelly and Hite rank mercury (0.101 mg/kg) at RM 19.90 as “elevated”.

While barium (91.7 mg/kg) was the only “elevated” metal concentration observed at RM 10.70 during the survey, “highly elevated” concentrations were recorded at RMs 8.52 (152 mg/kg) and 1.75 (121 mg/kg) per Ohio EPA guidelines. Additionally, concentrations of arsenic (17.1 mg/kg) at RM 8.52, classified as “elevated” by Ohio EPA guidelines, were ranked “highly elevated” by Kelly and Hite. Cadmium (0.622 mg/kg) and lead (46.2 mg/kg) at RM 1.75 were considered “elevated” per Ohio EPA guidelines.

Wolf Creek

Sediments collected from RM 16.61 and analyzed for metals during the 1995 survey attained the desired particle size composition of at least 30% silt and clay. While no values recorded at the site were classified as “highly elevated” or “extremely elevated” by any of the classification systems, concentrations of aluminum (21900 mg/kg), barium (168 mg/kg), chromium (33.4 mg/kg), and manganese (649 mg/kg) were considered “elevated” by Ohio EPA guidelines. Results may reflect the effects of stormwater runoff from both agricultural and urban sources.

Owl Creek

Sediments collected at RM 0.17, downstream of Fraser Paper and West Carrollton Parchment, were composed of less than 8 % silt and clay. Chromium (36.8 mg/kg) was considered “elevated” by both Ohio EPA and Kelly and Hite guidelines. All other concentrations were classified as “non-elevated” or “slightly elevated”. Low values may be partially attributable to the larger particle size of sediments at the site.

Bear Creek

Sediments collected from the mouth (RM 0.01) of Bear Creek were comprised entirely of silts and clays. All sediment metal concentrations evaluated were classified as “non-elevated” or “slightly elevated” by applicable guidelines.

Elk Creek
"Elevated" concentrations (Ohio EPA guidelines) of aluminum (20200 mg/kg), arsenic (13.8 mg/kg), barium (174 mg/kg), and manganese (505 mg/kg) were observed in sediments collected from RM 3.65 of Elk Creek, upstream of Dry Run. Additionally, while not included in any of the classification systems, the highest selenium concentration (2.48 mg/kg) of the 1995 survey occurred at this site. Sediments at the site were composed entirely of silts and clays.

Dicks Creek
Sediments from the five sites in Dicks Creek analyzed for metals during the 1995 survey attained the desired particle size composition of at least 30% silt and clay at all but one location (RM 3.00). One-half (50%) of sediment metal concentrations evaluated in this tributary were ranked as "non-elevated" or "slightly elevated" by all applicable guidelines.

Exceeding the Ontario SEL and ranked "extremely elevated" by both Ohio EPA and Kelly and Hite, the highest zinc concentration (1360 mg/kg) of the survey was recorded at RM 3.00, downstream of AK Steel Outfalls 003 and 015. Zinc levels, however, were excessive throughout the Dicks Creek basin with Ohio EPA and Kelly and Hite guidelines classifying concentrations at RM 5.21 (424 mg/kg), RM 2.51 (424 mg/kg), and RM 0.93 (575 mg/kg) as "extremely elevated". Zinc at RM 4.70 (388 mg/kg), ranked "highly elevated" by Ohio EPA guidelines, was considered "extremely elevated" by Kelly and Hite.

"Extremely elevated" by Ohio EPA guidelines and exceeding the Ontario SEL, the highest nickel concentration (232 mg/kg) of the 1995 survey occurred downstream of Moraine Materials at RM 5.21. Per Ohio EPA guidelines, values remained "highly elevated" at RM 4.70 (71.1 mg/kg) before decreasing to "elevated" at RMs 3.00 and 2.51 with respective concentrations of 58.9 mg/kg and 42.8 mg/kg.

Analysis of the sediments of Dicks Creek also revealed excessive amounts of chromium. The concentration recorded at RM 3.00 (66.8 mg/kg) was ranked "extremely elevated" by both Ohio EPA and Kelly and Hite while levels at RM 5.21 (44.4 mg/kg) and RM 2.51 (49.1 mg/kg) were considered "highly elevated". Concentrations at RMs 4.70 and 0.93 (28.8 mg/kg at both sites) were ranked "elevated" by both classification systems.

Both arsenic and copper at RMs 5.21 and 4.70 were considered "elevated" according to Ohio EPA guidelines with respective arsenic concentrations of 17.7 mg/kg and 13.9 mg/kg and corresponding copper values of 34.6 mg/kg and 37.7 mg/kg.

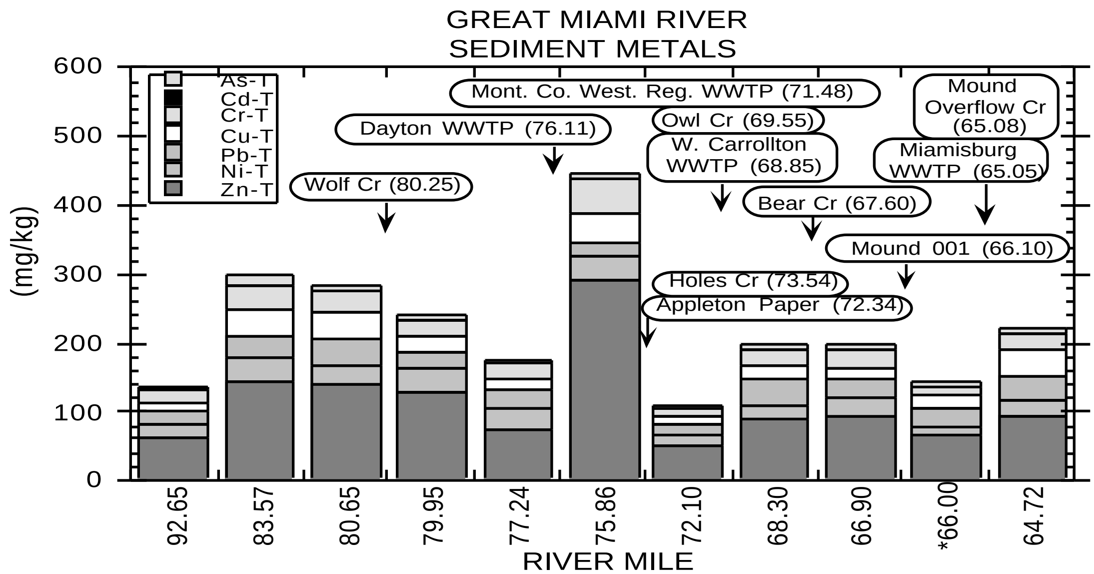
"Highly elevated" concentrations of cadmium (1.50 mg/kg) and "elevated" concentrations of aluminum (16500 mg/kg) and manganese (500 mg/kg) were recorded at RM 0.93 of Dicks Creek (Ohio EPA guidelines). Additionally, cadmium (0.931 mg/kg) at RM 3.00 was considered "elevated" by Ohio EPA guidelines.

North Branch Dicks Creek
Sediments from both sites (RMs 0.75 and 0.01) in the North Branch of Dicks Creek were composed of at least 30% silt and clay. The majority (75%) of evaluated sediment metal concentrations were ranked “non-elevated” or “slightly elevated” by all applicable guidelines.

Per Ohio EPA guidelines, concentrations of aluminum (22300 mg/kg), barium (140 mg/kg), chromium (29.0 mg/kg) and manganese (577 mg/kg) were “elevated” at RM 0.75. The concentration of zinc (183 mg/kg) at RM 0.01, ranked “elevated” by Ohio guidelines, was considered “highly elevated” by Kelly and Hite.

Paddys Run
Sediment samples collected from three sites (RMs 4.73, 3.27 and 2.82) in Paddys Run were analyzed by a contract laboratory. While 89% of evaluated concentrations were ranked “non-elevated” by applicable classification systems, results may be partially attributable to the sandy composition and large particle size of sediments at all sites.

The concentration of cadmium at RM 3.27 (1.9 mg/kg) was ranked by Ohio EPA guidelines as “extremely elevated” while concentrations at both RMs 4.73 (1.7 mg/kg) and 2.82 (0.97 mg/kg) were considered “highly elevated”. Additionally, a “highly elevated” manganese concentration (865 mg/kg) was recorded at RM 4.73 (Ohio EPA guidelines).



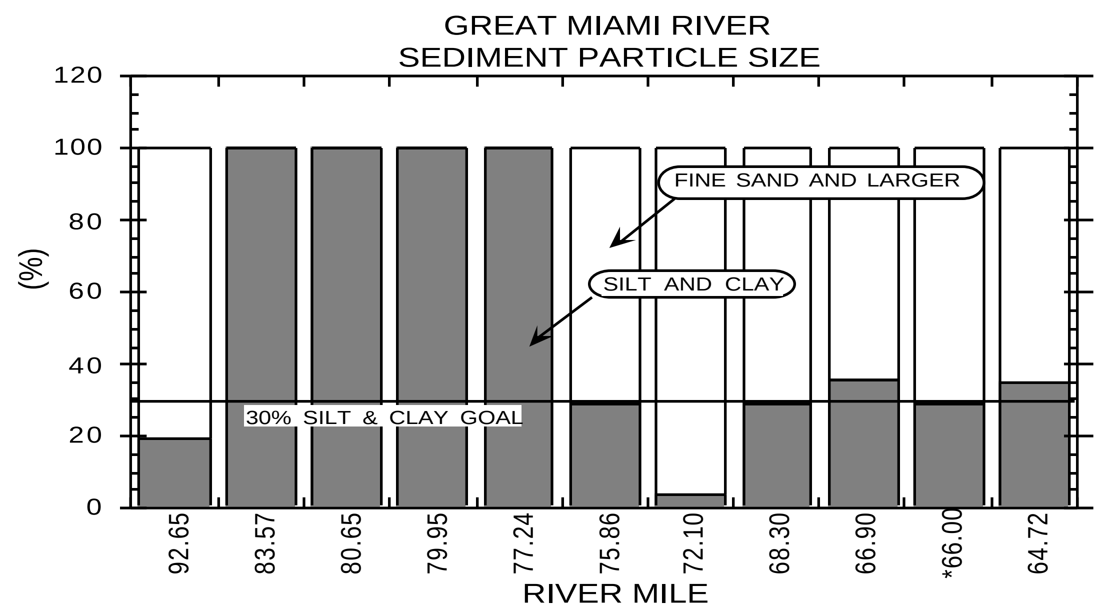
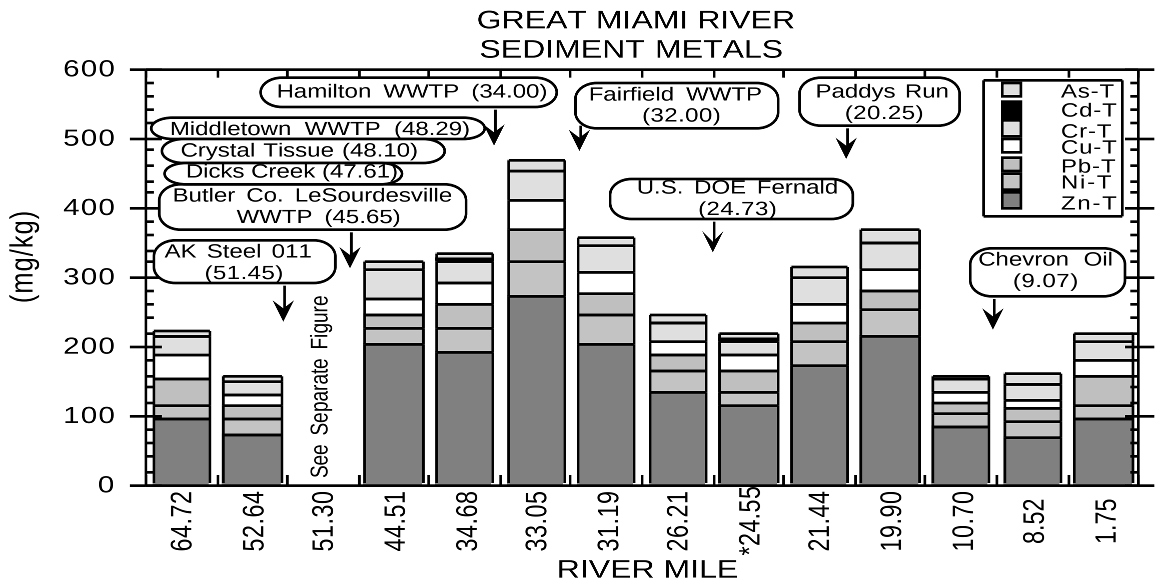


Figure 57 Longitudinal summary of select sediment metal concentrations in the Great Miami River (RMs 92.65-64.72) [Upper Plot] and associated sediment particle sizes [Lower Plot] during the 1995 survey. (*Samples from RM 66.00 were analyzed by a contract laboratory, Ross Analytical Services.)



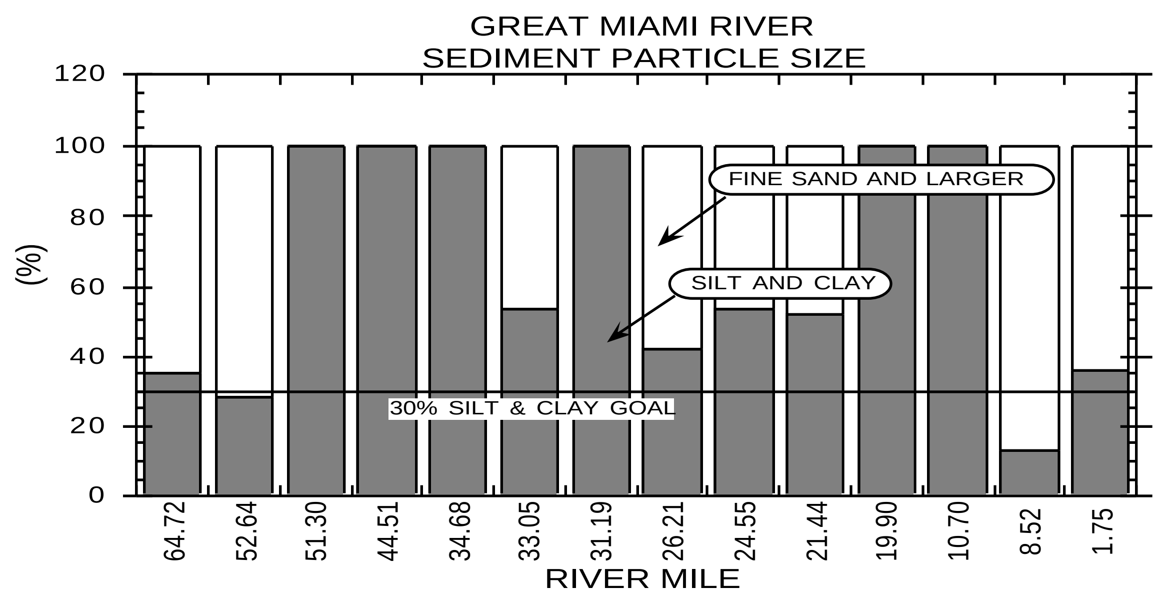


Figure 58 Longitudinal summary of select sediment metal concentrations in the Great Miami River (RMs 64.72-1.75) [Upper Plot] and associated sediment particle sizes [Lower Plot] during the 1995 survey. (*Samples from RM 24.55 in upper plot were analyzed by a contract laboratory, Ross Analytical Services.)

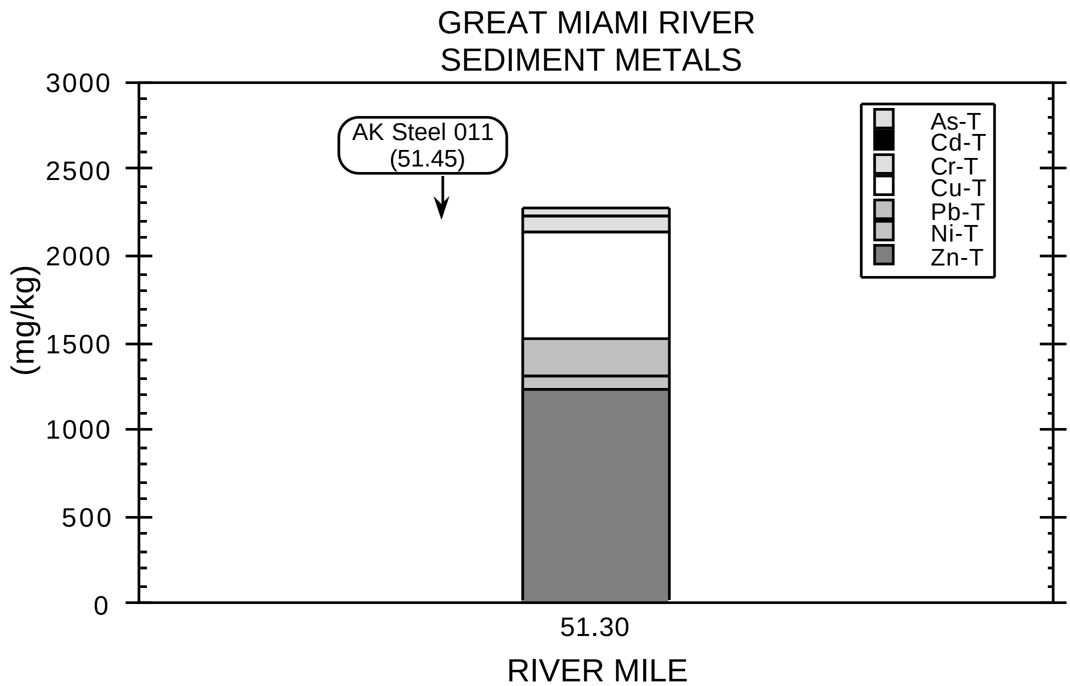
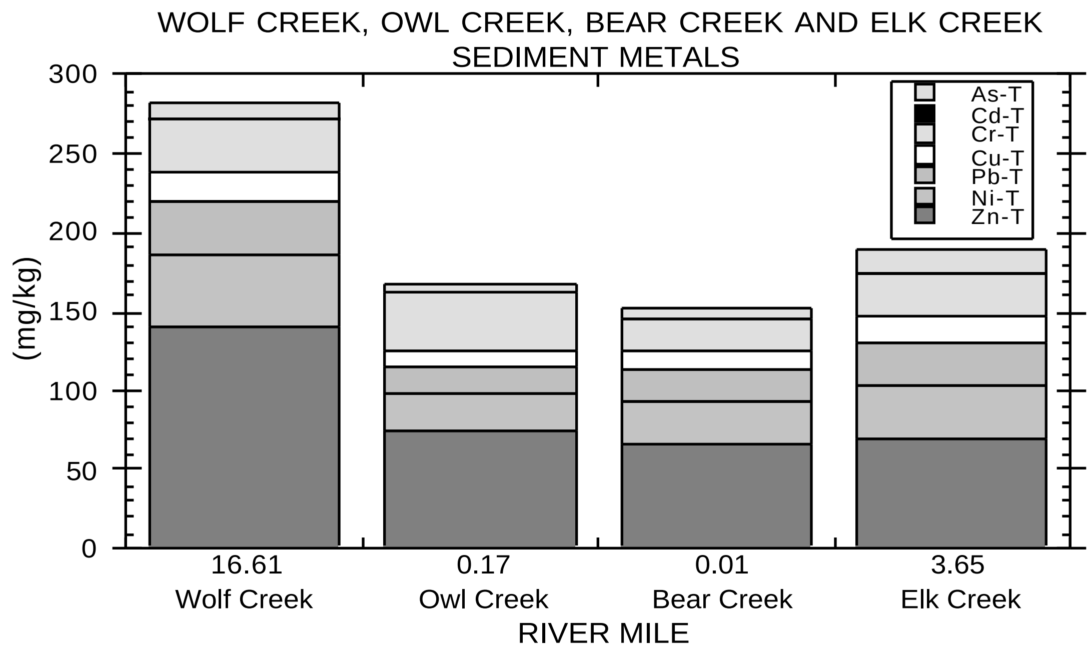


Figure 59 Select sediment metal concentrations in the Great Miami River at RM 51.30 downstream of AK Steel Outfall 011 during the 1995 survey.



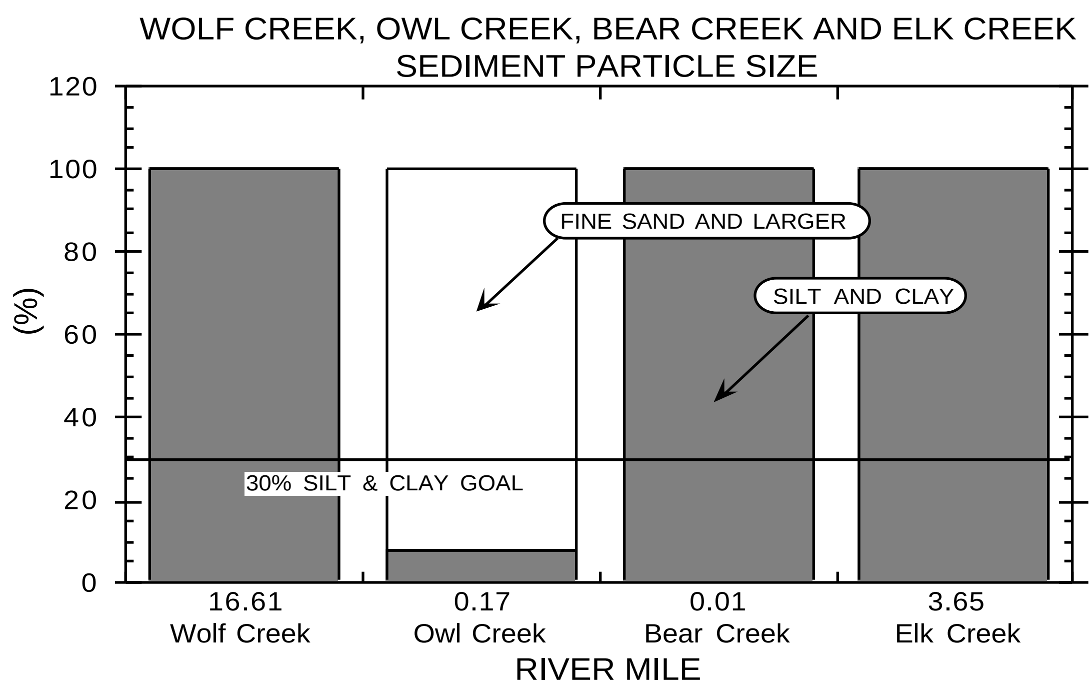
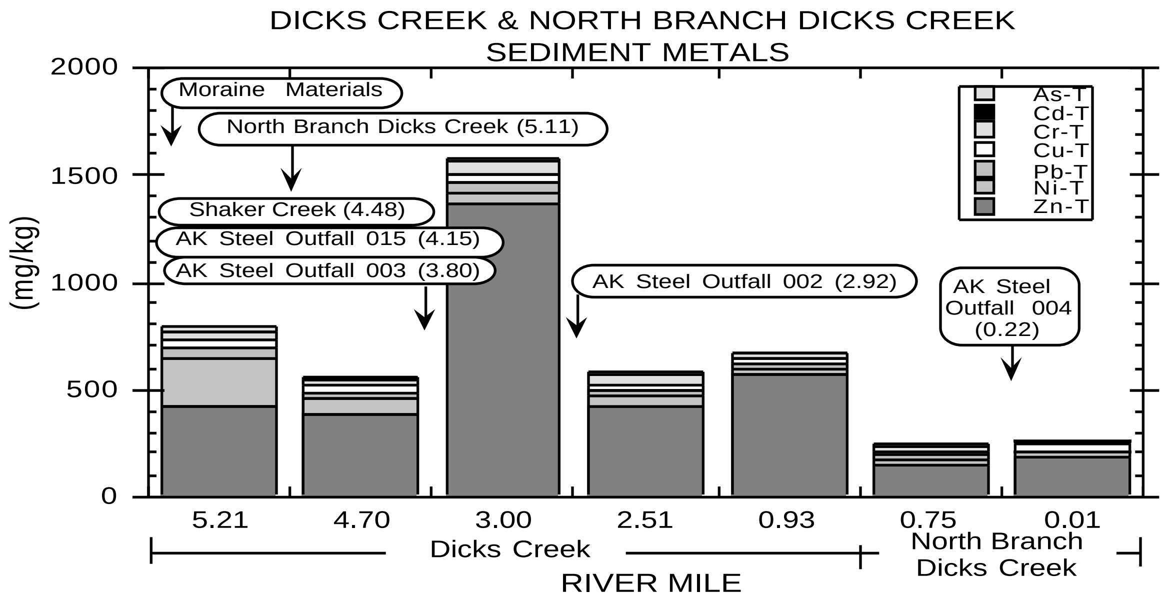


Figure 60 Select sediment metal concentrations in Wolf Creek, Owl Creek, Bear Creek and Elk Creek [Upper Plot] and associated sediment particle sizes [Lower Plot] during the 1995 survey.



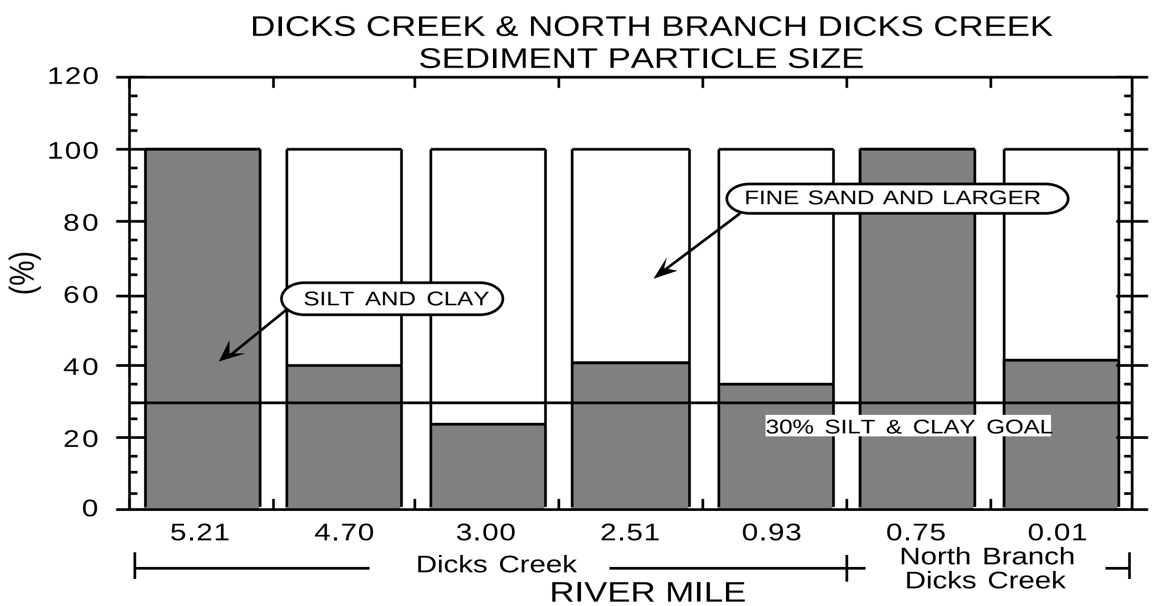
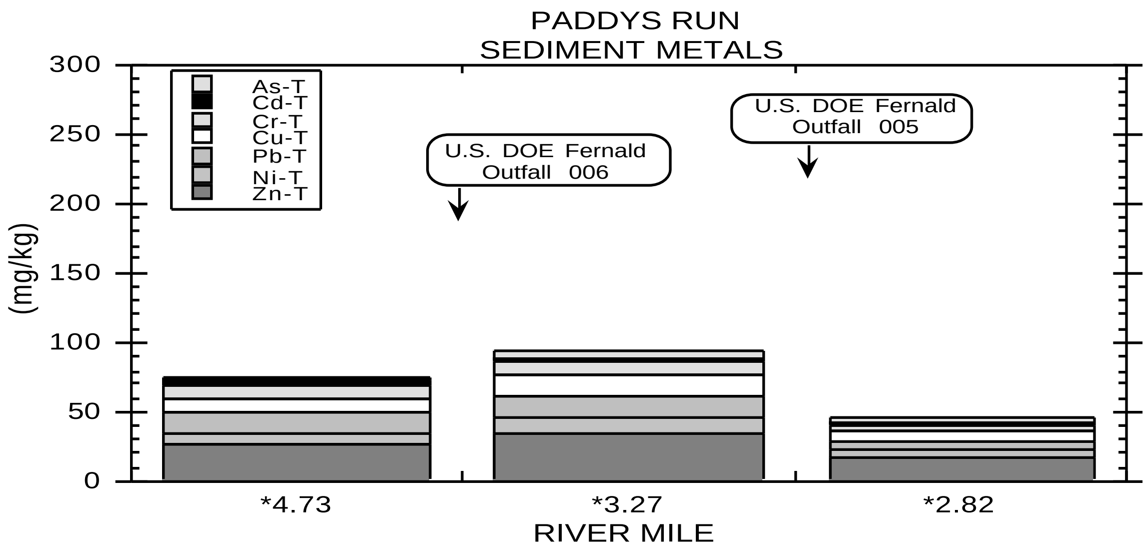


Figure 61 Longitudinal summary of select sediment metal concentrations in Dicks Creek and the North Branch of Dicks Creek [Upper Plot] and associated sediment particle sizes [Lower Plot] during the 1995 survey.



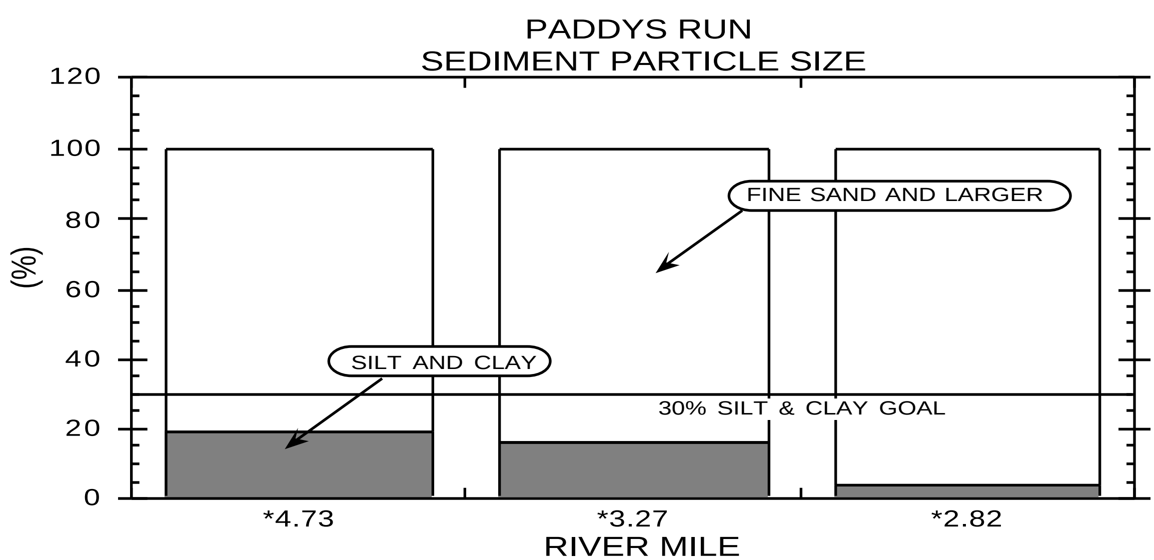


Figure 62 Longitudinal summary of select sediment metal concentrations in Paddys Run [Upper Plot] and associated sediment particle sizes [Lower Plot] during the 1995 survey. (*All samples were analyzed by a contract laboratory.)

Table 5. Concentrations (mg/kg) of metals in sediment samples collected in the Great Miami River study area during 1995. Parameter concentrations were evaluated based on Ohio EPA sediment reference sites, the Kelly and Hite (1984) stream sediment classification system and the Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario (1993).

Stream	----------------------**Sediment Concentration (mg/kg dry weight)**---------------------							
River Mile	**Al-T****	**As-T**	**Ba-T****	**Cd-T**	**Cr-T**	**Cu-T**	**Fe-T**	**Pb-T**
Great Miami River								
92.65	13500[B]	6.14[Aa]	94.5[A]	0.516[Ab]	18.0[Ab]	11.6[Aa]	13400[Aa]	<17.4[Aa]
83.57	**33300**[D]	*12.7*[Bc]	**219**[D]	*0.927*[Cb]	*36.3*[Cc]	*36.3*[Ca]	*26200*[Bc]	30.9[Ab]
80.65	*19800*[C]	9.09[Ab]	*172*[C]	0.738[Bb]	*30.1*[Cc]	**40.3**[Db]	18700[Ab]	34.9[Ab]
79.95	*18000*[C]	7.23[Aa]	*143*[C]	0.681[Bb]	<25.2[Aa-Bc]	23.5[Ba]	17400[Aa]	<25.2[Aa]
77.24	8190[A]	2.55[Aa]	82.3[A]	0.387[Aa]	<24.7[Aa-Bc]	14.8[Aa]	7970[Aa]	<24.7[Aa]
75.86	**24400**[D]	7.09[Aa]	*206*[C]	***1.22***[Dc]	**51.8**[Dd]	*37.5*[Ca]	20100[Ab]	<23.9[Aa]
72.10	7020[A]	4.50[Aa]	53.2[A]	0.273[Aa]	<14.4[Aa]	7.76[Aa]	8620[Aa]	<14.4[Aa]
68.30	10800[A]	5.32[Aa]	106[B]	0.720[Bb]	*24.0*[Bc]	22.6[Ba]	11500[Aa]	37.2[Ab]
66.90	*17200*[C]	9.33[Ab]	*138*[C]	0.477[Aa]	*24.5*[Bc]	16.3[Aa]	17100[Aa]	28.6[Ab]
66.00[L]	4000[A]	4.2[Aa]	61.4[A]	***1.6***[Dc]	11.5[Aa]	22.4[Ba]	10100[Aa]	26.5[Aa]
64.72	13700[B]	8.69[Ab]	*146*[C]	*0.756*[Cb]	*24.9*[Bc]	*36.7*[Ca]	17200[Aa]	35.7[Ab]
52.64	13000[B]	7.92[Aa]	94.2[A]	0.411[Aa]	19.3[Ab]	15.0[Aa]	13000[Aa]	20.3[Aa]
51.30	*17000*[C]	**41.4**[EeΔ]	**285**[D]	**5.41**[Ed]	**93.7**[Ee]	**613**[EeΔ]	**207000**[EeΔ]	**213**[De]
44.51	*19900*[C]	6.98[Aa]	*144*[C]	***1.22***[Dc]	**43.9**[Dd]	22.9[Ba]	21000[Ab]	<18.1[Aa]
34.68	**28500**[D]	9.07[Ab]	*186*[C]	0.699[Bb]	*35.8*[Cc]	*30.0*[Ca]	22600[Bb]	33.3[Ab]
33.05	**33300**[D]	*13.4*[Bc]	**242**[D]	*1.01*[Cc]	**42.3**[Dd]	**42.3**[Db]	*28000*[Bc]	*48.3*[Bc]
31.19	**30400**[D]	*11.6*[Bc]	*209*[C]	*0.768*[Cb]	*34.6*[Cc]	*32.4*[Ca]	*25000*[Bc]	33.5[Ab]
26.21	*20200*[C]	*14.1*[Cc]	*145*[C]	0.403[Aa]	*23.9*[Bc]	20.1[Aa]	19500[Ab]	<22.4[Aa]
24.55[L]	11400[A]	6.0[Aa]	117[B]	**2.9**[Ed]	19.0[Ab]	25.6[Ba]	18600[Ab]	28.9[Ab‡]
21.44[§]	*30900*[C]	*14.1*[Cc]	**212**[E]	*0.567*[Cb]	*36.4*[Cc]	27.5[Ba]	*25200*[Ac]	<26.6[Aa-B]
19.90[§]	*34400*[C]	*16.8*[Cc]	**243**[E]	*0.612*[Cb]	***39.8***[Cd]	30.1[Ba]	*25200*[Ac]	<29.2[Aa-Bb]
10.70[§]	14000[A]	7.15[Aa]	*91.7*[C]	0.332[Ba]	18.1[Ab]	14.0[Aa]	14800[Aa]	<15.5[Aa]
8.52[§]	19000[B]	***17.1***[Cd]	**152**[D]	0.218[Aa]	21.3[Ab]	12.9[Aa]	22600[Ab]	17.9[Aa]
1.75[§]	21000[B]	9.81[Bb]	**121**[D]	*0.622*[Cb]	*25.9*[Bc]	21.2[Ba]	18700[Ab]	*46.2*[Cc]

Table 5. Continued. Concentrations (mg/kg) of metals in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	**Sediment Concentration (mg/kg dry weight)**						
River Mile	**Mg-T***	**Mn-T**	**Hg-T******	**Ni-T**[#]	**K-T***	**Se-T***	**Zn-T**
Great Miami River (continued)							
92.65	26100	354[Ba]	<0.023[a]	<23.2[A]	NA	<1.16	60.8[Aa]
83.57	32700	*543*[Ca]	<0.0564[a]	<36.3[A-B]	NA	<1.82	*144*[Cc]
80.65	30800	*482*[Ca]	0.0798[b]	<27.3[A]	NA	1.78	*141*[Bc]
79.95	32800	369[Ba]	0.0750[b]	<33.6[A-B]	5040	1.76	*127*[Bc]
77.24	12400	197[Aa]	0.0851[b]	<32.9[A-B]	2470	<1.65	74.1[Aa]
75.86	25500	428[Ba]	*0.129*[c]	<31.9[A-B]	6400	1.75	**293**[Dd]
72.10	31600	216[Aa]	<0.0293[a]	<19.2[A]	2390	1.34	49.8[Aa]
68.30	22600	289[Aa]	*0.116*[c]	<18.8[A]	NA	1.18	90.4[Ab]
66.90	34000	*477*[Ca]	0.0416[a]	<27.2[A]	NA	1.57	91.9[Ab]
66.00[L]	22500	283[Aa]	*0.13*[c]	8.6[A]	461	<0.24[†]	68.3[Aa]
64.72	29500	394[Ba]	0.0478[a]	<20.7[A]	NA	1.55	95.3[Ab]
52.64	30900	319[Aa]	0.0578[a]	<19.3[A]	3380	1.35	74.9[Aa]
51.30	14300	393[Ba]	**1.15**[e]	**69.3**[D]	NA	2.41	**1240**[EeΔ]
44.51	21700	*521*[Ca]	*0.103*[c]	<24.1[A]	5420	<1.20	***202***[Cd]
34.68	30000	*542*[Ca]	0.0603[a]	<33.3[A-B]	NA	<1.66	***192***[Cd]
33.05	31400	*708*[Ca]	0.0888[b]	<48.3[A-C]	NA	<2.41	**272**[Dd]
31.19	29200	*668*[Ca]	0.0526[a]	<43.2[A-C]	NA	<2.16	***200***[Cd]
26.21	26900	*541*[Ca]	0.0772[b]	<29.8[A-B]	NA	<1.49	*136*[Bc]
24.55[L]	27600[‡]	*516*[Ca]	<0.05[a]	19.3[A]	2230	<0.33	*116*[Bc]
21.44[§]	24800	683[Aa]	0.0825[b]	<35.5[A-D]	NA	<1.77	***173***[Cd]
19.90[§]	20400	679[Aa]	*0.101*[c]	<38.9[A-D]	NA	<1.94	**213**[Dd]
10.70[§]	27500	429[Aa]	0.0549[a]	<20.7[A-C]	NA	1.29	83.4[Bb]
8.52[§]	22300	970[Ba]	0.0431[a]	<19.8[A-C]	NA	1.29	71.9[Aa]
1.75[§]	23600	533[Aa]	0.0541[a]	<18.8[A-C]	NA	1.08	95.2[Bb]

Table 5. Continued. Concentrations (mg/kg) of metals in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	----------------------Sediment Concentration (mg/kg dry weight)---------------------							
River Mile	**Al-T****	**As-T**	**Ba-T****	**Cd-T**	**Cr-T**	**Cu-T**	**Fe-T**	**Pb-T**
Wolf Creek								
16.61	*21900*^{C}	10.1^{Bb}	*168*^{C}	0.735^{Bb}	*33.4*^{Cc}	18.9^{Aa}	19300^{Ab}	<33.4^{Aa-b}
Owl Creek								
0.17	12000^{B}	4.87^{Aa}	97.4^{A}	0.198^{Aa}	*36.8*^{Cc}	11.3^{Aa}	13800^{Aa}	<17.0^{Aa}
Bear Creek								
0.01	15000^{B}	8.04^{Ab}	110^{B}	0.193^{Aa}	<19.9^{Aa-b}	12.6^{Aa}	13500^{Aa}	<19.9^{Aa}
Elk Creek								
3.65	*20200*^{C}	*13.8*^{Cc}	*174*^{C}	0.265^{Aa}	<26.5^{Aa-Cc}	17.7^{Aa}	20000^{Ab}	<26.5^{Aa}
Dicks Creek								
5.21	NA	***17.7***^{Cd}	NA	0.328^{Aa}	**44.4**^{Dd}	*34.6*^{Ca}	18000^{Ab}	<37.1^{Aa-b}
4.70	NA	*13.9*^{Cc}	NA	0.196^{Aa}	*28.8*^{Cc}	*37.7*^{Ca}	18200^{Ab}	<21.8^{Aa}
3.00	NA	8.57^{Ab}	NA	*0.931*^{Cb}	**66.8**^{Ee}	24.7^{Ba}	*24300*^{Bc}	*57.3*^{Bc}
2.51	NA	7.98^{Aa}	NA	0.670^{Bb}	**49.1**^{Dd}	23.6^{Ba}	21000^{Ab}	33.8^{Ab}
0.93	*16500*^{C}	7.89^{Aa}	108^{B}	***1.50***^{Dc}	*28.8*^{Cc}	16.7^{Aa}	19000^{Ab}	<20.1^{Aa}
North Branch Dicks Creek								
0.75	*22300*^{C}	7.37^{Aa}	*140*^{C}	0.444^{Aa}	*29.0*^{Cc}	16.8^{Aa}	20000^{Ab}	<22.0^{Aa}
0.01	11800^{B}	7.74^{Aa}	75.9^{A}	0.215^{Aa}	<15.0^{Aa}	23.5^{Ba}	12300^{Aa}	<15.0^{Aa}
Paddys Run								
4.73^{L}	4520^{A}	4.3^{Aa}	53.7^{A}	***1.7***^{Dc}	9.3^{Aa}	10.9^{Aa}	11700^{Aa}	14.7^{Aa,‡}
3.27^{L§}	6970^{A}	4.5^{Aa}	60.9^{A}	***1.9***^{Ec}	10.1^{Aa}	14.1^{Aa}	14300^{Aa}	15.6^{Aa,‡}
2.82^{L§}	1930^{A}	4.0^{Aa}	59.5^{A}	**0.97**^{Db}	4.4^{Aa}	6.7^{Aa}	6790^{Aa}	6.6^{Aa,‡}

Table 5. Continued Concentrations (mg/kg) of metals in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	----------------------Sediment Concentration (mg/kg dry weight)--------------------						
River Mile	**Mg-T***	**Mn-T**	**Hg-T*****	**Ni-T$^{\#}$**	**K-T***	**Se-T***	**Zn-T**
Wolf Creek							
16.61	27900	*649*^{Ca}	<0.0732^{a-b}	<44.6^{A-C}	6680	2.20	*141*^{Bc}
Owl Creek							
0.17	22600	256^{Aa}	0.0634^{a}	<22.6^{A}	3400	2.15	74.7^{Aa}
Bear Creek							
0.01	31900	298^{Aa}	<0.0285^{a}	<26.6^{A}	NA	<1.33	65.8^{Aa}
Elk Creek							
3.65	27400	*505*^{Ca}	0.0490^{a}	35.4^{B}	6180	2.48	68.1^{Aa}
Dicks Creek							
5.21	32100	NA	<0.0665^{a}	**232**$^{E\Delta}$	NA	NA	**424**^{Ee}
4.70	NA	NA	<0.0321^{a}	**71.1**^{D}	NA	NA	**388**^{De}
3.00	NA	NA	0.0336^{a}	*58.9*^{C}	NA	NA	**1360**$^{Ee\Delta}$
2.51	NA	NA	0.0481^{a}	*42.8*^{C}	NA	NA	**424**^{Ee}
0.93	20700	*500*^{Ca}	0.0648^{a}	<26.8^{A}	4680	<1.34	**575**^{Ee}
North Branch Dicks Creek							
0.75	19800	*577*^{Ca}	0.0446^{a}	<29.4^{A-B}	6600	1.46	*142*^{Bc}
0.01	26000	376^{Ba}	0.0272^{a}	<20.0^{A}	3490	0.998	***183***^{Cd}
Paddys Run							
4.73^{L}	14300‡	**865**^{Da}	0.04^{a}	8.8^{A}	681	<0.28	25.8^{Aa}
3.27^{L§}	17300‡	618^{Aa}	<0.05^{a}	12.3^{A}	1230	<0.33	33.9^{Aa}
2.82^{L§}	21100‡	436^{Aa}	<0.04^{a}	5.9^{A}	478	<0.23	17.0^{Aa}

Table 5. Continued. Concentrations (mg/kg) of metals in sediment samples collected in the Great Miami River study area during 1995, continued.

L Sample analyzed by contract laboratory (Ross Analytical Services); additional metals analyzed by Ross Analytical Services include the following:

Stream	River Mile	---------------Sediment Concentration (mg/kg dry weight)---------------							
		Sb-T*	**Be-T***	**Ca-T***	**Co-T***	**Ag-T***	**Na-T***	**Tl-T***	**V-T***
Great Miami River	66.00	<5.3†	0.20	64000	4.4	< 0.58	134	< 0.32	9.6
	24.55	1.9†	0.80	81400	6.9	< 0.06	306	< 0.53	19.1
Paddys Run	4.73	3.7†	0.38	63300	5.8	0.20	185	< 0.44	9.3
	3.27	< 0.52†	0.68	66300	6.6	< 0.06	219	< 0.52	14.0
	2.82	< 0.37†	0.39	104000	2.9	< 0.04	279	< 0.37	5.8

NA Compound not analyzed.
* Not evaluated by Ohio EPA, Kelly and Hite (1984) or Ontario (1993).
** Not evaluated by Kelly and Hite (1984) or Ontario (1993).
*** Not evaluated by Ohio EPA.
# Not evaluated by Kelly and Hite (1984).
† Spiked sample recovery not within control limits.
‡ Duplicate analysis not within control limits.

Ohio EPA Guidelines:
A Non-elevated
B Slightly elevated
C Elevated
D Highly elevated
E <u>Extremely elevated</u>

Kelly and Hite Guidelines:
a Non-elevated
b Slightly elevated
c Elevated
d Highly elevated
e <u>Extremely elevated</u>

Ontario Guidelines:
Δ ≥ **<u>severe effect level (SEL)</u>**

§ Ohio EPA sediment guidelines are based on ecoregions. River miles 21.44 - 1.75 of the Great Miami River mainstem and Paddys Run river miles 3.27 and 2.82 are evaluated based on guidelines for the Interior Plateau (IP) ecoregion; remaining sites are evaluated based on guidelines for the Eastern Corn Belt Plain (ECBP) ecoregion. (Given that aluminum guidelines for sites in the IP ecoregion are not available, aluminum concentrations at these sites were evaluated based on statewide guidelines.)

Sediment Organics (Appendix Table A-4, A-5, and A-6)

Great Miami River (Dayton to Middletown: RMs 92.65 - 57.55)

Sediments from nine sites in the upper segment of the mainstem were analyzed for semivolatile and volatile organic compounds, pesticides and PCBs. While all concentrations of organic compounds at RM 92.65 and the majority of values recorded at RM 72.10 were less than minimum detection limits, results may be influenced by the large sediment particle sizes at these sites.

Eight of the nine polynuclear aromatic hydrocarbons (PAHs) (38 of 43 detections) observed at various locations in this segment of the mainstem were evaluated by Ontario guidelines. All concentrations evaluated exceeded applicable LELs. Fluoranthene and pyrene, the most frequently detected compounds in the reach, were observed at seven of the nine sites.

Bis (2-ethylhexyl) phthalate was detected at RM 80.65 (1.0 mg/kg) and RM 79.95 (0.8 mg/kg) while pentachlorophenol was observed at RM 75.86 (3.7 mg/kg), downstream of the Dayton WWTP. Additionally, toluene (0.2 mg/kg) was recorded downstream of Wolf Creek at RM 79.95.

The organochlorine pesticides dieldrin and delta-hexachlorocyclohexane were detected at RMs 80.65, 79.95, and 72.10 while methoxychlor was recorded at RMs 79.95 (29 µg/kg) and 75.86 (7.8 µg/kg). The highest concentrations recorded during the survey for dieldrin (67 µg/kg) and delta-hexachlorocyclohexane (22 µg/kg) occurred downstream of Wolf Creek at RM 79.95. Kelly and Hite guidelines ranked concentrations of dieldrin at this site and RM 80.65 (37 µg/kg) as “extremely elevated” while a “highly elevated” concentration was recorded at RM 72.10 (16 µg/kg). All dieldrin concentrations exceeded the Ontario LEL.

Polychlorinated biphenyls (PCBs) were detected at five sites (RMs 75.86, 68.30, 66.90, 66.00, and 64.72) in this reach of the mainstem. Ranked “extremely elevated” by Kelly and Hite and exceeding the Ontario LEL, the highest total PCB concentration recorded in the entire mainstem (1650 µg/kg) occurred downstream of the West Carrollton WWTP at RM 68.30. “Highly elevated” concentrations (Kelly and Hite) were also recorded downstream of the Dayton WWTP at RM 75.86 (870 µg/kg) and at RM 64.72 (409 µg/kg), downstream of the Mound Overflow Creek and Miamisburg WWTP. Values at both sites also exceeded the Ontario LEL. Additionally, while total PCBs recorded at RM 66.90 (100 µg/kg) exceeded the Ontario LEL and concentrations at RM 66.00 (67 µg/kg) were below the LEL, values at both sites were considered “elevated” per Kelly and Hite.

Great Miami River (Middletown to Hamilton: RMs 55.14 - 34.68)

Sediments from four sites (RMs 52.64, 51.30, 44.51, and 34.68) in the middle reach of the mainstem were analyzed for organic compounds. Concentrations of all 17 PAHs detected in sediments at RM 51.30, downstream of AK Steel Outfall 011, were the highest observed during the 1995 survey. Concentrations of anthracene (31.0 mg/kg) and fluorene (31.4 mg/kg) exceeded Ontario SELs, while benzo [A] anthracene (35.8 mg/kg), benzo [A] pyrene (19.8 mg/kg), benzo [GHI] perylene (19.1 mg/kg), chrysene (20.0 mg/kg), dibenzo [A,H] anthracene (9.5 mg/kg), fluoranthene (83.2 mg/kg), indeno [1,2,3-CD] pyrene (19.1 mg/kg), phenanthrene (63.8 mg/kg), and pyrene (64.0 mg/kg) exceeded Ontario LELs. Additionally, while not evaluated by Ontario guidelines, acenaphthene (10.7 mg/kg), acenaphthylene (6.1 mg/kg), benzo [B&K] fluoranthene (37.7 mg/kg), dibenzofuran (8.2 mg/kg), 2-methylnaphthalene (7.6 mg/kg), and naphthalene (4.0 mg/kg) were also detected at the site.

PAHs detected at RMs 44.51 and 34.68 included concentrations of fluoranthene (0.8 mg/kg and 0.9 mg/kg, respectively) and pyrene (0.7 mg/kg at both sites) above the Ontario LELs. Additionally, benzo [B&K] fluoranthene was detected at both sites. Fluoranthene was also detected at RM 52.64 (0.6 mg/kg), but remained below the Ontario LEL.

“Highly elevated” (Kelly and Hite) concentrations of total DDT (51 µg/kg) and dieldrin (19 µg/kg) were recorded at RM 44.51, downstream of the LeSourdsville WWTP. Values at the site exceeded Ontario LELs for dieldrin, total DDT, and mirex (13 µg/kg). Delta-hexachlorocyclohexane (11 µg/kg) was also detected at the site. (As noted previously, runoff from miscellaneous trash adjacent to a small drainage swale immediately upstream of this site may impact results.) Additionally, concentrations of dieldrin (9.4 µg/kg) at RM 52.64 (“elevated” per Kelly and Hite) and alpha-hexachlorocyclohexane (26 µg/kg) at RM 51.30 exceeded Ontario LELs. No PCBs were detected in sediments from this segment of the river.

Great Miami River (Hamilton to the Ohio River: RMs 33.05 - 1.75)
Sediments collected from nine sites in the lower segment of the Great Miami River were analyzed for organic compounds.

Five of the six PAHs (13 of 19 detections) recorded at various locations in this segment of the mainstem were evaluated by Ontario guidelines. All concentrations evaluated exceeded applicable LELs. The most frequently detected compounds, fluoranthene and benzo [B&K] fluoranthene, were observed at six of the nine sites.

Bis (2-ethylhexyl) phthalate was detected at RM 33.05 (0.8 mg/kg) and RM 1.75 (0.9 mg/kg). Phenolic compounds observed in the reach included pentachlorophenol at RMs 26.21 and 1.75 (1.4 mg/kg and 1.2 mg/kg, respectively) and 3&4 methylphenol at RMs 33.05, 31.19, and 19.90 (2.1 mg/kg, 2.1 mg/kg, and 7.2 mg/kg, respectively).

Organochlorine pesticides, detected in the lower reach at only three sites, included concentrations of delta-hexachlorocyclohexane (14 µg/kg) at RM 33.05, dieldrin (60 µg/kg) at RM 31.19, and gamma-hexachlorocyclohexane (8.3 µg/kg) at RM 1.75. Dieldrin was considered “extremely elevated” by Kelly and Hite guidelines, while both dieldrin and gamma-hexachlorocyclohexane exceeded Ontario LELs.

PCBs were detected in sediments collected from two of the nine sites in this segment of the mainstem. Total PCBs decreased from l93 µg/kg recorded upstream of Chevron Oil at RM 10.70 to 70 µg/kg at RM 8.52, downstream of Chevron Oil. Results may reflect the effects of the larger sediment particle size at RM 8.52. (As previously noted, contaminants adhere more readily to finer depositional particles.) Values at both sites, ranked “elevated” by Kelly and Hite, exceeded Ontario LELs.

Wolf Creek
Sediments from two sites on Wolf Creek (RMs 16.61 and 0.01) were analyzed for organic compounds. As noted previously, sediments at RM 16.61 attained the desired 30% silt and clay composition. While particle size was not analyzed at RM 0.01, field notes indicate that sediments at the site were composed predominately of sand.

Eight PAH compounds were detected at RM 16.61, while ten PAHs were recorded at the mouth (RM 0.01). All concentrations evaluated by Ontario guidelines exceeded applicable LELs. Additionally, bis (2-ethylhexyl) phthalate was detected at both sites at a concentration of 1.2 mg/kg. Other compounds detected included 3&4 methylphenol (7.7 mg/kg) at RM 16.61 and toluene (0.3 mg/kg) at RM 0.01.

The concentration of dieldrin (49 µg/kg) at RM 0.01, ranked “extremely elevated” by Kelly and Hite, also exceeded the Ontario LEL. Endrin aldehyde (8.5 µg/kg) and delta-hexachlorocyclohexane (22 µg/kg) were also detected at the mouth while methoxychlor (31 µg/kg) was recorded upstream at RM 16.61. PCBs were not detected at either location.

Owl Creek
Although sediments collected from RM 0.17 of Owl Creek were comprised of less than 8% silt and clay (well below the desired composition of 30% silt and clay), concentrations of nine PAH compounds exceeded minimum detection limits at the site with all evaluated concentrations above applicable Ontario LELs. Bis (2-ethylhexyl) phthalate (0.8 mg/kg), 3&4 methylphenol (1.5 mg/kg), and methoxychlor (12 µg/kg) were also detected at the site. “Highly elevated” per Kelly and Hite guidelines, the concentration of total PCBs (240 µg/kg) also exceeded the Ontario LEL.

Bear Creek
No organic compounds were detected in sediments collected from RM 0.01 of Bear Creek during the survey.

Dicks Creek
Sediments from five sites on Dicks Creek were analyzed for organics. While not evaluated by Ontario guidelines, the highest concentration of bis (2-ethylhexyl) phthalate recorded during the

1995 survey occurred downstream of Moraine Materials at RM 5.21 (7.7 mg/kg). Additionally, di-n-butyl phthalate (1.6 mg/kg) was detected at RM 4.70. While no PAH compounds were detected at RMs 5.21 and 4.70, as many as nine PAHs (22 total detections) were observed in sediments collected from the remaining three downstream sites (RMs 3.00, 2.51, and 0.93). All evaluated PAH concentrations exceeded applicable Ontario LELs.

Pesticides were detected in sediments collected from RM 3.00 and included delta-hexachlorocyclohexane (6.1 µg/kg) and methoxychlor (7.4 µg/kg).

The highest PCB (total) concentrations of the 1995 survey were recorded downstream of AK Steel at RM 2.51 (18330 µg/kg) and RM 0.93 (14300 µg/kg). Values at both sites, ranked “extremely elevated” by Kelly and Hite, also exceeded Ontario SELs. The source of these excessive PCB levels is currently being investigated.

North Branch Dicks Creek
Sediments from two sites (RMs 0.75 and 0.01) on the North Branch of Dicks Creek were analyzed for organics. Five of the six PAH compounds detected at RM 0.75 were evaluated by Ontario guidelines and exceeded applicable LELs. Bis (2-ethylhexyl) phthalate (0.7 mg/kg) was also detected at this site. No volatile or semivolatile compounds were detected at RM 0.01.

Dieldrin concentrations at RM 0.75 (35 µg/kg) and RM 0.01 (14 µg/kg), respectively ranked“extremely elevated” and “ highly elevated” by Kelly and Hite, also exceeded Ontario LELs. Additionally, delta-hexachlorocyclohexane (19 µg/kg) was detected in sediments collected from RM 0.75. PCBs were not detected at either location.

Sediment Radionuclides

DOE Mound

Radiological parameters in sediment were compared with the Mound Recreational Soil/Sediment Guideline Values (GV) and background values. The GV were developed by the Mound plant using the United States Environmental Protection Agency guidance *Risk Assessment Guidance for Superfund (RAGS): Volume 1 - Human Health Evaluation Manual, Part B - Development of Risk-Based Preliminary Remediation Goals* (USEPA 1991). These GV represent a Target Excess Individual Lifetime Cancer Risk (TR) of $1X10^{-6}$. Background values were taken from *Remedial Investigation Report for Operable Unit 5* (USDOE Fernald 1995*).*

Levels of some radionuclides in sediment were elevated (two to three times background) in the Overflow Creek and in the Great Miami River downstream of the Overflow Creek (Figure 63a). The elevated levels of Uranium 233/234, Uranium 238, and Thorium 230 in the Great Miami River downstream of the Overflow Creek may be attributable to the Hutchings power plant. This sampling station was located at the impoundment adjacent to the power plant and the levels of radionuclides found there were consistent with levels found in sediments of fly ash piles. No radiological parameters exceeded or approached the Mound Recreational Soil/Sediment Guideline Value. The Overflow Creek receives part of its flow from Mound NPDES outfall 002. In 1997 a groundwater pump and treatment system for removal of volatile organic chemicals began discharge to the Overflow Creek. The sediments of the Miami-Erie Canal upstream of the Overflow Creek is undergoing remediation for Plutonium contamination.

DOE Fernald

Radiological parameters in sediment were compared with the final remediation levels (FRL) taken from *Operable Unit 5 Record of Decision* (USDOE Fernald 1995) and background values found in the *Site Environmental Report* (USDOE Fernald 1996), and *Remedial Investigation Report for Operable Unit 5* (USDOE Fernald 1995).

Thorium levels were slightly elevated above background in the Great Miami River sediments. Radium 226 was approximately three times background in the Great Miami River sediments. Total Uranium was approximately three times background in Paddy's Run below the Pilot Plant Drainage Ditch. No radiological parameters exceeded the FRL (Figure 63b).

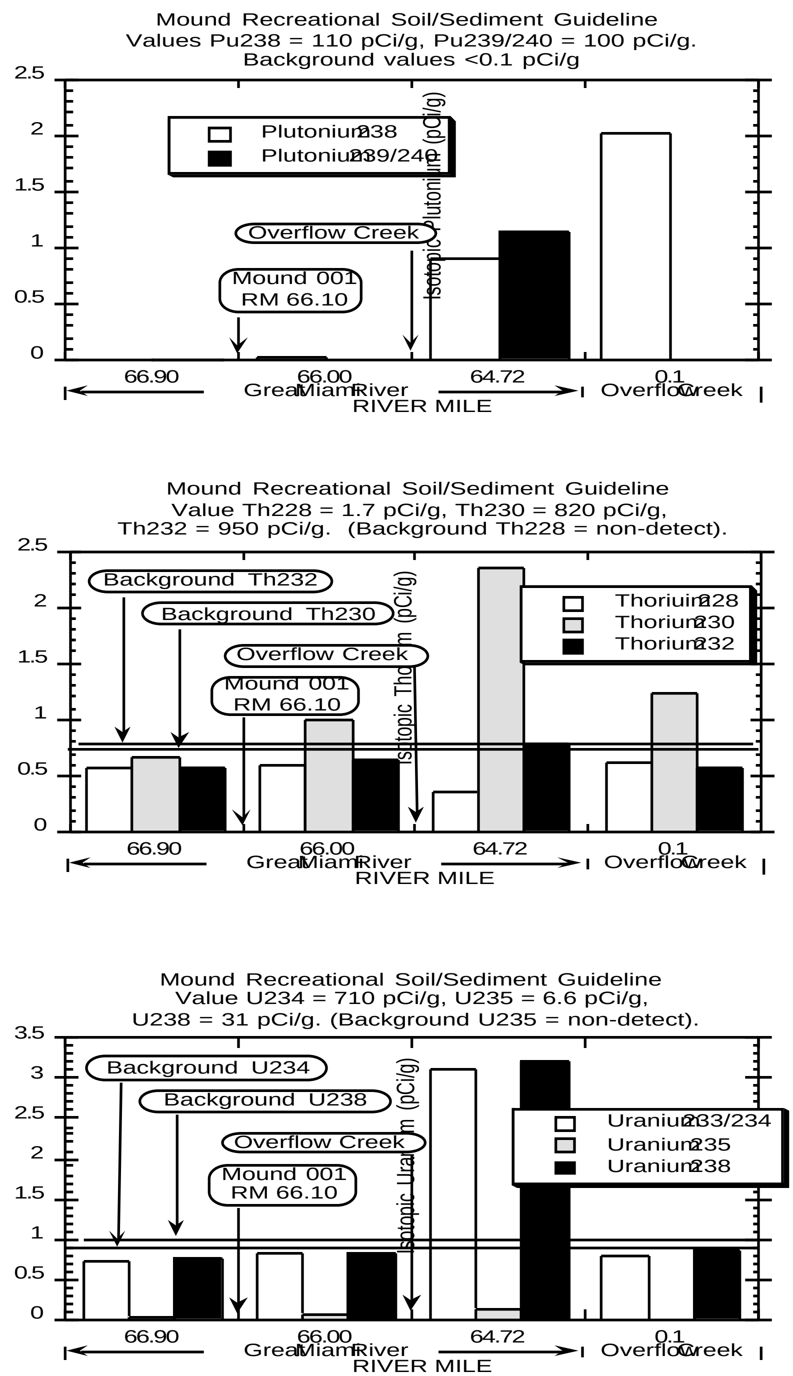


Figure 63a. Isotopic plutonium, isotopic thorium, isotopic uranium levels in sediment in the vicinity of the Mound plant.

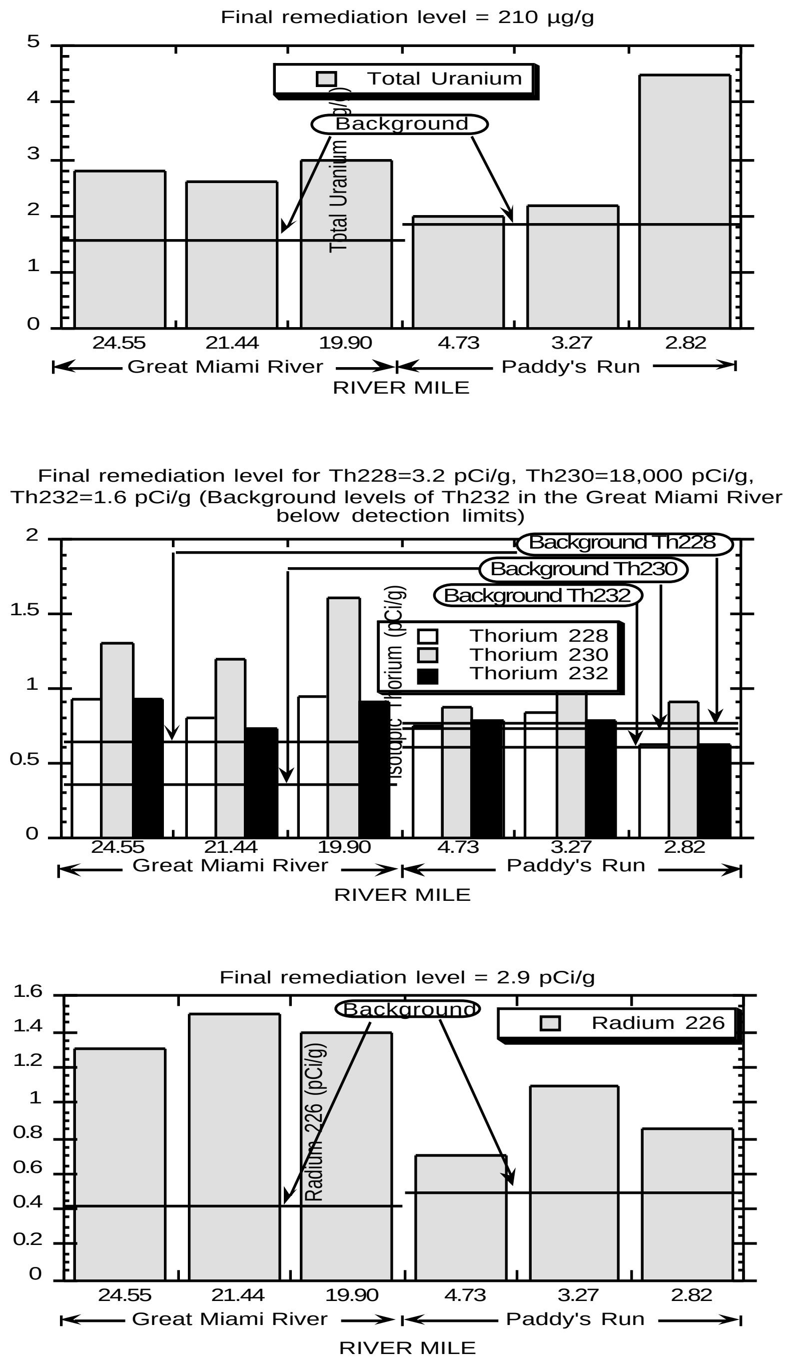


Figure 63b Total uranium, isotopic thorium, and radium 226 levels in sediment in the vicinity of the Fernald facility.

Fish Tissue

Great Miami River (Appendix Table A-8)

Fish tissue was analyzed from fourteen locations on the Great Miami River in 1993. A total of 42 samples comprised of nine species were collected between RM 87.0 and 8.5. Chemical analyses for selected metals and pesticides showed relatively little contamination of fish throughout the Great Miami River mainstem. Slightly to moderately elevated levels of polychlorinated biphenyl (PCB) compounds were detected at many of the sites between RM 81.3 to 8.5.

Mercury was detected in all of the samples that were analyzed (41 samples) ranging from 0.392 µg/g to 0.0185 µg/g, but were below the FDA Action Level of 1.0 µg/g. Lead was detected in 27 samples with the highest concentration (0.799 µg/g) occurring at RM 70.0 from five smallmouth bass skin on fillet composite samples. Cadmium was detected at RM 81.8 from one skin off fillet sample of a yellow bullhead.

Dieldrin and 4,4'-DDE were the only pesticides detected in the 42 samples. Dieldrin was found at one location (RM 80.1) in a channel catfish fillet composite sample. 4,4'-DDE was found in two white bass fillet composite samples at RM 8.5 and was also found in several channel catfish fillet composite samples at RMs 81.3, 73.5, and 67.50.

Slightly to moderately elevated levels of PCB compounds were found in 20 fillet samples (9 locations) which included the following species: channel catfish, common carp, smallmouth bass, largemouth bass, white bass, and saugeye.

The Ohio Department of Health (ODH) has issued a consumption advisory for all waters of the Great Miami River. One meal per week is recommended for channel catfish and common carp due to PCB and lead contamination. One meal per month is recommended for white bass due to PCB contamination. One meal per month is recommended for largemouth bass, smallmouth bass, and rock bass due to mercury contamination. It is recommended that all sucker species below the Monument Avenue dam (Dayton to the Ohio River) should NOT be consumed due to PCB contamination.

Dicks Creek

Two samples were collected from Dicks Creek in 1996 at RM 1.4 (downstream of several AK Steel outfalls). Low levels of mercury was detected in both samples, but cadmium and lead were not detected in either sample. Moderately elevated levels of PCB compounds were detected in a channel catfish fillet (620 µg/kg) and slightly elevated levels of PCB compounds were detected in a common carp fillet (220 µg/kg). Several pesticides were detected in the channel catfish fillet including 4,4'-DDE, dieldrin, chlordane, and trans-nonachlor. Pesticides were not detected in the common carp fillet sample.

Wolf Creek

Seven samples were collected from Wolf Creek in 1987 from four locations. Whole body composite samples of common carp, white sucker, and channel catfish had moderately elevated to extremely elevated levels of PCB compounds. Two smallmouth bass fillet composite samples also had moderately to extremely elevated levels of PCB compounds. Heptachlor epoxide, dieldrin, and 4,4'-DDE were found in a channel catfish whole body composite sample located at the mouth. Metals and pesticides were not analyzed for any other samples.

Paddys Run

Largemouth bass, white bass (*Micropterus salmoides* and *Morone chrysops*, respectively) and common carp (*Cyprinus carpio*) from the confluence of the Great Miami River and Paddys Run (RM 20) were analyzed for total uranium. The bass contained 0.001 micrograms per gram and the carp 0.002 micrograms per gram of total uranium. The ATSDR lists the average background amount of uranium in food at 80 to 70,000 micrograms per gram. EPA states that long term exposure to 0.003 milligrams of uranium per kilogram of body weight per day in the food or drinking water is safe for humans (US. Dept. of Health 1990)

Mound Overflow Creek

Common Carp (*Cyprinus carpio*) from the confluence of the Overflow Creek and the Great Miami River (RM 65.1) were analyzed for isotopic Plutonium. A background sample was taken from the Great Miami River north of Little York Road (RM 91.2). Plutonium was not detected in either sample.

Physical Habitat for Aquatic Life (Table 6)

Great Miami River

The middle and lower Great Miami River is mostly characterized as free flowing with a natural pool-riffle-run morphology. Numerous dams located on the mainstem have created a series of impounded segments which have locally affected the natural habitats. The mainstem has an average gradient of 2.9 feet/mile and flows through several urban and suburban developments as well as agricultural areas.

Middle Mainstem - Dayton to Middletown

During the 1995 sampling effort the macrohabitats of the middle Great Miami River (RM 90.0 to 55.0) were evaluated at 31 sampling stations. Qualitative Habitat Evaluation Index (QHEI) values ranged between 44.0 (upstream from the Steel Dam and the Tait Dam) and 88.0 (downstream Franklin WWTP at RM 58.4), with a mean reach value of 68.0 (Table 6). A mean QHEI value greater than 60.0 suggests that near and instream habitats of the middle Great Miami River are of sufficient quality to support and maintain aquatic communities consistent with the WWH biological criteria (Rankin 1989). However, habitat quality was not homogenous throughout the segment.

The impoundments formed by the Steele Dam, DP&L Tait Dam, West Carrollton Lowhead Dam, and the DP&L Hutchings EGS Dam, represent a significant habitat impact (mean QHEI score of 51.0) to the middle Great Miami River. Reduced current velocity, increased sediment deposition, increased embeddedness, and greater physical homogeny are common negative effects of impoundments. The low gradient of these reaches coupled with the negative impacts of the dams severely impede the rate of natural recovery. As a result, most of these impounded segments are currently not capable of supporting WWH communities.

The free flowing sections were markedly improved within the reach. Station QHEI values were typically greater than 60 (mean QHEI score of 78.0), reflective of more natural stream conditions. Positive WWH attributes found in the free flowing segments include: coarse substrates, moderate to high functional sinuosity, abundant instream cover, low riffle embeddedness, and numerous riffle-run-pool complexes. Nearly all of the free flowing segments support WWH communities with some attaining the EWH criteria.

Lower Mainstem - Middletown to the Ohio River

During the 1995 sampling effort the macrohabitats of the lower Great Miami River (RM 55.0 to 0.0) were evaluated at 35 sampling stations. QHEI values ranged between 45.5 (upstream from the new Hamilton Recreational Dam) and 86.0 (downstream of Dicks Creek), with a mean reach value of 71.0 (Table 7). A mean QHEI value 71.0 suggests that near and instream habitats of the lower Great Miami River are of sufficient quality to support and maintain aquatic communities consistent with the WWH biological criteria (Rankin 1989).

The impoundments formed by the new Middletown Dam, Hamilton Hydraulic Canal Dam, Hamilton Dam, Hamilton Recreational Dam, and the Markland Dam (on the Ohio River), represent a significant habitat impact (mean QHEI score of 51.0) to the lower Great Miami River.

Generally lower scores were found in the free flowing sections of the lower Great Miami River compared with the middle mainstem. The macrohabitat in the free flowing sections were markedly improved compared to the impounded reaches. Station QHEI values were typically greater than 60 (mean QHEI score of 73.5), reflective of more natural stream conditions. Positive WWH attributes found in the free flowing segments include: coarse substrates, moderate functional sinuosity, abundant instream cover, and numerous riffle-run-pool complexes.

Habitat modifications occurred in the free flowing section downstream of the Middletown dam (RM 52.0 to 51.3) in the form of channelization and riparian removal resulting in fair to poor development, and heavy to moderate silt cover. One site downstream of Paddys Run (RM 20) also exhibited poor quality habitat (QHEI = 54.0) due to a low number of WWH attributes (sparse cover, gravel mining, and no riffle). QHEI scores stay above 60 in the remaining free flowing sites but many of the segments only partially support WWH communities due to factors other than habitat limitations.

Wolf Creek (14-037)
During the 1995 sampling effort the macrohabitats of Wolf Creek were evaluated at six sampling stations. QHEI values ranged between 53.5 (upstream from the mouth) and 82.5 (at Nolan Road) indicative of fair to exceptional quality physical habitat (Table 6). The headwaters of Wolf Creek (RM 16.7 and 15.0) had degraded habitat with narrow wooded riparian zones, sparse cover, moderate siltation, low sinuosity, fair development, and moderate bank erosion. A tremendous recovery occurred downstream at RM 14.9 and 10.4 where instream and riparian habitats contained extensive cover, coarse substrates, high sinuosity, excellent pool-riffle-run development, wide wooded riparian zones, and deep pools. Habitat quality declined at RM 6.1 and dropped to the lowest score upstream from the mouth (RM 0.2).

Dry Run (14-038)
Dry Run, a tributary to Wolf Creek, was evaluated at one site near the mouth (0.2). The QHEI score was 73.5 indicating good quality however the stream had a narrow riparian zone and heavy bank erosion.

Holes Creek (14-036)
The macrohabitat of Holes Creek was evaluated at McEwen Road (RM 4.3) and SR 741 (RM 0.6). The upstream site scored a 63.0 indicated the ability to support WWH communities but the downstream site declined to 54.0 due to a moderate influence of MWH attributes including sparse cover, low sinuosity, and a narrow riparian zone.

Owl Creek (14-089)
Owl Creek was sampled downstream of Central Avenue at RM 0.15. The QHEI scored 69.0 indicating good quality habitat. WWH attributes in Owl Creek include good pool-riffle-run development, moderate cover, coarse substrates, and deep pools.

Bear Creek (14-029)
The macrohabitat of Bear Creek was evaluated at five sampling stations. QHEI scores ranged from 79.5 (downstream of the New Lebanon WWTP at RM 9.9) to 46.0 (upstream of the mouth) indicative of excellent to fair quality habitat. The two upper sites (RM 12.1 and 9.9) exhibited numerous WWH attributes including coarse substrate, moderate cover, good pool-riffle-run development, deep pools, and moderate sinuosity. The QHEI scores at RM 5.2 and 2.1 declined slightly due to an increase in the number of MWH attributes. The habitat quality significantly declined at the mouth due to increasing MWH attributes including channelization, sparse instream cover, no wooded riparian, and extensive riffle-run embeddedness.

Elk Creek (14-022)
Elk Creek was sampled at Elk Creek Road (RM 3.7) and was indicative of exceptional habitat quality (QHEI = 84.0) consistent with supporting EWH biological communities. The

macrohabitat was composed of numerous WWH attributes including course substrates, moderate sinuosity, good to excellent pool-riffle-run development, no channelization, moderate cover, wide wooded riparian, and deep pools.

Dicks Creek (14-018)

The macrohabitat of Dicks Creek was evaluated at six sampling locations with QHEI scores ranging from 72.5 (upstream from the mouth) to 40.0 at RM 3.0. The upstreram stations from RM 5.0 to 2.6 scored lower than 60 indicating fair habitat quality. The habitat quality at the downstream stations (RM 2.4 and 0.4) significantly improved with an increase of WWH attributes.

North Branch Dicks Creek (14-019)

Two sampling locations (RM 1.0 and 0.1) in the North Branch of Dicks Creek exhibited fair to poor habitat quality with QHEI scores ranging from 42.0 to 52.5.

Mound Overflow Creek (14-171)

The habitat quality of Mound Overflow Creek upstream of the mouth (0.2) was fair (QHEI=51) with a predominance of modified attributes.

Paddys Run (14-005)

Natural habitat conditions occurred in Paddys Run at all sampling locations which were evaluated in 1995. Paddys Run is generally predominated by bottom substrates of sand and gravel, with boulders and cobbles also prevalent. Instream cover was moderate at the two upstream sites, with less cover observed in the downstream two locations. Riffles and pools were generally of good development, with deep pools prevalent and riffles composed of gravel, cobbles and boulders. The QHEI scores ranged from 71.5 to 60.5 (good quality), with the lower QHEI scores occurring in the lower section of Paddys Run, an area prone to desiccation. Although the downstream three miles of Paddys Run has adequate instream habitat to support viable warmwater biological communities, these attributes are negated by the highly variable flow conditions occurring during the low flow months of August - October. The highly permeable channel bottom of Paddys Run in the area of the Great Miami Aquifer can result in intermittent flow or desiccated conditions instream. These conditions were evident during the 1995 sampling period.

Whitewater River (14-300)

QHEI scores in the Whitewater River indicated good to exceptional habitat quality consistent with supporting EWH biological communities. The macrohabitat was composed of numerous WWH attributes including coarse substrates, moderate to high sinuosity, good to excellent pool-riffle-run development, no channelization, moderate cover, wide wooded riparian, and deep pools.

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key
QHEI
Components

River Mile	QHEI	Gradient (ft/mile)	WWH Attributes: No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	Total WWH Attributes	MWH Attributes, High Influence: Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	Total H.I. MWH Attributes	MWH Attributes, Moderate Influence: Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	Total M.I. MWH Attributes	(MWH H.I.+1)/(WWH+1) Ratio	(MWH M.I.+1)/(WWH+1) Ratio
(14-001) Great Miami River																																		
Year: 95																																		
87.3	84.5	6.45	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
85.2	82.5	6.45	■	■		■	■	■	■	■	■	■	9						0						♦							1	0.10	0.20
83.3	44.0	0.10					■	■			■		3		●				1	♦	♦			♦				♦	♦		♦	6	0.50	2.00
82.0	66.0	0.10		■		■		■	■	■	■	■	7				●		1	♦					♦							2	0.25	0.50
80.7	74.0	5.00		■		■	■	■	■	■	■	■	8						0	♦												1	0.11	0.22
79.9	71.5	2.67		■		■	■	■	■	■	■	■	8						0	♦												1	0.11	0.22
78.1	42.5	0.10		■			■	■			■		4	●	●		●		3		♦			♦				♦	♦		♦	5	0.80	1.80
77.1	44.0	2.11					■	■			■		3	●	●		●		3		♦			♦				♦	♦		♦	5	1.00	2.25
76.9	75.0	2.67		■		■	■	■	■	■	■	■	8						0	♦												1	0.11	0.22
76.1	71.0	2.67	■	■	■	■			■	■	■	■	8				●		1					♦	♦							2	0.22	0.44
75.9	74.0	2.67	■	■		■		■		■	■	■	7						0		♦				♦			♦	♦			4	0.13	0.63
74.8	64.0	2.78	■	■			■	■			■		5		●				1		♦			♦				♦	♦		♦	5	0.33	1.17
73.3	62.0	2.78	■	■			■	■			■		5		●				1		♦			♦				♦	♦		♦	5	0.33	1.17
71.9	85.5	5.18	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
71.4	73.5	5.18	■	■					■	■	■	■	6				●		1					♦	♦							2	0.29	0.57
69.9	81.0	1.77	■	■		■	■	■	■	■	■	■	9						0									♦				1	0.10	0.20
69.3	77.0	1.77	■	■		■		■		■	■	■	7						0					♦	♦			♦				3	0.13	0.50
69.2	69.0	1.77	■	■				■		■	■	■	6				●		1					♦	♦			♦				3	0.29	0.71
69.0	82.5	1.77	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
65.9	57.0	1.77	■				■	■			■		4		●				1		♦			♦				♦	♦		♦	5	0.40	1.40
65.0	46.5	0.10	■					■			■		3		●				1		♦			♦	♦			♦	♦		♦	6	0.50	2.00
64.8	46.0	0.10	■				■	■			■		4		●				1		♦			♦				♦	♦		♦	5	0.40	1.40
64.3	60.5	6.25	■	■						■	■		4				●		1		♦			♦	♦			♦			♦	5	0.40	1.40
64.0	85.5	6.25	■	■	■	■	■	■	■		■	■	9						0										♦			1	0.10	0.20
63.3	81.0	6.25	■	■		■	■	■		■	■	■	8						0						♦			♦				2	0.11	0.33
62.1	83.5	6.25	■	■		■	■	■	■		■	■	8						0		♦								♦			2	0.11	0.33
60.2	69.0	4.12	■	■		■		■		■	■	■	7						0		♦			♦	♦			♦				4	0.13	0.63
59.6	85.5	4.12	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
59.4	80.0	4.12	■	■		■		■	■	■	■	■	8						0		♦				♦							2	0.11	0.33
58.4	88.0	4.12	■	■		■		■	■	■	■	■	8						0						♦							1	0.11	0.22
55.1	83.0	3.70	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
52.4	56.5	3.88		■				■		■	■		4				●		1	♦				♦	♦			♦			♦	5	0.40	1.40
52.0	78.5	2.90	■	■		■		■	■	■	■		7						0						♦					♦		2	0.13	0.38
51.4	51.0	2.90	■					■			■	■	4		●		●		2	♦	♦		♦	♦	♦	♦		♦	♦			8	0.60	2.20
51.3	52.5	2.90	■	■			■				■		4				●		1		♦		♦	♦				♦	♦		♦	6	0.40	1.60
51.0	60.5	2.90	■	■			■	■			■		5						0		♦		♦	♦				♦	♦		♦	6	0.17	1.17
49.1	75.5	2.41	■	■		■	■	■			■	■	7						0		♦			♦				♦	♦			4	0.13	0.63

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key
QHEI
Components

River Mile	QHEI	Gradient (ft/mile)	WWH Attributes: No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	Total WWH Attributes	MWH Attributes, High Influence: Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	Total H.I. MWH Attributes	MWH Attributes, Moderate Influence: Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	Total M.I. MWH Attributes	(MWH H.I.+1)/(WWH+1) Ratio	(MWH M.I.+1)/(WWH+1) Ratio
(14-001) Great Miami River																																		
Year: 95																																		
48.2	81.5	2.41	■	■		■	■	■	■	■	■	■	9				●		1													0	0.20	0.20
48.0	73.5	2.41	■	■		■	■	■			■	■	7						0		♦							♦	♦			3	0.13	0.50
47.5	86.0	2.41	■	■		■		■	■		■	■	7						0						♦				♦			2	0.13	0.38
45.6	67.5	2.78	■	■						■	■	■	5				●		1		♦			♦	♦			♦				4	0.33	1.00
45.5	82.5	2.78	■	■		■	■	■	■	■	■	■	9						0					♦				♦				2	0.10	0.30
43.4	83.0	2.78	■	■		■	■	■	■	■	■	■	9						0		♦											1	0.10	0.20
40.6	84.0	2.18	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
38.3	60.5	0.10	■	■			■	■			■		5		●				1		♦			♦				♦	♦		♦	5	0.33	1.17
36.9	67.5	4.65		■				■		■	■	■	5	●			●		2	♦				♦	♦			♦				4	0.50	1.17
34.6	45.5	0.10		■			■	■			■		4						0	♦	♦			♦				♦	♦		♦	6	0.20	1.40
34.2	72.5	2.45	■	■		■	■		■	■	■	■	8				●		1						♦	♦						2	0.22	0.44
33.9	67.5	2.45	■	■		■			■		■	■	6				●		1						♦				♦			2	0.29	0.57
33.6	81.5	2.45	■	■		■	■	■	■		■	■	8						0										♦			1	0.11	0.22
31.6	61.0	2.45	■	■				■			■		4				●		1		♦			♦	♦			♦	♦		♦	6	0.40	1.60
31.4	84.0	2.45	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
30.0	76.5	3.57	■	■		■	■	■	■		■		7						0										♦	♦		2	0.13	0.38
28.8	78.5	3.57	■	■		■	■	■	■		■	■	8						0										♦			1	0.11	0.22
25.8	58.5	3.75	■	■			■	■			■		5		●				1		♦			♦				♦	♦		♦	5	0.33	1.17
24.7	78.0	4.65	■	■		■	■	■	■	■	■	■	9						0					♦								1	0.10	0.20
23.4	84.0	4.65	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
21.1	75.5	3.01	■	■		■		■	■		■		6						0		♦				♦				♦	♦		4	0.14	0.71
20.0	54.0	3.01		■							■		2				●		1	♦	♦			♦	♦	♦		♦	♦		♦	8	0.67	3.33
16.9	74.0	2.53	■				■	■		■	■		5						0					♦				♦			♦	3	0.17	0.67
14.8	80.0	2.53	■	■		■	■	■	■		■		7						0		♦								♦	♦		3	0.13	0.50
11.6	75.0	2.84	■	■		■		■	■		■		6				●		1					♦	♦			♦	♦	♦		5	0.29	1.00
11.4	81.5	2.84	■	■		■	■	■	■	■	■		9				●		1		♦								♦	♦		3	0.20	0.50
8.4	79.5	3.50	■	■		■		■	■	■	■	■	8				●		1						♦							1	0.22	0.33
5.6	78.5	2.45	■	■		■	■	■	■	■	■	■	9						0		♦								♦			2	0.10	0.30
3.9	46.5	0.10	■				■	■			■		4	●			●		2		♦		♦	♦		♦		♦	♦		♦	7	0.60	2.00
1.8	57.5	0.10	■				■	■			■		4						0		♦			♦				♦	♦		♦	5	0.20	1.20
Year: 94																																		
158.9	43.0	0.77		■				■			■		3						0	♦	♦			♦	♦	♦		♦	♦	♦	♦	9	0.25	2.50
153.1	47.5	0.77						■			■		2	●					1		♦			♦	♦			♦	♦		♦	6	0.67	2.67
146.3	46.5	1.21						■			■		2		●				1	♦	♦			♦	♦			♦	♦		♦	7	0.67	3.00
143.8	60.0	0.10	■	■				■		■	■		5						0		♦			♦	♦			♦			♦	5	0.17	1.00
143.2	76.5	2.82	■	■		■	■	■	■		■		7						0		♦								♦	♦		3	0.13	0.50
142.5	70.5	2.82	■	■			■	■			■		5						0	♦	♦			♦	♦			♦	♦	♦		7	0.17	1.33

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key
QHEI
Components

River Mile	QHEI	Gradient (ft/mile)	WWH Attributes											MWH Attributes: High Influence						MWH Attributes: Moderate Influence														
			No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	Total WWH Attributes	Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	Total H.I. MWH Attributes	Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	Total M.I. MWH Attributes	(MWH H.I.+1)/(WWH+1) Ratio	(MWH M.I.+1)/(WWH+1) Ratio
(14-001) Great Miami River																																		
Year: 94																																		
138.2	71.0	2.07	■	■			■	■			■		5						0	♦	♦			♦				♦	♦	♦		6	0.17	1.17
133.1	60.0	2.05	■	■			■	■			■		5		●				1		♦			♦	♦			♦	♦		♦	6	0.33	1.33
130.0	69.0	12.34	■	■		■	■	■	■		■		7				●		1	♦	♦				♦	♦			♦	♦		6	0.25	1.00
127.7	74.0	5.71	■	■				■			■		4						0					♦	♦			♦	♦	♦		5	0.20	1.20
123.9	61.0	8.13						■	■		■		3				●		1	♦	♦			♦	♦				♦	♦		6	0.50	2.00
117.5	85.5	2.94	■	■		■	■	■	■	■	■		8						0		♦									♦		2	0.11	0.33
114.8	46.0	0.10		■							■		2	●			●		2	♦	♦			♦	♦			♦	♦		♦	7	1.00	3.33
114.3	47.5	0.10		■					■	■	■		4	●			●		2					♦	♦				♦		♦	4	0.60	1.40
114.3	51.5	0.10		■						■	■		3	●			●		2					♦	♦			♦			♦	4	0.75	1.75
114.1	68.5	4.02	■	■			■	■		■	■		6				●		1	♦	♦			♦	♦			♦	♦		♦	7	0.29	1.29
109.9	77.5	2.37	■	■		■		■	■		■		6				●		1		♦			♦	♦				♦	♦		5	0.29	1.00
108.5	73.5	2.00	■	■		■		■	■		■		6						0	♦	♦			♦	♦				♦	♦		6	0.14	1.00
106.3	55.0	3.01		■							■		2	●			●		2		♦			♦	♦			♦	♦	♦		6	1.00	3.00
104.7	86.0	3.52	■	■		■	■	■	■		■		7						0		♦								♦	♦		3	0.13	0.50
98.7	77.0	1.81	■	■		■		■	■	■	■		8						0		♦				♦				♦	♦		4	0.11	0.56
95.9	88.0	2.72	■	■		■		■	■		■		6						0		♦				♦				♦	♦		4	0.14	0.71
93.8	78.0	2.72	■	■		■		■	■		■		6						0	♦	♦				♦				♦	♦		5	0.14	0.86
91.0	68.0	2.03		■		■		■	■		■		5		●				1	♦	♦				♦				♦	♦		5	0.33	1.17
87.3	80.5	6.45	■	■		■	■	■	■		■		7						0	♦	♦								♦	♦		4	0.13	0.63
85.0	72.0	6.45		■		■		■	■		■		5						0	♦	♦			♦	♦				♦	♦		6	0.17	1.17
Year: 89																																		
91.0	71.5	2.03		■		■	■	■	■	■	■	■	8						0	♦	♦			♦				♦				4	0.11	0.56
88.1	91.0	2.03	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
87.0	73.5	6.37	■	■		■	■	■	■	■	■	■	9						0	♦		♦						♦				3	0.10	0.40
86.5	69.0	6.37	■	■		■		■	■	■	■	■	8						0	♦		♦		♦	♦			♦				5	0.11	0.67
82.9	36.0	0.10									■		1	●	●		●		3		♦			♦	♦			♦	♦		♦	6	2.00	5.00
82.0	50.0	0.10		■					■		■		3				●		1	♦	♦			♦	♦			♦	♦	♦		7	0.50	2.25
80.4	68.0	3.00		■				■	■	■	■	■	6						0	♦				♦	♦							3	0.14	0.57
80.1	70.5	2.67		■		■		■	■	■	■	■	7						0	♦				♦	♦							3	0.13	0.50
77.9	53.0	0.10		■				■			■		3	●					1					♦	♦			♦	♦		♦	5	0.50	1.75
76.9	61.5	2.67		■				■	■		■		4						0	♦	♦			♦	♦				♦		♦	6	0.20	1.40
75.9	67.5	2.67		■				■	■		■	■	5						0	♦	♦			♦	♦				♦			5	0.17	1.00
74.8	57.0	2.78		■					■		■		3				●		1	♦	♦			♦	♦				♦		♦	6	0.50	2.00
73.3	51.0	2.78		■							■		2	●			●		2		♦			♦	♦			♦	♦		♦	6	1.00	3.00
71.9	86.5	5.18	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
70.9	69.5	5.18		■					■	■	■	■	5				●		1	♦				♦	♦							3	0.33	0.83
70.1	66.5	5.18	■	■			■	■	■		■		6				●		1		♦	♦		♦				♦	♦		♦	6	0.29	1.14

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key: QHEI Components

			WWH Attributes											MWH Attributes: High Influence						MWH Attributes: Moderate Influence														
River Mile	QHEI	Gradient (ft/mile)	No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	Total WWH Attributes	Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	Total H.I. MWH Attributes	Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	Total M.I. MWH Attributes	(MWH H.I.+1)/(WWH+1) Ratio	(MWH M.I.+1)/(WWH+1) Ratio
(14-001) Great Miami River																																		
Year: 89																																		
68.6	92.0	1.77	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
65.9	54.5	1.77		■				■	■		■		4	●					1		♦	♦		♦	♦			♦	♦		♦	7	0.40	1.80
64.8	35.0	0.10									■		1	●	●		●		3		♦			♦	♦			♦	♦		♦	6	2.00	5.00
64.0	85.0	6.25	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
63.3	79.0	6.25	■	■		■	■	■	■	■	■	■	9				●		1						♦							1	0.20	0.30
62.1	68.5	6.25		■				■	■		■	■	5				●		1	♦	♦			♦	♦				♦			5	0.33	1.17
59.4	60.0	4.12		■				■	■				3					●	1	♦				♦	♦			♦	♦	♦		6	0.50	2.00
58.4	61.5	4.12							■		■		2				●		1	♦	♦	♦		♦	♦			♦	♦	♦		8	0.67	3.33
55.9	90.0	3.70		■	■	■	■	■	■	■	■	■	9						0	♦												1	0.10	0.20
52.4	45.5	3.88									■		1	●			●		2		♦			♦	♦			♦	♦		♦	6	1.50	4.50
52.0	43.0	2.90									■		1	●			●		2		♦			♦	♦			♦	♦		♦	6	1.50	4.50
51.2	59.0	2.90		■					■		■		3				●		1	♦				♦	♦	♦			♦	♦		6	0.50	2.00
50.0	61.0	2.41		■					■		■		3				●		1	♦	♦			♦	♦			♦	♦		♦	7	0.50	2.25
49.1	65.5	2.41		■				■	■		■		4						0	♦	♦			♦	♦				♦		♦	6	0.20	1.40
48.0	83.5	2.41	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
47.5	86.5	2.41	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
45.5	86.0	2.78	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
42.3	55.5	2.78		■							■		2				●		1	♦	♦	♦		♦	♦			♦	♦		♦	8	0.67	3.33
40.9	93.0	11.80	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
38.3	67.5	3.85	■	■			■	■	■	■	■		7						0					♦	♦						♦	3	0.13	0.50
37.0	40.5	4.65		■					■				2	●			●	●	3			♦		♦	♦				♦	♦		5	1.33	3.00
33.9	49.5	2.45		■					■				2	●			●	●	3	♦				♦	♦	♦			♦	♦		6	1.33	3.33
33.5	86.0	2.45	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
31.8	74.5	2.45	■		■	■	■	■	■	■	■	■	9						0			♦		♦								2	0.10	0.30
28.7	76.5	3.57	■	■	■	■	■	■	■		■	■	9						0										♦			1	0.10	0.20
25.8	61.5	3.75							■		■		2				●		1	♦	♦	♦		♦	♦				♦	♦		7	0.67	3.00
23.4	75.0	4.65	■	■		■	■	■	■		■	■	8				●		1		♦	♦							♦			3	0.22	0.56
21.2	86.0	3.01	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
20.1	54.0	3.01		■					■		■		3				●		1	♦	♦	♦		♦	♦			♦	♦		♦	8	0.50	2.50
15.6	76.0	2.53	■	■		■	■	■	■		■	■	8						0		♦			♦					♦			3	0.11	0.44
14.8	77.5	2.53	■			■	■	■	■	■	■	■	8						0		♦	♦										2	0.11	0.33
11.6	59.0	2.84	■	■				■	■		■		5				●		1		♦	♦		♦	♦			♦	♦		♦	7	0.33	1.50
8.2	77.5	3.50	■	■		■	■		■	■	■	■	8				●		1			♦										1	0.22	0.33
6.3	61.5	3.50	■				■		■		■		4				●		1		♦			♦	♦				♦	♦		5	0.40	1.40
0.9	54.5	0.10	■				■		■		■		4				●		1		♦			♦	♦			♦	♦	♦		6	0.40	1.60
Year: 82																																		
143.6	53.0	0.10	■		■			■		■	■		5						0			♦		♦	♦			♦			♦	5	0.17	1.00

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key QHEI Components

River Mile	QHEI	Gradient (ft/mile)	WWH Attributes: No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	Total WWH Attributes	MWH Attributes, High Influence: Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	Total H.I. MWH Attributes	MWH Attributes, Moderate Influence: Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	Total M.I. MWH Attributes	(MWH H.I.+1)/(WWH+1) Ratio	(MWH M.I.+1)/(WWH+1) Ratio
(14-001) Great Miami River																																		
Year: 82																																		
130.0	73.5	12.35	■	■	■	■		■		■	■	■	8						0						♦			♦				2	0.11	0.33
116.9	65.0	1.77	■	■						■	■	■	5				●		1			♦		♦	♦			♦				4	0.33	1.00
115.3	59.0	1.77	■	■						■	■		4				●		1					♦	♦			♦			♦	4	0.40	1.20
107.6	45.5	0.10	■	■							■		3				●		1				♦	♦	♦			♦	♦		♦	6	0.50	2.00
106.8	72.0	2.00		■	■			■		■	■	■	6						0	♦				♦	♦			♦				4	0.14	0.71
100.7	76.0	1.81	■	■		■	■	■		■	■	■	8		●				1		♦							♦				2	0.22	0.44
98.5	81.0	1.81	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
95.6	76.0	2.70	■	■		■		■		■	■	■	7						0			♦			♦			♦				3	0.13	0.50
Year: 80																																		
91.0	82.5	2.03	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
88.1	84.0	2.03	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
83.3	57.0	0.10	■	■						■	■		4				●		1					♦	♦			♦			♦	4	0.40	1.20
80.7	56.0	5.00		■				■		■	■		4	●			●		2					♦	♦	♦		♦			♦	5	0.60	1.60
77.1	59.0	2.11	■	■						■	■		4				●		1			♦		♦	♦	♦		♦			♦	6	0.40	1.60
(14-005) Paddy's Run																																		
Year: 95																																		
4.7	71.5	25.64	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
3.3	71.5	23.26	■	■		■	■	■		■	■	■	8			●			1				♦		♦			♦				3	0.22	0.56
2.8	60.5	14.71	■	■		■	■				■		5			●	●		2				♦		♦			♦	♦	♦		5	0.50	1.33
0.2	67.5	6.09	■	■		■		■			■		5			●	●		2		♦				♦			♦	♦	♦		5	0.50	1.33
(14-018) Dicks Creek																																		
Year: 95																																		
5.0	44.0	8.47		■							■		2	●		●	●		3		♦			♦	♦	♦		♦	♦	♦		7	1.33	3.67
4.4	58.5	8.47		■				■		■	■	■	5				●		1	♦				♦	♦			♦	♦			5	0.33	1.17
3.0	40.0	8.33									■		1	●			●		2					♦	♦			♦	♦	♦	♦	6	1.50	4.50
2.6	52.0	5.62						■	■		■		3	●			●		2		♦			♦	♦				♦	♦		5	0.75	2.00
2.4	62.5	5.62	■			■		■			■	■	5				●		1		♦				♦			♦	♦			4	0.33	1.00
0.4	72.5	9.09	■	■		■		■		■	■	■	7						0					♦	♦			♦				3	0.13	0.50
Year: 87																																		
5.5	77.0	12.67	■	■		■	■	■		■	■	■	8			●			1	♦				♦	♦			♦				4	0.22	0.67
4.7	53.0	8.47		■					■		■		3			●	●		2	♦	♦			♦	♦				♦	♦		6	0.75	2.25
4.2	43.0	8.47									■	■	2	●	●		●		3		♦			♦	♦			♦	♦			5	1.33	3.00
3.4	41.0	8.33									■		1	●	●		●		3		♦			♦	♦			♦	♦	♦		6	2.00	5.00
2.7	32.0	5.62									■		1	●	●		●		3		♦			♦	♦			♦	♦	♦		6	2.00	5.00
2.5	32.0	5.62									■		1	●	●		●		3		♦			♦	♦			♦	♦	♦		6	2.00	5.00
0.2	85.0	9.09	■	■		■	■	■	■		■		7						0										♦	♦		2	0.13	0.38

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key
QHEI
Components

River Mile	QHEI	Gradient (ft/mile)	WWH Attributes: No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	Total WWH Attributes	MWH Attributes, High Influence: Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	Total H.I. MWH Attributes	MWH Attributes, Moderate Influence: Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	Total M.I. MWH Attributes	(MWH H.I.+1)/(WWH+1) Ratio	(MWH M.I.+1)/(WWH+1) Ratio
(14-019) North Branch Dicks Creek																																		
Year: 95																																		
1.0	42.0	8.77		■						■	■	■	4	●		●	●		3					♦	♦	♦		♦				4	0.80	1.60
0.1	52.5	8.77		■					■		■		3			●	●		2	♦				♦	♦				♦	♦		5	0.75	2.00
Year: 87																																		
1.1	51.5	8.77	■	■							■		3	●		●	●		3		♦			♦	♦			♦	♦	♦		6	1.00	2.50
0.1	41.0	8.77		■				■	■		■		4	●		●			2		♦			♦	♦				♦	♦	♦	6	0.60	1.80
(14-022) Elk Creek																																		
Year: 95																																		
3.7	84.0	11.70	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
Year: 87																																		
3.7	91.5	11.70	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
(14-029) Bear Creek																																		
Year: 95																																		
12.1	77.0	29.41	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
9.9	79.5	21.28	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
5.2	66.5	15.15	■	■		■		■			■		5						0					♦	♦			♦	♦	♦		5	0.17	1.00
2.1	71.0	14.49	■	■		■		■			■		5						0						♦			♦	♦	♦		4	0.17	0.83
0.1	46.0	16.00		■							■		2	●			●		2					♦	♦			♦	♦	♦	♦	6	1.00	3.00
Year: 81																																		
12.1	60.0	29.41	■				■	■			■		4						0					♦				♦	♦		♦	4	0.20	1.00
(14-036) Holes Creek																																		
Year: 95																																		
4.3	63.0	20.83	■	■		■					■		4			●	●		2				♦	♦	♦			♦	♦	♦		6	0.60	1.80
0.6	54.0	12.99	■	■							■		3				●		1					♦	♦			♦	♦	♦		5	0.50	1.75
(14-037) Wolf Creek																																		
Year: 97																																		
6.1	75.5	18.18	■	■		■	■	■	■	■	■		9						0													0	0.10	0.10
4.4	73.5	8.70	■	■		■	■	■	■		■		8						0		♦								♦	♦		3	0.11	0.44
3.2	73.5	12.50	■	■		■	■	■	■	■	■		9				●		1		♦									♦		2	0.20	0.40
2.7	69.5	12.50	■	■		■	■	■	■		■		7				●		1		♦			♦					♦	♦		4	0.25	0.75
2.4	73.0	12.50	■			■	■	■	■		■		6						0		♦			♦					♦	♦		4	0.14	0.71
1.6	55.5	5.68	■	■				■			■		4				●		1		♦			♦	♦			♦	♦		♦	6	0.40	1.60
1.2	69.0	5.68	■	■		■	■	■	■	■	■	■	9				●		1		♦											1	0.20	0.30
1.0	55.0	5.68	■	■		■	■		■		■		6				●		1		♦			♦	♦				♦	♦	♦	6	0.29	1.14
0.1	37.0	5.68							■				1	●			●	●	3		♦			♦	♦	♦			♦	♦	♦	7	2.00	5.50
Year: 95																																		
16.7	56.0	10.64		■				■			■	■	4			●			1	♦	♦			♦	♦			♦	♦			6	0.40	1.60
15.0	63.5	29.41	■	■							■		3			●	●		2					♦	♦			♦	♦	♦		5	0.75	2.00
14.9	81.0	29.41	■	■		■	■	■			■		6						0									♦	♦	♦		3	0.14	0.57

Table 6. QHEI attributes for the Middle and Lower Great Miami River study area, 1995.

Key QHEI Components

			WWH Attributes											MWH Attributes: High Influence						MWH Attributes: Moderate Influence														
River Mile	QHEI	Gradient (ft/mile)	No Channelization or Recovered	Boulder/Cobble/Gravel Substrates	Silt Free Substrates	Good/Excellent Substrates	Moderate/High Sinuosity	Extensive/Moderate Cover	Fast Current/Eddies	Low-Normal Overall Embeddedness	Max Depth > 40 cm	Low-Normal Riffle Embeddedness	**Total WWH Attributes**	Channelized or No Recovery	Silt/Muck Substrates	No Sinuosity	Sparse/No Cover	Max Depth < 40 cm (WD, HW)	**Total H.I. MWH Attributes**	Recovering Channel	Heavy/Moderate Silt Cover	Sand Substrates (Boat)	Hardpan Substrate Origin	Fair/Poor Development	Low Sinuosity	Only 1-2 Cover Types	Intermittent and Poor Pools	No Fast Current	High/Mod. Overall Embeddedness	High/Mod. Riffle Embeddedness	No Riffle	**Total M.I. MWH Attributes**	**(MWH H.I.+1)/(WWH+1) Ratio**	**(MWH M.I.+1)/(WWH+1) Ratio**
(14-037) Wolf Creek																																		
Year: 95																																		
10.4	**82.5**	16.39	■	■		■	■	■	■		■		7						0										♦	♦		2	0.13	0.38
6.1	**69.0**	18.18	■	■		■		■	■		■		6						0					♦	♦	♦			♦	♦		5	0.14	0.86
0.2	**53.5**	5.68		■				■			■		3	●					1					♦	♦			♦	♦	♦		5	0.50	1.75
(14-038) Dry Run																																		
Year: 95																																		
1.8	**36.0**	18.18		■							■		2	●		●	●		3		♦			♦	♦	♦		♦	♦	♦	♦	8	1.33	4.00
1.6	**74.0**	18.18	■	■		■	■	■	■		■		7						0		♦								♦	♦		3	0.13	0.50
1.3	**74.0**	18.18	■	■		■	■	■	■		■		7						0		♦								♦	♦		3	0.13	0.50
0.2	**73.5**	23.26	■	■	■	■	■	■	■	■	■	■	10						0													0	0.09	0.09
(14-089) Owl Creek																																		
Year: 95																																		
0.1	**69.0**	33.33		■	■	■		■	■	■	■		7			●			1	♦				♦	♦					♦		4	0.25	0.75
(14-171) Mound Overflow Creek																																		
Year: 95																																		
0.2	**51.0**	12.20		■			■						2			●	●	●	3	♦	♦			♦	♦			♦	♦	♦		7	1.33	3.67
(14-300) Whitewater River																																		
Year: 95																																		
7.7	**83.0**	3.45	■	■		■	■	■	■	■	■	■	9						0													0	0.10	0.10
7.2	**82.0**	3.45	■	■		■		■	■	■	■	■	8						0						♦							1	0.11	0.22
4.7	**85.0**	4.78	■	■		■	■	■		■	■	■	8						0									♦				1	0.11	0.22
0.8	**77.5**	5.32	■	■		■	■	■		■	■	■	8				●		1									♦				1	0.22	0.33

Macroinvertebrate Assemblages (Figures 64 - 66; Table 7)

Great Miami River

Macroinvertebrate communities were evaluated at 52 stations on the Great Miami River from upstream from Needmore Road (RM 87.7) to Lost Bridge (RM 5.7). Invertebrate Community Index (ICI) scores (excluding the two September samples and the mixing zone samples) ranged from 52 (exceptional) downstream from the DP&L Hutchings EGS at RM 64.1 to 38 (good) at six sites from RMs 80.7 to 8.4 (Table 7, Fig. 64). The stations with the highest total mayfly (Ephemeroptera), stonefly (Plecoptera), and caddisfly (Trichoptera) taxa richness (EPT), a measure of the diversity of pollution sensitive taxa, were at RMs 66.9, 64.1, and 34.3 with 23 taxa. Two hundred and seven macroinvertebrate taxa were collected from the Great Miami River mainstem in 1995.

Macroinvertebrate sample retrieval in the Great Miami River mainstem was conducted from 23-31 October, outside of the standard sampling period of 15 June to 30 September, due to disturbance of the initial artificial substrate placement by high flows. Two undisturbed samples (RMs 80.0A and 76.4A) remaining from the initial sampling endeavor were retrieved on 14 September and analyzed for comparison with the October samples and with the 1989 survey data which were also collected in September. Sampling outside of the usual sampling period brings into the analysis the possible effects of seasonal community shifts due to insect emergence or a change in food supply. The 1995 October ICI scores were for the most part below the 1995 and 1989 September scores (Figure 86). Analysis of ICI metrics revealed that the compositional components were similar but several of the structural metrics showed a clear distinction between the two sampling periods (Figure 65). Percent abundance of mayflies (metric 5) and caddisflies (metric 6) were consistently lower in the October samples. Both of these community components are positive metrics and the drop in percent predominance lowered the ICI score. The October samples also scored lower on the percent abundance of tolerant organisms (metric 9) which is a negative metric. On the other hand, the positive metric 7 (percent abundance of Tanytarsini midges) was consistently higher during the October sampling. The high abundance of Tanytarsini midges was due to large numbers of the *Rheotanytarsus exiguus* group (as high as 63,840 at RM 9.5) which is a common filter feeding chironomid in large rivers. Large numbers of this taxon can indicate organic enrichment, which is realized in the ICI by lowering the relative abundance of other positive community components (e.g. percent mayflies and percent caddisflies). A possible explanation for the reduced percent abundance of mayfly and caddisfly populations in the October samples, besides the high numbers of the *R.. exiguus* group reducing their relative abundance, is that a substantial proportion of the population may have emerged as adults in late summer and had not yet been replaced by the next generation. Explanations for other differences in the October sampling are not clear. Overall, the apparent seasonal community shift did not effect the ability of the ICI to evaluate changes in biological integrity longitudinally, but may be slightly lowering the absolute evaluation of the mainstem Great Miami

River.

The macroinvertebrate fauna of the lower Great Miami River was fairly typical of Ohio's larger rivers. Taxa collected that are indicative of high quality rivers were the burrowing mayfly *Ephoron album* at RM 72.2, and the midge *Rheotanytarsus distinctissimus* at RMs 64.35 and 76.4. The rarely collected midge *Gillotia alboviridis* was collected at RMs 27.1, 8.4, and 5.7. Due to the latter sampling period, several taxa, whose larvae mature during the winter and emerge as adults in spring, were collected. These were the stonefly *Perlinella drymo* at RMs 87.7, 60.2, and 33.6 and the midge genera *Hydrobaenus* at 11 sites between RMs 87.7 and 45.5 and *Orthocladius (O.)* at 26 sites between RMs 87.7 and 5.7. Several taxa usually associated with coolwater streams were collected at a single site each and may represent stray individuals washed in from tributaries or small marginal populations that inhabit warmwater rivers during the winter. They were the caddisfly *Diplectrona modesta* at RM 71.7, and the midge taxa *Parametriocnemus* at RM 47.5, *Polypedilum (P.) albicorne* at RM 68.8, *Polypedilum (P.) aviceps* at RM 71.7, and *Micropsectra* at RM 66.9.

Freshwater mussels (Unionidae) were not commonly encountered during this study. Streams with healthy mussel populations usually have "beds" where a number of species aggregate in a defined stretch of the river. No such areas were observed at any of the 52 macroinvertebrate stations. Only scattered fresh-dead specimens of five species were collected. They were *Lasmigona camplanata* (white heelsplitter) at RM 5.7; *Lasmigona costata* (fluted-shell) at RMs 76.4, 59.1, and 55.0; *Pyganodon grandis* (giant floater) at RMs 82.0, 71.7, 60.2, 59.1, 49.3, 47.7, and 45.5; *Strophitus undulatus* (squaw foot) at RM 45.5; and *Truncilla truncata* (deertoe) at RM 31.4 (fish site). Zebra mussels (*Dreissena polymorpha*) were not encountered during this study.

Great Miami River: Dayton to Franklin

Macroinvertebrate communities were evaluated at 19 regular stations and 6 mixing zone stations starting upstream from Needmore Road (RM 87.7) to downstream from Clear Creek (RM 58.3). The river flows through the city of Dayton and adjacent to the communities of West Carrollton, Miamisburg, Chautauqua, and Franklin in this segment. The major tributaries in this area were the Stillwater River (RM 82.57) and the Mad River (RM 81.48). Excluding the mixing zone samples and the samples collected in September, the Invertebrate Community Index (ICI) ranged from 52 (exceptional) downstream from the DP&L Hutchings EGS at RM 64.1 to 38 (good) at RMs 80.7, 80.0, and 71.7 (Table 7, Fig. 64-top). Among the regular stations, the narrative evaluation was exceptional for ten sites, very good for five sites, and good for four sites; all sites achieved or exceeded the WWH biocriterion

The MCD North Regional WWTP (RM 86.6) was not noticeably impacting the macroinvertebrate community , with exceptional communities upstream (RM 87.7) and downstream (ICI=46 at RM 85.9). In fact, the community performed significantly higher than in 1994 when an ICI value of 38 (good) was achieved and changes in structural ICI metrics indicated an enrichment impact from the WWTP.

Macroinvertebrate community performance declined in Dayton with ICI values of 38 (good) achieved downstream from the Mad River at Monument Ave. (at RM 80.7) and downstream from Wolf Creek at I-75 (RM 80.0B). High numbers of aquatic segmented worms (Oligochaeta) at both stations raised the percent abundance of tolerant organisms (ICI metric 9) to 13.0% and 20.5%, respectively. High percent abundances of tolerant organisms without declines in the diversity metrics usually indicate an enrichment impact.

The Dayton WWTP (RM 76.1) was not significantly impacting the macroinvertebrate communities in the Great Miami River. Community performance was very good upstream (ICI=44 at RM 76.4) and downstream (ICI=42 at RM 75.7) from the discharge. Community performance increased to exceptional (ICI=50 at RM 72.4) downstream from the W. Carrollton Dam. The Dayton WWTP mixing zone was also supporting a very good community (ICI=42 at RM 76.0). There was no indication of effluent toxicity based on the macroinvertebrate community response.

The Appleton Paper WWTP discharge (RM 72.3) was significantly impacting the macroinvertebrate community. Community performance declined from exceptional (ICI=50 at RM 72.4) upstream to good (ICI=38 at RM 71.7) downstream. The decline was due primarily to structural changes and an increase in aquatic segmented worms (Oligochaeta), which raised the percent abundance of tolerant organisms to 23.7% (compared to 2.3% at RM 72.4). High percent abundances of tolerant organisms without declines in the diversity metrics usually indicate an enrichment impact. The community response within the mixing zone (RM 72.3) was very good (EPT=16 with hydropsychid caddisflies and riffle beetles predominant) on 2 August and fair (EPT=11 with midges predominant) on 24 October. During the second collection, extensive solids deposition was observed on the substrates and the water was stained a dark brown color. The substantially worsened condition within the mixing zone during the second sample corresponded to reduced river flow on 24 October compared to 2 August. The impact type within the mixing zone was organic solids with at most only mild toxicity. This type of impact has been observed below other paper plants in the state, for example Mead Paper on Paint Creek in Chillicothe and Container Corporation on the Scioto River in Circleville.

The Montgomery County Western Regional WWTP (RM 71.45) was not significantly impacting the macroinvertebrate community. Community performance improved to the exceptional range (ICI=46 at RM 70.5) downstream compared to good (ICI=38 at RM 71.7) upstream. The upstream station was impacted by the Appleton Paper WWTP discharge. The percent abundance of tolerant organisms dropped to 4.4% at this station compared to 23.7% at RM 71.7. The community response within the mixing zone was meeting WWH expectations with narrative evaluations of good. There was no discernible indication of effluent toxicity.

The confluence of Owl Creek (RM 69.55), which receives discharges from Miami Paper (RM 0.5) and W. Carrollton Parchment (RM 0.36), was not discernibly impacting the macroinvertebrate community. Community performance remained exceptional (ICI=48 at RM 69.3) 0.25 miles downstream from the confluence.

The W. Carrollton WWTP (RM 69.2) was not significantly impacting the macroinvertebrate community. Community performance, however, declined slightly to very good (ICI=44 at RM 68.8) compared to exceptional (ICI=48 at RM 69.3) upstream. Moderate declines in mayfly diversity and percent abundance and an increase in percent abundance of tolerant organisms (3.6% compared to 1.4% at RM 69.3) were the primary reasons for the decline. The ICI increased slightly to 46 (exceptional) at RM 66.9. The community response within the WWTP mixing zone was meeting WWH expectations with narrative evaluations of good and very good on 3 August and 26 October, respectively. There was no discernible indication of effluent toxicity.

Macroinvertebrate community performance downstream from the U.S. DOE Mound facility (discharges into the impoundment on river left at RM 66.0 and has an overflow discharge to a small stream that confluences at RM 65.1), the Miamisburg WWTP (RM 65.01 into the impoundment on river left), and the DP&L Hutchings EGS (RM 64.35 just downstream from the impoundment on river right) was not indicative of any water quality impact. The station located on the river left at RM 64.3 was performing in the exceptional range (ICI=50). Increased overall density (3595/ft^2 compared to 2498/ft^2 at RM 66.9) and a slightly increased abundacne of tolerant organisms (1.4% compared to 0.6% at RM 66.9) indicated a mild enrichment effect from upstream sources. The macroinvertebrate community performance within the DP&L Hutchings EGS mixing zone (at RM 64.35 on the river right) was meeting WWH expectations with narrative evaluations of very good and good on 14 September and 25 October, respectively. There was no discernible indication of a thermal impact from the EGS. The station located at RM 64.1 on river right was performing at the exceptional level (ICI=52). The overall density (3815/ft^2) and percent predominance of tolerant organisms (1.7%) were elevated at this station similar to RM 64.3, likewise indicating mild enrichment from upstream sources.

The Franklin WWTP (RM 59.65) was not negatively impacting the macroinvertebrate community. Community performance was in the exceptional range (ICI=48) at the two downstream stations (RMs 59.1 and 58.3). The macroinvertebrate community performance within the Franklin WWTP mixing zone (at RM 59.65) was meeting WWH expectations with narrative evaluations of good on 15 September and 26 October. There was no discernible indication of effluent toxicity.

Great Miami River: Middletown to Hamilton

Macroinvertebrate communities were evaluated at 12 regular stations and 3 mixing zone stations starting downstream from SR 4 (RM 55.0) to downstream from Hamilton Municipal Power (RM 37.0). The river flows adjacent to the city of Middletown and the communities of Trenton and New Miami in this segment. Excluding the mixing zone samples, the Invertebrate Community Index (ICI) ranged from 48 (exceptional) downstream from SR 4 at RM 55.0 and downstream from Hamilton Municipal Power at RM 37.0 to 38 (good) downstream from the AK Steel 001 discharge at RMs 51.3 and 50.9 (Table 7, Fig. 64-middle). Among the regular stations, the narrative evaluation was exceptional for two sites, very good for four sites, and good for six sites.

The AK Steel 001 discharge (RM 51.4) was significantly impacting the macroinvertebrate community. Community performance declined from very good (ICI=44 at RM 51.5) upstream to good (ICI=38 at RM 51.3) downstream from the discharge. Structural characteristics at the upstream station indicated an enrichment effect with an elevated density of 7488 organisms/ft^2 (compared to 3603/ft^2 at RM 55.0) and a slightly elevated abundance of tolerant organisms (1.9% compared to 0.2% at RM 55.0). Middletown CSO discharges were the likely source of enrichment in this area. Organism density at the station downstream from the AK Steel 011 discharge dropped remarkably to 383/ft^2 with an increase in the proportion of tolerant organisms to 12.9%. The large decrease in organism density is usually an indication of toxicity related impacts. The community response within the AK Steel 011 discharge mixing zone was in the poor range (ICI=8 at RM 51.4) due to very low total and EPT diversity (11 and 2 total , respecitively) and very low numbers of all taxa (density was 109/ft^2) except aquatic segmented worms; the later comprised 94.7% of the organisms collected from the artificial substrates. The response of the macroinvertebrate community in the mixing zone was indicative of highly toxic conditions. Field observations within the mixing zone at the time of sample retrieval noted an oily sheen released from the substrates when disturbed. River temperature in the vicinity of the discharge was 24˚C at the artificial substrate sampling location compared to 12˚C upstream from the discharge. The density (3390/ft^2) and percent predominance of tolerant organisms (1.9%) returned to near background levels at SR 73 (RM 49.3) with an ICI score of 40 (good).

The three presumed CSO discharge points observed in this area during the study were not discharging during the two visits. However, the small plunge pool at the CSO sampling stations at RMs 51.5 and 51.4 was black and septic at the time of sample placement (15 September) and was aqua blue-green colored at the time of sample retrieval (27 October); the pool at the CSO located upstream from the sampling station at RM 50.9 was purple colored at the time of sample retrieval (27 October). The presence of these unnatural colors associated with the Middletown CSOs indicated some unusual substances were entering the river and their source(s) and composition should be further investigated.

The Middletown WWTP (RM 48.29) was not significantly impacting the macroinvertebrate community. Community performance was in the very good range (ICI=44) at the downstream station (RM 47.7). However, slightly elevated abundance of tolerant orgnaisms (2.9%) indicated mild enrichment from the WWTP. The macroinvertebrate community performance within the Middletown WWTP mixing zone (at RM 48.2) was meeting WWH expectations with narrative evaluations of good on 18 September and 30 October. There was no discernible indication of effluent toxicity.

The confluence of Dicks Creek (RM 47.6) was not significantly impacting the macroinvertebrate community. The ICI declined slightly to 40 (good) compared to 44 upstream from the confluence. Overall density declined to 838/ft^2 (compared to 1622/ft^2 at RM 47.7) and the abuncance of tolerant organisms increased to 8.2% (compared to 2.9% at RM 47.7). These community measures indicated mild toxicity from Dicks Creek but an effect due to heavy sedimentation of the artificial substrates by sand and gravel could not be ruled out. However, field observations during the qualitative sampling noted reduced community density and the appearance of a slimy algae (probably blue-green algae) on natural substrate surfaces.

The Butler County LeSourdsville Regional WWTP (RM 45.65) was not significantly impacting the macroinvertebrate community. Community performance was in the very good range (ICI=44) at the downstream station (RM 45.5). However, slightly elevated percent predominance of tolerant organisms (2.9%) indicated mild enrichment from the WWTP. The macroinvertebrate community performance within the LeSourdsville WWTP mixing zone (RM 45.65) was meeting WWH expectations with narrative evaluations of marginally good on 18 September and 31 October. There was no discernible indication of effluent toxicity.

The Miller Brewing Co. WWTP (RM 43.7) was not significantly impacting the macroinvertebrate community. Community performance was in the good range (ICI=40) at the downstream station (RM 43.3). However, elevated percent predominance of tolerant organisms (5.6%) indicated mild enrichment from the WWTP.

Macroinvertebrate sampling stations bracketing Fourmile Creek (RM 38.33) were located in the upper part of the Hamilton Dam pool and downstream from the old Armco Steel New Miami plant. No impact was discernible downstream from the confluence of Fourmile Creek. The ICI scored 42 (very good) upstream from Fourmile Creek (at RM 38.5) and 40 (good) downstream from the confluence (at RM 38.2).

The Hamilton Municipal Power discharges (001 discharge at RM 37.12) were not significantly impacting the macroinvertebrate community. Community performance was in the exceptional range (ICI=46) at the downstream station (RM 37.0).

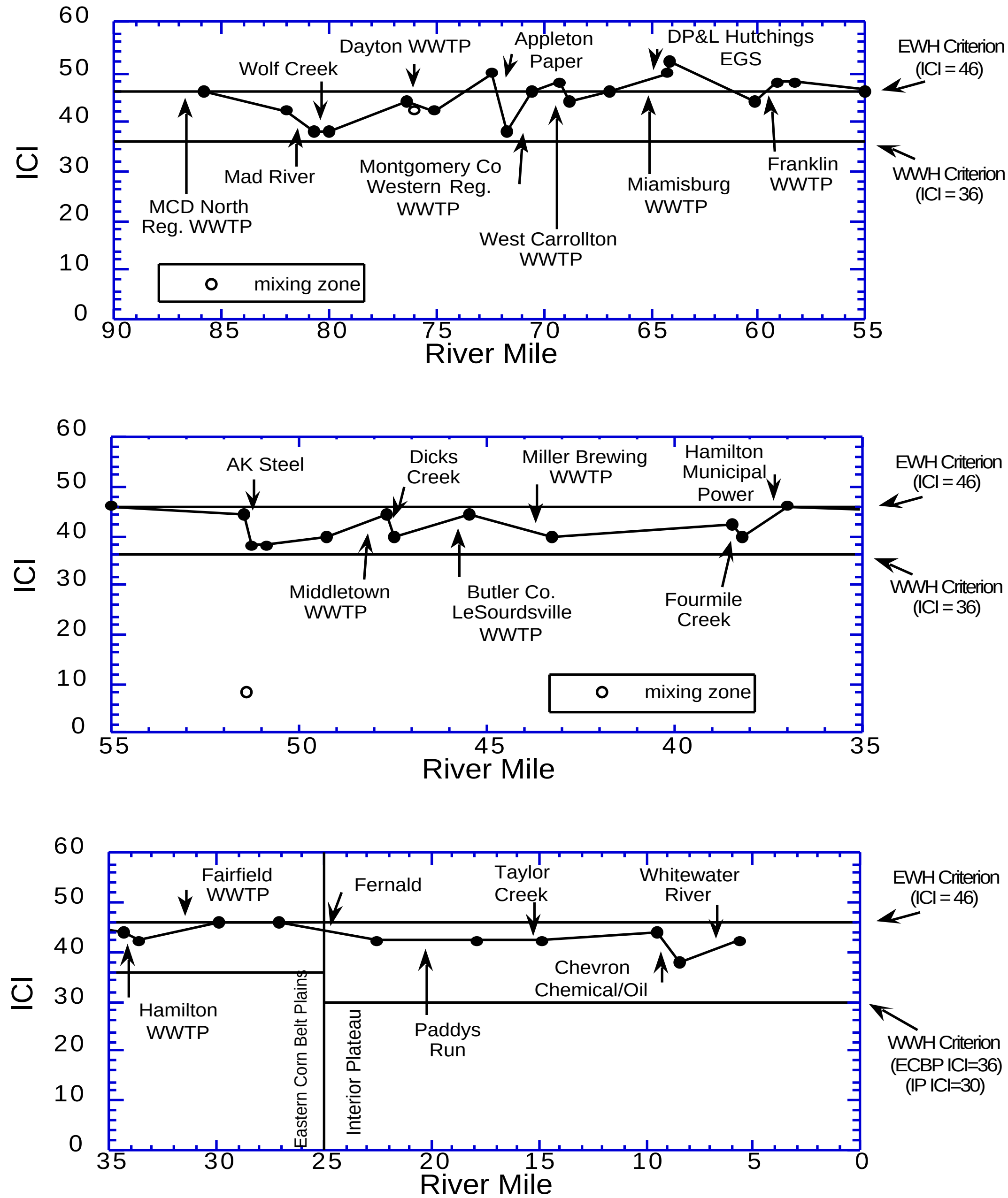


Figure 64 Longitudinal trends in Invertebrate Community Index (ICI) scores for the Middle and Lower Great Miami River, 1995.

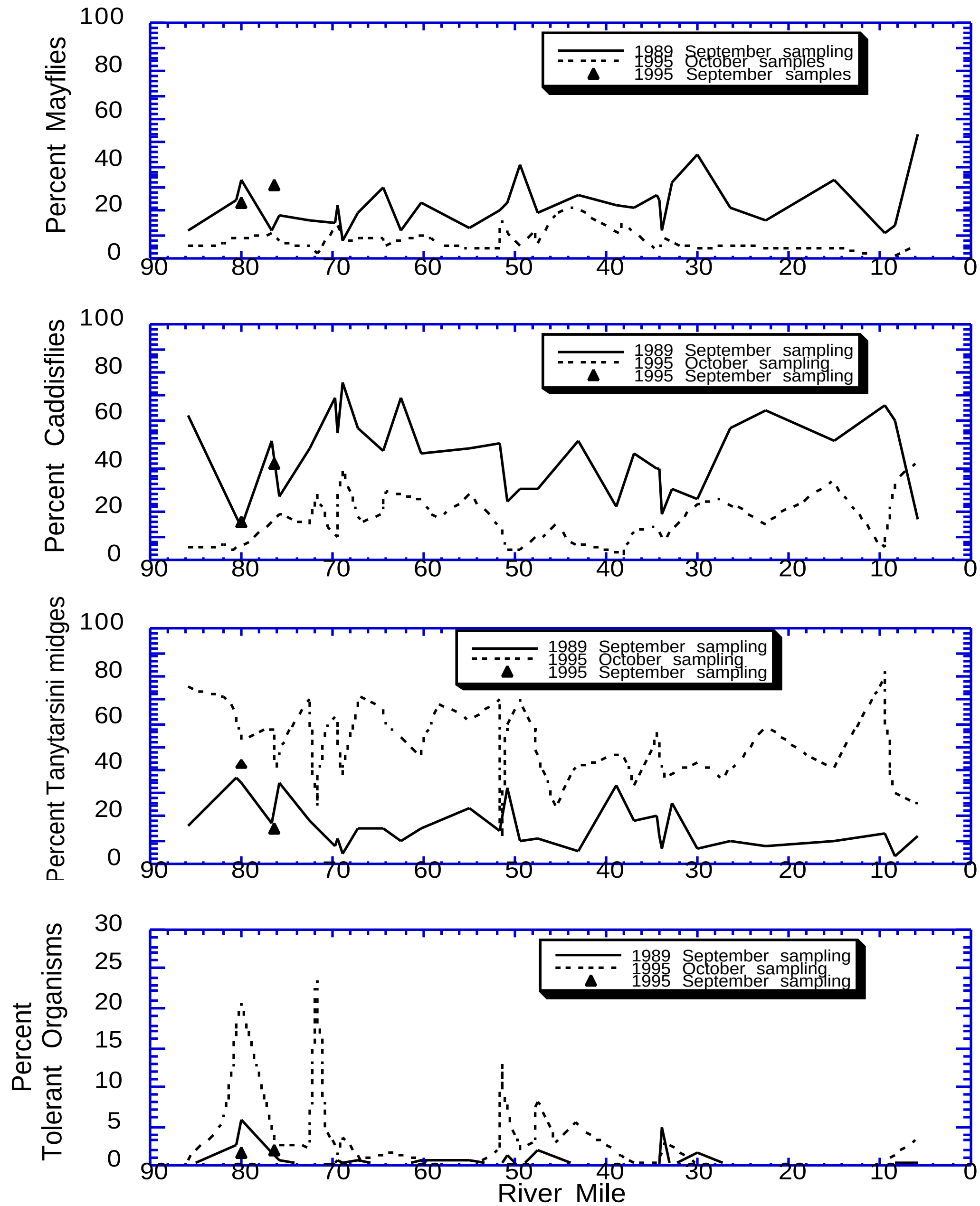


Figure 65 Longitudinal trends in Invertebrate Community Index (ICI) metrics comparing sampling variation between September (1989 and 1995) and October (1995) in the Middle and Lower Great Miami River.

Great Miami River: Hamilton to mouth

Macroinvertebrate communities were evaluated at 10 regular stations and 2 mixing zone stations starting upstream from the Hamilton WWTP (RM 34.3) to Lost Bridge (RM 5.7). The river flows through the city of Hamilton in the beginning of this segment. Excluding the mixing zone samples, the Invertebrate Community Index (ICI) ranged from 46 (exceptional) at the American Aggregates railroad bridge (RM 29.9) and at US 27 (RM 27.1) to 38 (good) at SR 50 (RM 8.4) (Table 6, Fig. 64-bottom). Among the regular stations, the narrative evaluation was exceptional for two sites, very good for seven sites, and good for one site.

The Hamilton WWTP (RM 34.0) was not significantly impacting the macroinvertebrate community. Community performance was in the very good range (ICI=42) at the downstream station (RM 33.6). However, slightly elevated percent predominance of tolerant organisms (3.2% compared to 0.3% at RM 34.3) indicated mild enrichment from the WWTP.

The Fairfield WWTP (RM 31.6) was not significantly impacting the macroinvertebrate community. Community performance was in the exceptional range (ICI=46) at the downstream station (RM 29.9). The macroinvertebrate community performance within the Fairfield WWTP mixing zone (at RM 31.6) was meeting WWH expectations with a narrative evaluation of marginally good on 23 October. There was no discernible indication of effluent toxicity.

The U.S. DOE Fernald facility WWTP (RM 24.73) was not significantly impacting the macroinvertebrate community. Community performance was in the very good range (ICI=42) at the downstream station (RM 22.5). The macroinvertebrate community performance within the Fernald WWTP mixing zone (RM 24.7) was meeting WWH expectations with a narrative evaluation of good on 24 October. There was no discernible indication of effluent toxicity.

Macroinvertebrate communities in the lower 20 miles of the free flowing Great Miami River were performing primarily in the very good range. The confluences of Paddys Run (RM 20.14), Taylor Creek (RM 14.98), and the Whitewater River (RM 6.45) were not significantly impacting community performance. High numbers of filter feeding midges of the *Rheotanytarsus exiguus* group were present from downstream from the Fernald facility (at RM 22.5) to upstream from Chevron Chemical/Oil plant (at RM 9.5) with a high of 63,840 individuals at RM 9.5. These high numbers indicated nutrient enrichment and large amounts of suspended fine particulate organic matter in this section of the river. Macroinvertebrate community performance declined to the good range (ICI=38 at RM 8.4) downstream from the Chevron Chemical/Oil plant. The decline was due to shifts in the ICI structural metrics and a decline in the qualitative sample EPT diversity. The extent of this decline that could be attributed to an impact from the Chevron plant was not certain. Community performance improved slightly to the very good range (ICI=42 at RM 5.7) at the next downstream station. However, slightly elevated percent predominance of tolerant organisms (3.3% compared to 1.4% at RM 8.4) indicated an enrichment effect at this site.

Wolf Creek

Macroinvertebrate communities were evaluated using qualitative methods at six stations on Wolf Creek to evaluate the Brookville WWTP (RM 14.93) and urban sources within Dayton. The station at RM 16.6 upstream from the town of Brookville exhibited a marginally good community with six mayfly and caddisfly taxa (35 total taxa) collected from the natural substrates and with hydropsychid caddisflies, planorbid snails, and Tanytarsini midges predominant. The stream at this site was very shallow (riffle depth of ≤ 1 in. and pool depth of < 6 in.) which may have been a significant limiting factor. Community performance declined at the station (RM 15.0) downstream from Brookville but upstream from the Brookville WWTP despite improved flow conditions (riffle depth of 1-2 in. and pool depth of 3 ft.). Only two caddisfly taxa and no mayfly taxa were collected from the natural substrates; midges were predominant. The poor performance at this site may be due to unknown pollution sources in addition to polluted runoff from Brookville. Downstream from the Brookville WWTP at RM 14.9, the community declined further with no EPT taxa collected (18 total taxa) and with midges, blackflies, and aquatic segmented worms predominant. The community improved to the fair range by RM 10.4 with 6 mayfly and caddisfly taxa (34 total taxa) and a predominance of caddisflies and midges. The communities continued to slightly improve further downstream without any substantial further impairment from urban sources downstream from the community of Trotwood or within Dayton. The community improved to the marginally good range near the confluence with the Great Miami River (RM 0.1) with 10 EPT taxa and 43 total taxa. However, the community was predominated by midges which was is indicative of an impact.

Holes Creek

Macroinvertebrates were sampled at three stations on Holes Creek to evaluate community health. The station at Normandy School (RM 5.6) was exhibiting a marginally fair community with four mayfly and caddisfly taxa (14 total taxa) collected from the natural substrates and with high densities of the genus *Elimia* (river snails) and the fingernail clam *Corbicula fluminea* noted as predominant; hydropsychid caddisflies and mayflies were among the common organisms in the riffle/run habitat. Potential causes of the below expected community performance were a stormwater sewer discharge located upstream near a shopping center and disruption of the bedrock stream substrates due to sewer line construction. Community performance improved into the marginally good range at RM 4.3 with seven mayfly and caddisfly taxa (22 total taxa) collected from the natural substrates and with hydropsychid caddisflies, water pennies, and riffle beetles predominant. Urban runoff and embedded substrates were considered the primary negative factors affecting the macroinvertebrate community. A stormwater sewer located at McEwen Rd. was discharging brownish-black runoff after a rain event on 12 September. The community downstream at RM 0.6 remained essentially unchanged except for a slight decline in EPT taxa to six. However, due to higher diversity expectations associated with the increased drainage area, the community was evaluated as fair. Overall, macroinvertebrate communities in Holes Creek appear to be moderately impacted by various causes associated with urban land use including stormwater runoff, substrate disruption associated with sewer line construction, and excessive sedimentation and embeddedness of the substrates.

Owl Creek

The macroinvertebrate community collected in Owl Creek at Central Ave. (RM 0.1) was severely degraded by the upstream dischargers (Fraser Paper and West Carrollton Parchment). Sampling by qualitative methods found eight macroinvertebrate taxa; there were no EPT taxa and snails of the genus *Physella* (tolerant) were predominant. Larvae of the midge taxa *Chironomus riparius* group and *Polypedilum (P.) illinoense* had mouth part deformities, usually only found at highly degraded sites. Field observations (14 September) noted that the stream substrates were covered with “sewage bacteria” and solids. Macroinvertebrate community performance in Owl Creek was very poor and was indicative of highly toxic instream conditions.

Bear Creek

Macroinvertebrate communities were evaluated at five stations on Bear Creek to assess any impact from the New Lebanon WWTP (RM 10.43). Community performance at the station upstream from the WWTP (RM 12.1) was meeting the WWH biological criterion with an ICI score of 38 (good). However, coarse stream bed substrates were highly embedded, which was an indication of excessive siltation at this station. Downstream from the New Lebanon WWTP, EPT taxa diversity declined below WWH expectations (6 taxa compared to 9 at RM 12.1) and the community was predominated by pollution intermediate forms. The decline in EPT taxa indicated an impact from the WWTP. Further downstream, the community recovered into the very good or exceptional range characterized by EPT taxa diversity totaling from 14 at RM 5.2 and 18 at RM 2.1.

Elk Creek

The macroinvertebrate community in Elk Creek at RM 3.7 was performing at an exceptional level with an ICI score of 52. However, large amounts of attached filamentous green algae in the stream channel indicated mild nutrient enrichment at this station.

Dry Run

Dry Run is a small stream with a drainage area of 5.8 mi^2 at its confluence point with Elk Creek at RM 3.59. Macroinvertebrate community performance was fair at RM 0.1 where five mayfly and caddisfly taxa were found and heptagenniid mayflies were noted as predominant. Stream flow was very low at the time of collection (11 September) with only a trickle of water flowing through riffle habitats. These very low flow conditions and the associated stresses were probably the primary causes of the below expected community performance.

Mound Overflow Creek

The “Mound Overflow Creek” is a small stream (3.1 mi^2 drainage area at RM 0.2) which confluences with the Great Miami River at RM 65.1 and receives an overflow discharge from the U.S. DOE Mound facility. Macroinvertebrate community performance was fair at RM 0.2; 26 taxa were collected by qualitative methods including, three EPT taxa (all hydropsychid caddisflies) and low organism density. The predominant organisms were hydropsychid caddisflies and midges. There were no obvious signs of pollution, other than the low diversity. The contribution of the Mound overflow discharge to this lower than expected diversity was unclear.

Dicks Creek

Macroinvertebrate communities in Dicks Creek were severely impacted by the various AK Steel discharges (Figure 66). Dicks Creek is typically dry upstream from the confluence of the North Branch Dicks Creek during low flow conditions. A concrete company located upstream from the confluence of the North Branch was dumping concrete and what looked like lime into the stream bed. No living organisms were found in this area except near the confluence with the North Branch where water from the North Branch backs up into Dicks Creek. Community performance at this station was very poor. Macroinvertebrate communities throughout Dicks Creek exhibited low diversity and extremely high abundances of toxic tolerant organisms (57.9% of organisms collected at RM 0.2 to 89.5% at RM 2.6). The most numerous taxa in Dicks Creek were the midges *Polypedilum (P.) illinoense* and *Cricotopus (C.) bicintus* and aquatic segmented worms (Oligochaeta). These taxa have demonstrated tolerance to toxic instream conditions. The poor community performance exhibited by the macroinvertebrates in Dicks Creek from RMs 4.7 to 2.6 was attributed to toxic instream conditions created by AK Steel discharges. Community performance improved into the fair range at the two downstream stations due primarily to modest increases in diversity. However, the percent predominance of tolerant organisms remained highly elevated at these downstream stations.

North Branch Dicks Creek

The North Branch Dicks Creek is a small (7.2 mi^2 drainage area), channelized stream flowing in the vicinity of the AK Steel facility. Macroinvertebrate community performance was poor (ICI=8 at RM 1.0) upstream from the AK Steel 004 discharge (RM 0.22). Aquatic segmented worms (Oligochaeta) and flatworms (Turbellaria) were the most common organisms collected from the artificial substrates with only two total EPT taxa present. This station appeared impacted by enrichment and urban runoff. Large amounts of algae growth noted at this site may have promoted low D.O. concentrations at night. Community performance downstream from the

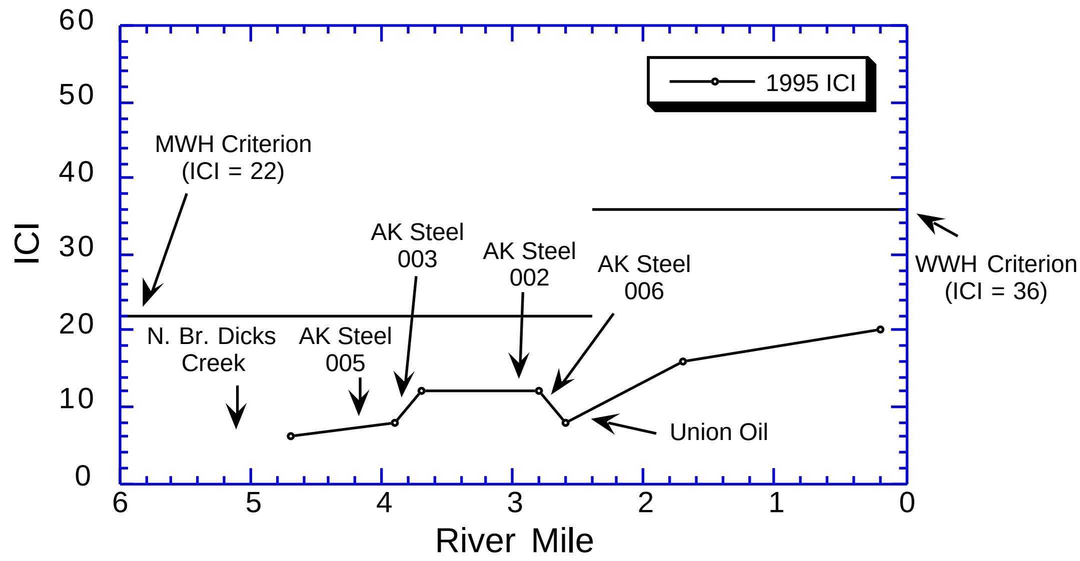


Figure 66. Longitudinal performance of the Invertebrate Community Index (ICI) in Dicks Creek, 1995.

AK Steel 004 discharge declined further into the very poor range with only 13 total taxa and no EPT taxa collected at RM 0.03. Midges were noted as the predominant taxa and overall density was low. This community response indicated toxic instream conditions downstream from the AK Steel 004 discharge.

Paddys Run

Macroinvertebrate communities were sampled in Paddys Run at RMs 4.9 and 3.3 to evaluate the FEMP 006 stormwater outfall from the U.S. DOE Fernald facility. Community performance at the upstream station was fair (ICI=28) due to lower than expected diversity and high percent predominance of non-Tanytarsini dipterans and non-insects. Qualitative sampling from the natural substrates noted a predominance of the caddisfly species *Helicopsche borealis* and genus *Chimarra*. However, densities were noted as low and the EPT diversity (6) was lower than expected. The artificial substrates ended up in less than optimal current speed (at 0.05 fps) due to low stream flow conditions, which may have contributed to the low ICI score. However, in small reference streams similar to Paddys Run, ICI scores typically equal or exceed the WWH criterion expectations even under slow current conditions. This upstream station may be mildly impacted by nonpoint sources in addition to low flow conditions. Downstream from the waste pit tributary, the macroinvertebrate community improved into the very good range (ICI=42).

There was no discernible impact from the U.S. DOE Fernald facility waste pit drainage. Paddys Run was not sampled farther downstream due to a lack of water in the stream channel.

Whitewater River

Macroinvertebrates were sampled at four stations on the Whitewater River to evaluate the Harrison WWTP (RM 7.6). Community performance was exceptional at all stations with ICI scores ranging from 52 to 56. There was no discernible impact from the Harrison WWTP. A rarely collected mayfly of the genus *Rhithrogena* was collected at the Suspension Bridge (RM 1.5). The Whitewater River is the only stream in Ohio where this taxa has been collected by the Ohio EPA.

Table 7. Summary of macroinvertebrate data collected from artificial substrates (quantitative sampling) and natural substrates (qualitative sampling) in the Great Miami River study area, July to October 1995.

			Quantitative Evaluation				
Stream River Mile	Density (/ft^2)	Quant. Taxa	Qual. Taxa	Qual. EPT[a]	Total EPT[a]	ICI	Evaluation[b]
Great Miami River (ECBP; EWH recommended)							
87.7	–	–	51	17	–	–	Exceptional
85.9	3319	29	52	14	15	46	Exceptional
(ECBP, WWH existing)							
82.0	2091	35	50	16	18	42	Very Good
80.7	3747	33	40	11	16	38	Good
80.0A	2128	47	44	15	20	52	Exceptional
80.0B	2504	49	43	12	21	38	Good
76.4A	1727	47	58	19	22	56	Exceptional
76.4B	1781	36	58	16	21	44	Very Good
76.0[c]	*1381*	*41*	*36*	*13*	*19*	*42*	*Very Good*
75.7	1770	43	36	13	19	42	Very Good
72.4	4078	36	52	16	18	50	Exceptional
72.3A[c]	–	–	*41*	*16*	–	–	*Very Good*
72.3B[c]	–	–	*42*	*11*	–	–	*Fair*
71.7	1780	37	46	14	17	38	Good
71.45A[c]	–	–	*33*	*13*	–	–	*Good*
71.45B[c]	–	–	*41*	*14*	–	–	*Good*
70.5	2284	36	43	15	22	46	Exceptional
69.3	2380	39	35	11	20	48	Exceptional
69.2A[c]	–	–	*33*	*14*	–	–	*Good*
69.2B[c]	–	–	*47*	*17*	–	–	*Very Good*
68.8	2640	37	45	14	15	44	Very Good
66.9	2498	31	50	17	23	46	Exceptional
64.35A[c]	–	–	*34*	*15*	–	–	*Very Good*
64.35B[c]	–	–	*32*	*13*	–	–	*Good*
64.3	3595	33	46	16	21	50	Exceptional
64.1	3815	35	52	19	23	52	Exceptional
62.6	–	–	39	14	–	–	Good
60.2	2887	28	34	14	20	44	Very Good

Table 7. (continued).

			Quantitative Evaluation				
Stream River Mile	Density (/ft^2)	Quant. Taxa	Qual. Taxa	Qual. EPT[a]	Total EPT[a]	ICI	Evaluation[b]
Great Miami River (continued)							
59.65A[c]	–	–	*39*	*14*	–	–	*Good*
59.65B[c]	–	–	*32*	*10*	–	–	*Good*
59.1	2566	29	49	13	20	48	Exceptional
58.3	3496	32	38	15	22	48	Exceptional
55.0	3603	24	46	17	19	46	Exceptional
51.5	7488	31	32	14	18	44	Very Good
51.4[c]	*109*	*11*	*7*	*2*	*2*	*8*	*Poor*
51.3	383	39	31	12	17	38	Good
50.9	1638	33	38	14	22	38	Good
49.3	3390	39	35	13	21	40	Good
48.2A[c]	–	–	*40*	*11*	–	–	*Good*
48.2B[c]	–	–	*36*	*12*	–	–	*Good*
47.7	1622	37	39	14	21	44	Very Good
47.5	838	53	50	16	22	40	Good
45.65A[c]	–	–	*35*	*12*	–	–	*Marginally Good*
45.65B[c]	–	–	*40*	*12*	–	–	*Marginally Good*
45.5	1054	41	48	18	21	44	Very Good
43.3	827	36	43	17	20	40	Good
38.5	1819	36	43	14	21	42	Very Good
38.2	1101	39	35	13	17	40	Good
37.0	2405	38	39	16	22	46	Exceptional
34.3	4498	37	51	15	23	44	Very Good
33.6	2024	40	37	16	22	42	Very Good
31.6[c]	–	–	*35*	*14*	–	–	*Marginally Good*
29.9	4879	35	51	16	22	46	Exceptional
27.1	2223	32	45	14	19	46	Exceptional
(IP; WWH existing)							
24.7[c]	–	–	*34*	*13*	–	–	*Good*
22.5	6054	31	38	16	22	42	Very Good
17.9	6155	25	34	14	18	42	Very Good
14.8	5310	24	32	14	16	42	Very Good

Table 7. (continued).

			Quantitative Evaluation				
Stream River Mile	Density (/ft^2)	Quant. Taxa	Qual. Taxa	Qual. EPT[a]	Total EPT[a]	ICI	Evaluation[b]
Great Miami River (continued)							
9.5	19563	30	36	15	20	44	Very Good
8.4	3742	28	33	11	17	38	Good
5.7	2414	34	40	15	19	42	Very Good
Bear Creek (ECBP; WWH existing)							
12.1	223	33	41	9	9	38	Good
Elk Creek (ECBP; EWH existing)							
3.7	828	49	44	13	18	52	Exceptional
Dicks Creek (ECBP; MWH existing)							
5.2	–	–	7	1	–	–	Very Poor
4.7	61	17	24	4	4	<u>6</u>*	Poor
4.1	–	–	31	4	–	–	Poor
3.9	258	19	15	1	3	<u>8</u>*	Poor
3.7	391	19	19	0	3	<u>12</u>*	Poor
2.8	1291	22	27	4	4	<u>12</u>*	Poor
2.6	1880	23	29	3	5	<u>8</u>*	Poor
(ECBP; WWH existing)							
1.7	373	26	36	7	7	16*	Fair
0.2	329	28	30	5	6	20*	Fair
N. Br. Dicks Creek (ECBP; MWH existing)							
1.0	679	19	16	1	2	<u>8</u>*	Poor
0.03	–	–	13	0	–	–	Very Poor
Paddys Run (IP; WWH existing)							
4.9	158	24	36	6	8	28[ns]	Marginally Good
3.3	489	36	49	13	15	42	Very Good

Table 7. (continued).

			Quantitative Evaluation				
Stream River Mile	Density (/ft^2)	Quant. Taxa	Qual. Taxa	Qual. EPT[a]	Total EPT[a]	ICI	Evaluation[b]
Whitewater River (IP; WWH existing)							
8.1	1906	37	65	18	21	52	Exceptional
7.0	1822	46	39	15	24	52	Exceptional
3.8	1326	41	57	18	22	52	Exceptional
1.5	835	39	61	17	23	56	Exceptional

Table 7. (continued).

		Qualitative Evaluation			
Stream River Mile	No. Qual. Taxa	Qual. EPT[a]	Relative Density	Predominant Organisms	Narrative Evaluation
Great Miami River (ECBP; EWH, recommended)					
87.7	51	17	Moderate	Hydropsychid caddisflies, mayflies	Exceptional
(ECBP, WWH, existing)					
72.3A[c]	41	16	Moderate	Hydropsychid caddisflies, riffle beetles	Very Good
72.3B[c]	42	11	Mod.-High	Midges	Fair
71.45A[c]	33	13	Low	Heptageniid mayflies, riffle beetles	Good
71.45B[c]	41	14	Low-Mod.	Midges, heptageniid mayflies	Good
69.2A[c]	33	14	Low-Mod.	Heptageniid mayflies	Good
69.2B[c]	47	17	Low-Mod.	Heptageniid mayflies	Very Good
64.35A[c]	34	15	Moderate	Heptageniid mayflies, midges	Very Good
64.35B[c]	32	13	Low-Mod.	Heptageniid mayflies, midges	Good
62.6	39	14	Mod.-High	Hydropsychid caddisflies, midges	Good
59.65A[c]	39	14	Moderate	Hydropsychid caddisflies, mayflies, midges	Good
59.65B[c]	32	10	Moderate	Hydropsychid caddisflies, mayflies, midges	Good
48.2A[c]	40	11	Moderate	Hydropsychid caddisflies, mayflies, midges	Good
48.2B[c]	36	12	Mod.-Low	Midges, caddisflies, heptageniid mayflies	Good
45.65A[c]	35	12	Low	Midges, mayflies	Marg. Good
45.65B[c]	40	12	Low	Midges, river snails	Marg. Good
31.6[c]	35	14	Low-Mod.	Aquatic segmented worms, red midges	Marg. Good
24.7[c]	34	13	Moderate	Mayflies, fingernail clams	Good

Table 7. (continued).

			Qualitative Evaluation		
Stream River Mile	No. Qual. Taxa	Qual. EPT[a]	Relative Density	Predominant Organisms	Narrative Evaluation
Wolf Creek (ECBP; WWH existing)					
16.6	35	6	Moderate	Hydropsychid caddisflies, planorbid snails, tanytarsini midges	Marg. Good
15.0	27	2	Mod.-High	Midges	Poor
14.9	18	0	Mod.-High	Midges, blackflies, aquatic segmented worms	Poor
10.4	34	6	Low-Mod.	Caddisflies, midges	Fair
6.1	32	7	Mod.-High	Caddisflies, tanytarsini midges	Fair
0.1	43	10	Mod.-High	Midges	Marg. Good
Holes Creek (ECBP; WWH existing)					
5.6	14	4	Mod.-High	River snails, fingernail clams	Marg. Fair
4.3	22	7	Moderate	Hydropsychid caddisflies, water pennies, riffle beetles	Marg. Good
0.6	21	6	Low-Mod.	Hydropsychid caddisflies, water pennies, riffle beetles	Fair
Owl Creek (ECBP; LRW existing)					
0.1	8	0	Low	Pond snails	Very Poor
Bear Creek (ECBP; WWH existing)					
12.1	41	9	Moderate	Midges, water pennies, caddisflies	Good
9.9	47	6	Moderate	Water pennies, riffle beetles, tanytarsini midges	Fair
5.2	50	14	High	Hydropsychid caddisflies, water pennies, midges	Very Good

Table 7. (continued).

			Qualitative Evaluation		
Stream River Mile	No. Qual. Taxa	Qual. EPT[a]	Relative Density	Predominant Organisms	Narrative Evaluation
Bear Creek (continued)					
2.1	45	18	Mod.-High	Caddisflies, mayflies, water pennies	Exceptional
0.2	52	16	Moderate	Midges, mayflies	Very Good
Mound Overflow Creek (ECBP; MWH recommended)					
0.5	26	3	Low	Hydropsychid caddisflies, midges	Fair
Dry Run (Trib. to Elk Creek; ECBP; no existing use designation)					
0.1	22	5	Low-Mod.	Heptageniid mayflies	Fair
Dicks Creek (ECBP; MWH existing)					
5.2	7	1	Very Low	None	Very Poor
4.1	31	4	High	Midges	Poor
N. Br. Dicks Creek (ECBP; MWH existing)					
1.0	16	1	High	Flatworms	Poor
0.03	13	0	Low	Midges	Very Poor

Table 7. (continued).

Ecoregion Biocriteria: Invertebrate Community Index (ICI)
(from OAC 3745-1-07, Table 7-14)

	WWH	EWH	MWH
Eastern Corn Belt Plains (ECBP)	36	46	22
Interior Plateau (IP)	30	46	22

[a] EPT = total Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies) taxa richness.
[b] A qualitative narrative evaluation based on sample attributes such as total taxa richness and EPT richness is used when quantitative data is not available to calculate the Invertebrate Community Index (ICI) scores.
[c] Mixing zone sampling location.
* Significant departure from ecoregion biocriterion (>4 ICI units); poor and very poor results are underlined.
[ns] Nonsignificant departure from biocriterion (≤4 ICI units).

Fish Assemblages (Figures 67-70, Tables 8)

Great Miami River (14-001)

A total of 29,499 fish, comprising 79 species and 10 hybrids, were collected from the middle and lower Great Miami River mainstem between August 22 and October 19, 1995. The sampling effort included 67 stations located between RMs 87.3 and 1.8. The catch included the blue sucker *(Cycleptus elongatus)* which is a state endangered species (ODNR 1992). Numerically predominant fish species were: golden redhorse (13.2%), gizzard shad (13.1%), spotfin shiner (12.3%), shorthead redhorse (9.2%), common carp (7.2%), and longear sunfish (4.7%). Species that predominated in terms of biomass include: common carp (37.7%), golden redhorse (11.0%), channel catfish (9.0%), and shorthead redhorse (8.5%).

Middle Great Miami River (Dayton to Middletown)

The fish community was evaluated at 35 stations between Dayton and Middletown (RM 87.1 to 55.0) using the standard boat electrofishing methodology (Ohio EPA 1987b, 1989a). The MIwb and the IBI were used to evaluate the condition of the fish assemblage. Excluding mixing zones, community indices and narrative evaluations ranged between exceptional (MIwb=9.9 and IBI=52) at RM 80.7 and fair (MIwb=32 and IBI=7.9) in the West Carrollton Dam pool at RM 74.8 (Figure 67). The fish assemblage of the middle Great Miami River can be classified as exceptional to good in the free flowing sections and marginally good to fair in the impounded segments.

The segment from Dayton to Middletown was in full attainment of the WWH use designation at all of the free-flowing sites with the exception of the station downstream of Owl Creek (RM 69.3). Most of the impounded segments were in partial or non attainment of the WWH. The impounded segments could not support WWH biological communities due in part to habitat impacts caused by the dams, but also by the exacerbation of chemical impacts (principally nutrient enrichment and marginal D.O. levels) associated with the many WWTPs and other discharges of organic wastes. Fish communities within the dam pools exhibited high levels of DELT anomalies also indicative of sublethal chemical stresses (Figure 70). In terms of numerical abundance, the majority of the species encountered in the middle Great Miami River were classified as being moderately intolerant of physical habitat and water quality degradation (e.g., shorthead redhorse, golden redhorse, smallmouth bass) (Ohio EPA 1987).

Middle and Lower Great Miami River (Middletown to Hamilton)

The fish communities were evaluated at 15 stations between Middletown and Hamilton (RM 52.4 to RM 36.9). Excluding mixing zones, community indices and narrative evaluations ranged between exceptional (IBI=48, MIwb=9.1) at RM 36.9 and fair (IBI=33, MIwb= 7.5) at RM 51.3 (downstream of AK Steel) (Figure 68). The fish assemblage of the lower Great Miami River can be classified as marginally good to fair. Most of the stations were in partial attainment of the

WWH use designation due primarily to fish community impairment. While an improvement from 1980 and 1989, the fish scores indicate that full recovery is not yet complete. Several factors affecting the fish community include the WWTPs (Middletown, Butler County LeSourdsville) and industrial dischargers (AK Steel), historically contaminated sediments, numerous Middletown CSOs, and habitat modifications including impoundments, channelization, and riparian removal.

Lower Great Miami River (Hamilton to the Ohio River)

The fish communities were evaluated at 20 stations between Hamilton and the Ohio River (RMs 34.6 - 1.8). Excluding mixing zones, community indices and narrative evaluations ranged between exceptional (IBI=50, MIwb=10.5) at RM 34.2 and fair (IBI=30, MIwb=8.1) at RM 3.9 (Ohio River backwaters) (Figure 70). The fish assemblage of the lower Great Miami River can be classified as very good to fair. Most of the stations were in partial attainment of the WWH use designation due primarily to fish community impairment. While an improvement from 1980 and 1989, the fish scores indicate that full recovery is not yet complete. Several factors affecting the fish community include point source dischargers (Fairfield WWTP, Hamilton WWTP, DOE Fernald), Hamilton CSOs, and several impoundments.

Wolf Creek (14-037)

Fish communities in Wolf Creek were evaluated at six locations to assess the impact of the Brookville WWTP and nonpoint sources such as stormwater runoff and urban runoff (Table 8). The fish communities did not meet WWH criterion upstream of the Brookville WWTP (RM 16.7 and 15.0), but attained at all four sites downstream of the discharge (RM 14.9, 10.4, 6.1, and 0.2). Marginal habitat quality and urban runoff upstream of the WWTP are the most likely causes of fish community impairment. While the Brookville WWTP did not impact the fish community, poor macroinvertebrate communities were found upstream and downstream from the discharge.

Dry Run (14-038)

Dry Run, a headwater tributary to Wolf Creek, was evaluated upstream of the mouth at RM 0.2. An IBI score of 50 was indicative of an exceptional headwater fish community.

Holes Creek (14-036)

Two stations were sampled in Holes Creek at McEwen Road (RM 4.3) and SR 741 (RM 0.6). The upstream site at McEwen Road was in full attainment of the WWH criterion with a headwater narrative of good (IBI=42), however the downstream site did not meet the wading criterion (IBI=30). Both sites had similar species compositions however the upstream site, which has a drainage area less than 20 mi^2, was scored with the more lenient headwater criteria. The QHEI score of the upstream station indicated that the physical habitat was capable of supporting a WWH community with coarse substrates, good to fair development, no channelization, deep pools, and high stability. The habitat quality at the downstream station was fair with soft substrates comprised of sand and gravel, sparse cover, and low stability.

Owl Creek (14-089)

Owl Creek was sampled downstream of Central Avenue at RM 0.15. The QHEI scored 69.0 indicating good quality habitat with coarse substrates, good pool-riffle-run development, moderate cover, and deep pools. An IBI score of 36 (nonsignificant departure from ecoregional biocriteria for WWH) was indicative of a marginally good fish community. The macroinvertebrate community was significantly impacted by the two paper companies (Fraser Paper and West Carrollton Parchment) located upstream with narrative scores of very poor. Owl Creek is currently designated as a Limited Resource Water, however IBI and QHEI scores indicate the ability to support a WWH community. Owl Creek is a small headwater stream with a drainage area of 3.8mi^2. The two paper mills that discharge to Owl Creek significantly increase the natural flow and is most likely responsible for inflating the IBI scores. Future monitoring is recommended upstream of the paper companies to assess if the sections with more natural flows are capable of supporting WWH communities.

Bear Creek (14-029)

Bear Creek was evaluated at six locations to assess the impact of the New Lebanon WWTP (RM 10.43). Fish communities were in the exceptional range upstream and downstream from the discharge (RM 12.1 and 9.9). Community scores declined slightly downstream at RM 5.2 and 2.1 ranging from good to marginally good but were still in full attainment of the WWH criterion. The station located upstream from the mouth (RM 0.1) demonstrated an impaired fish community due to marginal habitat quality (QHEI = 46).

Elk Creek (14-022)

A total of 23 fish species were collected from Elk Creek in July, 1995. The fish community (sampled at Elk Creek Road) was indicative of very good quality and fully support the EWH criterion. The exceptional habitat quality (QHEI = 84) was fundamental in supporting a diverse and well organized fish assemblage with environmentally sensitive taxa well represented.

Dicks Creek (14-018)

The fish community performed in the good range downstream from the North Branch of Dicks Creek (IBI = 43 at RM 5.0; IBI = 41 at RM 4.4) which easily met the MWH biocriteria. On July 26, 1995 a spill of flushing liquor occurred from outfall 003 resulting in a massive fish kill extending to the confluence with the Great Miami River (RM 3.8 to 0.0). Sampling prior to the spill showed an impairment of the MWH use designation downstream from the 003 and 015 outfalls at RM 3.0 for both the fish (IBI = 30; MIwb = 5.8) and macroinvertebrates (ICI = 12).

Sampling after the spill showed a much more degraded fish community (IBI = 22) and similar ICI scores (12). Prior to the 003 outfall spill, sampling downstream of the 002 outfall (RM 2.6) resulted in attainment of the MWH biocriteria for the fish community (IBI = 30; MIwb =5.8), but a severe impairment following the spill (IBI = 14; MIwb = 4.1). The lowest possible IBI score (12) occurred downstream from the spill at RM 2.4 and 0.4. Prior to the spill, 22 species (174 fish) were collected at RM 0.4, but afterwards only 2 species (3 individual fish) were observed.

North Branch Dicks Creek (14-019)

The North Branch of Dicks Creek is a small, channelized tributary to Dicks Creek with a drainage area of 7.2mi^2. Two sites were sampled in the North Branch upstream and downstream from the AK Steel 004 outfall. Both sites were in non attainment of the MWH use designation due to very poor macroinvertebrate ICI scores (ICI = 8). The 1995 fish community results in the North Branch both upstream (RM1.0) and downstream (RM 0.1) from the AK Steel 004 outfall were indicative of very good quality (IBI = 45 at RM 1.0; IBI = 48 at RM 0.1). This section of the stream is a deep channelized ditch not typical of a headwater stream. As a result the IBI seems to be arificially inflated.

Mound Overflow Creek (14-141)

The Mound Overflow Creek is a small headwater stream (approximately 0.4 miles long) with the lower 0.1 mile impounded by the Great Miami River. The flow is comprised partly of effluent from the Mound 002 outfall. The use designation of Mound Overflow Creek is currently unlisted but the artificial habitat conditions (channelization, stream flow partly influenced by the Mound 002 outfall, impounded) indicates that the appropriate use designation should be MWH. The fish community (evaluated upstream from the mouth at RM 0.2) performed in the fair range, and was representative of modfied stream habitat conditions..

Paddys Run(15-005)

Fish communities in Paddys Run were sampled at four locations using the wading method pulsed DC electrofishing gear. The fish communities in the two most upstream Paddys Run locations (RMs 4.7 and 3.3) were in the good to very good range, with IBI scores (44 and 49) achieving the WWH ecoregional biocriterion. No apparent negative influences were noted in the fish community at RM 3.3, an area immediately downstream from the FEMP 006 stormwater outfall. The two downstream sites in Paddys Run (RMs 2.8 and 0.2) are located in an area which loses stream flow to the underlying Great Miami Aquifer. This loss of flow is due to Paddys Runs highly permeable channel bottom which is eroded into the Great Miami Aquifer. The high permeability results in the lower three miles of Paddys Run going intermittent or completely dry during summer low flow periods. During 1995, Paddys Run at RM 2.8 had minimum flow during August, went completely dry in September and was flowing again in October. The isolated pool observed at RM 0.2 in Paddys Run during the August sampling event was nearly gone during the October sampling visit; however, this site remained wet due to ground water influences.

An attempt was made to sample fish communities in Paddys Run at two locations (RM 2.8 and 0.2) in the Great Miami Aquifer area, with RM 2.8 influenced by the FEMP pilot plant drainage ditch and RM 0.2 influenced by the storm sewer outfall ditch Sampling was conducted at RM 0.2 only once during 1995, and was restricted to a 70 meter pool due to intermittent flow. The IBI at RM 0.2 was 26, indicative of poor conditions. Fish sampling results from RM 2.8 revealed a community reflective of marginally good conditions during the August sampling event. The IBI scored a 38, within the non-significant departure range of the WWH biocriterion. Sampling in October yielded no fish. Between the August and October sampling, Paddys Run in the vicinity of RM 2.8 went completely dry, causing a severe impact on the fish populations.

Based on the 1995 fish community study of Paddys Run, impacts to biological condition attributable to the FEMP site were not evident. Stream desiccation was the overriding influence on fish community degradation.

Whitewater River (14-300)

Fish communities in the Whitewater River were evaluated at four sites to assess the impact of the Harrison WWTP. A total of 47 species of fish were collected from RMs 7.7 to 0.8 including one state endangered species (northern madtom) and numerous sensitive species intolerant of pollution. All four fish sampling locations from the Whitewater River were in full attainment of the EWH criterion with narrative evaluations of exceptional.

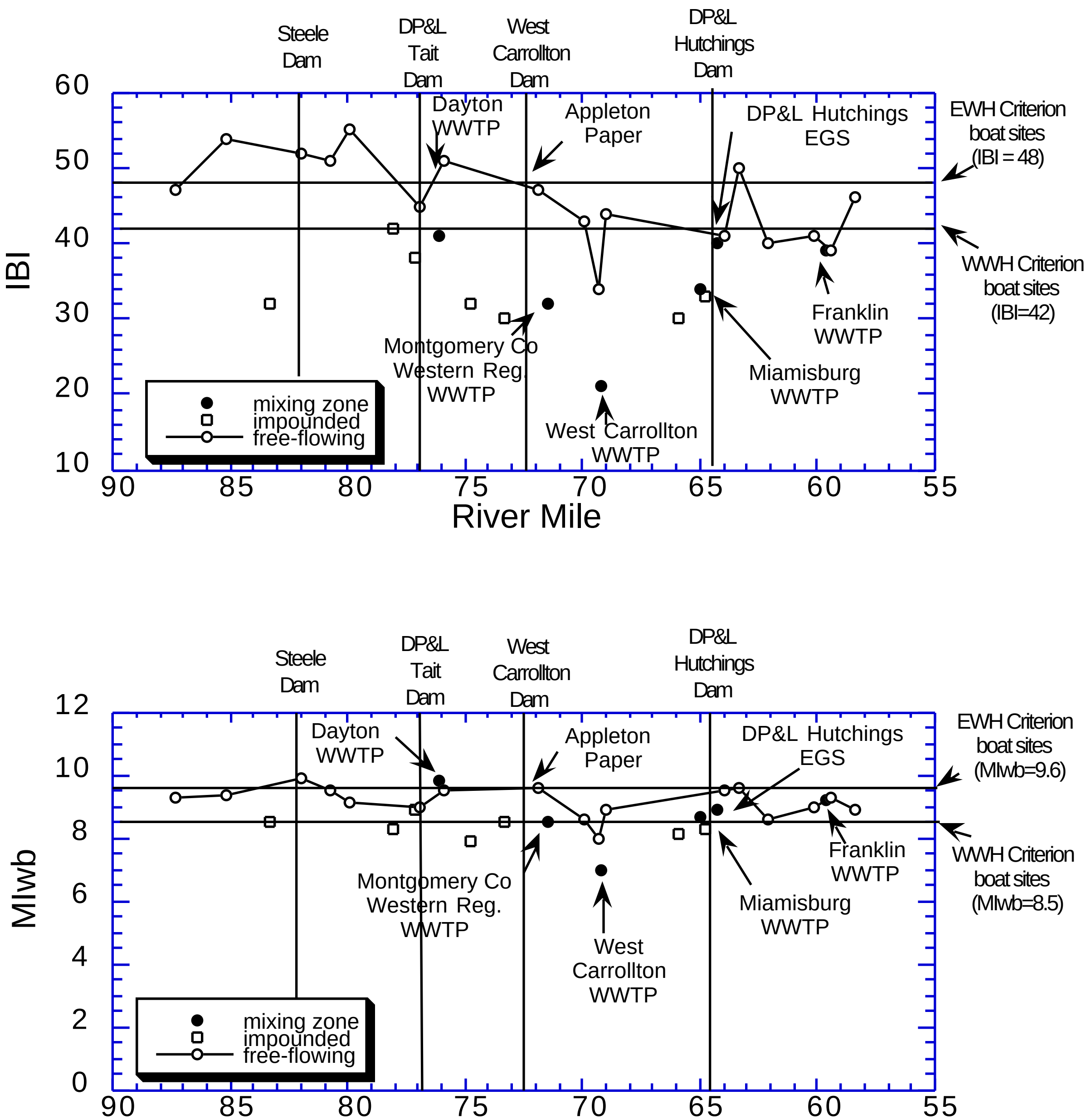
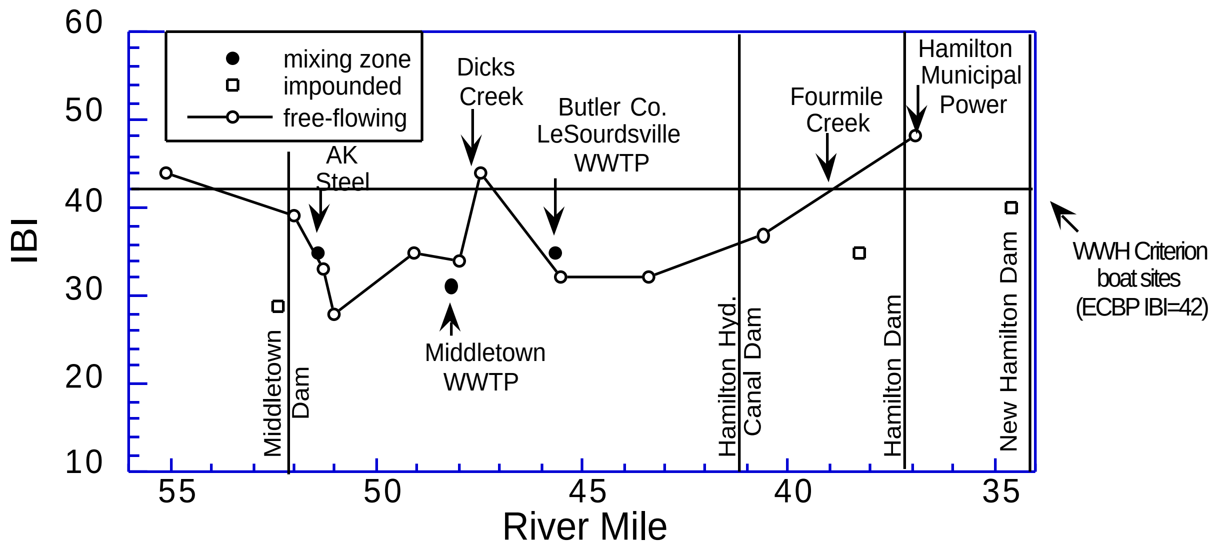


Figure 67. Longitudinal performance of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the Middle Great Miami River (RM 90-55).



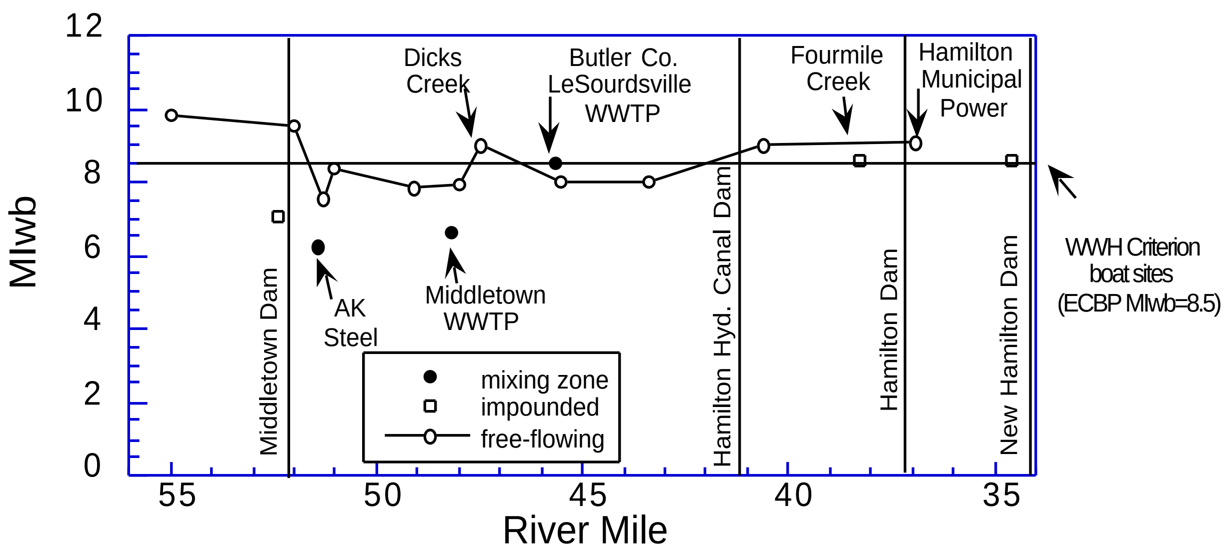
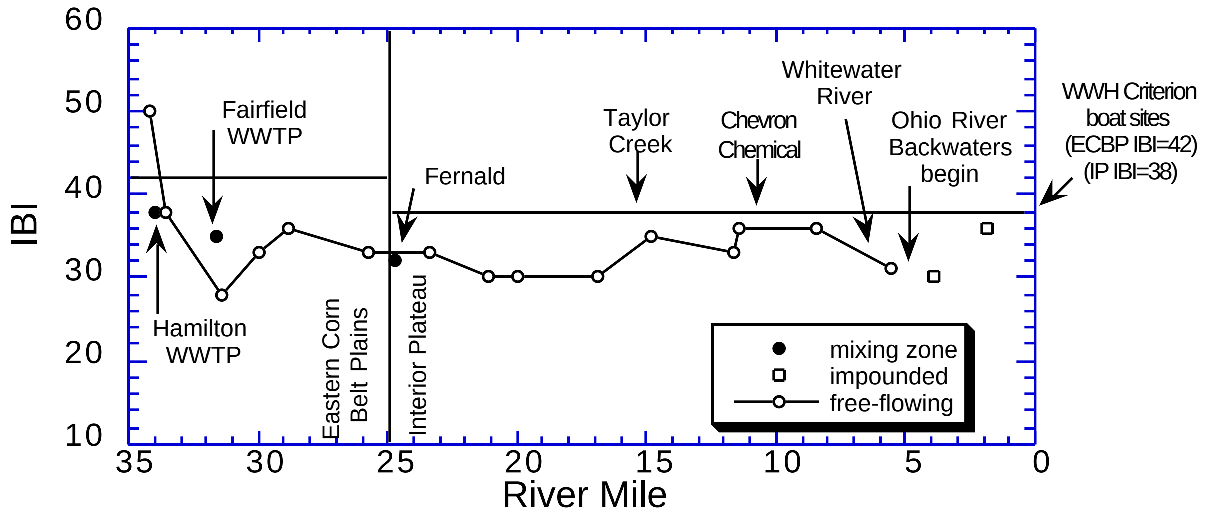


Figure 68 Longitudinal performance of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the Middle and Lower Great Miami River (RM 55.0-35.0)



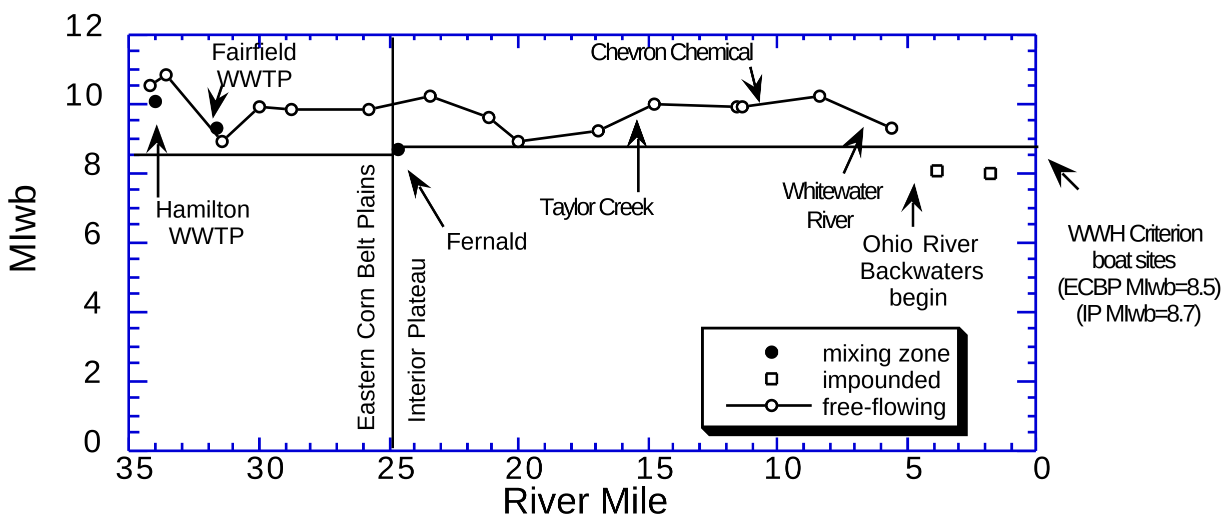


Figure 69 Longitudinal performance of theIndex of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the Lower Great Miami River (RM 35.0-0.0).

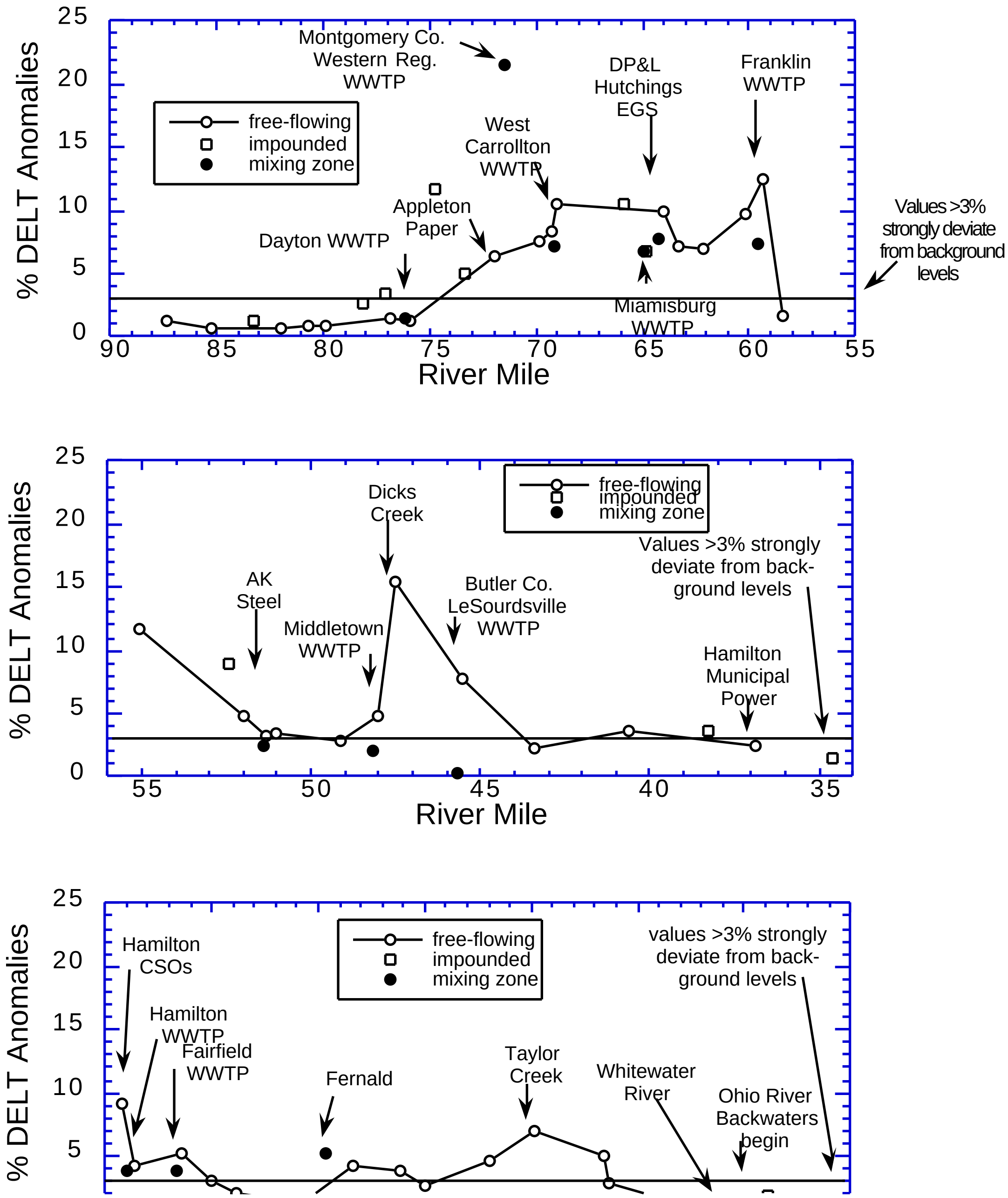


Figure 70 Longitudinal plots of the mean percentage of fish with DELT (deformities, eroded fins, lesions, and tumors) external anomalies in the Middle and Lower Great Miami River during 1995.

Table 8. Fish community summaries for 84 locations in the Great Miami River study area based on pulsed D.C. electrofishing catches during June through October, 1995. The number of samples collected at each location is listed with the sampling method. Relative number and weight are per km for boat sites and 0.3 km for wading sites. Mixing zone samples are denoted by italics.

Stream RM	Sampling Method	Mean # Species	Total # Species	Mean Relative Number	Mean Relative Wt. (kg)	Mean IBI	Mean Miwb	QHEI	Narrative Evaluation
Middle Great Miami River									
		***Eastern Corn Belt Plains - EWH Use Designation** (Recommended)*							
87.3	Boat-2	17.0	22	398	119.6	47^{ns}	9.3^{ns}	84.5	V. Good
85.2	Boat-2	19.5	22	500	97.8	54	9.4^{ns}	82.5	Except.-V.Good
		Eastern Corn Belt Plains - WWH Use Designation (Existing)							
83.3M	Boat-2	17.5	21	403	104.3	32*	8.5	44.0	Fair-Good
82.0	Boat-2	27.0	33	895	106.4	52	9.9	66.0	Exceptional
80.7R	Boat-2	26.5	34	916	153.2	51	9.5	74.0	Except.-V.Good
79.9	Boat-2	21.0	28	671	128.7	55	9.1	71.5	Except.-V.Good
78.1	Boat-2	15.5	20	339	59.0	42	8.3^{ns}	42.5	Good-M.Good
77.1M	Boat-2	16.5	22	473	85.4	38^{ns}	8.9	44.0	M.Good-Good
76.9	Boat-2	21.5	27	715	145.5	45	9.0	75.0	V.Good-Good
76.10	Boat-2	*17.5*	*23*	*1,765*	*351.9*	*41*	*9.8*	*71.0*	*Good-Exceptional*
75.9	Boat-2	20.5	24	639	136.0	51	9.5	74.0	Except.-V.Good
74.8	Boat-2	18.5	22	428	239.0	32*	7.9*	64.0	Fair
73.3	Boat-2	17.5	20	421	116.8	30*	8.5	62.0	Fair-Good
71.6	Boat-2	21.0	29	721	214.1	47	9.6	85.5	V.Good-Except.
71.45	Boat-2	*10.5*	*15*	*590*	*264.8*	*32*	*8.5*	*73.5*	*Fair-Good*
69.9	Boat-2	15.0	20	325	116.0	43	8.6	81.0	Good
69.3	Boat-2	13.5	17	226	116.2	34*	8.0^{ns}	77.0	Fair-M.Good
69.20	Boat-2	*8.5*	*12*	*345*	*167.8*	*21*	*7.0*	*69.0*	*Poor-Fair*
69.0	Boat-2	22.0	28	458	210.7	44	8.9	82.5	Good
65.9	Boat-2	18.0	20	300	165.5	30*	8.1^{ns}	57.0	Fair-M.Good
65.0	Boat-2	*13.0*	*15*	*700*	*161.2*	*35*	*8.7*	*46.5*	*Fair-Good*
64.8	Boat-2	18.5	22	375	112.8	33*	8.3^{ns}	46.0	Fair-M.Good
64.3	Boat-2	*14.0*	*19*	*545*	*116.4*	*40*	*8.9*	*60.5*	*M.G.-Good*
64.0	Boat-2	22.0	29	675	325.4	41^{ns}	9.5	85.5	M.Good-V.Good
63.3	Boat-2	17.5	20	663	264.3	50	9.6	81.0	Exceptional
62.1	Boat-2	18.0	22	350	160.0	40^{ns}	8.6	83.5	M.Good-Good
60.2	Boat-2	16.5	18	314	119.7	41^{ns}	9.0	69.0	M.Good-Except.
59.65	Boat-2	*14.0*	*16*	*745*	*147.4*	*39*	*9.2*	*85.5*	*M.Good-V.Good*
59.4	Boat-2	18.5	22	360	181.1	39^{ns}	9.3	80.0	*M.Good-V.Good*
58.4	Boat-1	19.0	19	370	103.2	46	8.9	88.0	V.Good-Good
55.1	Boat-2	20.5	25	596	214.3	44	9.8	83.0	Good-Exceptional

Table 8. Continued.

Stream RM	Sampling Method	Mean # Species	Total # Species	Mean Relative Number	Mean Relative Wt. (kg)	Mean IBI	Mean Miwb	QHEI	Narrative Evaluation
Lower Great Miami River									
52.4	Boat-2	16.5	19	325	218.1	29*	7.1*	56.5	Fair
52.0	Boat-2	24.5	30	849	173.8	39^{ns}	9.5	78.5	M.Good-V.Good
51.40	Boat-2	*10.5*	*14*	*800*	*58.17*	*35*	*6.2*	*51.0*	*Fair-Poor*
51.3	Boat-2	17.0	25	425	53.3	33*	7.5*	52.5	Fair
51.0	Boat-2	18.0	21	465	68.8	28*	8.4^{ns}	60.5	Fair-M.Good
49.1	Boat-2	16.5	22	365	109.5	35*	7.8*	75.5	Fair
48.20	Boat-2	*7.0*	*10*	*755*	*128.9*	*31*	*6.6*	*81.5*	*Fair*
48.0	Boat-2	20.0	27	578	133.2	34*	7.9*	73.5	Fair
47.5	Boat-2	22.0	28	474	138.4	44	9.0	86.0	Very Good-Good
45.65	Boat-2	*15.0*	*23*	*1,455*	*21.7*	*36*	*8.5*	*67.5*	*Fair-Good*
45.5	Boat-2	17.5	22	451	111.8	32*	8.0^{ns}	82.5	Fair-M.Good
43.4	Boat-2	21.5	27	759	105.0	32*	8.0^{ns}	83.0	Fair-M.Good
40.6	Boat-2	20.5	27	628	134.0	37*	9.0	84.0	Fair-Good
38.3	Boat-2	19.0	24	439	87.8	35*	8.6	60.5	Fair-Good
36.9	Boat-2	20.0	29	881	189.8	48	9.1	67.5	Except.-V.Good
34.6	Boat-2	20.0	26	694	119.2	40	8.6	45.5	M.Good-Good
34.2	Boat-2	26.0	32	763	241.9	50	10.5	72.5	Exceptional
33.99	Boat-2	*18.5*	*25*	*652*	*169.0*	*38*	*10.1*	*67.5*	*M.Good*-Except.
33.6	Boat-2	26.5	35	644	235.9	38^{ns}	10.8	81.5	M.Good-Except.
31.6	Boat-2	*16.5*	*24*	*520*	*90.5*	*36*	*9.3*	***61.0***	***Fair-V.Good***
31.4	Boat-2	16.5	23	236	122.9	28*	8.9	84.0	Fair-Good
30.0	Boat-2	24.0	28	461	171.6	33*	9.9	76.5	Fair-Exceptional
28.8	Boat-2	21.5	25	291	139.7	37*	9.8	78.5	Fair-Exceptional
25.8	Boat-2	24.5	29	353	139.1	33*	9.8	58.5	Fair-Exceptional
Interior Plateau - WWH Use Designation (Existing)									
24.7	Boat-2	*10.0*	*14*	*190*	*71.9*	*32*	*8.7*	*78.0*	*Fair-Good*
23.4	Boat-2	25.5	35	436	211.0	33*	10.2	84.0	Fair-Exceptional
21.1	Boat-2	22.5	28	328	134.4	30*	9.6	75.5	Fair-Exceptional
20.0	Boat-1	16.0	19	408	81.3	30*	8.9	54.0	Fair-Good
16.9	Boat-2	17.0	22	232	150.6	31*	9.2	74.0	Fair-Very Good
14.8	Boat-2	23.0	28	452	241.4	35^{ns}	10.0	80.0	M.Good-Except.
11.4	Boat-1	22.0	22	624	189.7	36^{ns}	9.9	81.5	M.Good-Except.
8.4	Boat-2	30.0	39	725	154.2	36^{ns}	10.2	79.5	M.Good-Except.
5.6	Boat-2	19.5	26	1,199	264.3	31*	9.3	78.5	Fair-V.Good
3.9	Boat-2	20.5	28	403	165.4	30*	8.1*	46.5	Fair
1.8	Boat-2	18.5	22	627	72.9	36^{ns}	8.0*	57.5	M.Good-Fair
TOTAL			**79**	**563**	**150.7**				

Table 8. Continued.

Stream RM	Sampling Method	Mean # Species	Total # Species	Mean Relative Number	Mean Relative Wt. (kg)	Mean IBI	Mean Miwb	QHEI	Narrative Evaluation
Wolf Creek									
			Eastern Corn Belt Plains - WWH Use Designation (Existing)						
16.7	Wading-1	9	9	733	NA	34*	NA	56.0	Fair
15.0	Wading-1	12	12	957	NA	30*	NA	63.5	Fair
14.9	Wading-1	8	8	1,140	NA	38^{ns}	NA	81.0	M. Good
10.4	Wading-1	16	16	926	NA	44	NA	82.5	Good
6.1	Wading-1	13	13	2,182	37.3	36^{ns}	7.7*	69.0	M.Good
0.2	Wading-2	17.5	22	254	42.6	39^{ns}	8.4	53.5	M.G.-Good
TOTAL			**28**	**921**	**40.0**				
Dry Run									
			Eastern Corn Belt Plains - WWH Use Designation (Existing)						
0.2	Wading-1	15	15	1,726	NA	50	NA	73.5	Exceptional
Holes Creek									
			Eastern Corn Belt Plains - WWH Use Designation (Existing)						
4.3	Wading-1	14	14	1,622	8.0	42	NA	63.0	Good
0.6	Wading-1	13	13	968	6.1	30*	7.5*	54.0	Fair
TOTAL			**17**	**1,295**	**7.1**				
Owl Creek									
			Eastern Corn Belt Plains - LRW Use Designation (Existing)						
0.1	Wading-1	12	12	94	NA	36^{ns}	NA	69.0	Good
Bear Creek									
			Eastern Corn Belt Plains - WWH Use Designation (Existing)						
12.1R	Wading-1	14	14	1,426	NA	50	NA	77.0	Exceptional
9.9	Wading-1	19	19	2,138	NA	52	NA	79.5	Exceptional
5.2	Wading-1	19	19	923	129.7	46	8.9	66.5	Very Good
2.1	Wading-1	14	14	798	17.0	40	8.0^{ns}	71.0	Good-M.Good
0.1	Wading-1	16	16	498	14.9	40	7.5*	46.0	M.Good-Fair
TOTAL			**33**	**1,157**	**53.9**				
Elk Creek									
			Eastern Corn Belt Plains - EWH Use Designation (Existing)						
3.7R	Wading-1	23	23	1,664	32.9	46^{ns}	9.0^{ns}	84.0	Very Good
Dicks Creek									
			Eastern Corn Belt Plains - MWH Use Designation (Existing)						
5.0	Wading-2	18.5	22	376	NA	43	NA	44.0	Good
4.4	Wading-2	21.0	24	1,222	25.6	41	9.7	58.5	G.-Exceptional
3.0	Wading-2	13/10	18	169/127	18.4/2.8	30*/22*^{b}	5.8*/5.6*^{b}	40.0	Fair-Poor
2.6	Wading-2	22/7	23	241/23	11.5/0.9	34*/14*^{b}	7.7*/4.1*^{b}	52.0	Fair-Very Poor
			Eastern Corn Belt Plains - WWH Use Designation (Existing)						
2.4	Wading-2	15/5	16	143/12	39/0.1	28*/12*^{b}	4.4*/2.1*^{b}	62.5	Fair-Very Poor
0.4	Wading-2	22/2	24	290/7	1.9/2.6	30*/12*^{b}	6.9*/1.5*^{b}	72.5	Fair-Very Poor
TOTAL			**34**	**351**	**NA**				

Table 8.. Continued.

Stream RM	Sampling Method	Mean # Species	Total # Species	Mean Relative Number	Mean Relative Wt. (kg)	Mean IBI	Mean Miwb	QHEI	Narrative Evaluation
North Branch Dicks Creek									
				Eastern Corn Belt Plains - MWH Use Designation (Existing)					
1.0	Wading-2	19	22	2,718	NA	45	NA	42.0	Good
0.1	Wading-2	16	21	1000	NA	48	NA	52.5	Very Good
TOTAL			**27**	**1,859**	**NA**				
Mound overflow Creek									
				Eastern Corn Belt Plains - MWH Use Designation (Recommended)					
0.2	Wading-2	16	19	502	NA	34	NA		Good
Paddys Run									
				Interior Plateau - WWH Use Designation (Existing)					
4.7	Wading-2	17.5	18	2,575	NA	44	NA		Good
3.3	Wading-2	20.5	23	3,731	NA	49	NA		Very Good
2.8	Wading-2	14/0	14	332/0	NA	38*/12*[c]	NA		M.Good/V.Poor
0.2	Wading-1	8/-	8	283/-	NA	26*/--[c]	NA		Poor
TOTAL			**24**	**1,937**	**NA**				
Whitewater River									
				Interior Plateau - EWH Use Designation (Recommended)					
7.7	Boat-1	26	26	623	214.2	48	10.6	83.0	Exceptional
7.2	Boat-1	32	32	856	323.6	50	10.9	82.0	Exceptional
4.7	Boat-1	35	35	914	302.3	50	11.4	85.0	Exceptional
0.8	Boat-1	31	31	854	312.0	48	10.6	77.5	Exceptional
TOTAL			**47**	**811**	**288.0**				

	Eastern Corn Belt Plains (ECBP)			***Interior Plateau (IP)***		
INDEX - Site Type	**WWH**	**EWH**	**MWH**	**WWH**	**EWH**	**MWH**
IBI - Headwaters	**40**	**50**	**24**	**40**	**50**	**24**
IBI - Wading	**40**	**50**	**24**	**40**	**50**	**24**
IBI - Boat	**42**	**48**	**24**	**38**	**48**	**24**
Mod. Iwb - Wading	**8.3**	**9.4**	**6.2**	**8.1**	**9.4**	**6.2**
Mod. Iwb - Boat	**8.5**	**9.6**	**5.8**	**8.7**	**9.6**	**5.8**

* Significant departure from ecoregional biological criterion (>4 IBI or >0.5 Iwb units); underlined values are in the poor and very poor range.
ns Nonsignificant departure from biocriterion (≤4 IBI units or ≤ 0.5 MIwb units).
a Narrative evaluation is based on both MIwb and IBI scores.
b IBI and MIwb scores before and after a spill occured from the AK Steel 003 outfall.
c Intermittent to dry conditions occured between samples.
NA Headwater site; MIwb is not applicable.

TREND ASSESSMENT

Chemical Water Quality Changes (Figures 71-85)

Great Miami River (Dayton to Middletown: RMs 92.65 - 57.55)

Since 1979, monthly ambient monitoring has been conducted in the Great Miami River at Monument Avenue (RM 80.65) as part of the National Ambient Water Quality Monitoring Network (NAWQMN). Figures 71 and 72 summarize this monthly data for five parameters over the seventeen year period. All dissolved oxygen concentrations (daytime grabs) recorded during the period were above the WWH minimum criterion with only one value (August, 1986) decreasing below the WWH average criterion. Concentrations of ammonia-N were generally higher in earlier years (1979-1988) with an overall mean value of 0.18 mg/l and only 35% of recorded concentrations less than or equal to the minimum detection limit. Significantly lower levels were measured in the following years (1989-1995) with a mean ammonia-N concentration of 0.06 mg/l recorded and 78% of values at or below the minimum detection limit of 0.05 mg/l. Conversely (perhaps due in part to increased nitrification at upstream wastewater treatment plants), somewhat higher nitrate+nitrite-N concentrations were recorded from 1989-1995 compared to earlier years (1979-1988). Overall means increased from 3.46 mg/l recorded during the first ten years of the monitoring period to 3.95 mg/l measured during the last seven years of the period. While virtually all (99%) phosphorus concentrations measured at the site throughout the 17 year period were above the minimum detection limit of 0.05 mg/l, a significant decrease in concentrations was observed in later years with overall means decreasing from 0.32 mg/l (1979-1988) to 0.20 mg/l (1989-1995). Mean total suspended solids (TSS) at the site ranged from 20 mg/l in 1988 to 137 mg/l in 1980. High TSS levels tended to coincide with high flow days, indicative of impacts associated with non-point runoff in the basin.

Ohio EPA conducted intensive biological and water quality studies of the mainstem Great Miami River in 1980 and 1989. A comparison of mean chemical results for select parameters is presented for 1995, 1989, and 1980 in Figures 74 - 79. Six sites (RMs 92.65, 83.57, 80.65, 73.77, 66.90, and 60.58) in this upper reach of the mainstem were common to all three surveys while an additional four sites (RMs 77.24, 69.87, 62.58, and 57.55) were common to the 1995 and 1989 surveys.

A comparison of May through September stream flows for 1995, 1989 and 1980 as measured by USGS gage stations in this section of the Great Miami River at Taylorsville and Miamisburg is presented in Figure 73. Highs recorded at the Taylorsville gage during surveys on specific water sampling days ranged from 1420 cfs on July 20, 1989 to 11100 cfs on June 5, 1980 while the Miamisburg gage recorded highs ranging from 2140 cfs to 22700 cfs on the same respective dates. Both gages recorded low flows in late September for all three survey years. Flows measured at both gages on specific water sampling days were typically higher in 1980 compared to 1989 and

1995 with recorded means at Taylorsville of 1476 cfs (1980), 1069 cfs (1995), and 583 cfs (1989); corresponding mean flows of 4288 cfs (1980), 2024 cfs (1995), and 1552 cfs (1989) were recorded at the Miamisburg gage.

Mean dissolved oxygen concentrations (daytime grabs) in all three surveys remained above WWH criteria. With the exception of higher 1995 levels observed from RM 62.58 through RM 57.55, survey results for D.O. were generally comparable.

While mean 1995 BOD_5 concentrations were generally comparable to 1980 values at common sites from RM 92.65 through RM 80.65, values recorded in 1995 at remaining sites in this reach were generally significantly lower than those measured in 1980. Means recorded during the 1989 survey (after converting from $CBOD_5$ to BOD_5) were similar to 1995 values. The highest mean values recorded in the reach (10.25 mg/l and 9.57 mg/l, respectively) occurred in 1995 at RM 72.10 (downstream of the Appleton WWTP) and at RM 66.00 (downstream of Mound 001). Neither site was sampled in 1989 or 1980.

Significantly lower instream concentrations of ammonia-N were recorded in the upper reach of the mainstem in both 1995 and 1989 compared to 1980 largely as a result of improvements made in wastewater treatment processes. The most notable improvements were measured at RM 73.77 (~2.5 miles downstream of the Dayton WWTP) and at RM 66.90 (~2 miles downstream of the West Carrollton WWTP).

Concentrations of nitrate+nitrite-N at common sites, while relatively stable throughout the reach, were generally somewhat lower in 1995 compared to 1989. The highest mean concentration occurred in 1995 at RM 75.86 (6.32 mg/l), downstream of the Dayton WWTP. This site was not sampled in 1989 or 1980.

Mean 1995 phosphorus concentrations, significantly lower than 1980 values at all common sites, were similar to 1989 values in the upper river miles of the reach (RMs 92.65-80.65). Levels recorded in 1995 at sites in the lower section (RMs 69.87-57.55), however, decreased substantially from 1989 values, most notably at RM 62.58, downstream of the DP&L Hutchings Station and the Miamisburg WWTP. In addition to the elevated 1989 mean value at RM 62.58 (1.05 mg/l), peaks were recorded in 1995 at RM 77.24 (0.89 mg/l) and RM 75.86 (0.98 mg/l), downstream of City of Dayton storm sewers and the Dayton WWTP, respectively.

Mean 1995 concentrations of total suspended solids (TSS) were generally higher than 1989 values in the upper river miles (RMs 92.65-69.87), declining again to 1989 levels in the lower section of the reach (RMs 69.87-57.55). Relatively similar to 1980 values from RM 92.65 through RM 80.65, mean 1995 concentrations dropped well below 1980 levels at the remaining common sites in the reach. Elevated concentrations generally coincided with high flows.

Great Miami River (Middletown to Hamilton: RMs 55.14 - 34.68)
Four sites (RMs 52.64, 49.27, 43.23, and 35.69) in the middle reach of the mainstem were common to all three surveys. May through September stream flow for 1995, 1989 and 1980 as measured by the USGS gage station at Hamilton remained above the 7 Q_{10} during all three survey years. Stream flow pattern in this reach was similar to flow in the Dayton to Middletown section of the mainstem with higher values (on sampling days) generally measured in 1980 compared to other survey years. Maximum values measured on specific water sampling days ranged from 2630 cfs in 1989 to 22500 cfs in 1980 with corresponding means of 1708 cfs and 5133 cfs.

Mean dissolved oxygen concentrations (daytime grabs) recorded in 1995 were generally somewhat higher than values measured in 1989 and 1980. Excessive algal growth resulted in 1995 peak values in the dam pools at RM 37.35 and RM 34.68 with mean concentrations of 11.43 mg/l measured at both sites.

Mean BOD_5 concentrations were relatively stable in the middle reach with 1995 concentrations generally comparable to 1980 values at common sites. Concentrations measured during the 1989 survey were moderately lower than those measured in both 1995 and 1980 (after converting from $CBOD_5$ to BOD_5).

Concentrations of ammonia-N recorded in both 1989 and 1995 were consistently lower than values measured at common sites during the 1980 survey. However, the highest mean value (0.87 mg/l) in the entire mainstem for all three survey years occurred in 1995 at RM 51.30, downstream of AK Steel Outfall 011.

Relatively stable throughout the reach in all three survey years, mean concentrations of nitrate+nitrite-N generally approached 3 mg/l at the majority of sites in 1995 while 1980 means approximated 3.3 mg/l and 1989 survey means ranged from 3.5 mg/l to 4.3 mg/l.

Substantial decreases in phosphorus concentrations were observed in the middle reach in 1995 compared to earlier surveys. Mean phosphorus values measured in 1995 at common sites decreased 60% to 70% from 1980 levels and 30% to 40% from 1989 levels.

The highest mean TSS concentrations experienced in the reach occurred during the 1980 survey, reflecting the higher flows observed in this period. Levels measured in 1995 were generally slightly higher than 1989 values.

Great Miami River (Hamilton to the Ohio River: RMs 33.05 - 1.75)
While there were no sites common to all three surveys in the lower reach of the mainstem, four sites (RMs 29.97, 26.21, 19.90, and 10.70) were sampled in both 1995 and 1989 and one site (RM 21.44) was sampled in 1995 and 1980.

While D.O. values (daytime grabs) in 1980 and 1989 were relatively stable throughout the lower reach with mean values approximating 8 mg/l and 9 mg/l, respectively, much more variability was observed in the 1995 survey. Nutrient loading and the resulting algal growth continued to be reflected in the higher mean dissolved oxygen concentrations recorded in 1995 in the upper river miles (RMs 31.19-27.15). Values moderated at downstream sites, decreasing to levels relatively comparable to 1989.

Moderately higher mean BOD_5 concentrations were measured during the 1995 survey in the lower reach compared to earlier years. The highest mean value (15.5 mg/l) in the mainstem for all three survey years was recorded in 1995 at RM 24.55, downstream of the Fernald facility.

Mean concentrations of ammonia-N recorded in 1989 and 1995, consistently lower than 1980 values, remained near the minimum detection limit at all sites. Concentrations of nitrate+nitrite-N in the reach were relatively stable in all three survey years with 1995 means generally somewhat less than values recorded during earlier surveys. Instream phosphorus concentrations followed a pattern similar to the middle reach with the lowest mean values observed in 1995 followed by 1989 and 1980.

Mean TSS concentrations were again highest at sites sampled during the 1980 survey while levels measured in 1995 were generally slightly higher than 1989 values.

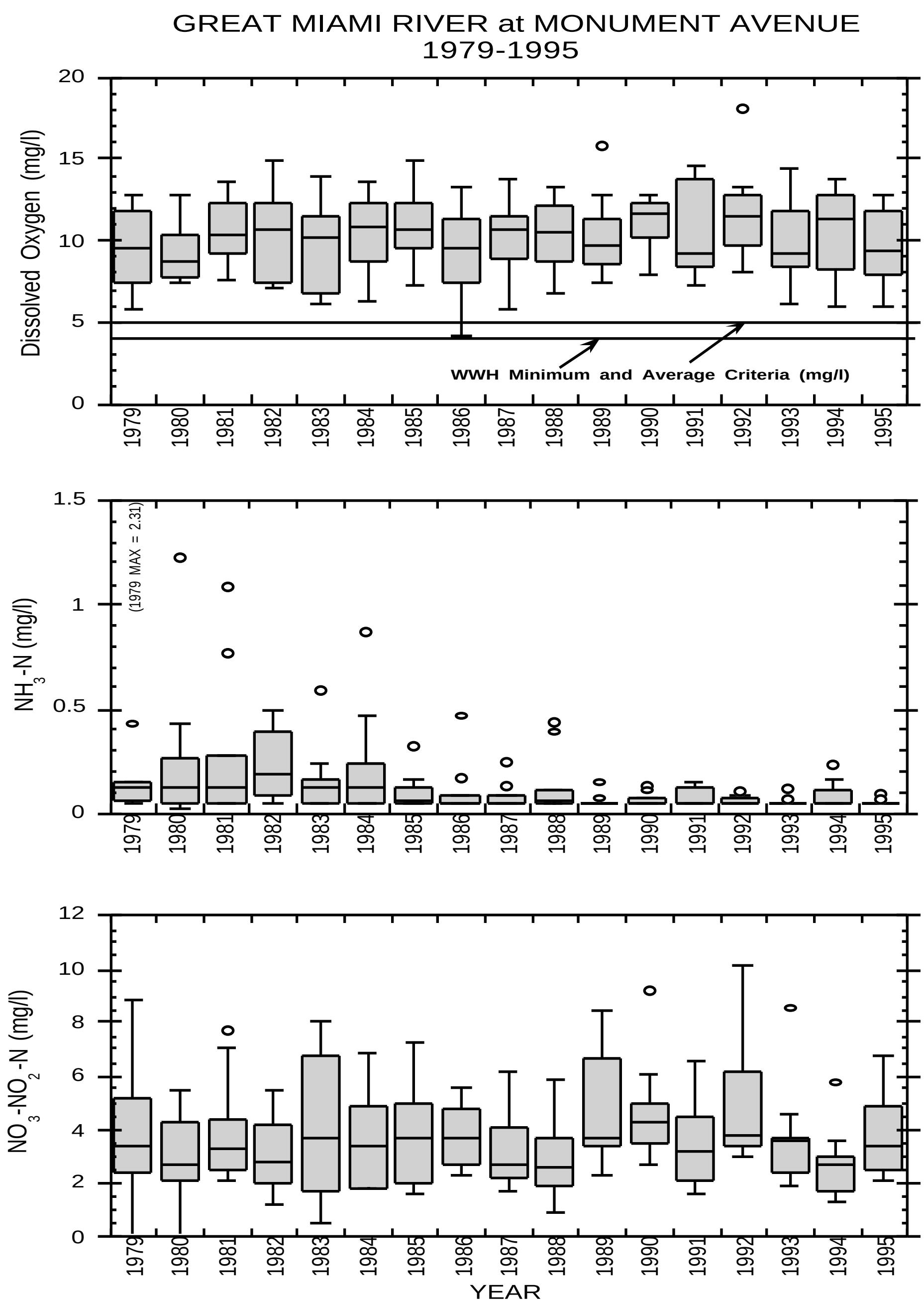


Figure 71 Dissolved oxygen (daytime grabs), ammonia-N, and nitrate-nitrite-N concentrations in the Great Miami River at Monument Avenue (RM 80.65) from 1979-1995.

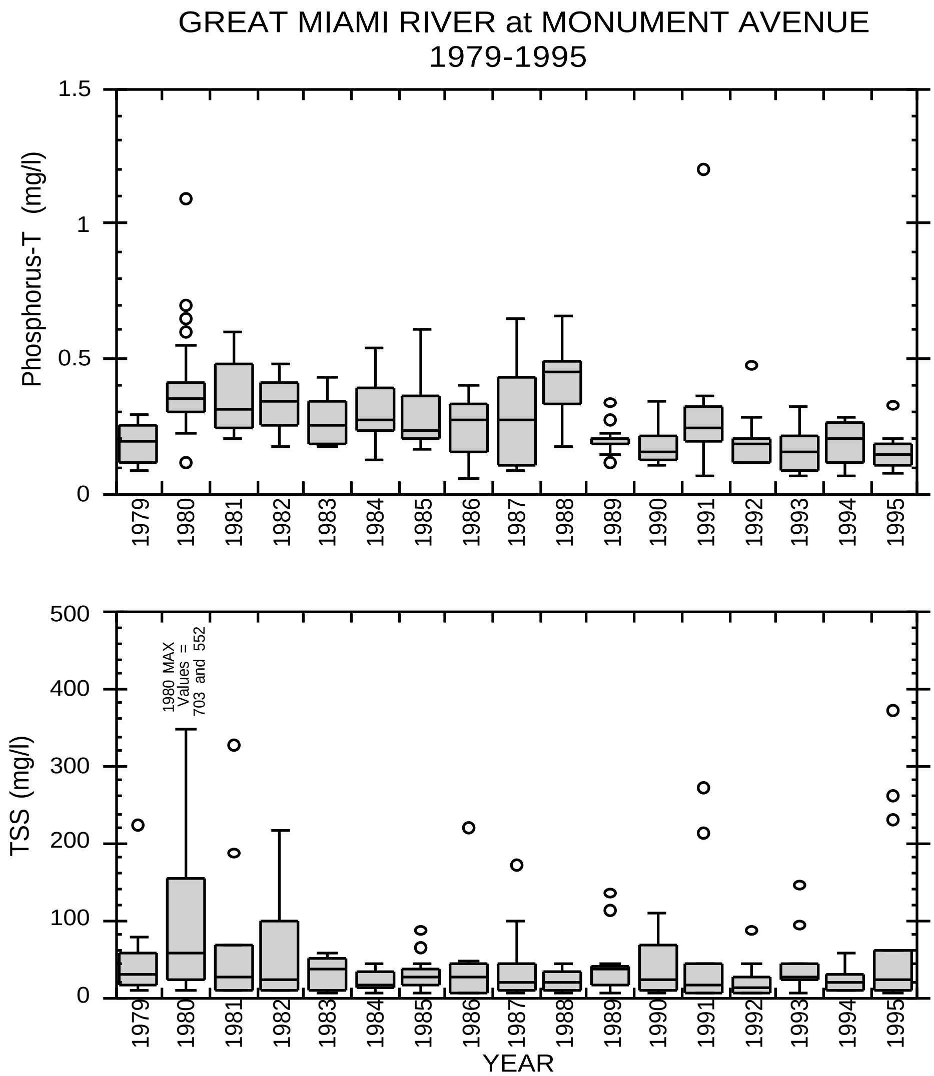


Figure 72. Total phosphorus and total suspended solids (TSS) concentrations in the Great Miami River at Monument Avenue (RM 80.65) from 1979-1995.

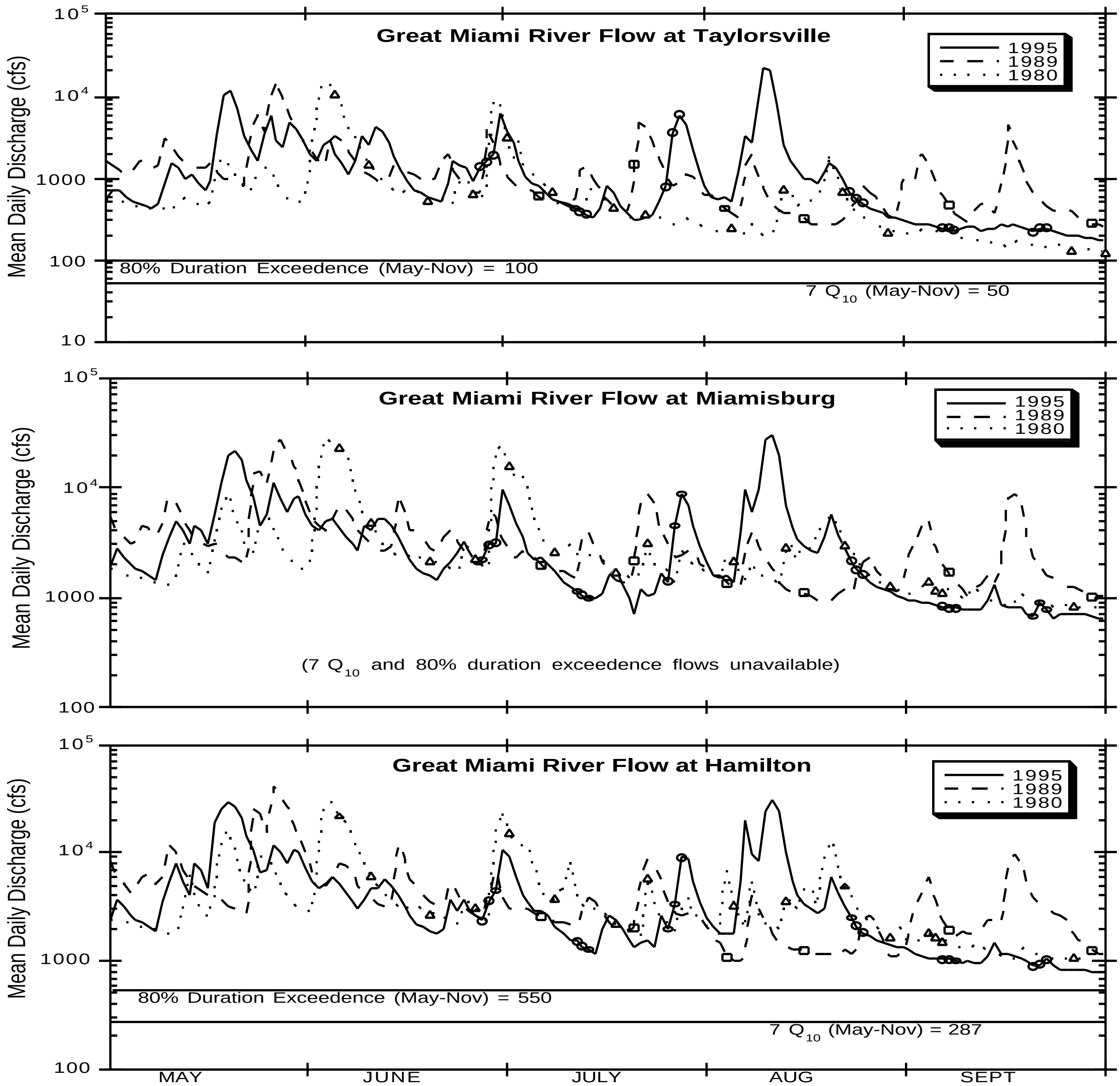


Figure 73 May through September flow hydrographs (1995, 1989, and 1980) for the Great Miami River at Taylorsville (RM 92.65), Miamisburg (RM 67.20), and Hamilton (RM 35.48) based on USGS stations #03263000, #03271500, and #03274000, respectively. Low flow conditions ($7Q_{10}$) and 80% duration exceedence flows at Taylorsville and Hamilton reflect periods of record from 1922-1978 and from 1930-1976, respectively. Markers indicate river discharge on water chemistry sampling days in each survey.

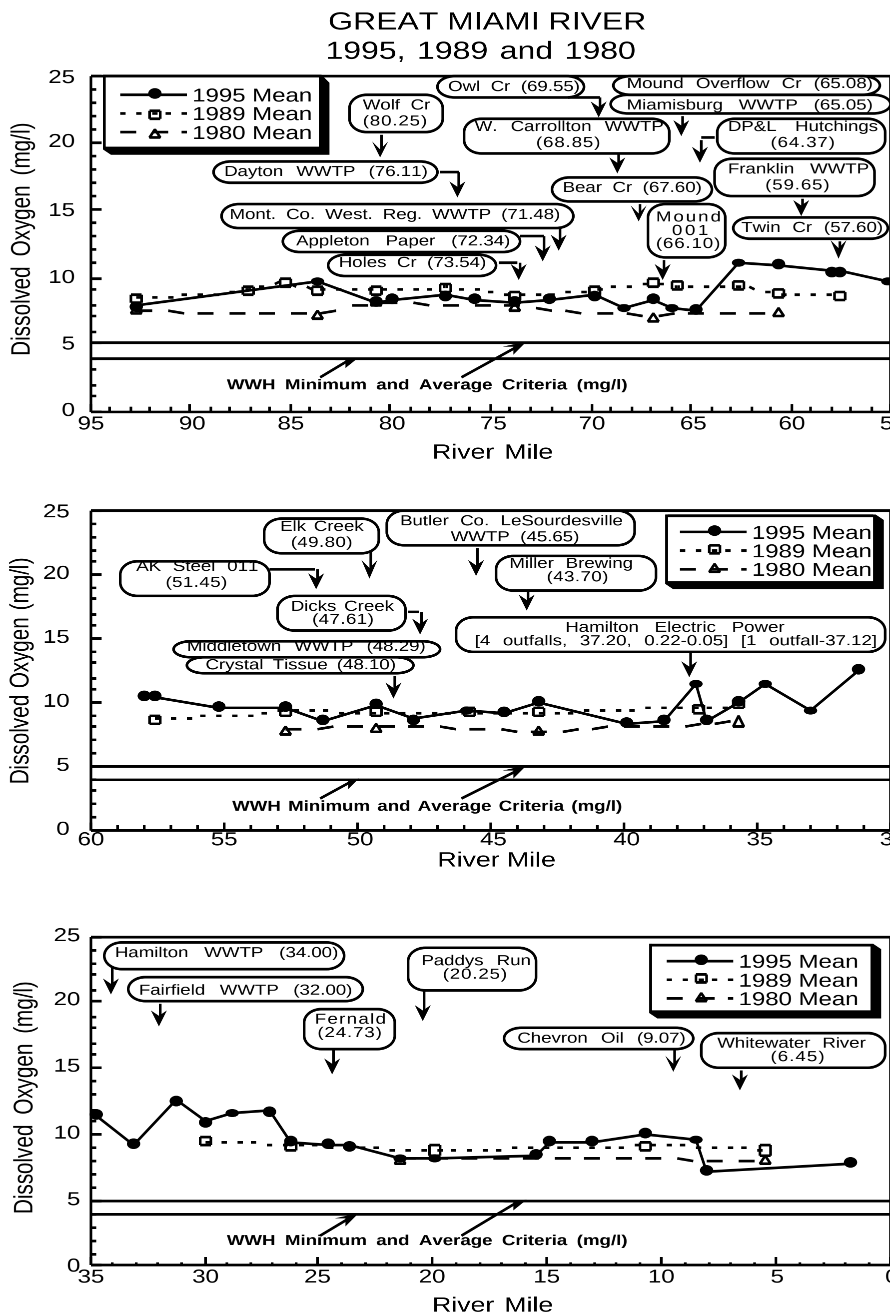


Figure 74 Longitudinal trend of mean dissolved oxygen concentrations (daytime grabs) in the Great Miami River in 1995, 1989 and 1980.

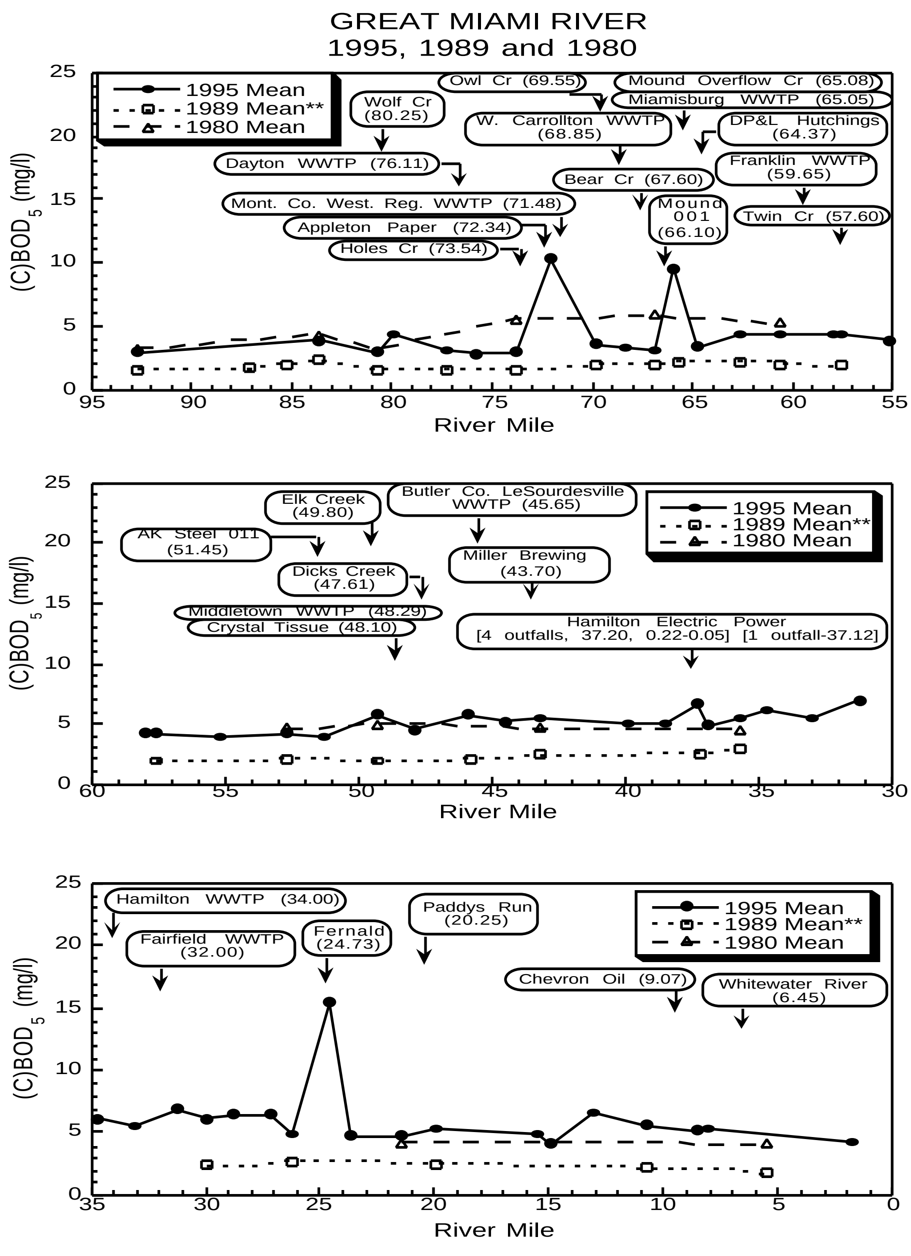


Figure 75 Longitudinal trend of mean BOD_5 concentrations in the Great Miami River in 1995, 1989 and 1980. (1995 samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services. ** 1989 values represent $CBOD_5$ mean concentrations.)

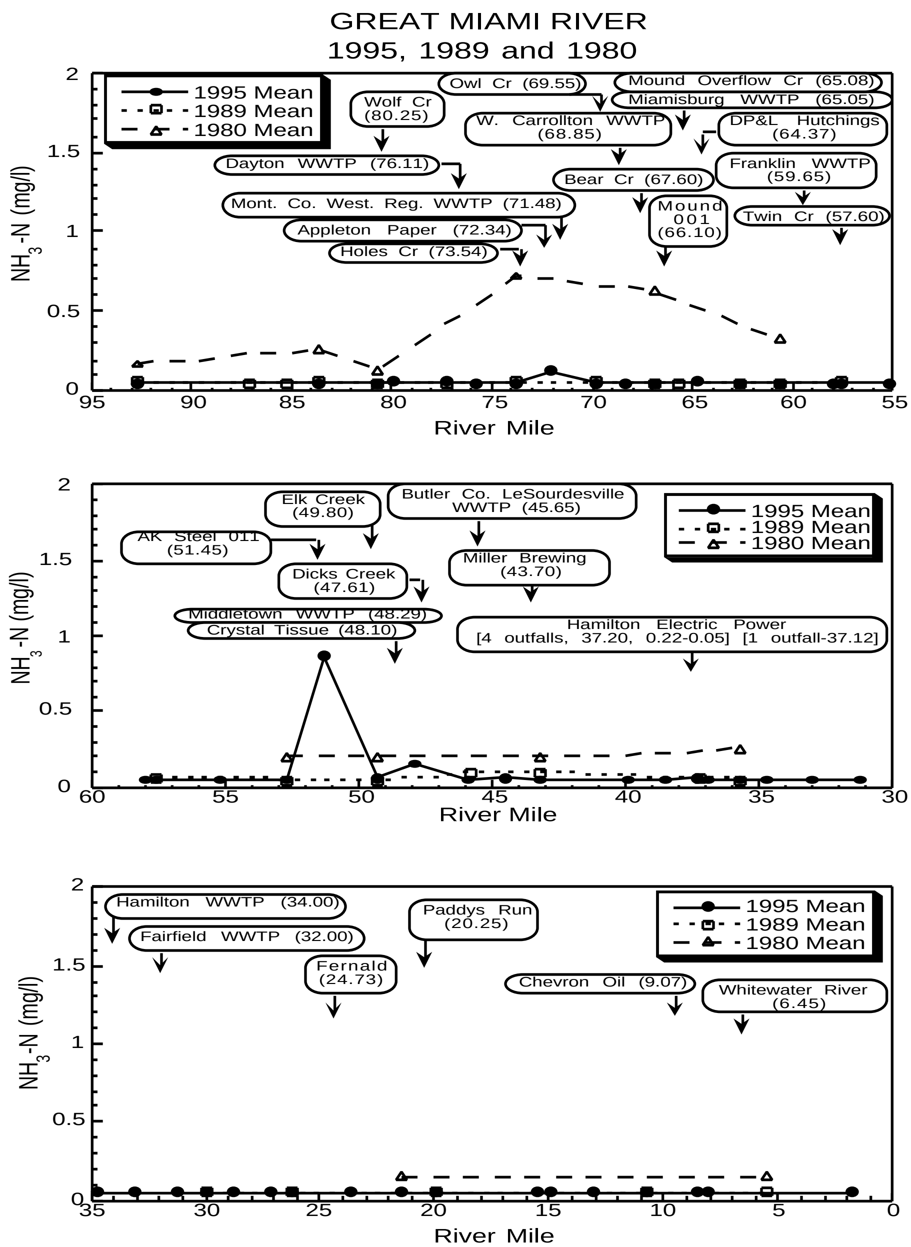


Figure 76 Longitudinal trend of mean ammonia-N concentrations in the Great Miami River in 1995, 1989, and 1980. (1995 samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services, and all sample results were less than the MDL of 3.0 mg/l.)

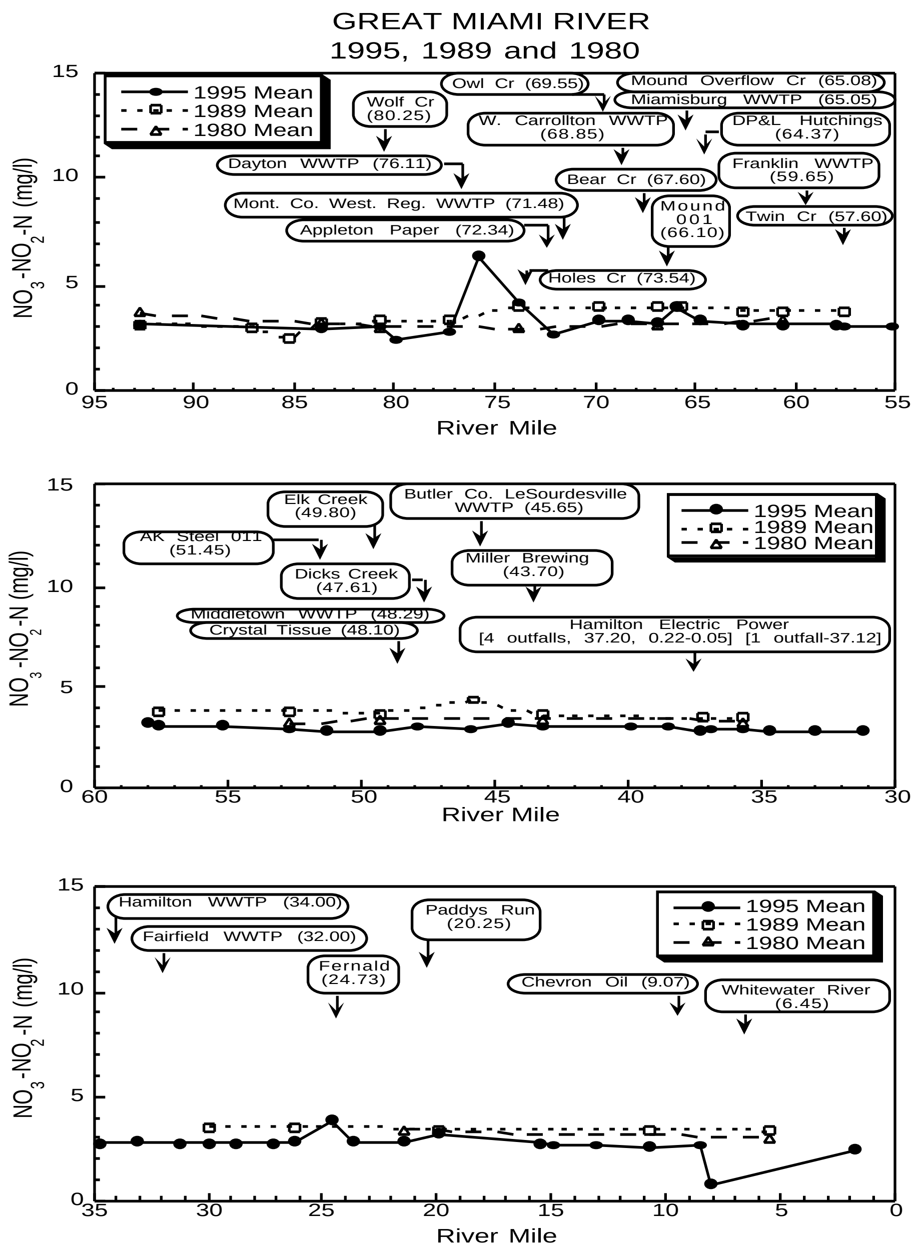


Figure 77 Longitudinal trend of mean nitrate-nitrite-N concentrations in the Great Miami River in 1995, 1989, and 1980. (1995 samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services, and represent mean nitrate-N concentrations only.)

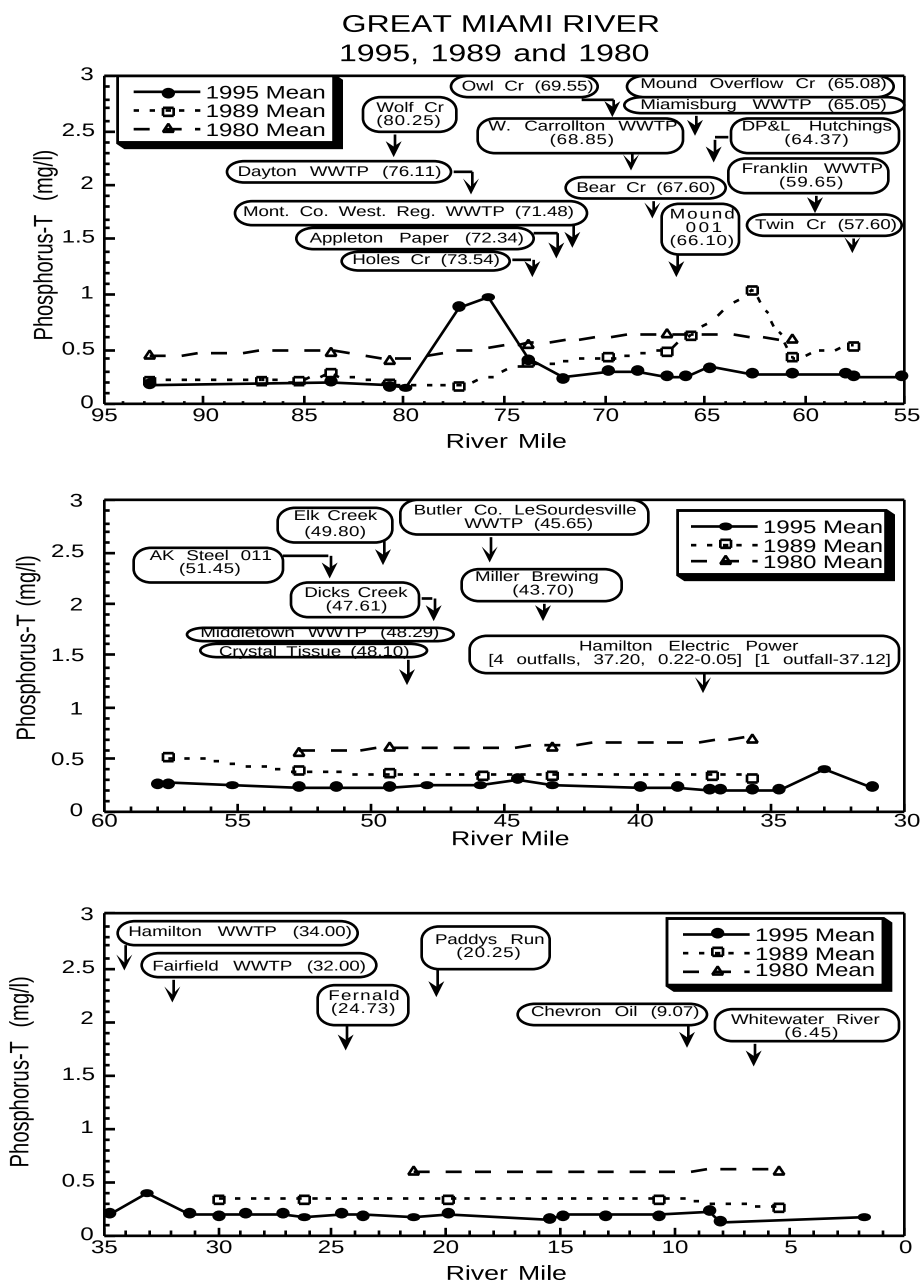


Figure 78 Longitudinal trend of mean total phosphorus concentrations in the Great Miami River in 1995, 1989 and 1980. (1995 samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services.)

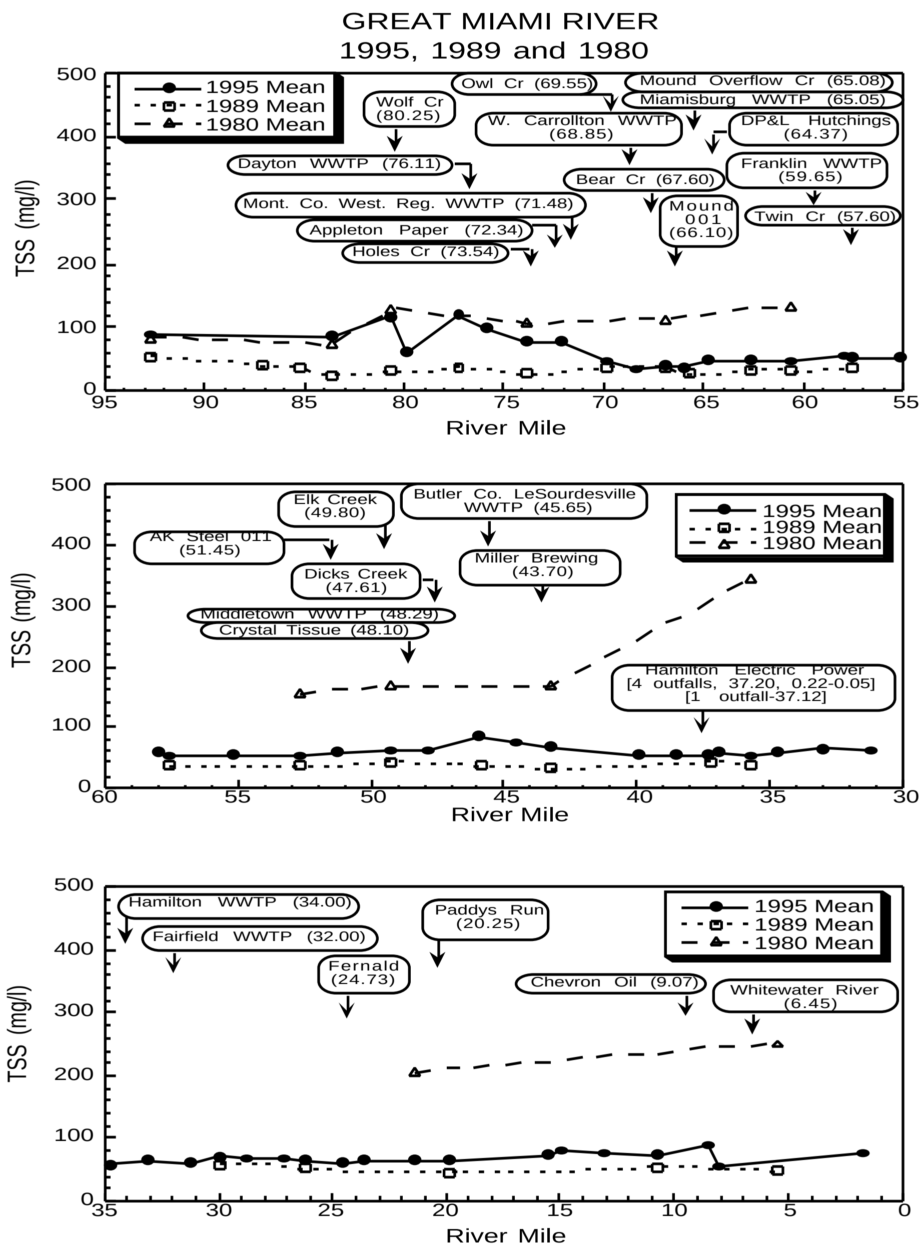


Figure 79 Longitudinal trend of mean total suspended solids (TSS) concentrations in the Great Miami River in 1995, 1989, and 1980. (1995 samples from RMs 66.00 and 24.55 were analyzed by a contract laboratory, Ross Analytical Services.)

Dicks Creek

Ohio EPA conducted an intensive biological and water quality study (unpublished) of Dicks Creek and the North Branch Dicks Creek in 1987. A comparison of mean chemical results for select parameters is presented for 1995 and 1987 in Figures 80 and 81. Only one site, RM 4.70 on Dicks Creek, was common to both surveys.

Mean dissolved oxygen concentrations (daytime grabs) remained above water quality criteria in both survey years. While mean concentrations recorded in 1995 were significantly lower than values measured in 1987 in the upper river miles, concentrations in 1987 were supersaturated with mean percent saturations approximating 150% at the first four sampling locations (RMs 4.70 - 2.65). Percent saturations in 1995 ranged from 68% at RM 5.21 to 101% at RM 2.51. Mean 1987 D.O. concentrations decreased below 1995 levels at downstream sites (RMs 1.75 and 0.30).

Concentrations of ammonia-N recorded in both 1995 and 1987 were frequently elevated. (Exceedences of water quality criteria were documented at RMs 4.16, 3.62, 2.65 and 1.75 during the 1987 survey.) Mean 1987 values ranged from 0.07 mg/l at RM 4.70 to 1.26 mg/l at RM 2.65 while 1995 levels ranged from 0.15 mg/l at RM 4.70 to 35.57 mg/l at RM 3.00. (Elevated 1995 means at RM 3.00 and RM 2.51 (3.58 mg/l) reflect the impact of the July 26 spill from AK Steel Outfall 003. Adjusting mean concentrations to exclude values recorded on this date yields respective mean 1995 values of 0.88 mg/l and 0.34 mg/l at these sites.) Mean values measured during both surveys decreased again in the lower reaches of the tributary (RMs 0.93 and 0.30).

Mean 1995 concentrations of both nitrate+nitrite-N and phosphorus were generally substantially less than values recorded in 1987. Levels of nitrate+nitrite-N increased longitudinally in both surveys with 1987 means ranging from 1.52 mg/l (RM 4.70) to 3.39 mg/l (RM 1.75). In 1995, nitrate+nitrite-N values ranged from 0.82 mg/l (RMs 5.21 and 4.70) to 1.81 mg/l (RM 3.00). Concentrations of phosphorus remained low in 1995 with the highest mean recorded at RM 3.00 (0.12 mg/l) while 1987 means ranged from 0.05 mg/l at RM 4.70 to 0.30 mg/l at RM 4.16.

While all concentrations of nickel measured during the 1987 survey in Dicks Creek were less than the minimum detection limit of 40 µg/l, elevated mean values were observed in 1995 at RM 5.21 (127 µg/l) and RM 4.70 (104 µg/l), downstream of Moraine Materials and the North Branch of Dicks Creek, respectively. Elevated concentrations of zinc were observed in both survey years, most notably downstream of AK Steel outfalls 015 and 003 at RM 3.62 (1987) and RM 3.00 (1995). Mean 1995 zinc values ranged from 46 µg/l at RM 0.93 to 299 µg/l at RM 3.00 while 1987 means ranged from 10 µg/l at RM 4.70 to 83.75 µg/l at RM 3.62.

North Branch Dicks Creek

Relatively similar concentrations of dissolved oxygen (daytime grabs) were measured in the North Branch Dicks Creek in 1995 and 1987. While mean dissolved oxygen values remained above water quality criteria, values observed downstream of AK Steel Outfall 004 were significantly lower in both survey years.

While concentrations of ammonia-N recorded in 1995 were somewhat higher than 1987 values, means increased downstream of AK Steel Outfall 004 in both years. Lower mean nitrate+nitrite-N concentrations were recorded in 1995 compared to the 1987 survey with means approximating 0.8 mg/l at both sites in 1995 while 1987 values exceeded 1.6 mg/l at both sites. Phosphorus concentrations in the North Branch Dicks Creek remained low during both surveys.

Nickel concentrations measured in 1987 remained below the minimum detection limit of 40 µg/l at both sites sampled. While values in 1995 measured at RM 0.75 also remained low, mean levels increased at RM 0.01 (68 µg/l), downstream of the AK Steel discharge. No elevated zinc concentrations were observed in the North Branch of Dicks Creek in 1987 with means of 15 µg/l recorded at both sites. Mean 1995 zinc levels, however, increased sharply from 48 µg/l at RM 0.75 to 249 µg/l at RM 0.01, downstream of AK Steel Outfall 004.

Bear Creek

Ohio EPA conducted an intensive biological and water quality study of Bear Creek in 1981. A comparison of mean chemical results for select parameters is presented for 1995 and 1981 in Figures 82 and 83. Two water chemistry sites (RMs 9.75 and 5.20) were common to both surveys.

Notable improvement was observed in 1995 at RM 9.75, downstream of the New Lebanon WWTP. This site experienced numerous exceedences of water quality criteria for dissolved oxygen and ammonia-N in 1981 with respective mean values of 3.9 mg/l and 6.42 mg/l. Elevated mean concentrations of BOD_5 (9.1 mg/l) and phosphorus (4.42 mg/l) were also observed at the site during the earlier survey. Degradation continued downstream at RM 8.51 with recovery occurring at RM 7.08. Conversely, concentrations of dissolved oxygen measured during the 1995 survey remained relatively stable at all sites with means ranging from 7.42 mg/l at RM 12.09 to 8.8 mg/l at RM 0.01. Additionally, all concentrations of BOD_5 and the majority (83%) of ammonia-N values recorded in 1995 were below minimum detection limits. Mean phosphorus declined to 0.44 mg/l at RM 9.75 in 1995. Concentrations of mean nitrate+nitrite-N in Bear Creek ranged from 1.12 mg/l (RM 2.08) to 4.52 mg/l (RM 8.51) in 1981 while 1995 values ranged from 1.39 mg/l (RM 5.20) to 2.85 mg/l (RM 9.75). Mean 1981 TSS values ranged from 17 mg/l (RM 0.24) to 38 mg/l (RM 5.20); the majority (87%) of 1995 concentrations were less than the minimum detection limit of 5 mg/l.

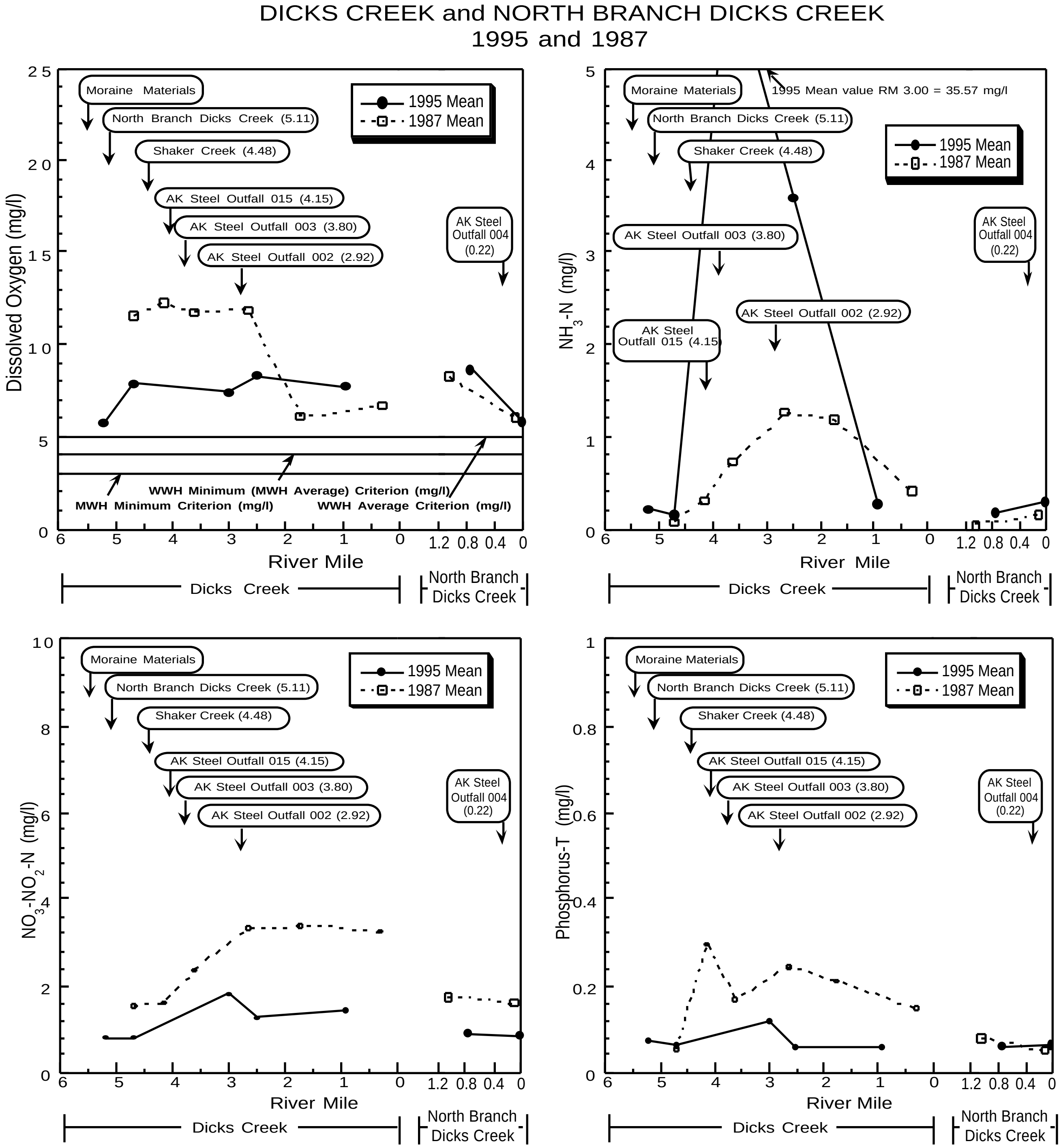


Figure 80 Longitudinal trend of mean dissolved oxygen (daytime grabs), ammonia-N, nitrate-nitrite-N, and total phosphorus concentrations in Dicks Creek and the North Branch of Dicks Creek in 1995 and 1987.

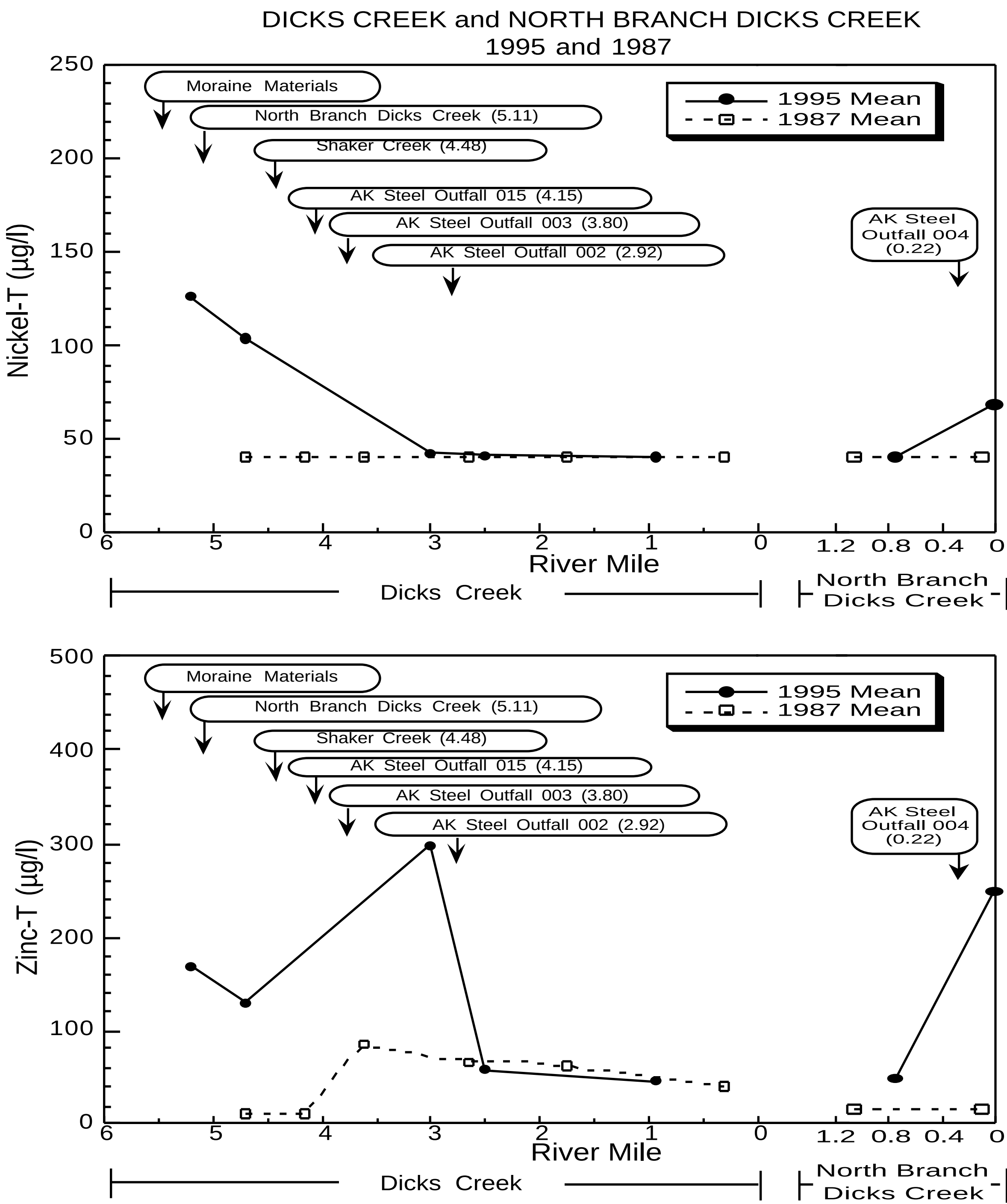


Figure 81 Longitudinal trend of mean nickel and zinc concentrations in Dicks Creek and the North Branch of Dicks Creek in 1995 and 1987.

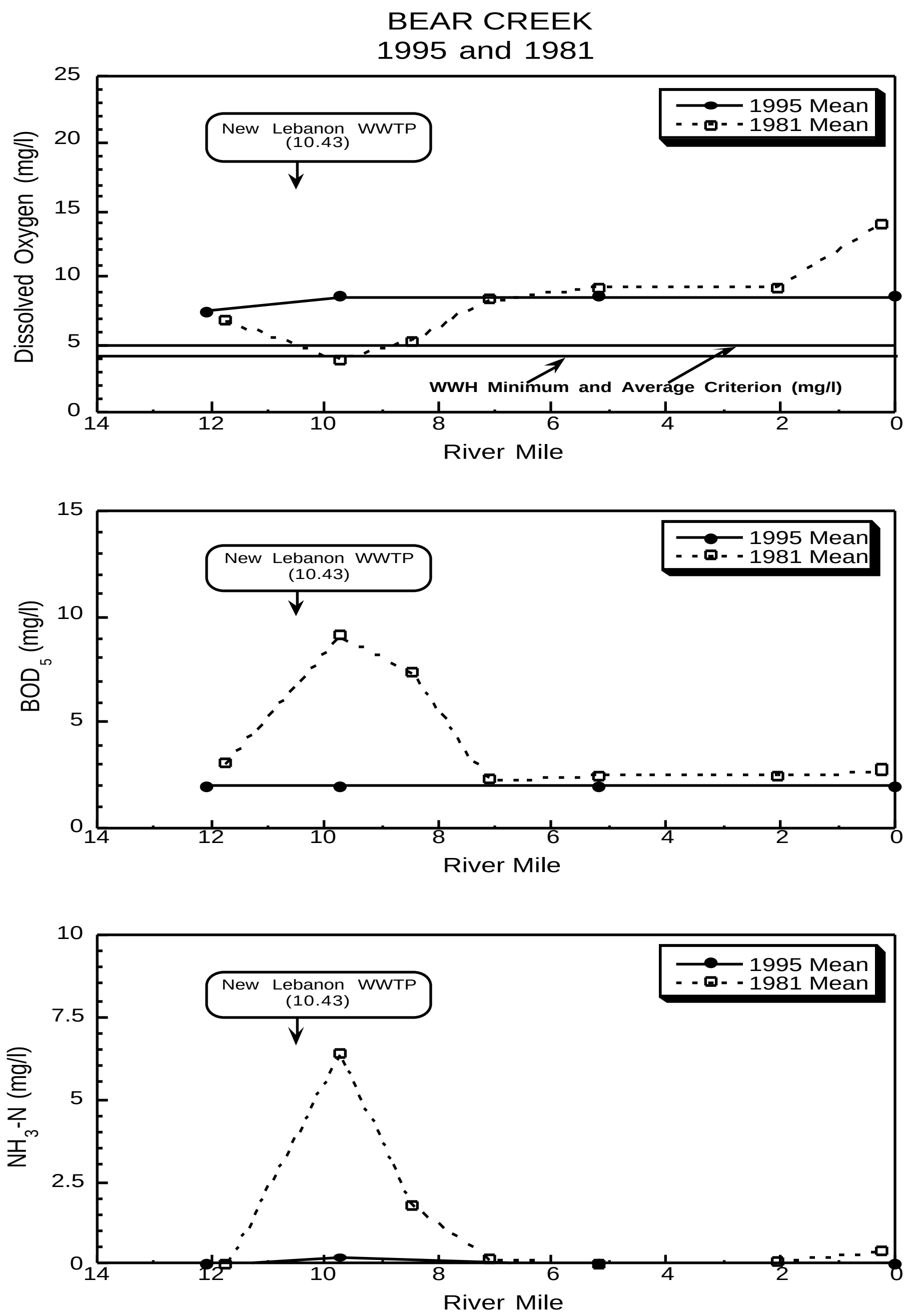


Figure 82 Longitudinal trend of mean dissolved oxygen (daytime grabs), BOD_5, and ammonia-N concentrations in Bear Creek in 1995 and 1981.

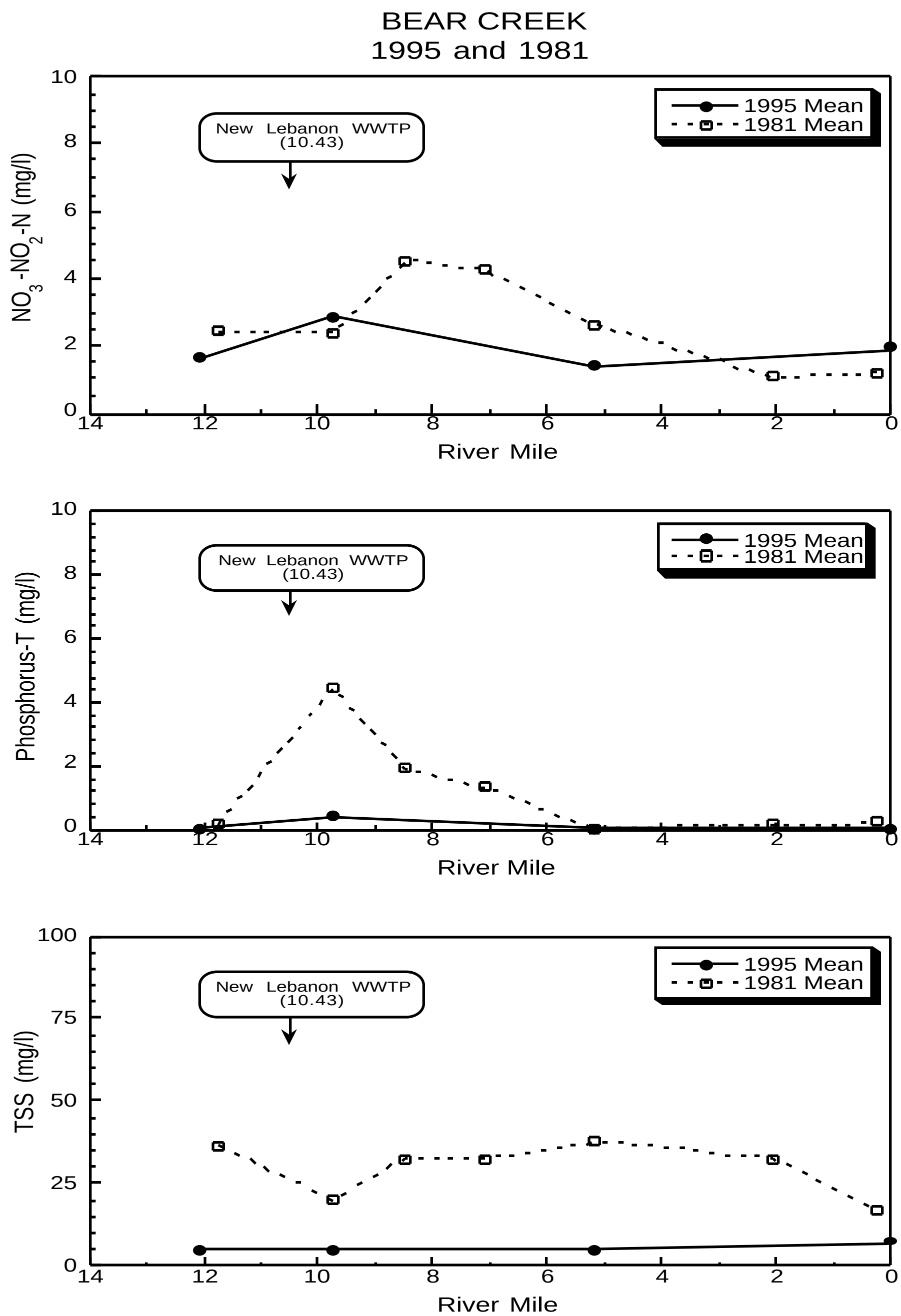


Figure 83 Longitudinal trend of mean nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations in Bear Creek in 1995 and 1981.

Whitewater River

Three sites on the Whitewater River (RMs 8.39, 7.04 and 1.50) were sampled during 1989 as part of the Ohio EPA biological and water quality study of the Great Miami River basin. A comparison of mean chemical results for select parameters is presented for 1995 and 1989 in Figures 84 and 85. Only RM 1.50 was sampled in both 1995 and 1989.

Daytime mean dissolved oxygen levels recorded during both surveys remained relatively constant with all values above WWH criteria. All 1989 $CBOD_5$ concentrations and the majority (67%) of BOD_5 values recorded in 1995 were below respective minimum detection limits of 1 mg/l and 2 mg/l. Additionally, ammonia-N levels remained low at all sites during both surveys with values near the minimum detection limit of 0.05 mg/l.

Concentrations of nitrate+nitrite-N remained longitudinally stable with 1995 mean values near 2 mg/l compared to 1989 mean levels of 3 mg/l. Mean phosphorus concentrations in the Whitewater River also remained low with the highest mean value (0.14 mg/l) of both surveys recorded in 1989 at RM 7.04, downstream of the Harrison WWTP.

Mean 1995 TSS concentrations increased longitudinally in both surveys with 1989 values ranging from 22 mg/l at RM 8.39 to 36 mg/l at RM 1.50 while 1995 means ranged from 48 mg/l at RM 7.63 to 62 mg/l at RM 1.50. Higher 1995 levels reflect the higher flows observed in this survey year.

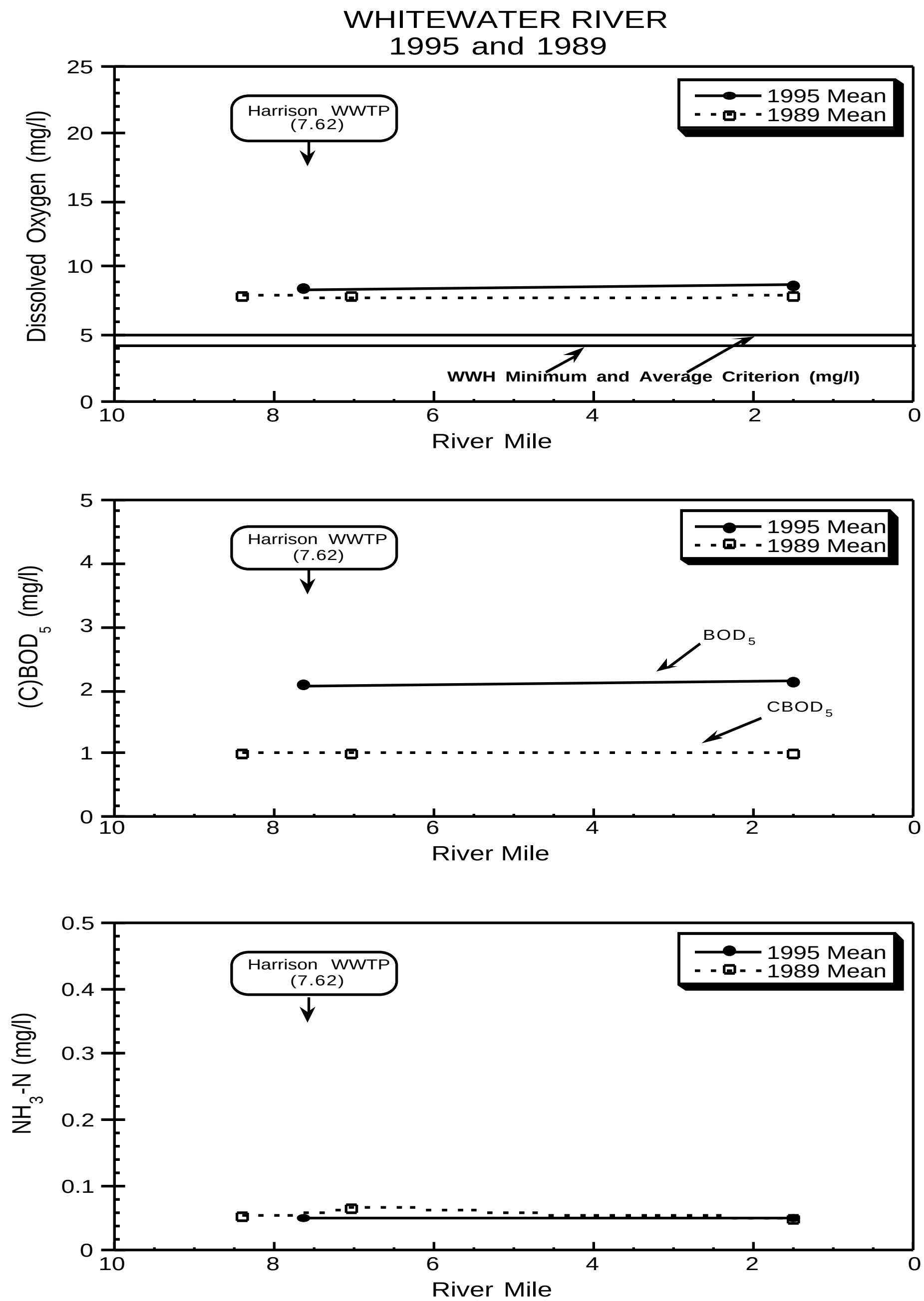


Figure 84 Longitudinal trend of mean dissolved oxygen (daytime grabs), (C)BOD_5, and ammonia-N concentrations in the Whitewater River in 1995 and 1989.

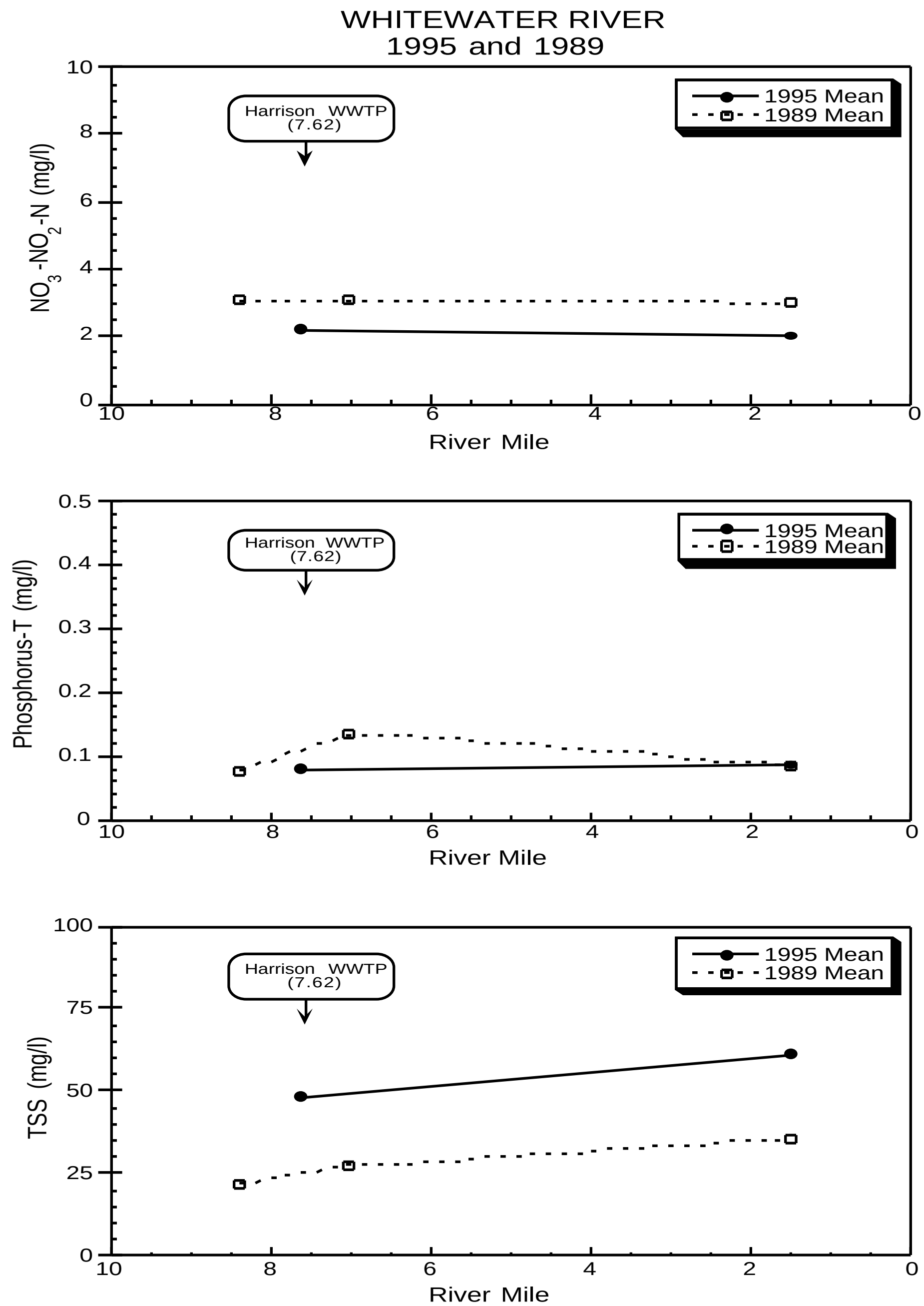


Figure 85 Longitudinal trend of mean nitrate-nitrite-N, total phosphorus, and total suspended solids (TSS) concentrations in the Whitewater River in 1995 and 1989.

Biological and Aquatic Life Use Attainment Changes: 1980-1995

Great Miami River

During the past decade, significant progress has been made towards restoring the chemical, physical, and biological integrity of the middle and lower reaches of the Great Miami River (RMs 90.0 to 0.0). Based on comparisons with previous biological surveys conducted by the Ohio EPA in 1980 and 1989, the 1995 results showed a continued improvement in the Middle and Lower Great Miami River (Figures 86 - 89). Since 1980, when most sites failed to attain the existing WWH or recommended EWH use designations (full = 1.6, partial = 5.9, and non = 82.5 miles), many sites improved to partial attainment in 1989 (full = 6.6, partial = 63.5, and non = 19.9 miles) and further to full attainment by 1995 (full = 49.7, partial = 36.3, and non = 4.0 miles). The longitudinal trend of the BIE (see Methods) for the Middle and Lower Great Miami River from 1980, 1989, and 1995 dramatically illustrate the improvements that have occurred throughout the mainstem (Figure 1d). These improvements corresponded to substantial reductions in loadings of oxygen demanding wastes, ammonia-N, and other substances discharged by point sources. Complete recovery was not evident in 1995, however, because 40.3 miles remain in partial or non-attainment due primarily to impaired fish assemblages.

Great Miami River: Dayton to Middletown

The most significant improvements have occurred in the segment between Dayton and Middletown due to the improved treatment of sewage by county and municipal wastewater treatment plants. Based on comparisons with previous biological surveys conducted in 1980 and 1989, the 1995 results revealed continued improvement in the Great Miami River between Dayton and Middletown. Since 1980, the number of mainstem miles in full attainment within the 35 mile segment (RMs 90.0-55.0) increased from 1.6 in 1980 and 6.6 in 1989 to 29.9 in 1995; the number of miles in partial attainment increased from 3.6 in 1980 to 20.7 in 1989 and decreased to 3.6 in 1995; and the number of miles in non-attainment has decreased from 29.8 in 1980 to 7.7 in 1989 and 1.5 in 1995.

The number of fish species collected from the mainstem between Dayton and Middletown increased from 36 in 1980 to 49 in 1995. The predominant fish species have also shifted from pollution tolerant species such as common carp in 1980 to pollution sensitive species in 1995 including golden redhorse and shorthead redhorse. In 1980, the fish community performance from the Dayton WWTP to the Middletown Dam was poor to very poor, but improved in 1989 to mostly fair. In 1995, community performance ranged from moderately good to exceptional in the free flowing segments and was fair to good in the impounded segments (Figure 87).

Macroinvertebrate community performance in the Great Miami River from Dayton to Franklin has generally been meeting WWH expectations since 1980 (Figure 86) (Ohio EPA 1982a). Community performance in 1980 generally ranged from marginally good to exceptional. The only significant decline below WWH expectations was downstream from the Appleton Paper WWTP discharge at RM 71.7 where an ICI score of 20 (fair) was achieved. Community performance improved in 1989 (Ohio EPA files) and 1995 into the very good to exceptional range.

Macroinvertebrate and fish community performance downstream from the MCD North Regional WWTP have steadily improved over the years. In 1980, the fish community was indicative of fair quality but improved in 1989 to very good and further to exceptional quality in 1995. The macroinvertebrate community improved from the fair range in 1979 (ICI=26 at RM 87.0) to the very good range (ICI=42 at RM 87.0) in 1980 and then to the exceptional range in 1989 (ICI=48 at RM 85.9) and 1993 (ICI=56 at RM 85.9) (Figure 90). 1994 was the first year this station demonstrated a negative impact from the WWTP (ICI=38 at RM 85.9 compared to 52 at RM 87.7). However, community performance improved back into the exceptional range in 1995 (ICI=46 at RM 85.9).

Both the macroinvertebrate and fish community performance has improved within the city of Dayton since 1980. In 1980, fish community scores ranged from fair to poor quality but improved in 1989 and 1995 ranging from marginally good to exceptional quality. Macroinvertebrate community performance ranged from marginally good to exceptional in 1980 and remained in the good to very good range in 1995.

Macroinvertebrate community performance downstream from the Dayton WWTP has remained consistently in the very good to exceptional range with no indication of a significant impact. In 1980, the fish community was severely impacted by the Dayton WWTP with scores indicative of poor quality. In 1989 (after several upgrades to the plant), the fish community demonstrated significant improvements with scores ranging from fair to good. The 1995 sampling effort revealed full recovery downstream from the Dayton WWTP with scores indicative of exceptional quality.

Macroinvertebrate community performance downstream from the Appleton Paper WWTP has improved since 1980 when the community declined into the fair range (ICI=20 at RM 71.7) from an exceptional community (ICI=46) at RM 75.2. The 1989 survey did not sample downstream from the WWTP, but did document a moderate impact within the mixing zone (ICI=40 at RM 72.3). Community performance also declined in 1995 downstream from Appleton Paper, but only into the good range (ICI=38 at RM 71.7) from an exceptional community upstream (ICI=50 at RM 72.4). This reduction in the degree of impact indicates improved treatment by the Appleton Paper WWTP. The fish community has significantly improved since 1980 when scores were indicative of poor and very poor quality. Full recovery occurred in 1995 with fish community scores indicating very good to exceptional quality.

Macroinvertebrate community performance downstream from the U.S. DOE Mound facility, the Miamisburg WWTP, and the DP&L Hutchings EGS has generally improved since 1980 when the community declined into the good range (ICI=36 at RM 64.3 and 60.2) from a very good community (ICI=42) at RM 67.6. Communities in 1989 and 1995 were performing in the exceptional range. However, in 1988 there was a massive fish kill due to extreme thermal loadings from the Hutchings EGS during a period of extended low flows and high ambient temperatures. Temperatures exceeding 40°C were observed immediately downstream and exceedences of the WWH temperature criterion were evident downstream to Middletown. No fish (IBI = 12) were found in sampling conducted downstream from the Hutchings EGS on July 14, 1988 (RM 63.5). No fish were found again on August 17, 1988 at RM 64.0 (downstream from the dam) and at RM 62.5 (upstream from the Wheelabrator/Franklin WWTP). Macroinvertebrate community performance was fair (ICI=18 at RM 64.3) indicating a significant impact to the macroinvertebrates. Thousands of crayfish were also killed by the elevated water temperatures. The fish community began to recover in September 1988, but was predominated by highly tolerant species such as green sunfish and goldfish and community condition remained poor to very poor. Since that time, the Hutchings EGS has been operating within a thermal load management plan designed to prevent similar impacts.

Macroinvertebrate community performance downstream from the Franklin WWTP has remained consistently in the very good to exceptional range with no indication of a significant impact. The fish community has significantly improved from poor quality in 1980 to a range of marginally good to good quality in 1995.

Great Miami River: Middletown to Hamilton

Aquatic life use attainment status in the Great Miami River from Middletown to Hamilton has markedly improved since 1980 and 1989 due to the numerous WWTP upgrades and subsequent reductions in loadings of oxygen demanding wastes and ammonia-N. However, recovery is not yet complete due mostly to fish community impairment (Figures 88). Since 1980, the number of mainstem miles in full attainment within the 20 mile segment (RMs 55.0 - 35.0) increased from 0.0 in 1980 and 1989 to 7.0 in 1995; the number of miles in partial attainment increased from 0.8 in 1980 to 16.3 in 1989 and decreased to 12.6 in 1995; and the number of miles in non-attainment has decreased from 19.2 in 1980 to 3.7 in 1989 to 0.4 in 1995.

Macroinvertebrate community performance in the Great Miami River from Middletown to Hamilton has generally been meeting WWH expectations since 1980 (Figure 86, middle). Community performance in 1980 generally ranged from marginally good to good. Community performance improved in 1989 and 1995 to the good to exceptional range. The only significant decline in community performance was documented downstream from the AK Steel 011 discharge.

The 1995 biological sampling in the Great Miami River downstream from the AK Steel 011 outfall indicated partial attainment due primarily to fish community impairment. This is an improvement from 1980 and 1989 when the downstream site was in non-attainment for both years. The fish community has slightly improved from poor in 1989 to fair in 1995 but still remains below regional expectations. Macroinvertebrate community performance downstream from the AK Steel 011 discharge demonstrated declines in 1980 (ICI=32 at RM 50.7 compared to 40 at RM 51.5) and 1995 (ICI=38 at RMs 51.3 and 50.9 compared to 44 at RM 51.5). The 1989 sampling did not find a significant decline downstream from the discharge.

The 1995 biological sampling in the Great Miami River upstream (RM 49.1) and downstream (RM 48.0) from the Middletown WWTP indicated partial attainment of the WWH criteria primarily due to fish community impairment. This is an improvement from 1980 and 1989 when the downstream site was in non-attainment for both years. The fish community performance downstream from the Middletown WWTP has slightly improved since 1980, but is still below regional expectations. Macroinvertebrate community performance downstream from the Middletown WWTP has remained consistently in the good to very good range with no indication of a significant impact.

The fish community was in full attainment of the WWH criteria in 1995 downstream from the confluence of Dicks Creek (RM 47.5). This is a significant improvement from 1980 and 1989 when both years were in non-attainment. Fish community scores were poor in 1980 and improved to fair in 1989. Macroinvertebrate community performance has consistently shown a slight decline downstream from the confluence of Dicks Creek. Elevated percent predominance of tolerant organisms in 1980 (5.4% at RM 47.7 compared to 1.7% at RM 47.7) and 1995 (8.2% at RM 47.7 compared to 2.9% at RM 47.7) indicated a persistent impact from Dicks Creek.

Great Miami River: Hamilton to the Ohio River

Since 1980, the number of mainstem miles in full attainment from Hamilton to the Ohio River (RMs 35.0-0.0) increased from 0.0 in 1980 and 1989 to 12.8 in 1995; the number of miles in partial attainment increased from 1.5 in 1980 to 26.5 in 1989 and decreased to 20.1 in 1995; and the number of miles in non-attainment has decreased from 33.5 in 1980 to 8.5 in 1989 and to 2.1 in 1995. Aquatic life use attainment status in the Great Miami River from Hamilton to the Ohio River has improved since 1980 but recovery is not yet complete because 22.2 miles are in partial or non-attainment due primarily to impaired fish assemblages. The fish community has improved from mostly poor quality in 1980 to fair quality in 1989 and 1995 but is still below regional expectations (Figure 89).

Macroinvertebrate community performance in the Great Miami River from Hamilton to the backwaters of the Ohio River has generally been meeting WWH expectations since 1980 (Figure 86, bottom). Community performance in 1980, 1989, and 1995 generally ranged from very good to exceptional. The only significant declines in community performance was documented downstream from Hamilton and upstream from the Hamilton WWTP in 1980 and downstream from the Chevron Chemical/Oil plant in 1989 and 1995.

Both the macroinvertebrate and fish community performance has improved downstream from the Hamilton WWTP since 1980. In 1980, fish community scores ranged from poor to fair quality but improved in 1995 ranging from marginally good to exceptional quality. Since 1980, macroinvertebrate community performance improved downstream from the Hamilton WWTP when the ICI declined into the fair range (ICI=30 at RM 34.1). The community impairment was attributed to storm sewer discharges and was apparently localized since the community improved into the good range (ICI=42) downstream from the Hamilton WWTP at RM 33.0. Community performance in 1989 and 1995 improved to the very good to exceptional range throughout Hamilton. Macroinvertebrate community performance downstream from the Hamilton WWTP has remained consistently in the very good to exceptional range with no indication of a significant impact.

Fish community scores from the Fairfield WWTP to the Ohio River significantly improved from 1980 (fair to poor quality) to 1995 (good to fair quality) but were still performing below regional expectations (Figure 89). Macroinvertebrate communities downstream from the Fairfield WWTP in 1989 and 1995 were performing in the very good to exceptional range with no indication of a significant impact. Macroinvertebrate community performance in 1989 and 1995 demonstrated a decline downstream from the Chevron Chemical/Oil plant. Six point declines in the ICI in both years were due to minor shifts in various ICI metrics without a clear impact type. The extent of this decline that can be attributed to an impact from the Chevron plant was not certain.

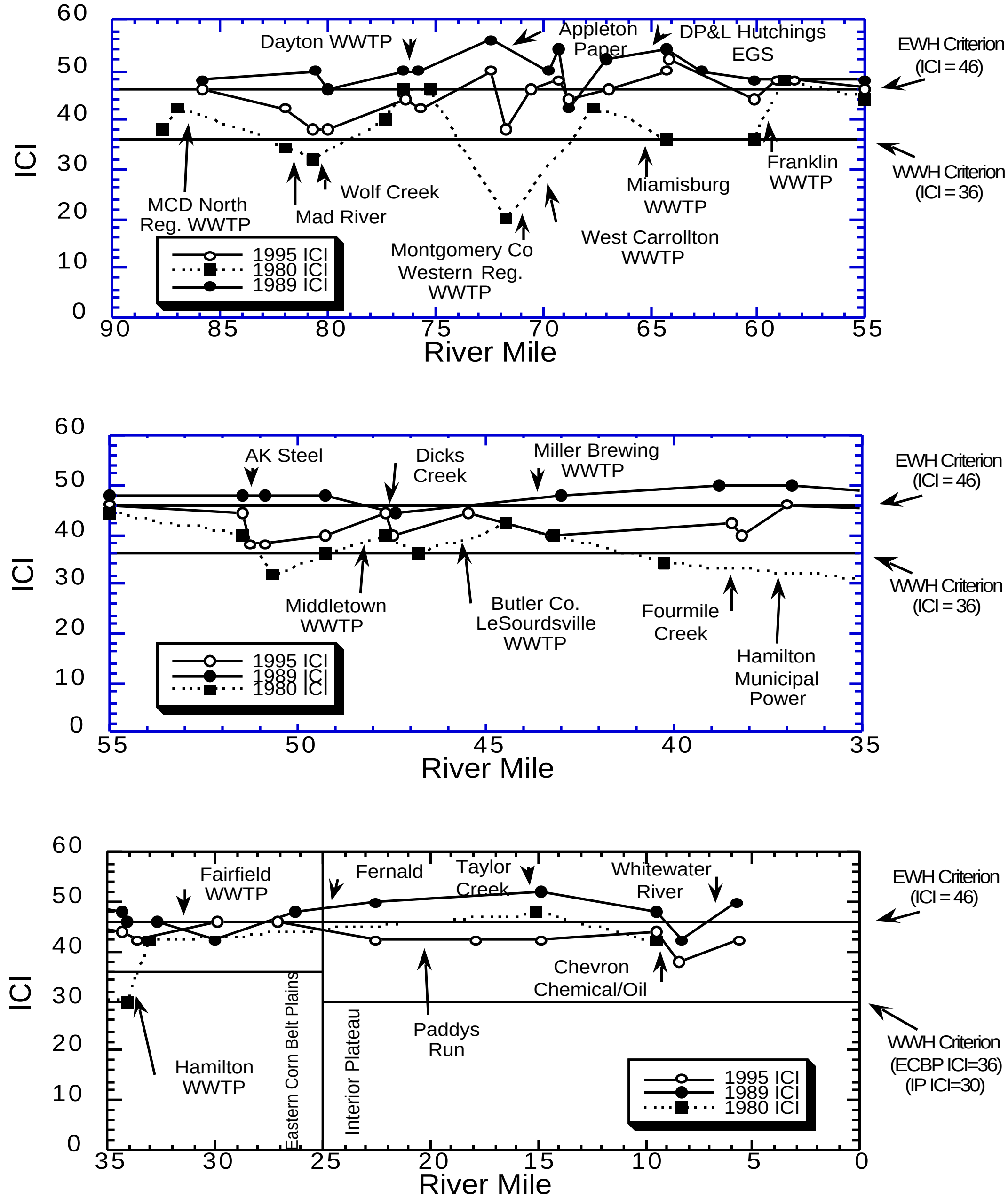


Figure 86 Longitudinal trend of the Invertebrate Community Index (ICI) for the Middle and Lower Great Miami River, 1980 through 1995.

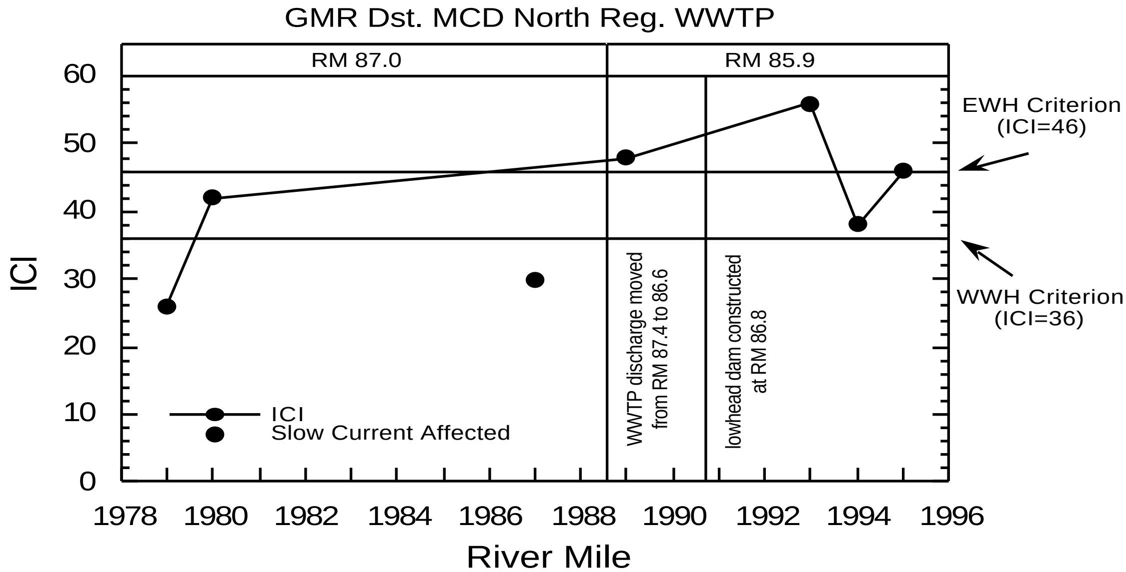


Figure 87 Invertebrate Community Index (ICI) values from the NAWQMN station located downstream from the MCD North Regional WWTP, 1979 through 1994.

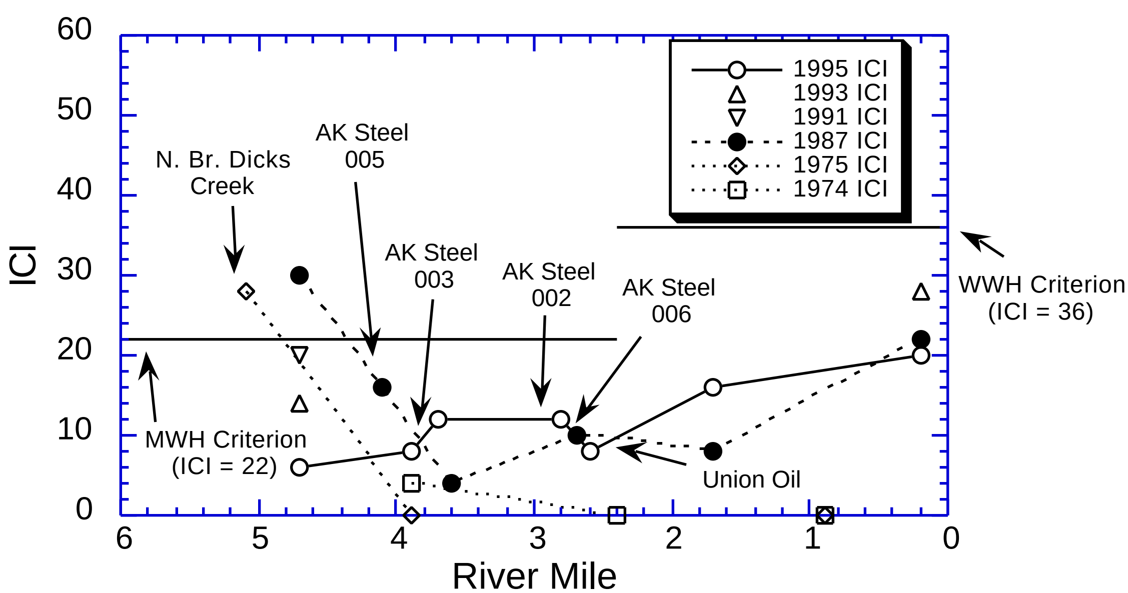


Figure 88 Invertebrate Community Index (ICI) values from Dicks Creek, 1974 through 1995.

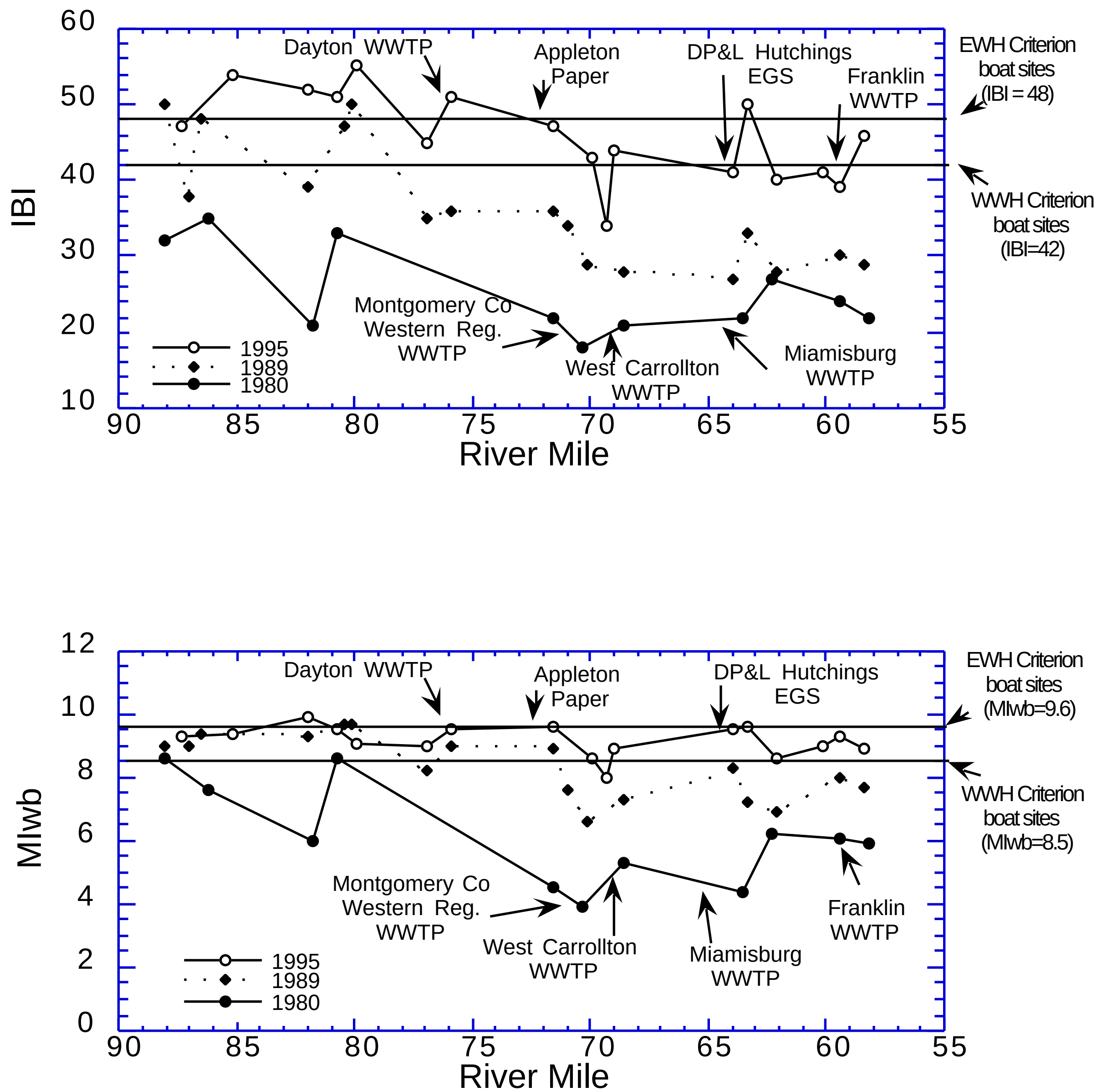
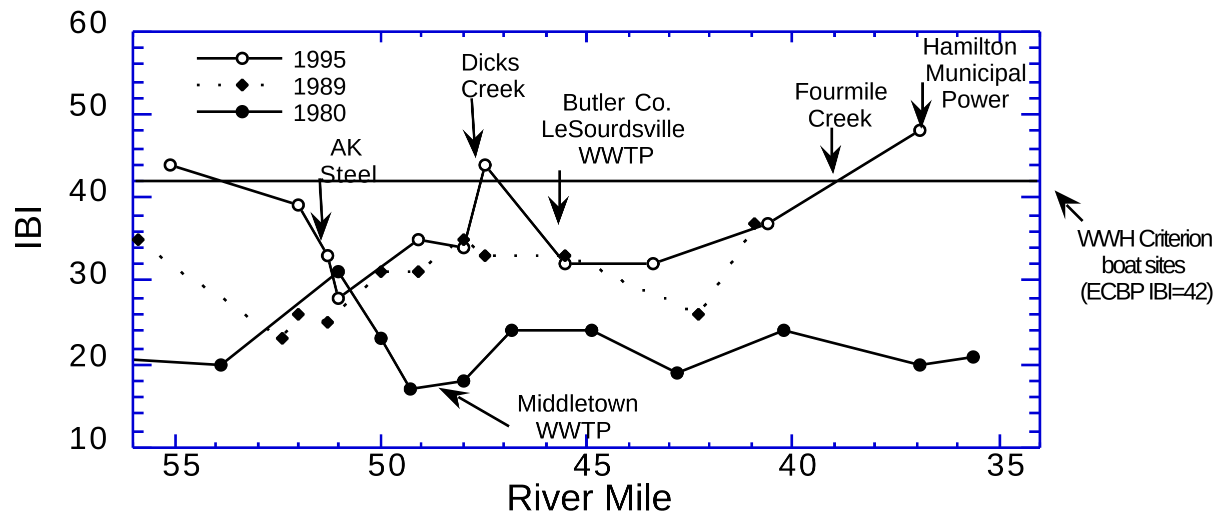


Figure 89 Longitudinal trend of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the Middle Great Miami River (RMs 90.0-55.0).



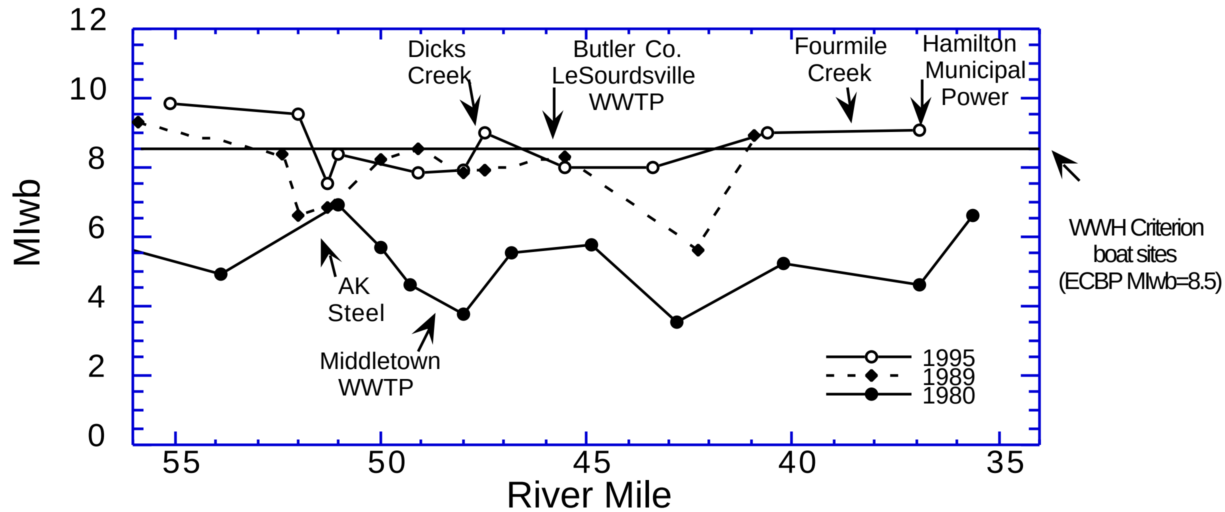


Figure 90 Longitudinal trend of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the Middle and Lower Great Miami River (RMs 55-35) from 1980 through 1995.

Dicks Creek and the North Branch of Dicks Creek

Aquatic life use attainment status in Dicks Creek and the North Branch Dicks Creek has declined since 1987 and in some cases since 1974. The 1995 results indicated non-attainment of the applicable MWH and WWH use designations at all sampling locations due to poor and very poor macroinvertebrate and fish communities. From 1987 to 1995, fish community scores have shown an improvement in the North Branch Dicks Creek, but the macroinvertebrate community continues to be degraded with scores indicative of poor and very poor quality. Fish and macroinvertebrate community scores in Dicks Creek indicated fair to poor quality in 1987 but declined to scores indicative of poor and very poor quality in 1995 (Figures 91 and 92). Macroinvertebrate communities in Dicks Creek downstream from the confluence of the North Branch Dicks Creek have been performing in the very poor to fair ranges since 1974 (Figure 91). The station immediately downstream from the confluence of the North Branch has consistently declined in performance since 1975 (ICI=28 at RM 5.1) and 1987 (ICI=30 at RM 4.7), when MWH expectations were being met, to a low ICI score of 6 (poor) in 1995. This decreasing trend indicated an increased impact from the AK Steel 004 discharge. Community performance in the remainder of Dicks Creek has improved slightly since 1974 and 1975, when macroinvertebrate communities were performing essentially in the very poor range. Communities in the remainder of the MWH segment of Dicks Creek from 1987 to 1995 were performing primarily in the poor range and then demonstrated an improvement into the fair range near the mouth.

Wolf Creek

The fish community showed some improvement in Wolf Creek from 1987 to 1995 particularly downstream from the Brookville WWTP (due to a facility upgrade) where no fish were found in the 1987 survey. In 1995, the fish community had recovered to marginally good quality (IBI=38). However, the assemblage immediately upstream from the WWTP (RM 15.0) has not changed since 1987 (IBI = 28) and remained indicative of fair quality. The macroinvertebrate community was severely impacted upstream and downstream from the Brookville WWTP with poor quality resulting in non-attainment of the WWH use designation.

Bear Creek

The fish community showed modest improvements in Bear Creek from 1981 to 1995 (Figure 93). The macroinvertebrate community was not sampled in 1981 but was in full attainment of the WWH use designation at four of the five sites in 1995.

Whitewater River

Based on comparisons with previous biological surveys conducted by Ohio EPA in 1980 and 1989, the 1995 results showed a continued improvement in the Whitewater River with narratives of exceptional quality. Since 1980, when all sites failed to attain the existing EWH use designation, the sites improved to partial attainment in 1989, and to full attainment in 1995

(Figure 94).

Macroinvertebrate community performance in the Whitewater River during the 1989 study (Ohio EPA files) was documented as exceptional upstream from the Harrison WWTP and good at the two downstream stations. The diminishing performance longitudinally was due to general declines in diversity and organism density without a clear impact type. Community performance was consistently exceptional during the 1995 survey with no indication of the decline observed in 1989.

Elk Creek

The 1995 fish community in Elk Creek showed a slight decline since the 1987 survey. IBI and MIwb scores declined from exceptional (IBI = 50, MIwb = 10.4) in 1987 to good (IBI=46, MIwb = 9.0) in 1995, but the 1995 scores were still in full attainment of the EWH use designation.

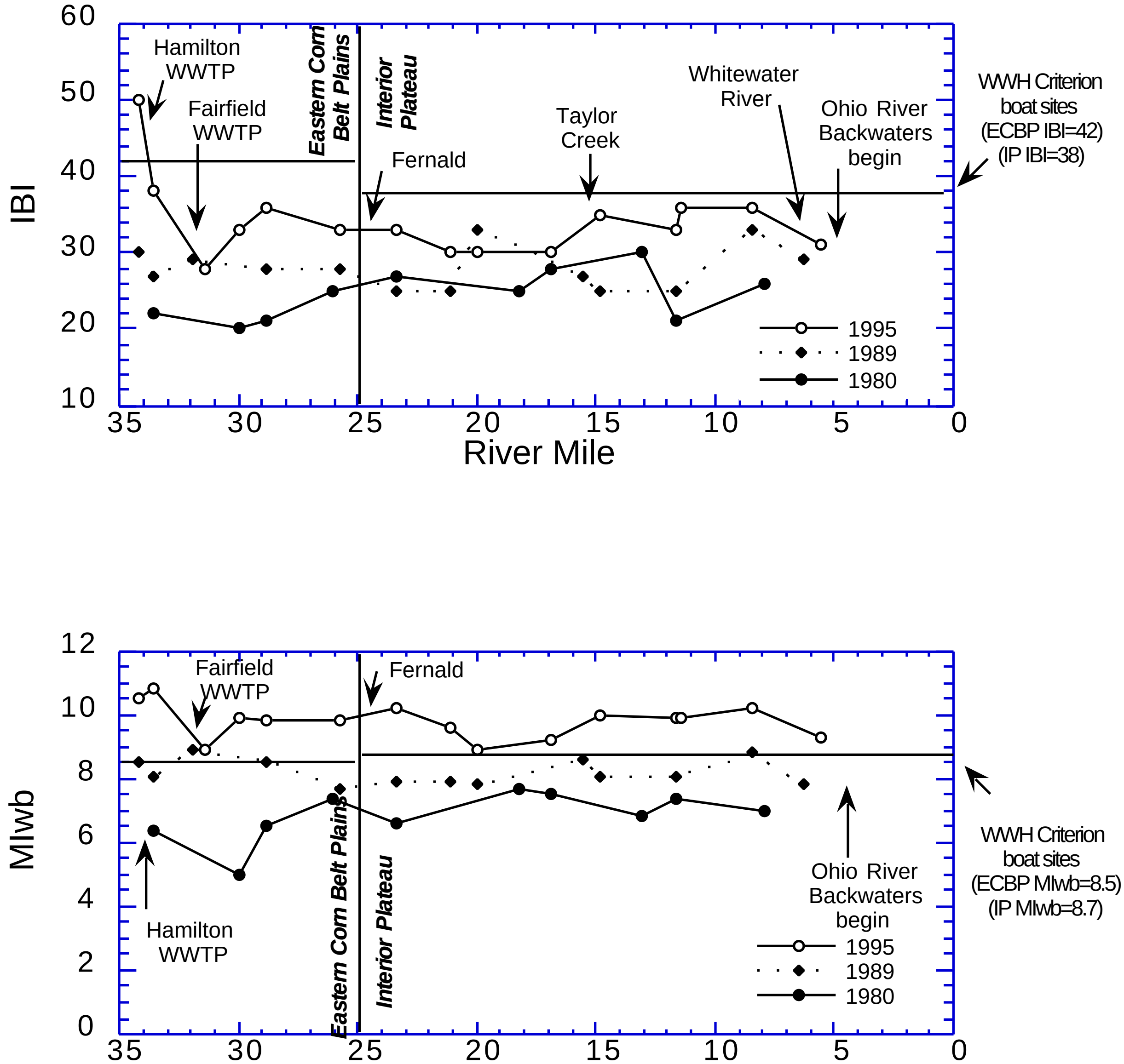


Figure 91 Longitudinal trend of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the lower Great Miami River (RMs 35.0-0.0) from 1980 through 1995.

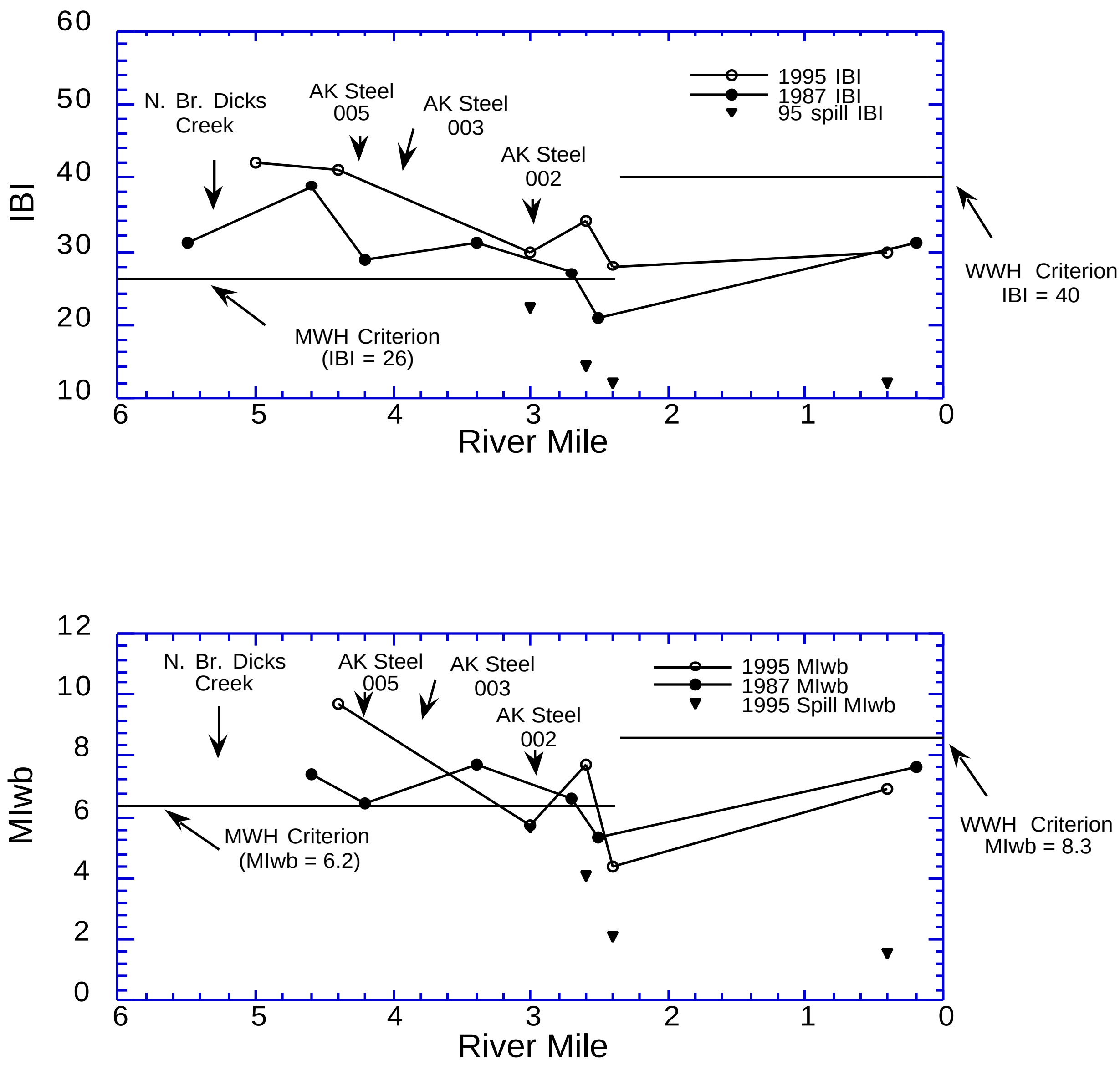


Figure 92 Longitudinal trend of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb for Dicks Creek from 1987 through 1995. The triangle symbols indicate the scores after a spill occured from the AK Steel 003 outfall.

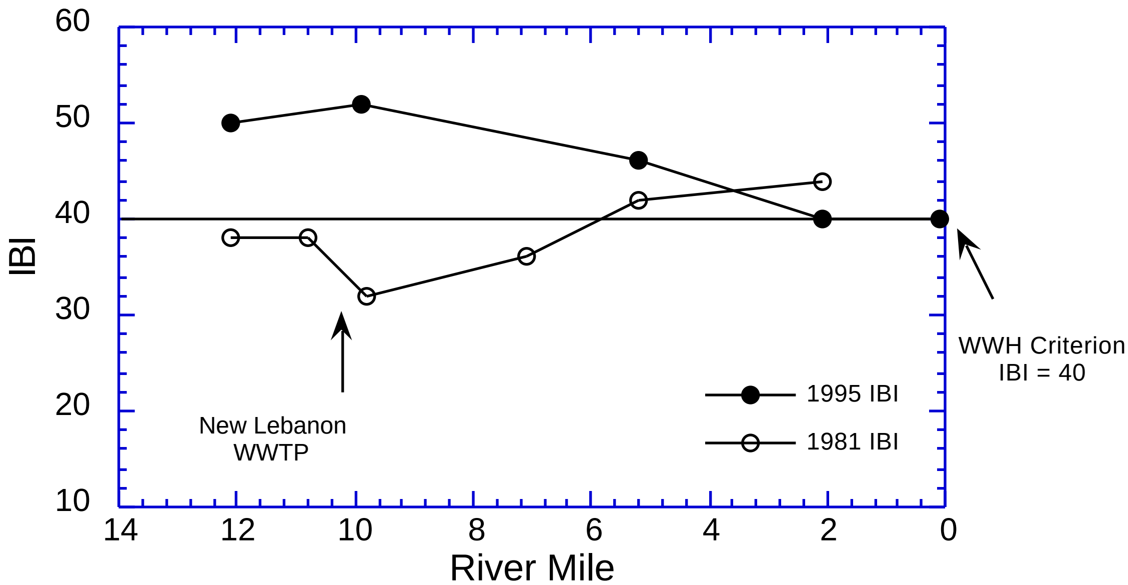


Figure 93. Longitudinal trend of the IBI in Bear Creek from 1981 to 1995.

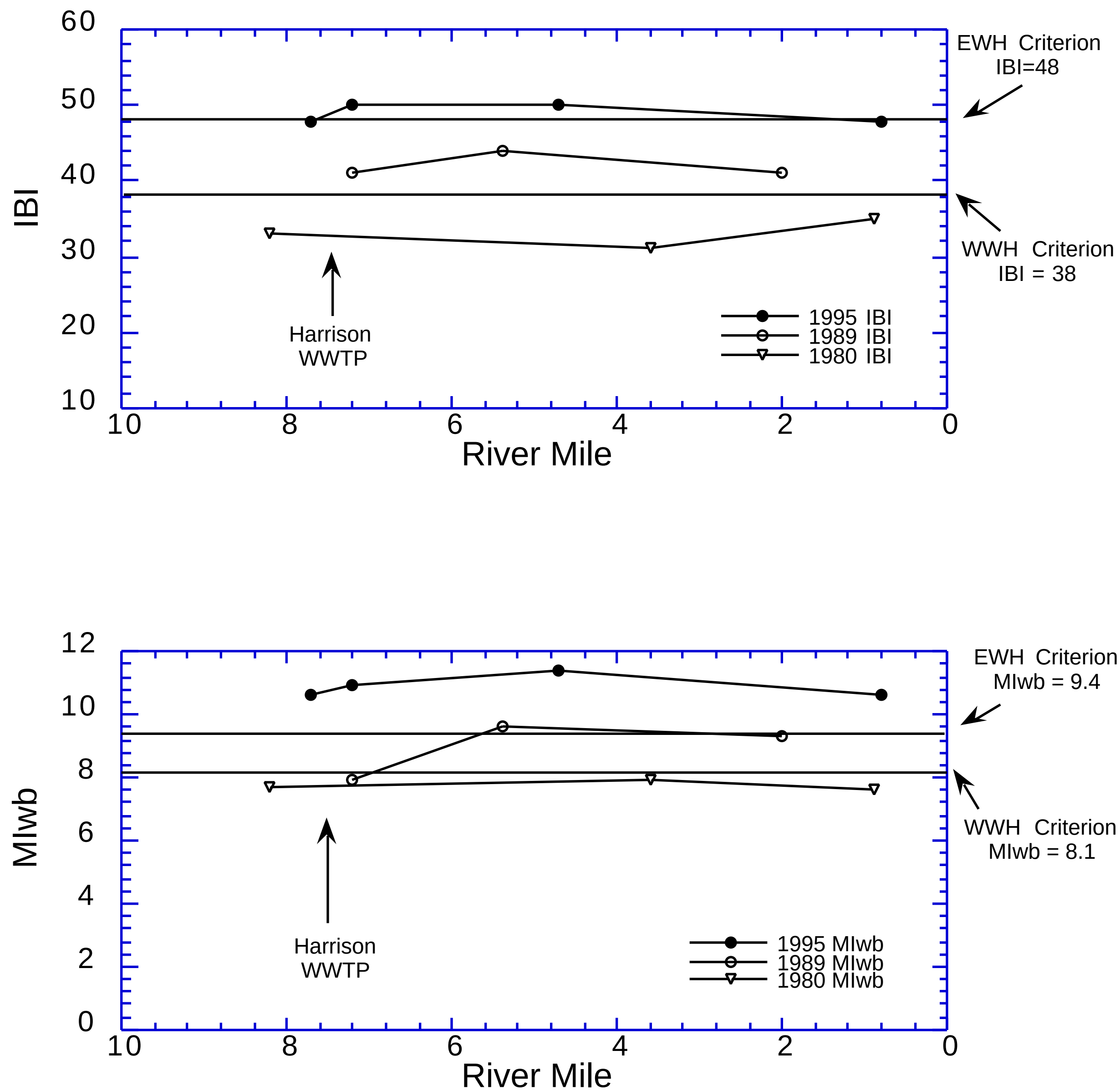


Figure 94. Longitudinal trend of the Index of Biotic Integrity (IBI) and the Modified Index of Well-being (MIwb) for the Whitewater River from 1980 through 1995.

References

DeShon, J. E. 1995. Development and application of the Invertebrate Community (ICI). *in* W.S. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Risk-based Planning and Decision Making. CRC Press/Lewis Publishers, Ann Arbor. (in press).

Fausch, D.O., Karr, J.R. and P.R. Yant. 1984. Regional application of an index of biotic integrity based on stream fish communities. Trans. Amer. Fish. Soc. 113:39-55.

Gammon, J.R. 1976. The fish populations of the middle 340 km of the Wabash River. Tech. Report No. 86. Purdue University, Water Resources Research Center, West Lafayette, IN. 73 p.

____ A. Spacie, J.L. Hamelink, and R.L. Kaesler. 1981. Role of electrofishing in assessing environmental quality of the Wabash River. pp. 307-324. In: Ecological assessments of effluent impacts on communities of indigenous aquatic organisms. ASTM STP 703, J.M. Bates and C.I. Weber (eds.). Philadelphia, PA.

Hughes, R. M., D. P. Larsen, and J. M. Omernik. 1986. Regional reference sites: a method for assessing stream pollution. Env. Mgmt. 10(5): 629-635.

Karr, J. R. 1981. Assessment of biotic integrity using fish communities. Fisheries 6 (6): 21-27.

____ and D.R. Dudley. 1981. Ecological perspective on water quality goals. Env. Mgmt. 5(1): 55-68.

____ K. D. Fausch, P. L. Angermier, P. R. Yant, and I. J. Schlosser. 1986. Assessing biological integrity in running waters: a method and its rationale. Ill. Nat. Hist. Surv. Spec. Publ. 5. 28 p.

____ 1991. Biological integrity: a long-neglected aspect of water resource management. Ecological Applications 1(1):66-84.

Kelly, M. H., R. L. Hite. 1984. Evaluation of Illinois stream sediment data: 1974-1980. Illinois Environmental Protection Agency, Div. of Water Pollution Control, Springfield, IL.

Miner R. and D. Borton. 1991. Considerations in the development and implementation of biocriteria, Water Quality Standards for the 21st Century, U.S. EPA, Offc. Science and Technology, Washington, D.C., 115.

Ohio Department of Natural Resources 1960. Gazetteer of Ohio streams. Ohio Dept. of Natural Resources, Division of Water, Ohio Water Plan Inventory Report No. 12.

Ohio Environmental Protection Agency 1987a. Biological criteria for the protection of aquatic life: Vol. I. The role of biological data in water quality assessment. Div. of Water Quality Monitoring and Assessment, Surface Water Section, Columbus, OH.

____ 1987b. Biological criteria for the protection of aquatic life: Vol. II. Users manual for biological field assessment of Ohio surface waters. Div. of Water Quality Monitoring and Assessment, Surface Water Section, Columbus, OH.

____ 1989a. Ohio EPA manual of surveillance methods and quality assurance practices, updated edition. Div. of Environmental Services, Columbus, OH.

____ 1989b. Addendum to biological criteria for the protection of aquatic life: Users manual for biological field assessment of Ohio surface waters. Div. of Water Quality Planning and Assessment, Surface Water Section, Columbus, OH.

____ 1989c. Biological criteria for the protection of aquatic life: Vol. III. Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities. Div. of Water Quality Planning and Assessment, Columbus, OH.

____ 1991. The use of biological criteria in the Ohio EPA surface water monitoring and assessment program. Div. of Water Quality Planning & Assessment, Ecological Assessment Section, Columbus, OH.

____ 1991a. 1990 Biological and Water Quality Study of the Stillwater River Basin (Darke, Miami, and Montgomery Counties, Ohio) and Trend Assessment: 1982 to 1990. Div. of Water Quality Planning & Assessment, Ecological Assessment Section, Columbus, OH.

____ 1992. Biological and Water Quality Study of Sevenmile Creek, Preble and Butler Counties. Div. of Water Quality Planning & Assessment, Ecological Assessment Section, Columbus, OH.

____ 1995. Biological and Water Quality Study of the Upper Great Miami River and Selected Tribuatries. Division of Surface Water, Ecological Assessment Section, Columbus, OH.

____ 1997. Ohio water quality inventory - 1996 305(b) report, volume I and executive summary. Rankin, E.T., Yoder, C. O., and Mishne, D. A. (Eds.), Ecological Assessment Unit.

Columbus, Ohio.

Omernik, J. M. 1987. Ecoregions of the conterminous United States. Ann. Assoc. Amer. Geogr. 77(1): 118-125.

Persaud, D., J. Jaagumayi, and A. Hayton. 1994. Guidelines for the protection and management of aquatic sediment quality in Ontario. Ministry of the Environment, Public Information Centre, Toronto, Ontario.

Rankin, E.T. 1989. The qualitative habitat evaluation index (QHEI): rationale, methods, and application. Division of Water Quality Planning and Assessment, Columbus, OH.

____ and C. O. Yoder. 1991 Calculation and uses of the Area of Degradation Value (ADV). Division of Water Quality Planning and Assessment, Surface Water Section, Columbus, OH.

____ 1995. Habitat indices in water resource quality assessments. *in* W.S. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Risk-based Planning and Decision Making. CRC Press/Lewis Publishers, Ann Arbor. (in press).

Suter, G. W. 1993. A critique of ecosystem health concepts and indexes. Env. Tox. and Chem. 12:1533-1539.

U.S. Department of Energy, 1996. Fernald Site Environmental Report For Calander Year 1995.

____ 1995. *Remidial Investigation Report for Operable Unit 5,* Fernald Environmental Management Project, DOE, Fernald Area Office, Cincinnati, OH.

____ 1995. Mound Site Environmental Report For Calander Year 1994.

____ 1995. Operable Unit 5 Record of Decision, December 1995.

____ 1994. *Characterization of Background Water Quality For Streams and Groundwater,* Fernald Environmental Management Project, DOE, Fernald Field Office, Cincinnati, OH.

U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR) Public Health Statement for Uranium, December, 1990.

U.S. Environmental Protection Agency. 1991. *Risk Assessment Guidance for Superfund (RAGS): Volume 1 - Human Health Evaluation Manual, Part B - Development of Risk-Based*

Preliminary Remediation Goals.

Yoder, C. O. 1989. The development and use of biological criteria in Ohio surface waters. U. S. EPA, Criteria and Standards Div., Water Quality Stds. 21st Century, 1989: 139-146.

____ 1991**.** Answering some concerns about biological criteria based on experiences in Ohio. In: Gretchin H. Flock, editor. Water quality standards for the 21st century. Proceedings of a National Conference, U. S. EPA, Office of Water, Washington, D.C.

____ 1995. Policy issues and management applications of biological criteria, *in* W.S. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Risk-based Planning and Decision Making. CRC Press/Lewis Publishers, Ann Arbor. (in press).

____ and E.T. Rankin. 1995. Biological response signatures and the area of degradation value: new tools for interpreting multi-metric data, *in* W.S. Davis and T. Simon (eds.). Biological Assessment and Criteria: Tools for Risk-based Planning and Decision Making. CRC Press/Lewis Publishers, Ann Arbor. (in press).

Appendices to:

Biological and Water Quality Study of the Middle and Lower Great Miami River and Selected Tributaries, 1995

Montgomery, Warren,
Butler, and Hamilton Counties, (Ohio)

Volume II

OEPA Technical Report MAS/1996-12-8

State of Ohio Environmental Protection Agency
Division of Surface Water
Monitoring and Assessment Section
1685 Westbelt Drive
Columbus, OH 43228-3809
and
Nonpoint Source Program
1800 WaterMark Drive
Columbus, OH 43266-0149
and
Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911

TABLE OF CONTENTS

Volume II

Appendix Table A-1. GREAT MIAMI RIVER CHEMICAL / PHYSICAL WATER SAMPLING RESULTS 1995

STORET	H05W23	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	92.65		#01-UST TAYLORSVILLE DAM *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	0900	21.5	7.0	7.90		3.98	1240	2.3	25
07/13/95	1015	24.5	8.8	8.36		2.24	346	4.7	K 10
07/27/95	0900	22.0	6.8		7.99	10.25	6150	4.0	47
08/24/95	1115	22.1	7.7		8.20	2.61	493	K 2.0	15
09/07/95	1005	21.5	7.9		8.43	1.90	234	4.0	13
09/21/95	1340	17.9	8.8		8.41	1.90	234	K 2.0	18
AVERAGE		21.58	7.83	8.130	8.258	3.813	1449.5	2.92	21.3
MAXIMUM		24.5	8.8	8.36	8.43	10.25	6150	4.7	47
MINIMUM		17.9	6.8	7.90	7.99	1.90	234	2.0	10

RM 92.65

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	502		7.31		K 0.05			0.20	382	182
07/13/95	673		2.37		K 0.05			0.12	430	38
07/27/95	379		3.21		0.06			0.29	250	258
08/24/95	651		2.18		K 0.05			0.18	408	24
09/07/95	712		1.56		K 0.05			0.14	392	14
09/21/95	743		1.88		K 0.05			0.21	450	11
AVERAGE	610.0		3.085		0.052			0.190	385.3	87.8
MAXIMUM	743		7.31		0.06			0.29	450	258
MINIMUM	379		1.56		0.05			0.12	250	11

RM 92.65

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	3	K 0.2	65	K 10.0		6.0	24			K40.0	K2.0	46.0	261
07/13/95													
07/27/95	3	0.2	54	11.0		6.0	20			K40.0	K2.0	51.0	217
08/24/95	3	K 0.2	81	K 10.0		K 2.0	28			K40.0	3.0	26.0	318
09/07/95	K 2	K 0.2	89	K 10.0		K 2.0	35			K40.0	K2.0	24.0	366
09/21/95	K 2	K 0.2	91	K 10.0		K 2.0	35			K40.0	K2.0	12.0	371
AVERAGE	2.6	0.20	76.0	10.20		3.60	28.4			40.00	2.20	31.80	306.6
MAXIMUM	3	0.2	91	11.0		6.0	35			40.0	3.0	51.0	371
MINIMUM	2	0.2	54	10.0		2.0	20			40.0	2.0	12.0	217

NOTE: K = less than L = greater than

*Gage and flow data based on USGS gage (#03263000)

Appendix Table A-1, continued.

STORET 600310 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 83.57 #04-KEOWEE / N. DIXIE

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	0945	22.0	7.2	8.02					31
07/13/95	1100	25.5	15.4	8.72				7.5	24
07/27/95	0930	22.5	9.8		8.18			4.0	44
08/24/95	1200	23.1	8.9		8.33			K 2.0	K 10
09/07/95	1040	21.7	7.6		8.38			2.7	14
09/21/95	1415	18.1	9.3		8.49			2.8	18
AVERAGE		22.15	9.70	8.370	8.345			3.80	23.5
MAXIMUM		25.5	15.4	8.72	8.49			7.5	44
MINIMUM		18.1	7.2	8.02	8.18			2.0	10

RM 83.57

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	531		6.72		K 0.05			0.21	372	212
07/13/95	613		1.88		K 0.05			0.09	376	30
07/27/95	418		3.16		K 0.05			0.35	280	220
08/24/95	644		2.19		K 0.05			0.13	410	12
09/07/95	734		1.80		K 0.05			0.16	414	20
09/21/95	765		1.85		K 0.05			0.24	454	13
AVERAGE	617.5		2.933		0.050			0.197	384.3	84.5
MAXIMUM	765		6.72		0.05			0.35	454	220
MINIMUM	418		1.80		0.05			0.09	280	12

RM 83.57

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	9	K 0.2	69	10.0		8.0	26			K40.0	K2.0	53.0	279
07/13/95													
07/27/95	3	0.3	58	K 10.0		6.0	20			K40.0	K2.0	47.0	227
08/24/95	K 2	K 0.2	76	K 10.0		K 2.0	27			K40.0	K2.0	20.0	301
09/07/95	K 2	K 0.2	88	K 10.0		K 2.0	35			K40.0	K2.0	13.0	364
09/21/95	K 2	K 0.2	89	K 10.0		K 2.0	34			K40.0	K2.0	20.0	362
AVERAGE	3.6	0.22	76.0	10.00		4.00	28.4			40.00	2.00	30.60	306.6
MAXIMUM	9	0.3	89	10.0		8.0	35			40.0	2.0	53.0	364
MINIMUM	2	0.2	58	10.0		2.0	20			40.0	2.0	13.0	227

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 610060 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 80.65 #05-MONUMENT AVE. *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1030	22.2	8.0	8.00	8.17	26.28	2120	K 2.0	22
07/13/95	1230	25.0	11.0	8.54		25.68	771	5.5	12
07/27/95	1000	22.7	7.9		8.07	28.46	11000	3.9	50
08/24/95	1225	22.5	6.0		8.35	25.92	1350	K 2.0	K 10
09/07/95	1105	21.8	8.3		8.35	25.57	626	2.3	14
09/21/95	1445	17.9	7.7		8.44	25.55	591	2.1	21
AVERAGE		22.02	8.15	8.270	8.276	26.243	2743.0	2.97	21.5
MAXIMUM		25.0	11.0	8.54	8.44	28.46	11000	5.5	50
MINIMUM		17.9	6.0	8.00	8.07	25.55	591	2.0	10

RM 80.65

DATE	Conductivity (μmhos/cm)	CN-T (μg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (μg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	574		5.65		K 0.05			0.18	388	230
07/13/95	675		2.44		K 0.05			0.08	423	42
07/27/95	424		2.97		K 0.05			0.33	272	373
08/24/95	680		2.60		K 0.05			0.13	426	20
09/07/95	714		2.10		K 0.05			0.10	422	20
09/21/95	750		2.47		K 0.05			0.20	468	21
AVERAGE	636.2		3.038		0.050			0.170	399.8	117.7
MAXIMUM	750		5.65		0.05			0.33	468	373
MINIMUM	424		2.10		0.05			0.08	272	20

RM 80.65

DATE	As-T (μg/l)	Cd-T (μg/l)	Ca-T (mg/l)	Cu-T (μg/l)	Fe-T (μg/l)	Pb-T (μg/l)	Mg-T (mg/l)	Mn-T (μg/l)	Hg-T (μg/l)	Ni-T (μg/l)	Se-T (μg/l)	Zn-T (μg/l)	Hardness (mg/l CaCO3)
06/29/95	3	K 0.2	75	K 10.0		5.0	28			K40.0	K2.0	37.0	303
07/13/95													
07/27/95	3	0.4	69	14.0		8.0	24			K40.0	K2.0	56.0	271
08/24/95	2	K 0.2	80	K 10.0		11.0	30			K40.0	K2.0	13.0	323
09/07/95	K 2	K 0.4	86	K 10.0		K 2.0	37			K40.0	K2.0	22.0	367
09/21/95	K 2	K 0.2	94	K 10.0		K 2.0	39			K40.0	K2.0	17.0	395
AVERAGE	2.4	0.28	80.8	10.80		5.60	31.6			40.00	2.00	29.00	331.8
MAXIMUM	3	0.4	94	14.0		11.0	39			40.0	2.0	56.0	395
MINIMUM	2	0.2	69	10.0		2.0	24			40.0	2.0	13.0	271

NOTE: K = less than L = greater than
*Gage and flow data based on USGS gage (#03270500) at RM 80.90

Appendix Table A-1, continued.

STORET	H09W72	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	79.95		#06-FIFTH ST, DST WOLF CREEK

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1130	21.2	7.5	8.12				9.9	47
07/13/95	1300	26.0	10.5	8.64				6.6	15
07/27/95	1015	22.6	4.7		8.13			3.1	39
08/24/95	1240	23.0	7.9		8.37			K 2.0	12
09/07/95	1125	21.1	8.9		7.72			2.0	14
09/21/95	1510	18.0	9.9		8.43			K 2.0	12
AVERAGE		21.98	8.23	8.380	8.163			4.27	23.2
MAXIMUM		26.0	10.5	8.64	8.43			9.9	47
MINIMUM		18.0	4.7	8.12	7.72			2.0	12

RM 79.95

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	345		1.86		0.14	1.06		0.16		
07/13/95	670		2.09		K 0.05			K 0.05	392	44
07/27/95	461		3.93		0.05			0.26	302	206
08/24/95	664		2.37		K 0.05			0.14	434	22
09/07/95	728		1.68		K 0.05			0.06	416	14
09/21/95	763		2.24		K 0.05			0.18	470	21
AVERAGE	605.2		2.362		0.065	1.060		0.142	402.8	61.4
MAXIMUM	763		3.93		0.14	1.06		0.26	470	206
MINIMUM	345		1.68		0.05	1.06		0.05	302	14

RM 79.95

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	3	0.4	58	20.0		37.0	21			K40.0	K2.0	130.0	231
07/13/95													
07/27/95	3	0.3	66	11.0		6.0	24			K40.0	K2.0	42.0	264
08/24/95	3	K 0.2	78	K 10.0		K 2.0	29			K40.0	K2.0	29.0	314
09/07/95	K 2	K 0.2	96	K 10.0		2.0	39			K40.0	K2.0	19.0	400
09/21/95	3	K 0.2	93	K 10.0		3.0	39			K40.0	K2.0	33.0	393
AVERAGE	2.8	0.26	78.2	12.20		10.00	30.4			40.00	2.00	50.60	320.4
MAXIMUM	3	0.4	96	20.0		37.0	39			40.0	2.0	130.0	400
MINIMUM	2	0.2	58	10.0		2.0	21			40.0	2.0	19.0	231

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W67 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 77.24 #07-BROADWAY AVE, UST DAYTON WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1315	22.0	7.2	8.05				2.0	16
07/13/95	1330	25.2	10.0	8.94				6.2	12
07/27/95	1045	22.2	7.5		8.07			4.0	36
08/24/95	1300	23.4	9.7		8.36			K 2.0	K 10
09/07/95	1155	21.5	8.6		8.37			2.1	14
09/21/95	1530	18.0	8.3		8.40			K 2.0	15
AVERAGE		22.05	8.55	8.495	8.300			3.05	17.2
MAXIMUM		25.2	10.0	8.94	8.40			6.2	36
MINIMUM		18.0	7.2	8.05	8.07			2.0	10

RM 77.24

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	595		4.78		K 0.05			0.16	382	142
07/13/95	672		2.30		K 0.05			0.07	426	51
07/27/95	395		2.77		0.08			3.90	262	467
08/24/95	675		2.50		K 0.05			0.15	438	18
09/07/95	730		1.89		K 0.05				418	18
09/21/95	765		2.52		K 0.05			0.16	458	16
AVERAGE	638.7		2.793		0.055			0.888	397.3	118.7
MAXIMUM	765		4.78		0.08			3.90	458	467
MINIMUM	395		1.89		0.05			0.07	262	16

RM 77.24

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	2	K 0.2	73	K 10.0		5.0	29			K40.0	K2.0	37.0	302
07/13/95													
07/27/95	K 2	0.3	65	15.0		10.0	23			K40.0	K2.0	67.0	257
08/24/95	K 2	K 0.2	83	K 10.0		K 2.0	31			K40.0	K2.0	24.0	335
09/07/95	K 2	K 0.2	85	K 10.0		K 2.0	38			K40.0	K2.0	16.0	369
09/21/95	K 2	K 0.2	89	K 10.0		K 2.0	37			K40.0	K2.0	12.0	375
AVERAGE	2.0	0.22	79.0	11.00		4.20	31.6			40.00	2.00	31.20	327.6
MAXIMUM	2	0.3	89	15.0		10.0	38			40.0	2.0	67.0	375
MINIMUM	2	0.2	65	10.0		2.0	23			40.0	2.0	12.0	257

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W73 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 75.86 #08-DST DAYTON WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	0845	22.5	8.2		8.05			K 2.0	25
07/13/95	0915	25.0	9.2		8.23			4.0	K 10
07/27/95	0830	22.2	7.6		8.03			4.3	56
08/24/95	0950	24.0	8.6		8.14			K 2.0	12
09/07/95	0945	23.5	7.8		8.10			K 2.0	14
09/21/95	0920	20.5	8.6		8.21			K 2.0	12
AVERAGE		22.95	8.33		8.127			2.72	21.5
MAXIMUM		25.0	9.2		8.23			4.3	56
MINIMUM		20.5	7.6		8.03			2.0	10

RM 75.86

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	809	K 10.0	7.34		K 0.05	K 1.00	K 10	0.62	512	83
07/13/95	1020		7.77		K 0.05			1.17	624	29
07/27/95	425		2.61		0.06		K 10	0.34	292	447
08/24/95	946	K 10.0	5.51		K 0.05	K 1.00	K 10	1.10	558	18
09/07/95	1080		7.29		K 0.05			1.10	600	12
09/21/95	1170		7.38		K 0.05			1.55	698	8
AVERAGE	908.3	10.0	6.317		0.052	1.000	10.0	0.980	547.3	99.5
MAXIMUM	1170	10	7.77		0.06	1.00	10	1.55	698	447
MINIMUM	425	10	2.61		0.05	1.00	10	0.34	292	8

RM 75.86

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	2	K 0.2	86	K 10.0		3.0	31			K40.0	K2.0	33.0	342
07/13/95													
07/27/95	3	0.3	70	17.0		13.0	26			K40.0	K2.0	76.0	282
08/24/95	K 2	K 0.2	82	K 10.0		K 2.0	30			K40.0	K2.0	37.0	328
09/07/95	K 2	K 0.2	86	K 10.0		K 2.0	36			K40.0	K2.0	37.0	363
09/21/95	K 2	K 0.2	88	K 10.0		K 2.0	33			K40.0	K2.0	29.0	356
AVERAGE	2.2	0.22	82.4	11.40		4.40	31.2			40.00	2.00	42.40	334.2
MAXIMUM	3	0.3	88	17.0		13.0	36			40.0	2.0	76.0	363
MINIMUM	2	0.2	70	10.0		2.0	26			40.0	2.0	29.0	282

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 610130 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 73.77 #09-SELLARS RD.

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	0945	22.5	8.5		8.09			2.3	22
07/13/95	1000	27.0	7.9		8.23			5.3	K 10
07/27/95	0935	22.9	7.3		8.06			3.0	30
08/24/95	1030	23.5	7.8		8.28			K 2.0	12
09/07/95	1015	23.5	8.5		8.25			3.0	14
09/21/95	0955	19.0	8.4		8.35			K 2.0	12
AVERAGE		23.07	8.07		8.210			2.93	16.7
MAXIMUM		27.0	8.5		8.35			5.3	30
MINIMUM		19.0	7.3		8.06			2.0	10

RM 73.77

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	691		6.23		K 0.05			0.36	456	90
07/13/95	717		3.12		K 0.05			0.20	448	75
07/27/95	494		3.88		0.06			0.34	310	221
08/24/95	786		3.84		K 0.05			0.52	476	38
09/07/95	865		4.29		K 0.05			0.46	486	22
09/21/95	856		3.66		K 0.05			0.51	520	18
AVERAGE	734.8		4.170		0.052			0.398	449.3	77.3
MAXIMUM	865		6.23		0.06			0.52	520	221
MINIMUM	494		3.12		0.05			0.20	310	18

RM 73.77

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	3	K 0.2	79	K 10.0		3.0	29	82.0		K40.0	K2.0	27.0	317
07/13/95													
07/27/95	3	K 0.2	65	10.0		7.0	24			K40.0	K2.0	42.0	261
08/24/95	3	0.3	81	K 10.0		K 2.0	29			K40.0	K2.0	32.0	322
09/07/95	K 2	K 0.2	79	K 10.0		K 2.0	37			K40.0	K2.0	15.0	350
09/21/95	K 2	K 0.2	86	K 10.0		2.0	35			K40.0	K2.0	25.0	359
AVERAGE	2.6	0.22	78.0	10.00		3.20	30.8	82.00		40.00	2.00	28.20	321.8
MAXIMUM	3	0.3	86	10.0		7.0	37	82.0		40.0	2.0	42.0	359
MINIMUM	2	0.2	65	10.0		2.0	24	82.0		40.0	2.0	15.0	261

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W74 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 72.10 #10-DST APPLETON PAPER WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1030	22.5	9.2		8.15			5.7	31
07/13/95	1030	26.5	9.8		8.45			7.3	21
07/27/95	0950	22.2	8.3		8.04			4.1	53
08/24/95	1100	25.0	8.6		8.29			9.8	55
09/07/95	1040	24.5	8.5		8.39			7.6	41
09/21/95	1025	25.5	5.4		7.90			27.0	184
AVERAGE		24.37	8.30		8.203			10.25	64.2
MAXIMUM		26.5	9.8		8.45			27.0	184
MINIMUM		22.2	5.4		7.90			4.1	21

RM 72.10

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	880		4.58		K 0.05			0.18	570	80
07/13/95	872		3.31		K 0.05			0.20	544	50
07/27/95	518		3.05		0.06			0.38	327	249
08/24/95	1230		2.43		K 0.05		K 10	0.22	736	30
09/07/95	1390		2.41		0.06			0.24	790	24
09/21/95	3720		0.40		0.46			0.20	2210	26
AVERAGE	1435.0		2.697		0.122		10.0	0.237	862.8	76.5
MAXIMUM	3720		4.58		0.46		10	0.38	2210	249
MINIMUM	518		0.40		0.05		10	0.18	327	24

RM 72.10

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	2	K 0.2	85	K 10.0		3.0	31			K40.0	K2.0	24.0	340
07/13/95													
07/27/95	3	K 0.2	77	16.0		13.0	27			K40.0	K2.0	72.0	303
08/24/95	K 2	K 0.2	87	K 10.0		K 2.0	28			K40.0	K2.0	38.0	333
09/07/95	K 2	K 0.2	86	K 10.0		K 2.0	37			K40.0	K2.0	17.0	367
09/21/95	K 2	K 0.4	105	K 10.0		K 2.0	33			K40.0	K2.0	77.0	398
AVERAGE	2.2	0.24	88.0	11.20		4.40	31.2			40.00	2.00	45.60	348.2
MAXIMUM	3	0.4	105	16.0		13.0	37			40.0	2.0	77.0	398
MINIMUM	2	0.2	77	10.0		2.0	27			40.0	2.0	17.0	303

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 600070 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 69.87 #12-FARMERSVILLE-WEST CARROLLTON PIKE

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1215	23.0	8.3		8.26			3.4	22
07/12/95	1100	25.0	11.6		8.44			5.4	21
07/25/95	1100	24.0	7.7		8.40			3.9	19
08/24/95	1215	24.0	8.6		8.34			K 2.0	12
09/07/95	1340	23.0	7.4		8.53			3.9	23
09/21/95	1230	19.0	7.7		8.29			2.7	K 10
AVERAGE		23.00	8.55		8.377			3.55	17.8
MAXIMUM		25.0	11.6		8.53			5.4	23
MINIMUM		19.0	7.4		8.26			2.0	10

RM 69.87

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	650		4.44		K 0.05			0.19	412	83
07/12/95	761		3.84		K 0.05			0.24	484	54
07/25/95	683		2.47		K 0.05			0.23		74
08/24/95	759		3.08		K 0.05			0.30	472	28
09/07/95	879		2.91		K 0.05			0.31	494	26
09/21/95	892		3.40		K 0.05			0.45	516	19
AVERAGE	770.7		3.357		0.050			0.287	475.6	47.3
MAXIMUM	892		4.44		0.05			0.45	516	83
MINIMUM	650		2.47		0.05			0.19	412	19

RM 69.87

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	K 2	K 0.2	76	K 10.0		3.0	29			K40.0	K2.0	23.0	309
07/12/95													
07/25/95	K 2	K 0.2	72	K 10.0		3.0	31				K2.0	26.0	307
08/24/95	K 2	0.3	83	K 10.0		K 2.0	31			K40.0	K2.0	21.0	335
09/07/95	K 2	K 0.2	86	K 10.0		K 2.0	38			K40.0	K2.0	15.0	371
09/21/95	K 2	K 0.2	87	K 10.0		K 2.0	34			K40.0	K2.0	25.0	357
AVERAGE	2.0	0.22	80.8	10.00		2.40	32.6			40.00	2.00	22.00	335.8
MAXIMUM	2	0.3	87	10.0		3.0	38			40.0	2.0	26.0	371
MINIMUM	2	0.2	72	10.0		2.0	29			40.0	2.0	15.0	307

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W75 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 68.30 #13-DST WEST CARROLLTON WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1115	23.0			8.27			K 2.0	K 10
07/12/95	0945	24.5	8.7		8.42			5.5	21
07/25/95	0950	24.0	7.8		8.39			3.4	K 10
08/24/95	1115	24.0	7.7		8.36			2.1	15
09/07/95	1200	23.0	6.5		8.48			3.7	23
09/21/95	1110	19.0	8.0		8.32			2.5	21
AVERAGE		22.92	7.74		8.373			3.20	16.7
MAXIMUM		24.5	8.7		8.48			5.5	23
MINIMUM		19.0	6.5		8.27			2.0	10

RM 68.30

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	667		4.50		K 0.05			0.21	428	23
07/12/95	764		3.88		K 0.05			0.23	434	54
07/25/95	706		2.54		K 0.05			0.23		48
08/24/95	761		2.98		K 0.05			0.31	462	29
09/07/95	880		2.85		K 0.05			0.32	498	28
09/21/95	902		3.34		K 0.05			0.45	520	20
AVERAGE	780.0		3.348		0.050			0.292	468.4	33.7
MAXIMUM	902		4.50		0.05			0.45	520	54
MINIMUM	667		2.54		0.05			0.21	428	20

RM 68.30

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	79	K 10.0		4.0	30			K40.0	K2.0	23.0	321
07/12/95													
07/25/95	K 2	K 0.2	75	K 10.0		K 2.0	32				K2.0	16.0	319
08/24/95	K 2	K 0.2	80	K 10.0		K 2.0	29			K40.0	K2.0	33.0	319
09/07/95	K 2	K 0.2	84	K 10.0		K 2.0	38			K40.0	K2.0	12.0	366
09/21/95	K 2	K 0.2	90	K 10.0		K 2.0	37			K40.0	K2.0	12.0	377
AVERAGE	2.0	0.20	81.6	10.00		2.40	33.2			40.00	2.00	19.20	340.4
MAXIMUM	2	0.2	90	10.0		4.0	38			40.0	2.0	33.0	377
MINIMUM	2	0.2	75	10.0		2.0	29			40.0	2.0	12.0	319

NOTE: K = less than L = greater than

STORET H09S13 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 66.90 #14-LINDEN AVE. *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1040	23.0	8.1		8.18	5.28	2910	K 2.0	23
07/12/95	0920	25.0	9.9		8.50	4.08	743	5.0	18
07/25/95	0930	24.0	8.0		8.42	4.34	1190	3.2	K 10
08/24/95	1045	24.0	8.2		8.33	4.43	1600	2.2	31
09/07/95	1130	23.0	7.4		8.47	3.92	724	3.8	23
09/21/95	1030	19.0	7.7		8.31	3.94	761	2.2	13
AVERAGE		23.00	8.22		8.368	4.332	1321.3	3.07	19.7
MAXIMUM		25.0	9.9		8.50	5.28	2910	5.0	31
MINIMUM		19.0	7.4		8.18	3.92	724	2.0	10

RM 66.90

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	668		4.49		K 0.05			0.19	424	76
07/12/95	761		3.70		K 0.05			0.20	450	53
07/25/95	716		2.33		K 0.05			0.19		44
08/24/95	759		3.02		K 0.05			0.30	452	26
09/07/95	853		2.57		K 0.05			0.27	482	22
09/21/95	888		3.21		K 0.05			0.39	520	18
AVERAGE	774.2		3.220		0.050			0.257	465.6	39.8
MAXIMUM	888		4.49		0.05			0.39	520	76
MINIMUM	668		2.33		0.05			0.19	424	18

RM 66.90

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	79	K 10.0		3.0	31			K40.0	2.0	21.0	325
07/12/95													
07/25/95	K 2	K 0.2	77	K 10.0		K 2.0	33				K2.0	15.0	328
08/24/95	K 2	K 0.2	80	K 10.0		K 2.0	29			K40.0	K2.0	17.0	319
09/07/95	K 2	K 0.2	83	K 10.0		K 2.0	38			K40.0	K2.0	11.0	364
09/21/95	K 2	K 0.2	87	K 10.0		K 2.0	35			K40.0	K2.0	19.0	361
AVERAGE	2.0	0.20	81.2	10.00		2.20	33.2			40.00	2.00	16.60	339.4
MAXIMUM	2	0.2	87	10.0		3.0	38			40.0	2.0	21.0	364
MINIMUM	2	0.2	77	10.0		2.0	29			40.0	2.0	11.0	319

NOTE: K = less than L = greater than
*Gage and flow data based on USGS gage (#03271500) at RM 67.20

Appendix Table A-1, continued.

STORET H09W76 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 66.00 #15-DST MOUND 001, UST MIAMISBURG WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
09/07/95	1055	23.0	5.1						
09/21/95	1000				8.34			2.4	
AVERAGE		23.00	5.10		8.340			2.40	
MAXIMUM		23.0	5.1		8.34			2.4	
MINIMUM		23.0	5.1		8.34			2.4	

RM 66.00

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
09/07/95										
09/21/95	890								508	24
AVERAGE	890.0								508.0	24.0
MAXIMUM	890								508	24
MINIMUM	890								508	24

RM 66.00

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
09/07/95	K 2	K 0.2	81	K 10.0		K 2.0	37			K40.0	K2.0	19.0	355
09/21/95													
AVERAGE	2.0	0.20	81.0	10.00		2.00	37.0			40.00	2.00	19.00	355.0
MAXIMUM	2	0.2	81	10.0		2.0	37			40.0	2.0	19.0	355
MINIMUM	2	0.2	81	10.0		2.0	37			40.0	2.0	19.0	355

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09C01 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 66.00 #15C-DST MOUND 001, UST MIAMISBURG WWTP *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1005	23.0	7.9		8.25			7.0	
07/12/95	0850	24.0	9.5		8.75			12.0	
07/25/95	0910	24.0	8.7		8.36			10.0	
08/24/95	1005	23.5	7.3		8.36			14.0	
09/07/95	1055				8.38			12.0	
09/21/95	1000								
AVERAGE		23.63	8.35		8.420			11.00	
MAXIMUM		24.0	9.5		8.75			14.0	
MINIMUM		23.0	7.3		8.25			7.0	

RM 66.00

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	644			5.08	K 3.00			0.30		51
07/12/95	775			4.24	K 3.00			0.30		50
07/25/95	694			7.24	K 3.00			0.30		64
08/24/95	740			2.23	K 3.00			K 0.02		K 10
09/07/95	840			2.00	K 3.00			0.26		30
09/21/95	1890			2.89	K 3.00			0.40		29
AVERAGE	930.5			3.947	3.000			0.263		39.0
MAXIMUM	1890			7.24	3.00			0.40		64
MINIMUM	644			2.00	3.00			0.02		10

RM 66.00

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 1.6	77	14.3		2.6	29	65.5	0.04	7.8		51.7	313
07/12/95													
07/25/95	2	K 1.6	69	10.8	1380	2.2	29	66.8	K 0.04	7.4	1.1		292
08/24/95	1	K 1.3	79	K 7.5	878	5.5	30	37.8	0.09	3.7		23.5	320
09/07/95													
09/21/95	2	K 1.3	73	13.6		2.4	30	33.1	K 0.04	4.1	K1.0	15.6	306
AVERAGE	1.8	1.45	74.5	11.55	1129.0	3.18	29.5	50.80	0.05	5.75	1.05	30.27	307.8
MAXIMUM	2	1.6	79	14.3	1380	5.5	30	66.8	0.09	7.8	1.1	51.7	320
MINIMUM	1	1.3	69	7.5	878	2.2	29	33.1	0.04	3.7	1.0	15.6	292

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services; Temp and D.O. per OEPA field measurements

Appendix Table A-1, continued.

STORET 600050 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 64.72 #16-CHAUTAUQUA RD. *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	0855	23.0	7.1		8.20	8.34	3070	2.0	43
07/12/95	0800	25.0	8.2		8.55	6.97	1080	5.3	21
07/25/95	0800	24.0	7.3		8.39	7.23	1380	4.4	16
08/24/95	0900	23.0	7.4		8.26	7.40	1600	K 2.0	K 10
09/07/95	1020	24.0	6.8		8.54	6.63	733	4.5	52
09/21/95	0930	19.5	8.1		8.34	6.65	752	2.4	18
AVERAGE		23.08	7.48		8.380	7.203	1435.8	3.43	26.7
MAXIMUM		25.0	8.2		8.55	8.34	3070	5.3	52
MINIMUM		19.5	6.8		8.20	6.63	733	2.0	10

RM 64.72

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	702		4.57		0.07				455	86
07/12/95	788		3.72		K 0.05			0.29	470	57
07/25/95	719		2.36		K 0.05			0.23		59
08/24/95	774		3.14		K 0.05			0.35	456	32
09/07/95	872		2.74		K 0.05			0.33	490	37
09/21/95	956		3.39		0.12			0.49	540	25
AVERAGE	801.8		3.320		0.065			0.338	482.2	49.3
MAXIMUM	956		4.57		0.12			0.49	540	86
MINIMUM	702		2.36		0.05			0.23	455	25

RM 64.72

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	81	K 10.0		4.0	31			K40.0	K2.0	22.0	330
07/12/95													
07/25/95	K 2	K 0.2	73	K 10.0		3.0	33				K2.0	51.0	318
08/24/95	K 2	K 0.2	80	K 10.0		K 2.0	29			K40.0	K2.0	24.0	319
09/07/95	K 2	K 0.2	75	K 10.0		K 2.0	36			K40.0	K2.0	23.0	336
09/21/95	K 2	K 0.2	86	K 10.0		K 2.0	34			K40.0	K2.0	19.0	355
AVERAGE	2.0	0.20	79.0	10.00		2.60	32.6			40.00	2.00	27.80	331.6
MAXIMUM	2	0.2	86	10.0		4.0	36			40.0	2.0	51.0	355
MINIMUM	2	0.2	73	10.0		2.0	29			40.0	2.0	19.0	318

NOTE: K = less than L = greater than

*Gage and flow data based on USGS gage (#03271601) at RM 64.36

Appendix Table A-1, continued.

STORET H09W68 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 62.58 #17-OLD CHAUTAUQUA DAM

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1500	25.0	8.3		8.26			2.0	28
07/12/95	1230	27.2	12.8		8.78			6.8	18
07/25/95	1205	25.3	8.6		8.35			3.9	21
08/23/95	1420	26.5	10.0		8.35			K 2.0	21
09/06/95	1245	26.0	13.9		8.86			6.8	16
09/19/95	1255	21.0	12.5		8.58			3.8	19
AVERAGE		25.17	11.02		8.530			4.22	20.5
MAXIMUM		27.2	13.9		8.86			6.8	28
MINIMUM		21.0	8.3		8.26			2.0	16

RM 62.58

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	670		4.33		K 0.05			0.26	454	43
07/12/95	763		3.46		K 0.05			0.19	456	65
07/25/95	655		2.60		K 0.05			0.25	384	90
08/23/95	724		3.07		K 0.05			0.28	432	28
09/06/95	825		2.19		K 0.05			0.30	492	32
09/19/95	878		3.33		K 0.05			0.41	509	28
AVERAGE	752.5		3.163		0.050			0.282	454.5	47.7
MAXIMUM	878		4.33		0.05			0.41	509	90
MINIMUM	655		2.19		0.05			0.19	384	28

RM 62.58

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	76	K 10.0		3.0	28			K40.0	K2.0	K10.0	305
07/12/95													
07/25/95	K 2	K 0.2	79	K 10.0		6.0	30			K40.0	K2.0	35.0	321
08/23/95	K 2	K 0.2	85	K 10.0		K 2.0	29			K40.0	K2.0	12.0	332
09/06/95	K 2	K 0.2	75	K 10.0		K 2.0	37			K40.0	K2.0	12.0	340
09/19/95	2	K 0.2	89	K 10.0		K 2.0	36			K40.0	K2.0	21.0	370
AVERAGE	2.0	0.20	80.8	10.00		3.00	32.0			40.00	2.00	18.00	333.6
MAXIMUM	2	0.2	89	10.0		6.0	37			40.0	2.0	35.0	370
MINIMUM	2	0.2	75	10.0		2.0	28			40.0	2.0	10.0	305

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09S31 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 60.58 #18-SR 123

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1345	25.0	8.6		8.29			2.0	18
07/12/95	1150	27.0	13.1		8.77			6.5	31
07/26/95	1135	25.0	8.3		8.41			4.0	21
08/23/95	1350	26.0	9.6		8.36			K 2.0	21
09/06/95	1225	26.0	14.2		8.89			7.8	16
09/19/95	1240	20.0	11.9		8.55			3.8	24
AVERAGE		24.83	10.95		8.545			4.35	21.8
MAXIMUM		27.0	14.2		8.89			7.8	31
MINIMUM		20.0	8.3		8.29			2.0	16

RM 60.58

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	678		4.58		K 0.05			0.22	450	79
07/12/95	763		3.33		K 0.05			0.18	470	59
07/26/95	677		2.62		K 0.05			0.28	378	
08/23/95	716		3.03		K 0.05			0.28	432	28
09/06/95	831		2.15		K 0.05			0.31	498	36
09/19/95	880		3.29		K 0.05			0.41	520	22
AVERAGE	757.5		3.167		0.050			0.280	458.0	44.8
MAXIMUM	880		4.58		0.05			0.41	520	79
MINIMUM	677		2.15		0.05			0.18	378	22

RM 60.58

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	76	K 10.0		2.0	30			K40.0	K2.0	12.0	313
07/12/95													
07/26/95	2	K 0.2	75	K 10.0		5.0	30			K40.0	K2.0	32.0	311
08/23/95	K 2	K 0.2	84	K 10.0		K 2.0	29			K40.0	K2.0	20.0	329
09/06/95	K 2	K 0.2	77	K 10.0		K 2.0	36			K40.0	K2.0	18.0	341
09/19/95	2	K 0.2	82	K 10.0		K 2.0	33			K40.0	2.0	26.0	341
AVERAGE	2.0	0.20	78.8	10.00		2.60	31.6			40.00	2.00	21.60	327.0
MAXIMUM	2	0.2	84	10.0		5.0	36			40.0	2.0	32.0	341
MINIMUM	2	0.2	75	10.0		2.0	29			40.0	2.0	12.0	311

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09W77	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	58.00		#20-UST TWIN CR, ADJ SR 73

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1320	25.0	8.4		8.27			2.1	31
07/12/95	1210	27.0	13.4		8.76			6.3	21
07/26/95	1115	25.0	8.1		8.37			3.9	
08/23/95	1315	25.0	8.9		8.31			K 2.0	24
09/06/95	1200	25.0	13.0		8.87			7.6	20
09/19/95	1220	19.0	11.2		8.50			3.4	18
AVERAGE		24.33	10.50		8.513			4.22	22.8
MAXIMUM		27.0	13.4		8.87			7.6	31
MINIMUM		19.0	8.1		8.27			2.0	18

RM 58.00

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	693		4.43		K 0.05			0.23	452	78
07/12/95	780		3.26		K 0.05			0.19	490	62
07/26/95	708								424	114
08/23/95	721	K 10.0	2.94		K 0.05	K 1.00	K 10	0.27	446	28
09/06/95	845		2.04		K 0.05			0.28	506	34
09/19/95	892		3.09		K 0.05			0.39	530	22
AVERAGE	773.2	10.0	3.152		0.050	1.000	10.0	0.272	474.7	56.3
MAXIMUM	892	10	4.43		0.05	1.00	10	0.39	530	114
MINIMUM	693	10	2.04		0.05	1.00	10	0.19	424	22

RM 58.00

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	77	K 10.0		3.0	30			K40.0	K2.0	10.0	316
07/12/95													
07/26/95	K 2	K 0.2	79	K 10.0		5.0	30			K40.0	3.0	32.0	321
08/23/95	K 2	K 0.2	84	K 10.0		K 2.0	28			K40.0	K2.0	18.0	325
09/06/95	K 2	K 0.2	77	K 10.0		6.0	36			K40.0	2.0	11.0	341
09/19/95	2	K 0.2	83	K 10.0		K 2.0	33			K40.0	2.0	18.0	343
AVERAGE	2.0	0.20	80.0	10.00		3.60	31.4			40.00	2.20	17.80	329.2
MAXIMUM	2	0.2	84	10.0		6.0	36			40.0	3.0	32.0	343
MINIMUM	2	0.2	77	10.0		2.0	28			40.0	2.0	10.0	316

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09S30 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 57.55 #21-DST TWIN CR @ OLD RAMP *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1300	25.0	8.7		8.32	3.20	3220	2.0	52
07/12/95	1115	27.0	13.0		8.77	2.23	1270	6.8	18
07/26/95	1100	26.0	8.8		8.43	3.39	3680	4.5	21
08/23/95	1245	25.0	8.8		8.32	2.59	1910	K 2.0	18
09/06/95	1140	25.0	12.2		8.82	2.05	985	7.0	16
09/19/95	1200	19.0	11.2		8.49	2.00	718	3.1	18
AVERAGE		24.50	10.45		8.525	2.577	1963.8	4.23	23.8
MAXIMUM		27.0	13.0		8.82	3.39	3680	7.0	52
MINIMUM		19.0	8.7		8.32	2.00	718	2.0	16

RM 57.55

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	690		4.43		K 0.05			0.23	444	73
07/12/95	777		3.38		K 0.05			0.19	445	62
07/26/95	702		2.60		K 0.05			0.27	406	95
08/23/95	715		2.94		K 0.05			0.25	432	27
09/06/95	826		2.09		K 0.05			0.26	502	35
09/19/95	875		2.88		K 0.05			0.35	512	20
AVERAGE	764.2		3.053		0.050			0.258	456.8	52.0
MAXIMUM	875		4.43		0.05			0.35	512	95
MINIMUM	690		2.09		0.05			0.19	406	20

RM 57.55

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	4	K 0.2	78	13.0		3.0	30			K40.0	K2.0	33.0	318
07/12/95													
07/26/95	2	K 0.2	76	K 10.0		4.0	30			K40.0	3.0	23.0	313
08/23/95	K 2	K 0.2	84	K 10.0		K 2.0	29			K40.0	K2.0	K10.0	329
09/06/95	K 2	K 0.2	79	K 10.0		K 2.0	37			K40.0	2.0	12.0	350
09/19/95	2	K 0.2	84	K 10.0		K 2.0	34			K40.0	3.0	23.0	350
AVERAGE	2.4	0.20	80.2	10.60		2.60	32.0			40.00	2.40	20.20	332.0
MAXIMUM	4	0.2	84	13.0		4.0	37			40.0	3.0	33.0	350
MINIMUM	2	0.2	76	10.0		2.0	29			40.0	2.0	10.0	313

NOTE: K = less than L = greater than

*Gage and flow data based on USGS gage (#03272100) at RM 57.05

Appendix Table A-1, continued.

STORET	H09W28	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	55.14		#22-SR 4

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1215	25.0	8.5		8.33			2.2	17
07/12/95	1045	26.5	11.2		8.69			6.1	21
07/26/95	1040	25.0	8.7		8.44			4.0	21
08/23/95	1215	25.0	8.8		8.30			K 2.0	15
09/06/95	1115	24.0	10.4		8.68			6.2	20
09/19/95	1135	18.0	10.3		8.40			2.7	12
AVERAGE		23.92	9.65		8.473			3.87	17.7
MAXIMUM		26.5	11.2		8.69			6.2	21
MINIMUM		18.0	8.5		8.30			2.0	12

RM 55.14

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	695		4.55		K 0.05			0.25	446	84
07/12/95	781		3.34		K 0.05			0.16	448	55
07/26/95	690		2.57		K 0.05			0.32	396	94
08/23/95	703		2.91		K 0.05			0.24	428	28
09/06/95	815		2.10		K 0.05			0.24	486	39
09/19/95	873		2.74		K 0.05			0.33	512	21
AVERAGE	759.5		3.035		0.050			0.257	452.7	53.5
MAXIMUM	873		4.55		0.05			0.33	512	94
MINIMUM	690		2.10		0.05			0.16	396	21

RM 55.14

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	81	K 10.0		2.0	32			K40.0	K2.0	20.0	334
07/12/95													
07/26/95	2	K 0.2	77	K 10.0		5.0	30			K40.0	3.0	32.0	316
08/23/95	K 2	K 0.2	84	K 10.0		K 2.0	29			K40.0	K2.0	10.0	329
09/06/95	K 2	K 0.2	78	K 10.0		K 2.0	36			K40.0	K2.0	12.0	343
09/19/95	2	K 0.2	83	K 10.0		K 2.0	33			K40.0	2.0	26.0	343
AVERAGE	2.0	0.20	80.6	10.00		2.60	32.0			40.00	2.20	20.00	333.0
MAXIMUM	2	0.2	84	10.0		5.0	36			40.0	3.0	32.0	343
MINIMUM	2	0.2	77	10.0		2.0	29			40.0	2.0	10.0	316

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 610110 SITE LOCATION GREAT MIAMI RIVER
RIVER MILE 52.64 #23-SR 122

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1120	24.0	8.6		8.34			2.1	18
07/12/95	1015	26.5	11.3		8.69			6.2	24
07/26/95	1010	20.0	8.1		8.92			4.1	21
08/23/95	1145	25.0	8.5		8.30			K 2.0	12
09/06/95	1055	24.5	11.2		8.79			7.0	16
09/19/95	1115	19.0	10.7		8.47			3.2	15
AVERAGE		23.17	9.73		8.585			4.10	17.7
MAXIMUM		26.5	11.3		8.92			7.0	24
MINIMUM		19.0	8.1		8.30			2.0	12

RM 52.64

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	704	K 10.0	4.05		K 0.05	K 1.00		0.24	455	80
07/12/95	787		3.34		K 0.05			0.16	448	60
07/26/95	683	K 10.0	2.30		K 0.05	K 1.00	K 10	0.21	374	93
08/23/95	690	K 10.0	2.87		K 0.05	K 1.00	K 10	0.23	398	30
09/06/95	789		1.87		K 0.05			0.20	466	29
09/19/95	875		2.74		K 0.05			0.31	516	22
AVERAGE	754.7	10.0	2.862		0.050	1.000	10.0	0.225	442.8	52.3
MAXIMUM	875	10	4.05		0.05	1.00	10	0.31	516	93
MINIMUM	683	10	1.87		0.05	1.00	10	0.16	374	22

RM 52.64

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	88	K 10.0		3.0	35			K40.0	K2.0	24.0	364
07/12/95													
07/26/95	2	K 0.2	73	K 10.0		3.0	30			K40.0	3.0	22.0	306
08/23/95	K 2	K 0.2	81	K 10.0		K 2.0	28			K40.0	K2.0	11.0	318
09/06/95	K 2	K 0.2	72	K 10.0		K 2.0	36			K40.0	K2.0	12.0	328
09/19/95	3	K 0.2	85	K 10.0		K 2.0	34			K40.0	2.0	17.0	352
AVERAGE	2.2	0.20	79.8	10.00		2.40	32.6			40.00	2.20	17.20	333.6
MAXIMUM	3	0.2	88	10.0		3.0	36			40.0	3.0	24.0	364
MINIMUM	2	0.2	72	10.0		2.0	28			40.0	2.0	11.0	306

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W78 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 51.30 #24-DST AK STEEL 011

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	0930	24.0	8.2		8.02			2.9	25
07/12/95	0900	26.0	8.6		8.37			4.6	18
07/26/95	0845	23.0	8.0		8.25			3.1	24
08/23/95	1010	24.5	8.0		8.19			K 2.0	12
09/06/95	0945	24.0	8.3		8.52			6.3	60
09/19/95	1010	19.0	9.9		8.45			3.9	18
AVERAGE		23.42	8.50		8.300			3.80	26.2
MAXIMUM		26.0	9.9		8.52			6.3	60
MINIMUM		19.0	8.0		8.02			2.0	12

RM 51.30

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	726	K 10.0	4.14		0.42	K 1.00	K 10	0.24	468	111
07/12/95	910		3.22		1.50			0.13	530	52
07/26/95	816	K 10.0	1.90		1.68	K 1.00	K 10	0.24	480	89
08/23/95	772	13.0	2.72		0.57	K 1.00	K 10	0.22	448	36
09/06/95	816		1.77		0.58			0.18	488	36
09/19/95	906		2.81		0.44			0.34	540	26
AVERAGE	824.3	11.0	2.760		0.865	1.000	10.0	0.225	492.3	58.3
MAXIMUM	910	13	4.14		1.68	1.00	10	0.34	540	111
MINIMUM	726	10	1.77		0.42	1.00	10	0.13	448	26

RM 51.30

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	83	K 10.0		4.0	33			K40.0		22.0	343
07/12/95													
07/26/95	2	K 0.2	84	K 10.0		5.0	32			K40.0	3.0	51.0	342
08/23/95	2	K 0.2	91	K 10.0		K 2.0	31			K40.0	2.0	15.0	355
09/06/95	K 2	K 0.2	73	K 10.0		2.0	35			K40.0	K2.0	25.0	326
09/19/95	3	K 0.2	90	K 10.0		3.0	35			K40.0	K2.0	28.0	369
AVERAGE	2.2	0.20	84.2	10.00		3.20	33.2			40.00	2.25	28.20	347.0
MAXIMUM	3	0.2	91	10.0		5.0	35			40.0	3.0	51.0	369
MINIMUM	2	0.2	73	10.0		2.0	31			40.0	2.0	15.0	326

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 600330 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 49.27 #25-SR 73

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1330	24.5	8.8	8.56				2.5	34
07/12/95	1315	27.5	13.8	9.28	8.66			11.0	21
07/26/95	1235	25.2	8.2		8.66			5.2	K 10
08/23/95	1315	25.2	8.3		8.35			K 2.0	12
09/06/95	1145	25.5	10.6					9.7	23
09/20/95	1510	21.0	9.2		8.57			4.7	26
AVERAGE		24.82	9.82	8.920	8.560			5.85	21.0
MAXIMUM		27.5	13.8	9.28	8.66			11.0	34
MINIMUM		21.0	8.2	8.56	8.35			2.0	10

RM 49.27

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	717	K 10.0	4.35		0.09	K 1.00	K 10	0.24	478	74
07/12/95	733	K 10.0	3.00		K 0.05	K 1.00	K 10	0.10	416	66
07/26/95	683	K 10.0	2.21		K 0.05	1.26	K 10	0.27	408	122
08/23/95	691	K 10.0	2.84		K 0.05	K 1.00	K 10	0.22	438	31
09/06/95	762	K 10.0	1.72		K 0.05	1.80	K 10	0.13	444	44
09/20/95	895	K 10.0	2.77		0.06	K 1.00	K 10	0.37	521	33
AVERAGE	746.8	10.0	2.815		0.058	1.177	10.0	0.222	450.8	61.7
MAXIMUM	895	10	4.35		0.09	1.80	10	0.37	521	122
MINIMUM	683	10	1.72		0.05	1.00	10	0.10	408	31

RM 49.27

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	3	K 0.2	83	K 10.0		3.0	33			K40.0	K2.0	41.0	343
07/12/95													
07/26/95	2	K 0.2	80	K 10.0		8.0	32			K40.0	K2.0	63.0	332
08/23/95	2	K 0.2	81	K 10.0		K 2.0	30			K40.0	K2.0	K 10.0	326
09/06/95	K 2	K 0.2	60	K 10.0		K 2.0	33			K40.0	3.0	26.0	286
09/20/95	K 2	K 0.2	86	K 10.0		2.0	34			K40.0	K2.0	18.0	355
AVERAGE	2.2	0.20	78.0	10.00		3.40	32.4			40.00	2.20	31.60	328.4
MAXIMUM	3	0.2	86	10.0		8.0	34			40.0	3.0	63.0	355
MINIMUM	2	0.2	60	10.0		2.0	30			40.0	2.0	10.0	286

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W79 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 47.91 #26-DST MIDDLETOWN AND CRYSTAL TISSUE WWTPS

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1400	24.5	7.3	8.72				2.4	15
07/12/95	1130	27.0	9.2	8.63				7.5	24
07/26/95	1205	26.0	7.8		8.59			4.1	26
08/23/95	1300	25.2	8.1		8.31			K 2.0	15
09/06/95	1330	26.0	10.9		8.62				33
09/20/95	1440	20.7	8.8		8.56			6.2	24
AVERAGE		24.90	8.68	8.675	8.520			4.44	22.8
MAXIMUM		27.0	10.9	8.72	8.62			7.5	33
MINIMUM		20.7	7.3	8.63	8.31			2.0	15

RM 47.91

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	722	K 10.0	4.46		0.10	K 1.00	K 10	0.25	468	95
07/12/95	808	K 10.0	3.38		0.44	K 1.00	K 10	0.13	458	54
07/26/95	697	K 10.0	2.33		K 0.05	K 1.00	12	0.35	428	97
08/23/95	702	K 10.0	2.87		K 0.05	K 1.00	K 10	0.23	450	34
09/06/95		K 10.0	1.92		0.06	K 1.00	K 10	0.20		
09/20/95	905	K 10.0	2.79		0.24	1.28	K 10	0.36	560	30
AVERAGE	766.8	10.0	2.958		0.157	1.047	10.3	0.253	472.8	62.0
MAXIMUM	905	10	4.46		0.44	1.28	12	0.36	560	97
MINIMUM	697	10	1.92		0.05	1.00	10	0.13	428	30

RM 47.91

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	84	K 10.0		21.0	33			K40.0	K2.0	32.0	346
07/12/95													
07/26/95	2	K 0.2	94	10.0		9.0	35			K40.0	3.0	116.0	379
08/23/95	K 2	K 0.2	81	K 10.0		K 2.0	29			K40.0	2.0	10.0	322
09/06/95	K 2	K 0.2	67	K 10.0		K 2.0	33			K40.0	4.0	52.0	303
09/20/95	K 2	K 0.2	95	K 10.0		K 2.0	36			K40.0	7.0	14.0	385
AVERAGE	2.0	0.20	84.2	10.00		7.20	33.2			40.00	3.60	44.80	347.0
MAXIMUM	2	0.2	95	10.0		21.0	36			40.0	7.0	116.0	385
MINIMUM	2	0.2	67	10.0		2.0	29			40.0	2.0	10.0	303

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09W92	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	45.85		#27-UST LESOURDSVILLE WWTP & GREGORY CREEK

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1415	24.5	7.4	8.74				2.2	18
07/12/95	1400	27.0	14.4	9.21	8.68			8.8	24
07/26/95	1310	26.0	7.6		8.70			5.2	33
08/23/95	1355	25.0	7.9		8.35			K 2.0	12
09/06/95	1205	25.0	9.3					12.0	46
09/20/95	1530	21.0	9.0		8.57			4.5	24
AVERAGE		24.75	9.27	8.975	8.575			5.78	26.2
MAXIMUM		27.0	14.4	9.21	8.70			12.0	46
MINIMUM		21.0	7.4	8.74	8.35			2.0	12

RM 45.85

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	708		4.42		K 0.05			0.24	466	99
07/12/95	784		3.26		K 0.05			0.13	464	118
07/26/95	696		2.22		K 0.05			0.39	414	132
08/23/95	712		2.87		K 0.05			0.23	452	35
09/06/95	788		1.84		K 0.05			0.17	460	93
09/20/95	955		2.85		0.06			0.32	606	32
AVERAGE	773.8		2.910		0.052			0.247	477.0	84.8
MAXIMUM	955		4.42		0.06			0.39	606	132
MINIMUM	696		1.84		0.05			0.13	414	32

RM 45.85

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	3	K 0.2	82	K 10.0		K 2.0	33			K40.0	K2.0	30.0	341
07/12/95													
07/26/95	K 2	K 0.2	84	K 10.0		5.0	33			K40.0	K2.0	73.0	346
08/23/95	K 2	K 0.2	83	K 10.0		K 2.0	30			K40.0	4.0	14.0	331
09/06/95	K 2	K 0.2	60	K 10.0		2.0	33			K40.0	K2.0	80.0	286
09/20/95	K 2	K 0.2	97	K 10.0		K 2.0	39			K40.0	6.0	25.0	403
AVERAGE	2.2	0.20	81.2	10.00		2.60	33.6			40.00	3.20	44.40	341.4
MAXIMUM	3	0.2	97	10.0		5.0	39			40.0	6.0	80.0	403
MINIMUM	2	0.2	60	10.0		2.0	30			40.0	2.0	14.0	286

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W80 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 44.51 #28-DST LESOURDSVILLE WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1445	24.0	7.9	8.33				2.4	34
07/12/95	1415	28.0	12.2	9.26	8.80			8.5	34
07/26/95	1335	26.0	7.8		8.63			5.3	24
08/23/95	1415	25.0	7.8		8.33			K 2.0	24
09/06/95	1230	24.5	9.8					8.5	23
09/20/95	1550	21.8	10.0		8.58			4.4	26
AVERAGE		24.88	9.25	8.795	8.585			5.18	27.5
MAXIMUM		28.0	12.2	9.26	8.80			8.5	34
MINIMUM		21.8	7.8	8.33	8.33			2.0	23

RM 44.51

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	733		4.07		0.11			0.25	470	117
07/12/95	799		3.38		K 0.05			0.21	436	106
07/26/95	715		2.34		0.06			0.30	430	128
08/23/95	738		3.48		K 0.05			0.32	460	29
09/06/95	810		2.45		K 0.05			0.28	476	36
09/20/95	943		3.59		K 0.05			0.49	588	32
AVERAGE	789.7		3.218		0.062			0.308	476.7	74.7
MAXIMUM	943		4.07		0.11			0.49	588	128
MINIMUM	715		2.34		0.05			0.21	430	29

RM 44.51

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	85	K 10.0		2.0	31			K40.0	K2.0	27.0	340
07/12/95													
07/26/95	K 2	K 0.2	80	K 10.0		4.0	32			K40.0	2.0	51.0	332
08/23/95	K 2	K 0.2	82	K 10.0		K 2.0	29			K40.0	4.0	21.0	324
09/06/95	K 2	K 0.2	58	K 10.0		K 2.0	33			K40.0	2.0	21.0	281
09/20/95	3	K 0.2	96	10.0		3.0	36			K40.0	4.0	38.0	388
AVERAGE	2.2	0.20	80.2	10.00		2.60	32.2			40.00	2.80	31.60	333.0
MAXIMUM	3	0.2	96	10.0		4.0	36			40.0	4.0	51.0	388
MINIMUM	2	0.2	58	10.0		2.0	29			40.0	2.0	21.0	281

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	610090	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	43.23		#29-LIBERTY-FAIRFIELD RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1500	24.5	9.0	8.67				2.3	25
07/12/95	1445	27.0	16.5	9.30	8.63			8.8	31
07/26/95	1355	27.0	8.4		8.69			5.1	21
08/23/95	1440	26.0	8.5		8.36			2.1	18
09/06/95	1250	24.2	9.3					9.7	33
09/20/95	1610	20.5	7.8		8.60			4.5	24
AVERAGE		24.87	9.92	8.985	8.570			5.42	25.3
MAXIMUM		27.0	16.5	9.30	8.69			9.7	33
MINIMUM		20.5	7.8	8.67	8.36			2.1	18

RM 43.23

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	711		4.40		K 0.05			0.24	472	96
07/12/95	751		3.10		K 0.05			0.11	432	72
07/26/95	702		2.24		K 0.05			0.26	429	121
08/23/95	704		3.07		K 0.05			0.31	442	36
09/06/95	788		2.00		K 0.05			0.16	462	42
09/20/95	916		3.14		K 0.05			0.39	568	36
AVERAGE	762.0		2.992		0.050			0.245	467.5	67.2
MAXIMUM	916		4.40		0.05			0.39	568	121
MINIMUM	702		2.00		0.05			0.11	429	36

RM 43.23

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	84	10.0		3.0	33			K40.0	K2.0	32.0	346
07/12/95													
07/26/95	K 2	K 0.2	84	K 10.0		4.0	34			K40.0	4.0	70.0	350
08/23/95	K 2	K 0.4	79	K 10.0		K 2.0	28			K40.0	4.0	K10.0	313
09/06/95	K 2	K 0.2	63	K 10.0		K 2.0	35			K40.0	3.0	49.0	301
09/20/95	2	K 0.2	89	K 10.0		K 2.0	35			K40.0	K2.0	27.0	366
AVERAGE	2.0	0.24	79.8	10.00		2.60	33.0			40.00	3.00	37.60	335.2
MAXIMUM	2	0.4	89	10.0		4.0	35			40.0	4.0	70.0	366
MINIMUM	2	0.2	63	10.0		2.0	28			40.0	2.0	10.0	301

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W45 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 39.95 #30-ADJ AUGSBERGER RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	0920	25.0	7.3		8.24			K 2.0	22
07/11/95	0900	24.0	8.8		8.32			5.5	12
07/25/95	0900	25.0	7.7		8.88			7.4	13
08/22/95	1020	26.5	7.3		8.26			K 2.0	21
09/05/95	1030	24.0	11.0		8.50			9.5	24
09/20/95	0945	20.0	7.9		8.43			3.6	21
AVERAGE		24.08	8.33		8.438			5.00	18.8
MAXIMUM		26.5	11.0		8.88			9.5	24
MINIMUM		20.0	7.3		8.24			2.0	12

RM 39.95

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	640		4.80		K 0.05			0.20	398	84
07/11/95	750		3.43		K 0.05			0.08	491	54
07/25/95	696		2.36		0.06			0.25	418	60
08/22/95	649		2.73		K 0.05			0.28	394	52
09/05/95	792		1.78		K 0.05			0.15	460	36
09/20/95	917		2.91		K 0.05			0.36	556	31
AVERAGE	740.7		3.002		0.052			0.220	452.8	52.8
MAXIMUM	917		4.80		0.06			0.36	556	84
MINIMUM	640		1.78		0.05			0.08	394	31

RM 39.95

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	2	K 0.2	76	K 10.0		2.0	29			K40.0	K2.0	100.0	309
07/11/95													
07/25/95	K 2	K 0.2	71	K 10.0		K 2.0	31			K40.0	K2.0	38.0	305
08/22/95	K 2	K 0.2	76	K 10.0		2.0	28			K40.0	K2.0	31.0	305
09/05/95	K 2	K 0.2	63	K 10.0		K 2.0	34			K40.0	2.0	35.0	297
09/20/95	K 2	K 0.2	90	K 10.0		K 2.0	35			K40.0	2.0	23.0	369
AVERAGE	2.0	0.20	75.2	10.00		2.00	31.4			40.00	2.00	45.40	317.0
MAXIMUM	2	0.2	90	10.0		2.0	35			40.0	2.0	100.0	369
MINIMUM	2	0.2	63	10.0		2.0	28			40.0	2.0	23.0	297

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09W40	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	38.55		#31-SR 127

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	0950	25.0	7.5		8.24			K 2.0	16
07/11/95	0925	24.0	9.1		8.40			5.7	12
07/25/95	0930	24.9	8.4		8.93			5.3	K 10
08/22/95	1045	26.5	7.3		8.31			K 2.0	18
09/05/95	1100	24.0	11.0		8.55			11.0	29
09/20/95	0955	20.0	7.6		8.47			3.5	21
AVERAGE		24.07	8.48		8.483			4.92	17.7
MAXIMUM		26.5	11.0		8.93			11.0	29
MINIMUM		20.0	7.3		8.24			2.0	10

RM 38.55

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	640		4.75		0.06			0.21	396	79
07/11/95	746		3.35		K 0.05			0.06	468	54
07/25/95	706		2.31		K 0.05			0.26	430	60
08/22/95	652		2.72		K 0.05			0.30	380	56
09/05/95	780		1.70		K 0.05			0.17	440	41
09/20/95	921		2.92		K 0.05			0.40	548	30
AVERAGE	740.8		2.958		0.052			0.233	443.7	53.3
MAXIMUM	921		4.75		0.06			0.40	548	79
MINIMUM	640		1.70		0.05			0.06	380	30

RM 38.55

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	2	K 0.2	74	21.0		6.0	29			K40.0	K2.0	69.0	304
07/11/95													
07/25/95	K 2	K 0.2	71	K 10.0		K 2.0	32			K40.0	K2.0	45.0	309
08/22/95	K 2	K 0.2	79	K 10.0		4.0	29			K40.0	K2.0	39.0	317
09/05/95	K 2	K 0.2	62	K 10.0		3.0	34			K40.0	2.0	37.0	295
09/20/95	K 2	K 0.2	87	K 10.0		2.0	34			K40.0	4.0	37.0	357
AVERAGE	2.0	0.20	74.6	12.20		3.40	31.6			40.00	2.40	45.40	316.4
MAXIMUM	2	0.2	87	21.0		6.0	34			40.0	4.0	69.0	357
MINIMUM	2	0.2	62	10.0		2.0	29			40.0	2.0	37.0	295

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11W46	**SITE LOCATION**	GREAT MIAMI RIVER
RIVER MILE	37.35		#32-UST HAMILTON POWER & DAM

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1045	25.0	7.3		8.24			K 2.0	13
07/11/95	1015	25.0	14.4		8.62			7.5	20
07/25/95	1020	25.0	12.0		9.06			6.7	32
08/22/95	1130	27.5	7.7		8.35			2.1	21
09/05/95	1150	25.0	19.1		8.86			16.0	39
09/20/95	1035	20.0	8.1		8.53			5.0	18
AVERAGE		24.58	11.43		8.610			6.55	23.8
MAXIMUM		27.5	19.1		9.06			16.0	39
MINIMUM		20.0	7.3		8.24			2.0	13

RM 37.35

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	644		4.85		0.09			0.21	394	77
07/11/95	741		3.15		K 0.05			0.07	468	66
07/25/95	679		1.93		K 0.05			0.22	422	66
08/22/95	659		2.64		K 0.05			0.22	376	45
09/05/95	726		1.32		K 0.05			0.11	412	50
09/20/95	908		2.86		0.06			0.42	528	30
AVERAGE	726.2		2.792		0.058			0.208	433.3	55.7
MAXIMUM	908		4.85		0.09			0.42	528	77
MINIMUM	644		1.32		0.05			0.07	376	30

RM 37.35

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	2	K 0.2	74	K 10.0		3.0	28			K40.0	K2.0	27.0	300
07/11/95													
07/25/95	K 2	K 0.2	69	K 10.0		K 2.0	30			K40.0	K2.0	38.0	296
08/22/95	K 2	K 0.2	76	K 10.0		K 2.0	28			K40.0	K2.0	24.0	305
09/05/95	K 2	K 0.2	52	K 10.0		K 2.0	33			K40.0	2.0	32.0	266
09/20/95	K 2	K 0.2	88	K 10.0		K 2.0	35			K40.0	2.0	31.0	364
AVERAGE	2.0	0.20	71.8	10.00		2.20	30.8			40.00	2.00	30.40	306.2
MAXIMUM	2	0.2	88	10.0		3.0	35			40.0	2.0	38.0	364
MINIMUM	2	0.2	52	10.0		2.0	28			40.0	2.0	24.0	266

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W47 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 36.95 #33-BLACK ST, DST HAMILTON POWER

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1020	25.0	7.9		8.23			K 2.0	16
07/11/95	0950	25.0	9.3		8.40			5.4	12
07/25/95	1000	22.5	8.0		8.96			4.8	22
08/22/95	1110	27.0	7.7		8.30			K 2.0	18
09/05/95	1125	25.5	10.1		8.55			12.0	27
09/20/95	1015	22.0	8.2		8.47			2.9	24
AVERAGE		24.50	8.53		8.485			4.85	19.8
MAXIMUM		27.0	10.1		8.96			12.0	27
MINIMUM		22.0	7.7		8.23			2.0	12

RM 36.95

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	642		4.85		0.08			0.21	408	95
07/11/95	745		3.41		K 0.05			0.09	466	60
07/25/95	684		2.18		K 0.05			0.23	456	44
08/22/95	648		2.69		K 0.05			0.21	374	54
09/05/95	746		1.49		K 0.05			0.12	423	52
09/20/95	915		2.86		K 0.05			0.38	548	46
AVERAGE	730.0		2.913		0.055			0.207	445.8	58.5
MAXIMUM	915		4.85		0.08			0.38	548	95
MINIMUM	642		1.49		0.05			0.09	374	44

RM 36.95

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	2	K 0.2	74	K 10.0		3.0	28			K40.0	K2.0	30.0	300
07/11/95													
07/25/95	K 2	K 0.2	69	K 10.0		K 2.0	30			K40.0	K2.0	40.0	296
08/22/95	K 2	K 0.2	76	K 10.0		2.0	28			K40.0	K2.0	27.0	305
09/05/95	K 2	K 0.2	55	K 10.0		K 2.0	34			K40.0	3.0	45.0	277
09/20/95	K 2	K 0.2	92	K 10.0		3.0	36			K40.0	3.0	29.0	378
AVERAGE	2.0	0.20	73.2	10.00		2.40	31.2			40.00	2.40	34.20	311.2
MAXIMUM	2	0.2	92	10.0		3.0	36			40.0	3.0	45.0	378
MINIMUM	2	0.2	55	10.0		2.0	28			40.0	2.0	27.0	277

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11W06	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	35.69		#34-PERSHING AVE. (SR 128) *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1115	25.9	7.7		8.25	63.46	2270	K 2.0	19
07/11/95	1100	25.0	10.3		8.52	63.14	1540	6.1	15
07/25/95	1050	26.5	10.6		9.03	63.33	1960	5.6	29
08/22/95	1150	26.5	7.9		8.35	63.57	2540	K 2.0	15
09/05/95	1215	26.0	15.0		8.79	62.88	1030	13.0	30
09/20/95	1055	20.6	8.1		8.50	62.81	902	4.1	21
AVERAGE		25.08	9.93		8.573	63.198	1707.0	5.47	21.5
MAXIMUM		26.5	15.0		9.03	63.57	2540	13.0	30
MINIMUM		20.6	7.7		8.25	62.81	902	2.0	15

RM 35.69

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	633		4.74		0.06			0.19	398	84
07/11/95	742		3.31		K 0.05			0.08	484	52
07/25/95	680		2.08		K 0.05			0.23	414	81
08/22/95	655		2.73		K 0.05			0.28	394	30
09/05/95	735		1.45		K 0.05			0.11	420	30
09/20/95	900		2.89		K 0.05			0.38	538	24
AVERAGE	724.2		2.867		0.052			0.212	441.3	50.2
MAXIMUM	900		4.74		0.06			0.38	538	84
MINIMUM	633		1.45		0.05			0.08	394	24

RM 35.69

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	3	K 0.2	73	K 10.0		2.0	28			K40.0	K2.0	31.0	298
07/11/95													
07/25/95	K 2	K 0.2	70	K 10.0		2.0	30			K40.0	K2.0	33.0	298
08/22/95	K 2	K 0.2	75	K 10.0		K 2.0	28			K40.0	K2.0	32.0	303
09/05/95	K 2	K 0.2	53	K 10.0		K 2.0	34			K40.0	3.0	21.0	272
09/20/95	K 2	K 0.2	87	K 10.0		K 2.0	35			K40.0	3.0	30.0	361
AVERAGE	2.2	0.20	71.6	10.00		2.00	31.0			40.00	2.40	29.40	306.4
MAXIMUM	3	0.2	87	10.0		2.0	35			40.0	3.0	33.0	361
MINIMUM	2	0.2	53	10.0		2.0	28			40.0	2.0	21.0	272

NOTE: K = less than L = greater than

*Gage and flow data based on USGS gage (#03274000) at RM 35.48

Appendix Table A-1, continued.

STORET	H11W48	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	34.68		#35-UST HAMILTON WWTP AND DAM

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1210	26.0	8.0		8.05			2.1	19
07/11/95	1140	26.0	15.6		8.67			8.6	20
07/25/95	1145	26.0	12.0		9.05			6.8	35
08/22/95	1215	27.5	7.5					K 2.0	26
09/05/95	1250	28.5	16.8		8.80			12.0	30
09/20/95	1125	20.2	8.7		8.52			5.6	24
AVERAGE		25.70	11.43		8.618			6.18	25.7
MAXIMUM		28.5	16.8		9.05			12.0	35
MINIMUM		20.2	7.5		8.05			2.0	19

RM 34.68

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	635	K 10.0	4.79		K 0.05	K 1.00	K 10	0.19	390	78
07/11/95	726	K 10.0	3.21		K 0.05	K 1.00	16	0.10	458	53
07/25/95	660		1.87		K 0.05			0.30	416	75
08/22/95	645		2.56		K 0.05			0.26	428	80
09/05/95	718	K 10.0	1.43		K 0.05	K 1.00	K 10	0.09	416	29
09/20/95	902	K 10.0	2.77		K 0.05	K 1.00	K 10	0.36	542	36
AVERAGE	714.3	10.0	2.772		0.050	1.000	11.5	0.217	441.7	58.5
MAXIMUM	902	10	4.79		0.05	1.00	16	0.36	542	80
MINIMUM	635	10	1.43		0.05	1.00	10	0.09	390	29

RM 34.68

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	73	K 10.0		3.0	28			K40.0	2.0	26.0	298
07/11/95													
07/25/95	K 2	K 0.2	67	K 10.0		K 2.0	29			K40.0	K2.0	34.0	287
08/22/95	K 2	K 0.2	78	K 10.0		3.0	28			K40.0	K2.0	39.0	310
09/05/95	K 2	K 0.2	52	K 10.0		K 2.0	33			K40.0	2.0	16.0	266
09/20/95	K 2	K 0.2	82	K 10.0		K 2.0	32			K40.0	4.0	27.0	337
AVERAGE	2.0	0.20	70.4	10.00		2.40	30.0			40.00	2.40	28.40	299.6
MAXIMUM	2	0.2	82	10.0		3.0	33			40.0	4.0	39.0	337
MINIMUM	2	0.2	52	10.0		2.0	28			40.0	2.0	16.0	266

NOTE: K = less than   L = greater than

Appendix Table A-1, continued.

STORET H11W49 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 33.05 #36-DST HAMILTON WWTP, JOYCE PARK

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1245	25.0	7.9		8.24			2.1	44
07/11/95	1220	25.1	11.0		8.48			6.5	22
07/25/95	1150	26.0	8.0		8.88			5.1	32
08/22/95	1245	27.0	7.7		8.31			K 2.0	21
09/05/95	1330	26.0	12.6		8.68			13.0	36
09/20/95	1200	20.0	8.7		8.43			4.1	18
AVERAGE		24.85	9.32		8.503			5.47	28.8
MAXIMUM		27.0	12.6		8.88			13.0	44
MINIMUM		20.0	7.7		8.24			2.0	18

RM 33.05

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	650	K 10.0	4.69		0.07	K 1.00	K 10	0.20	400	88
07/11/95	761	K 10.0	3.26		K 0.05	K 1.00	K 10	0.10	466	78
07/25/95	692		2.04		K 0.05			1.49	422	82
08/22/95	675		2.49		K 0.05			0.22	408	48
09/05/95	759	K 10.0	1.63		K 0.05	K 1.00	K 10	0.11	440	45
09/20/95	927	K 10.0	2.89		K 0.05	K 1.00	K 10	0.32	556	36
AVERAGE	744.0	10.0	2.833		0.053	1.000	10.0	0.407	448.7	62.8
MAXIMUM	927	10	4.69		0.07	1.00	10	1.49	556	88
MINIMUM	650	10	1.63		0.05	1.00	10	0.10	400	36

RM 33.05

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	76	K 10.0		3.0	28			K40.0	K2.0	29.0	305
07/11/95													
07/25/95	K 2	K 0.2	69	K 10.0		K 2.0	29			K40.0	K2.0	31.0	292
08/22/95	K 2	K 0.2	79	K 10.0		K 2.0	27			K40.0	K2.0	24.0	308
09/05/95	K 2	K 0.2	58	K 10.0		K 2.0	33			K40.0	3.0	24.0	281
09/20/95	3	K 0.2	87	K 10.0		K 2.0	32			K40.0	2.0	22.0	349
AVERAGE	2.2	0.20	73.8	10.00		2.20	29.8			40.00	2.20	26.00	307.0
MAXIMUM	3	0.2	87	10.0		3.0	33			40.0	3.0	31.0	349
MINIMUM	2	0.2	58	10.0		2.0	27			40.0	2.0	22.0	281

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11W50	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	31.19		#37-DST FAIRFIELD WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1335	26.0	8.7		8.32			2.2	19
07/11/95	1310	26.0	16.2		8.60			9.2	18
07/25/95	1220	26.0	10.8		9.07			6.1	29
08/22/95	1330	27.5	8.0		8.38			K 2.0	23
09/05/95	1450	27.0	20.0		8.73			17.0	39
09/20/95	1245	21.0	11.7		8.57			5.3	26
AVERAGE		25.58	12.57		8.612			6.97	25.7
MAXIMUM		27.5	20.0		9.07			17.0	39
MINIMUM		21.0	8.0		8.32			2.0	18

RM 31.19

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	637	K 10.0	4.86		K 0.05	K 1.00	K 10	0.21	394	75
07/11/95	724	K 10.0	3.12		K 0.05	K 1.00	K 10	0.18	458	84
07/25/95	663		1.79		K 0.05			0.22	396	58
08/22/95	660		2.62		K 0.05			0.20	396	40
09/05/95	716	K 10.0	1.46		K 0.05	K 1.00	K 10	0.12	410	60
09/20/95	924	K 10.0	2.78		K 0.05	K 1.00	K 10	0.40	550	44
AVERAGE	720.7	10.0	2.772		0.050	1.000	10.0	0.222	434.0	60.2
MAXIMUM	924	10	4.86		0.05	1.00	10	0.40	550	84
MINIMUM	637	10	1.46		0.05	1.00	10	0.12	394	40

RM 31.19

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	75	K 10.0		4.0	28			K40.0	K2.0	35.0	303
07/11/95													
07/25/95	K 2	K 0.2	63	K 10.0		K 2.0	28			K40.0	K2.0	58.0	273
08/22/95	K 2	K 0.2	78	K 10.0		5.0	28			K40.0	K2.0	20.0	310
09/05/95	K 2	K 0.2	57	K 10.0		K 2.0	33			K40.0	2.0	39.0	278
09/20/95	K 2	K 0.2	86	K 10.0		K 2.0	32			K40.0	3.0	22.0	347
AVERAGE	2.0	0.20	71.8	10.00		3.00	29.8			40.00	2.20	34.80	302.2
MAXIMUM	2	0.2	86	10.0		5.0	33			40.0	3.0	58.0	347
MINIMUM	2	0.2	57	10.0		2.0	28			40.0	2.0	20.0	273

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W11 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 29.97 #38-AMERICAN AGGREGATES RR BRIDGE

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1620	26.0	8.6		8.33			2.4	13
07/11/95	1335	26.0	13.6		8.57			7.6	23
07/25/95	1240	26.0	10.4		8.99			5.4	32
08/22/95	1350	27.5	8.4		8.38			K 2.0	23
09/05/95	1525	27.0	16.3		8.73			15.0	30
09/20/95	1315	21.0	8.7		8.48			4.5	32
AVERAGE		25.58	11.00		8.580			6.15	25.5
MAXIMUM		27.5	16.3		8.99			15.0	32
MINIMUM		21.0	8.4		8.33			2.0	13

RM 29.97

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	640		4.78		K 0.05			0.20	398	104
07/11/95	740		3.17		K 0.05			0.10	460	85
07/25/95	669		1.82		K 0.05			0.24	402	76
08/22/95	660		2.61		K 0.05			0.21	396	44
09/05/95	750		1.49		K 0.05			0.10	424	62
09/20/95	912		2.88		K 0.05			0.36	554	45
AVERAGE	728.5		2.792		0.050			0.202	439.0	69.3
MAXIMUM	912		4.78		0.05			0.36	554	104
MINIMUM	640		1.49		0.05			0.10	396	44

RM 29.97

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	75	K 10.0		3.0	28			K40.0	K2.0	29.0	303
07/11/95													
07/25/95	K 2	K 0.2	64	K 10.0		2.0	27			K40.0	K2.0	38.0	271
08/22/95	K 2	K 0.2	78	K 10.0		K 2.0	28			K40.0	K2.0	28.0	310
09/05/95	K 2	K 0.2	58	K 10.0		K 2.0	33			K40.0	K2.0	30.0	281
09/20/95	K 2	K 0.2	88	K 10.0		4.0	32			K40.0	K2.0	46.0	352
AVERAGE	2.0	0.20	72.6	10.00		2.60	29.6			40.00	2.00	34.20	303.4
MAXIMUM	2	0.2	88	10.0		4.0	33			40.0	2.0	46.0	352
MINIMUM	2	0.2	58	10.0		2.0	27			40.0	2.0	28.0	271

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W51 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 28.82 #39-ADJ EAST RIVER RD, DST AMER. AGGREGATES

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1410	26.0	9.0		8.32			2.4	16
07/11/95	1410	26.5	15.0		7.82			7.8	18
07/25/95	1305	26.0	10.8		9.07			6.6	32
08/22/95	1415	27.5	8.5		8.38			2.4	21
09/05/95	1550	27.0	17.3		8.75			15.0	39
09/20/95	1335	21.0	8.9		8.51			4.4	24
AVERAGE		25.67	11.58		8.475			6.43	25.0
MAXIMUM		27.5	17.3		9.07			15.0	39
MINIMUM		21.0	8.5		7.82			2.4	16

RM 28.82

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	633		4.87		K 0.05			0.18	386	92
07/11/95	729		3.09		K 0.05			0.11	477	88
07/25/95	664		1.79		K 0.05			0.22	410	82
08/22/95	658		2.57		K 0.05			0.23	410	46
09/05/95	731		1.44		K 0.05			0.11	420	63
09/20/95	915		2.89		K 0.05			0.37	556	35
AVERAGE	721.7		2.775		0.050			0.203	443.2	67.7
MAXIMUM	915		4.87		0.05			0.37	556	92
MINIMUM	633		1.44		0.05			0.11	386	35

RM 28.82

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	74	K 10.0		4.0	28			K40.0	K2.0	29.0	300
07/11/95													
07/25/95	K 2	K 0.2	63	K 10.0		K 2.0	28			K40.0	K2.0	33.0	273
08/22/95	K 2	K 0.2	76	K 10.0		K 2.0	28			K40.0	K2.0	25.0	305
09/05/95	K 2	K 0.2	58	K 10.0		K 2.0	33			K40.0	2.0	22.0	281
09/20/95	3	K 0.2	87	K 10.0		K 2.0	33			K40.0	3.0	19.0	353
AVERAGE	2.2	0.20	71.6	10.00		2.40	30.0			40.00	2.20	25.60	302.4
MAXIMUM	3	0.2	87	10.0		4.0	33			40.0	3.0	33.0	353
MINIMUM	2	0.2	58	10.0		2.0	28			40.0	2.0	19.0	273

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W52 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 27.15 #40-DST SR 27

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1510	26.0	8.6		8.31			2.1	19
07/11/95	1430	27.0	15.6		8.44			8.0	18
07/25/95	1330	26.0	11.6		9.07			6.1	25
08/22/95	1440	27.5	8.8		8.41			K 2.0	18
09/05/95	1615	27.0	16.7		8.69			16.0	27
09/20/95	1355	21.0	9.6		8.55			4.3	24
AVERAGE		25.75	11.82		8.578			6.42	21.8
MAXIMUM		27.5	16.7		9.07			16.0	27
MINIMUM		21.0	8.6		8.31			2.0	18

RM 27.15

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	637		4.93		K 0.05			0.18	402	94
07/11/95	710		3.10		K 0.05			0.10	444	94
07/25/95	652		1.76		K 0.05			0.22	392	77
08/22/95	655		2.56		K 0.05			0.26	396	44
09/05/95	717		1.38		K 0.05			0.12	412	64
09/20/95	922		2.85		K 0.05			0.36	560	34
AVERAGE	715.5		2.763		0.050			0.207	434.3	67.8
MAXIMUM	922		4.93		0.05			0.36	560	94
MINIMUM	637		1.38		0.05			0.10	392	34

RM 27.15

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	76	K 10.0		3.0	28			K40.0	K2.0	25.0	305
07/11/95													
07/25/95	K 2	K 0.2	65	K 10.0		K 2.0	28			K40.0	K2.0	35.0	278
08/22/95	K 2	K 0.2	75	K 10.0		K 2.0	28			K40.0	K2.0	23.0	303
09/05/95	K 2	K 0.2	57	K 10.0		K 2.0	33			K40.0	4.0	23.0	278
09/20/95	K 2	K 0.2	90	K 10.0		K 2.0	34			K40.0	K2.0	23.0	365
AVERAGE	2.0	0.20	72.6	10.00		2.20	30.2			40.00	2.40	25.80	305.8
MAXIMUM	2	0.2	90	10.0		3.0	34			40.0	4.0	35.0	365
MINIMUM	2	0.2	57	10.0		2.0	28			40.0	2.0	23.0	278

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W14 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 26.21 #41-SR 126, UST FERNALD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1210	25.0	8.2		8.28			K 2.0	19
07/11/95	1110	24.5	10.6		8.43			5.7	15
07/26/95	1145	26.0	10.4		8.91			5.1	26
08/23/95	1235	26.0	8.3		8.34			K 2.0	12
09/06/95	1205	25.0	10.4		8.53			10.0	26
09/20/95	1220	21.0	8.6		8.49			4.3	21
AVERAGE		24.58	9.42		8.497			4.85	19.8
MAXIMUM		26.0	10.6		8.91			10.0	26
MINIMUM		21.0	8.2		8.28			2.0	12

RM 26.21

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	621		4.88		K 0.05			0.18	391	89
07/11/95	725		3.27		K 0.05			0.08	466	77
07/26/95	653		1.93		K 0.05			0.17	378	79
08/23/95	660		2.81		K 0.05			0.20	408	41
09/06/95	749		1.44		K 0.05			0.09	464	48
09/20/95	923		2.91		K 0.05			0.34	558	38
AVERAGE	721.8		2.873		0.050			0.177	444.2	62.0
MAXIMUM	923		4.88		0.05			0.34	558	89
MINIMUM	621		1.44		0.05			0.08	378	38

RM 26.21

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	72	K 10.0		3.0	27			K40.0	K2.0	28.0	291
07/11/95													
07/26/95	K 2	K 0.2	69	K 10.0		2.0	29				3.0	26.0	292
08/23/95	K 2	K 0.2	77	K 10.0		K 2.0	27			K40.0	K2.0	12.0	303
09/06/95	K 2	K 0.2	58	K 10.0		K 2.0	34			K40.0	K2.0	24.0	285
09/20/95	K 2	K 0.2	92	K 10.0		K 2.0	35			K40.0	4.0	18.0	374
AVERAGE	2.0	0.20	73.6	10.00		2.20	30.4			40.00	2.60	21.60	309.0
MAXIMUM	2	0.2	92	10.0		3.0	35			40.0	4.0	28.0	374
MINIMUM	2	0.2	58	10.0		2.0	27			40.0	2.0	12.0	285

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11C01	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	24.55		#42C-DST. FERNALD *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1240	25.0	7.2		8.25			K 6.0	
07/11/95	1140	25.0	10.2		8.64			30.0	
07/26/95	1205	26.0	11.4		8.91			6.0	
08/23/95	1315	26.0	8.0		8.41			K 6.0	
09/06/95	1245	25.0	9.8		8.68			39.0	
09/20/95					8.82			K 6.0	
AVERAGE		25.40	9.32		8.618			15.50	
MAXIMUM		26.0	11.4		8.91			39.0	
MINIMUM		25.0	7.2		8.25			6.0	

RM 24.55

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	766			7.38	K 3.00			0.23		38
07/11/95	703			3.52	K 3.00			0.22		90
07/26/95	591			5.73	K 3.00			0.22		97
08/23/95	626			2.14	K 3.00			0.11		24
09/06/95	743			1.73	K 3.00			0.15		67
09/20/95	920			2.73	K 3.00			0.36		45
AVERAGE	724.8			3.872	3.000			0.215		60.2
MAXIMUM	920			7.38	3.00			0.36		97
MINIMUM	591			1.73	3.00			0.11		24

RM 24.55

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	2	K 1.6	73	14.3		2.5	27	89.3	0.04	6.6		43.3	291
07/11/95													
07/26/95	2	K 1.6	65	12.4	1430	2.9	27	75.9	K 0.04	5.7	0.8	36.2	273
08/23/95	2	K 1.3	69	9.8	1370	2.9	25	47.0	0.06	3.2	1.3	25.1	277
09/06/95													
09/20/95	3	K 1.3	81	12.9	896	2.5	31	62.2	0.09	6.0	2.2	23.3	328
AVERAGE	2.3	1.45	72.0	12.35	1232.0	2.70	27.5	68.60	0.06	5.38	1.43	31.98	292.3
MAXIMUM	3	1.6	81	14.3	1430	2.9	31	89.3	0.09	6.6	2.2	43.3	328
MINIMUM	2	1.3	65	9.8	896	2.5	25	47.0	0.04	3.2	0.8	23.3	273

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services; Temp and D.O. per OEPA field measurements

Appendix Table A-1, continued.

STORET H11W54 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 23.65 #43-UST PADDY'S RUN, ADJ E. MIAMI RIVER RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1140	25.0	7.9		8.32			K 2.0	19
07/11/95	1045	24.0	10.4		8.41			5.4	15
07/26/95	1115	26.0	10.4		8.00			5.8	35
08/23/95	1205	26.0	7.9		8.34			K 2.0	15
09/06/95	1145	25.0	9.7		8.49			9.4	26
09/20/95	1200	21.0	8.8		8.50			4.2	29
AVERAGE		24.50	9.18		8.343			4.80	23.2
MAXIMUM		26.0	10.4		8.50			9.4	35
MINIMUM		21.0	7.9		8.00			2.0	15

RM 23.65

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	618		4.85		0.05			0.18	388	95
07/11/95	720		3.33		K 0.05			0.09	446	72
07/26/95	650		1.86		K 0.05			0.18	374	89
08/23/95	666		2.81		K 0.05			0.19	402	38
09/06/95	750		1.49		K 0.05			0.10	458	50
09/20/95	920		2.90		K 0.05			0.37	550	36
AVERAGE	720.7		2.873		0.050			0.185	436.3	63.3
MAXIMUM	920		4.85		0.05			0.37	550	95
MINIMUM	618		1.49		0.05			0.09	374	36

RM 23.65

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	72	K 10.0		3.0	27			K40.0	K2.0	27.0	291
07/11/95													
07/26/95	K 2	K 0.2	68	K 10.0		2.0	29				K2.0	26.0	289
08/23/95	K 2	K 0.2	77	K 10.0		K 2.0	27			K40.0	K2.0	14.0	303
09/06/95	K 2	K 0.2	56	K 10.0		K 2.0	32			K40.0	K2.0	24.0	272
09/20/95	2	K 0.2	88	K 10.0		K 2.0	33			K40.0	5.0	24.0	356
AVERAGE	2.0	0.20	72.2	10.00		2.20	29.6			40.00	2.60	23.00	302.2
MAXIMUM	2	0.2	88	10.0		3.0	33			40.0	5.0	27.0	356
MINIMUM	2	0.2	56	10.0		2.0	27			40.0	2.0	14.0	272

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 600030 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 21.44 #44-BLUE ROCK RD.

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1100	25.0	7.6		8.33			K 2.0	16
07/11/95	1015	24.0	9.9		8.40			5.5	18
07/26/95	1005				8.86			5.9	29
08/23/95	1020	25.0	5.9		8.34			K 2.0	
09/06/95	1055	24.5	8.7		8.22			9.4	23
09/20/95	1120	21.0	8.6		8.51			4.1	22
AVERAGE		23.90	8.14		8.443			4.82	21.6
MAXIMUM		25.0	9.9		8.86			9.4	29
MINIMUM		21.0	5.9		8.22			2.0	16

RM 21.44

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	628		4.87		K 0.05			0.16	388	84
07/11/95	719		3.38		K 0.05			0.09	442	88
07/26/95	650		1.83		K 0.05			0.16	380	77
08/23/95	659								414	36
09/06/95	744		1.42		K 0.05			0.11	454	57
09/20/95	923		2.89		K 0.05			0.34	558	34
AVERAGE	720.5		2.878		0.050			0.172	439.3	62.7
MAXIMUM	923		4.87		0.05			0.34	558	88
MINIMUM	628		1.42		0.05			0.09	380	34

RM 21.44

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	73	K 10.0		4.0	27			K40.0	K2.0	24.0	293
07/11/95													
07/26/95	K 2	K 0.2	70	K 10.0		K 2.0	32				K2.0	28.0	307
08/23/95	K 2	K 0.2	81	K 10.0		K 2.0	28			K40.0	2.0	K 10.0	318
09/06/95	K 2	K 0.2	56	K 10.0		K 2.0	32			K40.0	K2.0	28.0	272
09/20/95	2	K 0.2	89	K 10.0		K 2.0	34			K40.0	4.0	31.0	362
AVERAGE	2.0	0.20	73.8	10.00		2.40	30.6			40.00	2.40	24.20	310.4
MAXIMUM	2	0.2	89	10.0		4.0	34			40.0	4.0	31.0	362
MINIMUM	2	0.2	56	10.0		2.0	27			40.0	2.0	10.0	272

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11S29 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 19.90 #45-ADJ SR 128, DST PADDYS RUN

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
07/11/95	0915	24.0	8.5		7.34			5.2	52
07/26/95	0940	25.5	9.2		8.84			6.1	29
08/23/95	1030	26.0	7.6		8.34			K 2.0	15
09/06/95	1005	25.0	9.2		8.35			9.1	20
09/20/95	1000	21.0	8.4		8.49			4.0	26
AVERAGE		24.30	8.58		8.272			5.28	28.4
MAXIMUM		26.0	9.2		8.84			9.1	52
MINIMUM		21.0	7.6		7.34			2.0	15

RM 19.90

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
07/11/95	724		3.44		K 0.05			0.10	450	71
07/26/95	656		1.94		K 0.05			0.22	384	68
08/23/95	657		2.76		K 0.05			0.20	414	36
09/06/95	735		1.38		K 0.05			0.12	455	47
09/20/95	904		3.00		K 0.05			0.36	544	54
AVERAGE	735.2		2.504		0.050			0.200	449.4	55.2
MAXIMUM	904		3.44		0.05			0.36	544	71
MINIMUM	656		1.38		0.05			0.10	384	36

RM 19.90

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
07/11/95													
07/26/95	K 2	K 0.2	63	K 10.0		K 2.0	30				K2.0	22.0	281
08/23/95	K 2	K 0.2	78	K 10.0		K 2.0	27			K40.0	K2.0	K10.0	306
09/06/95	K 2	K 0.2	51	19.0		K 2.0	30			K40.0	K2.0	33.0	251
09/20/95	2	K 0.2	90	14.0		3.0	33			K40.0	2.0	105.0	361
AVERAGE	2.0	0.20	70.5	13.25		2.25	30.0			40.00	2.00	42.50	299.8
MAXIMUM	2	0.2	90	19.0		3.0	33			40.0	2.0	105.0	361
MINIMUM	2	0.2	51	10.0		2.0	27			40.0	2.0	10.0	251

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11C07	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	19.90		#45C-ADJ SR 128, DST PADDYS RUN *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1015	25.0	6.4		8.25			K 6.0	
AVERAGE		25.00	6.40		8.250			6.00	
MAXIMUM		25.0	6.4		8.25			6.0	
MINIMUM		25.0	6.4		8.25			6.0	

RM 19.90

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	599			6.54	K 3.00			0.31		103
AVERAGE	599.0			6.540	3.000			0.310		103.0
MAXIMUM	599			6.54	3.00			0.31		103
MINIMUM	599			6.54	3.00			0.31		103

RM 19.90

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	1	K 1.6	73	11.0		2.5	27	97.3	0.06	6.1		61.8	293
AVERAGE	1.0	1.60	73.0	11.00		2.50	27.0	97.30	0.06	6.10		61.80	293.0
MAXIMUM	1	1.6	73	11.0		2.5	27	97.3	0.06	6.1		61.8	293
MINIMUM	1	1.6	73	11.0		2.5	27	97.3	0.06	6.1		61.8	293

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services; Temp and D.O. per OEPA field measurements

Appendix Table A-1, continued.

STORET H11W20 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 15.49 #46-HARRISON RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	0920	25.0	7.3		8.25			2.0	25
07/11/95	0830	25.0	8.6		8.35			5.1	20
07/26/95	0900	26.5	9.7		8.74			5.6	29
08/23/95	0930	26.0	8.0		8.34			K 2.0	15
09/06/95	0930	25.0	9.0		8.33			9.7	26
AVERAGE		25.50	8.52		8.402			4.88	23.0
MAXIMUM		26.5	9.7		8.74			9.7	29
MINIMUM		25.0	7.3		8.25			2.0	15

RM 15.49

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	615	K 10.0	4.64		K 0.05	K 1.00	K 10	0.23	394	130
07/11/95	722	K 10.0	3.51		K 0.05	K 1.00		0.09	430	90
07/26/95	646	K 10.0	1.81		K 0.05			0.14	380	61
08/23/95	666	K 10.0	2.66		K 0.05		11	0.18	418	41
09/06/95	724	K 10.0	1.28		K 0.05	1.46	K 10	0.13	410	49
AVERAGE	674.6	10.0	2.780		0.050	1.153	10.3	0.154	406.4	74.2
MAXIMUM	724	10	4.64		0.05	1.46	11	0.23	430	130
MINIMUM	615	10	1.28		0.05	1.00	10	0.09	380	41

RM 15.49

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	72	K 10.0		4.0	27			K40.0	K2.0	47.0	291
07/11/95													
07/26/95	K 2	K 0.2	60	K 10.0		K 2.0	29				K2.0	20.0	269
08/23/95	K 2	K 0.2	79	K 10.0		K 2.0	27			K40.0	K2.0	16.0	308
09/06/95	K 2	K 0.2	51	K 10.0		K 2.0	32			K40.0	2.0	29.0	259
AVERAGE	2.0	0.20	65.5	10.00		2.50	28.8			40.00	2.00	28.00	281.8
MAXIMUM	2	0.2	79	10.0		4.0	32			40.0	2.0	47.0	308
MINIMUM	2	0.2	51	10.0		2.0	27			40.0	2.0	16.0	259

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11W55	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	14.93		#47-DST TAYLOR CREEK , US 52

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1330	25.2	6.4		8.27			2.0	19
07/11/95	1400	26.7	12.2	8.26				6.3	29
07/25/95	1150	25.3	8.6		8.70			5.1	35
08/22/95	1200	27.0	5.8		8.22			K 2.0	21
09/05/95	1240	26.0	11.2		8.57			4.5	36
09/19/95	1505	21.0	12.0		8.59			4.5	12
AVERAGE		25.20	9.37	8.260	8.470			4.07	25.3
MAXIMUM		27.0	12.2	8.26	8.70			6.3	36
MINIMUM		21.0	5.8	8.26	8.22			2.0	12

RM 14.93

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	626	K 10.0	4.62		K 0.05	K 1.00	K 10	0.24	392	145
07/11/95	711	K 10.0	3.07		K 0.05	K 1.00	K 10	0.07	474	84
07/25/95	599	K 10.0	1.56		K 0.05		K 10	0.17		92
08/22/95	616	K 10.0	2.65		K 0.05		K 10	0.20	358	70
09/05/95	720	K 10.0	0.90		K 0.05	K 1.00	K 10	0.13	398	48
09/19/95	876	K 10.0	2.88		K 0.05	1.06	K 10	0.32	516	38
AVERAGE	691.3	10.0	2.613		0.050	1.015	10.0	0.188	427.6	79.5
MAXIMUM	876	10	4.62		0.05	1.06	10	0.32	516	145
MINIMUM	599	10	0.90		0.05	1.00	10	0.07	358	38

RM 14.93

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	73	K 10.0		4.0	27			K40.0	K2.0	31.0	293
07/11/95													
07/25/95	K 2	K 0.2	62	K 10.0		2.0	27			K40.0	K2.0	39.0	266
08/22/95	K 2	K 0.2	73	K 10.0		K 2.0	25			K40.0	K2.0	45.0	285
09/05/95	K 2	K 0.2	51	K 10.0		K 2.0	33			K40.0	K2.0	30.0	263
09/19/95	3	K 0.2	85	K 10.0		K 2.0	32			K40.0	5.0	22.0	344
AVERAGE	2.2	0.20	68.8	10.00		2.40	28.8			40.00	2.60	33.40	290.2
MAXIMUM	3	0.2	85	10.0		4.0	33			40.0	5.0	45.0	344
MINIMUM	2	0.2	51	10.0		2.0	25			40.0	2.0	22.0	263

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W56 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 13.05 #48-OPPOSITE CROWELL RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1300	25.1	7.4		8.29			K 2.0	19
07/11/95	1345	26.0	11.2	8.17				6.1	23
07/25/95	1130	25.2	8.6		8.90			5.3	45
08/22/95	1230	26.8	7.4		8.24			K 2.0	21
09/05/95	1220	25.0	11.0		8.45			13.0	36
09/19/95	1445	20.5	10.8		8.57			11.3	24
AVERAGE		24.77	9.40	8.170	8.490			6.62	28.0
MAXIMUM		26.8	11.2	8.17	8.90			13.0	45
MINIMUM		20.5	7.4	8.17	8.24			2.0	19

RM 13.05

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	619		4.57		K 0.05			0.21	408	139
07/11/95	714		3.14		K 0.05			0.07	432	84
07/25/95	595		1.55		0.08			0.18		94
08/22/95	604		2.66		K 0.05			0.22	370	54
09/05/95	722		0.92		K 0.05			0.12	402	52
09/19/95	877		2.87		K 0.05			0.33	520	38
AVERAGE	688.5		2.618		0.055			0.188	426.4	76.8
MAXIMUM	877		4.57		0.08			0.33	520	139
MINIMUM	595		0.92		0.05			0.07	370	38

RM 13.05

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	75	K 10.0		4.0	28			K40.0	K2.0	88.0	303
07/11/95													
07/25/95	K 2	K 0.2	60	K 10.0		2.0	26			K40.0	K2.0	40.0	257
08/22/95	K 2	K 0.2	71	K 10.0		K 2.0	25			K40.0	K2.0	24.0	280
09/05/95	K 2	K 0.2	54	K 10.0		K 2.0	33			K40.0	3.0	27.0	271
09/19/95	2	K 0.2	85	K 10.0		K 2.0	33			K40.0	K2.0	19.0	348
AVERAGE	2.0	0.20	69.0	10.00		2.40	29.0			40.00	2.20	39.60	291.8
MAXIMUM	2	0.2	85	10.0		4.0	33			40.0	3.0	88.0	348
MINIMUM	2	0.2	54	10.0		2.0	25			40.0	2.0	19.0	257

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11S28 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 10.70 #49-UST. CHEVRON, ADJ SR 128

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1230	25.1	6.8		8.28			K 2.0	25
07/11/95	1300	27.0	13.0	8.37				6.9	18
07/25/95	1215	25.2	8.8		8.83			5.3	41
08/22/95	1300	26.8	7.4		8.26			K 2.0	12
09/05/95	1120	26.0	10.9		8.69			13.0	39
09/19/95	1400	22.0	13.5		8.70			5.3	24
AVERAGE		25.35	10.07	8.370	8.552			5.75	26.5
MAXIMUM		27.0	13.5	8.37	8.83			13.0	41
MINIMUM		22.0	6.8	8.37	8.26			2.0	12

RM 10.70

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	612		4.29		K 0.05			0.27	386	151
07/11/95	699		3.16		K 0.05			K 0.05	444	74
07/25/95	585		1.54		K 0.05			0.17		78
08/22/95	603		2.66		K 0.05			0.24	356	42
09/05/95	718		0.90		K 0.05			0.10	402	56
09/19/95	864		2.83		K 0.05			0.30	514	30
AVERAGE	680.2		2.563		0.050			0.188	420.4	71.8
MAXIMUM	864		4.29		0.05			0.30	514	151
MINIMUM	585		0.90		0.05			0.05	356	30

RM 10.70

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	3	K 0.2	74	K 10.0		4.0	27			K40.0	K2.0	40.0	296
07/11/95													
07/25/95	K 2	K 0.2	58	K 10.0		K 2.0	26			K40.0	K2.0	36.0	252
08/22/95	K 2	K 0.2	70	K 10.0		K 2.0	25			K40.0	K2.0	22.0	278
09/05/95	K 2	K 0.2	53	K 10.0		K 2.0	32			K40.0	K2.0	32.0	264
09/19/95	3	K 0.2	83	K 10.0		K 2.0	32			K40.0	2.0	25.0	339
AVERAGE	2.4	0.20	67.6	10.00		2.40	28.4			40.00	2.00	31.00	285.8
MAXIMUM	3	0.2	83	10.0		4.0	32			40.0	2.0	40.0	339
MINIMUM	2	0.2	53	10.0		2.0	25			40.0	2.0	22.0	252

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11W57	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	8.52		#50-DST CHEVRON @ SR 50

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1215	25.0	7.6		8.28			2.1	22
07/11/95	1230	26.0	12.2	8.29				6.3	23
07/25/95	1015	25.5	9.2					5.8	25
08/22/95	1330	26.2	7.6		8.31			K 2.0	15
09/05/95	1045	24.5	9.7		8.45			11.0	33
09/19/95	1330	20.5	11.2		8.59			4.5	26
AVERAGE		24.62	9.58	8.290	8.408			5.28	24.0
MAXIMUM		26.2	12.2	8.29	8.59			11.0	33
MINIMUM		20.5	7.6	8.29	8.28			2.0	15

RM 8.52

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	609		4.49		K 0.05			0.33	390	203
07/11/95	709		3.23		K 0.05			0.08	472	82
07/25/95	606		1.63		K 0.05			0.29		96
08/22/95	599		2.64		K 0.05			0.24	348	59
09/05/95	727		0.94		K 0.05			0.15	400	54
09/19/95	864		2.85		K 0.05			0.31	508	46
AVERAGE	685.7		2.630		0.050			0.233	423.6	90.0
MAXIMUM	864		4.49		0.05			0.33	508	203
MINIMUM	599		0.94		0.05			0.08	348	46

RM 8.52

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	75	K 10.0		5.0	28			K40.0	K2.0	44.0	303
07/11/95													
07/25/95	K 2	K 0.2	64	K 10.0		3.0	27			K40.0	2.0	50.0	271
08/22/95	2	K 0.2	71	K 10.0		2.0	25			K40.0	K2.0	34.0	280
09/05/95	K 2	K 0.2	55	K 10.0		K 2.0	33			K40.0	K2.0	37.0	273
09/19/95	2	K 0.2	86	K 10.0		2.0	33			K40.0	4.0	35.0	351
AVERAGE	2.0	0.20	70.2	10.00		2.80	29.2			40.00	2.40	40.00	295.6
MAXIMUM	2	0.2	86	10.0		5.0	33			40.0	4.0	50.0	351
MINIMUM	2	0.2	55	10.0		2.0	25			40.0	2.0	34.0	271

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11W58 **SITE LOCATION** GREAT MIAMI RIVER
RIVER MILE 8.07 #51-VALLEY JCT RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1200	25.0	6.8		8.26			2.0	19
07/11/95	1215	28.0	8.5	8.81				4.1	18
07/25/95	1005	27.5	6.5		8.31			19.0	111
08/22/95	1345	29.5	6.5		8.43			K 2.0	12
09/05/95	1105	26.0	7.9		8.30			2.5	K 10
09/19/95	1420	22.0	7.5		8.12			2.7	26
AVERAGE		26.33	7.28	8.810	8.284			5.38	32.7
MAXIMUM		29.5	8.5	8.81	8.43			19.0	111
MINIMUM		22.0	6.5	8.81	8.12			2.0	10

RM 8.07

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	608		4.44		K 0.05			0.34	382	227
07/11/95	396		K 0.10		K 0.05			K 0.05	244	8
07/25/95	449		K 0.10		K 0.05			0.26		35
08/22/95	495		K 0.10		K 0.05			K 0.05	276	10
09/05/95	526		K 0.10		K 0.05			K 0.05	294	24
09/19/95	571		K 0.10		K 0.05			K 0.05	314	19
AVERAGE	507.5		0.823		0.050			0.133	302.0	53.8
MAXIMUM	608		4.44		0.05			0.34	382	227
MINIMUM	396		0.10		0.05			0.05	244	8

RM 8.07

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	76	K 10.0		5.0	28			K40.0	K2.0	47.0	305
07/11/95													
07/25/95	K 2	K 0.2	49	K 10.0		K 2.0	22			K40.0	K2.0	61.0	213
08/22/95	K 2	K 0.2	53	K 10.0		K 2.0	23			K40.0	K2.0	K 10.0	227
09/05/95	K 2	K 0.2	60	K 10.0		K 2.0	25			K40.0	K2.0	17.0	253
09/19/95	3	K 0.2	82	K 10.0		K 2.0	32			K40.0	K2.0	26.0	337
AVERAGE	2.2	0.20	64.0	10.00		2.60	26.0			40.00	2.00	32.20	267.0
MAXIMUM	3	0.2	82	10.0		5.0	32			40.0	2.0	61.0	337
MINIMUM	2	0.2	49	10.0		2.0	22			40.0	2.0	10.0	213

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H11W59	SITE LOCATION	GREAT MIAMI RIVER
RIVER MILE	1.75		#54-ADJ LAWRENCEBURG RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1100	24.0	6.8		8.25			K 2.0	16
07/11/95	1100	24.5	8.0	8.39				3.8	15
07/25/95	1050	25.0	7.0		8.57			4.2	47
08/22/95	1430				8.28			K 2.0	15
09/05/95	1150	24.2	8.3		8.51			10.0	39
09/19/95	1230	19.0	9.2		8.44			3.4	15
AVERAGE		23.34	7.86	8.390	8.410			4.23	24.5
MAXIMUM		25.0	9.2	8.39	8.57			10.0	47
MINIMUM		19.0	6.8	8.39	8.25			2.0	15

RM 1.75

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	606		4.20		K 0.05			0.20	382	78
07/11/95	697		3.22		K 0.05			0.10	428	56
07/25/95	566		1.56		K 0.05			0.20		116
08/22/95	580		2.49		K 0.05			0.23	338	148
09/05/95	693		0.81		K 0.05			0.14	392	42
09/19/95	774		2.51		K 0.05			0.21	466	25
AVERAGE	652.7		2.465		0.050			0.180	401.2	77.5
MAXIMUM	774		4.20		0.05			0.23	466	148
MINIMUM	566		0.81		0.05			0.10	338	25

RM 1.75

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	74	K 10.0		4.0	27			K40.0	K2.0	46.0	296
07/11/95													
07/25/95	2	K 0.2	60	K 10.0		3.0	26			K40.0	3.0	84.0	257
08/22/95	K 2	K 0.2	69	K 10.0		K 2.0	24			K40.0	K2.0	27.0	271
09/05/95	K 2	K 0.2	59	K 10.0		K 2.0	33			K40.0	K2.0	30.0	283
09/19/95	2	K 0.2	84	K 10.0		K 2.0	31			K40.0	5.0	19.0	337
AVERAGE	2.0	0.20	69.2	10.00		2.60	28.2			40.00	2.80	41.20	288.8
MAXIMUM	2	0.2	84	10.0		4.0	33			40.0	5.0	84.0	337
MINIMUM	2	0.2	59	10.0		2.0	24			40.0	2.0	19.0	257

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W81 **SITE LOCATION** WOLF_CREEK
RIVER MILE 16.61 #55-UPPER LEWISBURG-SALEM RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1330	20.0	8.9		8.01			2.1	K 10
07/13/95	1140	25.0	9.0		8.29			K 2.0	K 10
07/27/95	1130	20.1	8.8		7.92			K 2.0	K 10
08/24/95	1235	19.0	7.1		7.94			K 2.0	K 10
09/07/95	1200	19.0	4.8		7.71			K 2.0	K 10
09/21/95	1130	16.0	4.7		7.71			K 2.0	21
AVERAGE		19.85	7.22		7.930			2.02	11.8
MAXIMUM		25.0	9.0		8.29			2.1	21
MINIMUM		16.0	4.7		7.71			2.0	10

RM 16.61

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	706		4.56		0.17			0.08	456	K 5
07/13/95	682		6.50		0.06			K 0.05	546	K 5
07/27/95	685		9.71		K 0.05			0.08	416	14
08/24/95	835		0.74		K 0.05			K 0.05	504	K 5
09/07/95	1040		K 0.10		K 0.05			K 0.05	574	K 5
09/21/95	976		K 0.10		K 0.05			0.08	602	8
AVERAGE	820.7		3.618		0.072			0.065	516.3	7.0
MAXIMUM	1040		9.71		0.17			0.08	602	14
MINIMUM	682		0.10		0.05			0.05	416	5

RM 16.61

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	70	K10.0		K 2.0	31			K 40.0	2.0	K 10.0	302
07/13/95													
07/27/95	K 2	K 0.2	84	K10.0		K 2.0	30			K 40.0	K2.0	K 10.0	333
08/24/95	3	K 0.2	76	K10.0		2.0	34			K 40.0	K2.0	12.0	330
09/07/95	2	K 0.2	92	K10.0		K 2.0	43			K 40.0	K2.0	K 10.0	407
09/21/95	K 2	K 0.2	83	K10.0		K 2.0	40			K 40.0	K2.0	24.0	372
AVERAGE	2.2	0.20	81.0	10.00		2.00	35.6			40.00	2.00	13.20	348.8
MAXIMUM	3	0.2	92	10.0		2.0	43			40.0	2.0	24.0	407
MINIMUM	2	0.2	70	10.0		2.0	30			40.0	2.0	10.0	302

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W82 **SITE LOCATION** WOLF_CREEK
RIVER MILE 15.32 #56-WESTBROOK RD, UST BROOKVILLE WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1400	20.5	7.2		7.89			7.5	22
07/13/95	1220	23.5	9.2		8.30			K 2.0	K 10
07/27/95		20.2	9.5		8.10			K 2.0	K 10
08/24/95	1300	21.0	9.2		8.21			K 2.0	K 10
09/07/95	1225	19.5	6.1		8.02			K 2.0	17
09/21/95	1205	17.0	6.2		8.01			K 2.0	27
AVERAGE		20.28	7.90		8.088			2.92	16.0
MAXIMUM		23.5	9.5		8.30			7.5	27
MINIMUM		17.0	6.1		7.89			2.0	10

RM 15.32

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	399		1.81		0.06			0.06	272	19
07/13/95	793		4.12		K 0.05			K 0.05	482	K 5
07/27/95	693		9.15		K 0.05			0.09	432	14
08/24/95	870		0.88		K 0.05			0.06	506	K 5
09/07/95	948		0.83		0.08			0.15	526	K 5
09/21/95	828		0.64		K 0.05			0.06	494	8
AVERAGE	755.2		2.905		0.057			0.078	452.0	9.3
MAXIMUM	948		9.15		0.08			0.15	526	19
MINIMUM	399		0.64		0.05			0.05	272	5

RM 15.32

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	42	K10.0		5.0	17			K 40.0	K2.0	35.0	175
07/13/95													
07/27/95	K 2	K 0.2	84	K10.0		K 2.0	31			K 40.0	K2.0	K 10.0	337
08/24/95	2	K 0.2	82	K10.0		K 2.0	35			K 40.0	K2.0	19.0	349
09/07/95	2	K 0.2	91	K10.0		K 2.0	42			K 40.0	K2.0	14.0	400
09/21/95	K 2	K 0.2	79	K10.0		K 2.0	33			K 40.0	K2.0	22.0	333
AVERAGE	2.0	0.20	75.6	10.00		2.60	31.6			40.00	2.00	20.00	318.8
MAXIMUM	2	0.2	91	10.0		5.0	42			40.0	2.0	35.0	400
MINIMUM	2	0.2	42	10.0		2.0	17			40.0	2.0	10.0	175

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W83 **SITE LOCATION** WOLF_CREEK
RIVER MILE 14.14 #57-AIRHILL RD, DST BROOKVILLE WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1415	21.0	6.7		7.71			5.6	19
07/13/95	1240	21.0	4.9		7.88			2.5	K 10
07/27/95	1200	20.1	8.8		8.13			K 2.0	15
08/24/95	1315	20.0	6.0		8.00			K 2.0	12
09/07/95	1240	19.5	6.2		7.83			K 2.0	17
09/21/95	1215	17.5	5.4		7.79			K 2.0	18
AVERAGE		19.85	6.33		7.890			2.68	15.2
MAXIMUM		21.0	8.8		8.13			5.6	19
MINIMUM		17.5	4.9		7.71			2.0	10

RM 14.14

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	310		1.14		0.24			0.12	212	25
07/13/95	845		2.72		0.37			0.40	540	K 5
07/27/95	696		8.26		K 0.05			0.11	414	11
08/24/95	852		1.26		K 0.05			0.43	496	K 5
09/07/95	864		2.08		K 0.05			1.29	482	K 5
09/21/95	761		1.30		0.12			1.01	434	K 5
AVERAGE	721.3		2.793		0.147			0.560	429.7	9.3
MAXIMUM	864		8.26		0.37			1.29	540	25
MINIMUM	310		1.14		0.05			0.11	212	5

RM 14.14

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	30	K10.0		5.0	11			K40.0	K2.0	39.0	120
07/13/95													
07/27/95	K 2	K 0.2	81	K10.0		K 2.0	30			K40.0	3.0	K10.0	326
08/24/95	2	K 0.2	71	K10.0		K 2.0	27			K40.0	K2.0	47.0	288
09/07/95	2	K 0.2	68	K10.0		K 2.0	26			K40.0	K2.0	53.0	277
09/21/95	K 2	K 0.2	60	K10.0		K 2.0	20			K40.0	K2.0	36.0	232
AVERAGE	2.0	0.20	62.0	10.00		2.60	22.8			40.00	2.20	37.00	248.6
MAXIMUM	2	0.2	81	10.0		5.0	30			40.0	3.0	53.0	326
MINIMUM	2	0.2	30	10.0		2.0	11			40.0	2.0	10.0	120

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W84 **SITE LOCATION** WOLF_CREEK
RIVER MILE 6.08 #58-OLIVE RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1445	23.0	9.9		8.20			2.0	K 10
07/13/95	1315	25.9	11.0		8.37			K 2.0	K 10
07/27/95	1225	22.2	8.4		8.28			K 2.0	21
08/24/95	1345	22.9	12.0		8.35			K 2.0	K 10
09/07/95	1310	20.0	8.6		8.04			K 2.0	K 10
09/21/95	1245	17.0	8.1		8.09			K 2.0	K 10
AVERAGE		21.83	9.67		8.222			2.00	11.8
MAXIMUM		25.9	12.0		8.37			2.0	21
MINIMUM		17.0	8.1		8.04			2.0	10

RM 6.08

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	454		0.90		0.07			K 0.05	298	6
07/13/95	796		1.50		K 0.05			K 0.05	496	6
07/27/95	564		5.56		K 0.05			0.16	356	51
08/24/95	808		1.13		K 0.05			K 0.05	490	K 5
09/07/95	848		1.30		K 0.05			K 0.05	474	K 5
09/21/95	857		1.66		K 0.05			0.06	512	6
AVERAGE	721.2		2.008		0.053			0.070	437.7	13.2
MAXIMUM	857		5.56		0.07			0.16	512	51
MINIMUM	454		0.90		0.05			0.05	298	5

RM 6.08

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	47	K10.0		2.0	20			K 40.0	K2.0	23.0	200
07/13/95													
07/27/95	2	K 0.2	65	K10.0		K 2.0	25			K 40.0	K2.0	14.0	265
08/24/95	K 2	K 0.2	88	K10.0		K 2.0	38			K 40.0	K2.0	16.0	376
09/07/95	K 2	K 0.2	93	K10.0		K 2.0	42			K 40.0	K2.0	K 10.0	405
09/21/95	K 2	K 0.2	92	K10.0		K 2.0	40			K 40.0	K2.0	11.0	394
AVERAGE	2.0	0.20	77.0	10.00		2.00	33.0			40.00	2.00	14.80	328.0
MAXIMUM	2	0.2	93	10.0		2.0	42			40.0	2.0	23.0	405
MINIMUM	2	0.2	47	10.0		2.0	20			40.0	2.0	10.0	200

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W01 **SITE LOCATION** WOLF_CREEK
RIVER MILE 0.01 #59-@ MOUTH *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1520	22.5	8.5		8.06	2.78	112	4.7	22
07/13/95	1350	28.9	14.0		8.35	2.01	19	K 2.0	K 10
07/27/95	1250	23.0	8.2		8.21	2.52	70	K 2.0	18
08/24/95	1420	25.0	19.8		8.48	2.07	23	K 2.0	K 10
09/07/95	1340	21.0	12.0		8.28	1.95	15	K 2.0	K 10
09/21/95	1315	17.5	11.4		8.25	1.97	16	K 2.0	K 10
AVERAGE		22.98	12.32		8.272	2.217	42.5	2.45	13.3
MAXIMUM		28.9	19.8		8.48	2.78	112	4.7	22
MINIMUM		17.5	8.2		8.06	1.95	15	2.0	10

RM 0.01

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	311		0.66		K 0.05			K 0.05	226	61
07/13/95	761		1.00		K 0.05			K 0.05	478	K 5
07/27/95	520		4.30		K 0.05			0.15	326	63
08/24/95	742		0.76		K 0.05			2.66	452	12
09/07/95	791		0.81		K 0.05			K 0.05	430	6
09/21/95	812		1.00		K 0.05			K 0.05	502	6
AVERAGE	656.2		1.422		0.050			0.502	402.3	25.5
MAXIMUM	812		4.30		0.05			2.66	502	63
MINIMUM	311		0.66		0.05			0.05	226	5

RM 0.01

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	36	K10.0		8.0	13			K 40.0	K2.0	38.0	143
07/13/95													
07/27/95	K 2	K 0.2	59	K10.0		3.0	22			K 40.0	K2.0	21.0	238
08/24/95	K 2	K 0.2	72	K10.0		K 2.0	34			K 40.0	K2.0	13.0	320
09/07/95	K 2	K 0.2	85	K10.0		K 2.0	39			K 40.0	K2.0	K 10.0	373
09/21/95	K 2	K 0.2	85	K10.0		K 2.0	35			K 40.0	K2.0	14.0	356
AVERAGE	2.0	0.20	67.4	10.00		3.40	28.6			40.00	2.00	19.20	286.0
MAXIMUM	2	0.2	85	10.0		8.0	39			40.0	2.0	38.0	373
MINIMUM	2	0.2	36	10.0		2.0	13			40.0	2.0	10.0	143

NOTE: K = less than L = greater than

*Gage and flow data based on USGS gage (#03271000) at West Riverview Avenue (RM 1.80)

Appendix Table A-1, continued.

STORET	H09W86	SITE LOCATION	HOLES_CREEK
RIVER MILE	4.28		#61-MCEWEN RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1200	22.5	7.0	8.29				3.4	34
07/13/95	1400	27.0	9.2	8.67				K 2.0	K 10
07/27/95	1130	24.5	7.5		8.13			2.3	24
08/24/95	1350	24.2	9.0		8.33			K 2.0	12
09/07/95	1240	20.5	8.1					K 2.0	14
09/21/95	1615	18.2	8.5		8.21			K 2.0	24
AVERAGE		22.82	8.22	8.480	8.223			2.28	19.7
MAXIMUM		27.0	9.2	8.67	8.33			3.4	34
MINIMUM		18.2	7.0	8.29	8.13			2.0	10

RM 4.28

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	454		0.60		K 0.05			0.14	332	385
07/13/95	605		0.31		K 0.05			K 0.05	368	7
07/27/95	366		0.65		0.05			0.09	256	105
08/24/95	639		0.14		K 0.05			K 0.05	390	K 5
09/07/95	753		K 0.10		K 0.05			K 0.05	420	34
09/21/95	611		0.37		K 0.05			K 0.05	362	12
AVERAGE	571.3		0.362		0.050			0.072	354.7	91.3
MAXIMUM	753		0.65		0.05			0.14	420	385
MINIMUM	366		0.10		0.05			0.05	256	5

RM 4.28

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	3	0.3	60	12.0		9.0	21			K40.0	K2.0	62.0	236
07/13/95													
07/27/95	3	K 0.2	38	K10.0		K 2.0	13			K40.0	K2.0	31.0	148
08/24/95	4	K 0.2	48	K10.0		K 2.0	21			K40.0	K2.0	14.0	206
09/07/95	K 2	K 0.2	56	K10.0		K 2.0	26			K40.0	K2.0	34.0	247
09/21/95	K 2	K 0.2	51	K10.0		K 2.0	21			K40.0	K2.0	23.0	214
AVERAGE	2.8	0.22	50.6	10.40		3.40	20.4			40.00	2.00	32.80	210.2
MAXIMUM	4	0.3	60	12.0		9.0	26			40.0	2.0	62.0	247
MINIMUM	2	0.2	38	10.0		2.0	13			40.0	2.0	14.0	148

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W87 **SITE LOCATION** HOLES CREEK
RIVER MILE 0.59 #62-SR 741

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1130	21.2	7.5	8.12				6.0	12
07/13/95	1345	26.0	9.7	8.79				K 2.0	K 10
07/27/95	1115	24.0	7.1		8.23			K 2.0	18
08/24/95	1320	24.6	9.8		8.35			K 2.0	K 10
09/07/95	1210	20.0	7.2		8.29			K 2.0	K 10
09/21/95	1555	18.0	8.1		8.32			K 2.0	15
AVERAGE		22.30	8.23	8.455	8.298			2.67	12.5
MAXIMUM		26.0	9.8	8.79	8.35			6.0	18
MINIMUM		18.0	7.1	8.12	8.23			2.0	10

RM 0.59

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	391		0.81		0.09			0.18	270	285
07/13/95	776		1.15		K 0.05			K 0.05	468	K 5
07/27/95	418		0.83		K 0.05			0.32	266	101
08/24/95	770		1.13		K 0.05			K 0.05	460	K 5
09/07/95	810		1.49		K 0.05			K 0.05	444	40
09/21/95	666		0.87		K 0.05			K 0.05	394	6
AVERAGE	638.5		1.047		0.057			0.117	383.7	73.7
MAXIMUM	810		1.49		0.09			0.32	468	285
MINIMUM	391		0.81		0.05			0.05	266	5

RM 0.59

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	3	0.3	50	12.0		18.0	19			K40.0	K2.0	68.0	203
07/13/95													
07/27/95	K 2	K 0.2	44	K10.0		K 2.0	15			K40.0	K2.0	21.0	172
08/24/95	2	0.2	74	K10.0		K 2.0	31			K40.0	K2.0	23.0	312
09/07/95	K 2	K 0.2	80	K10.0		K 2.0	37			K40.0	K2.0	10.0	352
09/21/95	K 2	K 0.2	63	K10.0		K 2.0	25			K40.0	K2.0	13.0	260
AVERAGE	2.2	0.22	62.2	10.40		5.20	25.4			40.00	2.00	27.00	259.8
MAXIMUM	3	0.3	80	12.0		18.0	37			40.0	2.0	68.0	352
MINIMUM	2	0.2	44	10.0		2.0	15			40.0	2.0	10.0	172

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09S07	SITE LOCATION	OWL CREEK
RIVER MILE	0.17		#63-CENTRAL AVE

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
07/12/95	1000	26.0	6.0		7.92			8.5	70
07/25/95	1020	26.0	6.7		8.07			2.1	44
08/24/95	1140	24.5	6.1						86
09/07/95	1230	24.0	4.5		7.96			15.0	32
09/21/95	1130	23.0	7.0		8.16			14.0	86
AVERAGE		24.70	6.06		8.028			9.90	63.6
MAXIMUM		26.0	7.0		8.16			15.0	86
MINIMUM		23.0	4.5		7.92			2.1	32

RM 0.17

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
07/12/95	2420	K 10.0	0.99		K 0.05			0.78	1690	10
07/25/95	2270	K 10.0	0.93		K 0.05			0.49		5
08/24/95			0.66		K 0.05			0.80		
09/07/95	2380	K 10.0	0.11		K 0.05	2.20	K 10	0.86	1480	14
09/21/95	2550	13.0	0.57		K 0.05	K 1.00	K 10	1.22	1590	9
AVERAGE	2405.0	10.8	0.652		0.050	1.600	10.0	0.830	1586.7	9.5
MAXIMUM	2550	13	0.99		0.05	2.20	10	1.22	1690	14
MINIMUM	2270	10	0.11		0.05	1.00	10	0.49	1480	5

RM 0.17

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
07/12/95													
07/25/95	2	K 0.2	128	K10.0		2.0	34				5.0	K 10.0	460
08/24/95	4	K 0.2	127	K10.0		6.0	32			K 40.0	K2.0	23.0	449
09/07/95	10	K 0.2	149	K10.0		K 2.0	37			K 40.0	6.0	183.0	524
09/21/95	7	K 0.2	105	K10.0		K 2.0	46			K 40.0	K2.0	16.0	452
AVERAGE	5.8	0.20	127.3	10.00		3.00	37.3			40.00	3.75	58.00	471.3
MAXIMUM	10	0.2	149	10.0		6.0	46			40.0	6.0	183.0	524
MINIMUM	2	0.2	105	10.0		2.0	32			40.0	2.0	10.0	449

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09W88	SITE LOCATION	BEAR CREEK
RIVER MILE	12.09		#64-UST CLAYTON RD, UST NEW LEBANON WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1310	22.0	7.9		8.20			K 2.0	K 10
07/12/95	1245	22.0	8.1		8.22			K 2.0	K 10
07/25/95	1330	22.0	7.4		8.26			K 2.0	K 10
08/24/95	1450	21.0	7.7		8.21			K 2.0	14
09/07/95	1600	19.0	6.0		8.19			K 2.0	17
AVERAGE		21.20	7.42		8.216			2.00	12.2
MAXIMUM		22.0	8.1		8.26			2.0	17
MINIMUM		19.0	6.0		8.19			2.0	10

RM 12.09

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	716		2.66		0.07			K 0.05	450	K 5
07/12/95	738		3.91		K 0.05			K 0.05	462	K 5
07/25/95	659		0.63		K 0.05			0.05		K 5
08/24/95	737		0.91		K 0.05			K 0.05	432	K 5
09/07/95	748		0.14		K 0.05			K 0.05	438	K 5
AVERAGE	719.6		1.650		0.054			0.050	445.5	5.0
MAXIMUM	748		3.91		0.07			0.05	462	5
MINIMUM	659		0.14		0.05			0.05	432	5

RM 12.09

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	3	K 0.2	82	K10.0		K 2.0	40			K 40.0	K2.0	21.0	369
07/12/95													
07/25/95	3	K 0.2	71	K10.0		K 2.0	34				K2.0	K 10.0	317
08/24/95	3	K 0.2	81	K10.0		K 2.0	39			K 40.0	K2.0	10.0	363
09/07/95	4	K 0.2	83	K10.0		K 2.0	44			K 40.0	K2.0	K 10.0	388
AVERAGE	3.3	0.20	79.3	10.00		2.00	39.3			40.00	2.00	12.75	359.3
MAXIMUM	4	0.2	83	10.0		2.0	44			40.0	2.0	21.0	388
MINIMUM	3	0.2	71	10.0		2.0	34			40.0	2.0	10.0	317

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09P06 **SITE LOCATION** BEAR CREEK
RIVER MILE 9.75 #65-US 35, DST NEW LEBANON WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1345	22.0	7.9		8.08			K 2.0	K 10
07/12/95	1225	22.0	9.7		8.24			K 2.0	K 10
07/25/95	1245	22.0	8.2		8.27			K 2.0	13
08/24/95	1405	22.0	10.0					K 2.0	12
09/07/95	1545	20.0	7.5		8.27			K 2.0	20
09/21/95	1415	17.5	7.8		8.16			K 2.0	15
AVERAGE		20.92	8.52		8.204			2.00	13.3
MAXIMUM		22.0	10.0		8.27			2.0	20
MINIMUM		17.5	7.5		8.08			2.0	10

RM 9.75

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	1110		2.25		0.27			0.12	486	K 5
07/12/95	1160		2.85		0.43			0.12	912	K 5
07/25/95	1210		1.05		K 0.05			0.17		K 5
08/24/95	1490		1.96		K 0.05			0.28	892	K 5
09/07/95	1810		2.68		K 0.05			0.49	1080	K 5
09/21/95	1750		6.29		0.35			1.45	1030	K 5
AVERAGE	1421.7		2.847		0.200			0.438	880.0	5.0
MAXIMUM	1810		6.29		0.43			1.45	1080	5
MINIMUM	1110		1.05		0.05			0.12	486	5

RM 9.75

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	3	K 0.2	94	K10.0		K 2.0	41			K 40.0	3.0	32.0	404
07/12/95													
07/25/95	2	K 0.2	88	K10.0		K 2.0	38				K2.0	11.0	376
08/24/95	K 2	K 0.2	101	K10.0		K 2.0	43			K 40.0	K2.0	20.0	429
09/07/95	4	K 0.2	111	K10.0		K 2.0	46			K 40.0	K2.0	27.0	467
09/21/95	5	K 0.2	113	K10.0		K 2.0	49			K 40.0	K2.0	25.0	484
AVERAGE	3.2	0.20	101.4	10.00		2.00	43.4			40.00	2.20	23.00	432.0
MAXIMUM	5	0.2	113	10.0		2.0	49			40.0	3.0	32.0	484
MINIMUM	2	0.2	88	10.0		2.0	38			40.0	2.0	11.0	376

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09S03 **SITE LOCATION** BEAR_CREEK
RIVER MILE 5.20 #66-GERMANTOWN-LIBERTY RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1010	20.0	6.7		8.05			K 2.0	22
07/12/95	1155	23.0	10.2		8.27			K 2.0	K 10
07/25/95	1210	22.5	9.0		8.31			K 2.0	K 10
08/24/95	1335	23.5	10.0		8.31			K 2.0	K 10
09/07/95	1505	20.0	6.5		8.15			K 2.0	14
09/21/95	1345	17.0	8.6		8.09			K 2.0	K 10
AVERAGE		21.00	8.50		8.197			2.00	12.7
MAXIMUM		23.5	10.2		8.31			2.0	22
MINIMUM		17.0	6.5		8.05			2.0	10

RM 5.20

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	874		1.77		K 0.05			K 0.05	600	K 5
07/12/95	853		3.07		K 0.05			K 0.05	510	K 5
07/25/95	914		0.92		K 0.05			0.11		K 5
08/24/95	841		0.77		K 0.05			K 0.05	501	K 5
09/07/95	977		0.82		K 0.05			K 0.05	560	K 5
09/21/95	1200		0.99		K 0.05			K 0.05	688	K 5
AVERAGE	943.2		1.390		0.050			0.060	571.8	5.0
MAXIMUM	1200		3.07		0.05			0.11	688	5
MINIMUM	841		0.77		0.05			0.05	501	5

RM 5.20

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	96	K10.0		K 2.0	41			K 40.0	3.0	K 10.0	408
07/12/95													
07/25/95	K 2	K 0.2	84	K10.0		K 2.0	36				K2.0	K 10.0	358
08/24/95	K 2	K 0.2	81	K10.0		K 2.0	34			K 40.0	K2.0	K 10.0	342
09/07/95	K 2	K 0.2	100	K10.0		K 2.0	44			K 40.0	K2.0	K 10.0	431
09/21/95	K 2	K 0.2	141	K10.0		K 2.0	37			K 40.0	2.0	25.0	504
AVERAGE	2.0	0.20	100.4	10.00		2.00	38.4			40.00	2.20	13.00	408.6
MAXIMUM	2	0.2	141	10.0		2.0	44			40.0	3.0	25.0	504
MINIMUM	2	0.2	81	10.0		2.0	34			40.0	2.0	10.0	342

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W18 **SITE LOCATION** BEAR CREEK
RIVER MILE 0.01 #67-DST RR BRIDGE, @ MOUTH

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/29/95	1130	19.5	7.7		8.11			K 2.0	K 10
07/12/95	1130	23.0	8.6		8.15			K 2.0	K 10
07/25/95	1140	23.0	9.5		8.33			K 2.0	K 10
08/24/95	1200	22.0	9.9					K 2.0	K 10
09/07/95	1430	21.0	7.9		8.16			K 2.0	K 10
09/21/95	1315	17.0	9.0		8.15			K 2.0	15
AVERAGE		20.92	8.77		8.180			2.00	10.8
MAXIMUM		23.0	9.9		8.33			2.0	15
MINIMUM		17.0	7.7		8.11			2.0	10

RM 0.01

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/29/95	791		2.02		K 0.05			K 0.05	504	8
07/12/95	806		2.72		K 0.05			K 0.05	530	K 5
07/25/95	825		2.06		K 0.05			K 0.05		K 5
08/24/95	829		1.74		K 0.05			K 0.05	504	16
09/07/95	835		1.52		K 0.05			K 0.05	472	K 5
09/21/95	863		1.49		K 0.05			K 0.05	547	6
AVERAGE	824.8		1.925		0.050			0.050	511.4	7.5
MAXIMUM	863		2.72		0.05			0.05	547	16
MINIMUM	791		1.49		0.05			0.05	472	5

RM 0.01

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/29/95	K 2	K 0.2	96	K10.0		K 2.0	40			K 40.0	2.0	K 10.0	404
07/12/95													
07/25/95	K 2	K 0.2	87	K10.0		K 2.0	36				K2.0	K 10.0	365
08/24/95	K 2	K 0.2	91	K10.0		K 2.0	37			K 40.0	K2.0	12.0	380
09/07/95	K 2	K 0.2	92	K10.0		K 2.0	41			K 40.0	K2.0	K 10.0	399
09/21/95	K 2	K 0.2	106	K10.0		K 2.0	44			K 40.0	K2.0	10.0	446
AVERAGE	2.0	0.20	94.4	10.00		2.00	39.6			40.00	2.00	10.40	398.8
MAXIMUM	2	0.2	106	10.0		2.0	44			40.0	2.0	12.0	446
MINIMUM	2	0.2	87	10.0		2.0	36			40.0	2.0	10.0	365

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09C02	SITE LOCATION	MOUND OVERFLOW CREEK
RIVER MILE	0.10		#68C-UST MOUTH *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
07/12/95					8.57			41.0	
07/25/95					8.33			7.0	
08/24/95					8.44			K 6.0	
AVERAGE					8.447			18.00	
MAXIMUM					8.57			41.0	
MINIMUM					8.33			6.0	

RM 0.10

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
07/12/95	1950			1.37	K 3.00			0.13		16
07/25/95	770			5.82	K 3.00			0.25		36
08/24/95	1060			1.67	K 3.00			0.09		K 10
AVERAGE	1260.0			2.953	3.000			0.157		20.7
MAXIMUM	1950			5.82	3.00			0.25		36
MINIMUM	770			1.37	3.00			0.09		10

RM 0.10

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
07/12/95													
07/25/95	2	K 1.6	66	10.4	794	1.8	29	58.0	K 0.04	6.4	K0.5		283
08/24/95	34	K 1.3	50	14.6	1000	2.3	17	29.7	0.07	K 2.1	1.1	28.6	195
AVERAGE	18.0	1.45	58.0	12.50	897.0	2.05	23.0	43.85	0.06	4.25	0.80	28.60	239.0
MAXIMUM	34	1.6	66	14.6	1000	2.3	29	58.0	0.07	6.4	1.1	28.6	283
MINIMUM	2	1.3	50	10.4	794	1.8	17	29.7	0.04	2.1	0.5	28.6	195

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services

Appendix Table A-1, continued.

STORET	H09W89	SITE LOCATION	ELK CREEK
RIVER MILE	3.65		#69-UST DRY RUN

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1045	20.0	8.8		8.25			K 2.0	K 10
07/12/95	0950	20.0	10.2		8.27			K 2.0	K 10
07/26/95	0930	20.0	8.3		8.71			K 2.0	K 10
08/23/95	1115	19.0	10.3		8.26			K 2.0	K 10
09/06/95	1035	19.5	9.5		8.23			K 2.0	K 10
09/19/95	1050	15.0	11.1		8.28			K 2.0	K 10
AVERAGE		18.92	9.70		8.333			2.00	10.0
MAXIMUM		20.0	11.1		8.71			2.0	10
MINIMUM		15.0	8.3		8.23			2.0	10

RM 3.65

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	650		4.42		K 0.05			K 0.05	414	32
07/12/95	683		3.44		K 0.05			K 0.05	394	K 5
07/26/95	663		3.15		K 0.05			K 0.05	400	K 5
08/23/95	678		2.21		K 0.05			K 0.05	398	K 5
09/06/95	684		2.24		K 0.05			K 0.05	414	K 5
09/19/95	696		2.33		K 0.05			K 0.05	414	K 5
AVERAGE	675.7		2.965		0.050			0.050	405.7	9.5
MAXIMUM	696		4.42		0.05			0.05	414	32
MINIMUM	650		2.21		0.05			0.05	394	5

RM 3.65

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	K 2	K 0.2	84	K10.0		K 2.0	32			K 40.0	K2.0	11.0	341
07/12/95													
07/26/95	K 2	K 0.2	89	K10.0		K 2.0	32			K 40.0	3.0	K 10.0	354
08/23/95	K 2	K 0.2	90	K10.0		K 2.0	35			K 40.0	K2.0	K 10.0	369
09/06/95	K 2	K 0.2	84	K10.0		K 2.0	33			K 40.0	K2.0	K 10.0	346
09/19/95	K 2	K 0.2	86	12.0		K 2.0	34			K 40.0	K2.0	57.0	355
AVERAGE	2.0	0.20	86.6	10.40		2.00	33.2			40.00	2.20	19.60	353.0
MAXIMUM	2	0.2	90	12.0		2.0	35			40.0	3.0	57.0	369
MINIMUM	2	0.2	84	10.0		2.0	32			40.0	2.0	10.0	341

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W85 **SITE LOCATION** DRY_RUN
RIVER MILE 0.01 #70-@ MOUTH

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1030	19.0	8.5		8.17			K 2.0	K 10
07/12/95	1005	19.0	8.8		8.22			K 2.0	K 10
07/26/95	0945	20.0	8.0		8.16			K 2.0	15
08/23/95	1110	19.0	8.3		8.10			K 2.0	K 10
AVERAGE		19.25	8.40		8.163			2.00	11.3
MAXIMUM		20.0	8.8		8.22			2.0	15
MINIMUM		19.0	8.0		8.10			2.0	10

RM 0.01

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	664		6.82		K 0.05			0.06	418	6
07/12/95	682		3.87		K 0.05			K 0.05	396	K 5
07/26/95	662		3.10		K 0.05			0.10	390	K 5
08/23/95	681		0.23		K 0.05			K 0.05	404	K 5
AVERAGE	672.3		3.505		0.050			0.065	402.0	5.3
MAXIMUM	682		6.82		0.05			0.10	418	6
MINIMUM	662		0.23		0.05			0.05	390	5

RM 0.01

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	K 2	K 0.2	103	K10.0		K 2.0	25			K 40.0	K2.0	K 10.0	360
07/12/95													
07/26/95	K 2	K 0.2	96	K10.0		K 2.0	23			K 40.0	3.0	K 10.0	334
08/23/95	K 2	K 0.2	110	K10.0		K 2.0	24			K 40.0	K2.0	K 10.0	374
AVERAGE	2.0	0.20	103.0	10.00		2.00	24.0			40.00	2.33	10.00	356.0
MAXIMUM	2	0.2	110	10.0		2.0	25			40.0	3.0	10.0	374
MINIMUM	2	0.2	96	10.0		2.0	23			40.0	2.0	10.0	334

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09P15 **SITE LOCATION** DICKS CREEK
RIVER MILE 5.21 #71-UST NORTH BRANCH DICKS CREEK

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1000	23.1	8.0	8.70				2.1	28
07/12/95	1015	24.5	5.0	7.71				2.5	K 10
07/26/95	0935	24.2	5.8		7.85			K 2.0	K 10
08/23/95	1030	23.5	6.0		7.67			2.5	K 10
09/06/95	0915	22.5	4.1		7.73			2.3	K 10
09/20/95	1335	20.0	5.5		10.18			4.8	41
AVERAGE		22.97	5.73	8.205	8.358			2.70	18.2
MAXIMUM		24.5	8.0	8.70	10.18			4.8	41
MINIMUM		20.0	4.1	7.71	7.67			2.0	10

RM 5.21

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	370		0.73		K 0.05			0.10	268	37
07/12/95	2680		1.36		0.24			0.14	1780	13
07/26/95	2320		0.56		0.17			K 0.05	1980	10
08/23/95	3020		0.78		0.28			K 0.05	2250	12
09/06/95	3740		0.69		0.30			K 0.05	2500	K 5
09/20/95	1150		0.80		0.26			K 0.05	692	202
AVERAGE	2213.3		0.820		0.217			0.073	1578.3	46.5
MAXIMUM	3740		1.36		0.30			0.14	2500	202
MINIMUM	370		0.56		0.05			0.05	268	5

RM 5.21

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	43	K10.0		K 2.0	10			K 40.0	K2.0	30.0	148
07/12/95													
07/26/95	2	K 0.2	250	K10.0		K 2.0	130			320.0	5.0	523.0	1160
08/23/95	3	K 0.2	260	K10.0		K 2.0	140			194.0	7.0	158.0	1230
09/06/95	3	K 0.2	250	K10.0		K 2.0	140			K 40.0	6.0	105.0	1200
09/20/95	K 2	K 0.2	120	K10.0		K 2.0	20			K 40.0	7.0	26.0	382
AVERAGE	2.4	0.20	184.6	10.00		2.00	88.0			126.80	5.40	168.40	824.0
MAXIMUM	3	0.2	260	10.0		2.0	140			320.0	7.0	523.0	1230
MINIMUM	2	0.2	43	10.0		2.0	10			40.0	2.0	26.0	148

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09S19 **SITE LOCATION** DICKS CREEK
RIVER MILE 4.70 #72-DST NORTH BRANCH DICKS CREEK, UST SHAKER CREEK

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1015	23.5	6.6	8.17				2.1	12
07/12/95	1030	25.5	9.0	7.92				2.6	12
07/26/95	1005	25.0	8.3					K 2.0	K 10
08/23/95	1055	24.3	8.4		7.88			K 2.0	18
09/06/95	0950	22.8	8.0					K 2.0	K 10
09/20/95	1340	20.0	7.1		7.91			3.6	24
AVERAGE		23.52	7.90	8.045	7.895			2.38	14.3
MAXIMUM		25.5	9.0	8.17	7.91			3.6	24
MINIMUM		20.0	6.6	7.92	7.88			2.0	10

RM 4.70

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	1440		0.91		0.16			K 0.05	473	27
07/12/95	2680		1.22		0.12			0.12	1780	K 5
07/26/95	2330		0.51		0.06			K 0.05	2000	K 5
08/23/95	3000		0.75		0.18			K 0.05	2210	K 5
09/06/95	3740		0.66		0.17			K 0.05	2510	K 5
09/20/95	1560		0.84		0.20			K 0.05	938	8
AVERAGE	2458.3		0.815		0.148			0.062	1651.8	9.2
MAXIMUM	3740		1.22		0.20			0.12	2510	27
MINIMUM	1440		0.51		0.06			0.05	473	5

RM 4.70

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l $CaCO_3$)
06/28/95	2	K 0.2	118	10.0		K 2.0	55			K 40.0	3.0	56.0	521
07/12/95													
07/26/95	4	K 0.2	200	10.0		3.0	100			261.0	5.0	322.0	911
08/23/95	3	K 0.2	250	K10.0		K 2.0	140			150.0	9.0	140.0	1200
09/06/95	3	K 0.2	240	K10.0		K 2.0	130			K 40.0	3.0	79.0	1130
09/20/95	4	K 0.2	119	K10.0		K 2.0	56			K 40.0	7.0	56.0	528
AVERAGE	3.2	0.20	185.4	10.00		2.20	96.2			106.20	5.40	130.60	858.0
MAXIMUM	4	0.2	250	10.0		3.0	140			261.0	9.0	322.0	1200
MINIMUM	2	0.2	118	10.0		2.0	55			40.0	3.0	56.0	521

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09W90	SITE LOCATION	DICKS_CREEK
RIVER MILE	3.00		#73-DST AK STEEL OUTFALLS 003 AND 015, UST 002

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1045	24.5	8.2	8.09				2.0	15
07/12/95	1045	27.0	6.2	8.04				6.5	21
07/26/95	1020	26.5	8.5					133.0	238
08/23/95	1115	25.2	8.0		8.48			2.9	21
09/06/95	1000	25.9	6.6		8.68			3.3	13
09/20/95	1350	21.0	7.0		7.96			8.9	38
AVERAGE		25.02	7.42	8.065	8.373			26.10	57.7
MAXIMUM		27.0	8.5	8.09	8.68			133.0	238
MINIMUM		21.0	6.2	8.04	7.96			2.0	13

RM 3.00

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	1220	K 10.0	0.97		0.13	K 1.00	K 10	0.08	356	42
07/12/95	1020	16.0	2.65		1.97	K 1.00	K 10	0.12	690	20
07/26/95	2960	3380.0			209.00		8600	0.11	919	6
08/23/95	1140	10.0	2.16		1.10	K 1.00	K 10	0.20	692	9
09/06/95	1050	30.0	2.08		0.79	K 1.00	K 10	0.11	613	11
09/20/95	461	K 10.0	1.21		0.43	K 1.00	K 10	0.10	272	50
AVERAGE	1308.5	576.0	1.814		35.570	1.000	1441.7	0.120	590.3	23.0
MAXIMUM	2960	3380	2.65		209.00	1.00	8600	0.20	919	50
MINIMUM	461	10	0.97		0.13	1.00	10	0.08	272	6

RM 3.00

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	K 2	K 0.2	105	K10.0		K 2.0	39			K 40.0	K2.0	35.0	423
07/12/95													
07/26/95	8	0.2	114	34.0		6.0	44			52.0	33.0	241.0	466
08/23/95	2	K 0.2	73	K10.0		17.0	27			K 40.0	K2.0	564.0	293
09/06/95	K 2	K 0.2	58	K10.0		5.0	20			K 40.0	K2.0	447.0	227
09/20/95	K 2	K 0.2	40	K10.0		16.0	12			K 40.0	K2.0	206.0	149
AVERAGE	3.2	0.20	78.0	14.80		9.20	28.4			42.40	8.20	298.60	311.6
MAXIMUM	8	0.2	114	34.0		17.0	44			52.0	33.0	564.0	466
MINIMUM	2	0.2	40	10.0		2.0	12			40.0	2.0	35.0	149

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET 600250 **SITE LOCATION** DICKS_CREEK
RIVER MILE 2.51 #74-YANKEE RD, DST AK STEEL OUTFALL 002

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1115	23.0	7.0	8.08	7.98			5.6	40
07/12/95	1100	26.0	9.4	8.27				3.8	15
07/26/95	1105	27.0	6.2		8.36			16.0	33
08/23/95	1155	25.5	11.3		8.39			3.4	24
09/06/95		23.0	9.1					K 2.0	K 10
09/20/95	1405	21.8	6.5		7.92			5.5	29
AVERAGE		24.38	8.25	8.175	8.163			6.05	25.2
MAXIMUM		27.0	11.3	8.27	8.39			16.0	40
MINIMUM		21.8	6.2	8.08	7.92			2.0	10

RM 2.51

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	890		1.63		0.36			0.08	566	51
07/12/95	1950		1.68		0.60			K 0.05	1500	14
07/26/95	1770		0.82		19.80			0.07	1240	15
08/23/95	1890		1.07		0.31			K 0.05	1080	8
09/06/95	3020		1.04		0.12			K 0.05	2030	K 5
09/20/95	1370		1.29		0.29			0.05	894	20
AVERAGE	1815.0		1.255		3.580			0.058	1218.3	18.8
MAXIMUM	3020		1.68		19.80			0.08	2030	51
MINIMUM	890		0.82		0.12			0.05	566	5

RM 2.51

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	2	K 0.2	90	K10.0		2.0	28			K 40.0	3.0	53.0	340
07/12/95													
07/26/95	4	K 0.2	152	13.0		K 2.0	61			K 40.0	16.0	29.0	631
08/23/95	3	K 0.2	147	K10.0		K 2.0	73			49.0	K2.0	90.0	668
09/06/95	3	K 0.2	198	K10.0		K 2.0	91			K 40.0	3.0	47.0	869
09/20/95	3	K 0.2	102	K10.0		3.0	43			K 40.0	6.0	72.0	432
AVERAGE	3.0	0.20	137.8	10.60		2.20	59.2			41.80	6.00	58.20	588.0
MAXIMUM	4	0.2	198	13.0		3.0	91			49.0	16.0	90.0	869
MINIMUM	2	0.2	90	10.0		2.0	28			40.0	2.0	29.0	340

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET	H09W66	SITE LOCATION	DICKS_CREEK
RIVER MILE	0.93		#75-HAMILTON-MIDDLETOWN RD, NEAR EXCELLO

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	1215	22.0	7.2	8.00				2.3	18
07/12/95	1115	26.0	8.0	8.52				3.4	12
07/26/95	1140	26.0	7.4		8.09			2.4	K 10
08/23/95	1235	23.0	8.6		8.00			K 2.0	15
09/06/95		24.3	8.1					K 2.0	16
09/20/95	1420	20.5	6.9		7.87			2.6	18
AVERAGE		23.63	7.70	8.260	7.987			2.45	14.8
MAXIMUM		26.0	8.6	8.52	8.09			3.4	18
MINIMUM		20.5	6.9	8.00	7.87			2.0	10

RM 0.93

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	725	K 10.0	1.78		0.20	K 1.00	K 10	0.10	470	42
07/12/95	1750	K 10.0	2.13		0.42	K 1.00	K 10	K 0.05	1160	8
07/26/95	1562	K 10.0	1.18		0.35	K 1.00	K 10	K 0.05	1080	5
08/23/95	2050	K 10.0	1.24		0.34	1.04	K 10	K 0.05	1230	7
09/06/95	2840	K 10.0	0.87		K 0.05	1.40	K 10	K 0.05	1860	8
09/20/95	2040	K 10.0	1.47		0.27	K 1.00	K 10	0.06	1300	18
AVERAGE	1827.8	10.0	1.445		0.272	1.073	10.0	0.060	1183.3	14.7
MAXIMUM	2840	10	2.13		0.42	1.40	10	0.10	1860	42
MINIMUM	725	10	0.87		0.05	1.00	10	0.05	470	5

RM 0.93

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	5	K 0.2	73	K10.0		3.0	22			K 40.0	K2.0	46.0	273
07/12/95													
07/26/95	2	K 0.2	155	K10.0		K 2.0	65			K 40.0	6.0	12.0	655
08/23/95	3	K 0.2	166	K10.0		K 2.0	86			K 40.0	K2.0	65.0	769
09/06/95	3	K 0.2	196	K10.0		K 2.0	110			K 40.0	4.0	33.0	942
09/20/95	3	K 0.2	150	K10.0		K 2.0	69			K 40.0	9.0	75.0	659
AVERAGE	3.2	0.20	148.0	10.00		2.20	70.4			40.00	4.60	46.20	659.6
MAXIMUM	5	0.2	196	10.0		3.0	110			40.0	9.0	75.0	942
MINIMUM	2	0.2	73	10.0		2.0	22			40.0	2.0	12.0	273

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09W63 SITE LOCATION N BRANCH DICKS CREEK
RIVER MILE 0.75 #76-ADJ BREIEL RD, UST AK STEEL OUTFALL 004

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	0915	23.0	5.4	7.51	7.53			2.3	12
07/12/95	0930	20.0	10.0	8.00				K 2.0	K 10
07/26/95	0915	22.0	10.2		8.31			K 2.0	K 10
08/23/95	1000	20.2	9.7		8.19			K 2.0	
09/06/95	0905	20.9	8.8		8.04			K 2.0	K 10
09/20/95	1310	18.8	8.0		7.99			6.1	
AVERAGE		20.82	8.68	7.755	8.012			2.73	10.5
MAXIMUM		23.0	10.2	8.00	8.31			6.1	12
MINIMUM		18.8	5.4	7.51	7.53			2.0	10

RM 0.75

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	2670		1.24		0.45			K 0.05	1930	9
07/12/95	817		0.63		K 0.05			K 0.05	496	K 5
07/26/95	692		0.29		0.09			K 0.05	434	K 5
08/23/95	790								476	6
09/06/95	759		1.15		K 0.05			K 0.05	454	K 5
09/20/95	330		1.09		0.20			0.10	206	19
AVERAGE	1009.7		0.880		0.168			0.060	666.0	8.2
MAXIMUM	2670		1.24		0.45			0.10	1930	19
MINIMUM	330		0.29		0.05			0.05	206	5

RM 0.75

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	3	K 0.2	250	19.0		K 2.0	130			K 40.0	5.0	130.0	1160
07/12/95													
07/26/95	K 2	K 0.2	91	K10.0		K 2.0	26			K 40.0	K2.0	24.0	334
08/23/95	K 2	K 0.2	96	K10.0		K 2.0	30			K 40.0	K2.0	31.0	363
09/06/95	K 2	K 0.2	101	K10.0		K 2.0	30			K 40.0	K2.0	20.0	376
09/20/95	K 2	K 0.2	37	K10.0		4.0	12			K 40.0	K2.0	35.0	142
AVERAGE	2.2	0.20	115.0	11.80		2.40	45.6			40.00	2.60	48.00	475.0
MAXIMUM	3	0.2	250	19.0		4.0	130			40.0	5.0	130.0	1160
MINIMUM	2	0.2	37	10.0		2.0	12			40.0	2.0	20.0	142

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H09P18 **SITE LOCATION** N BRANCH DICKS CREEK
RIVER MILE 0.01 #77-DST AK STEEL OUTFALL 004, @ MOUTH

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/28/95	0945	22.5	5.8	7.70				2.5	25
07/12/95	1000	24.0	5.5	7.57				2.8	K 10
07/26/95	0935	24.0	5.4		7.76			K 2.0	K 10
08/23/95	1025	23.9	6.0		7.67			2.2	K 10
09/06/95	0915	22.9	5.2		7.64			2.2	20
09/20/95	1325	20.0	6.9		7.80			4.1	21
AVERAGE		22.88	5.80	7.635	7.718			2.63	16.0
MAXIMUM		24.0	6.9	7.70	7.80			4.1	25
MINIMUM		20.0	5.2	7.57	7.64			2.0	10

RM 0.01

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/28/95	1710		0.99		0.27			K 0.05	320	27
07/12/95	2690		1.25		0.32			0.12	1760	K 5
07/26/95	2360		0.58		0.19			K 0.05	2020	K 5
08/23/95	3010		0.75		0.31			K 0.05	2210	6
09/06/95	3740		0.66		0.33			K 0.05	2550	K 5
09/20/95	1640		0.85		0.24			K 0.05	1010	K 5
AVERAGE	2525.0		0.847		0.277			0.062	1645.0	8.8
MAXIMUM	3740		1.25		0.33			0.12	2550	27
MINIMUM	1640		0.58		0.19			0.05	320	5

RM 0.01

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/28/95	3	K 0.2	142	12.0		K 2.0	68			K 40.0	2.0	76.0	635
07/12/95													
07/26/95	4	K 0.2	220	K10.0		K 2.0	110				5.0	795.0	1000
08/23/95	4	K 0.2	250	10.0		K 2.0	140			153.0	K2.0	205.0	1200
09/06/95	3	K 0.2	220	K10.0		K 2.0	120			K 40.0	4.0	102.0	1040
09/20/95	4	K 0.2	130	K10.0		K 2.0	63			K 40.0	7.0	67.0	584
AVERAGE	3.6	0.20	192.4	10.40		2.00	100.2			68.25	4.00	249.00	891.8
MAXIMUM	4	0.2	250	12.0		2.0	140			153.0	7.0	795.0	1200
MINIMUM	3	0.2	130	10.0		2.0	63			40.0	2.0	67.0	584

NOTE: K = less than L = greater than

STORET H11C02 **SITE LOCATION** PADDYS_RUN
RIVER MILE 4.73 #78C-MORGAN-ROSS RD *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1330	22.0	8.7		8.12			K 6.0	
07/11/95	1220	20.0	7.9		8.15			33.0	
07/26/95		22.0	6.0		8.05			K 6.0	
08/23/95	1400	23.0	9.3		8.15			K 6.0	
09/06/95					7.84			40.0	
09/20/95	1315				8.04			K 6.0	
AVERAGE		21.75	7.98		8.058			16.17	
MAXIMUM		23.0	9.3		8.15			40.0	
MINIMUM		20.0	6.0		7.84			6.0	

RM 4.73

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	659			2.27	K 3.00			0.08		K 10
07/11/95	724			1.23	K 3.00			0.08		K 10
07/26/95	688			0.82	K 3.00			0.08		K 10
08/23/95	754			2.27	K 3.00			K 0.02		16
09/06/95	755			0.86	K 3.00			0.04		12
09/20/95	542			0.61	K 3.00			0.08		K 10
AVERAGE	687.0			1.343	3.000			0.063		11.3
MAXIMUM	755			2.27	3.00			0.08		16
MINIMUM	542			0.61	3.00			0.02		10

RM 4.73

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 1	K 1.6	102	9.1		K 0.6	26	30.3	0.03	K 3.2		17.1	360
07/11/95													
07/26/95	2	K 1.6	90	8.8	161	1.0	23	40.8	K 0.04	K 3.2	K0.5	12.2	317
08/23/95	1	K 1.3	101	K 7.5	154	0.9	25	25.2	0.06	K 2.1	K0.5	13.2	356
09/06/95													
09/20/95	2	K 1.3	87	K 7.5	131	1.2	22	39.1	K 0.04	K 2.1	K1.0	6.4	308
AVERAGE	1.5	1.45	95.0	8.23	148.7	0.93	24.0	33.85	0.04	2.65	0.67	12.23	335.3
MAXIMUM	2	1.6	102	9.1	161	1.2	26	40.8	0.06	3.2	1.0	17.1	360
MINIMUM	1	1.3	87	7.5	131	0.6	22	25.2	0.03	2.1	0.5	6.4	308

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services; Temp and D.O. per OEPA field measurements

Appendix Table A-1, continued.

STORET	H11C03	SITE LOCATION	PADDYS_RUN
RIVER MILE	3.27		#79C-DST OLD RR BRIDGE *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1400	25.0	9.8		8.34			K 6.0	
07/11/95	1250	24.0	9.4		8.40			37.0	
07/26/95					8.06			K 6.0	
08/23/95					8.21			K 6.0	
09/06/95					8.08			33.0	
AVERAGE		24.50	9.60		8.218			17.60	
MAXIMUM		25.0	9.8		8.40			37.0	
MINIMUM		24.0	9.4		8.06			6.0	

RM 3.27

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	616			1.96	K 3.00			0.07		K 10
07/11/95	646			1.06	K 3.00			0.07		12
07/26/95	638			0.76	K 3.00			0.13		18
08/23/95	719			1.58	K 3.00			0.03		28
09/06/95	667			0.23	K 3.00			0.05		16
AVERAGE	657.2			1.118	3.000			0.070		16.8
MAXIMUM	719			1.96	3.00			0.13		28
MINIMUM	616			0.23	3.00			0.03		10

RM 3.27

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	2	K 1.6	95	10.3		K 0.6	25	27.8	0.04	4.6		33.9	340
07/11/95													
07/26/95	2	K 1.6	85	K 8.5	757	1.1	23	86.9	K 0.04	K 3.2	K0.5	13.6	307
08/23/95	1	K 1.3	100	K 7.5	395	K 0.6	25	31.2	0.08	K 2.1	K0.5	23.6	354
09/06/95													
AVERAGE	1.7	1.50	93.3	8.77	576.0	0.77	24.3	48.63	0.05	3.30	0.50	23.70	333.7
MAXIMUM	2	1.6	100	10.3	757	1.1	25	86.9	0.08	4.6	0.5	33.9	354
MINIMUM	1	1.3	85	7.5	395	0.6	23	27.8	0.04	2.1	0.5	13.6	307

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services; Temp and D.O. per OEPA field measurements

Appendix Table A-1, continued.

STORET H11C06 **SITE LOCATION** PADDYS RUN
RIVER MILE 0.25 #80C-UST MOUTH *

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1520	17.0	6.5		7.38			K 6.0	
07/11/95	0945	13.0	4.9		7.38			12.0	
07/26/95	1030	17.0	3.5		6.77			K 6.0	
08/23/95	1120	14.0	2.0		7.25			K 6.0	
09/06/95	1030	18.0	5.0		7.47			29.0	
09/20/95	1040	17.0	4.8						
AVERAGE		16.00	4.45		7.250			11.80	
MAXIMUM		18.0	6.5		7.47			29.0	
MINIMUM		13.0	2.0		6.77			6.0	

RM 0.25

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	707			0.70	K 3.00			0.51		K 10
07/11/95	785			0.56	K 3.00			0.47		K 10
07/26/95	770			0.46	K 3.00			0.51		K 10
08/23/95	788			0.75	K 3.00			0.40		K 10
09/06/95	739			0.38	K 3.00			0.37		14
09/20/95				0.31	K 3.00			0.48		
AVERAGE	757.8			0.527	3.000			0.457		10.8
MAXIMUM	788			0.75	3.00			0.51		14
MINIMUM	707			0.31	3.00			0.37		10

RM 0.25

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	1	K 1.6	121	K 8.5		1.0	27	19.3	0.05	K 3.2		29.2	415
07/11/95													
07/26/95	3	K 1.6	121	K 8.5	113	1.0	27	63.0	K 0.04	K 3.2	K0.5	17.3	412
08/23/95	2	K 1.3	116	K 7.5	62	K 0.6	26	106.0	0.08	K 2.1	K0.5	12.8	396
09/06/95													
09/20/95	4	K 1.3	104	K 7.5	1440	2.6	23	164.0	K 0.04	2.3	K1.0	34.7	354
AVERAGE	2.5	1.45	115.5	8.00	538.3	1.30	25.8	88.08	0.05	2.70	0.67	23.50	394.3
MAXIMUM	4	1.6	121	8.5	1440	2.6	27	164.0	0.08	3.2	1.0	34.7	415
MINIMUM	1	1.3	104	7.5	62	0.6	23	19.3	0.04	2.1	0.5	12.8	354

NOTE: K = less than L = greater than

*Samples analyzed by Ross Analytical Services; Temp and D.O. per OEPA field measurements

Appendix Table A-1, continued.

STORET	H11W29	SITE LOCATION	WHITEWATER_RIVER
RIVER MILE	7.63		#81-UST HARRISON WWTP

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	1020	21.0	7.8		8.23			K 2.0	K 10
07/11/95	0945	22.0	8.2	8.24				K 2.0	K 10
07/25/95	0905	23.0	7.8		8.23			2.3	29
08/22/95	1045	24.0	8.7		8.31			K 2.0	K 10
09/05/95	0955	21.0	8.2		8.23			2.1	18
09/19/95	1130	16.5	9.5		8.29			K 2.0	K 10
AVERAGE		21.25	8.37	8.240	8.258			2.07	14.5
MAXIMUM		24.0	9.5	8.24	8.31			2.3	29
MINIMUM		16.5	7.8	8.24	8.23			2.0	10

RM 7.63

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	530		3.06		K 0.05			0.10	328	96
07/11/95	586		2.54		K 0.05			K 0.05	372	24
07/25/95	418		1.69		K 0.05			0.16		124
08/22/95	569		1.71		K 0.05			0.08	322	24
09/05/95	580		1.76		K 0.05			0.05	318	14
09/19/95	602		2.32		K 0.05			K 0.05	362	8
AVERAGE	547.5		2.180		0.050			0.082	340.4	48.3
MAXIMUM	602		3.06		0.05			0.16	372	124
MINIMUM	418		1.69		0.05			0.05	318	8

RM 7.63

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	75	K10.0		10.0	26			K40.0	K2.0	42.0	294
07/11/95													
07/25/95	K 2	K 0.2	63	K10.0		5.0	20			K40.0	K2.0	72.0	240
08/22/95	K 2	K 0.2	74	K10.0		K 2.0	25			K40.0	K2.0	68.0	288
09/05/95	K 2	K 0.2	73	K10.0		K 2.0	28			K40.0	K2.0	87.0	298
09/19/95	2	K 0.2	79	K10.0		K 2.0	28			K40.0	5.0	83.0	313
AVERAGE	2.0	0.20	72.8	10.00		4.20	25.4			40.00	2.60	70.40	286.6
MAXIMUM	2	0.2	79	10.0		10.0	28			40.0	5.0	87.0	313
MINIMUM	2	0.2	63	10.0		2.0	20			40.0	2.0	42.0	240

NOTE: K = less than L = greater than

Appendix Table A-1, continued.

STORET H11S26 **SITE LOCATION** WHITEWATER_RIVER
RIVER MILE 1.50 #82-SUSPENSION BRIDGE RD

DATE	Time	Temp (C)	D.O. (mg/l)	pH (fld) (SU)	pH (lab) (SU)	Gage (ft)	Flow (cfs)	BOD5 (mg/l)	COD (mg/l)
06/27/95	0930	21.5	8.0		8.23			K 2.0	K 10
07/11/95	1015	23.0	8.8	8.25				K 2.0	K 10
07/25/95	0935	23.0	7.5		8.12			2.6	35
08/22/95	1100	24.5	9.2		8.31			K 2.0	K 10
09/05/95	0920	21.2	8.3		8.21			2.2	K 10
09/19/95	1200	17.5	10.2		8.27			K 2.0	12
AVERAGE		21.78	8.67	8.250	8.228			2.13	14.5
MAXIMUM		24.5	10.2	8.25	8.31			2.6	35
MINIMUM		17.5	7.5	8.25	8.12			2.0	10

RM 1.50

DATE	Conductivity (µmhos/cm)	CN-T (µg/l)	NO3-NO2-N (mg/l)	NO3-N (mg/l)	NH3-N (mg/l)	Oil & Grease (mg/l)	Phenolics (µg/l)	P-T (mg/l)	Flt. Res. (mg/l)	TSS (mg/l)
06/27/95	540		3.15		K 0.05			0.10	336	83
07/11/95	590		2.44		K 0.05			K 0.05	370	34
07/25/95			1.30		K 0.05			0.19		192
08/22/95	567		1.63		K 0.05			0.08	338	30
09/05/95	580		1.54		K 0.05			K 0.05	336	18
09/19/95	613		2.03		K 0.05			K 0.05	360	12
AVERAGE	578.0		2.015		0.050			0.087	348.0	61.5
MAXIMUM	613		3.15		0.05			0.19	370	192
MINIMUM	540		1.30		0.05			0.05	336	12

RM 1.50

DATE	As-T (µg/l)	Cd-T (µg/l)	Ca-T (mg/l)	Cu-T (µg/l)	Fe-T (µg/l)	Pb-T (µg/l)	Mg-T (mg/l)	Mn-T (µg/l)	Hg-T (µg/l)	Ni-T (µg/l)	Se-T (µg/l)	Zn-T (µg/l)	Hardness (mg/l CaCO3)
06/27/95	K 2	K 0.2	77	K10.0		21.0	27			K 40.0	K2.0	65.0	303
07/11/95													
07/25/95	K 2	K 0.2	60	10.0		7.0	19			K 40.0	K2.0	63.0	228
08/22/95	K 2	K 0.2	76	K10.0		K 2.0	26			K 40.0	K2.0	43.0	297
09/05/95	K 2	K 0.2	71	K10.0		K 2.0	27			K 40.0	K2.0	54.0	288
09/19/95	K 2	K 0.2	77	K10.0		K 2.0	27			K 40.0	3.0	67.0	303
AVERAGE	2.0	0.20	72.2	10.00		6.80	25.2			40.00	2.20	58.40	283.8
MAXIMUM	2	0.2	77	10.0		21.0	27			40.0	3.0	67.0	303
MINIMUM	2	0.2	60	10.0		2.0	19			40.0	2.0	43.0	228

NOTE: K = less than L = greater than

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
010985	UNKNOWN	WARREN	ROADSIDE DITCH	DIESEL FUEL	50	GAI
011085	ARMCO INC.	BUTLER	DICKS CREEK	SULFURIC ACID	1000	GAI
011485	DAYTON HARD CHROME	MONTGOMERY	STORM SEWER	CHROMIC ACID	0	UNI
011585	ARMCO INC.	BUTLER	DICKS CREEK	SULFURIC ACID	1000	GAI
011685	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	WASTE WATER	1300000	GAI
012285	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 221 PPM	2	GAI
012385	ARMCO INC.	BUTLER	DICKS CREEK	SULFURIC ACID	0	UNI
012485	ARMCO INC.	BUTLER	DICKS CREEK	WASTE WATER	3000	GAI
012485	ARMCO INC.	BUTLER	DICKS CREEK	WASTE WATER	10000	GAI
012585	CHEVRON U S A / GULF OIL	HAMILTON	GREAT MIAMI	GASOLINE	0	GAI
013185	TROTWOOD MADISON	MONTGOMERY	WOLF CREEK	GASOLINE	0	UNI
013185	DUPONT CHEMICAL CO	HAMILTON	GREAT MIAMI	DIESEL #2	100	GAI
020185	GEETING AUTO OIL CO	PREBLE	STORM SEWERS	GASOLINE	200	GAI
020485	ARMCO INC .	BUTLER	GREAT MIAMI	DIESEL #2	600	GAI
020685	C N W INDUSTRIES	HAMILTON	STORM SEWER	CHROMIC ACID	300	GAI
020785	COMPLETE AUTO TRANSIT	MONTGOMERY	STORM SEWER	DIESEL	50	GAI
021185	ARMCO INC.	BUTLER	GREAT MIAMI	DIESEL #2	600	GAI
021185	UNKNOWN	HAMILTON		ODOR	0	UNI
021185	UNKNOWN	MONTGOMERY	GREAT MIAMI	WASTE OIL	0	UNI
022285	METALURGICAL HEAT	MONTGOMERY	GREAT MIAMI	WASTE OIL	0	UNI
022585	UNKNOWN	HAMILTON	SEWER	GASOLINE	0	UNI
022585	DAYTON POWER & LIGHT	MONTGOMERY	STORM SEWER	10C MINERAL OIL	75	GAI
022785	STANDARD OIL CO	HAMILTON	STORMSEWER	DIESEL #2	2	GAI
030385	CHEVRON U S A REFINERY	HAMILTON	DITCH	WASTE OIL	200	GAI
030785	ARMCO INC.	BUTLER	DICKS CREEK	HYDROCHLORIC ACID	4800	GAI
031585	DAN LOYD	BUTLER	HOWARDS CREE	WASTE OIL	0	UNI
032585	ASHLAND OIL	WARREN		OIL	0	UNI
032985	JORGENSON STEEL &	MONTGOMERY	STORM SEWER	CUTTING OIL	0	UNI
033085	NATIONAL LEAD OF OHIO	BUTLER	GREAT MIAMI	URANIUM	1	LBS
040485	CHEMICAL LEAMAN TANK	BUTLER	GREAT MIAMI	WASTE CHEMICAL	0	UNI
041085	BROWNS TRANSPORT	WARREN	DICKS CREEK	DIESEL	40	GAI
041285	OVERNIGHT TRUCKING	BUTLER	GREGORY CREEK	CLEANING	1296	LBS
041885	HOUSTON OIL CO	HAMILTON		FUEL OIL	0	UNI
042085	CBF TRUCKING	BUTLER	DITCH	CITRIC ACID	1000	LBS
042385	SHELL OIL CO	HAMILTON	SANITARY SEWER	ASPHALT	15000	GAI
042585	EASTERN TANK LINES	BUTLER	GREGORY CREEK	JET FUEL	1000	GAI
042685	DAYTON WATER PLANT	MONTGOMERY	GREAT MIAMI	CALCIUM	0	UNI
042685	MONTGOMERY CO	MONTGOMERY	HOLES CREEK	DIESEL	0	UNI
042985	CECOS INTERNATIONAL	HAMILTON	STORM SEWER	RUNOFF	80000	GAI
042985	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNI
042985	SIGNAL DELIVERY	PREBLE	ELKHAM CREEK	DIESEL	50	GAI
052386	J. B. HUNT OIL CO	MONTGOMERY	DITCH	DIESEL FUEL	50	GAI
050185	UNKNOWN	PREBLE	ELKHORN CREEK	FUEL OIL	0	UNI
050185	ARMCO INC	BUTLER	GREAT MIAMI	OIL	0	UNI
050385	OHIO & MIDWEST	HAMILTON	STORM SEWER	SOAP SOLUTION	0	UNI
050485	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNI
050685	UNIQUE LAWN CARE	BULTER	STORM SEWER	OFFNOL	50	LBS
050685	UNKNOWN	PREBLE	TWIN CREEK	AGRICULTURAL	0	UNI
050885	ARMCO INC	BUTLER	GREAT MIAMI	WASTE OIL	0	UNI
051485	ARMCO INC	BUTLER	GREAT MIAMI	OIL	0	UNI
052085	DAYTON POWER & LIGHT	MONTGOMERY	STORM SEWER	10C MINERAL OIL	18	GAI
052885	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	OIL	1	GAI
053185	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	WASTE WATER	0	UNI
060485	ARMCO INC.	BUTLER	GREAT MIAMI	OIL	0	UNI
060585	UNKNOWN	MONTGOMERY		OIL	0	UNI
060685	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	40000000	GAI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
060685	SAFETY KLEEN	BUTLER		SOLVENTS	0	UNK
060685	JOE DOWER TRUCKING CO.	HAMILTON	STORM SEWER	DIESEL FUEL	0	UNK
060985	ARMCO INC.	BUTLER	DICKS CREEK	WASTE WATER	5000	GAL
061185	UNKNOWN	WARREN	DITCH	WATER PICK UP	0	UNK
061385	FIRESTONE TIRE & RUBBER	HAMILTON	STORM SEWER	WASTE OIL	0	UNK
061385	SLONE AUTOMOTIVE	MONTGOMERY		GASOLINE	200	GAL
061485	MOBIL OIL CO	MONTGOMERY		GASOLINE	0	UNK
061485	UNKNOWN	MONTGOMERY		DIESEL FUEL	0	UNK
061885	HURLEYS MACHINE SHOP	MONTGOMERY	STORM SEWER	WASTE OIL	0	NOS
062185	UNKNOWN	HAMILTON		WASTE CHEMICALS	0	UNK
062485	COLERAIN PLUMBING CO.	HAMILTON	GREAT MIAMI	ASBESTOS	31	ITM
062985	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	20000000	GAL
070585	CITGO PETROLEUM CORP	BUTLER	STORM SEWER	GASOLINE	150	GAL
070685	DAYTON WWTP	MONTGOMERY	OPOSSUM CREEK	SEWAGE	0	UNK
070785	UNKNOWN TRUCKING CO.	HAMILTON	SEWER	DIESEL	150	GAL
070985	DAYTON SUPERIOR CO.	MONTGOMERY	GREAT MIAMI	MOTOR OIL	0	UNK
070985	MARATHON OIL CO	HAMILTON	SEWERS	GASOLINE	4000	GAL
071985	ARMCO INC.	BUTLER	GREAT MIAMI	OIL	0	UNK
072385	DAYTON-WALTHER /	MONTGOMERY	SEWER	PAINT WASTE	60	GAL
072585	UNKNOWN	HAMILTON	SPRING	OIL	0	UNK
072885	UNKNOWN	HAMILTON		FORMALDEHYDE	0	UNK
072985	SPRINGBORO WWTP	WARREN	CLEAR CREEK	SEWAGE	0	UNK
073085	HILTON DAVIS CHEMICAL	HAMILTON	SANITARY SEWER	BLUE DYE #1 FD&C	25	LBS
073185	UNKNOWN	WARREN	CLEAR CREEK	TAR	0	UNK
080185	DRACKETT CO.	MONTGOMERY	GREAT MIAMI	TRICHLOROAMINE	50000	LBS
080285	CARTHAGE AUTO PARTS	HAMILTON		OLD AUTO PARTS	0	UNK
080285	METROPOLITAN SEWER	HAMILTON		WASTE OIL	0	UNK
080585	FRANKLIN BOXBOARD	WARREN	CLEAR CREEK	WASTE WATER	30000	GAL
080685	ASTRONAUT VILLAGE	MONTGOMERY		TRICHLOROETHYLEN	30	GAL
080885	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
080885	ALBRIGHT & WILSON	BUTLER		PHOSPHORUS WASTES	0	UNK
080885	BIDWINKLE FARMS	HAMILTON	DRY FORK	MANURE	0	UNK
081085	OHIO VALLEY GLASS CO	HAMILTON		DIESEL FUEL	500	GAL
081385	BIRCHDALE SWIM CLUB	MONTGOMERY	WILD CREEK	WHITE STUFF	0	UNK
081585	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
081685	DAYTON POWER & LIGHT	MONTGOMERY	STORM SEWER	PCB OIL 27 PPM	10	GAL
082285	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	KOALIN CLAY	50	LBS
082785	SENCO PRODUCTS	HAMILTON		FUEL OIL #2	100	GAL
082985	DUBOIS CHEMICAL CO.	HAMILTON		FLUORESCENT GREEN	1	LBS
082985	DEVER INC	MONTGOMERY		CUTTING OIL	0	UNK
083185	METROPOLITAN SEWER	HAMILTON	PLEASANT RUN	SEWAGE	0	UNK
090585	TRUCKER	MONTGOMERY	DITCH	DIESEL FUEL	100	GAL
090785	MIAMI VIEW TRAILER	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNK
090885	CITIZEN	MONTGOMERY	HOLES CREEK	DIESEL	20	GAL
091885	OMEGA OIL CO	MONTGOMERY		GASOLINE	0	UNK
092285	ANDERSON'S AMOCO	MONTGOMERY	WOLF CREEK	GASOLINE	5000	GAL
092285	MIAMI WATER PLANT	MONTGOMERY	GREAT MIAMI	CALCIUM	0	UNK
100385	FRANKLIN BOXBOARD	WARREN	CLEAR CREEK	WASTE WATER	15000	GAL
100385	WENDYS / CLARK OIL CO	MONTGOMERY	WOLF CREEK	ASPHALT SEALER	0	UNK
100585	INMONT CHEMICAL CO	HAMILTON	SEWER	SOLVENT	0	UNK
100885	COPAZ MEAT PACKING	HAMILTON	STORM SEWER	WASTE MEAT	0	UNK
100885	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	4	GAL
101585	VERONA WWTP	PREBLE	SWAMP CREEK	SEWAGE	0	UNK
102185	MOTHER NATURE	MONTGOMERY	TOMS RUN	FISHKILL	0	UNK
102285	CINCINNATI FOAM CO.	HAMILTON	SEWER	POLYSTYRENE BEADS	0	UNK
102385	MR. EARL BRAMSON	MONTGOMERY		FUEL OIL	100	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
102485	UNKNOWN	HAMILTON	GREAT MIAMI	BLACK STUFF	0	UNK
110185	CARGILL / MILLING DIV	MONTGOMERY	GREAT MIAMI	COOLING WATER	0	UNK
110385	UNKNOWN	WARREN		WASTE OIL	5	GAL
110885	MARATHON OIL CO	MONTGOMERY	TWIN CREEK	GASOLINE	100	GAL
111285	ARMCO INC.	BUTLER	DICKS CREEK	WASTE OIL	5000	GAL
111385	BAKER CONCRETE	BUTLER	GREGORY CREEK	J-11 RESIN	300	GAL
111885	PROCTER & GAMBLE	HAMILTON	KINGS RUN	SEWAGE	0	UNK
111985	CINCINNATI MINING &	HAMILTON		CUTTING OIL	0	UNK
112185	HAUGHABOO TRUCKING	MONTGOMERY	ROADSIDE DITCH	DIESEL FUEL	50	GAL
112285	ARMCO INC.	BUTLER	DICKS CREEK	WASTE WATER	12000	GAL
112485	RUMKPE	HAMILTON	BANKLICK CREEK	DIESEL FUEL	250	GAL
112785	UNKNOWN	MONTGOMERY		FUEL OIL	0	UNK
112985	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	15000	GAL
113085	CARGILL / MILLING DIV	MONTGOMERY	GREAT MIAMI	WASTE WATER	1000	GAL
120285	UNKNOWN	HAMILTON	SEWERS	GASOLINE	0	UNK
120285	CINCINNATI GAS &	WARREN	SEWER	10C MINERAL OIL	20	GAL
120385	DUNCAN OIL CO	MONTGOMERY	STORM SEWER	GASOLINE	500	GAL
121385	SHELL OIL CO	HAMILTON		KEROSENE	720	GAL
121885	STANDARD OIL CO	MONTGOMERY		GASOLINE	20	GAL
121985	MARIMONT HILLS	HAMILTON		SEWAGE	0	UNK
121885	RYDER TRUCK RENTAL	MONTGOMERY		LUBE OIL	1000	GAL
121985	SOLVENT RESOURCE	MONTGOMERY		METHYLENE	620	GAL
122085	NATIONAL LEAD OFOHIO	HAMILTON	GREAT MIAMI	SEWAGE	15000	GAL
122085	STANDARD OIL CO	HAMILTON		GASOLINE	0	UNK
122285	CITIZEN	HAMILTON	UNNAMED CREEK	GASOLINE	0	UNK
122485	UNKNOWN	HAMILTON		BLUE DYE	17	DMS
122585	GROBY'S	MONTGOMERY		HERBICIDES	0	UNK
010186	U. S. POST OFFICE	MONTGOMERY	STORM SEWER	GASOLINE	40	GAL
010386	BECKETT PAPER CO.	HAMILTON	GREAT MIAMI	PONTAMINE BLACK	0	UNK
010386	D O E / MONSANTO MOUND	MONTGOMERY		RADIOACTIVE DIRT	0	UNK
010486	TAYLOR'S AUTO PARTS	BUTLER		SMOKE	0	UNK
010986	OHIO DEPT OF	MONTGOMERY		GASOLINE	0	NOS
011386	KETTERING WWTP	MONTGOMERY	DRAINAGE DITCH	SEWAGE	0	UNK
011786	SPRINGBORO WWTP	WARREN	CLEAR CREEK	SEWAGE	0	UNK
011886	UNKNOWN	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	0	UNK
012186	NATIONAL LEAD OF OHIO	HAMILTON		URANIUM	20	LBS
012486	INDUSTRIAL CHEMICAL	MONTGOMERY		NITRIC ACID 45%	50	GAL
013086	SORG PAPER CO.	BUTLER	GREAT MIAMI	FUEL OIL	0	UNK
013186	UNKNOWN	BUTLER	SHAFFER CREEK	FUEL OIL	0	UNK
013186	MONTGOMERY CO RTA	MONTGOMERY	WOLF CREEK	WASTE SOLVENTS	0	UNK
013186	GAS AMERICA	MONTGOMERY	STORM SEWER	GASOLINE	0	UNK
013186	F H BICKFORD CO	MONTGOMERY	GREAT MIAMI	WASTE CHEMICALS	0	UNK
020386	CITIZEN	MONTGOMERY	SEWER	WASTE OIL	0	UNK
020386	R S R CO	HAMILTON	DITCH	DIESEL FUEL	100	GAL
020586	ARMCO INC.	BUTLER	DICKS CREEK	SODIUM HYDROXIDE	5000	GAL
020686	KELLY BARNETT	BUTLER		FUEL OIL	200	GAL
021086	UNKNOWN	WARREN	DITCH	WASTE OIL	3	GAL
021986	CARGILL / MILLING DIV	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	100	GAL
022086	FIRESTONE STORE	BUTLER	STORM SEWER	WASTE OIL	0	UNK
022386	CINCINNATI GAS &	WARREN	STORM SEWER	10C MINERAL OIL	40	GAL
022586	UNKNOWN	HAMILTON	DITCH	GASOLINE	20	GAL
030586	H F HAWKINS & SONS CO	MONTGOMERY	DITCH	WOODLIFE	0	UNK
030686	COLUMBIA OIL CO	WARREN		GASOLINE	0	UNK
030786	ESTE OIL CO.	HAMILTON	SANITARY SEWER	FUEL OIL	50	GAL
031086	TRICOLOR	HAMILTON	STORM SEWERS	FLUORESCENT DYE	0	UNK
031186	LOVELAND OIL CO	BUTLER	LAKE MONROE	FUEL OIL	5	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
031386	CITIZEN	HAMILTON	DITCH	ANIMAL WASTE	0	UNK
031486	PRODUCERS OIL CO	MONTGOMERY	GREAT MIAMI	GASOLINE	0	UNK
031486	JERGENS EXCAVATING CO.	PREBLE		GASOLINE	100	GAL
031586	UNKNOWN	HAMILTON	UNNAMED TRIB	GREEN SUBSTANCE	0	UNK
031586	UNION 76 OIL CO	HAMILTON	SANITARY SEWER	GASOLINE	0	UNK
031986	EDMOND'S MOWER	HAMILTON	UNNAMED CREEK	OIL	0	UNK
032186	UNKNOWN	MONTGOMERY	GREAT MIAMI	WASTE OIL	0	UNK
032186	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	WASTE WATER	2250	GAL
032586	DONLEY'S RADIATOR &	MONTGOMERY	STORM SEWER	ETHYLENE GLYCOL	50	GAL
032786	LESTON CORP.	MONTGOMERY	SEWER	PUMPING OUT SEWER	0	NOS
032786	MONTGOMERY COUNTY	MONTGOMERY	SEWER	SEWAGE	800	GAL
032886	DRAWN METALS INC.	MONTGOMERY	HOLES CREEK	COOLING OIL	25	GAL
033186	LETTIE MILLER	MONTGOMERY		FUEL OIL	300	GAL
033186	DRAWN METALS INC.	MONTGOMERY	HOLES CREEK	CUTTING OIL	25	GAL
040286	EBBERTS FIELD SEED CORP	BUTLER	KIATA CREEK	BAGS OF SEED	20	ITM
040386	SUPERIOR LAWN CARE	MONTGOMERY	STORM SEWER	PRE-M-LESCO	0	UNK
040486	CINCINNATI CITY OF	HAMILTON	STORM SEWER	TRASH	0	UNK
041086	MOTHER NATURE	HAMILTON	GREAT MIAMI	BLACK WATER	0	NOS
041086	JERRY ERNST ATUO BODY	HAMILTON	SEWERS	PAINT WASTE	12	DMS
041186	VALLEY ASPHALT CO	BUTLER		TRICHLOROETHYLEN	0	UNK
041486	HARRISON WWTP	HAMILTON	GREAT MIAMI	DYE	0	UNK
041786	UNKNOWN	MONTGOMERY	HOLES CREEK	WASTE OIL	5	GAL
041886	SUPERIOR LAWN CARE	MONTGOMERY	SEWERS	FERTILIZER	0	UNK
041986	GAS AMERICA	MONTGOMERY	SANITARY SEWER	GASOLINE	0	UNK
042186	CITIZEN	HAMILTON	STORM SEWER	WASTE OIL	30	GAL
042186	JONES FAIRMONT MOBIL	HAMILTON	SANITARY SEWER	GASOLINE	900	GAL
042286	WHITEY'S CAR CARE	HAMILTON	SEWERS	ETHYLENE GLYCOL	0	UNK
042286	GENERAL MOTORS / DELCO	MONTGOMERY	STORM SEWER	WASTE WATER (PH	3000	GAL
042486	ARMCO INC.	BUTLER	DICKS CREEK	IRON OXIDE	0	UNK
042586	UNKNOWN	MONTGOMERY	WOLF CREEK TRIB	SEWAGE	0	UNK
043086	MCCOY OIL CO	BUTLER	ROADSIDE DITCH	GASOLINE	0	UNK
050586	NORTH HILLS OIL CO	HAMILTON		WASTE OIL	500	GAL
050186	ARMCO INC.	BUTLER	GREAT MIAMI	NON CONTACT	28000	GAL
050586	UNKNOWN	MONTGOMERY	WOLF CREEK TRIB	OIL	0	UNK
051086	RELIABLE ELECTRO	MONTGOMERY	SEWER	MERCURY	0	UNK
051286	UNKNOWN FARMER	BUTLER	GREGORY CREEK	FISHKILL	0	UNK
051386	DAYTON ELECTROPLATING	MONTGOMERY	STORM SEWER	PLATING WASTE	0	UNK
051686	GREAT LAKES	MONTGOMERY	HOLES CREEK	ASPHALT EMULSION	500	GAL
052186	RELIABLE ELECTRO	MONTGOMERY	SEWER	PLATING WASTE	0	UNK
052386	J. B. HUNT	MONTGOMERY	DITCH	DIESEL FUEL	50	GAL
052786	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
052986	DAYTON WWTP	MONTGOMERY	STORM DITCH	SEWAGE	0	UNK
060286	MR RON REES	BUTLER	DITCH	SEWAGE	0	UNK
060786	LORDS & WADSWORTH	MONTGOMERY	STORM SEWER	WASTE OIL	55	GAL
060986	UNKNOWN	WARREN	BULL RUN TRIB	UNKNOWN	0	UNK
061086	UNKNOWN	HAMILTON	STORM SEWERS	DIESEL FUEL	50	GAL
061186	HENDERSON TURF FARM	WARREN	BULL RUN TRIB	FARM CHEMICALS	0	UNK
061286	UNKNOWN FARMER	PREBLE	TWIN CREEK TRIB	FISHKILL	400	ITM
061786	TOMOCO TRUCKING	PREBLE	DITCH	DIESEL FUEL	200	GAL
061886	UNKNOWN	HAMILTON	SEWER	OIL	200	GAL
061886	DIAL-ONE CO	HAMILTON	SEWERS	PAINT WASTE	0	UNK
062786	DAYTON WATER PLANT	MONTGOMERY	GREAT MIAMI	CHLORINE ODOR	0	UNK
070386	LAKOTA HILLS GOLF	HAMILTON	GREGORY CREEK	FISHKILL	200	ITM
070786	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	PAPER STOCK	200	LBS
070886	MORMON GRAVEL PIT	BUTLER		WASTE OIL	0	UNK
070886	CSX TRANSPORTATION	MONTGOMERY	BEAR CREEK	PHOSPHORUS (WHITE)	12000	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
070986	DUNCAN OIL / CITGO	MONTGOMERY	SEWERS	GASOLINE	100	GAL
071186	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
072186	BREWER COTE ASPHALT	HAMILTON	STORM SEWER	OILS	0	UNK
072186	ATLAS WOOD & DOWEL	HAMILTON	TAYLOR CREEK	RED LEACHATE	0	UNK
072486	MONTGOMERY CO	MONTGOMERY	SANITARY SEWER	GASOLINE	0	UNK
072586	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	WASTE WATER	100	GAL
072686	DAYTON GEAR & TOOL CO.	MONTGOMERY	WOLF CREEK TRIB	CUTTING OIL	0	UNK
080186	PLATING TECHNOLOGIES	MONTGOMERY	SEWERS	CHROMIC ACID	0	UNK
080486	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	WASTE MOTOR OIL	15	GAL
080686	UNKNOWN	HAMILTON	GREAT MIAMI	OIL	0	UNK
080886	PLATING TECHNOLOGIES	MONTGOMERY	GREAT MIAMI	CHROMIC ACID	1400	LBS
081186	RUMPKE LANDFILL	HAMILTON	BANKLICK CREEK	LEACHATE	0	UNK
081386	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	BLUE DYE	0	UNK
081586	MEAD PAPERBOARD DIV	MONTGOMERY	DITCH	WASTE WATER	0	UNK
081886	UNKNOWN	MONTGOMERY	DITCH	WASTE OIL	0	UNK
082086	MONTGOMERY COUNTY	MONTGOMERY	STORM SEWERS	HYDRAULIC OIL	20	GAL
082086	RUBICON CADILLAC	MONTGOMERY	OAK CREEK TRIB	STODDARD SOLVENT	0	UNK
082586	UNKNOWN	MONTGOMERY	DITCH	OIL	0	UNK
082586	CITIZEN	WARREN		FUEL OIL	0	UNK
082886	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	20000	GAL
090286	DAYTON INDUSTRIAL	MONTGOMERY		OIL	0	UNK
090286	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 2957 PPM	2	GAL
090386	BILLY FINNELL	HAMILTON		WASTE CHEMICALS	4	DMS
090386	SHELL OIL CO / BULK	MONTGOMERY		GASOLINE	6000	GAL
090786	JAMES WILSMAN	BUTLER	GREAT MIAMI	DIESEL FUEL	75	GAL
090986	H WOLF & SONS	HAMILTON		MINERAL SPIRITS	50	GAL
090986	JOHNSON WRECKING	MONTGOMERY		10C MINERAL OIL	100	GAL
091086	MR. DEAN P SMITH	PREBLE	DRY FORK	MANURE	1000	GAL
091086	TWIN VALLEY TRAILER	PREBLE	TWIN CREEK TRIB	SEWAGE	0	UNK
091086	REFINERS TRANSPORT	HAMILTON	SEWER	BUNKER C OIL	300	GAL
091286	UNKNOWN	MONTGOMERY		HERBICIDE	0	UNK
091286	UNKNOWN	HAMILTON	BANKLICK CREEK	YELLOW STUFF	0	UNK
091786	CITY OF HAMILTON	BUTLER		ASBESTOS	0	UNK
091786	RUMPKE LANDFILL	HAMILTON	BANKLICK CREEK	LEACHATE	0	UNK
091886	U. S. EPA	HAMILTON		MERCURY	389	LBS
091886	HAMILTON FOUNDRY	HAMILTON		PCB OIL 1000000 PPM	2	GAL
091986	ARMCO INC.	BUTLER	GREAT MIAMI	OIL	0	UNK
092186	CITIZEN	MONTGOMERY	SANITARY SEWER	LEAD ARSENATE	0	NOS
092286	HILTON DAVIS CHEMICAL	HAMILTON		SULFUR TRIOXIDE	20	LBS
092286	UNKNOWN TRUCK CO	HAMILTON		ASBESTOS	0	NOS
092386	JAY GEE INDUSTRIAL PARK	WARREN		UNKNOWN	0	UNK
092386	GREENLON INC.	HAMILTON		LAWN CHEMICAL	1	GAL
092486	MIAMISBURG WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
092586	RONNIE / MARY	MONTGOMERY		WASTE OIL	5	GAL
092686	QUEEN CITY BARREL	HAMILTON		WASTE CHEMICAL	0	UNK
092686	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 600000 PPM	1	GAL
092886	CINCINNATI	HAMILTON	GREAT MIAMI	SEWAGE	0	UNK
092986	BILL ASHER	PREBLE		FUEO OIL #2	150	GAL
092986	RUMPKE LANDFILL	HAMILTON	BANKLICK CREEK	UNKNOWN	0	UNK
100186	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	2	LBS
100186	CLARK OIL CO.	MONTGOMERY		OIL COOLANT	5	GAL
100186	MIAMI CONSERVANCY	MONTGOMERY	GREAT MIAMI	SEWAGE	5000000	GAL
100286	SIDNEY TRUCKS	MONTGOMERY		WASTE CHEMICAL	0	NOS
100286	PERSONAL TOUCH	PREBLE		WASTE WATER	0	UNK
100386	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 191 PPM	10	GAL
100686	ULRICH CHEMICAL CO	HAMILTON		NITRIC ACID 70%	3	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
100786	NEIGHBOR	MONTGOMERY	STORM SEWER	WASTE OIL	1	GAl
100786	STANDARD OIL CO	HAMILTON		GASOLINE	0	UNk
100986	UNKNOWN	BUTLER		RADIOACTIVE WASTE	5	DMS
100986	FRISCH'S RESTAURANT	MONTGOMERY	STORM SEWER	CONCRETE CLEANER	5	GAl
101086	MORMON GRAVEL PIT	BUTLER	GREAT MIAMI	WASTE OIL	0	UNk
101086	NU-TONE CORP.	HAMILTON	SEWERS	WASTE CHEMICALS	12	DMS
101386	MEL'S PLATING CO	MONTGOMERY	GREAT MIAMI	WASTE ACID	0	UNk
101486	ECOFF TRUCKING CO	MONTGOMERY		HYDROCHLORIC ACID	100	GAl
101486	STOP-N-GO	MONTGOMERY		WASTE OIL	0	UNk
101486	STANDARD OIL PIPELINE	BUTLER	DICKS CREEK TRIB	FUEL OIL	0	UNk
101786	SOLVENT RESOURCE	MONTGOMERY		WASTE CHEMICALS	50	GAl
101786	C & M MOBILE HOME PARK	BUTLER		SEWAGE	0	UNk
101986	BECKETT PAPER CO.	BUTLER		WASTE WATER	60	GAl
102186	UNKNOWN	MONTGOMERY	HOLES CREEK	HERBICIDE	0	UNk
102186	UNKNOWN	HAMILTON		IRON OXIDE	0	UNk
102286	LEWISBURG WWTP	PREBLE	TWIN CREEK	SEWAGE	0	UNk
102286	EATON WWTP	PREBLE	DIVIDING CREEK	SEWAGE	0	UNk
102386	UNKNOWN	HAMILTON		WASTE CHEMICAL	12	DMS
102386	HAMILTON OIL CO.	BUTLER	STORM DRAIN	FUEL OIL	3	GAl
102486	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNk
102586	EARL HEYNE PAINTING	BUTLER	DICKS CREEK TRIB	DIESEL FUEL	500	GAl
102686	CSX TRANSPORTATION	HAMILTON		BENZENE	0	NOS
102886	STANDARD REGISTER CO.	MONTGOMERY		FUEL OIL #2	150	GAl
102986	BAIR PEST CONTROL CO	BUTLER		CHLORDANE	60	GAl
103086	SPAITH GENERAL STORE	HAMILTON		SODIUM HYDROXIDE	30	LBS
103186	C & L CONSTRUCTION	MONTGOMERY	STORM SEWER	FLAMABLE SOLVENT	0	UNk
110386	SERVA-TOOL CORP	MONTGOMERY		RUSTIC ACID	10	GAl
110486	MOTHER NATURE	MONTGOMERY	STORM SEWER	TANNIN	0	UNk
110586	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	SOLUBLE OIL	20	GAl
110586	JOHN KAHILL	PREBLE		VINYL PAINT	40	GAl
110686	IDEAL CUSTOM MILL	MONTGOMERY	GREAT MIAMI	FORMALDEHYDE	0	UNk
110886	CSX TRANSPORTATION	HAMILTON		NATURAL GAS	0	NOS
111186	APPLETON PAPER CO	MONTGOMERY	OWL CREEK	CHLORINE (AQUEOUS)	63	MGl
111386	MCGRAW EDISON /SRR INC	MONTGOMERY		PAINT WASTE	2423	GAl
111986	DURIRON CO / PLASTICS	MONTGOMERY	OPEN DITCH	WASTE WATER	40000	GAl
111986	QUALITY CIRCUITS	MONTGOMERY	WOLF CREEK	WASTE WATER	0	UNk
112086	STANDARD OIL CO	HAMILTON		GASOLINE	100	GAl
112086	UNKNOWN	MONTGOMERY	SANITARY SEWER	FLAMABLE LIQUID	0	UNk
112186	UNKNOWN	MONTGOMERY		FUEL OIL	0	UNk
112486	C & M TRAILER PARK	BUTLER		SEWAGE	0	UNk
112486	SMITH ELECTROCHEMICAL	HAMILTON		CHROMIC ACID	500	GAl
112786	DUPONT CHEMICAL CO	HAMILTON		SULFURIC ACID	200	GAl
112886	SOUTH DAYTON	MONTGOMERY	STORM SEWER	SCRUBBER WATER	0	UNk
120286	PAWAN SINGLA	HAMILTON	STORM SEWER	TRIMSOL	40	GAl
120286	OHIO GRAVEL	HAMILTON		TAR	0	UNk
120386	GRODIES BAKERY	HAMILTON	SEWER	OIL	0	UNk
120486	ALBRIGHT & WILSON	HAMILTON		WASTE WATER	90000	GAl
120486	MIAMI VALLEY HOSPITAL	MONTGOMERY		ETHYLENE OXIDE	14	LBS
120686	NOBER TRUCKING	HAMILTON		DIESEL FUEL	150	GAl
120786	PMC SPECIALTIES GROUP	HAMILTON		TOLYLTRIAZOLE	0	UNk
120686	UNKNOWN	HAMILTON		DIESEL FUEL	20	GAl
120886	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 600000 PPM	1	LBS
120986	MRS JANET LEIS	MONTGOMERY	TWIN CREEK TRIB	FUEL OIL	150	GAl
120986	ARMCO INC.	BUTLER	GREAT MIAMI	ROLLING OIL	150	GAl
120986	D O E / FEED MATERIALS	HAMILTON		URANIUM	7	LBS
121086	CHEMICALS INC.	HAMILTON		DIESEL FUEL #2	30	GAl

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
121186	TRAFFIK SERVICES CO	MONTGOMERY	STORM SEWER	DIESEL FUEL	80	GAL
121086	TERRY CO	BUTLER		OIL	0	UNK
121286	UNKNOWN	MONTGOMERY		PROPANE	92	GAL
121586	MR. LYCANS	BUTLER		GASOLINE	15	GAL
121586	PRODUCTION SCREW	MONTGOMERY		CUTTING OIL	55	GAL
121686	SOLVENT RESOURCE	MONTGOMERY		WASTE SOLVENTS	300	GAL
121686	T S POLYMERS INC	BUTLER		FORMIC ACID	50	GAL
121686	UNKNOWN	MONTGOMERY		GASOLINE	25	GAL
121786	ATLAS WOOD & DOWEL	HAMILTON	TAYLOR CREEK	WOOD CHIPS	0	UNK
121886	CAMBRIDGE GENERAL CO.	BUTLER		SOLVENTS	0	UNK
122286	GENERAL MOTORS /	MONTGOMERY	PLANT SEWER	SOLUBLE OIL	10	GAL
122386	STANDARD REGISTER CO.	MONTGOMERY		FUEL OIL	50	GAL
122986	LINDSEY MOTOR EXPRESS	HAMILTON		PHENOL	37200	UGL
010487	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	PAPER MILL SLUDGE	0	UNK
010687	OMEGA OIL CO	PREBLE		DIESEL FUEL	300	GAL
010687	GRADY VETRINARY	HAMILTON	STORM SEWERS	GASOLINE	75	GAL
010787	UNKNOWN	HAMILTON		FUEL OIL	5	GAL
010787	D O E / FEED MATERIALS	HAMILTON		MAGNESIUM	500	LBS
010887	AMERICAN CARCO CO.	MONTGOMERY		PCB OIL	1	GAL
010987	WILSON MILK CO	HAMILTON	GREAT MIAMI	DIESEL FUEL	100	GAL
011587	TRUCK STOPS OF AMERICA	PREBLE		DIESEL FUEL	0	UNK
011787	GLEN ALLEN AUTO PARTS	HAMILTON	SEWERS	GASOLINE	0	UNK
012287	APPLETON PAPERS INC	MONTGOMERY	GREAT MIAMI	WASTE WATER	0	UNK
012887	UNKNOWN	MONTGOMERY	SEWERS	ACETONE	0	UNK
020187	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	0	UNK
020287	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 92 PPM	18	GAL
020387	ARMCO INC.	BUTLER	GREAT MIAMI	FERROUS SULFATE	0	UNK
020387	UNKNOWN	MONTGOMERY	SEWER	GASOLINE	0	UNK
020387	CHARMAC CREMATORUIM	HAMILTON		FLY ASH	0	UNK
020487	STANDARD OIL CO	HAMILTON		GASOLINE	0	NOS
020687	QUEEN CITY TERMINALS	HAMILTON	SEWER	ETHYLENE GLYCOL	30	GAL
020687	INDEPENDENT TRUCK	MONTGOMERY		DIESEL FUEL	250	GAL
020987	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 52 PPM	0	NOS
021187	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	2000	GAL
021287	BOB'S TRUCKING	BUTLER		DIESEL FUEL	25	GAL
021587	INTERMODAL	HAMILTON		SULFURIC ACID	1	GAL
021687	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 117 PPM	1	LBS
021787	STILLPASS HONDA	HAMILTON		GASOLINE	0	UNK
021987	UNITED PARCEL SERVICE	HAMILTON		GASOLINE	1000	GAL
021987	YOUNGBLOOD TRUCK	BUTLER		DIESEL FUEL	150	GAL
021987	SOUTHERN RAILROAD	HAMILTON		PHOSPHORIC ACID	0	UNK
022087	CENTRAL TRANSPORT	BUTLER		BUTYL ACETATE	5	GAL
022087	H V C CHEMICAL CO.	BUTLER	DITCH	SODIUM HYDROXIDE	500	GAL
022287	MEYER MILK CO	HAMILTON		MILK	0	UNK
022387	HILTON DAVIS CO.	HAMILTON		NITRIC ACID	0	UNK
022487	CINCINNATI MILACRON	HAMILTON		PCB OIL 600000 PPM	3	LBS
022487	BUEHLS SEED FARM	WARREN	DRY DITCH	FERTILIZER 28-0-0	593	GAL
022687	U S F D A / ZEMACO	MONTGOMERY		TOXAPHENE	0	UNK
022787	SHIPPERS BULK SERVICE	MONTGOMERY		STYRENE	100	GAL
022887	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
030287	AL WILLIAMS BODY SHOP	MONTGOMERY		DIESEL FUEL	30	GAL
030387	RUMPKE LANDFILL	HAMILTON	BANKLICK CREEK	LEACHATE	0	UNK
030387	HILTON DAVIS CHEMICAL	HAMILTON		ORTHO-CHLORO	500	GAL
030487	MR. JAMES HEID	HAMILTON	SEWER	GASOLINE	20	GAL
030587	L. J. INDUSTRIES	MONTGOMERY		POTASSIUM	15	GAL
030587	BERNARD LABORATORIES	HAMILTON		SOLVENT	55	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
030687	DAYTON-FORGING / D & J	MONTGOMERY	SEWER	DEGREASER	1	GAL
030687	GENERAL MOTORS / DELCO	MONTGOMERY		ASBESTOS WASTE	20	LBS
030887	MR. LENHART	HAMILTON	DITCH	TURPENTINE	0	UNK
030987	GENERAL MOTORS / DELCO	MONTGOMERY		HYDROCHLORIC ACID	2600	LBS
030987	GENERAL MOTORS / DELCO	MONTGOMERY		GASOLINE	300	GAL
031087	WORTHINGTON STEEL	BUTLER	SHAFFER CREEK	FERROUS CHLORIDE	0	UNK
031287	WINTON HILLS MEDICAL	HAMILTON		MERCURY	0	UNK
031287	UNKNOWN	MONTGOMERY	SEWERS	DIESEL FUEL	50	GAL
031287	UNKNOWN	HAMILTON		PAINT WASTE	5	DMS
031387	VICTORY EXPRESS	MONTGOMERY	DITCH	DIESEL FUEL	0	UNK
031387	SUN CHEMICAL / PIGMENTS	HAMILTON	SANITARY SEWER	HYDROCHLORIC ACID	8000	GAL
031487	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	0	UNK
031687	MR SILKSCREEN CO /	HAMILTON	STORM SEWER	D662 SOLVENT	0	UNK
031687	UNKNOWN	HAMILTON		ABANDONED DRUM	1	DMS
031887	MATLACK TRUCKING CO.	MONTGOMERY		PAINT	5	GAL
031987	QUEEN CITY METRO	HAMILTON	SEWER	DIESEL FUEL	7000	GAL
032087	UNKNOWN	HAMILTON		WASTE CHEMICAL	4	DMS
032187	SUPERIOR LAWN CARE	MONTGOMERY		WATER	550	GAL
032387	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	0	UNK
032487	GREENLON INC.	HAMILTON		FERTILIZER 15-3-6	50	GAL
032487	CONSTRUCTION	MONTGOMERY	STORM SEWER	KEROSENE	20	GAL
032587	UNKNOWN	MONTGOMERY		GASOLINE	0	UNK
032587	NATIONAL TRANSPORT	PREBLE		SULFURIC ACID	200	GAL
032587	B & J CARPET &	MONTGOMERY	STORM SEWERS	CLEANING WASTE	0	UNK
032687	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	6	GAL
032787	UNKNOWN	HAMILTON		POTASSIUM CYANIDE	1	LBS
040187	UNKNOWN	HAMILTON		PAINT THINNER	0	UNK
040287	SHELL OIL CO	MONTGOMERY		GASOLINE	10	GAL
040387	TECHNI-FAB PRODUCTS	HAMILTON		STAINLESS STEEL	0	UNK
040387	J. V. PROPERTIES / DAYTON	MONTGOMERY	WOLF CREEK	PCB OIL 22900 PPM	1600	GAL
040587	CITIZEN	MONTGOMERY		GASOLINE	16	GAL
040787	AMERICAN AGGREGATES	MONTGOMERY	NORTH BRANCH	OIL	0	UNK
040787	TOM GIBSON	HAMILTON		WASTE OIL	500	GAL
040787	UNKNOWN	MONTGOMERY	GREAT MIAMI	FUEL OIL	0	UNK
040787	ADVERTISING DISPLAYS	MONTGOMERY		HEAT TRANSFER	200	GAL
040787	CLAYTON AUTO	MONTGOMERY	NORTH BRANCH	OIL	0	UNK
040887	ALBRIGHT & WILSON	HAMILTON		HYDROCHLORIC ACID	4000	GAL
040987	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	200	GAL
040987	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
041087	UNION TERMINAL BLDG	MONTGOMERY		TRANSFORMERS	20	ITM
041187	SHELL OIL CO	MONTGOMERY	STORM SEWER	GASOLINE	100	GAL
041387	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 58 PPM	1	GAL
041387	ROUTZAHA OIL CO	WARREN		OIL	0	UNK
041387	CARLISLE CONSTRUCTION	HAMILTON		DIESEL FUEL	100	GAL
041387	PINNACLE ROAD LANDFILL	MONTGOMERY		LIQUID WASTES	0	UNK
041387	UNKNOWN	MONTGOMERY	STORM DITCH	OIL	0	UNK
041587	UNKNOWN	BUTLER		ORANGE STUFF	0	UNK
041587	VICKERS DEMO LANDFILL	BUTLER		GARBAGE	0	UNK
041587	D O E / FERNALD FEED	HAMILTON		MAGNESIUM	200	LBS
041587	ROSE'S TRANSMISSION	BUTLER		TRANSMISSION FLUID	0	UNK
041587	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	0	UNK
041687	WILLIAM POTT & SONS INC	BUTLER	DITCH	DIESEL FUEL	100	GAL
041687	SARVER OIL CO	MONTGOMERY	SEWERS	GASOLINE	30	GAL
041787	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	30	GAL
041887	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	100	GAL
041887	RUMPKE LANDFILL	HAMILTON	BANKLICK CREEK	ODOR	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
042187	ARMCO INC.	BUTLER	GREAT MIAMI	WASTE WATER	18000	GAL
042187	D O E / FERNALD FEED	HAMILTON		URANIUM	50	LBS
042187	MURPHY TRUCKING CO	BUTLER	DITCH	WASTE OIL	0	UNK
042287	UNKNOWN	MONTGOMERY		WASTE OIL	0	UNK
042287	ROSS READY MIX	HAMILTON	TAYLOR CREEK	CONCRETE	0	UNK
042387	MIKE KAESER AUTO BODY	HAMILTON		PAINT THINNER	0	UNK
042787	D O E / MONSANTO	MONTGOMERY	GREAT MIAMI	CALCIUM CHLORIDE	2100	GAL
042787	CITIZEN	HAMILTON	SEWER	GASOLINE	12	GAL
042787	OHIO-SEALY MATTRESS	BUTLER	SANITARY SEWER	DIESEL FUEL	4000	GAL
042887	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 55 PPM	1	GAL
042887	DUPONT CHEMICAL CO	PREBLE		ACETIC ACID	5	GAL
042987	FINPAN INC	BUTLER	GREAT MIAMI	STYRENE BUTADIENE	650	GAL
042987	MIEJER THRIFTY ACRES /	WARREN		GASOLINE	3000	GAL
042987	KETTERING STREET DEPT	MONTGOMERY		CONTAMINATED	500	GAL
051987	STANDARD OIL CO	HAMILTON		GASOLINE	0	UNK
050187	VERN CRABTREE	HAMILTON		UREA	78000	LBS
050187	ROSE'S TRANSMISSION	BUTLER		TRANSMISSION FLUID	0	UNK
050287	UNKNOWN	MONTGOMERY	SEWERS	WASTE WATER	0	UNK
050487	GENERAL MOTORS /	MONTGOMERY		HYDROCHLORIC ACID	4000	GAL
050487	CENTRAL OIL & ASPHALT	MONTGOMERY	SEWER	OIL EMULSION	5000	GAL
050587	MR. GARY HUDSON	MONTGOMERY		WASTE OIL	1	GAL
050587	UNKNOWN	HAMILTON	SEWERS	WASTE OIL	0	UNK
050687	MR. LEE ELAM	HAMILTON		WASTE OIL	2	GAL
050887	DIGITRON TOOL CO.	MONTGOMERY	GREAT MIAMI	SOLVENT	0	UNK
051087	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 136 PPM	5	GAL
051187	SOUTHERN RAILWAY	HAMILTON		ETHYL ETHER	0	UNK
051287	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 74 PPM	1	GAL
051387	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	140000	GAL
051387	ARMCO INC.	BUTLER	DICKS CREEK	SULFURIC ACID	100	GAL
051387	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 600000 PPM	2	GAL
051487	M/M BARRY	MONTGOMERY		FUEL OIL	150	GAL
051587	DAYTON-WALTHER	MONTGOMERY		PCB OIL 6000000 PPM	0	UNK
051587	MAMCO CONVERTERS INC	MONTGOMERY	STORM SEWERS	GAS	0	UNK
051587	PRIVATE CITIZEN	MONTGOMERY	STORM SEWER	GASOLINE	0	UNK
051587	KAISER AG CHEMICAL CO	HAMILTON		FERTILIZER 28-0-0	0	UNK
051787	CINCINNATI GAS &	HAMILTON	SEWER	TRANSFORMER OIL	20	GAL
051787	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 50 PPM	30	GAL
051787	HILTON DAVIS CHEMICAL	HAMILTON		SODIUM NITRITE	1650	LBS
051687	CAPITAL DRY CLEANING	MONTGOMERY	SEWER	PERCHLOROETHYLEN	5	GAL
051887	QUALITY CIRCUITS /	MONTGOMERY	SANITARY SEWER	WASTE ACID	0	UNK
051987	UNKNOWN	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	20	GAL
051987	STANDARD OIL CO	HAMILTON	STORM SEWER	GASOLINE	0	UNK
052187	ALBRIGHT & WILSON	HAMILTON		WASTE WATER	1100	GAL
052687	STANDARD OIL CO	MONTGOMERY		GASOLINE	20	GAL
052787	SHERWIN WILLIAMS	MONTGOMERY		SMOKE	0	UNK
052987	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 97 PPM	1	GAL
053087	DAYTON WATER PLANT	MONTGOMERY		HYDROCHLORIC ACID	50	GAL
060187	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 53 PPM	5	LBS
060187	MORTON THIOKOL /	HAMILTON		STANNIC CHLORIDE	10	GAL
060187	DAYTON-WALTHER CO	MONTGOMERY	GREAT MIAMI	OIL	1	GAL
060187	STOP-N-GO	BUTLER		GASOLINE	0	NOS
060287	UNKNOWN	WARREN		HERBICIDE	400	LBS
060287	EASTERN CHEMICAL	HAMILTON		HYDRAULIC FLUID	1	DMS
060287	MAD RIVER HIGH SCHOOL	MONTGOMERY		GASOLINE	0	UNK
060387	UNKNOWN	MONTGOMERY	WOLF CREEK	DIESEL FUEL	0	UNK
060387	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
060487	FARMER	WARREN	CLEAR CREEK	FISHKILL	500	ITM
060587	MRS QUINN	MONTGOMERY		FUEL OIL	200	GAI
060587	DUNCANS SALVAGE YARD	MONTGOMERY	STORM SEWER	SMOKE	0	UNK
060587	PEERLESS	MONTGOMERY		CONTAMINATED	100	GAI
060587	SHORTY GRIFFIN	BUTLER		YELLOW WHITE	1206	LBS
060687	UNKNOWN	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
060787	HILTON DAVIS CHEMICAL	HAMILTON		ANHYDROUS	53	LBS
060887	OFFICE BUILDING	HAMILTON	SANITARY SEWER	CONDENSATION	100	GAI
060887	INTERNATIONAL PAPER	HAMILTON		FUEL OIL #2	0	UNK
060987	CENTRAL OIL & ASPHALT	HAMILTON	STORM SEWER	ASPHALT	75	GAI
060987	C F INDUSTRIES INC	HAMILTON		FERTILIZER 33-0-0	5000	GAI
061087	B A S F / INMONT DIV	HAMILTON		HYDROQUINONE	4	LBS
061287	SWIFTY OIL CO	MONTGOMERY	DITCH	GASOLINE	0	UNK
061587	MAXWELL CO	WARREN		PAINT THINNER	0	UNK
061587	TIMBER HOLLOW	BUTLER		CONCRETE ADDITIVE	30	GAI
061587	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 941 PPM	1	GAI
061687	UNKNOWN	HAMILTON		RADIOACTIVE WASTE	100	DMS
061787	U. S. PRINTING CO	HAMILTON	SEWERS	LIGHT LUBE OIL	1000	GAI
061887	S E I & DEVELOPMENT	BUTLER		ASBESTOS	0	UNK
061887	UNITED BEVERAGE CO	MONTGOMERY		WASTE OIL	0	UNK
061987	MORAINE CONSTRUCTION	BUTLER		DIESEL FUEL	40	GAI
061987	RIVERSIDE STREET DEPT	MONTGOMERY		SODIUM ARSENATE	1	DMS
062087	MATLACK TRUCKING CO.	HAMILTON		STYRENE MONOMER	1	GAI
062287	CINCINNATI GAS &	HAMILTON		FLY ASH	0	UNK
062287	HAMILTON STREET DEPT	BUTLER	STORM SEWER	PAINT WASTE	0	UNK
062387	BUD FLETCHERS USED	HAMILTON		WASTE OIL	0	UNK
062387	DAYTON POWER & LIGHT	MONTGOMERY	STORM SEWER	PCB OIL	1	GAI
062487	ALBRIGHT & WILSON	HAMILTON	PADDYS RUN	WASTE WATER	0	UNK
062687	CINCINNATI BELL	BUTLER		GASOLINE	400	GAI
062787	CINCINNATI GAS &	BUTLER		PCB OIL 50 PPM	12	GAI
062487	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 192 PPM	2	LBS
070387	UNKNOWN	HAMILTON		HAZARDOUS WASTE	16	DMS
070687	CINCINNATI STEEL	HAMILTON		PHOSPHORIC ACID	25	GAI
070687	ARMCO INC.	BUTLER	GREAT MIAMI	OIL	0	UNK
070687	KLLM INC.	WARREN		A-TURCO 5948-R	1	DMS
070787	UNITED BEVERAGE CO	MONTGOMERY		ABANDONED TANKS	2	ITM
070887	MANVILLE CORP / FOREST	HAMILTON	SEWER	WASTE WATER	0	UNK
070887	TIMBER HOLLOW	BUTLER	STORM SEWER	LEACHATE	0	UNK
070887	APEX CO.	MONTGOMERY		CUTTING OIL	0	UNK
071087	CITIZEN	MONTGOMERY		LEAD AZIDE	0	UNK
071187	CSX TRANSPORTATION	MONTGOMERY	WOLF CREEK	PHOSPHORUS	0	UNK
071187	BILL'S CAR CARE SERVICE	HAMILTON		ANTIFREEZE	0	UNK
071187	CITIZEN	MONTGOMERY	STORM SEWER	GASOLINE	23	GAI
071487	CARBOLINE DISTRIBUTION	MONTGOMERY	STORM SEWER	DIESEL FUEL	0	UNK
071487	OHIO DEPT CORR /	WARREN	SHAKER CREEK	BLACK WATER	0	UNK
071587	DUPONT CHEMICAL CO	HAMILTON		HYDROCHLORIC ACID	200	GAI
071587	TRADING POST	MONTGOMERY	HOLES CREEK	RED DEVELOPER	5	GAI
071687	BILLS CAR CARS	HAMILTON		RED STUFF	0	UNK
071687	UNKNOWN	MONTGOMERY		OIL	0	UNK
071887	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
071887	DAYTON MAILING	MONTGOMERY		DIESEL FUEL	100	GAI
072187	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 61 PPM	1	LBS
072387	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 57 PPM	10	GAI
072687	P I E	BUTLER		DIESEL FUEL	200	GAI
072687	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 143 PPM	1	GAI
072787	PROCTER & GAMBLE	HAMILTON		OLEUM	300	GAI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
072787	MRS ANNA HIBBERD	HAMILTON	STORM SEWER	FUEL OIL	117	GAL
072787	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 165 PPM	2	GAL
072787	MANVILLE CORP / FOREST	HAMILTON	PLANT SEWERS	INK SLUDGE	300	GAL
073087	AMACO INC .	BUTLER	GREAT MIAMI	WASTE OIL	200	GAL
073187	SORG PAPER CO. / MILL #2	BUTLER		SULFURIC ACID	880	GAL
073187	UNKNOWN	BUTLER	GREAT MIAMI	OIL	0	UNK
080387	SOLVENT RESOURCE	MONTGOMERY		WASTE CHEMICAL	125	GAL
080487	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 350 PPM	5	LBS
080487	FAGALY & SONS OIL CO	HAMILTON	GREAT MIAMI	KEROSENE	300	GAL
080487	SPRINGFIELD TWP FIRE	HAMILTON	STORM SEWER	GASOLINE	5	GAL
080487	CHEVRON U S A OIL CO	HAMILTON	GREAT MIAMI	GASOLINE	2	GAL
080587	CECOS INC / ENSCO	HAMILTON		PCB OIL	10	LBS
080587	TABER'S BODY SHOP	MONTGOMERY		GASOLINE	0	UNK
080587	UNKNOWN	MONTGOMERY		UNKNOWN	0	UNK
080687	UNKNOWN	MONTGOMERY		NICKEL SULFATE	1	DMS
080687	NEW LEBANON WTP	MONTGOMERY	BEAR CREEK	SEWAGE	0	UNK
080787	UNKNOWN	HAMILTON		BLUE STUFF	0	UNK
080887	OAKWOOD WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
081087	CITIZEN	MONTGOMERY		WASTE OIL	0	UNK
081087	HI-LIFT EQUIPMENT	BUTLER		DIESEL FUEL	55	GAL
081087	DAYTON EVANS MOTOR	MONTGOMERY		DIESEL FUEL	0	UNK
081087	CSX TRANSPORTATION	MONTGOMERY		DIESEL FUEL	2750	GAL
081187	PAY LESS GAS CO	MONTGOMERY	STORM SEWER	GASOLINE	2500	GAL
082887	CINCINNATI ENQUIRER	HAMILTON	SEWER	PRINTING WASTE	0	UNK
082887	LEASEWAY	BUTLER		HYDROCHLORIC ACID	2	GAL
082787	BLANCHARD GRINDING	MONTGOMERY		ANTIFREEZE	0	UNK
081387	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	18	GAL
081387	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER	1	ITM
081387	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
081487	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 76 PPM	0	UNK
081487	FRANKLIN BOXBOARD	WARREN	CLEAR CREEK	WASTE WATER	10000	GAL
081487	SUPERIOR LAWN CARE	HAMILTON		FERTILIZER	10	GAL
081487	BRUBAKER FARMS	PREBLE		MANURE	0	UNK
081487	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
081787	FRANKLIN BOXBOARD	WARREN	CLEAR CREEK	WASTE WATER	0	UNK
081887	LEE PAUL OIL CO	MONTGOMERY	STORM SEWER	DIESEL FUEL #2	100	GAL
081887	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	4	LBS
081987	KETTERING SERVICE DEPT	MONTGOMERY		PCB OIL 880 PPM	3	GAL
081987	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 118 PPM	2	GAL
082087	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 56 PPM	1	LBS
082187	SHELL OIL CO	MONTGOMERY		GASOLINE	10	GAL
082487	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 600000 PPM	25	LBS
082487	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	25	GAL
082587	KROGER CO.	HAMILTON	CILLEY CREEK	BLACK STUFF	0	UNK
082787	CINCINNATI PAPERBOARD	HAMILTON	SEWERS	WASTE CHEMICALS	0	UNK
083087	DAYTON WWTP	MONTGOMERY		ODORS	0	UNK
083187	UNKNOWN	HAMILTON	BANNING CREEK	FLUORESCENT DYE	0	UNK
083087	UNKNOWN	HAMILTON		DIESEL FUEL	45	GAL
083087	MR. J THOMPSON	HAMILTON	TAYLOR CREEK	GARBAGE	0	UNK
083187	ROADWAY TRUCKING	MONTGOMERY		CONCRETE SEALER	5	GAL
083187	UNKNOWN	HAMILTON		WASTE OIL	0	UNK
083187	SOUTHERN RAILROAD	HAMILTON		SODIUM HYDROXIDE	2	GAL
090187	KING TRUCKING	MONTGOMERY	STORM SEWER	HYDRAULIC FLUID	15	GAL
090187	TEXAS EASTERN REFINERS	WARREN		TACK COAT	0	UNK
090187	UNKNOWN	BUTLER		DRUMS	12	DMS
090287	SUN CHEMICAL / PIGMENTS	HAMILTON		RCRA WASTE	60	DMS

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
090287	CINCINNATI BELL	BUTLER	STORM SEWER	GASOLINE	150	GAL
090387	WEST POINT PEPPERELL	MONTGOMERY		DIESEL FUEL	100	GAL
090487	BARRETT CO	HAMILTON		HEATING OIL	150	GAL
090487	QUEEN CITY BARREL	HAMILTON		WASTE CHEMICALS	0	UNK
090487	ASTRO CONTAINER	HAMILTON		WASTE CHEMICAL	0	UNK
090887	MEDIA INC	BUTLER	SEWER	CARBON	0	UNK
091087	DIGITRON TOOL CO.	MONTGOMERY	SEWERS	WASTE SOLVENTS	0	UNK
091087	SHEPHERD CHEMICAL CO	HAMILTON		WASTE CHEMICALS	0	UNK
091187	MONTGOMERY CO	MONTGOMERY		SMOKE	0	UNK
091187	MR. CHRIS NOLAND	HAMILTON		SULFURIC ACID	1	GAL
091287	TNT HOLLAND EXPRESS	WARREN		SULFURIC ACID	0	UNK
091487	INTERNATIONAL	BUTLER		METHYL ETHYL	10	DMS
091687	ARMCO INC.	BUTLER	GREAT MIAMI	WASTE WATER	9000	GAL
091687	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	18	GAL
091887	ARMCO INC	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
091887	UNOCAL CHEMICAL	BUTLER		PAINT WASTE	1	GAL
092087	U. S. POST OFFICE	MONTGOMERY		ASBESTOS	0	UNK
092087	UNKNOWN	HAMILTON	TAYLOR CREEK	FLUORESCENT DYE	0	UNK
092187	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 600000 PPM	1	LBS
092187	ARMCO INC	BUTLER		PCB OIL 600000 PPM	7	GAL
092387	PEERLESS	MONTGOMERY	STORM SEWER	CUTTING OIL	0	UNK
092587	MIAMI VALLEY REGIONAL	MONTGOMERY	GREAT MIAMI	ANTIFREEZE	300	GAL
092687	SPEEDWAY OIL CO	WARREN		GASOLINE	500	GAL
092587	MIAMI VALLEY REGIONAL	MONTGOMERY	STORM SEWER	ETHYLENE GLYCOL	500	GAL
092987	D O E / FERNALD FEED	HAMILTON		HYDROGEN FLUORIDE	3000	LBS
092987	CINTRAN CO.	HAMILTON		DIESEL FUEL	40	GAL
100187	MR. D BURNETT	WARREN		DIESEL FUEL	20	GAL
100387	CINCINNATI GAS &	HAMILTON	STORM SEWER	10C MINERAL OIL	8	GAL
100587	WOOD PROPANE CO	PREBLE		PROPANE	0	UNK
100587	DICONIX / KODAK	MONTGOMERY		NITRIC ACID	0	UNK
100687	STEVE R RAUSCH INC	MONTGOMERY		OIL	0	UNK
100687	UNKNOWN	HAMILTON		LUCIDENE 604	0	UNK
100687	MIAMI PAPER /	MONTGOMERY		AMMONIA	0	UNK
100887	MR. CHRIS GILIUM	MONTGOMERY		PAINT	1	GAL
100987	ARMCO INC	BUTLER	DICKS CREEK	OIL	60	GAL
101087	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
101287	DAVID MCDOUGLE	MONTGOMERY		FUEL OIL #2	1000	GAL
101587	SOLVENT RESOURCE	MONTGOMERY		SMOKE	0	UNK
101687	MAD RIVER TRANSPORT	MONTGOMERY		OIL	0	UNK
101687	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 248 PPM	5	GAL
101787	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 248 PPM	5	GAL
102087	DAYTON POWER & LIGHT	MONTGOMERY		FUEL OIL	300	GAL
102087	ARMCO INC	BUTLER	DICKS CREEK	OIL	25	GAL
102187	CHEVRON U S A OIL CO	HAMILTON		TANK BOTTOMS	0	NOS
102487	PRIVATE AUTO	HAMILTON	SEWER	GASOLINE	12	GAL
102687	STANDARD OIL CO	MONTGOMERY		GASOLINE	200	GAL
102787	STANDARD OIL CO	MONTGOMERY		GASOLINE	25	GAL
102887	CHEMICAL LEAMAN	HAMILTON		OLEUM	1	GAL
102987	UNKNOWN	MONTGOMERY	HOLES CREEK	WASTE CHEMICALS	2	DMS
103087	SOLVENT RESOURCE	MONTGOMERY		HEPTANE	35	GAL
103187	GREEN THUMB LAWN	HAMILTON		MAKEUP WATER	50	GAL
103187	CITIZEN	HAMILTON		COMPRESSED GAS	0	UNK
110287	UNKNOWN	MONTGOMERY	STORM SEWER	ODOR OF SOLVENT	0	UNK
110287	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	1	GAL
110287	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
110287	UNKNOWN	BUTLER		CALCIUM	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
110587	HAMILTON WWTP	BUTLER		SEWAGE SLUDGE	0	UNK
110987	S & W ELECTRICAL CONT	MONTGOMERY		ASBESTOS	0	UNK
110987	SHELL OIL CO	MONTGOMERY		GASOLINE	0	UNK
111087	GENERAL MOTORS / DELCO	MONTGOMERY	SANITARY SEWER	WASTE WATER	9000	GAL
111087	COLUMBIA GAS	WARREN		NATURAL GAS	0	UNK
111087	UNKNOWN	HAMILTON		PERCHLOROETHYLEN	0	UNK
111087	ARMCO INC	BUTLER	DICKS CREEK	WASTE OIL	500	GAL
111187	BIG BEE TRANSPORTATION	HAMILTON		DIESEL FUEL	200	GAL
111287	ARMCO INC	BUTLER		GASOLINE	1000	GAL
111587	UNKNOWN	HAMILTON	STORM DITCH	SEWAGE	0	UNK
111487	UNKNOWN	MONTGOMERY	GREAT MIAMI	SOLVENT	5	GAL
111687	GENERAL MOTORS / DELCO	MONTGOMERY	SANITARY SEWER	CHROMIUM	3	LBS
111787	DAYTON COUNTRY CLUB	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	0	UNK
112087	PILOT CHEMICAL CO.	HAMILTON	STORM SEWER	CLEANING	250	GAL
112087	PORTER PRECISION CO	HAMILTON		SODIUM CYANIDE	5	LBS
112487	UNKNOWN	BUTLER		ASBESTOS	1	BAG
112487	UNKNOWN	MONTGOMERY		POLYMERIC	4	DMS
112587	BOYD BROTHERS	WARREN		DIESEL FUEL	70	GAL
112787	MOBILE HOME PARK	MONTGOMERY	CRAINS RUN	SEWAGE SLUDGE	0	UNK
112887	UNKNOWN	HAMILTON		AMMONIA	0	UNK
113087	DAYTON PAINT &	MONTGOMERY	SEWERS	PAINT WASTE	0	UNK
120387	LEND LEASE TRUCK	HAMILTON		DIESEL FUEL	50	GAL
120387	ARAMCO INC /HAMILTON	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
120487	UNKNOWN	HAMILTON	DITCH	ANTIFREEZE	0	UNK
120587	BECKETT PAPER CO.	HAMILTON	GREAT MIAMI	RED DYE	0	UNK
120687	WARREN COUNTY WATER	WARREN		SEWAGE	0	UNK
120487	TRI COUNTY AMC	HAMILTON		HYDRAULIC FLUID	0	UNK
120787	CINTRAN TRUCKING	MONTGOMERY	STORM SEWER	DIESEL FUEL	35	GAL
120787	GENERAL MOTORS / DELCO	MONTGOMERY		DICHROMATE	0	UNK
120787	M & G BODY SHOP	HAMILTON		PAINT WASTE	0	UNK
120987	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 600000 PPM	2	GAL
121187	SAALFELD PAPER CO	BUTLER	DITCH	DIESEL FUEL	20	GAL
121087	CINCINNATI GAS &	HAMILTON		MERCURY	0	UNK
121187	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	BLUE DYE	110	GAL
121187	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	5	GAL
121387	UNKNOWN	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
121487	MS DEBBIE WHITTON	MONTGOMERY		METHYL CHLORIDE	0	UNK
121487	ROSE SCOTT	HAMILTON		MALATHION	1	LBS
121687	DAYTON POWER & LIGHT	WARREN		10C MINERAL OIL	20	GAL
121887	DAYTON POWER & LIGHT	PREBLE		PCB OIL 57 PPM	1	GAL
121887	WILLOWDALE STREET	MONTGOMERY	BREWSTER RUN	MUDDY WATER	0	UNK
122187	UNOCAL CHEMICAL	BUTLER		1,1,1	13	GAL
122187	DAYTON POWER & LIGHT	MONTGOMERY		*PRIOR REPORT	1	GAL
122287	HAMILTON WWTP	BUTLER	GREAT MIAMI	SEWAGE	0	UNK
122287	HVC CHEMICAL CO.	BUTLER		SODIUM NITRITE	3000	LBS
122487	HAMILTON WWTP /	HAMILTON	GREAT MIAMI	BLACK WATER	0	UNK
122487	BILLY'S AUTO CENTER	MONTGOMERY		SMOKE	0	UNK
122487	HAMILTON WWTP /	HAMILTON	GREAT MIAMI	BLACK WATER	0	UNK
122887	KETTERING MEDICAL	MONTGOMERY	GREAT MIAMI	FUEL OIL	0	UNK
122987	LYKINS OIL CO.	HAMILTON		FUEL OIL #2	200	GAL
123187	AUEN TRUCKING CO.	PREBLE	DRY DITCH	DIESEL FUEL	250	GAL
010488	OHIO DEPT OF	MONTGOMERY		GASOLINE	500	GAL
010588	DAYTON POWER & LIGHT	PREBLE		TRANSFORMER OIL	0	UNK
010688	UNIVERSITY HOSPITAL	HAMILTON		WASTE WATER	0	UNK
010688	MONARCH MARKING	MONTGOMERY		TOLUENE	0	UNK
010788	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	20	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
010788	SOUTHERN RAILWAY	HAMILTON		LACQUER RESIN	1	GAL
011388	PLATING TECHNOLOGIES	MONTGOMERY	SEWER	ZINC CYANIDE	1000	GAL
011388	SUPERIOR CARRIERS	BUTLER		CLEANING	206	GAL
011388	GENERAL MOTORS / DELCO	MONTGOMERY		WASTE WATER	0	UNK
011488	ARKAY PLASTICS CO.	BUTLER	DRY DITCH	PAINT THINNER	200	GAL
011588	IAMS CORP	PREBLE		MERCURY COMPOUND	2	DMS
011688	MCDONALDS-CRAFT	MONTGOMERY	STORM SEWER	DIESEL FUEL	300	GAL
011888	D O E / FEED MATERIALS	HAMILTON	STORM SEWER	*URANIUM	0	UNK
011888	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	3	GAL
011988	GRAND TRUNK / DTI RR	MONTGOMERY		COAL	0	UNK
011988	UNKNOWN	MONTGOMERY	WOLF CREEK TRIB	DIESEL FUEL	20	GAL
012088	MATLACK TRUCKING CO.	HAMILTON		PERCHLOROETHYLEN	1	LBS
012188	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
012388	AMERICAN CARCO CO.	MONTGOMERY		ACETONE	0	UNK
012588	BLANCHARD GRINDING	MONTGOMERY		COOLANT	0	UNK
012688	MONSANTO	MONTGOMERY	SANITARY SEWER	TRIFLUOROACETIC	80	LBS
012688	GRATHEL INCORP	HAMILTON	UNNAMED CREEK	WASTE OIL	55	GAL
012888	MANVILLE CORP / FOREST	HAMILTON		PROPYLACETATE	1200	GAL
012988	A T & T	HAMILTON		DIESEL FUEL	0	UNK
012988	SOLVENT RESOURCE	MONTGOMERY		TRICHLOROETHYLEN	4	GAL
012988	MANVILLE CORP / FOREST	HAMILTON		TOLUENE	3000	GAL
012988	CINCINNATI GAS &	HAMILTON	STORM SEWER	TRANSFORMER OIL	15	GAL
012988	UNKNOWN	BUTLER		NITRATE	0	UNK
013088	HOBART CORP	MONTGOMERY		ASBESTOS	0	NOS
020188	GENERAL MOTORS /	MONTGOMERY		STODDARD SOLVENT	500	GAL
020188	MICHILMAN INC	HAMILTON	STORM SEWER	MINERAL SPIRITS	5	GAL
020188	MIAMISBURG WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
020288	OHIO DEPT OF	MONTGOMERY		OIL	500	GAL
020288	FAIRFIELD WWTP	BUTLER	GREAT MIAMI	SEWAGE	16000000	GAL
020288	FAT DADDY'S SERVICE	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	25	GAL
020388	UNKNOWN	BUTLER		PCB OIL 50 PPM	0	UNK
020488	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	CALGON H130	5	GAL
020888	OHIO DEPT OF	PREBLE	BANTAS FORK	CALCIUM CHLORIDE	3000	GAL
020888	GENERAL MOTORS / DELCO	MONTGOMERY	SANITARY SEWER	CHROME (TRIVALENT)	0	UNK
020988	CSX TRANSPORTATION	HAMILTON		BUTYRALDEHYDE	10	GAL
021088	DAYTON PRESS	MONTGOMERY		PCB OIL	112	GAL
021188	BETHESDA HOSPITAL	HAMILTON		ETHYLENE OXIDE	2	LBS
021388	MAYS-SHEDD OIL CO	MONTGOMERY		WASTE OIL	0	UNK
021388	MIAMISBURG FIRE	MONTGOMERY	SYCAMORE	GASOLINE	25	GAL
021488	BONDED OIL	MONTGOMERY	SYCAMORE	GASOLINE	25	GAL
021288	CONSOLIDATED GRAIN &	HAMILTON		GASOLINE	0	UNK
021688	GLEN MOOR CO	HAMILTON	SANITARY SEWER	VULCAN J-CUT 911	1500	GAL
021688	FAT DADDY'S SERVICE	MONTGOMERY		GASOLINE	20	GAL
021888	GENERAL MOTORS / DELCO	MONTGOMERY		OIL	0	UNK
022288	GENERAL MOTORS /	MONTGOMERY	SEWER	OIL	0	UNK
022288	SOLVENT RESOURCE	WARREN		RCRA WASTE D001	105	LBS
022388	ARMCO INC	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
022488	HAROLD OSTROV	MONTGOMERY	SANITARY SEWER	SEWAGE	0	UNK
022588	NEIGHBORS	HAMILTON		FUEL OIL	100	GAL
022788	ARMCO STEEL	BUTLER	DICKS CREEK	CAUSTIC SODA	3000	GAL
022988	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL 24 PPM	90	GAL
030188	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	5	GAL
030188	BROOKVILLE WWTP	MONTGOMERY	WOLF CREEK	FUEL OIL	0	UNK
030188	UNKNOWN	MONTGOMERY		PHOTO FIXER	55	GAL
030288	GARFIELD PLACE DOCTORS	HAMILTON		FUEL OIL	75	GAL
030288	GENERAL MOTORS / DELCO	MONTGOMERY		SOLUBLE OIL	10	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
030288	GENERAL MOTORS / DELCO	MONTGOMERY	SANITARY SEWER	BRAKE FLUID	490	GAL
030688	MORHEAT COMPANY	HAMILTON		FUEL OIL	25	GAL
030788	UNKNOWN	MONTGOMERY	TOMS RUN	FUEL OIL	0	UNK
030788	ARMCO STEEL	BUTLER	DICKS CREEK	EMULSIFIED OIL	0	UNK
030888	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
030988	RYDER TRUCK	HAMILTON		WASTE OIL	50	GAL
030988	ARMCO INC	BUTLER	DICKS CREEK	AMMONIUM WATER	0	UNK
030988	HARISON THOMAS DROP	MONTGOMERY		DIESEL FUEL	100	GAL
031088	QUALITY CIRCUITS	MONTGOMERY		SULFURIC ACID	55	GAL
031188	MIAMI VALLEY HOSPITAL	MONTGOMERY		ETHYLENE OXIDE	2	LBS
031188	ELDAR LANDFILL	HAMILTON		METHANE	0	UNK
031588	UNKNOWN	HAMILTON		ETHYLENE GLYCOL	75	GAL
031888	UNKNOWN	BUTLER	UNKNOWN	GREEN SUBSANCE	0	UNK
032188	RYDER TRUCK	MONTGOMERY		DIESEL FUEL	200	GAL
032188	AMACO	BUTLER	DICKS CREEK	FLUSHING LIQUID	0	UNK
032288	UNKNOWN	MONTGOMERY		DIESEL FUEL	50	GAL
032188	MRS TINA ALUISE	HAMILTON		ASBESTOS	0	UNK
032288	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL 50 PM	1	GAL
032288	NEW PARIS OIL CO	WARREN		GASOLINE	0	UNK
032388	DAYTON POWER & LIGHT	MONTGOMERY		10C MINERAL OIL	2	GAL
032388	VAN CLEVE ELEMENTARY	MONTGOMERY		ASBESTOS	0	NOS
032488	ARMCO INC	BUTLER	DICKS CREEK	SULFURIC ACID	30	GAL
032588	GENERAL MOTORS /	MONTGOMERY	STORM SEWER	WASTE WATER	150	GAL
032588	BEAVER TREE SERVICE	HAMILTON	SEWERS	GASOLINE	0	UNK
032588	TRUCK STOP OF DAYTON	MONTGOMERY	DITCH	ANTIFREEZE	0	UNK
032588	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	18	GAL
032788	UNKNOWN	MONTGOMERY	SEWAGE	SEWAGE	0	UNK
032988	SOHIO	HAMILTON		GASOLINE	0	UNK
033088	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	GAS	0	UNK
033088	NORFOLK & WESTERN RR	PREBLE		FUEL OIL	0	UNK
040188	UNION 76 OIL CO	MONTGOMERY		GASOLINE	0	UNK
040288	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
040488	COLVIN CONSTRUCTION	MONTGOMERY		GASOLINE	0	UNK
040488	NEIGHBOR	MONTGOMERY		WASTE OIL	0	UNK
040588	UNKNOWN	MONTGOMERY		SEWAGE	0	UNK
040588	CINCINNATI MILACRON	HAMILTON		CAUSTIC WASTE	0	UNK
040588	UNKNOWN	PREBLE		UNKNOWN	0	UNK
040688	CHAMPION PAPER	BUTLER	GREAT MIAMI	AMMONIA NITRATE	0	UNK
040788	MOTHERS GARAGE	HAMILTON	STORM SEWER	OIL	0	UNK
040888	MEAD MATERIALS PROD	BUTLER	PADDYS RUN	URANIUM NITRATE	300	GAL
040888	UNKNOWN	MONTGOMERY	UNNAMED CREEK	OIL	0	UNK
040888	NU-TONE CORP.	HAMILTON		PERCHLOROETHYLEN	40	GAL
041088	CITIZEN	MONTGOMERY		GASOLINE	5	GAL
041188	H V C CHEMICAL CO.	BUTLER		POTASSIUM	2500	GAL
041188	UNKNOWN	MONTGOMERY		WASTE OIL	0	UNK
041888	A T & T	HAMILTON		HEATING OIL	0	UNK
041988	LANDLORDS	HAMILTON		MOTOR OIL	55	GAL
042588	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAL
042388	SOUTHERN RAILROAD	HAMILTON		ACETONE	0	UNK
042388	PERF-A LAWN	BUTLER		LAWN CHEMICAL MIX	45	GAL
042688	MR. CLARENCE REESE	HAMILTON		OIL	0	UNK
042688	AAMCO TRANSMISSION	MONTGOMERY		TRANSMISSION FLUID	100	GAL
042988	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
043088	EASTERN LANE BOWLING	WARREN	UNKNOWN CREEK	BLACK STUFF	0	UNK
051088	MONARCH MARKING	MONTGOMERY		DIESEL FUEL	60	GAL
050288	HARRIS-THOMAS DROP	MONTGOMERY	DITCH	#2 DIESEL FUEL	2000	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
050288	CCC TRUCKING CO	BUTLER		DIESEL FUEL	0	UNK
050288	MRS CAMERON	BUTLER		FUEL OIL	0	UNK
050288	UNKNOWN	BUTLER		SOLVENT	1000	GAL
050288	JOHNSON'S SALOON	BUTLER	HYDRAULIC	CONCRETE	0	UNK
050288	UNKNOWN	WARREN		SULFURIC ACID	1	GAL
050388	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	PAPER WASTE	0	UNK
050388	MIAMI PAPER CO.	MONTGOMERY	UNNAMED CREEK	WHITE STUFF	0	UNK
050588	DRACKETT CO.	HAMILTON		VANISH-PLURONIC	30	GAL
050688	PARKER HANNIFIN	PREBLE		METAL PLATING	0	UNK
050988	UNKNOWN	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNK
050988	DAYTON WATER PLANT	MONTGOMERY		CALCIUM	0	UNK
050988	UNKNOWN	HAMILTON	UNNAMED CREEK	OIL	0	UNK
050988	MOBIL OIL CO	HAMILTON		UNKNOWN	0	UNK
050988	UNITED DAIRY FARMERS	HAMILTON		GASOLINE	0	UNK
051088	UNKNOWN	HAMILTON	CILLY CREEK	WHITE STUFF	0	NK
051088	MONARCH MARKING	MONTGOMERY		DIESEL FUEL	60	GAL
051088	GENERAL MOTORS / DELCO	MONTGOMERY		ASBESTOS	1	BBL
051188	UNKNOWN	HAMILTON	LICK RUN	UNKNOWN	0	UNK
051188	GENERAL MOTORS / TRUCK	MONTGOMERY		PAINT	55	GAL
051388	CERTIFIED OIL CO	WARREN		MOTOR OIL	10	GAL
051388	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAL
051388	HILTON DAVIS CHEMICAL	HAMILTON		SMOKE	0	UNK
051688	UNKNOWN	MONTGOMERY	DILL CREEK	DARK SUBSTANCE	0	UNK
051688	MR WEILER	HAMILTON	OAK CREEK	OIL	5	QTS
051688	UNKNOWN	HAMILTON	GREAT MIAMI	BROWN & BLACK	0	UNK
052088	PETROLEUM TRADERS	WARREN	DITCH	DIESEL FUEL	500	GAL
052088	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	10	GAL
052088	CINCINNATI GAS &	BUTLER		LUBRICATING OIL	220	GAL
052088	GRISMER TIRE CO.	MONTGOMERY	WOLF CREEK	MOTOR OIL	0	UNK
052188	FRISCH'S RESTARUANT	MONTGOMERY	HOLES CREEK	CHEMEX CONCRETE	0	UNK
052388	VALLEYVIEW	MONTGOMERY		GASOLINE	70	GAL
052388	R WITE	HAMILTON	STORM SEWER	LUBE OIL	0	UNK
052488	JOHNSON WRECKING	MONTGOMERY		KEROSENE	0	UNK
052488	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
052488	HAMILTON WWTP	BUTLER	GREAT MIAMI	RED STUFF	0	UNK
052488	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	15	GAL
052488	STAMPING TECHNOLOGIES	HAMILTON		LACOUR THINNER	12	GAL
052588	UNKNOWN	HAMILTON	BLUE ROCK	FUEL OIL	0	UNK
052588	UNKNOWN	HAMILTON		HYDROCHLORIC ACID	1	GAL
052688	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAL
052788	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	3	GAL
052788	SIEMENS ENERGY &	BUTLER		TRICHLORETH	0	UNK
052888	KROGER CO. /	HAMILTON		DIESEL FUEL	100	GAL
052988	METROPOLITAN SEWER	HAMILTON	SMALL CREEK	SEWAGE	0	UNK
053188	DAYTON SCHOOL SYSTEM	MONTGOMERY	SANITARY SEWER	PCB	0	UNK
053188	ARMCO STEEL	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
053188	THREE TRUCKS	MONTGOMERY		#2 DIESEL FUEL	100	GAL
060788	UNKNOWN	BUTLER	GREAT MIAMI	UNKNOWN	0	UNK
060188	C & N EVANS TRUCKING	MONTGOMERY		DIESEL FUEL	30	GAL
060188	TORCO	HAMILTON		DURSBAN	10	GAL
060188	CHEM CO	PREBLE		SOLVENT	1500	GAL
060288	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	20	GAL
060288	W R GRACE CO.	HAMILTON		HYDROCHLORIC ACID	0	UNK
060388	SOMETHING SPECIAL	HAMILTON	WATER SUPPLY	WATER IS BLUE	0	UNK
060588	DUPONT CHEMICAL CO	HAMILTON		SULFUR TRIOXIDE	0	UNK
060588	CSX TRANSPORTATION	HAMILTON		METHYL ETHYL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
060788	INTERNATIONAL	HAMILTON		DIESEL FUEL	50	GAL
060988	HAMILTON WWTP	BUTLER	GREAT MIAMI	RED WATER	0	UNK
060988	STAN'S BODY SHOP	PREBLE		ODOR OF PAINT	0	UNK
060988	UNKNOWN	HAMILTON	GREAT MIAMI	BROWN ORANGE	0	UNK
061088	WESTINGHOUSE ELECTRIC	HAMILTON		URANIUM 238	0	UNK
061188	AMOCO OIL CO. / SERVICE	HAMILTON		GASOLINE	50	GAL
061488	WILLIAM ENNEKING	HAMILTON	DITCH	PAINT	0	UNK
061588	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	2	GAL
061688	TRAFFIK SERVICES CO	HAMILTON		UNKNOWN	0	U
061788	SUPER AMERICA	HAMILTON		GASOLINE	5	GAL
060288	UNKNOWN	BUTLER	HYDRAULIC	UNKNOWN	0	UNK
061788	UNKNOWN	MONTGOMERY	STORM SEWER	BLUE STUFF	0	UNK
061788	BLACKER INKS	BUTLER	UNKNOWN CREEK	RUST WATER	2000	GAL
061788	CHRYSLER CORP /	MONTGOMERY	GREAT MIAMI	CUTTING OIL	100	GAL
061788	GENERAL MOTORS / DELCO	MONTGOMERY		FUEL OIL	0	UNK
062188	CINCINNATI GAS &	HAMILTON	STORM SEWER	TRANSFORMER OIL	1	GAL
062288	GENERAL MOTORS /	MONTGOMERY	STORM SEWER	XYLENE	2500	GAL
062288	MOTHER NATURE	MONTGOMERY	GREAT MIAMI	FISHKILL	0	UNK
062288	WAGNER SMITH	MONTGOMERY		GASOLINE	2	GAL
062288	DOVER CORP	BUTLER	DITCH	CUTTING OIL	200	GAL
062488	LYKINS OIL CO.	WARREN		GASOLINE	2750	GAL
062488	DAYTON POWER & LIGHT	MONTGOMERY		ASKAREL	0	UNK
062788	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
062888	GENERAL MOTORS /	MONTGOMERY	STORM SEWER	HCL SOLUTION	200	GAL
063088	AMERICAN MACHINE	MONTGOMERY		GASOLINE	0	UNK
063088	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
070188	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	NITRIC ACID	0	UNK
070688	BUCKEYE COMPRESSOR	MONTGOMERY		OIL	0	UNK
070688	JOE AND MARGARETS	MONTGOMERY		GREASE	0	UNK
070688	ARMCO INC	BUTLER		PICKLE LIQUOR	200	GAL
070688	SUPER VALUE STORES INC	MONTGOMERY		DIESEL FUEL	50	GAL
070788	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	12	GAL
070788	MONTGOMERY CO	MONTGOMERY		CEMENT	0	UNK
070788	AMACO	BUTLER	DICKS CREEK	SPENT PICKLE LIQUOR	1880	GAL
070788	SOUTHERN RAILROAD	HAMILTON		ACID SOLUTION	2	GAL
070788	UNKNOWN	MONTGOMERY		JET FUEL	15	GAL
070788	DAYTON POWER & LIGHT	MONTGOMERY		PCB FLUID	4	GAL
070888	AMERICAN ENGINE &	MONTGOMERY		GASOLINE	0	UNK
070888	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	18	GAL
070888	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	10	GAL
071088	FAT DADDY'S SERVICE	MONTGOMERY	DITCH	DIESEL FUEL	100	GAL
071188	L B H PETROLEUM	PREBLE		DIESEL FUEL	217	GAL
071188	CINCINNATI GAS &	HAMILTON	STORM SEWER	PCB OIL	10	GAL
071288	AMERICAN ENGINEERS	MONTGOMERY		GASOLINE	0	UNK
071288	LORDS CORP	MONTGOMERY		NITRIC ACID	2	GAL
071488	OHIO CRANE & HOIST	BUTLER		UNKNOWN CHEMICAL	0	UNK
071588	SUB CAFE	HAMILTON		GREASE	55	GAL
071688	ALLISON HIRTZ	HAMILTON		MERCURY	0	UNK
071888	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	10	GAL
071888	SORG PAPER CO.	BUTLER	HYDRAULIC	BRINE	0	UNK
072088	PRECISION METAL TOOL	HAMILTON	STORM SEWER	OIL	0	UNK
072188	SPEEDWAY OIL CO	MONTGOMERY		GASOLINE	1100	GAL
072188	DAYTON	MONTGOMERY		DIESEL FUEL	500	GAL
072288	OAKWOOD	MONTGOMERY	GREAT MIAMI	GASOLINE	20	GAL
072591	LESTON CORP.	MONTGOMERY		WASH WATER	5	DMS
072588	CSX TRANSPORTATION	MONTGOMERY		TANKERS	3	ITM

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
072688	UNKNOWN	BUTLER		VARNISH	165	GAL
072688	CLARK OIL CO.	MONTGOMERY	STORM SEWER	GASOLINE	0	UNK
072688	UNIVERSITY OF DAYTON	MONTGOMERY		UNKNOWN	0	UNK
072688	CHEVRON U S A SLUDGE	HAMILTON		SLUDGE	0	UNK
072888	SLURRY SEAL CO	MONTGOMERY		ASPHALT EMULSIFIER	0	UNK
072888	HAMILTON WWTP	BUTLER	GREAT MIAMI	FISHKILL	0	UNK
080288	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 6L PPM	20	GAL
080188	UNKNOWN	HAMILTON		DIAZINON	0	UNK
080388	DIGITRON TOOL CO.	MONTGOMERY		DRUMS	55	GAL
080388	MRS CITIZEN	PREBLE	SEWERS	COPPER SULFATE	30000	GAL
080488	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	4	GAL
080688	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	8	GAL
080888	WITHERSPOON AUTOS	HAMILTON		MOTOR OIL	0	UNK
080888	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	0	UNK
080888	HIGHWAY TRANSPORT INC	WARREN		SANTICIZER (PROD #	2200	GAL
080988	ANDREW JERGENS	HAMILTON		SULFURIC ACID	3000	LBS
080988	BECKETT PAPER CO.	BUTLER	STORM SEWER	WHITE STUFF	200	PPM
080988	WEST HILLS FORD	HAMILTON	UNKNOWN	MOTOR OIL	0	UNK
080988	FLEMMINGSBURG	HAMILTON		ASPHALT	0	UNK
081088	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAL
081188	U. S. EPA	HAMILTON		MERCURY	3	LBS
081188	ARMCO INC	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
081288	PROCTER & GAMBLE	HAMILTON		FUEL OIL #2	0	UNK
081688	TERRY MATERIALS	MONTGOMERY	BEAR CREEK	ASPHALT EMULSION	5000	GAL
081688	GENERAL MOTORS / DELCO	MONTGOMERY	STORM SEWER	SLUDGE	200	GAL
081688	QUEEN CITY BARREL	HAMILTON		WASTE CHEMICALS	0	UNK
081688	PARKER HANNIFIN	PREBLE		PLATING CYANIDE	15	GAL
081788	UNKNOWN	BUTLER		SEWAGE	0	UNK
081888	UNKNOWN	PREBLE	DRAINAGE DITCH	GASOLINE	0	UNK
081888	CITIZEN	BUTLER	STORM SEWER	WASTE OIL	0	UNK
081888	ISOTEC INC	MONTGOMERY		SOLVENT	1	GAL
081888	CINCINNATI GAS &	HAMILTON		MINERAL OIL	0	UNK
081888	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	0	UNK
081988	ROGER HECK	HAMILTON		DIESEL FUEL	100	GAL
082288	UNKNOWN	HAMILTON		GASOLINE	0	UNK
082288	CINCINNATI TECHNICAL	HAMILTON	SANITARY SEWER	PESTICIDES	0	UNK
082488	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL 52	18	GAL
082488	UNKNOWN	MONTGOMERY	SMALL CREEK	HYDRAULIC OIL	4	GAL
082588	SWIFTY OIL CO	MONTGOMERY		GAS	0	UNK
082588	V A MEDICAL CENTER	MONTGOMERY		PCB OIL	100	GAL
082588	HILTON DAVIS CO.	HAMILTON		NITRIC ACID	0	UNK
082588	UNKNOWN	MONTGOMERY		OIL	0	UNK
082688	GENERAL MOTORS / DELCO	MONTGOMERY		HYDROGEN FLUORIDE	35	GAL
082688	CONSOLIDATED	HAMILTON	STORM SEWER	DIESEL FUEL	100	GAL
082788	MR RAY TERRY	BUTLER		FUEL OIL	0	UNK
082988	DOVER CORP	BUTLER	UNKNOWN	SOLUBLE OIL	2	LBS
082988	TRI STATE RIGGING	HAMILTON		HAZARDOUS WASTE	0	UNK
082988	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER SLUDGE	0	UNK
083188	PMC SPECIALTIES GROUP	HAMILTON		SODIUM HYDROXIDE	200	GAL
083188	CULLIGAN	MONTGOMERY	SEWERS	SALT BRINE	0	UNK
083188	ZERO BREEZE INC	HAMILTON	SEWER	TAR	0	UNK
083188	DICONIX	MONTGOMERY		COAL STRIPPER	55	GAL
083188	DAYTON ACCUSTAR	MONTGOMERY		LUBRICATING OIL	40	GAL
083188	UNKNOWN	HAMILTON	UNNAMED CREEK	ANTIFREEZE	30	GAL
090188	MR STURGILL	MONTGOMERY	SEWER	OIL	3	GAL
090188	UNKNOWN	HAMILTON		SOLVENT	60	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
090388	GENERAL MOTORS /	MONTGOMERY		MURIATIC	0	UNK
090388	UNKNOWN	BUTLER		UNKNOWN	0	UNK
090588	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	RED DYE	0	UNK
090888	GENERAL MOTORS /	MONTGOMERY		HYDROCHLORIC ACID	875	GAL
090788	LAZARUS	HAMILTON		#2 FUEL OIL	0	UNK
090788	LAZARUS /SALEM MALL	MONTGOMERY		DIESEL FUEL	0	UNK
090788	UNKNOWN	HAMILTON		SOLVENT WASTE	455	GAL
090888	U. S. NAVAL WEAPONS	HAMILTON		COPPER CHLORIDE	8	GAL
090888	UNKNOWN	HAMILTON	UNNAMED CREEK	ANTIFREEZE	0	UNK
091088	WYLER WELDING	MONTGOMERY		CARBON DIOXIDE	244	CFT
091088	B A S F / INMONT DIV /	HAMILTON		ETHYL ACETATE	108	GAL
091088	HENDY INC	HAMILTON		DIESEL FUEL	50	GAL
091288	MARATHON OIL CO	WARREN		#2 FUEL OIL	42000	GAL
091288	VARIOUS CITIZENS	HAMILTON	STORM SEWER	OIL	0	UNK
091288	UNKNOWN	HAMILTON	UNNAMED CREEK	GASOLINE	0	UNK
091488	UNKNOWN	MONTGOMERY		CYANIDE EGG	0	UNK
091688	SOHIO	HAMILTON		GASOLINE	800	GAL
091688	ARCHITECTUAL	HAMILTON	STORM SEWER	PAINT STRIPPER	0	UNK
091888	NIEMAN PLUMBING	HAMILTON		DIESEL FUEL	150	GAL
091988	UNKNOWN	HAMILTON		DIESEL FUEL	50	GAL
091988	PROCTOR & GAMBLE	MONTGOMERY		#2 HEATING FUEL	0	UNK
091988	UNKNOWN	PREBLE	SMALL STREAM	UNKNOWN	0	UNK
091988	DAYTON POWER & LIGHT	MONTGOMERY	GREAT MIAMI	WASTE WATER	8000	GAL
092288	PARKLAWN FARMHOUSES	MONTGOMERY	UNKNOWN CREEK	PAINT THINNER	0	UNK
092288	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	20	GAL
092488	BIRCHWOOD SWIM POOL	MONTGOMERY	UNKNOWN CREEK	CHLORINE WATER	0	UNK
092688	PMC SPECIALTIES GROUP	HAMILTON		CHLORINE	7	LBS
092688	UNKNOWN	BUTLER		UNKNOWN	10	GAL
092688	WHITEFORD	MONTGOMERY		DIESEL FUEL	40	GAL
092888	SUPER AMERICA NO 5598	WARREN		GASOLINE	7	GAL
092888	JMI TRANSPORT	MONTGOMERY		PARA	100	LBS
092988	BEE HICKS /RENTER	HAMILTON		MOTOR OIL	0	UNK
092988	RITTER TRUCKING	HAMILTON	UNKNOWN CREEK	ASPHALT	3000	GAL
093088	CINCINNATI FD	HAMILTON	STORM SEWER	JET FUEL	20	GAL
100388	FRANKLIN BOXBOARD	WARREN	CLEAR CREEK	#6 FUEL OIL	5	GAL
100388	HENDERSON TURF FARM	WARREN		SEWAGE	0	UNK
100488	MACINTOSH TOWING CO	HAMILTON		MOTOR OIL	220	GAL
100588	D O E / FERNALD FEED	HAMILTON		URANIUM	250	GAL
100588	MORAINE ELECTRIC DEPT	MONTGOMERY		PCB OIL 600000 PPM	0	UNK
100788	UNOCAL CHEMICAL	BUTLER	GREAT MIAMI	SOLVENT WASTE	400	GAL
101088	LEASEWAY	BUTLER		ANHYDROUS	0	UNK
101188	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	18	GAL
101188	ARSCO INC.	HAMILTON		PAINT	320	GAL
101188	GENERAL MOTORS / DELCO	MONTGOMERY		WASTE WATER	0	UNK
101388	G T E INC.	MONTGOMERY		HYDRAULIC FLUID	5	GAL
101288	MANVILLE CORP / FOREST	HAMILTON		TOLUENE	0	UNK
101588	UNKNOWN	HAMILTON		MEK SOLVENTS	500	GAL
101488	MONTGOMERY COUNTY	MONTGOMERY	HOLES CREEK	SEWAGE	0	UNK
101488	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	SUSPENDED SOLIDS	14000	BS
101588	HUBER HEIGHTS BUILDERS	MONTGOMERY	DRY LICK RUN	WATER WATER	0	UNK
102188	BOATHOUSE SALES	MONTGOMERY		GASOLINE	0	UNK
102188	BONDED OIL	MONTGOMERY	UNNAMED CREEK	GASOLINE	0	UNK
102588	MORTON THIOKOL /	HAMILTON		CHLOROETHANE	300	LBS
102588	R J STEVENSON INC	WARREN		GASOLINE	300	GAL
102688	UNKNOWN	HAMILTON	SANITARY SEWER	CHEMICALS	0	UNK
102688	UNKNOWN	HAMILTON		RAW SEWAGE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
102788	CINCINNATI ELECTRIC	HAMILTON	STORM SEWER	PCB OIL 250 PPM	5	GAI
102788	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAI
102888	GENERAL LOGISTICS	WARREN	CLEAR CREEK	DIESEL FUEL	160	GAI
103088	COLUMBIA OIL	BUTLER	STORM SEWER	DIESEL FUEL	30	GAI
103088	COMTRANS	MONTGOMERY	STORM	DIESEL FUEL	75	GAI
103188	SOHIO	BUTLER		#2 FUEL OIL	3	GAI
103188	VERONA WWTP	PREBLE	SWAMP CREEK	SEWAGE	0	UNK
121688	COMMERCIAL INTERIOR	BUTLER		LACQUER THINNER	0	UNK
110188	KAISER ESTECH	HAMILTON		NITROUS OXIDE	0	UNK
110388	UNKNOWN	MONTGOMERY		DIESEL FUEL	0	UNK
110388	MIAMI PAPER CO.	MONTGOMERY		AMMONIA NITROGEN	0	UNK
110388	SOUTHERN RAILWAY	HAMILTON		COCA COLA SYRUP	1	GAI
110488	BREWER & SONS	MONTGOMERY	DITCH	DIESEL FUEL	150	GAI
110588	UNKNOWN	BUTLER	GREAT MIAMI	SHEEN	0	UNK
110688	UNKNOWN	MONTGOMERY	SEWER SYSTEM	GASOLINE	8	GAI
110988	CHRYSLER CORP /	MONTGOMERY	GREAT MIAMI	HYDRAULIC OIL	35	GAI
110988	TELOS FIELD ENGINEERING	MONTGOMERY		CAPACITOR FLUID	1	QTS
110988	GENERAL MOTORS /	MONTGOMERY		WASTE WATER	0	UNK
110988	OMEGA OIL CO	MONTGOMERY		GASOLINE	0	UNK
110988	OLD LONGVIEW STATE	HAMILTON		TRANSFORMER OIL	0	UNK
110988	TRAILERS WORLD FLEA	WARREN	UNNAMED	SEWAGE	0	UNK
111188	UNKNOWN	HAMILTON	CREEK	ACRYLIC COATING	20	GAI
111188	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	AMMONIA	0	UNK
111288	FAIRFIELD WWTP	BUTLER		SLUDGE	130000	GAI
111588	ARMCO STEEL	BUTLER	DICKS CREEK	OIL	300	GAI
111588	ALBRIGHT & WILSON	HAMILTON		PHOSPHORUS	40	LBS
111688	RUMPKE DISPOSAL	HAMILTON		DIESEL FUEL	75	GAI
111688	UNKNOWN	BUTLER		BLACK SUBSTANCE	0	UNK
111688	ELIZABETH ARDEN INC	HAMILTON		NAIL POLISH	2	DMS
111788	CHRYSLER CORP / DAYTON	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	0	UNK
111688	UNIVERSITY OF DAYTON	MONTGOMERY		#2 HEATING FUEL	0	UNK
112188	STANDARD OIL CO	HAMILTON	STORM SEWER	GASOLINE	0	UNK
111688	CHRYSLER CORP	MONTGOMERY	GREAT MIAMI	PAINT SLUDGE	500	GAI
112388	HOHENWALD TRUCK LINES	MONTGOMERY		DIESEL FUEL	250	GAI
112388	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	3	GAI
112388	MOODY'S DRILLING	HAMILTON		CHROMIC ACID	20	GAI
112588	UNKNOWN	HAMILTON	UNKNOWN CREEK	GREEN STUFF	0	UNK
112688	ARMCO INC.	BUTLER		PHENOL	0	UNK
112988	MR. DAN GRUBBS	MONTGOMERY		KEROSENE	0	UNK
113088	APPLETON PAPERS	MONTGOMERY		METHYLETHYLKETON	100	GAI
120188	ARMCO INC	BUTLER	DICKS CREEK TRIB	LUBE OIL	0	UNK
120188	WALL PAPERS TO GO	MONTGOMERY		#2 FUEL OIL	0	UNK
120588	UNKNOWN	MONTGOMERY		DIESEL FUEL	50	GAI
120688	DAYTON ELECTRIC DEPT	MONTGOMERY		PCB OIL	0	UNK
120588	UNKNOWN	BUTLER	GREAT MIAMI	UNKNOWN	0	UNK
120788	UNKNOWN	HAMILTON	GREAT MIAMI	BLACK WATER	0	UNK
120988	UNKNOWN	BUTLER		UNKNOWN	0	UNK
121288	GENERAL MOTORS / DELCO	MONTGOMERY		CHROME	0	UNK
121388	CINCINNATI GAS &	HAMILTON		MINERAL OIL	10	GAI
121388	CINCINNATI GAS &	HAMILTON		MINERAL OIL	4	GAI
121688	COMMERCIAL INTERIOR	BUTLER		LACQUER THINNER	0	UNK
121688	SUPER AMERICA	MONTGOMERY		GASOLINE	4	GAI
121888	UNKNOWN	BUTLER		MINERAL OIL	0	UNK
122088	UNKNOWN	MONTGOMERY	DITCH	OIL	0	UNK
122088	UNKNOWN	BUTLER		LATEX PAINT	4	GAI
122088	SENCO PRODUCTS	HAMILTON		XYLENE	329	GAI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
122188	CHEM-SERV	BUTLER		LIQUID WASTE	0	UNK
122188	SORG PAPER CO.	BUTLER		LACTAL SPIRITS	0	UNK
122188	GENERAL MOTORS	MONTGOMERY		CUTTING OIL	0	UNK
122388	DOVER CORP / OPW DIV	BUTLER	STORM SEWER	CUTTING OIL	30	GAL
122488	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	25	GAL
123088	BAXTER HEALTH CARE	PREBLE		METHENOL	1200	LBS
123088	LESTON CORP.	MONTGOMERY		WASTE ACID	0	UNK
123088	MINI-MART	HAMILTON		GASOLINE	4600	GAL
123188	CARGILL INC	MONTGOMERY	GREAT MIAMI	CORN STARCH	0	UNK
010489	UNKNOWN	BUTLER	GREAT MIAMI	GREEN WATER	0	UNK
010589	U. S. DEPT OF DEFENSE	HAMILTON		JET FUEL	100	GAL
011089	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
011289	UNKNOWN	HAMILTON		SAND	600	LBS
011389	CINCINNATI VULCAN CO	HAMILTON		HYDRAYKUC IUK	50	GAL
011889	MR. CHARLIE LAGORY	HAMILTON	STORM SEWER	MOTOR OIL	0	UNK
011989	CSX TRANSPORTATION	BUTLER		FUEL OIL	200	GAL
012189	UNKNOWN	HAMILTON	STORM DRAIN	DIESEL FUEL	30	GAL
012089	W R GRACE CO. /	HAMILTON		HYDROCHLORIC ACID	0	UNK
012789	UNOCAL CHEMICAL	BUTLER		ETHYL ACETATE	1265	GAL
012789	JACK GREY TRANSPORT	HAMILTON		SULFURIC ACID	50	GAL
020189	ARMCO INC	BUTLER		SPENT PICKLE LIQUOR	300	GAL
020189	PLEASANT RUN FARM	HAMILTON	UNKNOWN	UNKNOWN	0	UNK
020389	UNKNOWN	HAMILTON		ALUMINUM	1	ITM
020589	JOHN J KEEHNER	BUTLER	DITCH	DIESEL FUEL	50	GAL
020789	CINCINNATI STREET DEPT	HAMILTON		DIESEL FUEL	100	GAL
021089	B A S F / INMONT DIV /	HAMILTON		FORMALDEHYDE	20	GAL
021389	JOHN HILL TRUCKING	BUTLER	UNKNOWN	DIESEL FUEL	100	GAL
022189	MR. CRILLEY	HAMILTON		FUEL OIL	40	GAL
022389	PROCTER & GAMBLE	HAMILTON		JET FUEL	18000	GAL
022389	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	0	UNK
022889	HILTON DAVIS CO.	HAMILTON	SANITARY SEWER	ANILINE	200	GAL
030889	ALBRIGHT & WILSON	HAMILTON	PADDYS RUN	CHEMICALS	100	LBS
031689	HVC-DALY	BUTLER		PERCHLOROETHYLEN	0	UNK
031789	GARNER TRUCKING	HAMILTON		DIESEL FUEL	0	UNK
032089	WARD WAY FUELS INC	HAMILTON		FUEL OIL	0	UNK
032189	UNKNOWN	HAMILTON	SEWER	UNKNOWN	0	UNK
032289	ST. JOHNSBURY TRUCKING	HAMILTON		PAINT	55	GAL
032389	UNKNOWN	HAMILTON	SMALL CREEK	GREEN WATER	0	UNK
032589	SILVER OIL CO	HAMILTON		GASOLINE	0	UNK
032889	JOHN NOLAN FORD	HAMILTON		MOTOR OIL	0	UNK
032889	MR. MARK KING	HAMILTON	GREAT MIAMI	BLUE STUFF	0	UNK
033089	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
040589	WILSON PKG MARATHON	HAMILTON		GASOLINE	0	UNK
040689	CINCINNATI GAS &	HAMILTON		MINERAL OIL	25	GAL
041189	GREENE'S LAWN COMPANY	HAMILTON	STORM SEWER	FERTILIZER MIX	75	GAL
041289	STANDARD OIL CO	HAMILTON		GASOLINE	0	UNK
041289	ARMCO STEEL	BUTLER		COKE OVEN GAS	0	UNK
041289	CAR X	HAMILTON	UNKNOWN DITCH	GREEN WATER	0	UNK
041789	UNKNOWN	HAMILTON	CAMEN CREEK	SOAP	0	UNK
041789	MOTHER NATURE	HAMILTON	TAYLOR CREEK	BLACK STUFF	0	UNK
041989	WATKINS TRUCK LINES	BUTLER	DITCH	DIESEL FUEL	100	GAL
041989	CINCINNATI GAS &	BUTLER		MERCURY	0	UNK
041989	FERGUSON VAN LINES	BUTLER	DRAINAGE DITCH	DIESEL FUEL	75	GAL
042489	UNKNOWN	HAMILTON	STORM DRAIN	OIL	0	UNK
042689	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
042689	QUANTUM CHEMICAL	HAMILTON		OCTANE	300	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
042689	MRS CROSBY	HAMILTON	UNKNOWN CREEK	MANURE	0	UNK
042789	UNITED DAIRY FARMERS	HAMILTON		GASOLINE	15	GAL
042889	PORTS PETROLEUM	HAMILTON		GASOLINE	1000	GAL
042889	PORTS PETROLEUM	HAMILTON		GASOLINE	1000	GAL
042989	UNKNOWN	HAMILTON	STORM SEWER	GASOLINE	0	UNK
042989	MOTHER NATURE	BUTLER		CHEMICALS	0	UNK
050189	CYCHEM INC.	HAMILTON		CHLORINE	230	LBS
050189	CHAMPION	BUTLER		SULFURIC ACID	250	GAL
050189	CYCHEM INC.	HAMILTON		CHLORINE	230	LBS
050389	CYCHEM INC.	HAMILTON		CHLORINE	0	UNK
050389	ROJACK TRANSPORTA INC	BUTLER		DIESEL FUEL	100	GAL
050489	SCHWEITZER	BUTLER		DIESEL FUEL	60	GAL
050989	ROYAL PAPER	BUTLER		DIESEL FUEL	75	GAL
051289	VELVA SHEEN	HAMILTON		MINERAL SPIRITS	0	UNK
051589	KOEHLER GRAPHICS	HAMILTON	SANITARY SEWER	INDUSTRIAL WASTE	0	UNK
051789	FRANKLIN DIESEL SERVICE	BUTLER		DIESEL FUEL	0	UNK
051789	FUEL MART	HAMILTON	UNNAMED	GASOLINE	30	GAL
051889	UNKNOWN	HAMILTON		PHOSPHORIC ACID	10	GAL
051989	SUPER AMERICA	HAMILTON	SEWER	GASOLINE	23	GAL
052289	SORG PAPER CO.	BUTLER	MIDDLETOWN	PAPER MILL WASTE	10000	GAL
052289	ARMCO STEEL	BUTLER	DICKS CREEK	WASTE WATER	2000	GAL
052489	UNKNOWN	HAMILTON		WASTE OIL	110	GAL
052789	TRI STATE DRIVING	BUTLER		WASTE CHEMICAL	0	UNK
052889	HOT SPRINGS CAR WASH	HAMILTON	TAYLOR CREEK	SOAP	0	UNK
050989	UNKNOWN	HAMILTON		GASOLINE	0	UNK
051089	COMMERCIAL INTERIOR	BUTLER		PAINT	0	UNK
051189	HAZARDOUS MATERIAL	HAMILTON		PCB CONTAMINATED	0	UNK
060289	UNKNOWN	BUTLER		DRUMS	3	DMS
060689	EXQUISITE DRY CLEANERS	HAMILTON		#2 FUEL OIL	0	UNK
060689	MANNING EXPRESS	HAMILTON		DIESEL FUEL	100	GAL
060689	WATKINS TRUCKING	BUTLER		DIESEL FUEL	20	GAL
060689	RIGGS BUS CO	HAMILTON		MOTOR OIL	0	UNK
060689	ROBERT RUST	HAMILTON	DITCH	FUEL OIL	0	UNK
060689	SIGN WORLD	HAMILTON		CONCRETE	0	UNK
060789	NORWOOD CHROME	HAMILTON		CYANIDE PLATING	20000	LBS
060889	UNKNOWN	HAMILTON	SEWERS	GASOLINE	0	UNK
060989	CINCINNATI GAS &	BUTLER		MINERAL OIL	1	GAL
060989	CITIZEN	HAMILTON		GASOLINE	0	UNK
061389	ROYALTY TRUCKING	HAMILTON	STORM SEWER	GASOLINE	50	GAL
061589	CITIZEN	HAMILTON	STORM SEWERS	GASOLINE	5	GAL
061989	D O E / FEED MATERIALS	HAMILTON		1,1,1	1	OZ
061789	WILLIE FOWLERS	HAMILTON	UNNAMED CREEK	UNKNOWN LIQUID	0	UNK
062089	FRED W HAMILTON	HAMILTON		MOTOR OIL	40	GAL
062089	UNKNOWN	HAMILTON	WHITEWATER	DIESEL FUEL	0	UNK
062089	D O E / FEED MATERIALS	BUTLER		GASOLINE	0	UNK
062089	GENERAL POLYMER	HAMILTON	CILLEY CREEK	SOLVENT	0	UNK
062289	CECOS INTERNATIONAL	HAMILTON		LEACHATE	50	GAL
062289	D O E / FEED MATERIALS	HAMILTON		PAINT	0	UNK
062389	HEEKIN CAN INC.	HAMILTON		CHEMICALS	0	UNK
062389	ARMCO INC	BUTLER		SULFURIC ACID	500	GAL
062489	BARRETT PAVING	HAMILTON	STORM SEWER	GASOLINE	0	UNK
062689	NATIONAL BY-JPRODUCTS	HAMILTON		WASTE OIL	0	UNK
062889	GEORGIA PACIFIC	HAMILTON		ACETONE	20	DMS
062989	HEEKIN CAN INC.	HAMILTON		ETHYLENE GLYCOL	0	UNK
063089	HENKEL CORP / EMORY	HAMILTON		AMMONIA	0	UNK
070389	UNKNOWN	HAMILTON	STORM SEWER	MOTOR OIL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
070389	I DEUTCH SCRAP YARD	HAMILTON		MOTOR OIL	0	UNK
070589	METROPOLITAN SEWER	HAMILTON	SEWERS	SEWAGE	0	UNK
070689	UNKNOWN	HAMILTON	UNKNOWN CREEK	OIL	0	UNK
070689	MARTINS FARMS	BUTLER		SLUDGE	0	UNK
070789	WATER SCHUNK TRUCKING	HAMILTON	GREAT MIAMI	DIESEL FUEL	0	UNK
071189	HAMILTON PLAZA	BUTLER		HEATING OIL	0	UNK
071189	UNKNOWN	BUTLER	CANAL	WHITE STUFF	0	UNK
071189	FMPC WESTINGHOUSE	HAMILTON		SOLVENT WASTE	1	GAL
071189	HMT	HAMILTON		WASTE FLAMMABLE	3	ITM
071289	MOTHER NATURE	HAMILTON		YELLOW STUFF	0	UNK
071289	HEEKIN CAN INC.	HAMILTON		HISOL 15	0	UNK
071289	UNKNOWN	HAMILTON	WHITEWATER	SUSPENDED SOLIDS	0	UNK
072089	HILTON DAVIS CO.	HAMILTON	STORM SEWER	GREEN WATER	0	UNK
072089	PHELCO	BUTLER		CORROSIVE LIQUID	10	GAL
072189	HILTON DAVIS CO.	HAMILTON		BROMINE	5	LBS
072189	SOUTHERN RAILWAY	HAMILTON		BENZO CREOSOTE	0	UNK
072389	UNKNOWN	HAMILTON		UNKNOWN	55	GAL
072489	DUWELL AUTO	HAMILTON		#2 FUEL OIL	0	UNK
073189	TAYLOR'S GARAGE	HAMILTON	WHITEWATER	WASTE OIL	55	GAL
080289	UNKNOWN	BUTLER		DRUMS	2	ITM
080589	CINCINNATI	HAMILTON	STORM SEWER	RAW SEWAGE	0	UNK
080889	EMERY WORLDWIDE INC.	HAMILTON		DIESEL FUEL	50	GAL
080989	MID-OHIO CHEMICAL	HAMILTON		NITROGEN	700	GAL
081189	UNKNOWN	HAMILTON	UNKNOWN	OIL	0	UNK
081189	UNKNOWN	HAMILTON	DITCH	SOLVENT	0	UNK
081189	CHEM DYNE	BUTLER	GREAT MIAMI	UNKNOWN CHEMICAL	0	UNK
081489	METROPOLITAN SEWER	HAMILTON		ODOR OF SEWAGE	0	UNK
081989	RYDER TRUCK	HAMILTON		PAINT	30	GAL
082289	MCWHARTON TRUCKING	BUTLER	UNKNOWN CREEK	DIESEL FUEL	0	UNK
082389	HVC-DALY INC	BUTLER		CHLORINE	10	LBS
082489	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
082589	HARTWELL TRUCKING	HAMILTON		UNKNOWN	0	UNK
082589	KROGER CO.	HAMILTON		HEATING FUEL	0	UNK
082589	CHILDREN'S HOSP MED	HAMILTON		FUEL OIL	0	UNK
082889	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PAPER WASTE	2500	GAL
082889	UNKNOWN	FRANKLIN	UNNAMED		0	X
083189	UNKNOWN	BUTLER		SEPTIC WASTE	0	UNK
082489	UNKNOWN	HAMILTON		HYDROCARBON	0	UNK
090289	SPANGLES	BUTLER		PAINT	0	UNK
090289	UNIVERSITY OF	HAMILTON		MERCURY	7	OZS
090689	W R GRACE CO.	HAMILTON	SEWERS	SULFURIC ACID 94%	100	GAL
090889	GOLD METAL PRODUCTS	HAMILTON		TOLUENE	0	UNK
090889	CHEVRON	HAMILTON		SLUDGE	0	UNK
091089	CINCINNATI	HAMILTON	GREAT MIAMI	CHLORINE	0	UNK
091189	CHILDERNS HOSPITAL	HAMILTON		#2 FUEL OIL	0	UNK
091289	CSX TRANSPORTATION	BUTLER		HYDROCHLORIC ACID	0	UNK
091289	EEI	HAMILTON		HAZARDOUS WASTE	0	UNK
091389	SIMPSON PAPER	BUTLER	GREAT MIAMI	RED STUFF	0	UNK
091589	ARMCO STEEL	BUTLER	GREAT MIAMI	ZINC	0	UNK
091689	UNKNOWN	HAMILTON	STORM SEWER	PAINT THINNER	0	UNK
091889	UNKNOWN	HAMILTON		OIL	0	UNK
091989	CSX TRANSPORTATION	HAMILTON		POLYVINYL	173000	LBS
091989	SOHIO / PROCARE	HAMILTON		ANTIFREEZE	0	UNK
092689	BFI	HAMILTON		HAZARDOUS WASTE	1	GAL
092889	BECKETT PAPER CO.	BUTLER		FUEL OIL	80	GAL
092989	MR. BERNIVS	HAMILTON	BANKLICK CREEK	RAW SEWAGE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
100389	OLD FIELD EQUIPMENT CO	HAMILTON		OIL	200	GAL
100289	MERCY HOSPITAL	BUTLER	GREAT MIAMI	RED STUFF	0	UNK
100389	BFI	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNK
100589	UNKNOWN	HAMILTON	STORM SEWER	MOTOR OIL	0	UNK
100689	UNION TANK	HAMILTON		CARBON DIOXIDE	0	UNK
100889	UNKNOWN	HAMILTON	DITCH	DIESEL FUEL	200	GAL
101589	UNKNOWN	HAMILTON	SEWER	OIL	100	GAL
101189	ZION METHODIST CHURCH	HAMILTON		#2 FUEL OIL	0	UNK
101289	HILLS	BUTLER		FUEL OIL	200	GAL
101289	UNITED DAIRY FARMERS	HAMILTON	STORM SEWER	DIESEL FUEL	10	GAL
101689	UNKNOWN	HAMILTON		PETROLEUM	0	UNK
101889	UNKNOWN	BUTLER		UNKNOWN	0	UNK
101989	CINCINNATI	HAMILTON		SEWAGE	0	UNK
102189	THI CHEM	HAMILTON		TRICHLORO BENZENE	0	UNK
102189	CINCINNATI	HAMILTON	UNNAMED CREEK	SEWAGE	750	GAL
102389	TERRY INDUSTRIES	HAMILTON		WASTE CHEMICALS	0	UNK
102489	MR. GOREMAN	BUTLER		DIESEL FUEL	90	GAL
102789	ARMCO STEEL	BUTLER		36% HYDROCHLORIC	1800	LBS
102789	LEO STALPH	HAMILTON		HAZARDOUS WASTE	0	UNK
103089	B A S F / INMONT DIV /	HAMILTON	SEWERS	TRANSFER OIL	50	GAL
110289	KROGER CO./ DAIRY	HAMILTON		AMMONIA	0	UNK
110389	U. S. FOOD AND DRUG	HAMILTON		HYDROGEN SULFIDE	0	UNK
110789	HIGHWAY CARRIER CORP	HAMILTON		DIESEL FUEL	75	GAL
111189	MR. HOLMES	HAMILTON		SULFURIC ACID	7	GAL
111489	SAFETY KLEEN	HAMILTON		WASTE OIL	100	GAL
112189	ARMCO STEEL	BUTLER	GREAT MIAMI	WASTE WATER	200	GAL
112189	OCCIDENTAL CHEMICAL	HAMILTON		#6 FUEL OIL	0	UNK
112189	HANNAH FARMS	BUTLER		ILLEGAL DUMPING	0	UNK
112289	VARIOUS	BUTLER		GASOLINE FUMES	0	UNK
112689	METROPOLITAN SEWER	HAMILTON		CHLORINE	0	UNK
110989	HAMILTON WWTP	BUTLER	GREAT MIAMI	ODOR OF SEWAGE	0	UNK
101389	CHEVRON	HAMILTON		WASTE MOTOR OIL	0	UNK
112989	GARY FIERMAN	HAMILTON		CORRASINE STRIPPER	0	UNK
112989	D O E / FMPC-FERNALD	HAMILTON		THORIUM RESIDUE	75	LBS
113089	KISSEL BROTHERS	HAMILTON		DIESEL FUEL	0	UNK
120189	POLYMET CORP	BUTLER	DITCH	QUENCH OIL	0	UNK
120489	CONSTRUCTION HENRY	HAMILTON	SMALL CREEK	DIESEL FUEL	0	UNK
120489	ARMCO STEEL	BUTLER	DITCH	PICKLE RINSE WATER	216000	GAL
120489	DUNHAM REC CTR	HAMILTON		GASOLINE	40	GAL
120689	HENRY FISHER BILDER	HAMILTON	SMALL CREEK	DIESEL FUEL	0	UNK
120689	CHEMDYNE & GAHMS	BUTLER		UNKNOWN	0	UNK
120689	ERIC HENDENBERG ER	HAMILTON	SEWER	ALKALINE ACID	0	UNK
120789	SOUTHERN RAILWAY	HAMILTON		COAL TAR PITCH	0	UNK
120989	MS LISA PRICE'S	HAMILTON	SEWER	FUEL OIL	250	GAL
121089	BAER OIL-SOHIO DEALER	HAMILTON		FUEL OIL	80	GAL
121189	ELCO	HAMILTON		SODIUM	0	UNK
121389	CHAMPION OR BECKETT	BUTLER	GREAT MIAMI	DYE	0	UNK
121889	HVC-DALY INC	HAMILTON		ANHYDROUS	800	LBS
121889	SULZER ESCHER &	BUTLER		FUEL OIL #2	0	UNK
121889	PIERCETON TRUCKING CO	BUTLER		KEROSENE	7000	GAL
122089	PILOT CHEMICAL CO.	BUTLER	DULES CREEK	SODIUM DAL	500	LBS
122289	METROPOLITAN SEWER	HAMILTON		CHLORINE	0	UNK
122289	CINCINNATI MILACRON	HAMILTON		NAPTHA	0	UNK
122389	UNKNOWN	HAMILTON	SMALL CREEK	SEWAGE	0	UNK
122789	HAZARDOUS MATERIAL	BUTLER		CHLOROPICCIN	0	UNK
122989	UNKNOWN	HAMILTON		DIESEL FUEL ODORS	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
010190	MR. CLIFFORD HILL	HAMILTON		SPECTRACIDE	2	LBS
010990	FOOD & DRUG	HAMILTON		WASTE CHEMICALS	0	UNK
011990	D O E / FEED MATERIALS	BUTLER		RCRA WATER	0	UNK
011090	CHAMPION OR BECKETT	BUTLER	GREAT MIAMI	GREEN SUBSTANCE	0	UNK
011090	HYDE PARK PLAZA TIRE	HAMILTON		USED OIL	0	UNK
011890	ARMCO STEEL	BUTLER	DICKS CREEK	FLUSHING LIQUOR	30000	GAL
011890	UNKNOWN	BUTLER		DIESEL FUEL	100	GAL
011890	U.S. EPA	HAMILTON		HEATING OIL	4000	GAL
012390	UNKNOWN	HAMILTON	CREEK	ANTIFREEZE	0	UNK
012490	OHIO DEPT OF	HAMILTON		ASBESTOS	0	UNK
012590	MR. JAMES ANGLE	HAMILTON		SEWAGE	0	UNK
012990	HILTON DAVIS CO.	HAMILTON		PHOSPHORUS	700	LBS
012990	MAJOR SUPPLY CORP	BUTLER		BAY WASTES	0	UNK
012990	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
012990	PROCTER & GAMBLE	HAMILTON		TOLUENE	0	UNK
012990	CHAMPION PAPER	BUTLER	GREAT MIAMI	BRIGHT GREENISH	0	UNK
013190	FUSIDE DIXIE EMERSON	HAMILTON		HYDROCHLORIC ACID	30	GAL
013190	UNKNOWN	HAMILTON		ILLEGAL DUMPING	0	UNK
020190	PROCTER & GAMBLE	HAMILTON		FUEL OIL #2	0	UNK
020190	F & C INTERNATIONAL	HAMILTON		METHYLENE	0	UNK
020290	D O E / FEED MATERIALS	BUTLER		FURNACE SALT	5	GAL
020292	D O E / FEED MATERIALS	HAMILTON	PADDYS RUN	URANIUM	2	LBS
020590	EARL GRATHWALL	HAMILTON		OIL	0	UNK
020590	MAJOR SUPPLY CORP	BUTLER		PAINT STRIPPER	0	UNK
020590	CARGILL INC	HAMILTON		#2 FUEL OIL	0	UNK
020990	STEPHENSON OIL	BUTLER	TWO MILE CREEK	GASOLINE	1230	GAL
021390	D O E / FEED MATERIALS	HAMILTON		HAZARDOUS WASTE	0	UNK
021590	AMERICAN AGGREGATES	BUTLER	DIKE	DIESEL FUEL	50	GAL
021590	CINCINNATI GAS &	HAMILTON	DITCH	UNLEADED GASOLINE	75	GAL
021590	STEVENSON OIL CO	BUTLER	GREAT MIAMI	GASOLINE	0	UNK
021590	COLERAIN WWTP	HAMILTON	BLUE ROCK	WASTE WATER	0	UNK
021690	ELECTRO-METALLICS CO.,	BUTLER		STRUCTURE FIRE	0	UNK
022190	J. C. PENNEY	HAMILTON		FUEL OIL	5000	GAL
022190	METROPOLITAN SEWER	HAMILTON		#3 FUEL OIL	700	GAL
022590	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
022690	BASF	HAMILTON	STORM SEWER	STOCK THINNER	500	GAL
022690	CLEVES CAR CLINIC	HAMILTON	DRAINS	WASTE OIL	0	UNK
022690	MATLACK TRUCKING CO.	HAMILTON	STORM SEWER	DIESEL FUEL	8	GAL
022690	HAMILTON	BUTLER	GREAT MIAMI	GREEN DISCHARGE	0	UNK
022790	BLACK CLAWSON CO.	BUTLER		FUEL OIL	10000	GAL
030190	KINGS INN RESTAURANT	HAMILTON		PETROLEUM PRODUCT	0	UNK
030490	UNKNOWN	BUTLER		UNKNOWN	0	UNK
030990	QUEEN CITY BARREL	HAMILTON		VARIOUS HAZARDOUS	0	UNK
031090	D O E / FEED MATERIALS	BUTLER		ORANGE FOG	0	UNK
031090	METROPOLITAN SEWER	HAMILTON	GREAT MIAMI	SEWAGE	0	UNK
031290	UNKNOWN	HAMILTON	DITCH	UNKNOWN	0	UNK
031290	UNKNOWN	HAMILTON	CREEK	FUEL OIL	0	UNK
031290	METROPOLITAN SEWER	HAMILTON	DITCH	SEWAGE	0	UNK
031390	WILSONS	HAMILTON	DITCH	MOTOR OIL	0	UNK
030690	ROELLS BROTHERS	HAMILTON	UNKNOWN CREEK	INCINERATOR WASTE	0	UNK
031390	HILLS DEPARTMENT STORE	HAMILTON	STORM SEWER	FOE 30	35	GAL
031490	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	0	UNK
031590	NEIGHBOR	HAMILTON	STORM SEWER	TRANSMISSION FLUID	0	UNK
031590	LINDENS AUTO	BUTLER		WASTE OIL	0	UNK
031590	COLERAIN TWP	HAMILTON	BLUE ROCK	OILY SUBSTANCE	0	UNK
032690	XAVIER UNIVERSITY	HAMILTON		FUEL OIL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
032690	OHIO PULP MILLS	HAMILTON		WASTE WATER	0	UNK
032690	D O E / FEED MATERIALS	BUTLER		GRAPHITE RESIDUE	0	UNK
032890	EXECUTIVE STRUCTORS	HAMILTON	DRAINS	PHOTOGRAPHIC	0	UNK
032890	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
032990	CORNELL COMMERCE	HAMILTON		#2 FUEL OIL	0	UNK
032990	UNKNOWN	BUTLER	UNKNOWN CREEK	PAINT	0	UNK
033190	UNKNOWN	HAMILTON	CREEK	ANTIFREEZE	0	UNK
040290	HELCHER OIL	HAMILTON	CREEK	DIESEL FUEL	30	GAL
040390	UNKNOWN	BUTLER		BLUE WATER	0	UNK
040490	RUMPKE POWER	HAMILTON	CREEK	OILY WASTE	0	UNK
040690	METROPOLITAN SEWER	HAMILTON	GREAT MIAMI	SEWAGE	0	UNK
040990	JOY DEROSE	HAMILTON		PESTICIDES	0	UNK
041090	WIHTERS IMPORT	HAMILTON		OIL	0	UNK
041090	UNKNOWN	HAMILTON	DRAIN-STORM	OIL	0	UNK
041190	AMERICANA AMUSEMENT	BUTLER	DITCH	TRANSFORMER OIL	0	UNK
041690	TOM REIS	HAMILTON	STORM SEWER	WASTE OIL	0	UNK
041790	H WOLF & SONS	HAMILTON		MINERAL SPIRITS	0	UNK
041790	PREMIUM FINISHES INC	HAMILTON		KETONES	0	UNK
041890	JIM SCHNALY	BUTLER		#2 FUEL OIL	0	UNK
042090	PMC SPECIALTIES GROUP	HAMILTON		CHLORINE	1	LB
042390	HILTON DAVIS CO.	HAMILTON		ACETIC ACID	200	GAL
042490	UNKNOWN	HAMILTON	STORM SEWER	DIRTY WATER	0	UNK
042590	CINCINNATI TECHINCAL	HAMILTON		UNKNOWN CHEMICAL	0	UNK
042590	UNKNOWN	HAMILTON	UNNAMED CREEK	WHITE MILKY STUFF	0	UNK
042590	MIDDLETOWN REGIONAL	BUTLER		MERCURY	30	CC
042690	CREST TRUCKING	HAMILTON		DIESEL FUEL	150	GAL
042390	ARCADIAN CORP	HAMILTON		FERTILIZER (RENEW)	4858	GAL
042790	MIDDLETOWN REGIONAL	BUTLER		FUEL OIL # 2	0	UNK
042790	FALHABER CAR SALES	HAMILTON	STORM SEWER	UNKNOWN	0	UNK
050190	HILTON DAVIS CO.	HAMILTON		CHROME HYDROXIDE	4000	LBS
050190	UNKNOWN	BUTLER	STORM SEWER	GASOLINE	0	UNK
050190	MIDWEST	HAMILTON		PAINT THINNER	25	GAL
050790	EASTERN ELECTRIC	HAMILTON		TCA	0	UNK
050890	AUTO REPAIR SHOP	HAMILTON		USED OIL	0	UNK
050890	D O E / FMPC	HAMILTON		HAZARDOUS WASTE	60	LBS
051690	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	UNKNOWN CHEMICAL	0	UNK
051690	MR. GORDON MCWHORTER	BUTLER	CREEK	DIESEL FUEL	3000	GAL
051690	D O E / FMPC	HAMILTON	PADDYS RUN	WASTE WATER	0	UNK
051790	UNKNOWN	BUTLER	STORM SEWER	DIESEL FUEL	100	GAL
051890	WERNERKE CO	HAMILTON		INK	0	UNK
052090	CHAMPION	BUTLER		SULFURIC ACID	1840	LBS
052190	FORT HAMILTON HUGHES	BUTLER		FRYER GREASE	0	UNK
051890	AMERICAN CYANAMID CO.	BUTLER		ALUM	20	GAL
052490	WATKIN MOTOR LINE	BUTLER		BENZAL DEHYDR	2	GAL
052590	GEORGIA PACIFIC	BUTLER		DIESEL FUEL	10	GAL
052590	CHAMPION	BUTLER	GREAT MIAMI	OIL	0	UNK
052990	JIM WITTKOPH	HAMILTON		TRANSFORMER OIL	15	GAL
052990	CHEMLAWN CORP	BUTLER		WIPEOUT	25	GAL
053090	TANKS UNLIMITED	HAMILTON		UNKNOWN	0	UNK
053190	DOD FUEL DEPOT	HAMILTON		JET FUEL	0	UNK
060190	UNKNOWN	HAMILTON		MOTOR OIL	0	UNK
060190	THE WILLIAMSONS	HAMILTON		WASTE OIL	0	UNK
060290	TURNULL CONCRETE	BUTLER		CONCRETE DUST &	0	UNK
060390	UNKNOWN	HAMILTON	UNKNOWN CREEK	BLUISH COLORED	0	UNK
060390	CINCINNATI	HAMILTON	CREEK	WASTE WATER	0	UNK
060490	CINCINNATI	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
060190	I DEUTCH & SONS INC.	HAMILTON		HYDRAULIC OIL	0	UNK
060590	C G E	HAMILTON		TRANSFORMER OIL	0	UNK
060690	BARROWS	HAMILTON		MINERAL SPIRITS	10	GAL
060690	MR. ZACK SHEPHERD	HAMILTON		TRANSFORMER OIL	5	GAL
060690	FIBERLAM TRUCKING	HAMILTON		TOTAL 301	60	GAL
060890	TEXAS EASTERN	BUTLER		BUTANE	84	GAL
061190	ACK-MOR	HAMILTON		FUEL OIL #2	0	UNK
060690	SUPER AMERICA	HAMILTON		GASOLINE	5	GAL
061390	SUN REFINING &	BUTLER		GASOLINE	0	UNK
061390	METROPOLITAN SEWER	HAMILTON		RAW SEWAGE	0	UNK
061590	HVC CHEMICAL CO.	BUTLER		CHLORINE GAS	50	LBS
061590	UNKNOWN	HAMILTON		WASTE OIL	600	GAL
061590	DICK RICE/DICKS SERVICE	BUTLER		USED MOTOR OIL	0	UNK
061890	CINCINNATI MILACRON	HAMILTON		UNKNOWN	0	UNK
061890	BASF CORPORATION	HAMILTON		CELLULOSE ACETATE	0	UNK
061990	TERRY INDUSTRIES	HAMILTON	DITCH	DIESEL FUEL	0	UNK
061890	RUMPKE	HAMILTON	STORM SEWER	HYDRAULIC OIL	20	GAL
061990	UNKNOWN	HAMILTON		DIESEL FUEL	200	GAL
062590	ARMY TOOL	HAMILTON	UNNAMED CREEK	WHITE MILKY	0	UNK
062690	BORDEN CHEMICAL	HAMILTON		TOLUENE INK	0	UNK
062690	MARION MERRELL DOW	HAMILTON		#2 FUEL OIL	0	UNK
062790	SUN REFINING &	BUTLER		GASOLINE	0	UNK
062790	TANKS UNLIMITED	HAMILTON		FUEL OIL	30	DRM
062790	UNKNOWN	BUTLER	GREAT MIAMI	DRUM	1	ITM
062790	GREGORY FOREST	HAMILTON		PESTICIDE	0	UNK
062990	PENSKE TRUCK LEASING	HAMILTON		DIESEL FUEL	50	GAL
070190	QUEEN CITY BARREL	HAMILTON		UNKNOWN	0	UNK
070390	GEORGIA PACIFIC	HAMILTON		#2 FUEL OIL	0	UNK
071090	SIGNAL DELIVERY	BUTLER	GREAT MIAMI	DIESEL FUEL	20	GAL
071090	STOP-N-GO	HAMILTON		GASOLINE	0	UNK
071290	UNKNOWN	HAMILTON	SEWERS	PAINT & PAINT	0	UNK
071290	LITTLE MIAMI TREATMENT	HAMILTON		WASTE WATER	0	UNK
071390	JEFF INDUSTRIES	HAMILTON		WASTE OIL	0	UNK
071390	B P OIL CO	BUTLER		UNKNOWN	0	UNK
071690	GENERAL POLYMERS	HAMILTON	SANITARY SEWER	SCIPT SET	100	GAL
071690	INTERNATIONAL PAPER	HAMILTON	SEWERS	PRINTING WASTE	0	UNK
071790	HAMILTON FOUNDRY	HAMILTON	SEWER	PCB OIL	3	LBS
071890	MR. FLOYD	HAMILTON		#2 FUEL OIL	0	UNK
071890	ROAD LINK INC	BUTLER		DIESEL FUEL	50	GAL
071890	SUN REFINING &	HAMILTON		KEROSENE	5	GAL
072090	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
072190	CINCINNATI GAS &	HAMILTON		TRANSFORMERS	100	ITM
072390	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	0	UNK
072390	CINCINNATI RECYCLING	HAMILTON		PCB OIL	0	UNK
072390	JOE B. BISHOP	BUTLER		SLUDGE	0	UNK
072590	SUN REFINING &	HAMILTON		KEROSENE	0	UNK
072690	DUTCH MAID	HAMILTON		UNKNOWN CLEAR	0	UNK
072790	CINCINNATI GAS &	HAMILTON	STORM SEWER	MINERAL OIL	5	GAL
073090	SUN REFINING &	HAMILTON		GASOLINE	0	UNK
073090	SUN REFINING &	BUTLER		KEROSENE	0	UNK
073190	DICKS AUTO SERVICE	BUTLER		MOTOR OIL	0	UNK
080190	NU-TONE CORP.	HAMILTON	SEWER	TOLUENE	0	UNK
080190	UNKNOWN	BUTLER	GREAT MIAMI	UNKNOWN	0	UNK
080190	KOCH MATERIALS	HAMILTON	STORM DRAIN	ASPHALT	700	GAL
080390	CINCINNATI RECYCLING	HAMILTON	SEWER	OIL	0	UNK
080690	FOXMEYER	HAMILTON		PHENOL	16	OZ

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
080690	UNKNOWN	HAMILTON		DIESEL FUEL	200	GAI
080890	CHEM CENTRAL	HAMILTON		DIESEL FUEL	0	UNI
081090	GEORGIA DIRECT CARPET	BUTLER		GASOLINE	0	UNI
081090	MT. AIREY SLOPES	HAMILTON	STORM SEWER TO	SEWAGE	0	UNI
081090	MATLACK TRUCKING CO.	HAMILTON		PETRO OIL	15	GAI
081190	METROPOLITAN SEWER	HAMILTON	UNNAMED CREEK	RAW SEWAGE	0	UNI
081390	XAVIER UNIVERSITY	HAMILTON	STORM SEWERS	PCB	3	LBS
081390	UNKNOWN	BUTLER		UNKNOWN	0	UNI
081390	UNKNOWN	BUTLER	GREAT MIAMI	ALGAE	0	UNI
061490	ARKAY PLASTICS CO.	BUTLER		METHYL ETHYL	30	GAI
081490	UNKNOWN	BUTLER	GREAT MIAMI	SEWAGE	0	UNI
081490	HAMILTON FOUNDRY	HAMILTON	SANITARY SEWER	PCB OIL	33	LBS
081590	LYKINS OIL CO.	HAMILTON		#2 DIESEL FUEL	160	GAI
081690	ACME WRECKING CO.	HAMILTON	SANITARY SEWER	DIESEL FUEL	70	GAI
081690	CHAMPION	BUTLER	GREAT MIAMI	WHITE STUFF	0	UNI
082090	LIBERTY SHEET METAL	BUTLER	STORM SEWER	FLOOR STRIPPER	0	UNI
082190	PILOT CHEMICAL CO.	HAMILTON		SULFUR TRIOXIDE	5	LBS
082190	CHILDRENS HOSPITAL	HAMILTON		#2 FUEL OIL	0	UNI
082190	CENTRAL INSULATION	HAMILTON		ASBESTOS	0	UNI
082290	CINCINNATI MILACRON	HAMILTON		MONOETHONALAMIN	11	LB
082290	ARMCO STEEL	BUTLER	GREAT MIAMI	WASTE ACID	6000	GAI
082290	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	WASTE WATER	0	UNI
082290	BULLYS AUTO SERVICE	HAMILTON	DRAIN	ANTIFREEZE	0	UNI
082290	JOHN NOLAN FORD	HAMILTON		WASTE OIL	0	UNI
082490	UNKNOWN	HAMILTON	UNNAMED CREEK	UNKNOWN	0	UNI
082690	CENTRAL TRANSPORT INC	HAMILTON		D.B. ACETATE	25	GAI
082890	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	0	UNI
082990	CHAMPION PAPER	BUTLER	GREAT MIAMI	SUSPENDED SOLIDS	0	UNI
082990	METROPOLITAN SEWER	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNI
083090	PILOT CHEMICAL CO.	HAMILTON		SULFUR TRIOXIDE	0	UNI
083090	UNKNOWN	HAMILTON		UNKNOWN	0	UNI
083190	LIGHT SYSTEM INC	HAMILTON		FUEL OIL	0	UNI
090190	UNKNOWN	HAMILTON	CREEK	UNKNOWN CHEMICAL	0	UNI
090490	AERONOCA / CHEMICALS	BUTLER		MURIATIC ACID	15	GAI
090590	PARKWAY CLEANERS	HAMILTON		PERCHLOROETHYLEN	0	UNI
090790	CHAMPION PAPER	BUTLER	GREAT MIAMI	WASTE WATER	0	UNI
090790	CINCINNATI GAS &	HAMILTON	STORM SEWER	TRANSFORMER OIL	3	GAI
091190	QUEEN CITY BARREL	HAMILTON	STORM SEWER	WASTE CHEMICALS	3	DMS
091290	B.P. OIL	HAMILTON	STORM SEWER	KEROSENE	55	GAI
091390	EDWARDS	HAMILTON	STORM SEWER	DIESEL FUEL	75	GAI
091490	METROPOLITAN SEWER	HAMILTON	UNNAMED CREEK	RAW SEWAGE	300	GAI
092090	HILTON DAVIS CO.	HAMILTON		ISOPROPYL ALCOHOL	1000	GAI
092190	CARVER COATINGS	HAMILTON		DRUMS	2	ITM
092190	UNKNOWN	HAMILTON		DIESEL FUEL	55	GAI
092190	SUNOCO OIL	HAMILTON	STORM SEWER	CONTAMINATED	1000	GAI
092290	FINNEYTOWN SCHOOL	HAMILTON	UNNAMED CREED	GASOLINE	3000	GAI
092590	HILTON DAVIS CO.	HAMILTON		PHOPHOROUS OXY	755	LBS
092590	QUEEN CITY BARREL	HAMILTON		UNKNOWN	0	UNI
092790	HAMILTON OIL CO.	BUTLER		#2 FUEL OIL	700	GAI
092790	ELLIS POPCORN	MONTGOMERY		DIESEL FUEL	150	GAI
092890	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	PROCESS WATER	0	UNI
092890	ACME WRECKING CO.	HAMILTON		DIESEL FUEL	5	GAI
093090	ELIJAH CORNET-CHEVRON	BUTLER	TWO MILE CREEK	WASTE OIL	300	GAI
100190	WILLARD INDUSTRIES	HAMILTON		FOUNDRY SAND	0	UNI
100190	PEPSI-COLA	HAMILTON	STORM SEWER	GASOLINE	200	GAI
100290	AMERICAN CHEMICAL	BUTLER		PAINT WASTE	0	UNI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
100490	GOOD SAMARITAN	HAMILTON	SEWER	#4 FUEL OIL	100	GAI
100890	DRAVO CORP	HAMILTON		RESIN PRODUCT	100	GAI
101090	KOLINSKI BROS INC.	HAMILTON	DRY FORK	DIESEL FUEL	35	GAI
101490	PAM SCHAFER	BUTLER		CHLORDANE	1	GAI
101590	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	SUSPENDED SOLIDS	900	GAI
101990	CONRAIL	BUTLER	DICKS CREEK	DIESEL FUEL	1000	GAI
102090	METROPOLITAN SEWER	HAMILTON	WAYSIDE CREEK	SEWAGE	0	UNK
102390	KENNER PRODUCTS	HAMILTON	STORM SEWER	MINERAL SPIRITS	30	GAI
102690	D O E / FEED MATERIALS	BUTLER	GREAT MIAMI	DRUMS	20	DRI
102790	MOBIL OIL CO / VINCE'S	HAMILTON		GASOLINE	30	GAI
102890	SUPER AMERICA	HAMILTON	SANITARY SEWER	MOTOR OIL	100	GAI
102990	SUN REFINING &	HAMILTON		GASOLINE	0	UNK
102990	CSX TRANSPORTATION	HAMILTON		DIESEL FUEL	200	GAI
110190	BECKETT PAPER & PROTEK	BUTLER		PAPER PULP	100	GAI
110390	CHEVRON	BUTLER	DRAINAGE DITCH	GASOLINE	0	UNK
110590	BOB'S TRUCK SERVICE,	BUTLER	DITCH	DIESEL FUEL	100	GAI
110690	HOWARD BEAR TRUCKING`	BUTLER		DIESEL FUEL	75	GAI
110690	A & A CARPET CLEANING	HAMILTON	STORM SEWER	WASTE CHEMICALS	0	UNK
110790	ESTE OIL CO.	HAMILTON	SANITARY SEWER	FUEL OIL	258	GAI
110790	CONWAY CENTRAL	BUTLER		PAINT	20	GAI
111390	RIVERFRONT COLISEUM	HAMILTON		AMMONIA	2	LBS
111790	UNKNOWN	BUTLER		ASBESTOS	50	LBS
111790	HILTON DAVIS CO.	HAMILTON		TOLUENE	75	GAI
111490	CSX TRANSPORTATION	HAMILTON		HCL	1	GAI
112190	HAMILTON WWTP	BUTLER	GREAT MIAMI	UNKNOWN	0	UNK
112190	TOWNE MANAGEMENT	BUTLER		MERCURY	0	UNK
112190	CSX TRANSPORTATION	HAMILTON		SODIUM HYDROXIDE	0	UNK
112290	UNKNOWN	HAMILTON	GREAT MIAMI	UNKNOWN	0	UNK
112390	VALLEY ASPHALT	HAMILTON		DIESEL FUEL	100	GAI
112690	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
112790	ACE CHEMICAL	HAMILTON		UNKNOWN	0	UNK
112990	AMERISTOP FOOD MART	HAMILTON		GASOLINE	36	GAI
112990	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	WASTE WATER	200	GAI
113090	SEARS	BUTLER	STORM SEWER	DIESEL FUEL	0	UNK
113090	HILTON DAVIS CO.	HAMILTON		ORTHOCHLOROALDEH	5	GAI
121090	TED BAER/BAER OIL/SOHIO	HAMILTON		FUEL OIL	80	GAI
120390	UNKNOWN	HAMILTON	CREEK	OIL	0	UNK
120690	STEELCRAFT	HAMILTON		#2 FUEL OIL	0	UNK
120890	COLERAIN TWP PUBLIC	HAMILTON	SMALL CREEK	DIESEL FUEL	200	GAI
121190	ALPHA PROTECK	HAMILTON		METHYL ETHYL	0	UNK
121290	UNKNOWN	BUTLER	GREAT MIAMI	UNKNOWN	0	UNK
121590	HOWARD FISHER FARM	BUTLER	WILLOWS RUN	MANURE (HOG)	0	UNK
121890	CINCINNATI GAS &	HAMILTON		HYDRALIC OIL	1	QT
121990	UNKNOWN	BUTLER	DITCH	CLEAR LIQUID	0	UNK
121990	INSITUFORM OHIO INC.	HAMILTON	SANITARY SEWER	SEWAGE	0	UNK
122190	METROPOLITAN SEWER	HAMILTON		FUEL OIL	0	UNK
122790	TOP VALUE MUFFLER	HAMILTON	STORM SEWERS	WASTE OIL	1	UNK
122790	B P OIL CO	HAMILTON		GASOLINE	0	UNK
122790	KIATA SALOON	BUTLER		FUEL OIL #2	50	GAI
123090	BECKETT PAPER CO.	BUTLER	GREAT MIAMI	KOALIN CLAY	0	UNK
020290	D O E / FEED MATERIALS	HAMILTON	GREAT MIAMI	URANIUM	5	LBS
010391	LIBERTY MAINTENANCE	HAMILTON		CHLORDANE	1	GAI
010791	METROPOLITAN SEWER	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNK
011091	DUPONT CHEMICAL CO	HAMILTON	CREEK	CHEMICAL	0	UNK
011191	HILL TOP BASIC	HAMILTON	STORM SEWER	LUBE OIL	500	GAI
011191	BUILDERS TRANSPORT	HAMILTON	SEWERS	DIESEL FUEL	100	GAI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
011591	HILTON DAVIS CO.	HAMILTON		ANILINE	600	LBS
011492	HAMILTON OIL CO.	BUTLER	GREGORY CREEK	#2 FUEL OIL	1500	GAI
011791	METROPOLITAN SEWER	HAMILTON	WAYSIDE CREEK	SEWAGE	0	UNI
012491	UNKNOWN	HAMILTON		GASOLINE	0	UNI
012591	D O E / FEED MATERIALS	HAMILTON		CADMIUM	20	LBS
012891	BASF CORP	HAMILTON		ASBESTOS	0	UNI
013091	B P OIL CO / TERMINAL	BUTLER		GASOLINE	35	GAI
013191	OK TRUCKING	BUTLER		DIESEL FUEL	70	GAI
013191	ABANDONED JUNKYARD	HAMILTON		RADIOACTIVE	4	ITM
013191	NEWLIFE FURNITURE	BUTLER		METHYL ETHYL	0	UNI
010892	BASF	HAMILTON		ASBESTOS	110	CYI
020191	MR. JESSE RADER	BUTLER	SANITARY SEWER	PAINT THINNER	0	UNI
020491	HAMILTON OIL CO.	BUTLER		FUEL OIL	137	GAI
020491	HAMILTON OIL CO.	BUTLER		FUEL OIL	500	GAI
020491	UNKNOWN	HAMILTON		ANTIFREEZE	0	UNI
020591	HENKEL CORP	HAMILTON		CONTAMINATED DIRT	0	UNI
020691	FFE TRANSPORTATION	HAMILTON		DIESEL FUEL	80	GAI
020791	CINCINNATI UNION	HAMILTON		DIESEL	0	UNI
020891	UNKNOWN	HAMILTON		DIESEL FUEL	50	GAI
020891	D O E / FEED MATERIALS	HAMILTON		COAL RAFFINATE	710	LBS
020991	HINKLE CHEMICAL CORP	HAMILTON		UNKNOWN, FLYASH	0	UNI
021491	MR RICH POPE	HAMILTON	DITCH	FERTILIZER	1000	GAI
022191	CINCINNATI GAS &	BUTLER		TRANSFORMER OIL	0	UNI
022191	AMERICAN AMUSEMENT	BUTLER		TRANSFORMER	0	UNI
022591	ASHLAND OIL /ASHLAND	HAMILTON		METHYL ALCOHOL	6500	GAI
022591	ARMCO STEEL	BUTLER		FERROUS CHLORIDE	200	GAI
022691	STEVE KREBS OIL/SOHIO	HAMILTON	STORM SEWER	DIESEL FUEL	55	GAI
022891	HILTON DAVIS CO.	HAMILTON		PHENOL	0	UNI
022891	HAMILTON	BUTLER	GREAT MIAMI	GREEN DYE	0	UNI
022891	CLIFF FLICK	HAMILTON	CREEK	OIL	0	UNI
022891	CLIFFS MOTORCYCLE	HAMILTON		UNKNOWN	0	UNI
030191	MR. HOWELL	HAMILTON	LAKE GLORIA	KEROSENE/FUEL OIL	0	UNI
030591	MIDDLETOWN SCHOOL	BUTLER		DIESEL FUEL	0	UNI
030691	B P OIL CO / STAPHEN	HAMILTON		FUEL OIL	50	GAI
030791	MR MICHAEL RIA	BUTLER		FUEL OIL	0	UNI
030791	CINCINNATI PAPERBOARD	HAMILTON		WASTE	5600	GAI
030791	D O E / FEED MATERIALS	HAMILTON		PAINT WASTE	2	GAI
030891	ARMCO STEEL	BUTLER	DICKS CREEK	WASTE WATER	0	UNI
031491	STOCK MANFACTURING &	HAMILTON		OIL	0	UNI
031591	ROCK-TENN COMPANY	HAMILTON		FUEL OIL	0	UNI
031991	PRECISION TUNE	BUTLER	STORM SEWER	WASTE OIL	0	UNI
031991	MR. LEWIS	HAMILTON		WASTE OIL	0	UNI
032091	ETNA FREIGHTLINES INC.	BUTLER		TIRES	200	ITM
032091	EZY BODY SHOP	HAMILTON	DITCH	CONTAMINATED	200	GAI
032091	METROPOLITAN SEWER	HAMILTON		FLUORESCENT DYE	0	UNI
032191	ESZ & ESZ AUTOMOTIVE	HAMILTON		CAUSTIC SOLUTION	0	UNI
032191	UNKNOWN	HAMILTON		DRUMS	6	DRI
032291	UNKNOWN	HAMILTON		DIESEL FUEL	70	GAI
032391	METROPOLITAN SEWER	HAMILTON		GREEN STUFF	0	UNI
032591	B P OIL CO / MAIER	HAMILTON		GASOLINE	0	UNI
032491	KEEBLER CO.	HAMILTON		ASBESTOS	0	UNI
032691	D O E / FEED MATERIALS	BUTLER		SUMP CAKE	586	LBS
032791	E Z AUTOMOTIVE	HAMILTON		UNKNOWN CHEMICAL	0	UNI
032791	CLARK GAS STATION	HAMILTON		GASOLINE	0	UNI
032791	UNKNOWN	BUTLER		ORPHAN DRUM	0	DRI
032791	HAMILTON COUNTY	HAMILTON		CONTAMINATED SOIL	0	UNI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
032891	METROPOLITAN SEWER	HAMILTON	STORM SEWER	DIESEL FUEL	25	GAI
032991	B P OIL CO/SOHIO STATION	HAMILTON	PLEASANT RUN	TGASOLINE	0	UNK
032991	B P OIL CO/STAPEN SOHIO	HAMILTON		FUEL OIL	100	GAI
040191	MAIER AVIATION	HAMILTON		JET FUEL	0	UNK
041091	METROPOLITAN SEWER	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNK
041091	OLD ICE HOUSE	HAMILTON		TRANSMISSION FLUID	0	UNK
041291	UNKNOWN	HAMILTON	UNKNOWN CREEK	OIL	0	UNK
041391	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
041591	PROCTER & GAMBLE/SAINT	HAMILTON	SEWER	SULFURIC ACID	0	UNK
041691	SILVER OIL CO /	HAMILTON		GASOLINE	50	GAI
041691	MORTON SALT	HAMILTON		FERRIC CHLORIDE	792	GAI
042491	MR. KEITH BRISBIN	HAMILTON		SEWAGE	0	UNK
042591	B P OIL CO	HAMILTON		FUEL OIL	0	UNK
042691	FORD MOTOR CO /	HAMILTON		CAPACITORS	3	ITM
042791	CINCINNATI GAS &	HAMILTON	STORM SEWER	TRANSFORMER	1	GAI
042891	MIDDLETOWN SCHOOL	BUTLER		DIESEL FUEL	2000	GAI
043091	TOWNSEND TREE	HAMILTON		WEED CONTROL	0	UNK
050191	UNKNOWN	BUTLER		RUST COLORED STUFF	0	UNK
050391	UNKNOWN	BUTLER	GREAT MIAMI	OIL	0	UNK
050991	ORKIN LAWN CARE	BUTLER		FERTILIZER	50	GAI
051091	ARMCO STEEL	BUTLER		FLUSHING LIQUOR	25000	GAI
051491	I DEUTCH & SONS INC.	HAMILTON		CLEANER	0	UNK
051491	UNKNOWN	BUTLER	UNNAMED CREEK	GREEN WATER	0	UNK
051591	MR MICHAEL ROSS	HAMILTON		DIESEL FUEL	0	UNK
051991	METROPOLITAN SEWER	HAMILTON		CHLORINE	0	UNK
052091	UNKNOWN	BUTLER	CREEK - POND	FISHKILL	0	UNK
052291	METROPOLITAN SEWER	HAMILTON	BLOOM CREEK	SEWAGE	0	UNK
052291	HVC INC	BUTLER		CHLORINE	30	LBS
052391	TEAMSTER'S VILLAGE	MONTGOMERY	DRAINAGE DITCH	OIL	0	UNK
052391	METROPOLITAN SEWER	HAMILTON		DIESEL FUEL	100	GAI
052391	ASHLAND PETROLEUM	HAMILTON		METHANOL	0	UNK
052791	SHELL OIL CO	HAMILTON		OIL	30	GAI
052891	MR RALPH OKORY	HAMILTON		DIESEL	100	GAI
052891	UNKNOWN	HAMILTON		UNKNOWN	1	DRM
052991	MS RUTH ALCORN	BULTER		DIESEL FUEL	0	UNK
053091	INTERNATIONAL PAPER	HAMILTON		MINERAL	0	UNK
053191	UNKNOWN	HAMILTON		TRANSFORMER OIL	25	GAI
063091	METROPOLITAN SEWER	HAMILTON	STORM SEWER TO	SEWAGE	0	UNK
060791	HINCKLE CORP.	HAMILTON		CHLOROFORM	10	GAI
060791	DURAMED	HAMILTON		METHYLENE	0	UNK
061091	UNOCAL CHEMICAL	BUTLER		SOLVENT BLEND	45	GAI
061091	UNKNOWN	HAMILTON	TAYLOR CREEK	BLUE STUFF	0	UNK
061291	CECOS INTERNATIONAL	HAMILTON		SOLVENTS	0	UNK
061791	ARISTECH CHEMICA CORP	HAMILTON		BISPHENOL EPOXIE	50	LBS
061891	GOULSHE EXCAVATING &	HAMILTON		CONTAMINATED DIRT	0	UNK
061991	FRANK INDUSTRIES	HAMILTON		ALCOHOL	0	UNK
062091	MR. DONALD SHELEY	BUTLER	GREAT MIAMI	DEBRIS	0	UNK
062591	CINCINNATI MINE	HAMILTON		HEATING OIL	0	UNK
062591	MR SYLVESTER WHITE	HAMILTON		ARSENIC	0	UNK
006259	JOY TAYLOR WRECKING	BUTLER		TIRES	7000	ITM
062691	JIM'S TILE & TRENCHING	HAMILTON		OIL	0	UNK
062691	TRI STATE CARPET	HAMILTON	STORM SEWER	WASTE CHEMICALS	0	UNK
062791	A R INDUSTRIES	HAMILTON		CAR PARTS	0	UNK
062891	MR. HARRY CHATBIN	HAMILTON		FIBER DRUMS	5	DMS
062991	RUMPKE	HAMILTON		DIESEL OIL	450	GAI
063091	UNKNOWN	HAMILTON		WHITE STUFF	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
070291	UNKNOWN	HAMILTON		GASOLINE	0	UNK
070491	MONSANTO CHEMICAL CO	HAMILTON		ACRYLONITRILE	4000	GAL
070491	INGREDIENT EXCHANGE	BUTLER		DIESEL FUEL	300	GAL
070691	UNKNOWN	HAMILTON		ASBESTOS	0	UNK
070991	ARMCO STEEL	BUTLER		FLUSHING LIQUOR	0	UNK
071991	PEPSI-COLA	HAMILTON		HEATING OIL	0	UNK
071091	SUPER AMERICA	HAMILTON		GASOLINE	5	GAL
071691	QUEEN CITY METRO BUS	HAMILTON	STORM SEWER	DIESEL FUEL	50	GAL
071691	PETROLEUM TRADERS	HAMILTON	STORM SEWER	DIESEL FUEL	50	GAL
071691	CSX TRANSPORTATION	HAMILTON		DIESEL OIL	700	GAL
071991	CITY OF MIDDLETOWN	BUTLER	DICKS CREEK	SEWAGE SLUDE	10000	LBS
072091	CINCINNATI MULTI FOODS	HAMILTON		AMMONIA	100	LBS
072091	DURHAM DAYCARE &	HAMILTON	DITCH	GREEN STUFF	0	UNK
072191	UNKNOWN	BUTLER	STORM SEWER	POOL FILTER	0	UNK
072291	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	10	GAL
072291	CHEMICALS INC.	HAMILTON		SULFURIC ACID	55	GAL
072391	KORNYLAK CORP.	BUTLER		CHEMICALS	0	UNK
072391	FRONTIER MOTORS	HAMILTON		HEATING OIL	0	UNK
072491	MR. KARL AUGUSTINE	BUTLER	STORM SEWER	DIESEL FUEL	200	GAL
072491	MIDDLETOWN SCHOOL	BUTLER	SEWERS	OIL	0	UNK
072691	CHEM DYNE TRUST	BUTLER	FORD CANAL	ORGANIC	0	UNK
072691	UNKNOWN	HAMILTON		HAZARDOUS WASTE	20	DMS
726910	BRAY TRUCKING	BUTLER		DIESEL FUEL	0	UNK
072691	UNKNOWN	HAMILTON	STORM SEWER	FLUORESCENT GREEN	0	UNK
072991	LAND AIR	HAMILTON		DIESEL FUEL	80	GAL
095591	UNKNOWN	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
073191	CENTRAL TIRE COMPANY	BUTLER	SEWER	HYDRAULIC FLUID	0	UNK
080191	BONDED OIL / EMRO	HAMILTON	STORM SEWER	GASOLINE	30	GAL
080191	ANCHOR ASSOCIATES	HAMILTON		FUEL OIL	0	UNK
080291	SHELL OIL CO	HAMILTON		OILY STUFF	0	UNK
080591	NORTH HILLS NAZARENE	HAMILTON		CONTAMINATED SOIL	0	UNK
080691	COLERAIN TOWNSHIP	HAMILTON		GASOLINE	38	GAL
080691	NORFOLK & SOUTHERN	HAMILTON		WASTE OIL	10	GAL
081191	MR NEIGHBOR	BUTLER	DITCH	OIL	0	UNK
081691	JELEN TRUCKING CO.	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	75	GAL
081791	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
081891	BROWN RUN COUNTRY	BUTLER	GREAT MIAMI	SEWAGE	0	UNK
082091	SWIFTON LEASING CO	HAMILTON	STORM SEWER	DIESEL FUEL	50	GAL
082091	MONSANTO CHEMICAL CO	HAMILTON		BUTADIENE	700	LBS
082091	OHIO CONNECTION	BUTLER	GREAT MIAMI	DIESEL FUEL	110	GAL
082291	TARGET STORE	BUTLER		SEWAGE	0	N
082391	UNKNOWN	HAMILTON		CONTAMINATED SOIL	0	UNK
082791	ASHLAND CHEMICAL	HAMILTON		AMMONIA	100	LBS
082791	B P OIL CO	HAMILTON		GASOLINE	5	GAL
082891	BALTIMORE PIKE	HAMILTON		HERBICIDE	0	UNK
082991	UNKNOWN	HAMILTON		TRASH	0	UNK
082991	UNKNOWN	BUTLER		ABANDONED PAILS	12	ITM
083091	MONSANTO CHEMICAL CO	HAMILTON		BUTADIENE	3300	LBS
083091	PMC SPECIALTIES GROUP	HAMILTON		SULFURIC ACID 93 %	200	GAL
090291	UNKNOWN	HAMILTON	DITCH	WASTE WATER	0	UNK
090391	LEE'S CROSSING	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
090691	UNKNOWN	BUTLER	GREAT MIAMI	ABANDONED DRUM	1	DMS
090691	TEASDALE FENTON DRY	HAMILTON		SPENT	2	GAL
090891	METROPOLITAN SEWER	HAMILTON	WAYSIDE CREEK	SEWAGE	0	UNK
090991	EMERSON ELECTRIC CO /	HAMILTON	SANITARY SEWER	POTASSIUM	150	LBS
091091	OHIO DEPT OF	HAMILTON		DIESEL FUEL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
091191	ASHLAND PETROLEUM	HAMILTON		AMMONIA	323	PPM
091191	ASHLAND PETROLEUM	HAMILTON	HOLLOW CREEK	AMMONIA	0	UNK
091291	ASHLAND PETROLEUM	HAMILTON		AMMONIA	300	PPM
091291	FIRESTONE CO	BUTLER		ANTIFREEZE	0	UNK
091391	ASHLAND PETROLEUM	HAMILTON		AMMONIA	100	LBS
091691	ASHLAND PETROLEUM	HAMILTON		AMMONIA	116	LBS
091691	STEVENSON OIL CO	BUTLER	UNKNOWN	GASOLINE	0	UNK
091791	ASHLAND PETROLEUM	HAMILTON		AMMONIA	151	LBS
091791	D O E / FERNALD	HAMILTON		INCINERATOR	2231	LBS
091891	ASHLAND PETROLEUM	HAMILTON		AMMONIA	160	LBS
091991	UNKNOWN	BUTLER		SLUDGE	0	UNK
092091	SAFETY KLEEN	HAMILTON		MINERAL SPIRITS	4	GAL
092091	ASHLAND PETROLEUM	HAMILTON		AMMONIA	123	LBS
092391	HIGHLAND LAUNDRY	HAMILTON		DRY CLEANING FLUID	5	ITM
092391	CRYSTAL TISSUE	BUTLER	GREAT MIAMI	RED STUFF	0	UNK
092491	UNKNOWN	BUTLER		PAPER SLUDGE	1	ITM
092691	HINCKLE CORP.	HAMILTON		AMMONIA	180	LBS
092791	UNKNOWN	HAMILTON	STORM SEWER	MOTOR OIL	6	QTS
092791	D O E / FERNALD	HAMILTON		OIL SLUDGE	197	LBS
093091	MR. L.J. NUSS	BUTLER		SLUDGE	0	UNK
100291	MR STEVE BROCKOFF	HAMILTON		MOTOR OIL	0	UNK
100291	BUILDERS TRANSPORT	HAMILTON		DIESEL FUEL	75	GAL
100291	BUTLER COUNTY	BUTLER		SEWAGE	0	UNK
100391	ASHLAND PETROLEUM	HAMILTON		AMMONIA	106	LBS
100491	UNKNOWN	HAMILTON		MEDICAL OXYGEN	1	ITM
100491	GREEN TREE APARTMENTS	BUTLER		SEWAGE	0	UNK
100991	KLING BEIL MANAGEMENT	BUTLER		INSECTICIDE	20	GAL
101191	UNKNOWN	BUTLER	GREAT MIAMI	WHITE FOAM	0	UNK
101191	D O E / FEED MATERIALS	HAMILTON		LEAD	0	UNK
101591	UNKNOWN	BUTLER		ARMCO SLAG	0	UNK
101791	SISTERS OF CHARITY OF	HAMILTON		FUEL OIL	0	UNK
101791	B P OIL CO / PIPELINE DIV	HAMILTON		HYDROCARBONS	0	UNK
101791	UNKNOWN	HAMILTON		OIL	55	GAL
102091	KENTUCKY FRIED	HAMILTON		GREASE	0	UNK
102291	NORFOLK SOUTHERN	BUTLER		MOLTEN SULPHUR	0	NOS
102391	ANDERSON PARK DISTRICT	HAMILTON		GASOLINE	0	UNK
102491	WALT SWEENEY WEST	HAMILTON	DRAIN	ANTIFREEZE	0	UNK
102591	UNKNOWN	HAMILTON		MOTOR OIL	0	UNK
102591	UNKNOWN	HAMILTON		UST	0	UNK
102591	UNKNOWN	HAMILTON		OIL	0	UNK
110591	GREEN TWP PUBLIC	HAMILTON		CONTAMINATED SOIL	0	UNK
110591	UNKNOWN	HAMILTON	SEWER	RED STUFF	0	UNK
110691	ARMCO STEEL LP	BUTLER	GREAT MIAMI	WASTE OIL	1000	GAL
110691	UNKNOWN	BUTLER	UNKNOWN CREEK	OIL	0	UNK
110691	UNKNOWN	HAMILTON		UNKNOWN	0	UNK
110891	PRINT PACK	HAMILTON		CONTAMINATED SOIL	0	UNK
110991	UNKNOWN	HAMILTON		HYDRAULIC FLUID	20	GAL
111291	UNKNOWN	HAMILTON	STORM SEWER	MOTOR OIL	0	UNK
111591	UNKNOWN	HAMILTON	WHITEWATER	BLACK STUFF	0	UNK
112791	HANDBY TOOL RENTAL	HAMILTON		PETROLEUM	0	UNK
120191	ASHLAND CHEMICAL	HAMILTON		PETROLEUM NAPTHA	0	UNK
120291	MR. FRANK	HAMILTON	GREAT MIAMI	OIL	0	UNK
120391	CHEVRON / LARRY'S	BUTLER		GASOLINE	0	UNK
120991	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
121091	ARMCO STEEL	BUTLER		SPENT PICKLE LIQUOR	200	GAL
121191	CRESCENT PARK	BUTLER		DIESEL FUEL	50	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
121291	MOBAY	BUTLER		HYDROCHLORIC ACID	300	GAL
121391	WITT COMPANY	HAMILTON	STORM SEWER	ACID	4000000	GAL
121391	KUJAC TRANSPORT	HAMILTON		DIESEL FUEL	200	GAL
121391	GE APPARATUS SERVICE	HAMILTON		ASKAREL	3	GAL
121991	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
122391	HAMILTON COUNTY	HAMILTON	STREAM	DIESEL FUEL	20	GAL
010392	PINNACLE MANAGEMENT	BUTLER		GASOLINE	1	GAL
010892	BRINKS INC.	HAMILTON	SEWER	WASTE OIL	0	UNK
010892	BASF	HAMILTON		ASBESTOS	0	UNK
011492	LUKIN AIRPORT	HAMILTON	SEWER	WASTE MOTOR OIL	0	UNK
011492	UNKNOWN	BUTLER		DIESEL FUEL	100	GAL
011692	CHEMICALS INC.	HAMILTON		ISOPROPYL ALCOHOL	20	GAL
012192	HINCKLE CORP.	HAMILTON		ETHYLENE GLYCOL	200	GAL
012292	MOSE MARCUS	HAMILTON		GASOLINE	0	UNK
012392	BAY WEST PAPER CO	BUTLER	GREAT MIAMI	WHITE CORROSIVE	0	UNK
012492	UNKNOWN	HAMILTON		DIESEL	80	GAL
012492	GOLSCH LANDFILL	HAMILTON		WASTE CHEMICALS	0	UNK
012492	OFF ROAD CENTER	HAMILTON		WASTE OIL	3	DMS
012892	MAACO AUTO PAINTING	HAMILTON		DRUMS	40	DRM
012992	BASF	HAMILTON		ASBESTOS	0	UNK
013092	HAMILTON DIE CAST	BUTLER	GREAT MIAMI	WASTE OIL	0	UNK
013192	UNKNOWN CITIZEN	HAMILTON	SANITARY SEWER	FUEL OIL	150	GAL
013192	PETROLEUM TRADERS	BUTLER		DIESEL FUEL	20	GAL
020392	INTERNATIONAL PAPER	HAMILTON		ETHYLENE GLYCOL	0	UNK
020492	CSX	HAMILTON		UNKNOWN	0	UNK
020692	UNKNOWN	HAMILTON		DYE	0	UNK
020692	JOE'S AUTO SERVICE	HAMILTON	SANITARY SEWER	GASOLINE	100	UNK
020992	MR. DUNCAN	HAMILTON		FUEL OIL	30	GAL
021092	MOSEY'S INC	HAMILTON		AMMONIA	2000	LBS
020192	INTERNATIONAL PAPER	HAMILTON		ETHYLENE GLYCOL	0	UNK
021192	MOSE COHN	HAMILTON		ABANDONED DRUM	0	UNK
021292	D O E / FERNALD	HAMILTON	GREAT MIAMI	RCRA WASTE	57	LBS
021392	DON'S AUTO SERVICE	BUTLER	GREAT MIAMI	OIL	0	UNK
021492	PROCTER & GAMBLE	HAMILTON		HYDROCARBONS	0	UNK
021892	D O E / FERNALD	HAMILTON	GREAT MIAMI	RCRA SPENT	24	LBS
021892	BURLEWS CARPET &	BUTLER	STORM SEWER	WASTE CHEMICALS	0	UNK
021992	D O E / FERNALD	HAMILTON		RCRA SPENT SOLVENT	41	LBS
021992	CONWAY CENTRAL	BUTLER	DITCH & SEWER	FOOD COLORING	10	GAL
022092	ROSS MIDDLE SCHOOL	BUTLER		GASOLINE	5	GAL
022292	UNKNOWN	HAMILTON		SEWAGE	0	UNK
022692	UNKNOWN	HAMILTON		TRANSFORMES	6	ITM
022892	OLD DOMINION FREIGHT	HAMILTON		INK	55	GAL
030292	SHORTY'S & LENNY'S	HAMILTON		WASTE OIL	0	UNK
030392	UNKNOWN	BUTLER	GREGORY &	ALGAE	0	UNK
030592	UNKNOWN	HAMILTON	DITCH	FLUORESCENT GREEN	0	UNK
031092	TRUCKWAY LEASING	BUTLER		DIESEL FUEL	100	GAL
031092	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
031092	TNT HOLLAND MOTORS	BUTLER		UNKNOWN	0	UNK
031192	TAYLOR'S AUTO PARTS	BUTLER		WASTE OIL	0	UNK
031392	ARAB TERMITE &	HAMILTON		DURSBAN	0	UNK
031392	TRUCKWAY LEASING	BUTLER	STORM DRAIN	DIESEL FUEL	100	GAL
031792	SORG PAPER CO.	BUTLER	MIDDLETOWN	EFFLUENT	150	GAL
031792	RAY GORDON CO	HAMILTON		WASTE OIL	0	UNK
031892	MIDDLETOWN	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
031992	PRIVATE CITIZEN	BUTLER		GASOLINE	18	GAL
032092	B P GAS STATION	BUTLER		GASOLINE	10	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
032492	ARMCO STEEL	BUTLER		IRON OXIDE WASTE	0	UNK
032492	METROPOLITAN SEWER	HAMILTON	UNNAMED CREEK	SEWAGE	0	UNK
032692	D O E / FERNALD	HAMILTON		URANIUM 2-35	0	UNK
033192	ARMCO STEEL	BUTLER		OIL	0	UNK
040192	CHAMPION PAPER	BUTLER	GREAT MIAMI	GREEN STUFF	0	UNK
040392	UNKNOWN	HAMILTON		ABANDONED DRUM	1	DMS
040392	SORG PAPER CO.	BUTLER		MINERAL OIL	0	UNK
040692	MT PLEASANT	BUTLER		BUNKER OIL	0	UNK
040992	SORG PAPER CO.	BUTLER		WASTE WATER	12000	GAL
041392	LENERTZ'S TRUCKING CO /	HAMILTON		POLYVINYL ALCOHOL	2000	GAL
041592	JL TRANSPORT INC.	BUTLER		DIESEL FUEL	100	GAL
041592	CSX TRANSPORTATION	HAMILTON		ETHYLENE GLYCOL	0	UNK
041692	UNKNOWN	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
041692	HORN INDUSTRIES	BUTLER		WASTE SOLVENTS	0	UNK
041692	BURGER KING	HAMILTON	UNKNOWN CREEK	VEGETABLE OIL	0	UNK
041792	SORG PAPER CO.	BUTLER		GASOLINE	25	GAL
041792	UNKNOWN	HAMILTON	TAYLOR CREEK	GASOLINE	0	UNK
042092	MR ROLAND HEDGE	HAMILTON		POTASSIUM CYANIDE	5	DMS
042392	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
042592	UNKNOWN	HAMILTON		CHLOROBENZENE	0	UNK
042792	SORG PAPER CO.	BUTLER	SANITARY SEWER	PARAMEL	3000	GAL
042892	UNKNOWN	BUTLER	DICKS CREEK	OIL	0	UNK
042892	RALPH RODEFELD	BUTLER		FUEL OIL	100	GAL
042892	UNKNOWN	BUTLER		FUEL OIL	0	UNK
043092	CHARLES DREWRY	HAMILTON	UNKNOWN CREEK	BLACK STUFF	0	UNK
050392	MR. BOB HAYES	HAMILTON	UNKNOWN CREEK	WHITE STUFF	0	UNK
050392	CORKY'S AUTO CARE	BUTLER		GASOLINE	0	UNK
050492	UNKNOWN	HAMILTON		OIL	0	UNK
050492	SHAFFER TRUCKING INC	HAMILTON		DIESEL FUEL	50	GAL
050692	UNKNOWN	BUTLER	STORM SEWER	GASOLINE	0	UNK
050792	MONSANTO / PORT	HAMILTON		ACRYLONITRILE	23	LBS
050792	QUEEN CITY TERMINALS	HAMILTON		RED STUFF	0	UNK
050992	PMC SPECIALTIES GROUP	HAMILTON		CHLORINE	0	UNK
051092	UNKNOWN	BUTLER		OIL	0	UNK
051292	UNKNOWN	HAMILTON	TAYLOR CREEK	BLACK STUFF	0	UNK
051592	UNKNOWN	HAMILTON		BATTERY ACID	0	UNK
051892	GREEN TWP FIRE DEPT	HAMILTON		DIESEL FUEL FUMES	0	UNK
051992	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
051992	JENISON EQUIPMENT INC.	BUTLER		DIESEL FUEL	65	GAL
052192	BUTLER COUNTY WATER &	BUTLER	UNKNOWN CREEK	SLUDGE	3000	GAL
052792	UNKNOWN	BUTLER	GREAT MIAMI	WHITE STUFF	0	UNK
060192	PROCTOR & GAMBLE	HAMILTON		FUEL OIL	0	UNK
060192	BEST LAWN	HAMILTON		HERBICIDE	150	GAL
060492	SILVER OIL CO	HAMILTON	SANITARY SEWER	GASOLINE	3000	GAL
060892	HILTON DAVIS CO.	HAMILTON		XYLENE	800	GAL
060992	FRANK SYMMES TRUCKING	HAMILTON		DIESEL FUEL	80	GAL
061092	UNKNOWN	HAMILTON		OIL	0	UNK
061292	THE GARAGE	HAMILTON		RUSTY STUFF	0	UNK
061592	FIBERGLASS EVERCOAT	HAMILTON		STYRENE	0	UNK
061792	UNKNOWN	HAMILTON		KEROSENE	20	GAL
061792	DECAMP TOWING	HAMILTON	COMBINED	GASOLINE	0	UNK
061892	MR. JOHN SHOCKLEY	BUTLER	SEWERS	OIL	20	GAL
061892	BAY WEST PAPER	BUTLER		SEWAGE	0	UNK
062292	B P OIL	HAMILTON		DIESEL FUEL	25	GAL
062392	BUTLER COUNTY WATER &	BUTLER	TWO MILE CREEK	SLUDGE	0	UNK
062492	SUMNER'S SUNOCO GAS	HAMILTON	SEWERS	ANTIFREEZE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
062592	UNKNOWN	HAMILTON	COMBINED	DIESEL FUEL	150	GAL
062792	ARMCO STEEL	BUTLER	DICKS CREEK	FLUSHING LIQUOR	0	UNK
063092	SORG PAPER CO.	BUTLER	STORM SEWER	CLEANING SOLUTION	40	GAL
063092	KENTON TIRE	HAMILTON		OIL	0	UNK
070792	UNIVERSITY OF	HAMILTON	SANITARY SEWER	FUEL OIL	300	GAL
070992	ARMCO STEEL	BUTLER	DICKS CREEK	WASTE WATER	0	UNK
071492	JOE KIDD DODGE	HAMILTON	STORM SEWER	ANTIFREEZE	0	UNK
071492	HILTON DAVIS CO.	HAMILTON	COMBINED SEWER	SODIUM FLUORSCEIN	200	GAL
071692	RFK TRANSPORT	HAMILTON	COMBINED	DIESEL FUEL	25	GAL
071792	B F I MEDICAL WASTE	BUTLER	SANITARY	WASTE WATER	19000	GAL
071792	UNKNOWN	BUTLER		UNKNOWN	0	UNK
072792	M P & G PAINTING	HAMILTON		ABANDONED DRUM	30	DMS
072892	LEISURE LAWN	HAMILTON		HERBICIDE	140	GAL
072892	REFINERS TRANSPORT &	HAMILTON		DIESEL FUEL	40	GAL
072992	DUBOIS CHEMICAL CO.	HAMILTON	UNKNOWN CREEK	UNKNOWN STUFF	0	UNK
072992	SKYLINE CHILI	HAMILTON	STORM SEWER	GREASE	0	UNK
073092	E M SCIENCE	HAMILTON		CARBON	15	GAL
073092	MSD OF HAMILTON	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
080492	CREEN'S FUEL & SUPPLY	HAMILTON	UNKNOWN CREEK	CONTAMINATED	0	UNK
080692	MS LAURA GIBSON	BUTLER		HEATING OIL	80	GAL
080692	HILLTOP CONCRETE	HAMILTON		HYDRAULIC OIL	0	UNK
081192	RENNICKS GARAGE	HAMILTON		OIL	0	UNK
081192	JOHN R. JURGENSON CO.	BUTLER	DITCH	ASPHALT EMULSION	200	GAL
081192	BUILDERS	HAMILTON	STORM SEWER	PESTICIDES	0	UNK
081892	KENTUCKY CONTAINER	HAMILTON		DIESEL FUEL	1000	GAL
082192	UNKNOWN	BUTLER		DIESEL FUEL	50	GAL
082292	UNKNOWN	BUTLER	WHITE CREEK	UNKNOWN STUFF	0	UNK
082592	HILTON DAVIS CO.	HAMILTON		PROCESS LIQUORS	7500	LBS
083192	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
083192	CINCINNATI GAS &	BUTLER		TRANSFORMER OIL	1	GAL
083192	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	200	GAL
090192	UNKNOWN	BUTLER		FUEL OIL	0	UNK
090292	MR. JIM DOZIER	BUTLER		PAINT	0	UNK
090292	HINCKLE CORP.	HAMILTON		DALTHERM	125	LBS
090292	RUMPKE	HAMILTON	STORM SEWER	HYDRAULIC OIL	30	GAL
090592	SCALISE PRECISION TOOL	HAMILTON		OIL	0	UNK
090692	ARMCO INC	BUTLER		TAR	500	GAL
090792	SIGN WORLD	HAMILTON		ACETATE THINNER	0	UNK
090892	DWAINE'S AUTO SERVICE	HAMILTON	UNKNOWN CREEK	CARBORATOR	5	GAL
090892	DWAYNE & JERRY MOBIL	HAMILTON	MSD	CARBURETOR	5	GAL
090992	UNKNOWN	HAMILTON	STORM SEWER	ANTIFREEZE	0	UNK
091192	HINCKLE REALTY	BUTLER		SEWAGE	0	UNK
091192	TERMINEX	HAMILTON	UNKNOWN CREEK	PRYFON 6	50	GAL
091592	SORG PAPER CO.	BUTLER	GREAT MIAMI	TRANSFORMER OIL	5	OZS
091692	LILLY VAN SLUYS	HAMILTON		GASOLINE	3	GAL
091692	B P OIL CO	BUTLER		GASOLINE	15	GAL
091792	ARMCO INC	BUTLER		YELLOW STUFF	0	UNK
091992	MIDWEST TRANSIT CO	HAMILTON		DIESEL FUEL	25	GAL
092192	SORG PAPER CO.	BUTLER	GREAT MIAMI	WASTE WATER	150	GAL
100392	MS HELEN HUMPHREY	HAMILTON	UNKNOWN CREEK	GASOLINE	2	GAL
100392	UNKNOWN	HAMILTON		ABANDONED DRUMS	3	DMS
100592	UNKNOWN	BUTLER		OIL	0	UNK
101292	UNKNOWN	HAMILTON		OIL	0	UNK
101492	GOUGH LAMB DRY	BUTLER		PERCHLOROETHYLEN	0	UNK
101492	ROSS LOCAL SCHOOLS	BUTLER		DIESEL FUEL	0	UNK
101492	MR. KEN FARROW	HAMILTON		DRUMS	13	DMS

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
101592	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
101692	MR. DANIEL GALBERT	HAMILTON		HEATING OIL	100	GAL
101992	MR. MARTY MICHELS	HAMILTON	STORM SEWER	OIL	0	UNK
101992	CLARK GAS STATION	BUTLER		OIL	0	UNK
102092	TRANS-STATES EXPRESS	HAMILTON		OIL	50	GAL
102192	E M SCIENCE	HAMILTON		DICHLOROETHANE	30	GAL
102192	E M SCIENCE	HAMILTON		CHLOROFORM	20	GAL
102692	ORKIN PEST CONTROL	HAMILTON		DRAGNET	2	GAL
102892	SPEEDWAY GAS STATION	HAMILTON		GASOLINE	0	UNK
110392	RUAN LEASING CO	BUTLER		DIESEL FUEL	10	GAL
110492	KLEIN MOTOR	HAMILTON	STORM SEWER	OIL	0	UNK
110992	CLARK GAS STATION	BUTLER	SANITARY SEWER	GASOLINE	40	GAL
110992	G E PARK	HAMILTON		FUEL OIL	15	GAL
111492	UNKNOWN	BUTLER	GREAT MIAMI	FOAM	0	UNK
111592	GRAYE MACHINE SHOP	BUTLER		CLEANING SOLUTION	30	GAL
111692	DEACONESS HOSPITAL	HAMILTON		PICRIC ACID	20	GMS
111792	BLUE VELVET TRANSPORT	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	80	GAL
112292	ARMCO STEEL	BUTLER		DIESEL FUEL	2500	GAL
112292	UNKNOWN	BUTLER	GREAT MIAMI	WHITE FOAMY STUFF	0	UNK
112492	UNKNOWN	BUTLER		DRUMS	1	DMS
112792	INTERSTATE BATTERY	HAMILTON	STORM SEWER	BATTERY ACID	0	UNK
120592	MR. ERIC PENNDELTON	HAMILTON		SEWAGE	0	UNK
120792	ARMCO STEEL	BUTLER		HYDROGEN SULFIDE	30000	LBS
120892	MADISON SCHOOL	BUTLER		GASOLINE	36	GAL
120992	ASHLAND OIL	HAMILTON		GASOLINE	4	GAL
121092	OHIO ARMY NATIONAL	HAMILTON		DIESEL FUEL	100	GAL
121192	SOUTHWESTERN OHIO	BUTLER	DICKS CREEK	DIESEL FUEL	0	UNK
121792	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	25	GAL
121992	ARMCO STEEL	BUTLER	DICKS CREEK	RINSE WATER	400	GAL
122792	ARMCO INC	BUTLER	STORM SEWER	WASTE WATER	0	UNK
122792	ARMCO INC	BUTLER		WASTE WATER	0	UNK
010493	METROPOLITAN SEWER	HAMILTON	TAYLOR CREEK	SEWAGE	0	UNK
010593	MS ALICE BISHOP	BUTLER	UNKNOWN CREEK	FUEL OIL	0	UNK
010693	MR TIMOTHY TAYLOR	BUTLER	DRY FORK	FUEL OIL	0	UNK
011293	AERONOCA / CHEMICALS	BUTLER	HYDRAULIC	HM406 PENETRANT	60	GAL
011393	UNKNOWN	BUTLER		MURIATIC ACID	1	GAL
020293	CHEVRON	HAMILTON		GASOLINE	0	UNK
020493	CRYSTAL TISSUE	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
020593	METROPOLITAN SEWER	HAMILTON	REEMLIN ROAD	SEWAGE	0	UNK
020993	HAMILTON FOUNDRY	HAMILTON	SEWER	TRANSFORMER OIL	1	GAL
020993	UNKNOWN	BUTLER		DIESEL FUEL	10	GAL
021193	TRI-STATE PAVING &	HAMILTON		DIESEL FUEL	0	UNK
021193	MILLER BREWING CO	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
021593	AMERICAN CYANAMID CO.	BUTLER		SULFURIC ACID	650	GAL
021693	ARMCO STEEL /	BUTLER		SPENT PICKLE LIQUOR	4000	GAL
021793	UNKNOWN	HAMILTON		JET A FUEL	100	GAL
021893	CLARK TRANSPORTATION	BUTLER		DIESEL FUEL	40	GAL
021993	CITIZEN	HAMILTON	STORM SEWER	FUEL OIL	0	UNK
022193	UNKNOWN	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	0	UNK
022693	HIRLINGER CHEVROLET	HAMILTON	WHITEWATER	WASTE OIL	0	UNK
022893	QUEEN CITY BARREL	HAMILTON	SANITARY SEWER	ALUMINUM RING DIP	0	UNK
030493	BUTLER COUNTY WATER &	BUTLER		SEWAGE	0	UNK
030593	CINCINNATI GAS &	BUTLER		TRANSFORMER OIL	12	GAL
030593	G S FRANK & SONS	HAMILTON	SANITARY SEWER	SULFURIC ACID	0	UNK
030893	ANR FREIGHT SYSTEM	BUTLER		INSECTICIDE	6	LBS
030993	METROPOLITAN SEWER	HAMILTON	TAYLOR CREEK	SEWAGE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
031193	UNKNOWN	BUTLER	SANITARY SEWER	OIL	0	UNK
031593	ALLDAIR FARM	BUTLER		FERTILIZER	300	GAL
031793	STEELCRAFT	HAMILTON	UNKNOWN CREEK	PAINT	0	UNK
031793	BETHESDA HOSPITAL	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	600	GAL
031893	BETHESDA HOSPITAL	HAMILTON	COMBINED	DIESEL FUEL	100	GAL
032393	UNKNOWN	HAMILTON	UNKNOWN CREEK	OIL	0	UNK
032493	DEUTCH & SON	HAMILTON		DRUMS	0	UNK
032693	HARRIS SOUTH & NORTH	HAMILTON	SANITARY SEWER	CITRIC ACID	0	UNK
032793	METROPOLITAN SEWER	HAMILTON		SEWAGE	0	UNK
032993	WAKINS TERMINAL	BUTLER	STORM SEWERS	WASTE WATER	0	UNK
032993	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
040193	UNKNOWN	HAMILTON		WHITE POWDER	0	UNK
040193	METROPOLITAN SEWER	HAMILTON	GREAT MIAMI	SEWAGE	0	UNK
040393	CINCINNATI GAS &	HAMILTON	STORM SEWER	TRANSFORMER OIL	340	GAL
040593	SPENCE'S GARAGE	BUTLER	UNKNOWN CREEK	GASOLINE	10	GAL
040993	UNKNOWN	MONTGOMERY	STORM SEWER	GASOLINE	11	GAL
041393	ASHLAND PETROLEUM	HAMILTON		KEROSENE	200	GAL
041693	UNKNOWN	BUTLER		FUEL OIL	0	UNK
041993	WALLACE INC .	HAMILTON		DARK BLUE STUFF	0	UNK
042093	CINCINNATI GAS &	HAMILTON	STORM SEWER	TRANSFORMER OIL	25	GAL
042393	ARMCO STEEL	BUTLER	GREAT MIAMI	WASTE WATER	0	UNK
042793	KELLERMAN CO.	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	20	GAL
042893	EMRO MARKETING	BUTLER	STORM SEWER	GASOLINE	15	GAL
931731	D O E / FERNALD	HAMILTON		VINYL NITRATE	30	GAL
042993	RUMPKE WASTE INC	HAMILTON	UNKNOWN CREEK	OIL	50	GAL
043093	HAYLES INDUSTRIAL	BUTLER		HAZARDOUS WASTES	0	UNK
050193	UNKNOWN	HAMILTON		YELLOW SUBSTANCE	0	UNK
050493	ACKMOR PROPERTIES	HAMILTON		HEATING OIL	0	UNK
050593	DRAKE CENTER INC	HAMILTON	CILLY CREEK	OIL	5	GAL
050793	MIDDLETOWN WWTP	BUTLER	GREAT MIAMI	SEWAGE	0	UNK
050793	UNKNOWN	HAMILTON		MERCURY	0	UNK
051093	UNKNOWN	HAMILTON		GASOLINE	0	UNK
051093	CHEMITROL	BUTLER		HERBICIDE	0	UNK
051193	OHMART CORP	HAMILTON		DRUM	1	DMS
051193	LARRY SMITH	HAMILTON		DIESEL FUEL	0	UNK
051193	BOLLMER FARMS	BUTLER		SEWAGE	0	UNK
051293	CINCINNATI GAS &	HAMILTON		TRANSFORMER OIL	450	GAL
051393	RUMPKE WASTE INC	HAMILTON		HYDRAULIC OIL	45	GAL
051693	RELIABLE SERVICE INC	HAMILTON		LIME SLURRY	3000	GAL
051893	GRUBB OIL CO	HAMILTON		OIL	0	UNK
051893	TAYLOR OIL	HAMILTON		WASTE OIL	20	GAL
052193	GREEN'S FUEL & SUPPLY	HAMILTON	UNKNOWN CREEK	WASTE WATER	0	UNK
052293	ARMCO STEEL	BUTLER	GREAT MIAMI	SULFURIC ACID	8300	GAL
052293	MR. ASHER COLLET	BUTLER	STORM SEWER	OIL	1	GAL
052293	SOUTHERN OHIO SEAL	BUTLER	GREGORY CREEK	BLACKTOP SEALANT	5	GAL
052493	SUN CHEMICAL	HAMILTON		INK	20	LBS
052593	MR. CHARLES DUDLEY	BUTLER	SALMAN CREEK	MANURE SLUDGE	100	GAL
052593	UNKNOWN	HAMILTON		OIL	0	UNK
052593	MR RALPH BLOOM	HAMILTON		DIESEL FUEL	0	UNK
052993	TOWN ASSESSED	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
052993	TEXAS EASTERN GAS CO	BUTLER		NATURAL GAS	0	UNK
060193	UNKNOWN	HAMILTON		GASOLINE	0	UNK
060293	CITY OF HAMILTON	BUTLER		CALCIUM CHLORIDE	7000	GAL
060493	ENERFAB INC	HAMILTON	STORM SEWER	METHYL EHTYL	50	GAL
060893	CAMPBELL HAUSSELD	HAMILTON		GASOLINE	100	GAL
061093	UNKNOWN	HAMILTON		DIESEL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
061193	METROPOLITAN SEWER	HAMILTON	TAYLOR CREEK	SEWAGE	0	UNK
061293	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
061293	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
061293	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
061593	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
061793	PETROLEUM TRADERS	BUTLER		DIESEL FUEL	0	UNK
061893	UNKNOWN	HAMILTON	UNKNOWN CREEK	HEATING FUEL	0	UNK
062293	VULCAN OIL CO	HAMILTON		TALLOW	500	GAL
062393	DELHI FOUNDRY SAND	HAMILTON		LIME POWDER	1000	LBS
062393	PLAINVILLE CONCRETE	HAMILTON		OIL	10	GAL
062493	DAYTON CONTAINERIZED	BUTLER	DRY DITCH	DIESEL FUEL	80	GAL
062693	ARMCO STEEL	BUTLER	DICKS CREEK	WASTE WATER	0	UNK
062693	ADDISON HARDWARE	HAMILTON		SEWAGE	0	UNK
062793	PAVE PREP	HAMILTON		LIQUID ASPHALT	200	GAL
062893	MR ROVERT COVERT	HAMILTON		DIESEL FUEL	0	UNK
070293	BECKETT PAPER CO.	BUTLER		ETHYLENE GLYCOL	0	UNK
070293	MT PLEASANT	BUTLER	WALKER RUN	DIESEL OIL	100	GAL
070293	MS ESTEL HARMONN	HAMILTON		OIL	0	UNK
070293	BUTLER COUNTY WATER &	BUTLER		SEWAGE	0	UNK
070293	MT PLEASANT	BUTLER	UNKNOWN CREEK	OIL	125	GAL
070393	UNKNOWN	HAMILTON	BRIARLY CREEK	OIL	0	UNK
070393	BUTLER COUNTY WATER &	BUTLER	UNKNOWN CREEK	SEWAGE	0	UNK
070793	JEWISH HOSPITAL	HAMILTON		PHENOL	1	LBS
071393	RUETGERS-NEASE	HAMILTON	GREAT MIAMI	WASTE WATER	480	GAL
071493	DAWN TRUCKING	HAMILTON		ADCOTE	0	UNK
071493	CINCINNATI GAS &	HAMILTON	UNKNOWN CREEK	TRANSFORMER OIL	2	GAL
071593	H 2 ORGANICS	BUTLER	PLEASANT RUN	PIGMENT	0	UNK
071693	CRAIG TRANSPORTATION	BUTLER	STORM SEWER	DIESEL FUEL	50	GAL
071993	CINCINNATI	HAMILTON		FUEL OIL	0	UNK
072293	ALL PRO AUTO	HAMILTON		OIL	0	UNK
072893	TURNBULL CONCRETE	HAMILTON	UNKNOWN CREEK	CLEANERS	0	UNK
080493	UNKNOWN	HAMILTON	UNKNOWN CREEK	GASOLINE	25	GAL
080493	ARMCO STEEL	BUTLER		FERROUS CHLORIDE	150	GAL
080993	UNKNOWN	HAMILTON		DIESEL FUEL	80	GAL
080993	B P OIL CO	BUTLER		GASOLINE	0	UNK
081093	KOKOSING CONSTRUCTION	HAMILTON		DIESEL FUEL	150	GAL
081193	ARMCO STEEL	BUTLER	STORM SEWER	PICKLE LIQUOR	100	GAL
081193	L & L DECORATING	HAMILTON		THINNERS	0	UNK
081293	UNKNOWN	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
081393	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	WASTE WATER	0	UNK
081493	INTERNATIONAL PAPER	BUTLER	GREAT MIAMI	PAPER PROCESS	1000	GAL
082193	UNKNOWN	HAMILTON		OIL	0	UNK
082493	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
082593	METROPOLITAN SEWER	HAMILTON		WATER AND OIL MIX	800	GAL
082793	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	WASTE WATER	500	GAL
083093	INLAND CONTAINER CORP	BUTLER		DIESEL FUEL	25	GAL
083093	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
083093	B P OIL CO	HAMILTON		GASOLINE	0	UNK
083193	MR VINCE RACK	HAMILTON		OIL	0	UNK
090293	VERNON MILLING	HAMILTON		ADHESIVE	330	GAL
090893	PACKARD LAND TRUCKING	HAMILTON		DIESEL FUEL	100	GAL
090893	B P OIL CO	BUTLER		OIL	0	UNK
090893	ENVIRONMENTAL RISK	HAMILTON		CHEMICALS	0	UNK
090893	ASHLEY FURNITURE	HAMILTON		OIL	10	GAL
090893	AMERICAN METAL	HAMILTON		WASTE CHEMICALS	0	UNK
090893	CINCINNATI GAS &	HAMILTON	UNKNOWN CREEK	TRANSFORMER OIL	27	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
090993	CRESTHILLS MIDDLE	HAMILTON		CHEMICALS	0	UNK
091393	B P OIL CO	HAMILTON		GASOLINE	0	UNK
091393	GREEN'S CONCRETE	HAMILTON		OIL	15	GAL
091493	ECONOMY PETROLEUM	BUTLER	STORM SEWER	FUEL OIL	0	UNK
091693	WORTHINGTON STEEL	BUTLER		HAZARDOUS WASTE	5	GAL
092193	B P OIL CO	HAMILTON		GASOLINE	0	UNK
092393	CLARK OF CINCINNATI	BUTLER	DRAINAGE DITCH	UL-SO-460	5	GAL
092493	MR. JAMES HARPER	HAMILTON		OIL	0	UNK
092493	SOF COMPANY ERECTORS	HAMILTON		HYDRAULIC OIL	20	GAL
092593	HAMILTON FOUNDRY	HAMILTON		PCB OIL	1	GAL
092793	SENCO COMPANY	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	40	GAL
092893	VIGORO INDUSTRIES	HAMILTON		AMMONIA	300	LBS
100193	VULCAN OIL CO	HAMILTON		HEATING OIL	15	GAL
100493	MR. BUD BLEDSOE	HAMILTON		OIL	0	UNK
100493	HAMILTON COUNTY	HAMILTON	STORM SEWER	GASOLINE	20	GAL
100493	RUETGERS-NEASE	HAMILTON	GREAT MIAMI	WASTE WATER	0	UNK
100593	B P OIL	HAMILTON		GASOLINE	0	UNK
100693	G E AIRCRAFT ENGINES	HAMILTON		HYDRAULIC OIL	40	GAL
100893	HAMILTON FIRE DEPT	BUTLER	GREAT MIAMI	GASOLINE	20	GAL
100893	UNKNOWN	HAMILTON	UNKNOWN CREEK	BRIGHT GREEN STUFF	0	UNK
100893	RUETGERS-NEASE	HAMILTON	GREAT MIAMI	WASTE WATER	0	UNK
100893	HAMILTON FOUNDRY	HAMILTON		TRANSFORMER OIL	0	UNK
100993	UNKNOWN	BUTLER		FUEL OIL	1	GAL
100993	CINCINNATI GAS &	HAMILTON	COMBINED CITY	TRANSFORMER OIL	23	GAL
101193	UNKNOWN	HAMILTON		TOXIC WASTE	0	UNK
101193	RIVER TRANSPORTATION	HAMILTON		CAUSTIC SOLUTION	1000	GAL
101193	CLEVER CLEANERS	BUTLER	UNKNOWN CREEK	DRY CLEANING	0	UNK
101293	UNKNOWN	HAMILTON	UNKNOWN CREEK	UNKNOWN BRIGHT	0	UNK
101593	SUPER X	HAMILTON	UNKNOWN CREEK	PHOTOGRAPHIC	5	GAL
102193	UPS	HAMILTON		GASOLINE	0	UNK
102193	UNKNOWN	HAMILTON	UNKNOWN CREEK	ANTIFREEZE	0	UNK
102293	J & D TRUCKING CO	HAMILTON		DIESEL FUEL	20	GAL
102693	UNKNOWN	HAMILTON	STORM SEWER	MOTOR OIL	0	UNK
102993	E & L TRANSPORT CO	HAMILTON		DIESEL FUEL	2	GAL
102993	UNKNOWN	HAMILTON		DIESEL FUEL	25	GAL
103093	BESL TRANSFER	HAMILTON		DIESEL FUEL	100	GAL
110193	UNKNOWN	BUTLER		HEATING OIL	150	GAL
110393	METROPOLITAN SEWER	HAMILTON	TAYLOR CREEK	SEWAGE	0	UNK
110393	OVERLAND TRANSPORT	HAMILTON		DIESEL FUEL	80	GAL
110693	APARTMENT COMPLEX	HAMILTON		CLEANING SOLVENTS	0	UNK
110893	RUETGERS-NEASE	HAMILTON	GREAT MIAMI	WASTE WATER	0	UNK
110993	RIVER TRANSPORTATION	HAMILTON		DIESEL FUEL	500	GAL
111193	VALLEY PEST CONTROL	HAMILTON		PESTICIDE	0	UNK
111193	UNKNOWN	HAMILTON	UNKNOWN CREEK	OIL	0	UNK
111293	METROPOLITAN SEWER	HAMILTON	UNKNOWN CREEK	SEWAGE	0	UNK
111593	UNKNOWN	BUTLER		ACIDIC	2	GAL
111893	CINCINNATI GAS &	HAMILTON	STORM SEWER	HYDRAULIC OIL	1	GAL
111993	KIRT BLOOMS MODULAR	BUTLER		DIESEL FUEL	20	GAL
112293	UNKNOWN	BUTLER		OIL	0	UNK
112293	MR MIKE JAMES	HAMILTON		KEROSENE	100	GAL
112393	MOELLER TRUCKING	BUTLER		DIESEL FUEL	50	GAL
112893	SUPER AMERICA	BUTLER		GASOLINE	12	GAL
112993	W L LOGAN TRUCKING CO	BUTLER		DIESEL FUEL	65	GAL
113093	CINCINNATI GAS &	BUTLER		TRANSFORMER OIL	35	GAL
120193	WHITEHALL OFFICE PARK	HAMILTON		HEATING OIL	0	UNK
120193	MR. DEWEY PRESTON	BUTLER	ROADSIDE DITCH	FUEL OIL	150	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
120293	ROGER JONES	HAMILTON	SEWER	WASTE OIL	2	GAL
121093	DIRECT TRANSIT INC	HAMILTON	UNKNOWN CREEK	DIESEL FUEL	100	GAL
121393	AIR PRODUCTS &	BUTLER		LUBE OIL	55	GAL
121493	RUMPKE LANDFILL	HAMILTON	UNKNOWN CREEK	WASTE WATER	0	UNK
121893	MOLECULAR RESEARCH	HAMILTON	UNKNOWN CREEK	PHENOL	0	UNK
122893	BP OIL CO.	HAMILTON		GASOLINE	600	GAL
010189	SNYDER BLOCK CO	MONTGOMERY	STORM SEWER	SEWAGE	0	UNK
010389	GENERAL MOTORS /	MONTGOMERY	UNKNOWN	WASTE WATER	0	UNK
010689	GENERAL MOTORS / DELCO	MONTGOMERY		CHROMIUM	16	LBS
010789	ENVIRONTECH OPERATION	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
010989	OHIO DEPT CORR /	WARREN		CHLORINE	0	UNK
011189	UNKNOWN	MONTGOMERY	BEAR CREEK TRIB	FUEL OIL	0	UNK
011289	UNITED EXPRESS	MONTGOMERY		JET FUEL	0	UNK
011889	ST. ELIZABETH MEDICAL	MONTGOMERY		#2 FUEL OIL	25	GAL
011989	IBSCO STEEL FB	MONTGOMERY	STORM SEWER	PAINT THINNER	0	UNK
012289	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	0	UNK
012589	DAYTON WAREHOUSE INC	MONTGOMERY	STORM SEWER	PAPER DYE	0	UNK
020289	COPPER & BRASS SALES	MONTGOMERY		DIESEL FUEL	50	GAL
020789	HAMILTON FOUNDRY	MONTGOMERY		DIESEL FUEL	40	GAL
020989	AUTO WORKS	MONTGOMERY		DIESEL FUEL	25	GAL
020989	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	20	GAL
021089	MR. CHARLES MORRIS	MONTGOMERY		FUEL OIL	0	UNK
021589	SHELL OIL CO / SERVICE	MONTGOMERY		GASOLINE	16	GAL
021689	GENERAL MOTORS / DELCO	MONTGOMERY		CHROME PLATING	0	UNK
021689	GENERAL MOTORS / DELCO	MONTGOMERY		CONTAMINATED	120	GAL
022189	METROPOLITAN LIFE	MONTGOMERY		DIESEL FUEL	845	GAL
022289	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	0	UNK
022389	TECHNICOTE	MONTGOMERY		SILICONE	0	UNK
030289	MR. LARRY KUNS	MONTGOMERY		CYANIDE	0	UNK
030389	CARGILL INC.	MONTGOMERY	SANITARY SEWER	#2 FUEL OIL	75	GAL
030389	NORTH REGIONAL WTP	MONTGOMERY	GREAT MIAMI	SLUDGE	0	UNK
030489	SHERBROOK FARMS	MONTGOMERY	NORTH BRANCH	SOAP SUDS	0	UNK
030489	LLOYD BUSH	PREBLE	TWIN CREEK	DIESEL FUEL	0	UNK
030689	UNKNOWN	MONTGOMERY		DIESEL FUEL	200	GAL
030389	VETERANS HOSPITAL	MONTGOMERY		PCB OIL	10	LBS
030689	SIMONS REALITY	MONTGOMERY		FUEL OIL	0	UNK
030789	DAYTON POWER & LIGHT	PREBLE		PCB OIL	10	GAL
030789	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	0	UNK
031089	ZENGEL CONSTRUCTION	MONTGOMERY		DIESEL FUEL	250	GAL
031089	UNKNOWN	MONTGOMERY	WOLF CREEK	UNKNOWN	0	UNK
031089	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
031289	MILES INC	MONTGOMERY	GREAT MIAMI	CITRIC ACID 25%	3000	GAL
031389	B P AMERICA	MONTGOMERY		DIESEL FUEL	175	GAL
031689	GENERAL MOTORS / DELCO	MONTGOMERY	SANITARY SEWER	WASTE WATER	30000	GAL
031789	UNKNOWN	MONTGOMERY		CUTTING OIL	0	UNK
031789	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	4	GAL
031789	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
032089	PHILLIPS IND	MONTGOMERY		GASOLINE	0	UNK
032189	NORTHRIDGE HIGH	MONTGOMERY		#2 FUEL OIL	0	UNK
032589	L M S TRUCKING CO.	WARREN	GREAT MIAMI	DIESEL FUEL	150	GAL
032789	CHRYSLER CORP /	MONTGOMERY	GREAT MIAMI	WASTE WATER	12000	GAL
032789	UNKNOWN	MONTGOMERY	TWIN CREEK	WASTE MOTER OIL	0	UNK
032989	OMEGA OIL CO	MONTGOMERY	STORM SEWER	GASOLINE	50	GAL
033089	SUN REFINING &	PREBLE	UNKNOWN CREEK		0	GAS
040389	GENERAL MOTORS	MONTGOMERY		CHROME	0	UNK
040789	GAS AMERICA	WARREN	STORM SEWER	GASOLINE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
041089	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 94 PPM	26	LBS
041189	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	4	GAI
041289	MONTGOMERY PARK	MONTGOMERY		GASOLINE	0	UNI
041389	PARKER HANNIFIN	PREBLE		NURATIC/NITRIC ACID	0	N
041389	MONTGOMERY COUNTY	MONTGOMERY		GASOLINE	0	UNI
041489	UNITED DAIRY FARMERS	MONTGOMERY		GASOLINE	300	GAI
041489	MIAMI CONSERVANCY	WARREN	CLEAR CREEK	SEWAGE	0	UHN
041489	D A P	MONTGOMERY		HYDROCARBON	25	GAI
041689	UNKNOWN	MONTGOMERY	UNNAMED CREEK	GASOLINE	0	UNI
041989	MONARCH MARKING	MONTGOMERY		#2 FUEL OIL	0	UNI
042089	HOLMAN PLATING CO	MONTGOMERY		HAZARDOUS WASTE	4	GAI
042089	GENERAL MOTORS /	MONTGOMERY		CYCLO ALIPHATIC	400	GAI
042189	INDUSTRIAL ELECTRONICS	MONTGOMERY		PCBS	0	UNI
042489	UNKNOWN	MONTGOMERY	STORM SEWER	OIL	0	UNI
042489	MIKE NOLTE	MONTGOMERY	UNNKNOWN	DIESEL FUEL	4	GAI
042589	ANTZ JR. HIGH SCHOOL	MONTGOMERY		SULFURIC	0	UNI
042689	DAYTON POWER & LIGHT	MONTGOMERY		GASOLINE	0	UNI
042689	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	15	GAI
042789	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	2	GAI
042889	REPUBLIC ASPHALT	MONTGOMERY		OIL	100	GAI
042889	UNKNOWN	MONTGOMERY	STORM SEWER	MINERAL OIL	30	GAI
042689	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAI
042989	MR WOODY BOWMAN	MONTGOMERY		UNKNOWN	12	DMS
050189	CUSTOM TIRES	MONTGOMERY		OIL	0	UNI
050589	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNI
050289	VERONA PUBLIC SERVICE	PREBLE		NATURAL GAS	0	UNI
050289	UNKNOWN	MONTGOMERY		MOTOR OIL	0	UNI
050489	UNKNOWN	MONTGOMERY		PCB OIL	60	GAI
050489	SPEEDY MUFFLER	MONTGOMERY		GASOLINE	0	UNI
050489	UNIVERSITY OF DAYTON	MONTGOMERY		#2 FUEL OIL	0	UNI
050589	DAYTON POWER & LIGHT	WARREN		PCB CONTAMINATED	5	GAI
050589	UNKNOWN	MONTGOMERY	UNKNOWN	PETROLEUM	0	UNI
051089	MIAMI PAPER CO.	MONTGOMERY	GREAT MIAMI	WASTE WATER	80000	GAI
051389	FOREST JACKSON	MONTGOMERY	CLEAR CREEK	DIESEL FUEL	75	GAI
051389	UNKNOWN	MONTGOMERY	GREAT MIAMI	ANTIFREEZE	0	UNI
051589	TROTWOOD	MONTGOMERY		FUEL OIL	0	UNI
051589	TROTWOOD	MONTGOMERY		FUEL OIL	0	UNI
051889	DAYTON POWER & LIGHT	MONTGOMERY		UNKNOWN OIL	0	UNI
051889	UNKNOWN	MONTGOMERY		OIL	0	UNI
051989	JOHNSON WRECKING	MONTGOMERY	GREAT MIAMI	UNKNOWN	0	UNI
052289	SUPER AMERICA	MONTGOMERY		GASOLINE	4	GAI
052389	GENERAL MOTORS /	MONTGOMERY		PCB OIL 600000 PPM	6	LBS
051989	JOHN HAKE	PREBLE		INSECTICIDE	0	UNI
052289	UNKNOWN	WARREN		SEWAGE	0	UNI
052589	FRANKLIN WWTP	WARREN	GREAT MIAMI	RAW SEWAGE	600000	GAI
052689	MIAMI CONSERVANCY	WARREN		SEWAGE	0	UNI
053089	UNKNOWN	MONTGOMERY	CATCH BASIN	PAINT WASTE	0	UNI
053089	DAYTON SEWERS &	MONTGOMERY		SEWAGE	0	UNI
053089	SUPERIOR LAWN CARE	MONTGOMERY	STORM SEWER	CHEMICALS	0	UNI
053189	UNOCAL CHEMICAL	MONTGOMERY		TOLUENE	45	GAI
051789	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNI
060189	BETTER BUILT	MONTGOMERY	WOLF CREEK	SEWAGE	0	UNI
060289	PATHERSON IRON &	MONTGOMERY		GASOLINE	0	UNI
060589	BOONE OIL	PREBLE	DITCH	DIESEL FUEL	100	GAI
060589	MOSIER CONSTRUCTION	PREBLE		DIESEL FUEL	0	UNI
060789	MALT PRODUCTS	MONTGOMERY		MALT LIQUOR	0	UNI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
060789	K & R DELIVERY	MONTGOMERY		WASTE OIL	30	GAL
061289	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	BRINE	0	UNK
061389	UNKNOWN	MONTGOMERY	WOLF CREEK	DIESEL FUEL	375	GAL
061589	GENERAL MOTORS / DELCO	MONTGOMERY		WASTE WATER	0	UNK
062089	MONTGOMERY SANITARY	MONTGOMERY	HOLES CREEK	SEWAGE	0	UNK
062089	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
062389	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	0	UNK
062389	UNKNOWN	MONTGOMERY		GASOLINE	5	GAL
062389	K. M. I. MISH INC.	MONTGOMERY		SOLVENTS	100	DMS
062689	PATTERSON IRON & METAL	MONTGOMERY		PAINT THINNER	0	UNK
062689	VICTORY EXPRESS	MONTGOMERY	WOLF CREEK	ANHYDROUS	0	UNK
062689	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	1	GAL
062689	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	1	GAL
062789	CORBY JOHNSON	MONTGOMERY	OPOSSUM CREEK	MOTOR OIL	43	DMS
070589	UNKNOWN	MONTGOMERY		MOTOR OIL	0	UNK
071189	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	140	GAL
071189	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	0	UNK
071289	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	1	PT
071389	MR MULE GROVER	MONTGOMERY	UNKNOWN	DIESEL FUEL	30	GAL
071489	FRANKLIN WWTP	WARREN	GREAT MIAMI	SEWAGE	0	UNK
071489	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL 79 PPM	10	GAL
071789	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	7	GAL
071889	LESTON CORP.	MONTGOMERY		UNKNOWN	0	UNK
071889	GENERAL MOTORS /	MONTGOMERY	SEWER	UNKNOWN	0	UNK
072489	SCHRIBER ROOFING CO	MONTGOMERY		TRANSFORMER OIL	0	UNK
072589	ATLAS TRUCKING /RENTAL	MONTGOMERY		DIESEL FUEL	90	GAL
072689	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAL
072789	MASTER TRANSPORT INC	WARREN		TOLUENE	0	UNK
073189	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	9	GAL
080289	LEES SPETIC TANK	MONTGOMERY		SEWAGE	0	UNK
080289	STANDARD REGISTER CO.	MONTGOMERY		DIETHYLENE	4	LBS
080689	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL 40	10	GAL
080889	PATTERSON IRON & METAL	MONTGOMERY		OIL	0	UNK
081089	TALBOTT CO	MONTGOMERY		PAINT THINNER	0	UNK
081189	N.C.R.	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	75	GAL
081189	UNKNOWN	MONTGOMERY	GREAT MIAMI	RAW SEWAGE	0	UNK
081189	VICTORY EXPRESS	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
081589	BILL HOLTZMILLER	MONTGOMERY		WASTE OIL	0	UNK
081689	DANS TRANSIT	WARREN		LATEX GLUE	250	GAL
082189	UNOCAL / UNION 76	WARREN	GREENS RUN	GASOLINE	0	UNK
082189	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	18	GAL
082289	MRS. FRANCIS WHITTAKER	MONTGOMERY		MOTOR OIL	0	UNK
082489	NORTH AMERICA VAN	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	100	GAL
082489	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	10	GAL
082489	DAYTON ELECTROPLATING	MONTGOMERY		HAZARDOUS WASTE	0	UNK
083089	OHIO NATIONAL GUARD	PREBLE		DIESEL FUEL	0	UNK
083189	GENERAL MOTORS / DELCO	MONTGOMERY	STORM SEWER	HYDRAULIC OIL	0	UNK
090289	TALBOT TOWER	MONTGOMERY	GREAT MIAMI	GLUTEROLDEHYDE	75	GAL
090589	CONTINENTAL	MONTGOMERY		GASOLINE	0	UNK
090689	CARGILL INC	MONTGOMERY	STORM DRAIN	DIESEL FUEL	20	GAL
090789	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	0	UNK
091589	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	50000	GAL
091889	UNKNOWN	MONTGOMERY		GASOLINE	0	UNK
091989	KEN MOORE DEMOLITION	MONTGOMERY	WOLF CREEK	WASTE CHEMICAL	0	UNK
092189	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
092589	MONTGOMERY CO	MONTGOMERY		MINERAL OIL	32	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
100289	FRAZIERS LAUNDRY	MONTGOMERY	STORM SEWER	PAINT	0	UNI
100289	MR. ELDER BERMAN /	MONTGOMERY	STORM SEWER	MOTOR OIL	0	UNI
100289	OHIO BELL TELEPHONE	MONTGOMERY		HEATING OIL	0	UNI
101089	DISTINCTIVE DRY	MONTGOMERY		UNKNOWN CHEMICAL	0	UNI
101089	CUSICK TRUCKING	MONTGOMERY	CREEK	USED OIL	0	UNI
101689	CENTRAL TRANSPORT	MONTGOMERY		WASTE MOTOR OIL	100	GAI
101789	AIRPORT DAYTON	MONTGOMERY		WASTE PAINTS	0	UNI
101989	GENERAL MOTORS / DELCO	MONTGOMERY		TRICHLOROETHANE	0	UNI
101989	DAP INC.	MONTGOMERY		ORIGINAL CONTACT	500	
102089	GTE NORTH	MONTGOMERY		HYDRAULIC OIL	40	GAI
102489	DAYTON POWER & LIGHT	MONTGOMERY		PCB	1	QT
102589	ARMCO STEEL	WARREN		DIESEL FUEL	100	GAI
102689	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	55	GAI
102789	BRENTWOOD	MONTGOMERY		PCBS	0	UNI
102889	KROGER CO.	MONTGOMERY		DIESEL FUEL	50	GAI
110189	UNKNOWN	WARREN	DICKS CREEK	MOTOR OIL	0	UNI
110389	PRECISION TUNE	MONTGOMERY		USED MOTOR OIL	0	UNI
110389	METROCON INC	MONTGOMERY		NON TOXIC INK	2	GAI
110789	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	HYDROCARBON	0	UNI
111389	MILES INC.	MONTGOMERY		#2 DIESEL FUEL	0	UNI
111489	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	5	GAI
111689	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	EFFLUENT	750	GAI
111689	DAYTON FORGING & HEAT	MONTGOMERY		QUENCH OIL	0	GAI
111989	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	PRIMARY CLARIFIED	0	UNI
112089	MIAMI VALLEY HOSPITAL	MONTGOMERY		ETHYLENE OXIDE	15	LBS
112089	DAYTON POWER & LIGHT	MONTGOMERY	GREAT MIAMI	SOLVENT	0	UNI
112189	GENERAL MOTORS / DELCO	MONTGOMERY	STORM SEWER	CONTAMINATED	0	UNI
112189	PETES AUTO SALE S	MONTGOMERY		WASTE OIL	0	UNI
112289	SUN OIL	MONTGOMERY		ALCOHOL/ETHANOL	350	GAI
112489	UNKNOWN	MONTGOMERY		OIL	15	GAI
112689	UNKNOWN	MONTGOMERY		HYDROCARBON	200	GAI
112789	PEST DOCTOR	PREBLE		FUMI TOXIN	0	UNI
112789	MS CINDY CLARK	MONTGOMERY		FUEL OIL	0	UNI
112789	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	QT
112889	AMERICAN KAR	MONTGOMERY		NICKEL	30	GAI
112989	CARGILL INC.	MONTGOMERY		SULFURIC ACID	50	GAI
120189	HENRY JORGENS	MONTGOMERY		DIESEL FUEL	0	UNI
120189	SHELL OIL CO	MONTGOMERY		FUEL OIL	0	UNI
120589	STOP-N-GO	MONTGOMERY	STORM SEWER	GASOLINE	40	GAI
120789	SRI	MONTGOMERY	SEWER	DIESEL FUEL	0	UNI
121289	REQUARTH LUMBER CO	MONTGOMERY		#2 FUEL OIL	0	UNI
121289	ATKINSON TRUCKING	MONTGOMERY	DITCH-MIAMI	DIESEL FUEL	0	UNI
121389	OMEGA OIL CO	PREBLE		DIESEL FUEL	100	GAI
121489	ALLIED	MONTGOMERY		FILM DEVELOPING	0	UNI
121889	GENERAL MOTORS / DELCO	MONTGOMERY		HYDROCHLORIC ACID	0	UNI
122089	APPLETON PAPER	MONTGOMERY	GREAT MIAMI	WASTE WATER	10000	GAI
122189	MONSANTO	MONTGOMERY		CHLORO BENZENE	920	LBS
010290	MIAMI VALLEY REGIONAL	MONTGOMERY		HYDRAULIC FLUID	0	UNI
010590	MENDELSON SURPLUS	MONTGOMERY		CUTTING OIL	0	UNI
010590	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNI
010590	OLD PAYLESS GAS	MONTGOMERY		DRUMS	3	ITM
010590	BURGER IRON CO.	MONTGOMERY	STORM SEWER	UNKNOWN LIQUID	1000	GAI
010890	LEWIS AND MICHAELS	MONTGOMERY		MOTOR OIL	10	GAI
010890	OLD PHILLIPS 66 GAS	MONTGOMERY		POSSIBLE ILLEGAL	0	UNI
010990	GENERAL MOTORS /	MONTGOMERY		PCBS	0	UNI
011090	GENERAL MOTORS / DELCO	MONTGOMERY		VARIOUS	0	UNI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
011790	UNKNOWN	MONTGOMERY		MINERAL SPIRITS	5	GAL
011790	GENERAL MOTORS /	MONTGOMERY		FUEL OIL	0	UNK
011890	JEVIC TRANSPORTATION	PREBLE		DIMETHYLETHANOLA	55	GAL
011990	SPEEDWAY OIL CO	MONTGOMERY		GASOLINE	0	UNK
012390	DANIS INDUSTRIES	MONTGOMERY		#2 FUEL OIL	1000	GAL
012490	UNKNOWN	MONTGOMERY	SEWER	GASOLINE	0	UNK
012490	UNKNOWN	MONTGOMERY	CREEK	UNKNOWN	0	UNK
012690	UNKNOWN	MONTGOMERY		ABANDONED DRUMS	0	UNK
012990	ROTO ROOTER	MONTGOMERY		CALCI	2	OZ
121089	BULLET TRUCKING CO.	MONTGOMERY		DIESEL FUEL	100	GAL
021290	GENERAL MOTORS / DELCO	MONTGOMERY		CHOMIC ACID	300	GAL
021290	TECHNICOTE	MONTGOMERY	STORM SEWER	WHITE MILKY	0	UNK
021390	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1640	GAL
021490	BURGAMO CENTER	MONTGOMERY		#2 FUEL OIL	0	UNK
021590	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNK
021690	MIAMISBURG WWTP	MONTGOMERY	UNKNOWN CREEK	SEWAGE	0	UNK
021890	MONTGOMERY COUNTY	MONTGOMERY	STORM SEWER	RAW SEWAGE	500	GAL
022090	FARMERSVILLE WWTP	MONTGOMERY	LITTLE TWIN	SEWAGE	0	UNK
022090	M & M CYCLE	MONTGOMERY	TRIB TO WOLF	KEROSENE	0	UNK
022190	UNKNOWN	MONTGOMERY		UNKNOWN WHITE	0	UNK
022190	TIRE AMERICA	MONTGOMERY		WASTE OIL	0	UNK
022290	LESTON/ROTO ROOTER	MONTGOMERY		GREASE	0	UNK
022290	DAYTON THERMAL PROD.	MONTGOMERY	STORM	UNTREATED WASTE	10	GAL
022690	RAM CORP	PREBLE	WELL	STYRENE	0	UNK
022690	PERFORMANCE CARPET	MONTGOMERY		WASTE CLEANING	0	UNK
022690	HOWARD MAHAFFEY, JR	MONTGOMERY	WOLF CREEK	DIESEL OR FUEL OIL	250	GAL
022790	BLAYLOCK TRUCKING &	MONTGOMERY	DITCH TO WOLF	HYDRAULIC OIL	15	GAL
022790	ULRICH CONTRACTING	WARREN		DRUMS	30	DRM
030490	SPRINGBORO WWTP	WARREN	RICHARDS RUN	WASTE WATER	3000	GAL
030690	OMEGA OIL CO	MONTGOMERY	STORM SEWER	PETROLEUM	0	UNK
030990	HEPAR INDUSTRIES	WARREN	SEWERS	WASTE WATER	0	UNK
031190	MONTGOMERY COUNTY	MONTGOMERY	STORM	SEWAGE	0	UNK
031590	UNO-VEN	MONTGOMERY		GASOLINE	50	GAL
031690	GENERAL MOTORS / DELCO	MONTGOMERY		OIL	0	UNK
031690	AMERICAN DRIVE TRAIN	MONTGOMERY		OIL	0	UNK
031990	CWM RESOURCE	MONTGOMERY		PERCHLOROETHYLEN	40	LBS
032090	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	20	GAL
032190	DAYTON POWER & LIGHT	PREBLE		TRANSFORMER OIL	3	GAL
032190	HOLIDAY EXPRESS CORP	MONTGOMERY		DIESEL FUEL	50	GAL
032190	UNKNOWN	MONTGOMERY	CREEK	PESTICIDE	0	UNK
032290	UNKNOWN	MONTGOMERY		WASTE ACID	0	UNK
032390	UNKNOWN	MONTGOMERY	STORM TILE	WHITE SUBSTANCE	0	UNK
032390	ST. ELIZABETH HOSPITAL	MONTGOMERY	GREAT MIAMI	FUEL OIL	1000	GAL
032390	UNKNOWN	MONTGOMERY		DIESEL FUEL	50	GAL
032690	UNKNOWN	MONTGOMERY		WASTE OIL DRUM	0	UNK
032690	ETNA FREIGHTLINES INC.	WARREN	DITCH	DIESEL FUEL	250	GAL
032890	YOWELL	MONTGOMERY		TRANSFORMER	20	GAL
032890	ST. ELIZABETH HOSPITAL	MONTGOMERY	GREAT MIAMI	FUEL OIL	0	UNK
032890	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	8	GAL
032990	CARL AKEY CO., INC.	PREBLE		DIESEL FUEL	50	GAL
033090	PROTECTIVE TREATMENTS	MONTGOMERY		TOLUENE	0	UNK
033090	FRANKLIN TOWNSHIP FIRE	WARREN	NORTH BRANCH	#2 FUEL OIL	600	GAL
033090	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	10	GAL
040190	DAMON CHEMICAL	MONTGOMERY		IRON PHOSPHATE	125	GAL
040290	TRUE FAB	MONTGOMERY		WASTE ACID	0	UNK
040290	A P	MONTGOMERY		SOLVENTS	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
040490	UNKNOWN	MONTGOMERY		SLUDGE	0	UNK
040490	EDWARD A SHALTON	MONTGOMERY		ZINC	1	GAL
040590	UNKNOWN	MONTGOMERY		UNKNOWN	0	UNK
040690	UNKNOWN	MONTGOMERY		#2 FUEL OIL	0	UNK
040790	UNKNOWN	MONTGOMERY	CREEK	WASTE	0	UNK
040990	UNKNOWN	WARREN		CREOSOTE	0	UNK
041090	UNKNOWN	WARREN	GREAT MIAMI	OIL	0	UNK
041090	MONTGOMERY COUNTY	MONTGOMERY	UNKNOWN CREEK	SEWAGE	0	UNK
041090	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNK
041090	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNK
041190	UNKNOWN	MONTGOMERY	GREAT MIAMI	FUEL OIL	0	UNK
041190	C & J TRUCKING	PREBLE		DIESEL FUEL	150	GAL
041390	MULLINS AVIATION	MONTGOMERY	DITCH	PAINT SOLVENTS	0	UNK
041390	DON TOPPER	PREBLE		DIESEL FUEL	20	GAL
041490	MONTGOMERY COUNTY	MONTGOMERY	UNKNOWN CREEK	SEWAGE	0	UNK
041790	DAYTON POWER & LIGHT	MONTGOMERY		PCB	21	GAL
042090	JAMES RIVER CORP.	MONTGOMERY	STORM SEWER	DIESEL FUEL	25	GAL
042190	MONTGOMERY	MONTGOMERY	STORM SEWERS	SEWAGE/RAINWATER	0	UNK
042190	P K LUMBER YARD	WARREN	JOHNAS RUN	RUNOFF FROM	0	UNK
042490	TERRACE ACRES TRAILER	PREBLE		SEWAGE	0	UNK
042490	CHRYSLER CORP /	MONTGOMERY	STORM SEWER	WASTE WATER	14000	GAL
042490	NATIONAL RECYCLING	MONTGOMERY		OIL	0	UNK
042590	WHITMANS NURSERY	MONTGOMERY	UNNAMED CREEK	FERTILIZER	0	UNK
042590	CARGILL INC.	MONTGOMERY	GREAT MIAMI	WASTE WATER	500	GAL
042590	UNKNOWN	MONTGOMERY		WASTE OIL	0	UNK
042590	FAUACE OIL CO.	WARREN		FUEL OIL	1	GAL
042790	EVERGREEN SUPERIOR	MONTGOMERY		AMMONIA	30	GAL
042790	D O E	MONTGOMERY		TRANSFORMER OIL	1	LBS
043090	MID-OHIO CHEMICAL	PREBLE		9-27-15 FERTILIZER	900	GAL
050390	CITIZEN	MONTGOMERY		WASTE OIL	55	GAL
050490	UNKNOWN	MONTGOMERY	GREAT MIAMI	SOLVENT	0	UNK
050590	UNKNOWN	MONTGOMERY		GASOLINE	0	UNK
050790	OMEGA OIL CO	MONTGOMERY		DIESEL FUEL	1	GAL
050890	ASHLAND CHEMICAL	MONTGOMERY		ACETONE	5	GAL
050990	CHRYSLER-DAYTON	MONTGOMERY		ZINC	2600	GAL
051190	GENERAL MOTORS / DELCO	MONTGOMERY	STORM SEWER	DISTOL 77	200	GAL
051490	G T E INC.	MONTGOMERY		GASOLINE	0	UNK
051590	CONSTRUCTION CO.	MONTGOMERY	UNKNOWN CREEK	DIESEL FUEL	0	UNK
051590	KENNETH M. BICKEL	MONTGOMERY		FUEL OIL	150	GAL
051690	IKO MANUFACTURING	WARREN	GREAT MIAMI	FERRIC CHLORIDE	1500	GAL
051690	BONDED OIL	MONTGOMERY	STORM SEWER	GASOLINE	10	GAL
051790	VALLEY MACHINE	MONTGOMERY		SOLVENT WASTE	0	UNK
051990	UNKNOWN	WARREN	SMALL CREEK	OIL	0	UNK
051990	BOB CASTLE	PREBLE		WASTE OIL	0	UNK
052290	SCHROEDER INDUSTRIES	MONTGOMERY	CULVERT	TAR ADHESIVE	10	GAL
052390	EMERY WORLDWIDE INC.	MONTGOMERY		GASOLINE	20	GAL
052590	BAXTER HEALTH CARE	PREBLE		METHANOL	0	UNK
052590	MOTHER NATURE	WARREN	RICHARDS RUN	PAINT	0	UNK
052590	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	50	GAL
052690	FREDRICK FREIGHT	MONTGOMERY	STORM SEWER	DIESEL FUEL	200	GAL
052690	CENTERVILLE WWTP	MONTGOMERY		SEWAGE	0	UNK
052690	CENTERVILLE WWTP	MONTGOMERY		SEWAGE	0	UNK
052690	CENTERVILLE WWTP	MONTGOMERY		SEWAGE	0	UNK
052990	SHRIMP BOAT SEAFOOD	MONTGOMERY	SEWER	DIESEL FUEL	0	UNK
052990	GEORGE TUCK TRUCKING	MONTGOMERY	STORM SEWER	DIESEL FUEL	75	GAL
053090	IKO MFG	WARREN	STORM SEWER	HEAT TRANSFER OIL	300	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
060190	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
060190	HOME X-RAY SERVICE	MONTGOMERY		FILM DEVELOPMENT	0	UNK
060290	MONKEM BURLINGTON	WARREN		UN 1133, ADHESIVE,	50	GAL
060490	SUN REFINING &	MONTGOMERY		GASOLINE	0	UNK
060590	MR. WAVEL LEWIS	MONTGOMERY		TRENCHRITE`	1	LB
060590	INDUSTRIAL GRINDING	MONTGOMERY		GASOLINE	20	GAL
060790	DAYTON WATER PLANT	MONTGOMERY		HYDROFLUOROSILICI	150	GAL
060790	OLD RAM CHEMICAL CO	PREBLE		UNKNOWN	0	UNK
060890	R.B. TERRY	MONTGOMERY		ASPHALT TAR	0	UNK
060890	THE CLEANERS-JANE	MONTGOMERY		PERCHLOROETHYLEN	0	UNK
061190	MR. JEFF SARGENT	MONTGOMERY	STORM SEWER	GASOLINE	15	GAL
061890	OAK CREEK SHELL	MONTGOMERY	STORM SEWER	GASOLINE	24	GAL
061990	DAYTON SUPERIOR CO.	MONTGOMERY	STORM DRAIN	TECTYL 506, TOLUENE	100	GAL
062090	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	90	PPM
062090	AMERICAN HIGHWAY	PREBLE	UNNAMED CREEK	DIESEL FUEL, MOTOR	100	GAL
062190	SUPERIOR LAWN CARE	MONTGOMERY	STORM SEWER	UREA NITROGEN	10	GAL
062690	SUN REFINING &	MONTGOMERY		GASOLINE	0	UNK
062890	OLD	MONTGOMERY		MOTOR OIL	0	UNK
062990	MEAD CORP.	MONTGOMERY		#2 FUEL OIL	0	UNK
070690	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
071190	SOUTHEAST BRIDGE &	MONTGOMERY		DIESEL FUEL	50	GAL
071690	SUN REFINING &	MONTGOMERY		ETHANOL	0	UNK
071890	T A TRUCKSTOP	PREBLE		DIESEL FUEL	100	GAL
071890	MS JEANNE RICE	MONTGOMERY		UNKNOWN RED STUFF	55	GAL
071990	UNKNOWN	MONTGOMERY	STORM SEWER	GASOLINE	20	GAL
072190	MONTGOMERY COUNTY	MONTGOMERY	STORM SEWER	SEWAGE	0	UNK
072390	UNKNOWN	MONTGOMERY		UNKNOWN	100	GAL
072490	JOESPH P. KOLAKOWSKI	MONTGOMERY	STORM DRAIN	WASTE OIL	0	UNK
072490	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
072590	JAMES RIVER CORP.	MONTGOMERY		CHROMIC ACID	300	LBS
072590	RIVERSIDE	MONTGOMERY		CONTAMINATED SOIL	0	UNK
072890	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	PRIMARY CLARIFIER	7500	GAL
073190	UNKNOWN	MONTGOMERY		POSS HAZARDOUS	0	UNK
080190	GENERAL MOTORS / DELCO	MONTGOMERY		PCB OIL	1	GAL
080190	DAYTON WATER PLANT	MONTGOMERY		HYDROFLUOROSILICI	3600	GAL
080290	UNITED PARCEL SERVICE	MONTGOMERY		RUST	5	GAL
008029	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	1	GAL
080390	BART WEPRIN	MONTGOMERY		#2 FUEL OIL	0	UNK
081290	UNKNOWN	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
081490	MR. MARK CLINE	MONTGOMERY		#2 FUEL OIL	40	GAL
082390	UNKNOWN	MONTGOMERY		DIESEL FUEL	250	GAL
082390	KELCHNER EXCAVATING	MONTGOMERY		DIESEL FUEL	100	GAL
082490	MEAD IMAGING	MONTGOMERY	UNNAMED CREEK	DYE	300	GAL
082490	UNKNOWN	MONTGOMERY	WOLF CREEK TRIB	SEWAGE	0	UNK
082990	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	290000	GAL
082990	MILLION IN ONE	MONTGOMERY		ANIMAL/VEGTABLE	3000	GAL
083090	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	10	GAL
083090	UNKNOWN	MONTGOMERY	GREAT MIAMI	UNKNOWN	0	UNK
083190	MARCO TRASPORTATION	MONTGOMERY		DIESEL FUEL	150	GAL
090690	MR ROBERT SOUELL	MONTGOMERY		TRASH	0	UNK
090790	GENERAL MOTORS / DELCO	MONTGOMERY	WOLF CREEK	WATER SOLUABLE	15000	GAL
091290	CHEM WASTE	MONTGOMERY		TIRCHLOROETHANE	1540	LBS
091290	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
091390	MONSANTO	MONTGOMERY		TOLUENE	1146	LBS
091390	UNKNOWN	PREBLE	STORM SEWER	FUEL OIL	0	UNK
091490	SOCIETY BANK	MONTGOMERY		DIESEL FUEL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
091490	KEYBOARD CARTAGE INC.	MONTGOMERY	SMALL CREEK	DIESEL FUEL	50	GAI
091490	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	RAW SEWAGE	0	UNK
091790	BUCKEYE POOLS	MONTGOMERY	UNKNOWN CREEK	POOL CLEANER	0	UNK
092090	APS MATERIALS	MONTGOMERY		UNKNOWN WASTE	0	UNK
092690	CENTERVILLE MILL	MONTGOMERY		KEROSENE	100	GAI
092790	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	1	GAI
092790	CITY OF DAYTON	MONTGOMERY	GREAT MIAMI	CHLORINE	0	UNK
100190	KETTERING EAST	MONTGOMERY	UNNAMED CREEK	PERCHLOROETHYLEN	0	UNK
100490	DAYTON POWER & LIGHT	MONTGOMERY		CONTAMINATED SOIL	1	DRM
100590	APEX AUTO PARTS	MONTGOMERY		OIL	0	UNK
100890	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	8	GAI
100890	TRI COUNTY NORTH LOCAL	PREBLE		FUEL OIL	0	UNK
100990	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	BLACK WATER	0	UNK
101590	GENERAL MOTORS /	MONTGOMERY		WASTE WATER	0	UNK
101590	UNKNOWN	WARREN	GREAT MIAMI	10C MINERAL OIL	0	UNK
101890	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	150000	GAI
101890	FPC PRINTING	WARREN		INK	0	UNK
101890	PTI	MONTGOMERY		HEPTANE	0	UNK
102290	GOOD SAMARITAN	MONTGOMERY		FUEL OIL	10	GAI
102390	HOWARD PAPER	MONTGOMERY	STORM SEWERS	OIL	0	UNK
102490	UNKNOWN	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	0	UNK
102490	GTE	MONTGOMERY		GASOLINE	20	GAI
102890	DAYTON POWER & LIGHT	MONTGOMERY		ASBESTOS	0	UNK
103090	BRUBAKER GRAIN &	MONTGOMERY	DITCH	AMMONIUM SULFATE	20660	LBS
103190	TRAILOR LOAD EXPRESS	WARREN		MOTOR OIL	5	GAI
103190	UNKNOWN	MONTGOMERY	GREAT MIAMI	FERTILIZER	0	UNK
103190	LEWIS AND MICHAELS	MONTGOMERY		OIL	20	GAI
110190	GENERAL MOTORS / DELCO	MONTGOMERY		RCRA WASTE	5	GAI
110790	JOHN YINJT	MONTGOMERY		UNKNOWN WHITE	0	UNK
111090	ACCUSTAR/DAYTON	MONTGOMERY	STORM SEWER	HEXAVALENT	0	UNK
111290	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER	12	GAI
111990	TABER'S BODY SHOP	MONTGOMERY		KEROSENE	0	UNK
112190	GENERAL MOTORS / DELCO	MONTGOMERY	WOLF CREEK	8% WATER SOLUBLE	20	GAI
120390	DAYTON, CITY OF	MONTGOMERY	GREAT MIAMI	SEWAGE	160000	GAI
120490	VAN BERGEN	MONTGOMERY		FUEL OIL	0	UNK
120690	OWNER DECEASED	PREBLE		DRUMS	4	ITM
120690	GENERAL MOTORS / DELCO	MONTGOMERY	WOLF CREEK	WATER SOLUABLE	0	UNK
120790	LEASEWAY	MONTGOMERY		DIESEL FUEL	0	UNK
121290	GENERAL MOTORS / DELCO	MONTGOMERY		TRIVALENT	48	LBS
121490	GENERAL MOTORS /	MONTGOMERY		OIL COOLANT	0	UNK
121290	GENERAL MOTORS / DELCO	MONTGOMERY		CHROMIUM	0	UNK
121890	DAYTON, CITY OF	MONTGOMERY	GREAT MIAMI	SEWAGE	1250000	GAI
122190	UNKNOWN	MONTGOMERY	SYCAMORE	HYDROCARBON	0	UNK
122190	DAYTON	MONTGOMERY		TRANSFORMERS	0	UNK
122490	MONTGOMERY COUNTY	MONTGOMERY	STORM SEWERS	SEWAGE	0	UNK
123090	DAYTON	MONTGOMERY	GREAT MIAMI	SEWAGE	20000000	GAI
123090	DAYTON	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
123090	ENVIRONTECH OPERATING	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
123090	MONTGOMERY COUNTY	MONTGOMERY	EAGLE CREEK	SEWAGE	0	UNK
123090	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
123090	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
123090	MONTGOMERY COUNTY	MONTGOMERY	HOLES CREEK	SEWAGE	0	UNK
123090	ENVIRONTECH OPERATING	WARREN	GREAT MIAMI	SEWAGE	0	UNK
123090	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
123090	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
123190	GEORGIA PACIFIC	WARREN	GREAT MIAMI	OIL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
010191	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
301029	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	FUEL OIL	150	GAL
010491	UNKNOWN	MONTGOMERY	GREAT MIAMI	UNKNOWN	0	UNK
010491	GENERAL MOTORS /	MONTGOMERY		PCB CONTAMINATED	484	PPM
010891	MARATHON / PENNZOIL	MONTGOMERY		GASOLINE	30	GAL
011091	DAYTON SEWERS &	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
011191	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
011491	MR RONALD L BOWERS &	PREBLE	CREEK	DIESEL FUEL	100	GAL
011491	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	25000	GAL
011591	BP OIL CO.	WARREN		DIESEL FUEL	10	GAL
011791	MR WAITS	MONTGOMERY		GASOLINE	0	UNK
011891	KLOSTERMAN'S BAKING	MONTGOMERY	HOLES CREEK	DIESEL FUEL	40	GAL
012291	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
012591	BUCKEYE BAILER	MONTGOMERY		FUEL OIL	0	UNK
012591	TOMAK PRECISION	WARREN		POTASSIUM HYDRATE	0	UNK
012891	CHRYSLER CORP /	MONTGOMERY		FREON	0	UNK
013091	GENERAL MOTORS / DELCO	MONTGOMERY		XYLENE	0	UNK
013091	MR ROY JOHNSON	WARREN	CREEK TRIB	FUEL OIL	200	GAL
020191	WOGAMAN OIL	PREBLE		DIESEL FUEL	0	UNK
020191	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	PAPER WASTE	0	UNK
020491	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	8	GAL
020791	L & H THREADED ROD	MONTGOMERY	GREAT MIAMI	COOLANT OIL	5	GAL
020991	RONSON TRANSPORTATION	MONTGOMERY		DIESEL FUEL	1200	GAL
021191	GENERAL MOTORS / DELCO	MONTGOMERY	WOLF CREEK	CUTTING OIL	40	GAL
021691	ECOLOTEC INC	MONTGOMERY		RCRA WASTE	400	GAL
021791	UNKNOWN	PREBLE	TWIN CREEK TRIB	OIL	0	UNK
021991	UNKNOWN	MONTGOMERY	GREAT MIAMI	WHITE STUFF	0	UNK
022891	MAGIC SEAL MFG CO INC.	MONTGOMERY		TOLUENE	0	UNK
030191	MERCHANDISE DISPLAYS	MONTGOMERY		FUEL OIL	0	UNK
030591	TERMINIX INTERNATIONAL	MONTGOMERY	GREAT MIAMI	PRYFON MIXTURE	40	GAL
031191	GENERAL MOTORS / DELCO	MONTGOMERY		GASOLINE	0	UNK
031191	MEIJER CO	MONTGOMERY		GASOLINE	0	UNK
031391	MONTGOMERY COUNTY	MONTGOMERY	HOLES CREEK	SEWAGE	6000	GAL
031391	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	9898000	GAL
031491	LUSCALEET TRUCK	MONTGOMERY		FUEL OIL	0	NOS
031591	CHRYSLER CORP /ACUSTAR	MONTGOMERY	STORM SEWER	INDUSTRIAL WASTE	35	GAL
031991	WARREN COUNTY SEWER	WARREN	GREAT MIAMI	SEWAGE	0	UNK
022391	UNITED HOME	MONTGOMERY		FUEL OIL	0	UNK
032291	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNK
032691	MIAMI COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
032691	MIAMI COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
032691	MIAMI CO SANITATION	MONTGOMERY	NORTH HOLES	SEWAGE	0	UNK
032991	MR. FLOYD LIBECAP	PREBLE	AUCKERMAN	FERTILIZER	5000	GAL
040891	PREBLE LANDMARK	MONTGOMERY		FUEL OIL	30	GAL
040991	CHEMICAL SERVICES	MONTGOMERY		HYDROCHLORIC ACID	0	UNK
041391	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
041391	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
041391	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNK
041591	MIAMI CONSERVANCY	MONTGOMERY		DIESEL FUEL	50	GAL
041591	OVERPASS AUTO PARTS	MONTGOMERY		OIL	0	UNK
041691	SINCLAIR COMMUNITY	MONTGOMERY		HEATING OIL	0	UNK
041691	PIERLESS TRUCKING	MONTGOMERY	STORM SEWER	DIESEL FUEL	70	GAL
041791	JET EXPRESS INC.	MONTGOMERY	STORM SEWER	DIESEL FUEL	40	GAL
041891	BROOKVILLE LAWN AND	MONTGOMERY		GASOLINE	0	UNK
041891	TALBERT HOUSE	HAMILTON		HYDRAULIC OIL	0	UNK
042191	STONE CONTAINER	WARREN	GREAT MIAMI	SEWAGE	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
042491	MR. CHARLES BARHORST	WARREN		DIESEL FUEL	200	GAL
042491	UNKNOWN	MONTGOMERY		OIL	40	GAL
042791	UNKNOWN	MONTGOMERY	CREEK	LATEX PAINT - WHITE	5	GAL
043091	MAGIC SEAL MFG CO INC.	MONTGOMERY		TOLUENE	0	UNK
050391	VILLAGE RENTAL /	WARREN		OIL	0	UNK
050491	SHELL OIL CO	MONTGOMERY	STORM SEWER	GASOLINE	0	UNK
050691	SPEEDY MUFFLER	MONTGOMERY	STORM	WASTE OIL (MOTOR	55	GAL
051091	SPRING PARK DRY	WARREN	SANITARY SEWER	WASTE SOLVENTS	0	UNK
051091	CLEMONS OIL	MONTGOMERY	STORM SEWER	GASOLINE	30	GAL
051091	UNKNOWN	MONTGOMERY		ORPHAN DRUM	1	ITM
051291	UNKNOWN	WARREN	UNKNOWN CREEK	FUEL OIL	0	UNK
051391	OVERPASS AUTO	MONTGOMERY		OIL	0	UNK
051491	UNKNOWN	WARREN		DIESEL FUEL	0	UNK
051591	PARKLAWN TERRACE	MONTGOMERY	UNKNOWN	WASTE CHEMICALS	0	UNK
051591	GOURMET GARDEN	MONTGOMERY		HERBICIDE	3	ITM
051591	EASTERN BOWLING LINES	WARREN	DICKS CREEK TRIB	OIL	0	UNK
051591	IMPERIAL	MONTGOMERY		DIESEL FUEL	70	GAL
051891	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	100000	GAL
052091	DAYTON OTTAWA STP	MONTGOMERY		LIME	0	UNK
052091	DEMELLO'S AUTO REPAIR	MONTGOMERY		WASTE OIL	0	UNK
052091	DAYTON POWER & LIGHT	PREBLE		MINERAL OIL (2 PPM	2	GAL
052091	G H & R FOUNDRY	MONTGOMERY		PCB TRANSFORMERS	5	ITM
052291	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL PCB (320	2	GAL
052491	WAGNER FORD GULF	MONTGOMERY		GASOLINE	25	GAL
052591	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
052691	GENERAL MOTORS / DELCO	MONTGOMERY		ZINC PHOSPHATE(SM	25	GAL
052791	UNKNOWN	MONTGOMERY		MOTOR OIL	55	GAL
052991	BECKETT PAPER CO.	MONTGOMERY	GREAT MIAMI	WASTE WATER	300	GAL
053091	CENTRAL TRANSPORT	WARREN		DIESEL FUEL	20	GAL
053091	UNKNOWN	MONTGOMERY		ABANDONED DRUM	1	ITM
060391	WORTH TRANSPORT CO	WARREN		WATER/CUTTING OIL	5	GAL
060391	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	PT
060391	UNKNOWN	MONTGOMERY		UNKNOWN	3	DMS
060491	STEVENS AVIATION / ARF	MONTGOMERY		JET FUEL	9	GAL
060691	DAYTON WATER PLANT	MONTGOMERY		LIME	0	UNK
060691	ALPINE PRODUCTS	MONTGOMERY		PAINT THINNER	1	DMS
060791	EASTWAY MENTAL	MONTGOMERY		HEATING OIL	75	GAL
061091	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	QT
061091	COUNTRY MART	WARREN		ANHYDROUS	0	UNK
061091	ASHLAND OIL / GAS	MONTGOMERY		GASOLINE	0	UNK
061091	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	20	GAL
061091	HOTOP & SONS	MONTGOMERY		DIESEL FUEL	20	GAL
061291	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
061291	TECH METALS INC.	MONTGOMERY		NITRIC ACID	0	UNK
061491	UNION 76 STATION	MONTGOMERY		GASOLINE	0	UNK
061491	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	LTR
061491	MS DAWN RUTLEDGE	MONTGOMERY		FREON MIXTURE	1	GAL
061491	BELMONT HIGH SCHOOL	MONTGOMERY		LAB SUPPLIES	0	UNK
061691	UNKNOWN	MONTGOMERY		STUFF FROM THE AIR	0	UNK
061891	DAYTON STREET DEPT	MONTGOMERY		TRANSFORMER OIL	0	UNK
062291	AGRI-URBAN /	WARREN		FERTILIZER 28-0-0	5000	GAL
062591	OHIO VALLEY PAINTING	MONTGOMERY	BEAR CREEK TRIB	PAINT OVERSPRAY	0	UNK
062591	MONGTOMERY CO WWTP	MONTGOMERY		DIESEL FUEL	0	UNK
062591	GREENLON INC.	WARREN	ROADSIDE DITCH	FERTILIZER 12-2-2	3000	GAL
062691	NCR COUNTRY CLUB	MONTGOMERY	HOLES CREEK	PESTICIDE	0	UNK
062791	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL (37 PPM	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
062791	MR TOM REAGAN	WARREN	BEECH CREEK	ASBESTOS WASTE	0	UNK
063091	SPEEDWAY	MONTGOMERY		GASOLINE	25	GAL
070191	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL (63PPM	7	GAL
070591	EATON CITY SCHOOLS	PREBLE		FUEL OIL	0	UNK
070891	GENERAL MOTORS / DELCO	MONTGOMERY		TRE-VALENT	6000	GAL
071091	TRAILER COURT	PREBLE		SEWAGE	0	UNK
071191	MIDWEST PAINTING CO	MONTGOMERY		WASTE PAINTS	0	UNK
071191	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER	0	UNK
071391	GRAPHICS PACKAGING CO	WARREN		PROPANE	150	GAL
071491	CARGILL INC	MONTGOMERY		HYDROCHLORIC ACID	10000	GAL
071691	FARMERSVILLE WWTP	MONTGOMERY	LITTLE TWIN	SEWAGE	0	UNK
061891	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	LBS
071991	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL (63	1	LBS
071991	BURLINGTON MOTOR	WARREN		LIGHTER FLUID	1	GAL
072391	MIM INDUSTRIES	MONTGOMERY		PLATING WASTE	0	UNK
072391	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
072391	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL (38	2	GAL
072491	TECH METALS INC.	MONTGOMERY		NITRIC ACID/NITRIC	0	UNK
072491	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
072991	WELLAND CHEMICAL LTD	WARREN		ANHYDROUS	0	UNK
072991	UNKNOWN	MONTGOMERY		ABANDONED DRUMS	4	DMS
073091	MARATHON OIL /	WARREN		FUEL OIL #2	40000	GAL
073091	UNKNOWN	MONTGOMERY	STORM	ODOR OF PETROLEUM	0	UNK
073191	DAYTON MENTAL HEALTH	MONTGOMERY		PCB OIL (600000 PPM)	1	GAL
080191	DAYTON BAG & BURLAP	MONTGOMERY	STORM SEWER	WASTE CHEMICALS	0	UNK
080291	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	8	GAL
080691	UNKNOWN	MONTGOMERY		TRASH	0	UNK
080691	SUN REFINING &	MONTGOMERY		GASOLINE	0	UNK
080791	CHEMICAL WASTE	MONTGOMERY		MERCURY	5	LBS
080891	MONTGOMERY COUNTY	MONTGOMERY		SODIUM	75	GAL
080891	UNKNOWN	MONTGOMERY		ASBESTOS	7	ITM
080991	DAYTON POWER & LIGHT	PREBLE		TRANSFORMER OIL	0	UNK
081291	ASHLAND CHEMICAL	MONTGOMERY		TOLUENE	0	UNK
081691	DANIS CORPORATION	MONTGOMERY	GREAT MIAMI	FUEL OIL	0	UNK
081691	DAYTON PUBLIC SCHOOLS	MONTGOMERY		HEATING OIL	0	UNK
081791	BENU CORPORATION	WARREN	CLEAR CREEK	DIESEL FUEL	200	GAL
081991	VANDALIA BLACKTOP &	MONTGOMERY		DIESEL	50	GAL
082191	METALURGICAL INC	MONTGOMERY	GREAT MIAMI	WASTE OIL	30	GAL
082391	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	200	GAL
082391	DUEUR CO	MONTGOMERY	DRAINAGE DITCH	WASTE CHEMICALS	0	UNK
082391	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	LBS
082791	REPUBLIC ASPHALT	MONTGOMERY	HOLES CREEK	ASPHALT EMULSIFIER	0	UNK
082891	VALLEY KITCHENS	WARREN		ABANDONED DRUMS	70	DMS
083091	YELLOW FREIGHT SYSTEM	MONTGOMERY		DIESEL FUEL	175	GAL
083191	UNKNOWN	WARREN	GREAT MIAMI	OIL	0	UNK
090291	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	OIL	300	GAL
090491	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	0	UNK
090491	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	20	GAL
090491	UNKNOWN*PROPERTY	WARREN		LASSO	5	GAL
090491	DAYTON GENRAL, INC.	MONTGOMERY		WASTE CHEMICALS	0	UNK
090491	UNKNOWN	MONTGOMERY	OAK CREEK	RUNOFF FROM	0	UNK
090691	ALLOYD INSULATION CO	MONTGOMERY		ASBESTOS	0	UNK
090691	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	LBS
090691	UNKNOWN	MONTGOMERY		WASTE OIL	30	GAL
091091	GREEN THUMB	MONTGOMERY	WOLF CREEK	FERTILIZER	500	GAL
091091	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
091191	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	500	ML
091491	MONTGOMERY COUNTY	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
091691	FRALEY'S EXCAVATION CO	WARREN		DIESEL FUEL	20	GAL
091691	BUILDERS TRANSPORT	MONTGOMERY	DITCH	DIESEL FUEL	150	GAL
091791	UNKNOWN	MONTGOMERY	MANHOLE	KEROSENE	5	GAL
091891	UNKNOWN	WARREN	GREAT MIAMI	GASOLINE	0	UNK
092091	GREENLON INC.	WARREN	DITCH	LIQUID FERTILIZER	4000	GAL
092091	CSX RAILROAD	WARREN		HYDRAULIC OIL	30	GAL
092591	UNKNOWN	MONTGOMERY	DRAINAGE	UNKNOWN	0	UNK
092591	UNKNOWN	WARREN		ABANDONED DRUM	0	UNK
092691	CUSTOM LUBE	MONTGOMERY		HEATING OIL	0	UNK
100291	J. B. HUNT	MONTGOMERY		DIESEL FUEL	0	UNK
100291	SUSPECTED*DREXEL	MONTGOMERY	STORM DRAIN	TRANSMISSION OIL	0	UNK
100291	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK TRIB	PAPER SLUDGE	0	UNK
100291	DAYTON WWTP/ OTTAWA	MONTGOMERY	GREAT MIAMI	LIME	0	UNK
100391	UNKNOWN	MONTGOMERY		FRENCH DRESSING	0	UNK
100491	UNKNOWN	MONTGOMERY		DIESEL FUEL	0	UNK
100491	GREEN WALLS GREEN	MONTGOMERY		HEATING OIL	0	UNK
100691	MIAMI PAPER CO.	MONTGOMERY		SUSPENDED SOLIDS	5060	LBS
100791	BRUBAKER GRAIN	PREBLE	DITCH	FARM CHEMICALS	0	UNK
100891	UNKNOWN	PREBLE		ABANDONED DRUM	3	DMS
100891	MR. KUSH SHETTH	MONTGOMERY		BENZENE	0	UNK
101791	HOLLAND EXCAVATING	MONTGOMERY		DIESEL FUEL	20	GAL
101891	MR. DONALD PEACE	PREBLE		SEWAGE	0	UNK
102091	GENERAL MOTORS /	MONTGOMERY	WOLF CREEK TRIB	EXXON KUTWELL #40	380	GAL
102391	PENSKE TRUCKING	MONTGOMERY		DIESEL FUEL	150	GAL
102391	HONEYWELL	MONTGOMERY		MERCURY	1	LBS
102491	GOOD SAMARITAN	MONTGOMERY		DIESEL FUEL	0	UNK
103191	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
110191	LYDEN OIL	MONTGOMERY		CONTAMINATED SOIL	0	UNK
110191	MR. DOUG BLACKFORD	MONTGOMERY	DITCH	FUEL OIL	3	GAL
110491	FRANKLIN BOX BOARD	WARREN	CLEAR CREEK	WASTE WATER	100000	GAL
110491	FRANKLIN BOXBOARD	WARREN	CLEAR CREEK	CARBON BLACK	0	UNK
110491	BILL FRENCH TRUCKING	WARREN		DIESEL FUEL	200	GAL
110591	UNKNOWN	MONTGOMERY		ABANDONED DRUM	1	DMS
110691	MENDELSON ELECTRONICS	MONTGOMERY		MERCURY	0	UNK
110791	UNKNOWN	WARREN		CONCRETE ADHESIVE	10	GAL
110791	MIAMI PAPER CO.	MONTGOMERY	G MIAMI	WASTE WATER	0	UNK
110891	KMI MISH EQUIPMENT	MONTGOMERY		TRANSFORMER OIL	0	UNK
111391	FRANKLIN BOX BOARD	WARREN		PURPLE-WHITE STUFF	0	UNK
120491	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	2	GAL
120991	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	5000	GAL
121191	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	CHLORINE	0	UNK
121891	ACUSTAR DAYTON	MONTGOMERY		INDUSTRIAL WASTE	0	UNK
121991	PRECISION TUNE	MONTGOMERY		OIL	10	UNK
122391	CORTIS BAILEY	WARREN		HEATING OIL	0	UNK
123091	DAYTON POWER & LIGHT	MONTGOMERY	HOLES CREEK	TRANSFORMER OIL	650	GAL
123091	DAYTON-OTTAWA WTP	MONTGOMERY		LEAD	0	UNK
123091	UNKNOWN	MONTGOMERY	WOLF CREEK TRIB	UNKNOWN	0	UNK
010392	LEPRINO	WARREN	CLEAR CREEK	RED DYE COATING	165	GAL
010492	MIAMI CONSERVANCY	MONTGOMERY	NORTH HOLES	SEWAGE	0	UNK
010892	NEIGHBOR	MONTGOMERY		GASOLINE	1	GAL
011692	DAYTON MAINTENANCE	MONTGOMERY	SEWER	DIESEL FUEL	325	GAL
012192	INK SPOT PRINTING	MONTGOMERY		WASTE INK	0	UNK
012192	GRISMER TIRE CO.	WARREN	SEWER	ANTIFREEZE	0	UNK
012292	FAST WAY SYSTEMS	PREBLE	BANTAS FORK	DIESEL FUEL	150	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
012392	TECH METALS INC.	MONTGOMERY		SODIUM	50	GAI
012392	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	GREYISH BROWN	0	UNI
012892	SPRING PARK CLEANERS	WARREN		PERCHLOROETHYLEN	0	UNI
012992	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	CHLORINE	0	UNI
012992	DAYTON METROPOLITAN	MONTGOMERY		HEATING OIL	0	UNI
013092	MCCOY OIL CORP	PREBLE		FUEL OIL #2	50	GAI
020492	OHIO NATIONAL GUARD	WARREN		GASOLINE	30	GAI
020592	CHEMICAL WASTE	MONTGOMERY		HYDROGEN SULFIDE	0	UNI
020692	GERMANTOWN TOWNSHIP	MONTGOMERY		GASOLINE	0	UNI
020792	UNKNOWN	MONTGOMERY		DIESEL FUEL	80	GAI
020892	UNKNOWN	MONTGOMERY		ABANDONED DRUM	1	DM
020992	UNKNOWN CITIZEN	MONTGOMERY	GREAT MIAMI	GASOLINE	20	GAI
020992	UNKNOWN	MONTGOMERY		SEWAGE SLUDGE	0	UNI
021092	UNKNOWN	MONTGOMERY	WOLF CREEK TRIB	OIL	0	UNI
022192	ECOLOTEC INC	MONTGOMERY	CONCRETE DIKE	WASTE SOLVENTS	150	GAI
022692	TRI STATE SERVICE	WARREN		GASOLINE	0	UNI
022692	UNKNOWN	WARREN	DITCH-CREEK	SEWAGE	0	UNI
022792	UNKNOWN	MONTGOMERY		UNKNOWN LIQUID	0	UNI
030292	DAYTON POWER & LIGHT	MONTGOMERY		PCB OIL	1	GAI
030292	ACTION TRUCKING	MONTGOMERY	STORM	DIESEL FUEL	10	GAI
030292	DALE'S GOODYEAR & TIRE	MONTGOMERY	SEWER	ANTIFREEZE	0	UNI
031292	CITY OF DAYTON	MONTGOMERY		UNLEADED GASOLINE	43	GAI
031992	PREBLE LANDMARK	PREBLE		TRANSFORMER OIL	1	GAI
031992	LEBANON CITY SERVICE	WARREN		MINERAL OIL	30	GAI
031992	UNKNOWN	MONTGOMERY		ABANDONED DRUMS	8	DM
032592	MS LOLA ISAAC	MONTGOMERY		CHEMICALS	0	UNI
033092	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL SHEEN	0	UNI
033192	UNKNOWN	MONTGOMERY		DIESEL FUEL	150	GAI
040292	BOB'S TRUCKING SERVICE	MONTGOMERY	ROADSIDE DITCH	DIESEL FUEL	0	UNI
040792	UNKNOWN	WARREN		DRUM	1	ITM
040992	MAR-CON TOOL COMPANY	MONTGOMERY		WHITE LIQUID	0	UNI
041092	DAYTON POWER & LIGHT	MONTGOMERY	STORM SEWER	TRANSFORMER OIL	60	GAI
041092	U.S.DIAMOND & GOLD	MONTGOMERY	SANITARY SEWER	CYANIDE	0	UNI
041092	COUNTRY MARK COOP	MONTGOMERY		DIESEL FUEL	30	GAI
041292	FRANKLIN BOX BOARD	WARREN	CLEAR CREEK	PULP	0	UNI
041592	SPECIALTY SERVICES	MONTGOMERY	STORM SEWER	DIESEL FUEL	40	GAI
041692	DAYTON POWER & LIGHT	MONTGOMERY		MINERAL OIL	170	PPM
042292	VOSS CHEVROLET	MONTGOMERY		OIL	0	UNI
042392	MANTYCH MACHINE CO	MONTGOMERY		FUEL OIL	100	GAI
042792	FLOYD LOY	PREBLE		OIL	200	GAI
042792	ARCO INDUSTRIES	MONTGOMERY		YELLOW STUFF	0	UNI
042792	GOLD'S GYM	MONTGOMERY		HYDROCHLORIC ACID	1	GAI
042892	UNKNOWN	MONTGOMERY		OIL	0	UNI
043092	SUN CO INC	MONTGOMERY		GASOLINE	0	UNI
050292	RELIANT AUTO REPAIR	MONTGOMERY	GREAT MIAMI	WASTE OIL	100	GAI
050492	KAISER CHEMICAL	PREBLE		BICEP	5	GAI
050592	JOHN DEERE / VALLEY	MONTGOMERY		BLACK STUFF	0	UNI
050592	BRUBAKER GRAIN &	PREBLE		BICEP CONCENTRATE	14	GAI
050692	CITY OF LEBANON	WARREN		OIL CONTAMINATED	0	UNI
050692	UNKNOWN	MONTGOMERY	GREAT MIAMI	GASOLINE	5	GAI
050892	RYDER TRUCKING CO	PREBLE		DIESEL FUEL	70	GAI
051192	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	2	GAI
051292	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	BACKWASH WATER	0	UNI
051492	BOB'S TRUCK SERVICE, INC	MONTGOMERY		DIESEL FUEL	60	GAI
052092	SUTTLEMYER SEED	WARREN	DITCH	FERTILIZER	10	GAI
052192	UNKNOWN	MONTGOMERY	SANITARY SEWER	GLUE PASTE	55	GAI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
052192	UNKNOWN	MONTGOMERY		DRUM	1	ITM
052192	UNKNOWN	PREBLE		DIESEL FUEL	50	GAI
052392	VETERANS	MONTGOMERY	STORM SEWER	FUEL OIL	300	GAI
052792	EDCO LIFT TRUCKS &	MONTGOMERY	SEWER	BATTERY ACID	0	UNI
052792	UNKNOWN	MONTGOMERY	WOLF CREEK	SEWAGE	0	UNI
053092	SUPER AMERICA	MONTGOMERY	SANITARY SEWER	GASOLINE	0	UNI
060392	UNKNOWN	MONTGOMERY		WHITE POWDER	0	UNI
060592	SHELL OIL CO	MONTGOMERY	GREAT MIAMI	WASTE WATER	1000	GAI
061392	MONTGOMERY COUNTY	MONTGOMERY		SEWAGE	0	UNI
061592	UNKNOWN	MONTGOMERY		SEWAGE	0	UNI
061692	ROADWAY EXPRESS	MONTGOMERY		PHOSPHORIC ACID	1	LBS
061692	SONNEVELDT TOUCH	MONTGOMERY		DIESEL FUEL	66	GAI
062292	SUN REFINING &	MONTGOMERY		GASOLINE	300	GAI
062592	GRISMER TIRE CO.	MONTGOMERY	WOLF CREEK	WASTE OIL	0	UNI
062692	FREDERIC E GAGEL &	MONTGOMERY		UNKNOWN	0	UNI
062892	MIAMI PAPER CO.	MONTGOMERY	OWL CREEK	WASTE WATER	0	UNI
062992	MS VIRGINIA BROWN	WARREN		METHYL ALCOHOL	1	GAI
063092	BRUBAKER FEED & GRAIN	MONTGOMERY		FARM CHEMICAL	0	UNI
063092	OHIO HIGHWAY PATROL	MONTGOMERY		HEATING OIL	0	UNI
071192	CENTERVILLE MOVING	MONTGOMERY	UNKNOWN CREEK	MOTOR OIL	5	GAI
071292	CINCINNATI GAS &	WARREN		TRANSFORMER OIL	0	UNI
071392	UNKNOWN	MONTGOMERY		OIL	1	QTS
071592	UNKNOWN	MONTGOMERY	GREAT MIAMI	DIESEL FUEL	100	GAI
071692	OHIO HIGHWAY PATROL	MONTGOMERY		HEATING OIL	0	UNI
071692	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	WASTE WATER	0	UNI
071792	UNKNOWN	MONTGOMERY	STORM SEWER	GASOLINE	10	GAI
072192	UNKNOWN	MONTGOMERY		OIL	1	GAI
072792	ROGERS SERVICES	MONTGOMERY		OIL	0	UNI
073092	UNKNOWN	MONTGOMERY		UNKNOWN	0	UNI
073192	TURNER ELECTRIC	MONTGOMERY	UNKNOWN CREEK	TRANSFORMER OIL	0	UNI
080392	WONDER BREAD	MONTGOMERY		DIESEL FUEL	0	UNI
080392	CONTINENTAL BAKING CO.	MONTGOMERY		DIESEL FUEL	0	UNI
080492	UNKNOWN	MONTGOMERY		UNKNOWN	0	UNI
080692	UNKNOWN	MONTGOMERY		CHEMICAL MIXTURE	2	GAI
081092	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	STORM WATER	0	UNI
081292	CORCON INDUSTRIAL	MONTGOMERY	GREAT MIAMI	PAINT	0	UNI
081492	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	SEPTIC LEACHATE	0	UNI
081492	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	30	GAI
081892	TEXAS EASTERN	WARREN		WASTE WATER	300	GAI
081992	DYNAPOINT TOOL CORP	MONTGOMERY		COOLING OIL	5	GAI
082492	MR. CHRIS MILLER	MONTGOMERY		FUEL OIL	0	UNI
082592	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	BLACK STUFF	0	UNI
082792	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	WASTE WATER	0	UNI
082792	FURROW BUILDING	MONTGOMERY		ROOF COAT	250	GAI
082892	MONTGOMERY COUNTY	MONTGOMERY	STORM SEWER	STORM WATER	0	UNI
082892	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	21	GAI
090192	UNKNOWN	MONTGOMERY		WASTE OIL	1	DMS
090292	GLOBE MOTORS	MONTGOMERY	UNKNOWN CREEK	HYDRAULIC FLUID	15	GAI
090292	UNKNOWN	MONTGOMERY	GREAT MIAMI	WHITE STUFF	0	UNI
090492	SUN CHEMICAL	WARREN		WASTE WATER	75	GAI
090492	BUDGET CLEANERS	MONTGOMERY		TRICHLOROETHYLEN	20	GAI
090492	UNKNOWN	MONTGOMERY		FUEL OIL	0	UNI
090992	ELDER BEERMAN	MONTGOMERY		HEATING OIL	0	UNI
090992	DAYTON ELECTROPLATING	MONTGOMERY		CYANIDE WASTE	0	UNI
091492	UNKNOWN	MONTGOMERY	GREAT MIAMI	DIESEL	0	UNI
092292	OHIO BELL	MONTGOMERY	STORM SEWER	GASOLINE	20	GAI

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
092592	DAYTON TRASH SERVICE	MONTGOMERY	UNKNOWN CREEK	DIESEL FUEL	45	GAL
092592	FRANKLIN WWTP	WARREN		SLUDGE	3000	GAL
093092	DAYTON POWER & LIGHT	MONTGOMERY		FUEL OIL	30	GAL
101492	EASTMAN KODAK CO	MONTGOMERY		INK	50	GAL
102192	TRADER PUBLISHING CO	MONTGOMERY	STORM SEWER	WASTE WATER	0	UNK
102292	JONES TRANSFER	MONTGOMERY	STORM SEWER	DIESEL FUEL	0	UNK
102392	UNKNOWN	WARREN		DIESEL FUEL	150	GAL
102392	GENERAL MOTORS /	MONTGOMERY	GREAT MIAMI	OIL	40	GAL
102492	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
102792	ROLLINS TRUCKING	MONTGOMERY	DITCH	DIESEL FUEL	100	GAL
102792	A.E.T.C.	MONTGOMERY		TRANSFORMER OIL	1	GAL
103092	HEPAR INDUSTRIES	WARREN	SANITARY SEWER	SULFURIC ACID	100	GAL
103192	GENERAL MOTORS / DELCO	MONTGOMERY		FUEL OIL	0	UNK
110292	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
110292	KABI PHARMACIA HEPAR	WARREN	CLEAR CREEK	SULFURIC ACID	10	GAL
110492	LEBANON STREET DEPT	WARREN		HYDRAULIC OIL	10	GAL
111092	ABERDEEN EXPRESS	MONTGOMERY	UNKNOWN CREEK	DIESEL FUEL	0	UNK
111292	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	GASOLINE	15	GAL
111292	UNKNOWN	MONTGOMERY		DIESEL FUEL	0	UNK
111392	UNKNOWN	MONTGOMERY	WOLF CREEK	DIESEL FUEL	40	GAL
111392	CHEMLAWN	MONTGOMERY	STORM SEWER	UREAPRILL	10	GAL
111692	UNKNOWN	MONTGOMERY		GASOLINE	0	UNK
111892	UNKNOWN	MONTGOMERY	NATURAL SPRING	FUEL OIL	0	UNK
112092	LEASEWAY	MONTGOMERY	DITCH	DIESEL FUEL	100	GAL
112792	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
112792	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	TRANSMISSION FLUID	1	GAL
120492	FRANKLIN BOXBOARD	WARREN	CATCH BASIN	PAPER PULP	0	UNK
120892	SUNOCO	WARREN		DIESEL FUEL	600	GAL
121992	MONTGOMERY COUNTY	MONTGOMERY	CENTERVILLE	SEWAGE	0	UNK
122192	PENSKE TRUCK LEASING	MONTGOMERY		DIESEL FUEL	45	GAL
122392	FRANKLIN METAL CO	MONTGOMERY		OIL	0	UNK
122692	DUNKEL BERGER OIL	PREBLE		FUEL OIL	0	UNK
122892	DAYTON EXTRUDED	WARREN		PVC POWDER	16000	LBS
122992	CARGILL INC	MONTGOMERY		DIESEL FUEL	210	GAL
122992	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
010493	JAMES RIVER CORP.	MONTGOMERY		AMMONIA	900	LBS
010493	JORGENSEN STEEL &	MONTGOMERY		COOLANT	0	UNK
010493	GREENTREE	MONTGOMERY	UNKNOWN CREEK	DIESEL FUEL	60	GAL
010893	SAFETY KLEEN	PREBLE		PETROLEUM NAPTHA	9	GAL
011993	RESOURCE RECOVERY	MONTGOMERY		METHANOL & WATER	600	GAL
012793	RICH FOOD PLANT	MONTGOMERY		DIESEL FUEL	50	GAL
020193	AMTEX INC.	WARREN		OIL	1	GAL
020193	MS BETTY JEAN CARROLL	MONTGOMERY		FUEL OIL	0	UNK
020293	QUALITY CHEMICALS CO.	MONTGOMERY		BUTYRALDEHYDE	1	GAL
020393	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
020393	CHEM PARTS	MONTGOMERY		HYDROCHLORIC ACID	2	GAL
020493	MR. LARRY FOWLER	MONTGOMERY	STORM SEWER	WASTE MOTOR OIL	0	UNK
020993	UNKNOWN	WARREN		OIL	0	UNK
021693	TURNER ELECTRIC	MONTGOMERY		OIL	0	UNK
022593	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
030393	EMRO MARKETING	MONTGOMERY	STORM SEWER	GASOLINE	1	GAL
030393	WEAVER OIL CO	MONTGOMERY		FUEL OIL	150	GAL
030893	UNKNOWN	WARREN	UNKNOWN CREEK	OIL	0	UNK
031093	UNKNOWN	MONTGOMERY	STORM SEWER	DIESEL FUEL	25	GAL
031693	KABI PHARMACIA HEPAR	WARREN	UNKNOWN CREEK	WASTE WATER	10	GAL
031993	OHIO BELL	MONTGOMERY		DIESEL FUEL	90	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
032193	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
032293	UNKNOWN	MONTGOMERY	SEWER	WATER SOFTENER	0	UNK
032393	GENERAL MOTORS / DELCO	MONTGOMERY		DIESEL FUEL	5	GAL
032493	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	44	GAL
032593	DALE'S GOODYEAR & TIRE	MONTGOMERY		ANTIFREEZE	0	UNK
032693	CITIZEN	WARREN		FUEL OIL	30	GAL
032793	UNKNOWN	MONTGOMERY		MINERAL SPIRITS	1	DMS
032993	UNKNOWN	WARREN	DICKS CREEK	BLACK STUFF	0	UNK
040193	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	100	GAL
040893	UNKNOWN	MONTGOMERY		OIL	0	UNK
041293	UNKNOWN	WARREN	DITCH	28% FERTILIZER	30	GAL
041593	EXPEDITED TRANSPORT	WARREN		DIESEL FUEL	100	GAL
041593	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	0	UNK
041593	MCCAULEY / ACCESSORY	MONTGOMERY	GREAT MIAMI	FUEL OIL	0	UNK
042793	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	20	GAL
050693	UNKNOWN	MONTGOMERY	STORM SEWER	PESTICIDE	0	UNK
051093	QUALITY CHEMICALS CO.	MONTGOMERY		ACETONE	1200	LBS
051193	PRESTON TRUCKING	PREBLE		DIESEL FUEL	1	GAL
051193	GEORGIA PACIFIC	WARREN		WASTE WATER	0	UNK
051193	A B F FREIGHT SYSTEMS	MONTGOMERY		NITROUS OXIDE	0	UNK
061293	DAYTON POWER & LIGHT	MONTGOMERY		NTRANSFORMER OIL	25	GAL
051593	BASKE LINE INC	WARREN	ROADSIDE DITCH	DIESEL FUEL	50	GAL
051893	MIDWEST PIPELINES INC	MONTGOMERY		DIESEL FUEL	100	GAL
052093	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	UNKNOWN	2	GAL
052493	DAYTON WIREBURN	MONTGOMERY		METAL WASTE	0	UNK
052593	GREASE MONKEY	MONTGOMERY		ANTIFREEZE	0	UNK
060193	FOUST BROTHERS	PREBLE		GASOLINE	25	GAL
060493	E T I	MONTGOMERY	UNKNOWN CREEK	DIESEL FUEL	0	UNK
060893	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	5	GAL
061093	MOTHER NATURE	MONTGOMERY		MULCH WATER	0	UNK
061693	REPUBLIC	MONTGOMERY		1,1,1	30	GAL
061693	TISCHER HARDWARE	PREBLE		GASOLINE	30	GAL
061893	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	4	GAL
061893	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	25	GAL
062793	DAYTON INTERNATIONAL	MONTGOMERY	UNKNOWN CREEK	OIL	100	GAL
062893	UNKNOWN	WARREN		DIESEL FUEL	100	GAL
062893	KABI PHARMACIA HEPAR	WARREN	GREAT MIAMI	SULFURIC ACID	33000	GAL
062893	DAYTON WWTP	MONTGOMERY	GREAT MIAMI	SEWAGE	0	UNK
063093	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
063093	MR ROBERT LANDIS	MONTGOMERY		OIL	1	GAL
070993	MR MIKE HURST	MONTGOMERY		FUEL OIL	600	GAL
070993	FIBRE-GLAST	MONTGOMERY		DIPHENYLMETHANE	0	UNK
071393	MR. FRED GLANDER	MONTGOMERY		FERTILIZER	5700	GAL
071393	DELCO CHASSIS	MONTGOMERY	GREAT MIAMI	WASTE WATER	0	UNK
071493	UNKNOWN	MONTGOMERY	UNKNOWN CREEK	OIL	0	UNK
071493	ADVERTISING DISPLAYS	MONTGOMERY	UNKNOWN CREEK	OIL	15	GAL
071693	UKNOWN	MONTGOMERY		UNKNOWN OILY	0	UNK
071693	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	5	GAL
072193	UNKNOWN	MONTGOMERY		OIL	1	GAL
072293	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
072393	UNKNOWN	WARREN		DIESEL FUEL	75	GAL
072393	MAIN STREET AUTO	MONTGOMERY	GREAT MIAMI	WASTE OIL	40	GAL
072693	EMRO MARKETING	MONTGOMERY	UNKNOWN CREEK	GASOLINE	35	GAL
072693	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
072693	CORROC INTERNATIONAL	WARREN		CORN STARCH LIQUID	20	GAL
073093	E M S	MONTGOMERY	UNKNOWN CREEK	SULFURIC ACID	0	UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
072793	LANDMARK	PREBLE		AMMONIA	0	UNK
080293	KOOGLER SUBURBAN	MONTGOMERY		HYDRAULIC OIL	15	GAL
080393	UNKNOWN	MONTGOMERY	SYCAMORE	WASTE OIL	50	GAL
080393	BODE-FINN	MONTGOMERY		OIL	200	GAL
080593	VOSS CHEVROLET	MONTGOMERY		GASOLINE	0	UNK
080593	U.S. DOE MOUND PLANT	MONTGOMERY	UNKNOWN CREEK	WASTE WATER	0	UNK
080693	SHELL OIL CO	MONTGOMERY		WASTE OIL	50	GAL
080793	MR. DONALD DANIEL	MONTGOMERY		GASOLINE	3	GAL
081093	UNKNOWN	MONTGOMERY		OIL	15	GAL
081193	CHEMICAL WASTE	MONTGOMERY		SRR WASTE	1	GAL
081193	VICTORY WAREHOUSE	MONTGOMERY		DIESEL FUEL	25	GAL
081193	UNKNOWN	MONTGOMERY		OIL	0	UNK
081193	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
081293	GENERAL MOTORS / DELCO	MONTGOMERY	UNKNOWN CREEK	WASTE WATER	0	UNK
081693	WILEY'S COMEDY CLUB	MONTGOMERY		PROPANE	0	UNK
082093	ASPHALT MATERIAL CO.	WARREN		OIL	0	UNK
082493	MAZUR CORP	MONTGOMERY		CHEMICALS	0	UNK
082593	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
082593	OMEGA GAS	MONTGOMERY	GREAT MIAMI	GASOLINE	25	GAL
082693	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
082793	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	1	GAL
082793	OTIS WRIGHT & SONS INC	WARREN		DIESEL FUEL	20	GAL
082893	RITE TRUCKING	WARREN		DIESEL FUEL	10	GAL
090193	KABI PHARMACIA HEPAR	WARREN		BIOXIDE	15	GAL
090193	MR. CHAMBERLAIN	WARREN	UNKNOWN CREEK	SEWAGE	0	UNK
090793	GREENLAWN	WARREN		FERTILIZER	30	GAL
090893	GAYSTON INDUSTRIES	WARREN		SODIUM HYDROXIDE	0	UNK
091093	MONTGOMERY COUNTY	MONTGOMERY		DIESEL FUEL	20	GAL
091393	CITY OF LEBANON	WARREN		TRANSFORMER OIL	10	GAL
091593	SEARS CLEANING SERVICE	MONTGOMERY	UNKNOWN CREEK	CLEANING FLUID	0	UNK
091593	B P OIL CO	MONTGOMERY		GASOLINE	0	UNK
091993	MONTGOMERY COUNTY	MONTGOMERY	HOLES CREEK	DIESEL FUEL	0	UNK
092393	E G & G MOUND APPLIED	MONTGOMERY	UNKNOWN CREEK	OIL	80	GAL
092393	GENERAL MOTORS / DELCO	MONTGOMERY	GREAT MIAMI	ACRYLIC PAINT	25	GAL
092393	GENERAL MOTORS	MONTGOMERY	GREAT MIAMI	POLAR COAT	10	GAL
092593	UNKNOWN	MONTGOMERY	GREAT MIAMI	OIL	0	UNK
092793	DAP INC.	MONTGOMERY		UNKNOWN	0	UNK
100593	VERNON MILLING	WARREN		GLUE	0	UNK
100593	CHEMWASTE	MONTGOMERY		WASTE INKS	25	GAL
101093	UNKNOWN	MONTGOMERY		PAINT	10	GAL
101193	UNKNOWN	MONTGOMERY		PAINT	1	GAL
101393	RIVERSIDE NURSING HOME	MONTGOMERY	UNKNOWN CREEK	DIESEL FUEL	5	GAL
102093	UNKNOWN	MONTGOMERY		TETRACHLOROETHEN	0	UNK
102493	C S X TRANSPORTATION	MONTGOMERY		DIESEL FUEL	40	GAL
102693	COUNSELOR MATERIAL	MONTGOMERY		IRON OXIDE	0	UNK
102793	LEWIS AND MICHAELS	MONTGOMERY		DIESEL FUEL	10	GAL
102993	LONGHAUL TRUCKING	PREBLE		DIESEL FUEL	50	GAL
110193	GENERAL MOTORS	MONTGOMERY	GREAT MIAMI	WASTE WATER	0	UNK
110893	COPPER & BRASS SALES	MONTGOMERY		ALUMINUM CHIPS	0	UNK
110993	UNKNOWN	MONTGOMERY	STORM SEWER	OIL	1	GAL
111093	SHELL OIL CO	MONTGOMERY		PCB OIL	200	GAL
111293	BLALOCK TRUCKING CO..	MONTGOMERY		HYDRAULIC FLUID	25	GAL
111593	UNKNOWN	MONTGOMERY		OIL	0	UNK
111993	PETROLEUM TRADERS	MONTGOMERY		GASOLINE	5	GAL
112393	WASHINGTON TWP FD	MONTGOMERY	UNKNOWN CREEK	GASOLINE	0	UNK
112493	SUN OIL CO	MONTGOMERY		DIESEL FUEL	200	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995.

Date	Entity	County	Waterway	Material	Quantity	
112693	DAYTON WWTP	MONTGOMERY		SEWAGE	0	UNK
121093	B P OIL	MONTGOMERY	SANITARY SEWER	GASOLINE	0	UNK
121093	UNKNOWN	MONTGOMERY		OIL	2	GAL
121193	CINCINNATI GAS &	WARREN		TRANSFORMER OIL	30	GAL
121493	CENTURY OK TRUCKING	MONTGOMERY		ADHESIVE RESIN	150	GAL
121793	SHELL GAS STATION	MONTGOMERY		GASOLINE	0	UNK
121793	UNKNOWN	MONTGOMERY		DIESEL FUEL	100	GAL
121993	DAYTON POWER & LIGHT	MONTGOMERY		TRANSFORMER OIL	250	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995

Date	Entity	County	Waterway	Material	Quantity	
02/25/95	WILLIAM WASSELMAN	Hamilton		MISCELLANEOUS	0.0	UNK
09/17/95	MSD	Hamilton		SEWAGE	0.0	UNK
01/05/95	ROBERT MESSER	Hamilton	UNNAMED CREEK	HEATING OIL	100.0	GAL
01/12/95	PASTI MAKER	Hamilton	SEWER	SEWER GAS	0.0	UNK
/ /	MSD	Hamilton		RAW SEWAGE	400.0	GAL
/ /	METROPOLITAN SEWER DISTRICT	Hamilton	COMBINED SEWER		0.0	
01/28/95	BP OIL CO.	Hamilton	STORM SEWERS	HYDRO-WATER	600000	GAL
/ /	UNKNOWN	Hamilton	PRIVATE LAKE	UNKNOWN	0.0	UNK
03/23/95	COURTESY CHEVROLET	Hamilton	SEWER	DIESEL AND OIL	10.0	GAL
04/21/95	FOX MIDWEST TRUCKING	Hamilton	STORM SEWER	DIESEL FUEL	90.0	GAL
06/05/95	MOTHER NATURE	Hamilton	PRIVATE POND	ALGAE	0.0	
06/18/95	UNITED DAIRY FARMERS	Hamilton	SEWER	GASOLINE	8.0	GAL
07/12/95	MSD	Hamilton	OHIO RIVER TRIB	SEWAGE	0.0	UNK
/ /	RUMPKE WASTE	Hamilton	STORM SEWER	HYDRAULIC	40.0	GAL
/ /	MSD	Hamilton	WET WELL @	PCB	135.0	GAL
08/05/95	MSD	Hamilton	MIAMI RIVER	WASTE WATER	0.0	UNK
08/18/95	RUMPKE WASTE	Hamilton	STORM SEWER	HYDRAULIC	40.0	GAL
/ /	UNKNOWN	Hamilton		ORPHAN	20.0	ITM
/ /	MSD	Hamilton	UNKNOWN CREEK	SEWAGE	0.0	UNK
09/22/95	MR JOE KUYKENDAHL	Hamilton	SEWER	ANTIFREEZE	2.0	GAL
/ /	LINDSEY MOTOR EXPRESS INC.	Hamilton	SEWER	WASTE RINSE	15000	GAL
/ /	TRU LOG CHEMICAL	Hamilton		FERTILIZER	10.0	GAL
/ /	UNKNOWN	Hamilton	UNKNOWN CREEK	BRIGHT GREEN	0.0	UNK
/ /	RUMPKE SANITARY LANDFILL	Hamilton	BANKLICK CREEK		0.0	
/ /	RUMPKE SANITARY LANDFILL	Hamilton	BANKLICK CREEK	WASTE WATER	0.0	UNK
/ /	RUMPKE SANITARY LANDFILL	Hamilton	BANKLICK CREEK	WASTE WATER	0.0	UNK
10/31/95	RUMPKE WASTE	Hamilton	BANKLICK CREEK	WASTE WATER	0.0	UNK
05/08/95	A.J. SEILER	Hamilton	SHEED RD CREEK	DIESEL FUEL	500.0	GAL
/ /	PRIVATE CITIZEN	Hamilton		PETROLEUM	0.0	UNK
06/09/95	TRUCKWAY LEASING	Hamilton		DIESEL FUEL	100.0	GAL
02/21/95	RUEDGERS-NEASE	Hamilton	GREAT MIAMI	WASTE WATER	0.0	UNK
/ /	RUETGERS-NEASE CORP	Hamilton	GREAT MIAMI	WASTE WATER	0.0	UNK
07/17/95	REUETGERS-NEASE	Hamilton	GREAT MIAMI	WASTE WATER	0.0	UNK
/ /	RUETGERS-NEASE CORP	Hamilton	GREAT MIAMI	WASTE WATER	0.0	UNK
/ /	ALBRIGHT & WILSON	Hamilton	GREAT MIAMI	WASTE WATER	0.0	UNK
/ /	METROPOLITAN SEWER DISTRICT	Hamilton	UNKNOWN CREEK		0.0	
04/10/95	CUSTOMER @ UDF GAS	Hamilton	NONE/UNK	GASOLINE	11.0	GAL
/ /	MSD	Hamilton	UNKNOWN CREEK	SEWAGE	0.0	UNK
04/07/95	UNKNOWN	Hamilton	UNKNOWN CREEK	DIRTY WASH	0.0	UNK
05/17/95	MSD	Hamilton	TAYLOR CREEK	SEWAGE	0.0	UNK
01/20/95	RUETGERS NESE	Hamilton	GREAT MIAMI	WASTE WATER	0.0	UNK
/ /	UNKNOWN	Hamilton	UNKNOWN CREEK	GREEN SLIMY	0.0	UNK
/ /	DEER RUN COUNTRY CLUB	Hamilton	TRIB TO INDIAN	GASOLINE	150.0	GAL
/ /	UNKNOWN	Hamilton	CREEK	BLACK MATERIAL	0.0	UNK
/ /	UNKNOWN	Hamilton	STONY CREEK	UNKNOWN	0.0	UNK
/ /	SYCAMORE CREEK WWTP	Hamilton		WASTE WATER	0.0	UNK
07/16/95	BP OIL	Hamilton		GASOLINE	10.0	GAL
01/05/95	DAYTON POWER & LIGHT	Montgomery	STORM SEWER	TRANSFORMER	1.0	GAL
01/05/95	DAYTON POWER & LIGHT	Montgomery	STORM SEWER	NO SPILL	0.0	NOS
01/05/95	DAYTON POWER & LIGHT	Montgomery	STORM SEWER	TRANSFORMER	1.0	GAL
/ /	UNKNOWN	Montgomery	WOLF CREEK	MILK	0.0	UNK
/ /	UNKNOWN	Montgomery	POND	HAZARDOUS	205.0	LBS
/ /	UNKNOWN	Montgomery	POND	REDDISH	0.0	UNK
05/17/95	UNKNOWN	Montgomery	DITCH	UNKNOWN ODOR	0.0	UNK
07/18/94	SHELL SERVICE STATION	Montgomery	UNKNOWN CREEK	GASOLINE	0.0	
/ /	TRUE GREEN CHEMLAWN	Montgomery	STORM SEWER	FUEL OIL	0.0	UNK
/ /	TRUE GREEN CHEMLAWN	Montgomery	STORM SEWER	LAWN FERTILIZER	5.0	GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995

Date	Entity	County	Waterway	Material	Quantity
04/22/94	UNKNOWN	Montgomery	PRIVATE POND TO	OIL	0.0 UNK
/ /	UNKNOWN	Montgomery	STORM SEWER	WHITE SMELLY	0.0 UNK
/ /	TRUGREEN CHEMLAWN	Montgomery	STORM SEWER	LAWN	5.0 GAL
03/04/95	WILSON CONCRETE PRODUCTS	Montgomery	TRIB TO HOLES	RED DYE	30.0 GAL
03/14/95	MONTGOMERY CTY WWTP	Montgomery	SOUTH HOLES	SEWAGE	200.0 GAL
03/14/95	MONTGOMERY COUNTY WWTP	Montgomery	SOUTH HOLES	FUEL OIL	100.0 GAL
03/14/95	MONTGOMERY COUNTY WWTP	Montgomery	SOUTH HOLES	SEWAGE	200.0 GAL
05/02/94	MONTGOMERY CO SANITARY	Montgomery	TRIB TO HOLES	SEWAGE	0.0 UNK
/ /	UNKNOWN	Montgomery	TRIB TO HOLES	BRIGHT GREEN	0.0 UNK
07/06/94	MONTGOMERY COUNTY SANITARY	Montgomery	SOUTH HOLES	SEWAGE	1000.0 GAL
/ /	NO SPILL	Montgomery	BROOKVILLE LAKE	FISH KILL	0.0 UNK
01/20/94	JAMES RIVER CORPORATION	Montgomery	STORM SEWER	TOLUENE	200.0 GAL
01/20/94	JAMES RIVER CORPORATION	Montgomery	STORM SEWER	WASTE WATER	0.0 UNK
06/09/94	UNKNOWN	Montgomery	UNKNOWN	OIL	0.0 UNK
/ /	NO SPILL	Montgomery	STORM SEWER	WASTE WATER	.1E+7 GAL
/ /	JAMES RIVER CORP	Montgomery	UNKNOWN CREEK		0.0
/ /	EASTOWN DRYCLEANERS	Montgomery			0.0
/ /	MIAMI CONSERVANCY DISTRICT	Montgomery	DITCH	SEWAGE	0.0 UNK
/ /	DAYTON	Montgomery	QUARRY	CRUDDY WATER	0.0 UNK
/ /	GM DAYTON	Montgomery	STORM SEWER	5% OIL SOLUTION	0.0 UNK
/ /	ADVANCED MACHINE CO.	Montgomery	STORM SEWER	USED MOTOR OIL	50.0 GAL
05/08/94	KLOSTERMAN'S BAKERY	Montgomery	STORM SEWER	MOTOR OIL	3.0 GAL
/ /	DAYTON POWER & LIGHT	Montgomery	STORM SEWER	FUEL OIL	50.0 GAL
07/12/95	INTERNATIONAL FINEBLANKING	Montgomery	STORM SEWER	WASTE CLEANING	0.0 UNK
07/12/95	INTERNATIONAL FINEBLANKING	Montgomery	STORM SEWER	WASTE OIL	0.0 UNK
/ /	DAYTON POWER AND LIGHT	Montgomery		OIL	0.0 UNK
/ /	METOKOTE	Montgomery		PAINT	0.0
/ /	DAYTON INTERNATIONAL AIRPORT	Montgomery		DE-ICING FLUID	0.0 UNK
12/20/95	RIGHTWAY EXPRESS	Montgomery		DIESEL FUEL	0.0 UNK
/ /	DAYTON CITY	Montgomery	GREAT MIAMI	SEWAGE	1000.0 GAL
/ /	CITY OF DAYTON	Montgomery	GREAT MIAMI	OIL	0.0 UNK
/ /	CITY OF DAYTON	Montgomery	GREAT MIAMI	SEWAGE	1000.0 GAL
01/19/94	DAYTON STP	Montgomery	TRIB TO GREAT	SEWAGE	0.0 UNK
01/19/94	DAYTON STP	Montgomery	TRIB TO GREAT	SEWAGE	0.0 UNK
/ /	DAYTON WWTP	Montgomery	GREAT MIAMI		0.0
02/09/95	MIAMI CONSERVANCY DISTRICT	Montgomery	GREAT MIAMI	SEWAGE	.1E+7 GAL
/ /	UNKNOWN	Montgomery	GREAT MIAMI	SLUDGE	0.0 UNK
/ /	UNKNOWN	Montgomery	GREAT MIAMI	HYDROCARBON	0.0 UNK
/ /	UNKNOWN	Montgomery	GREAT MIAMI	CREAMY MILKY	0.0 UNK
/ /	DAYTON WWTP	Montgomery	GREAT MIAMI TRIB	SEWAGE	0.0 UNK
05/06/94	DELCO CHASSIS	Montgomery	GREAT MIAMI	UNKNOWN OIL	1.0 UNK
/ /	MOTHER NATURE	Montgomery	GREAT MIAMI	FOAM	0.0 UNK
05/18/95	DAYTON WATER DEPT/WWTP	Montgomery	GREAT MIAMI	BLACK ACRID	0.0 UNK
/ /	MARATHON OIL COMPANY	Montgomery	GREAT MIAMI	GASOLINE	0.0 UNK
06/07/95	NOT A SPILL	Montgomery	GREAT MIAMI	LIGHT BLUE	0.0 UNK
/ /	UNKNOWN	Montgomery	GREAT MIAMI	MILKY FOAM	0.0 UNK
07/26/94	CITY OF DAYTON	Montgomery	GREAT MIAMI	WASTE WATER	0.0 UNK
09/12/95	MONTGOMERY COUNTY SANITARY	Montgomery	GREAT MIAMI	SANITARY	2000.0 GAL
10/03/95	DELPHI CHASIS	Montgomery	GREAT MIAMI	OIL SHEEN	0.0 UNK
10/17/95	M&M RESTAURANT SUPPLY	Montgomery	STORM	DIESEL FUEL	50.0 GAL
/ /	UNKNOWN	Montgomery	GREAT MIAMI	HYDROCARBON	0.0 UNK
10/25/94	UNKNOWN	Montgomery	GREAT MIAMI	PETROLEUM	1.0 GAL
/ /	UNKNOWN	Montgomery	GREAT MIAMI	DIESEL FUEL	50.0 GAL
/ /	UNKNOWN	Montgomery	GREAT MIAMI	SEWAGE	0.0 UNK
11/17/94	CITY OF DAYTON WWTP	Montgomery	GREAT MIAMI	WASTE WATER	472000 GAL
11/27/95	UNKNOWN	Montgomery	GREAT MIAMI	PEA GREEN	0.0 UNK
/ /	DAYTON WWTP	Montgomery	GREAT MIAMI	RAW SEWAGE	0.0 UNK

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995

Date	Entity	County	Waterway	Material	Quantity
/ /	RALPH WRIGHT	Montgomery	SEWERS	WASTE OIL	0.0 UNK
06/21/94	MONTGOMERY CO SEWER DEPT	Montgomery	TRIB TO WOLF	SEWAGE	0.0 UNK
07/27/94	DELCO CHASEY DIVISION OF	Montgomery	WOLF CREEK	FLY ASH WATER	1800.0 GAL
07/27/94	UNKNOWN	Montgomery	WOLF CREEK	UNKNOWN	0.0 UNK
/ /	UNKNOWN	Montgomery	WOLF CREEK	OIL SHEEN	0.0 UNK
/ /	UNKNOWN	Montgomery	WOLF CREEK	OIL	0.0 UNK
08/17/94	MONTGOMERY COUNTY WWTP	Montgomery	OWL CREEK	SEWAGE	300.0 GAL
/ /	UNKNOWN	Montgomery	UNKNOWN CREEK	55 GALLON	3.0 ITM
07/31/95	UNKNOWN	Montgomery	UNKNOWN	MUDDY YELLOW	0.0 UNK
/ /	UNKNOWN	Montgomery	UNKNOWN CREEK	UNKNOWN	0.0 UNK
/ /	UNKNOWN	Montgomery	UNKNOWN CREEK		0.0
/ /	DAYTON WATER DEPT	Montgomery	GREAT MIAMI	SEWAGE	0.0 UNK
06/30/95	T&S EXPRESS INC.	Montgomery	TRIB TO GREAT	DIESEL FUEL	140.0 GAL
04/18/95	UNKNOWN	Montgomery	PUDDLES	WHITE FOAMY	0.0 UNK
/ /	UNKNOWN	Montgomery	STORM SEWER	GASOLINE	3.0 GAL
05/24/95	UNKNOWN	Montgomery	CREEK	GASOLINE	10.0 GAL
/ /	KATHY PENNINGTON	Montgomery	STORM DRAIN	GASOLINE	5.0 GAL
/ /	BLEVINS INC.	Montgomery	CLEAR CREEK	ASPHALT-PAINT	60.0 GAL
08/20/94	UNKNOWN	Montgomery	BEAR CREEK	55 GALLON DRUM	1.0 ITM
/ /	UNKNOWN	Montgomery	HOLES CREEK	TIRES	6.0 ITM
/ /	UNKNOWN	Montgomery	SYCAMORE CREEK	DIESEL FUEL	0.0 UNK
04/18/94	DOE MOUND PLANT	Montgomery	GREAT MIAMI	TRITIUM LACED	100000 GAL
05/25/94	MR DONALD BOEGER	Montgomery	TRIB TO GREAT	OLD ASPHALT &	0.0 UNK
06/02/94	KAROLTON ENVELOPE	Montgomery	SANITARY SEWER	OIL	15.0 GAL
09/14/94	U.S. DEPT. OF ENERGY	Montgomery	GREAT MIAMI	WASTE WATER	2000.0 GAL
/ /	UNKNOWN	Montgomery	HOLES CREEK	RAW SEWAGE	0.0
/ /	DAYTON INTERNATIONAL AIRPORT	Montgomery	MILL CREEK	DIESEL FUEL	150.0 GAL
/ /	DAYTON INTERNATIONAL AIRPORT	Montgomery	MILL CREEK	WHITE FOAMY	0.0 UNK
12/21/94	GENERAL MOTORS - HARRISON DIV	Montgomery	TRIB TO GREAT	WASTE WATER	0.0 UNK
12/21/94	GENERAL MOTORS - HARRISON DIV	Montgomery	TRIB TO GREAT	1-3 BUTADIENE	2.0 LBS
/ /	HARRISON DIVISION OF GENERAL	Montgomery	GREAT MIAMI		0.0
07/07/95	UNKNOWN	Montgomery	TRIB TO WOLF	OIL	0.0 UNK
07/31/95	SEE COMMENTS	Montgomery	UNKNOWN CREEK	SEWAGE	0.0 UNK
/ /	UNKNOWN	Montgomery	SANITARY SEWER	GRAY PAINT	0.0 UNK
04/15/95	UNKNOWN	Montgomery	STORM SEWER	USED MOTOR OIL	0.0 UNK
/ /	RE HOLLAND EXCAVATING INC	Montgomery	WOLF CREEK	HYDROCARBON	0.0 UNK
/ /	CONTRACTOR FOR SEWER DIST	Montgomery	NORTH BRANCH	DIESEL	0.0 UNK
04/20/95	UNKNOWN	Montgomery	UNKNOWN CREEK	FISH KILL	0.0 UNK
05/10/94	MONTGOMERY CO SANTATION	Montgomery	OLDS CREEK	SEWAGE	1000.0 GAL
/ /	UNKNOWN	Montgomery	GREAT MIAMI	UNKNOWN SHEEN	0.0
09/26/94	CHEMICAL WASTE MANAGEMENT	Montgomery	GREAT MIAMI	WATER	20000 GAL
01/31/95	WEST CARROLTON PARCHMENT	Montgomery	OWL CREEK	HYDROCARBON	0.0 UNIK
01/31/95	WEST CARROLTON PARCHMENT	Montgomery	OWL CREEK	FUEL OIL	100.0 GAL
01/31/95	WEST CARROLTON PARCHMENT	Montgomery	OWL CREEK	HYDROCARBON	0.0 UNIK
07/28/95	UNKNOWN	Montgomery	OWL CREEK	GREENISH MILKY	0.0 UNK
/ /	UNKNOWN	Preble	AUKERMAN CREEK	WASTE OIL	10.0 GAL
/ /	UNKNOWN	Preble	AUKERMAN CREEK	WASTE OIL	2.5 GAL
06/01/95	ABF TRUCKING	Preble	DITCH	DIESEL FUEL	100.0 GAL
/ /	UNKNOWN	Preble	TWIN CREEK	RED MATERIAL	0.0 UNK
04/07/95	UNKNOWN	Preble	TWIN CREEK	KEROSENE AND	0.0 UNK
04/19/95	ROY T DUDLEY	Preble		ADHESIVE	0.0 UNK
04/09/95	GREG LOVETT	Preble	TRIB TO TWIN	CONSTRUCTION/D	0.0 UNK
/ /	DAVIS FLORY	Preble	TRIB TO DRY FORK	DIESEL FUEL < 100	100.0 GAL
/ /	UNKNOWN	Warren	QUARRY	HYDRAULIC OIL	50.0 GAL
/ /	UNKNOWN	Warren	UNKNOWN CREEK	UNKNOWN	0.0 UNK
/ /	UNKNOWN	Warren	TRIB TO CLEAR	DRUM	1.0 ITM
/ /	UNKNOWN	Warren		ANTIFREEZE	2.5 GAL

Appendix Table A-2. Spills to the Great Miami River and its tributaries: 1985-1995

Date	Entity	County	Waterway	Material	Quantity
/ /	UNKNOWN	Warren	DRAINAGE DITCH	SEPTIC WATER	0.0 UNK
/ /	PHARMACIA	Warren	STORM SEWER	FERROUS	2000.0 GAL
/ /	FRANKLIN BOX BOARD	Warren	STORM SEWER/	PULP WATER	0.0 UNK
05/09/95	MIAMI CONSERVANCY DISTRICT	Warren	CLEAR CREEK	RAW SEWAGE	0.0 UNK
12/31/95	UNKNOWN	Warren	DITCH	GASOLINE	15.0 GAL
/ /	UNKNOWN	Warren	CREEK	GASOLINE ODORS	0.0 UNK
/ /	MOTHER NATURE	Warren	POND	BROWN	0.0 UNK
10/25/95	R & W HEATING, INC	Warren	DRAINAGE DITCH	FUEL OIL	30.0 GAL
/ /	UNKNOWN	Warren		DRUMS	3.0 ITM
/ /	UNKNOWN	Warren	TRIB TO DICKS	WHITE MILKY	0.0 UNK
01/06/95	JAMES WILSMAN INC	Warren	NONE	DIESEL	50.0 GAL
11/15/95	UNKNOWN	Warren	CREEK	DIESEL FUEL	40.0 GAL

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995.

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

Great Miami River

RM 92.65 (Ust Taylorsville Dam)

Parameter*	7/13/95	9/7/95	9/21/95
Heptachlor Epoxide	0.002	0.003	ND
Hexachlorobenzene	0.004	ND	ND
alpha-Hexachlorocyclohexane	ND	ND	0.004
gamma-Hexachlorocyclohexane	ND	0.006	0.006
Endosulfan II	ND	ND	0.002
Endrin	ND	ND	0.002

RM 80.65 (Monument Ave)

Parameter*	7/13/95	9/7/95	9/21/95
Toluene	0.5	ND	ND
Trichloroethene	0.6	ND	ND
Dieldrin	0.002	ND	0.004
Heptachlor Epoxide	0.003	0.003	ND
Hexachlorobenzene	0.006	ND	ND
gamma-Hexachlorocyclohexane	ND	0.004	0.004

RM 79.95 (Fifth St)

Parameter*	6/29/95	7/13/95	9/7/95	9/21/95
Aldrin	ND	0.003	ND	ND
alpha-Hexachlorocyclohexane	0.007	ND	ND	0.004
gamma-Hexachlorocyclohexane	0.016	ND	0.003	0.004
Dieldrin	0.009	0.003	ND	ND
Heptachlor Epoxide	ND	0.004	0.003	ND
Endosulfan II	0.003	ND	ND	ND
Hexachlorobenzene	0.005	0.007	ND	ND

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

Stream **River Mile** (Location)	------------------ Date	Sample Collected	------------------
Great Miami River (continued)			
RM 75.86 (Dst Dayton WWTP)			
Parameter*	6/29/95	7/27/95	8/24/95**
Bromodichloromethane	2.1	ND	2.8
Bromoform	1.1	ND	0.7
Chloroform	1.0	ND	1.9
Dibromochloromethane	3.2	ND	2.6
Chloroethane	ND	1.0	ND
alpha-Hexachlorocyclohexane	ND	0.003	ND
gamma-Hexachlorocyclohexane	0.012	ND	0.006
Dieldrin	0.008	0.008	0.004
Endosulfan I	0.002	ND	ND
Endrin	0.005	ND	ND
Endrin Aldehyde	0.011	ND	ND
Heptachlor	0.004	ND	ND
Hexachlorobenzene	0.003	0.005	ND
RM 72.10 (Dst Appleton Paper)			
Parameter*	6/29/95	7/27/95	8/24/95
Bromodichloromethane	ND	ND	0.5
Chloroethane	ND	1.1	ND
Chloroform	2.1	0.6	11.0
Diethyl Phthalate	ND	ND	5.2
2,4,6-Trichlorophenol	ND	ND	7.5
Aldrin	ND	ND	0.003
delta-Hexachlorocyclohexane	0.015	ND	0.030
gamma-Hexachlorocyclohexane	0.008	ND	ND
4,4’-DDD	0.009	ND	ND
4,4’-DDE	0.010	ND	ND
Dieldrin	0.006	0.006	0.009
Endosulfan I	0.004	ND	ND
Endosulfan II	0.019	ND	ND
Endrin	0.012	0.002	0.008
Methoxychlor	ND	ND	0.043
Hexachlorobenzene	ND	0.004	ND

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

Stream **River Mile** (Location)	------------------ Date Sample Collected------------------		
Great Miami River (continued)			
RM 69.87 (Farmersville-West Carrollton Pike)			
Parameter*	7/25/95	8/24/95	9/7/95
Bromodichloromethane	0.5	0.6	1.0
Chloroethane	0.7	ND	ND
Chloroform	0.8	0.7	1.5
Dibromochloromethane	ND	0.6	0.9
Aldrin	ND	0.002	ND
delta-Hexachlorocyclohexane	0.009	0.013	ND
gamma-Hexachlorocyclohexane	0.004	0.004	0.010
4,4'-DDD	ND	ND	0.013
Dieldrin	0.002	0.004	ND
Endosulfan II	0.004	0.005	ND
Endrin Aldehyde	ND	ND	0.013
Heptachlor	ND	ND	0.007
Heptachlor Epoxide	0.006	0.008	ND
Methoxychlor	ND	0.014	0.083
Mirex	ND	ND	0.036
Hexachlorobenzene	0.003	ND	0.005

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Great Miami River (continued)

RM 68.30 (Dst West Carrollton WWTP)

Parameter*	6/28/95	7/25/95	8/24/95	9/7/95
Bromodichloromethane	ND	0.5	0.6	0.7
Chloroform	ND	0.9	0.8	1.1
Dibromochloromethane	ND	ND	0.7	0.6
beta-Hexachlorocyclohexane	0.004	ND	ND	ND
delta-Hexachlorocyclohexane	0.014	0.012	ND	ND
gamma-Hexachlorocyclohexane	0.005	0.006	0.003	0.010
4,4’-DDD	ND	ND	ND	0.011
Dieldrin	ND	0.003	ND	ND
Endosulfan II	ND	0.004	ND	ND
Endrin Aldehyde	ND	ND	ND	0.008
Heptachlor	ND	ND	ND	0.015
Heptachlor Epoxide	ND	0.005	ND	ND
Methoxychlor	ND	ND	ND	0.030
Mirex	ND	ND	ND	0.015
Hexachlorobenzene	ND	0.004	ND	ND

RM 66.00[C] (Dst Mound 001)

Parameter*	7/12/95	7/25/95	8/24/95	9/7/95
All parameters	ND[C]	ND[C]	ND[C]	ND[C]

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Great Miami River (continued)

RM 64.72 (Chautauqua Rd)

Parameter*	6/28/95	7/25/95	9/7/95
Bromodichloromethane	ND	ND	0.7
Chloroethane	ND	0.5	ND
Chloroform	ND	0.8	1.1
Dibromochloromethane	ND	ND	0.7
delta-Hexachlorocyclohexane	ND	0.009	ND
gamma-Hexachlorocyclohexane	0.007	0.005	0.007
4,4'-DDD	0.014	ND	ND
Endosulfan II	ND	0.002	ND
Endrin	ND	0.003	0.005
Endrin Aldehyde	ND	ND	0.009
Heptachlor Epoxide	ND	0.007	0.012
Mirex	ND	ND	0.020
Hexachlorobenzene	ND	0.003	0.004

RM 58.00 (Ust Twin Cr; Adj SR 73)

Parameter*	8/23/95
Chloroform	0.6
Dibromochloromethane	0.6
delta-Hexachlorocyclohexane	0.010
gamma-Hexachlorocyclohexane	0.006
4,4'-DDE	0.002
Dieldrin	0.003
Endosulfan I	0.002

RM 52.64 (SR 122)

Parameter*	6/28/95	7/26/95	8/23/95
delta-Hexachlorocyclohexane	0.012	***	0.007
gamma-Hexachlorocyclohexane	0.012	***	0.003
Dieldrin	0.003	***	0.004
Heptachlor Epoxide	ND	***	0.009

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Great Miami River (continued)

RM 51.30 (Dst AK Steel 011)

Parameter*	6/28/95	7/26/95	8/23/95
Aldrin	ND	0.005	ND
alpha-Hexachlorocyclohexane	0.002	0.010	ND
beta-Hexachlorocyclohexane	0.004	ND	ND
delta-Hexachlorocyclohexane	ND	ND	0.007
gamma-Hexachlorocyclohexane	0.002	0.002	0.007
Dieldrin	ND	0.009	0.005
Endrin	ND	0.007	ND
Hexachlorobenzene	ND	0.003	ND

RM 47.91 (Dst Middletown WWTP & Crystal Tissue; Ust Dicks Creek)

Parameter*	9/6/95	9/20/95
Chloroform	0.6	ND
Bromodichloromethane	ND	0.5
Dibromochloromethane	ND	0.7
delta-Hexachlorocyclohexane	ND	0.020
gamma-Hexachlorocyclohexane	0.007	0.007
Endosulfan II	0.004	0.008
Endrin	0.004	ND
Heptachlor Epoxide	0.006	0.007

RM 44.51 (Dst Butler Co LeSourdesville WWTP)

Parameter*	7/12/95	9/6/95	9/20/95
gamma-Hexachlorocyclohexane	0.009	0.007	0.009
4,4'-DDE	0.003	ND	ND
Dieldrin	0.003	ND	ND
Endosulfan II	ND	ND	0.007
Endrin	0.002	0.002	ND
Heptachlor	0.003	ND	ND
Heptachlor Epoxide	0.009	0.004	0.003
Hexachlorobenzene	0.004	ND	ND

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Great Miami River (continued)

RM 34.68 (Ust Hamilton WWTP & dam)

Parameter*	7/11/95	9/5/95	9/20/95
alpha-Hexachlorocyclohexane	0.004	ND	ND
delta-Hexachlorocyclohexane	0.010	ND	ND
gamma-Hexachlorocyclohexane	0.006	0.005	0.010
4,4'-DDE	0.003	ND	ND
Dieldrin	0.009	ND	0.004
Endosulfan I	0.002	ND	ND
Heptachlor Epoxide	0.009	ND	0.005
Hexachlorobenzene	ND	ND	0.003

RM 33.05 (Dst Hamilton WWTP; Joyce Park)

Parameter*	7/11/95	9/5/95	9/20/95
Bis (2-ethylhexyl) phthalate	10.6	ND	ND
gamma-Hexachlorocyclohexane	0.009	0.008	0.012
4,4'-DDE	ND	0.002	ND
Dieldrin	0.005	ND	0.005
Heptachlor Epoxide	0.010	0.007	ND
Endosulfan II	ND	ND	0.006

RM 31.19 (Dst Fairfield WWTP)

Parameter*	7/11/95	9/5/95	9/20/95
alpha-Hexachlorocyclohexane	0.004	ND	ND
delta-Hexachlorocyclohexane	0.011	ND	ND
gamma-Hexachlorocyclohexane	0.008	0.007	0.011
Dieldrin	0.009	0.005	0.004
Endosulfan I	0.003	ND	ND
Endosulfan II	ND	0.008	ND
Heptachlor Epoxide	0.014	0.007	0.009
Hexachlorobenzene	0.004	ND	0.005

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Great Miami River (continued)

RM 21.44 (Blue Rock Rd; Ust Paddys Run)

Parameter*	6/27/95	7/26/95	8/23/95	9/20/95
Chloroethane	ND	ND	2.0	ND
delta-Hexachlorocyclohexane	†	ND	0.006	ND
gamma-Hexachlorocyclohexane	†	0.005	ND	0.009
Dieldrin	†	0.006	ND	ND
Heptachlor Epoxide	†	0.006	0.005	ND
Hexachlorobenzene	†	0.003	ND	ND

RM 19.90 (Adj SR 128; Dst Paddys Run)

Parameter*	6/27/95	7/26/95	8/23/95	9/20/95
Chloroethane	ND	41.4	ND	ND
delta-Hexachlorocyclohexane	†	ND	0.008	ND
gamma-Hexachlorocyclohexane	†	0.008	ND	0.011
Dieldrin	†	0.004	ND	ND
Heptachlor Epoxide	†	0.007	0.006	ND
Hexachlorobenzene	†	0.002	ND	0.003

RM 10.70 (Adj SR 128; Ust Chevron Oil)

Parameter*	7/11/95	9/5/95	9/19/95
alpha-Hexachlorocyclohexane	0.003	ND	ND
delta-Hexachlorocyclohexane	0.009	ND	ND
gamma-Hexachlorocyclohexane	0.005	0.008	0.007
Dieldrin	0.009	ND	ND
Endosulfan II	ND	0.007	0.006
Endrin	ND	0.003	0.003
Heptachlor Epoxide	0.009	ND	ND
Hexachlorobenzene	0.003	ND	ND

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Great Miami River (continued)
RM 8.52 (SR 50; Dst Chevron Oil)

Parameter*	7/11/95	9/5/95	9/19/95
delta-Hexachlorocyclohexane	0.011	ND	ND
gamma-Hexachlorocyclohexane	0.006	0.007	0.011
4,4'-DDE	ND	0.002	ND
Endosulfan II	ND	ND	0.009
Endrin	ND	0.003	0.003
Heptachlor Epoxide	0.007	0.010	ND
Hexachlorobenzene	0.003	ND	0.004

RM 1.75 (Adj Lawrenceburg Rd)

Parameter*	7/11/95	9/5/95	9/19/95
alpha-Hexachlorocyclohexane	0.003	ND	ND
delta-Hexachlorocyclohexane	0.007	ND	ND
gamma-Hexachlorocyclohexane	0.006	0.006	0.007
4,4'-DDE	ND	0.002	ND
Dieldrin	ND	0.003	ND
Endosulfan II	ND	ND	0.008
Endrin	ND	0.002	ND
Heptachlor Epoxide	0.007	ND	ND
Hexachlorobenzene	0.005	ND	0.003

Wolf Creek
RM 16.61 (Upper Lewisburg-Salem Rd)

Parameter*	7/13/95	9/7/95	9/21/95
Dieldrin	0.007	0.003	0.003
Hexachlorobenzene	0.002	ND	ND
Endrin	ND	0.002	ND
Endosulfan I	ND	ND	0.003

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Wolf Creek (continued)
RM 14.14 (Airhill Rd; Dst Brookville WWTP)

Parameter*	7/13/95	9/7/95	9/21/95
Chloroform	ND	0.9	ND
Aldrin	ND	0.002	ND
gamma-Hexachlorocyclohexane	0.003	ND	ND
Dieldrin	0.004	0.002	ND
Endrin	ND	0.003	ND
Endosulfan II	0.007	ND	ND
Heptachlor Epoxide	0.006	0.003	ND
Hexachlorobenzene	0.005	ND	ND

RM 0.01 (Dst Edwin C. Moses Blvd; @ mouth)

Parameter*	7/13/95	9/7/95	9/21/95
4,4’-DDE	0.003	ND	ND
Dieldrin	0.005	ND	0.004
Heptachlor Epoxide	0.003	ND	ND
Hexachlorobenzene	0.004	ND	ND

Owl Creek
RM 0.17 (Central Ave)

Parameter*	7/12/95	7/25/95	8/24/95	9/7/95
Chloroform	4.4	4.0	5.3	9.1
1,2,4-Trimethylbenzene	0.7	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	28.4	9.3
delta-Hexachlorocyclohexane	0.004	0.006	0.007	ND
gamma-Hexachlorocyclohexane	ND	ND	ND	0.004
Dieldrin	ND	0.003	ND	0.003
Endosulfan II	ND	ND	0.011	ND
Endrin	ND	ND	0.002	ND
Heptachlor Epoxide	0.003	0.011	0.022	0.024
Methoxychlor	0.014	ND	ND	0.013

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

Stream **River Mile** (Location)	------------------ Date	Sample Collected	------------------	
Bear Creek				
RM 9.75 (US 35; Dst New Lebanon WWTP)				
Parameter*	6/28/95	7/25/95	8/24/95	9/7/95
Chloroethane	ND	ND	ND	0.5
alpha-Hexachlorocyclohexane	0.003	ND	0.003	ND
delta-Hexachlorocyclohexane	ND	0.006	0.010	ND
gamma-Hexachlorocyclohexane	ND	ND	0.003	0.017
4,4'-DDE	ND	ND	ND	0.007
Dieldrin	0.005	0.002	ND	ND
Endrin	0.008	0.007	0.009	0.017
Heptachlor Epoxide	ND	0.003	0.004	ND
RM 0.01 (Dst RR bridge; near mouth)				
Parameter*	6/29/95	7/25/95	8/24/95	9/7/95
Chloroethane	0.6	ND	ND	ND
Bis (2-ethylhexyl) phthalate	ND	ND	20.1	ND
Dieldrin	0.005	0.003	ND	ND
Heptachlor Epoxide	ND	0.003	ND	ND
Hexachlorobenzene	ND	0.002	ND	ND
Heptachlor	ND	ND	ND	0.003
Mound Overflow Creek				
RM 0.10[C] (Ust mouth)				
Parameter*	7/12/95	7/25/95	8/24/95	
Methylene Chloride	ND	ND	120	
All other parameters	ND[C]	ND[C]	ND[C]	

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Dicks Creek

RM 5.21 (Ust North Branch Dicks Creek; Dst Moraine Materials)

Parameter*	6/28/95	7/26/95	8/23/95
alpha-Hexachlorocyclohexane	0.010	ND	ND
delta-Hexachlorocyclohexane	ND	0.005	0.003
gamma-Hexachlorocyclohexane	0.004	ND	ND
Dieldrin	0.004	ND	ND
Endosulfan I	0.002	ND	ND
Endosulfan II	ND	ND	0.005
Endosulfan Sulfate	0.030	ND	ND
Endrin	0.003	ND	ND

RM 4.70 (Dst North Branch Dicks Creek; Ust Shaker Creek)

Parameter*	6/28/95	7/26/95	8/23/95
delta-Hexachlorocyclohexane	0.015	ND	0.004
gamma-Hexachlorocyclohexane	0.004	ND	ND
Dieldrin	0.006	ND	ND
Endosulfan II	ND	ND	0.005
Heptachlor Epoxide	ND	ND	0.003
Hexachlorobenzene	ND	0.003	ND

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Dicks Creek (continued)
RM 3.00 (Dst AK Steel 003/015; Ust 002)

Parameter*	6/28/95	7/26/95‡	8/23/95	9/6/95‡
Benzene	ND	50.0	1.6	0.8
Naphthalene	ND	420.0	ND	ND
Acenaphthylene	ND	115	ND	ND
Aniline	‡‡	498	‡‡	ND
Anthracene	ND	19.5	ND	ND
Dibenzofuran	‡‡	29.3	‡‡	ND
2,4-Dimethylphenol	ND	209	ND	ND
Fluoranthene	ND	38.8	ND	ND
Fluorene	ND	34.9	ND	ND
2-Methylphenol	‡‡	1280	‡‡	ND
3&4 Methylphenol	‡‡	4810	‡‡	ND
Naphthalene	ND	337	ND	ND
Phenanthrene	ND	110	ND	ND
Phenol	ND	8900	ND	ND
2-Picoline	‡‡	25.9	‡‡	ND
Pyrene	ND	31.3	ND	ND
O-Toluidine	‡‡	19.4	‡‡	ND
Aldrin	ND	ND	ND	0.006
alpha-Hexachlorocyclohexane	0.007	ND	ND	ND
beta-Hexachlorocyclohexane	ND	ND	0.003	0.004
delta-Hexachlorocyclohexane	0.015	0.030	0.014	ND
gamma-Hexachlorocyclohexane	0.002	ND	0.003	0.002
4,4’-DDE	0.003	ND	ND	0.005
Dieldrin	0.004	0.049	ND	ND
Endrin	ND	0.009	0.005	ND
Endrin Aldehyde	ND	0.182	ND	ND
Hexachlorobenzene	ND	ND	ND	0.003

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

Dicks Creek (continued)
RM 2.51 (Yankee Rd)

Parameter*	6/28/95	7/26/95	8/23/95
Benzene	1.6	4.7	1.0
Naphthalene	ND	17.2	ND
Toluene	ND	1.0	ND
Acenaphthylene	ND	5.2	ND
2,4-Dimethylphenol	ND	16.8	ND
Naphthalene	ND	13.2	ND
Phenanthrene	ND	3.8	ND
Phenol	ND	754	ND
Aldrin	0.003	ND	ND
alpha-Hexachlorocyclohexane	0.007	ND	ND
beta-Hexachlorocyclohexane	ND	ND	0.005
delta-Hexachlorocyclohexane	0.007	0.020	ND
gamma-Hexachlorocyclohexane	0.004	ND	0.015
4,4'-DDD	ND	0.017	ND
4,4'-DDE	0.003	ND	0.003
Dieldrin	0.005	0.015	ND
Endosulfan II	0.003	ND	ND
Endrin	ND	ND	0.010
Endrin Aldehyde	ND	0.183	ND
Hexachlorobenzene	0.006	ND	0.004

RM 0.93 (Hamilton-Middletown Rd; near Excello)

Parameter*	6/28/95	7/26/95	8/23/95
Benzene	0.8	ND	ND
Aldrin	0.003	ND	ND
delta-Hexachlorocyclohexane	ND	ND	0.012
gamma-Hexachlorocyclohexane	0.003	0.005	ND
4,4'-DDE	0.002	ND	ND
Dieldrin	0.004	ND	ND
Endosulfan II	ND	ND	0.004
Endrin	0.002	ND	ND
Hexachlorobenzene	ND	0.003	ND

Appendix Table A-3. Concentrations (µg/l) of organic compounds detected in water samples collected in the Great Miami River study area during 1995, continued.

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

North Branch Dicks Creek
RM 0.75 (Ust AK Steel 004; Adj Breiel Rd)

Parameter*	6/28/95	7/26/95	8/23/95
Aldrin	ND	ND	0.002
Heptachlor	0.003	0.003	ND
Heptachlor Epoxide	ND	ND	0.002
Hexachlorobenzene	ND	ND	0.004

RM 0.01 (Dst AK Steel 004; @ mouth)

Parameter*	6/28/95	7/26/95	8/23/95
alpha-Hexachlorocyclohexane	0.002	ND	ND
beta-Hexachlorocyclohexane	ND	ND	0.005
delta-Hexachlorocyclohexane	0.010	ND	ND
Dieldrin	0.004	0.004	ND
Endosulfan II	0.008	ND	ND
Endrin	ND	ND	0.003
Hexachlorobenzene	ND	0.004	ND

Paddys Run
RM 0.25 (Ust mouth)

Parameter*	6/27/95	7/26/95	8/23/95	9/20/95
Chloroethane	ND	ND	ND	0.5
alpha-Hexachlorocyclohexane	ND	ND	ND	0.002
delta-Hexachlorocyclohexane	ND	ND	ND	0.003
Dieldrin	ND	ND	ND	0.002
Hexachlorobenzene	0.004	ND	ND	ND

* Parameters in plain type are organochlorine pesticides; parameters in italic type are *volatile organic compounds*; and parameters in bold type are **semivolatile organic compounds**.
** Not analyzed for semivolatile organic compounds. *** Not analyzed for pesticides or pcbs.
† Not analyzed for semivolatile organic compounds, pesticides or pcbs.
‡ Semivolatile organics analyzed at this site on 7/26/95 and 9/6/95 per USEPA method 8270. (All other semivolatiles analyzed per USEPA method 625.)
‡‡ Not analyzed for this parameter.
C Analysis performed by contract laboratory (Ross Analytical Services). The estimated quantitation limits (EQLs) used by the contract laboratory are significantly higher than OEPA minimum detection limits. The majority of reported concentrations are, therefore, below the EQL (i.e. non-detect).
ND Compound not detected or less than minimum detection limit.

Appendix Table A-4. Particle size distribution in sediments collected from the Great Miami River study area in 1995.

Stream River Mile (Time)[1] [Size][2]	**SAND & >** (%) (0.5) [>60]	**COARSE SILT** (%) (0.5-3) [60-30]	**MED SILT** (%) (3-10) [30-15]	**FINE SILT** (%) (10-90) [15-8]	**VFINE SILT** (%) (90-270) [8-4]	**COARSE CLAY** (%) (270-720) [4-2]	**MED CLAY** (%) (720-1440) [2-1]	**FINE CLAY** (%) (>1440) [<1]
Great Miami River								
92.65	81.1	5.2	3.1	3.1	2.1	0.0	2.0	3.4
83.57	0.0	52.2	20.0	7.7	6.2	3.1	3.0	7.8
80.65	0.0	59.0	7.9	23.7	1.6	1.6	3.2	3.0
79.95	0.0	67.9	20.3	4.4	1.5	1.5	1.5	2.9
77.24	0.0	60.8	21.8	8.7	1.5	1.5	1.5	4.2
75.86	70.8	6.6	10.6	5.3	2.7	2.7	0.0	1.3
72.10	95.9	1.0	1.0	1.0	0.0	1.0	0.0	0.1
68.30	71.0	5.5	8.2	5.5	2.8	1.4	0.0	5.6
66.90	64.3	6.6	15.9	5.3	2.6	1.3	1.3	2.7
66.00[C]	71.0	5.0	6.0	3.0	2.0	3.8	9.2	0.0
64.72	64.9	10.0	13.4	3.3	1.7	1.7	1.7	3.3
52.64	72.0	7.0	10.6	3.5	1.8	1.8	0.0	3.3
51.30	0.0	30.8	60.0	4.6	1.5	0.0	1.5	1.6
44.51	0.0	60.8	5.6	16.8	2.8	4.2	1.4	8.4
34.68	0.0	58.6	11.6	16.5	3.3	1.7	3.4	4.9
33.05	46.3	9.3	18.6	7.4	5.6	3.7	1.9	7.2
31.19	0.0	45.6	14.9	19.9	6.6	1.7	3.4	7.9
26.21	58.2	6.3	16.8	6.3	4.2	2.1	2.1	4.0
24.55	46.7	11.1	20.0	6.7	4.4	4.4	0.0	6.7
21.44	48.2	11.3	18.0	9.0	4.5	2.3	2.3	4.4
19.90	0.0	37.5	0.0	39.1	9.4	1.6	4.7	7.7
10.70	0.0	70.5	5.7	11.4	2.3	1.1	2.2	6.8
8.52	86.6	1.0	4.2	2.1	1.0	1.0	1.0	3.1
1.75	63.6	4.0	13.5	6.7	2.7	1.3	0.0	8.2
Wolf Creek								
16.61	0.0	49.1	13.9	21.6	4.6	4.6	1.5	4.7
0.01	*	*	*	*	*	*	*	*
Owl Creek								
0.17	92.5	1.1	2.2	2.2	1.1	0.0	0.0	0.9

Appendix Table A-4. Particle size distribution in sediments collected from the Great Miami River study area in 1995, continued.

Stream River Mile (Time)[1] [Size][2]	**SAND & >** (%) (0.5) [>60]	**COARSE SILT** (%) (0.5-3) [60-30]	**MED SILT** (%) (3-10) [30-15]	**FINE SILT** (%) (10-90) [15-8]	**VFINE SILT** (%) (90-270) [8-4]	**COARSE CLAY** (%) (270-720) [4-2]	**MED CLAY** (%) (720-1440) [2-1]	**FINE CLAY** (%) (>1440) [<1]
Bear Creek								
0.01	0.0	51.7	12.4	24.9	2.8	1.4	1.4	5.4
Elk Creek								
3.65	0.0	71.0	17.4	4.6	2.3	1.2	1.2	2.3
Dicks Creek								
5.21	0.0	31.5	9.1	32.0	11.4	4.6	4.6	6.8
4.70	59.6	6.1	16.2	4.0	6.1	0.0	2.0	6.0
3.00	75.8	4.5	7.5	4.5	0.0	1.5	1.5	4.7
2.51	59.0	3.3	6.6	18.0	3.3	0.0	3.2	6.6
0.93	65.0	4.6	12.2	4.6	3.0	1.5	1.5	7.6
North Branch Dicks Creek								
0.75	0.0	55.3	9.5	23.1	4.1	0.0	0.0	8.0
0.01	58.1	10.5	18.0	4.5	0.0	1.5	1.5	5.9
Paddys Run								
4.73[C1]				(See Note Below)				
3.27[C1]				(See Note Below)				
2.82[C1]				(See Note Below)				

1 (Settling time in minutes)
2 [Particle size in microns]
C Analyzed by contract laboratory (Solar Testing Laboratories, Inc.)
C1 Analyzed by contract laboratory (Thermo Analytical); 19%, 16% and 4.2% < 53 µm at river miles 4.73, 3.27, and 2.82, respectively.
* Not analyzed

Appendix Table A-5. Concentrations (mg/kg) of organic compounds (priority pollutants) detected in sediment samples collected in the Great Miami River study area during 1995. Parameter concentrations were evaluated based on the Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario (1993).

Stream	------------------------**Great Miami River** ------------------------					
River Mile	92.65	80.65	79.95	75.86	72.10	68.30
	SEMIVOLATILE ORGANIC COMPOUNDS					
PHTHALATES*						
Bis (2-ethylhexyl) Phthalate	ND	1.0	0.8	ND	ND	ND
Di-N-Butyl Phthalate	ND	ND	ND	ND	ND	ND
PAHS						
Acenaphthene*	ND	ND	ND	ND	ND	ND
Acenaphthylene*	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND
Benzo [A] Anthracene	ND	*0.9£*	ND	*0.7£*	ND	*0.5£*
Benzo [B&K] Fluoranthene*	ND	2.1	1.5	1.6	ND	1.2
Benzo [A] Pyrene	ND	*0.9£*	ND	ND	ND	*0.5£*
Benzo [GHI] Perylene	ND	*0.9£*	ND	ND	ND	ND
Chrysene	ND	*1.2£*	*1.0£*	*1.0£*	ND	*0.7£*
Dibenzofuran*	ND	ND	ND	ND	ND	ND
Dibenzo [A,H] Anthracene	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	*2.1£*	*2.0£*	*2.2£*	ND	*1.3£*
Fluorene	ND	ND	ND	ND	ND	ND
Indeno [1,2,3-CD] Pyrene	ND	*1.2£*	*0.8£*	ND	ND	ND
2-Methylnaphthalene*	ND	ND	ND	ND	ND	ND
Naphthalene*	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	*1.2£*	*1.0£*	*1.2£*	ND	*0.8£*
Pyrene	ND	*1.7£*	*1.6£*	*1.7£*	ND	*1.1£*
PHENOLS*						
3&4 Methylphenol	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	3.7	ND	ND
	VOLATILE ORGANIC COMPOUNDS*					
Toluene	ND	ND	0.2	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND

Appendix Table A-5. Concentrations (mg/kg) of organic compounds (priority pollutants) detected in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	------------------------**Great Miami River** ------------------------					
River Mile	66.90	66.00C	64.72	52.64	51.30	44.51
			SEMIVOLATILE ORGANIC COMPOUNDS			
PHTHALATES*						
Bis (2-ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND
Di-N-Butyl Phthalate	ND	ND	ND	ND	ND	ND
PAHS						
Acenaphthene*	ND	ND	ND	ND	10.7	ND
Acenaphthylene*	ND	ND	ND	ND	6.1	ND
Anthracene	ND	ND	ND	ND	**31.0**Δ	ND
Benzo [A] Anthracene	ND	ND	*1.1*£	ND	*35.8*£	ND
Benzo [B&K] Fluoranthene*	ND	ND	2.0	ND	37.7	0.7
Benzo [A] Pyrene	ND	ND	*1.0*£	ND	*19.8*£	ND
Benzo [GHI] Perylene	ND	ND	*0.7*£	ND	*19.1*£	ND
Chrysene	ND	*0.52*£	*1.4*£	ND	*20.0*£	ND
Dibenzofuran*	ND	ND	ND	ND	8.2	ND
Dibenzo [A,H] Anthracene	ND	ND	ND	ND	*9.5*£	ND
Fluoranthene	*0.9*£	*0.99*£	*2.7*£	0.6†	*83.2*£	*0.8*£
Fluorene	ND	ND	ND	ND	**31.4**Δ	ND
Indeno [1,2,3-CD] Pyrene	ND	ND	*1.0*£	ND	*19.1*£	ND
2-Methylnaphthalene*	ND	ND	ND	ND	7.6	ND
Naphthalene*	ND	ND	ND	ND	4.0	ND
Phenanthrene	ND	*0.73*£	*1.3*£	ND	*63.8*£	ND
Pyrene	*0.7*£	*0.69*£	*2.1*£	ND	*64.0*£	*0.7*£
PHENOLS*						
3&4 Methylphenol	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND
				VOLATILE ORGANIC COMPOUNDS*		
Toluene	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	1.0	ND

Appendix Table A-5. Concentrations (mg/kg) of organic compounds (priority pollutants) detected in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	------------------------	-----**Great Miami**	**River** -----	------------------------		
River Mile	34.68	33.05	31.19	26.21	24.55	21.44
SEMIVOLATILE ORGANIC COMPOUNDS						
PHTHALATES*						
Bis (2-ethylhexyl) Phthalate	ND	0.8	ND	ND	ND	ND
Di-N-Butyl Phthalate	ND	ND	ND	ND	ND	ND
PAHS						
Acenaphthene*	ND	ND	ND	ND	ND	ND
Acenaphthylene*	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND
Benzo [A] Anthracene	ND	ND	ND	ND	ND	ND
Benzo [B&K] Fluoranthene*	0.8	1.0	1.0	1.3	0.8	1.1
Benzo [A] Pyrene	ND	ND	ND	ND	ND	ND
Benzo [GHI] Perylene	ND	ND	ND	*1.0*£	ND	ND
Chrysene	ND	ND	ND	*0.7*£	ND	ND
Dibenzofuran*	ND	ND	ND	ND	ND	ND
Dibenzo [A,H] Anthracene	ND	ND	ND	ND	ND	ND
Fluoranthene	*0.9*£	*1.3*£	*1.2*£	*1.4*£	ND	*0.9*£
Fluorene	ND	ND	ND	ND	ND	ND
Indeno [1,2,3-CD] Pyrene	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene*	ND	ND	ND	ND	ND	ND
Naphthalene*	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	*0.7*£	ND	ND
Pyrene	*0.7*£	*1.0*£	*0.9*£	*1.1*£	ND	ND
PHENOLS*						
3&4 Methylphenol	ND	2.1	2.1	ND	ND	ND
Pentachlorophenol	ND	ND	ND	1.4	ND	ND
VOLATILE ORGANIC COMPOUNDS*						
Toluene	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND

Appendix Table A-5. Concentrations (mg/kg) of organic compounds (priority pollutants) detected in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	-----------**Great Miami River** ----------			
River Mile	19.90	10.70	8.52	1.75
	SEMIVOLATILE ORGANIC COMPOUNDS			
PHTHALATES*				
Bis (2-ethylhexyl) Phthalate	ND	ND	ND	0.9
Di-N-Butyl Phthalate	ND	ND	ND	ND
PAHS				
Acenaphthene*	ND	ND	ND	ND
Acenaphthylene*	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND
Benzo [A] Anthracene	ND	ND	ND	ND
Benzo [B&K] Fluoranthene*	1.6	ND	ND	ND
Benzo [A] Pyrene	ND	ND	ND	ND
Benzo [GHI] Perylene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
Dibenzofuran*	ND	ND	ND	ND
Dibenzo [A,H] Anthracene	ND	ND	ND	ND
Fluoranthene	*1.1*£	*0.8*£	ND	ND
Fluorene	ND	ND	ND	ND
Indeno [1,2,3-CD] Pyrene	ND	ND	ND	ND
2-Methylnaphthalene*	ND	ND	ND	ND
Naphthalene*	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND
Pyrene	ND	*0.7*£	ND	ND
PHENOLS*				
3&4 Methylphenol	7.2	ND	ND	ND
Pentachlorophenol	ND	ND	ND	1.2
	VOLATILE ORGANIC COMPOUNDS*			
Toluene	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND

Appendix Table A-5. Concentrations (mg/kg) of organic compounds (priority pollutants) detected in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	**--Wolf Creek--**		**Owl Creek**	**Bear Creek**
River Mile	16.61	0.01	0.17	0.01
	SEMIVOLATILE ORGANIC COMPOUNDS			
PHTHALATES*				
Bis (2-ethylhexyl) Phthalate	1.2	1.2	0.8	ND
Di-N-Butyl Phthalate	ND	ND	ND	ND
PAHS				
Acenaphthene*	ND	ND	ND	ND
Acenaphthylene*	ND	ND	ND	ND
Anthracene	ND	*0.8£*	ND	ND
Benzo [A] Anthracene	ND	*2.0£*	*2.4£*	ND
Benzo [B&K] Fluoranthene*	5.2	3.2	3.8	ND
Benzo [A] Pyrene	*1.9£*	*1.5£*	*1.5£*	ND
Benzo [GHI] Perylene	*1.6£*	*1.1£*	*1.0£*	ND
Chrysene	*3.9£*	*2.2£*	*3.1£*	ND
Dibenzofuran*	ND	ND	ND	ND
Dibenzo [A,H] Anthracene	ND	ND	ND	ND
Fluoranthene	*8.4£*	*5.6£*	*9.1£*	ND
Fluorene	ND	ND	ND	ND
Indeno [1,2,3-CD] Pyrene	*2.3£*	*1.5£*	*1.6£*	ND
2-Methylnaphthalene*	ND	ND	ND	ND
Naphthalene*	ND	ND	ND	ND
Phenanthrene	*2.7£*	*3.7£*	*4.6£*	ND
Pyrene	*6.2£*	*4.2£*	*6.8£*	ND
PHENOLS*				
3&4 Methylphenol	7.7	ND	1.5	ND
Pentachlorophenol	ND	ND	ND	ND
VOLATILE ORGANIC COMPOUNDS*				
Toluene	ND	0.3	ND	ND
Naphthalene	ND	ND	ND	ND

Appendix Table A-5. Concentrations (mg/kg) of organic compounds (priority pollutants) detected in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream			**Dicks Creek**			**N.B. Dicks Cr**	
River Mile	5.21	4.70	3.00	2.51	0.93	0.75	0.01
SEMIVOLATILE ORGANIC COMPOUNDS							
PHTHALATES*							
Bis (2-ethylhexyl) Phthalate	7.7	ND	ND	ND	ND	0.7	ND
Di-N-Butyl Phthalate	ND	1.6	ND	ND	ND	ND	ND
PAHS							
Acenaphthene*	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene*	ND	ND	ND	ND	ND	ND	ND
Anthracene	ND	ND	ND	ND	ND	ND	ND
Benzo [A] Anthracene	ND	ND	ND	*1.2*[£]	*0.7*[£]	ND	ND
Benzo [B&K] Fluoranthene*	ND	ND	1.0	2.2	1.5	1.6	ND
Benzo [A] Pyrene	ND	ND	ND	*1.0*[£]	*0.8*[£]	ND	ND
Benzo [GHI] Perylene	ND	ND	ND	*0.9*[£]	*0.6*[£]	ND	ND
Chrysene	ND	ND	ND	*1.1*[£]	*0.8*[£]	*0.9*[£]	ND
Dibenzofuran*	ND	ND	ND	ND	ND	ND	ND
Dibenzo [A,H] Anthracene	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	ND	ND	*0.8*[£]	*2.6*[£]	*1.4*[£]	*1.7*[£]	ND
Fluorene	ND	ND	ND	ND	ND	ND	ND
Indeno [1,2,3-CD] Pyrene	ND	ND	*0.6*[£]	*1.2*[£]	*0.8*[£]	*1.0*[£]	ND
2-Methylnaphthalene*	ND	ND	ND	ND	ND	ND	ND
Naphthalene*	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	*1.2*[£]	*0.7*[£]	*0.7*[£]	ND
Pyrene	ND	ND	*0.7*[£]	*2.0*[£]	*1.2*[£]	*1.3*[£]	ND
PHENOLS*							
3&4 Methylphenol	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND
VOLATILE ORGANIC COMPOUNDS*							
Toluene	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	0.1	ND	ND	ND

* Not evaluated by Ontario (1993). ND Compound not detected or less than minimum detection limit.

[C] Samples from Great Miami River RM 66.00 analyzed by Ross Analytical Services.

Ontario Guidelines:

[†] < lowest effect level (LEL) [£] ≥ *lowest effect level (LEL)* [Δ] ≥ **severe effect level (SEL)**

Appendix Table A- 6. Concentrations (µg/kg) of pesticides and PCBs in sediment samples collected in the Great Miami River study area during 1995. Parameter concentrations were evaluated based on the Kelly and Hite (1984) stream sediment classification system and the Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario (1993).

Stream	**Great Miami River**						
River Mile	92.65	80.65	79.95	75.86	72.10	68.30	66.90
Pesticides							
Aldrin#	ND	ND	ND	ND	ND	ND	ND
alpha-BHC#	ND	ND	ND	ND	ND	ND	ND
beta-BHC#	ND	ND	ND	ND	ND	ND	ND
delta-BHC*	ND	20	22	ND	13	ND	ND
gamma-BHC#	ND	ND	ND	ND	ND	ND	ND
DDT-Total[1]	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	**<u>37</u>e£**	**<u>67</u>e£**	ND	**16d£**	ND	ND
Endosulfan I*	ND	ND	ND	ND	ND	ND	ND
Endosulfan II*	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate*	ND	ND	ND	ND	ND	ND	ND
Endrin#	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde*	ND	ND	ND	ND	ND	ND	ND
Heptachlor*	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide#	ND	ND	ND	ND	ND	ND	ND
Methoxychlor*	ND	ND	29	7.8	ND	ND	ND
Mirex#	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene#	ND	ND	ND	ND	ND	ND	ND
PCBs							
PCB (total)	ND	ND	ND	**870d£**	ND	**<u>1650</u>e£**	*100c£*
PCB-1016#	ND	ND	ND	ND	ND	ND	ND
PCB-1221*	ND	ND	ND	ND	ND	ND	ND
PCB-1232*	ND	ND	ND	ND	ND	ND	ND
PCB-1242*	ND	ND	ND	ND	ND	ND	ND
PCB-1248#	ND	ND	ND	ND	ND	*760£*	*100£*
PCB-1254#	ND	ND	ND	*610£*	ND	**<u>890</u>Δ**	ND
PCB-1260#	ND	ND	ND	*260£*	ND	ND	ND

Appendix Table A- 6. Concentrations (µg/kg) of pesticides and PCBs in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream				**Great Miami River**			
River Mile	66.00[C]	64.72	52.64	51.30	44.51	34.68	33.05
Pesticides							
Aldrin#	ND	ND	ND	ND	ND	ND	ND
alpha-BHC#	ND	ND	ND	*26*£	ND	ND	ND
beta-BHC#	ND	ND	ND	ND	ND	ND	ND
delta-BHC*	ND	ND	ND	ND	11	ND	14
gamma-BHC#	ND	ND	ND	ND	ND	ND	ND
DDT-Total[1]	ND	ND	ND	ND	**51d£**	ND	ND
Dieldrin	ND	ND	*9.4c£*	ND	**19d£**	ND	ND
Endosulfan I*	ND	ND	ND	ND	ND	ND	ND
Endosulfan II*	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate*	ND	ND	ND	ND	ND	ND	ND
Endrin#	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde*	ND	ND	ND	ND	ND	ND	ND
Heptachlor*	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide#	ND	ND	ND	ND	ND	ND	ND
Methoxychlor*	ND	ND	ND	ND	ND	ND	ND
Mirex#	ND	ND	ND	ND	*13*£	ND	ND
Hexachlorobenzene#	ND	ND	ND	ND	ND	ND	ND
PCBs							
PCB (total)	*67c†*	**409d£**	ND	ND	ND	ND	ND
PCB-1016#	ND	ND	ND	ND	ND	ND	ND
PCB-1221*	ND	ND	ND	ND	ND	ND	ND
PCB-1232*	ND	ND	ND	ND	ND	ND	ND
PCB-1242*	ND	ND	ND	ND	ND	ND	ND
PCB-1248#	ND	*370*£	ND	ND	ND	ND	ND
PCB-1254#	*67*£	ND	ND	ND	ND	ND	ND
PCB-1260#	ND	*39*£	ND	ND	ND	ND	ND

Appendix Table A- 6. Concentrations (µg/kg) of pesticides and PCBs in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	----------------------------**Great Miami River** ----------------------------							
River Mile	31.19	26.21	24.55	21.44	19.90	10.70	8.52	1.75
Pesticides								
Aldrin[#]	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC[#]	ND	ND	ND	ND	ND	ND	ND	ND
beta-BHC[#]	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC*	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC[#]	ND	ND	ND	ND	ND	ND	ND	*8.3*[£]
DDT-Total[1]	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	**60**[e£]	ND	ND	ND	ND	ND	ND	ND
Endosulfan I*	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan II*	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate*	ND	ND	ND	ND	ND	ND	ND	ND
Endrin[#]	ND	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde*	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor*	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide[#]	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor*	ND	ND	ND	ND	ND	ND	ND	ND
Mirex[#]	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene[#]	ND	ND	ND	ND	ND	ND	ND	ND
PCBs								
PCB (total)	ND	ND	ND	ND	ND	*193*[c£]	*70*[c£]	ND
PCB-1016[#]	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221*	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232*	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242*	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248[#]	ND	ND	ND	ND	ND	*160*[£]	*70*[£]	ND
PCB-1254[#]	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1260[#]	ND	ND	ND	ND	ND	*33*[£]	ND	ND

Appendix Table A- 6. Concentrations (µg/kg) of pesticides and PCBs in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	**Wolf Creek**		**Owl Creek**	**Bear Creek**
River Mile	16.61	0.01	0.17	0.01
Pesticides				
Aldrin#	ND	ND	ND	ND
alpha-BHC#	ND	ND	ND	ND
beta-BHC#	ND	ND	ND	ND
delta-BHC*	ND	22	ND	ND
gamma-BHC#	ND	ND	ND	ND
DDT-Total[1]	ND	ND	ND	ND
Dieldrin	ND	**49**[e£]	ND	ND
Endosulfan I*	ND	ND	ND	ND
Endosulfan II*	ND	ND	ND	ND
Endosulfan Sulfate*	ND	ND	ND	ND
Endrin#	ND	ND	ND	ND
Endrin Aldehyde*	ND	8.5	ND	ND
Heptachlor*	ND	ND	ND	ND
Heptachlor Epoxide#	ND	ND	ND	ND
Methoxychlor*	31	ND	12	ND
Mirex#	ND	ND	ND	ND
Hexachlorobenzene#	ND	ND	ND	ND
PCBs				
PCB (total)	ND	ND	**240**[d£]	ND
PCB-1016#	ND	ND	ND	ND
PCB-1221*	ND	ND	ND	ND
PCB-1232*	ND	ND	ND	ND
PCB-1242*	ND	ND	240	ND
PCB-1248#	ND	ND	ND	ND
PCB-1254#	ND	ND	ND	ND
PCB-1260#	ND	ND	ND	ND

Appendix Table A- 6. Concentrations (µg/kg) of pesticides and PCBs in sediment samples collected in the Great Miami River study area during 1995, continued.

Stream	----------------**Dicks Creek**----------------					**N. B. Dicks Cr**	
River Mile	5.21	4.70	3.00	2.51	0.93	0.75	0.01
Pesticides							
Aldrin#	ND	ND	ND	ND	ND	ND	ND
alpha-BHC#	ND	ND	ND	ND	ND	ND	ND
beta-BHC#	ND	ND	ND	ND	ND	ND	ND
delta-BHC*	ND	ND	6.1	ND	ND	19	ND
gamma-BHC#	ND	ND	ND	ND	ND	ND	ND
DDT-Total[1]	ND	ND	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND	**35**[e£]	**14**[d£]
Endosulfan I*	ND	ND	ND	ND	ND	ND	ND
Endosulfan II*	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate*	ND	ND	ND	ND	ND	ND	ND
Endrin#	ND	ND	ND	ND	ND	ND	ND
Endrin Aldehyde*	ND	ND	ND	ND	ND	ND	ND
Heptachlor*	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide#	ND	ND	ND	ND	ND	ND	ND
Methoxychlor*	ND	ND	7.4	ND	ND	ND	ND
Mirex#	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene#	ND	ND	ND	ND	ND	ND	ND
PCBs							
PCB (total)	ND	ND	ND	**18330**[eΔ]	**14300**[eΔ]	ND	ND
PCB-1016#	ND	ND	ND	ND	ND	ND	ND
PCB-1221*	ND	ND	ND	ND	ND	ND	ND
PCB-1232*	ND	ND	ND	ND	ND	ND	ND
PCB-1242*	ND	ND	ND	ND	ND	ND	ND
PCB-1248#	ND	ND	ND	**17400**[Δ]	**8800**[Δ]	ND	ND
PCB-1254#	ND	ND	ND	ND	**5500**[Δ]	ND	ND
PCB-1260#	ND	ND	ND	**930**[Δ]	ND	ND	ND

Appendix Table 6. Concentrations (µg/kg) of pesticides and PCBs in sediment samples collected in the Great Miami River study area during 1995, continued.

ND	Compound not detected or less than minimum detection limit.
*	Not evaluated by Kelly and Hite (1984) or Ontario (1993).
#	Not evaluated by Kelly and Hite (1984).
C	Sample analyzed by contract laboratory (Ross Analytical Services).
1	DDT-Total is the sum of 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

Kelly and Hite:

a	Non-elevated
b	Slightly elevated
c	*Elevated*
d	**Highly elevated**
e	**<u>Extremely elevated</u>**

Ontario Guidelines:

†	< lowest effect level (LEL)
£	≥ *lowest effect level (LEL)*
Δ	≥ **<u>severe effect level (SEL)</u>**

Appendix Table A-7. Summary of diurnal dissolved oxygen (D.O.) concentration data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995.

River Mile	Dates Sampled	Total Hours	Mean (mg/l)	Median (mg/l)	Minimum (mg/l)	Maximum (mg/l)	25th %ile (mg/l)	75th %ile (mg/l)
Great Miami River								
87.05	9/11-14	67	8.76	8.56	6.97	11.02	7.73	9.61
83.57	9/11-14	*	*	*	*	*	*	*
80.65	9/11-14	*	*	*	*	*	*	*
77.24	9/11-14	68	9.50	9.31	7.18	16.93	8.47	10.22
76.21	9/11-14	*	*	*	*	*	*	*
75.31	9/11-14	70	8.56	8.44	7.64	10.28	8.13	8.84
73.77	9/11-14	*	*	*	*	*	*	*
72.80	9/11-14	69	6.38	6.13	4.66†	8.83	5.73	6.98
71.85	9/11-14	70	8.82	8.72	8.24	10.11	8.34	9.20
70.10	9/12-14	50	7.75	7.77	7.06	8.92	7.28	8.01
68.30	9/12-14	49	8.30	8.00	7.30	10.08	7.74	8.89
67.33	9/12-14	48	8.80	8.59	7.54	10.64	8.11	9.50
64.72	9/12-14	49	6.65	6.77	4.44†	8.02	6.06	7.29
64.36(L)	9/12-14	48	10.14	10.19	9.43	10.86	9.77	10.46
64.36(R)	9/12-14	47	9.29	9.28	8.45	10.11	8.98	9.79
63.42	9/12-14	46	8.84	8.88	8.06	9.68	8.60	9.16
60.58	9/11-14	46	8.89	8.68	7.92	10.33	8.33	9.57
55.14	9/12-14	45	9.03	8.87	7.62	10.75	8.22	9.86
51.50	9/5-7	*	*	*	*	*	*	*
51.13	9/5-7	*	*	*	*	*	*	*
48.30	9/5-7	*	*	*	*	*	*	*
47.91	9/5-7	*	*	*	*	*	*	*
46.05	9/5-7	*	*	*	*	*	*	*
44.51	9/5-7	*	*	*	*	*	*	*
43.23	9/5-7	47	10.96	10.64	5.44	17.56	7.43	14.91
38.55	9/5-7	*	*	*	*	*	*	*
37.35	9/5-7	*	*	*	*	*	*	*
36.95	9/5-7	42	9.83	9.14	4.78†	16.77	6.78	12.79
35.48	9/5-7	*	*	*	*	*	*	*
33.05	9/5-7	47	8.85	8.43	6.36	12.32	7.28	10.64
31.19	9/5-7	49	8.40	7.27	5.46	13.49	6.30	10.79
28.82	9/5-7	46	8.73	7.85	4.87†	14.89	5.88	11.63
27.15	9/5-7	43	9.36	8.82	5.32	14.61	6.53	12.40

Appendix Table A-7. Summary of diurnal dissolved oxygen (D.O.) concentration data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995, continued.

River Mile	Dates Sampled	Total Hours	Mean (mg/l)	Median (mg/l)	Minimum (mg/l)	Maximum (mg/l)	25th %ile (mg/l)	75th %ile (mg/l)
Great Miami River (continued)								
21.44	9/5-7	42	8.95	8.60	4.67†	13.49	6.62	11.29
19.90	9/5-7	42	10.72	10.13	5.40	16.81	7.69	13.84
15.49	9/5-7	*	*	*	*	*	*	*
14.65	9/5-7	44	10.15	10.21	6.52	13.33	8.57	11.94
5.56	9/5-7	43	10.74	9.64	6.60	16.63	7.70	13.77
Wolf Creek								
1.10	9/11-14	*	*	*	*	*	*	*
Owl Creek								
0.01	9/12-14	44	3.54	3.31	1.68++	6.94	2.63+	4.24
Dicks Creek								
4.70	9/12-14	48	5.41	5.25	2.72‡‡	8.88	4.11	6.36
3.57	9/12-14	46	6.64	6.56	4.82	9.47	5.94	7.06
2.51	9/11-14	70	5.18	5.34	3.58‡	7.60	4.27	5.81
0.01	9/12-14	*	*	*	*	*	*	*
Whitewater River								
7.63	9/5-7	*	*	*	*	*	*	*
6.04	9/5-7	*	*	*	*	*	*	*
1.50	9/5-7	*	*	*	*	*	*	*

* Data unavailable.
† value is below the WWH minimum 24-hour average D.O. criterion (5.0 mg/l).
†† exceedence of the WWH minimum at any time D.O. criterion (4.0 mg/l).
‡ value is below the MWH minimum 24-hour average D.O. criterion (4.0 mg/l).
‡‡ exceedence of the MWH minimum at any time D.O. criterion (3.0 mg/l).
\+ value is below the LRW minimum 24-hour average D.O. criterion (3.0 mg/l).
++ exceedence of the LRW minimum at any time D.O. criterion (2.0 mg/l).

Appendix Table A-7. Summary of diurnal dissolved oxygen (D.O.) saturation data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995.

River Mile	Dates Sampled	Total Hours	Mean (%)	Median (%)	Minimum (%)	Maximum (%)	25th %ile (%)	75th %ile (%)
Great Miami River								
87.05	9/11-14	*	*	*	*	*	*	*
83.57	9/11-14	*	*	*	*	*	*	*
80.65	9/11-14	70	126	122	112	156	115	131
77.24	9/11-14	68	109	107	82	197	97	117
76.21	9/11-14	70	102	101	90	121	96	110
75.31	9/11-14	70	102	100	90	126	97	104
73.77	9/11-14	70	97	96	78	136	87	101
72.80	9/11-14	*	*	*	*	*	*	*
71.85	9/11-14	70	102	101	95	117	97	105
70.10	9/12-14	*	*	*	*	*	*	*
68.30	9/12-14	*	*	*	*	*	*	*
67.33	9/12-14	*	*	*	*	*	*	*
64.72	9/12-14	*	*	*	*	*	*	*
64.36(L)	9/12-14	*	*	*	*	*	*	*
64.36(R)	9/12-14	*	*	*	*	*	*	*
63.42	9/12-14	*	*	*	*	*	*	*
60.58	9/11-14	46	103	99	92	121	96	112
55.14	9/12-14	*	*	*	*	*	*	*
51.50	9/5-7	*	*	*	*	*	*	*
51.13	9/5-7	*	*	*	*	*	*	*
48.30	9/5-7	*	*	*	*	*	*	*
47.91	9/5-7	*	*	*	*	*	*	*
46.05	9/5-7	*	*	*	*	*	*	*
44.51	9/5-7	*	*	*	*	*	*	*
43.23	9/5-7	*	*	*	*	*	*	*
38.55	9/5-7	*	*	*	*	*	*	*
37.35	9/5-7	*	*	*	*	*	*	*
36.95	9/5-7	*	*	*	*	*	*	*
35.48	9/5-7	*	*	*	*	*	*	*
33.05	9/5-7	*	*	*	*	*	*	*
31.19	9/5-7	*	*	*	*	*	*	*
28.82	9/5-7	*	*	*	*	*	*	*
27.15	9/5-7	*	*	*	*	*	*	*

Appendix Table A-7. Summary of diurnal dissolved oxygen (D.O.) saturation data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995, continued.

River Mile	Dates Sampled	Total Hours	Mean (%)	Median (%)	Minimum (%)	Maximum (%)	25th %ile (%)	75th %ile (%)
Great Miami River (continued)								
21.44	9/5-7	*	*	*	*	*	*	*
19.90	9/5-7	*	*	*	*	*	*	*
15.49	9/5-7	*	*	*	*	*	*	*
14.65	9/5-7	*	*	*	*	*	*	*
5.56	9/5-7	*	*	*	*	*	*	*
Wolf Creek								
1.10	9/11-14	*	*	*	*	*	*	*
Owl Creek								
0.01	9/12-14	*	*	*	*	*	*	*
Dicks Creek								
4.70	9/12-14	*	*	*	*	*	*	*
3.57	9/12-14	46	80	76	57	124	72	83
2.51	9/11-14	70	62	62	42	98	50	69
0.01	9/12-14	*	*	*	*	*	*	*
Whitewater River								
7.63	9/5-7	*	*	*	*	*	*	*
6.04	9/5-7	*	*	*	*	*	*	*
1.50	9/5-7	*	*	*	*	*	*	*

* Data unavailable.

Appendix Table A-7. Summary of diurnal temperature data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995.

River Mile	Dates Sampled	Total Hours	Mean (˚C)	Median (˚C)	Minimum (˚C)	Maximum (˚C)	25th %ile (˚C)	75th %ile (˚C)
Great Miami River								
87.05	9/11-14	67	20.09	19.77	18.20	22.01	19.35	20.74
83.57	9/11-14	71	20.23	20.20	18.43	21.76	19.70	20.60
80.65	9/11-14	70	20.13	20.03	18.47	21.75	19.74	20.50
77.24	9/11-14	68	20.74	20.64	19.80	22.25	20.26	21.09
76.21	9/11-14	70	20.47	20.40	19.55	21.80	20.01	20.88
75.31	9/11-14	70	22.39	22.30	21.47	24.22	21.74	22.97
73.77	9/11-14	70	20.84	20.65	19.93	22.62	20.29	21.36
72.80	9/11-14	69	21.22	21.25	20.27	22.60	20.78	21.67
71.85	9/11-14	70	20.94	20.90	20.01	22.69	20.41	21.37
70.10	9/12-14	50	21.45	21.42	20.53	22.51	20.99	21.63
68.30	9/12-14	49	21.38	21.29	20.70	22.60	21.08	21.54
67.33	9/12-14	48	21.38	21.20	20.74	22.56	20.95	21.67
64.72	9/12-14	49	21.43	21.25	20.44	22.43	21.08	22.05
64.36(L)	9/12-14	48	21.55	21.35	20.91	22.26	21.16	22.05
64.36(R)	9/12-14	47	21.74	21.33	20.57	24.16	21.12	22.09
63.42	9/12-14	46	21.31	21.21	20.44	22.60	20.87	21.71
60.58	9/11-14	46	21.39	21.43	20.66	23.07	20.96	21.61
55.14	9/12-14	45	21.75	21.63	20.99	22.94	21.25	22.09
51.50	9/5-7	48	25.18	25.28	24.21	25.96	24.83	25.43
51.13	9/5-7	47	25.22	25.35	24.29	26.17	24.85	25.49
48.30	9/5-7	45	25.38	25.03	24.27	27.33	24.58	26.17
47.91	9/5-7	44	25.44	25.42	24.75	26.44	25.04	25.79
46.05	9/5-7	43	25.14	24.88	24.10	26.93	24.45	25.90
44.51	9/5-7	49	25.10	24.73	23.87	27.08	24.32	25.95
43.23	9/5-7	47	25.45	25.17	24.16	27.03	24.63	26.44
38.55	9/5-7	45	25.08	25.15	24.14	25.73	24.85	25.30
37.35	9/5-7	49	24.77	24.62	23.24	26.64	24.00	25.66
36.95	9/5-7	42	25.09	24.95	24.08	26.61	24.37	25.85
35.48	9/5-7	41	25.84	25.90	25.01	26.57	25.38	26.30
33.05	9/5-7	47	26.11	26.02	25.34	27.24	25.64	26.65
31.19	9/5-7	49	25.76	25.60	24.20	27.16	24.92	26.57
28.82	9/5-7	46	25.91	25.87	24.79	27.16	25.13	26.74
27.15	9/5-7	43	25.74	25.81	24.20	27.20	24.71	26.69

Appendix Table A-7. Summary of diurnal temperature data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995, continued.

River Mile	Dates Sampled	Total Hours	Mean (˚C)	Median (˚C)	Minimum (˚C)	Maximum (˚C)	25th %ile (˚C)	75th %ile (˚C)
Great Miami River (continued)								
21.44	9/5-7	42	25.86	25.96	24.63	26.78	25.34	26.40
19.90	9/5-7	42	25.74	25.62	24.88	26.82	25.17	26.23
15.49	9/5-7	45	25.84	25.85	25.17	26.44	25.64	26.10
14.65	9/5-7	44	25.89	25.85	25.22	26.53	25.66	26.23
5.56	9/5-7	43	25.58	25.43	24.03	27.33	24.58	26.53
Wolf Creek								
1.10	9/11-14	70	19.01	18.93	17.58	22.84	18.11	19.68
Owl Creek								
0.01	9/12-14	44	24.87	24.84	21.80	26.86	24.14	25.89
Dicks Creek								
4.70	9/12-14	48	23.19	22.64	21.37	26.74	22.20	23.63
3.57	9/12-14	46	23.16	22.71	21.08	28.09†	21.83	23.43
2.51	9/11-14	70	22.95	22.49	21.38	27.28	21.91	23.36
0.01	9/12-14	43	22.22	22.24	21.59	22.97	22.01	22.44
Whitewater River								
7.63	9/5-7	42	23.21	23.30	21.43	24.84	22.20	24.16
6.04	9/5-7	42	23.33	23.38	21.58	24.88	22.43	24.32
1.50	9/5-7	41	23.27	23.16	21.49	25.39	22.07	24.50

† exceedence of the WWH / MWH average temperature criterion (27.8˚C) for September 1-15.
†† exceedence of the WWH / MWH daily maximum temperature criterion (29.4˚C) for September 1-15.
‡ exceedence of the WWH / MWH average temperature criterion (29.4˚C) for September 1-15 (GMR Rm 81.3 to mouth).
‡‡ exceedence of the WWH / MWH daily maximum temperature criterion (31.7˚C) for September 1-15 (GMR Rm 81.3 to mouth).
\+ exceedence of the LRW average temperature criterion (34˚C).
++ exceedence of the LRW daily maximum temperature criterion (37˚C).

Appendix Table A-7. Summary of diurnal pH data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995.

River Mile	Dates Sampled	Total Hours	Mean (SU)	Median (SU)	Minimum (SU)	Maximum (SU)	25th %ile (SU)	75th %ile (SU)
Great Miami River								
87.05	9/11-14	67	8.19	8.18	8.03	8.38	8.10	8.26
83.57	9/11-14	71	8.20	8.21	8.04	8.37	8.13	8.24
80.65	9/11-14	70	8.24	8.22	8.10	8.46	8.16	8.31
77.24	9/11-14	68	8.33	8.32	8.13	8.58	8.26	8.41
76.21	9/11-14	70	8.08	8.08	7.91	8.24	8.01	8.14
75.31	9/11-14	70	8.01	8.01	7.84	8.25	7.95	8.09
73.77	9/11-14	70	8.09	8.10	7.85	8.37	7.96	8.19
72.80	9/11-14	69	8.08	8.05	7.86	8.40	7.97	8.20
71.85	9/11-14	70	7.82	7.82	7.61	8.11	7.71	7.90
70.10	9/12-14	50	8.10	8.04	7.97	8.34	8.01	8.20
68.30	9/12-14	49	7.93	7.92	7.80	8.13	7.86	8.00
67.33	9/12-14	48	7.93	7.93	7.75	8.15	7.82	8.06
64.72	9/12-14	49	8.06	8.07	7.82	8.22	8.01	8.15
64.36(L)	9/12-14	48	8.08	8.09	7.88	8.30	8.00	8.17
64.36(R)	9/12-14	47	8.09	8.10	7.92	8.21	8.05	8.19
63.42	9/12-14	46	7.97	8.00	7.77	8.13	7.89	8.06
60.58	9/11-14	46	8.33	8.37	8.14	8.55	8.20	8.41
55.14	9/12-14	45	8.08	8.14	7.68	8.43	7.88	8.21
51.50	9/5-7	48	8.47	8.42	8.27	8.70	8.40	8.59
51.13	9/5-7	47	8.51	8.49	8.30	8.74	8.42	8.62
48.30	9/5-7	45	8.31	8.22	8.03	8.75	8.11	8.56
47.91	9/5-7	44	8.52	8.46	8.24	8.86	8.38	8.69
46.05	9/5-7	43	8.43	8.35	8.11	8.85	8.21	8.66
44.51	9/5-7	49	8.66	8.57	8.27	9.19‡	8.38	8.96
43.23	9/5-7	47	8.20	8.20	7.79	8.62	7.93	8.47
38.55	9/5-7	45	8.29	8.30	7.96	8.61	8.14	8.46
37.35	9/5-7	49	8.05	8.03	7.66	8.43	7.88	8.25
36.95	9/5-7	42	8.27	8.19	7.99	8.65	8.08	8.48
35.48	9/5-7	41	8.46	8.44	8.04	8.75	8.34	8.63
33.05	9/5-7	47	8.30	8.31	7.98	8.56	8.12	8.49
31.19	9/5-7	49	8.14	8.14	7.81	8.51	7.96	8.34
28.82	9/5-7	46	8.15	8.17	7.80	8.46	7.98	8.33
27.15	9/5-7	43	8.16	8.14	7.82	8.52	7.95	8.39

Appendix Table A-7. Summary of diurnal pH data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995, continued.

River Mile	Dates Sampled	Total Hours	Mean (SU)	Median (SU)	Minimum (SU)	Maximum (SU)	25th %ile (SU)	75th %ile (SU)
Great Miami River (continued)								
21.44	9/5-7	42	8.11	8.03	7.73	8.61	7.87	8.38
19.90	9/5-7	42	8.05	8.03	7.58	8.66	7.73	8.40
15.49	9/5-7	45	8.24	8.28	7.84	8.54	8.07	8.41
14.65	9/5-7	44	8.34	8.40	7.94	8.63	8.17	8.53
5.56	9/5-7	43	8.46	8.44	8.07	8.83	8.23	8.70
Wolf Creek								
1.10	9/11-14	70	7.86	7.84	7.74	8.08	7.78	7.93
Owl Creek								
0.01	9/12-14	44	7.53	7.54	7.41	7.69	7.50	7.56
Dicks Creek								
4.70	9/12-14	48	7.73	7.67	7.30	8.83	7.45	7.92
3.57	9/12-14	46	7.75	7.68	7.48	8.35	7.56	7.91
2.51	9/11-14	70	8.04	8.03	7.69	8.68	7.81	8.22
0.01	9/12-14	43	7.46	7.45	7.39	7.56	7.41	7.51
Whitewater River								
7.63	9/5-7	42	8.02	8.01	7.91	8.19	7.94	8.10
6.04	9/5-7	42	7.88	7.85	7.76	8.06	7.77	7.98
1.50	9/5-7	41	8.15	8.12	8.03	8.36	8.06	8.23

‡ exceedence of the pH criterion (6.5-9.0 SU).

Appendix Table A-7. Summary of diurnal conductivity data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995.

River Mile	Dates Sampled	Total Hours	Mean (µmhos/cm)	Median (µmhos/cm)	Minimum (µmhos/cm)	Maximum (µmhos/cm)	25th %ile (µmhos/cm)	75th %ile (µmhos/cm)
Great Miami River								
87.05	9/11-14	67	622	620	590	640	620	630
83.57	9/11-14	71	755	754	735	776	748	764
80.65	9/11-14	70	735	735	560	771	728	750
77.24	9/11-14	68	720	752	441	794	679	777
76.21	9/11-14	70	768	796	555	845	727	817
75.31	9/11-14	70	1086	1102	881	1182	1043	1139
73.77	9/11-14	70	864	889	654	977	784	941
72.80	9/11-14	69	742	770	600	820	670	800
71.85	9/11-14	70	738	757	587	824	671	794
70.10	9/12-14	50	710	735	570	840	630	790
68.30	9/12-14	49	736	670	610	1010	620	870
67.33	9/12-14	48	822	810	710	950	770	870
64.72	9/12-14	49	762	770	640	870	700	830
64.36(L)	9/12-14	48	793	810	680	890	740	850
64.36(R)	9/12-14	47	782	790	660	880	710	850
63.42	9/12-14	46	769	790	660	870	710	840
60.58	9/11-14	46	863	878	738	964	793	936
55.14	9/12-14	45	983	1000	800	1100	930	1060
51.50	9/5-7	48	794	794	769	828	780	808
51.13	9/5-7	47	816	808	779	983	794	817
48.30	9/5-7	45	766	769	749	786	757	775
47.91	9/5-7	44	812	810	784	844	803	823
46.05	9/5-7	43	810	813	782	837	799	818
44.51	9/5-7	49	595	575	513	879	547	606
43.23	9/5-7	47	710	690	650	830	680	740
38.55	9/5-7	45	783	785	768	802	777	789
37.35	9/5-7	49	777	775	743	808	766	790
36.95	9/5-7	42	700	700	670	730	690	710
35.48	9/5-7	41	819	822	762	850	810	840
33.05	9/5-7	47	762	760	730	790	750	770
31.19	9/5-7	49	772	770	670	810	760	790
28.82	9/5-7	46	691	690	660	730	680	700
27.15	9/5-7	43	702	700	670	730	690	720

Appendix Table A-7. Summary of diurnal conductivity data recorded with Datasonde continuous monitors at 47 locations in the Great Miami River study area during 1995, continued.

River Mile	Dates Sampled	Total Hours	Mean (µmhos/cm)	Median (µmhos/cm)	Minimum (µmhos/cm)	Maximum (µmhos/cm)	25th %ile (µmhos/cm)	75th %ile (µmhos/cm)
Great Miami River (continued)								
21.44	9/5-7	42	748	730	710	820	720	770
19.90	9/5-7	42	736	740	690	790	710	760
15.49	9/5-7	*	*	*	*	*	*	*
14.65	9/5-7	44	660	660	640	690	650	670
5.56	9/5-7	43	639	640	620	660	630	640
Wolf Creek								
1.10	9/11-14	70	841	851	253	912	820	895
Owl Creek								
0.01	9/12-14	44	1692	1965	90	2330	1335	2185
Dicks Creek								
4.70	9/12-14	48	2353	2725‡	750	2850‡	1995	2800‡
3.57	9/12-14	46	1909	1990	597	2570‡	1477	2430‡
2.51	9/11-14	70	1325	1237	644	2160	811	1880
0.01	9/12-14	43	808	876	541	1029	698	900
Whitewater River								
7.63	9/5-7	42	591	590	583	601	587	595
6.04	9/5-7	42	692	691	680	708	685	697
1.50	9/5-7	41	558	576	452	601	539	593

* Data unavailable.
‡ exceedence of the WWH / MWH 30-day average conductivity criterion (2400 µmhos/cm).

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed.

Great Miami River Parameter	RM 87.0 4-smallmouth bass (SOFC)	RM 87.0 2-channel catfish (SFFC)	RM 87.0 7-smallmouth bass (SOFC)	RM 87.0 4-smallmouth bass (SOFC)	RM 87.0 5-smallmouth bass (SOFC)
Metals (ug/g = PPM)					
Cadmium	<0.00619	<0.00600	<0.00607	<0.00571	<0.00580
Lead	0.176	0.0600	0.607	<0.0571	0.243
Mercury	0.306	0.342	0.164	0.226	0.258
Pesticides (ug/kg = PPB)					
Aldrin	ND	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND	ND
4,4’-DDE	ND	ND	ND	ND	ND
4,4’-DDT	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND
Mirex	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA	NA
PCBs (ug/kg = PPB)					
PCB-1016	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND	ND

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Little Miami River during 1993. Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analysed, continued.

Great Miami River Parameter	RM 84.6 3-channel catfish (SFFC)	RM 81.8 1-yellow bullhead (SFF)	RM 81.8 4-smallmouth bass (SOFC)	RM 81.8 4-largemouth bass (SOFC)
Metals (ug/g = PPM)				
Cadmium	<0.00634	0.00715	<0.00620	<0.00611
Lead	0.0761	<0.0622	0.218	0.144
Mercury	0.192	0.371	0.266	0.267
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	ND	ND	ND
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND
PCB-1260	ND	ND	ND	ND

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River Parameter	RM 81.3 5-smallmouth bass (SOFC)	RM 81.3 4-rock bass (SOFC)	RM 81.3 3-channel catfish (SFFC)	RM 80.1 5-smallmouth bass (SOFC)
Metals (ug/g = PPM)				
Cadmium	<0.00631	<0.00587	<0.00577	<0.00619
Lead	0.278	0.120	0.271	<0.0619
Mercury	0.127	0.203	0.285	0.379
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	ND	48.22	ND
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND
PCB-1260	ND	ND	202.19	ND

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River				
Parameter	RM 80.1 4-smallmouth bass (SOFC)	RM 80.1 2-channel catfish (SFFC)	RM 77.7 1-common carp (SFF)	RM 77.7 2-smallmouth bass (SOFC)
Metals (ug/g = PPM)				
Cadmium	<0.00614	<0.00588	<0.00579	<0.00603
Lead	0.0923	0.0912	<0.0579	0.133
Mercury	0.392	0.118	0.200	0.189
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	ND	ND	ND
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	24.93	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	ND	337.82	ND
PCB-1254	ND	ND	ND	ND
PCB-1260	ND	ND	171.58	93.88

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River Parameter	RM 77.7 5-smallmouth bass (SOFC)	RM 73.5 2-channel catfish (SFFC)	RM 73.5 2-smallmouth bass (SOFC)	RM 73.5 4-largemouth bass (SOFC)
Metals (ug/g = PPM)				
Cadmium	<0.00623	<0.00615	<0.00602	0.00609
Lead	<0.0623	<0.0615	<0.0602	<0.0609
Mercury	0.0818	0.300	0.220	0.202
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	25.52	ND	ND
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	111.35	ND	ND	ND
PCB-1254	ND	ND	ND	ND
PCB-1260	90.16	433.42	121.81	99.9

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River Parameter	RM 73.3 3-largemouth bass (SOFC)	RM 73.3 2-largemouth bass (SOFC)	RM 73.3 2-brown bullhead (SFFC)	RM 70.0 5-smallbouth bass (SOFC)
Metals (ug/g = PPM)				
Cadmium	NA	<0.00626	<0.00631	<0.00607
Lead	NA	<0.0626	<0.0631	0.799
Mercury	NA	0.319	0.237	0.177
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4'-DDD	ND	ND	ND	ND
4,4'-DDE	ND	ND	ND	ND
4,4'-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND
PCB-1260	90.59	ND	ND	ND

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River				
Parameter	RM 70.0 4-smallmouth bass (SOFC)	RM 70.0 3-channel catfish (SFFC)	RM 67.5 3-smallmouth bass (SOFC)	RM 67.5 4-channel catfish (SFFC)
Metals (ug/g = PPM)				
Cadmium	<0.00591	<0.00601	<0.00609	<0.00593
Lead	0.313	0.0811	0.0731	<0.0593
Mercury	0.188	0.220	0.210	0.249
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	ND	ND	21.24
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	ND	ND	ND
PCB-1254	ND	ND	ND	ND
PCB-1260	ND	ND	ND	209.23

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River Parameter	RM 67.5 3-smallmouth bass (SOFC)	RM 49.2 3-saugeye (SOFC)	RM 49.2 6-smallmouth bass (SOFC)	RM 49.2 3-channel catfish (SFFC)
Metals (ug/g = PPM)				
Cadmium	<0.00596	<0.00614	<0.00638	<0.00571
Lead	0.525	0.702	<0.0638	0.0314
Mercury	0.173	0.185	0.190	0.124
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	ND	ND	ND
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	174.37	68.20	287.69
PCB-1254	ND	ND	ND	ND
PCB-1260	ND	57.87	ND	ND

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River during 1993. Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River Parameter	RM 38.5 5-smallmouth bass (SOFC)	RM 38.5 3-smallmouth bass (SOFC)	RM 38.5 3-channel catfish (SFFC)	RM 27.0 5-white bass (SOFC)
Metals (ug/g = PPM)				
Cadmium	<0.00599	<0.00576	<0.00618	<0.00614
Lead	0.212	0.210	<0.0618	<0.0614
Mercury	0.192	0.218	0.124	0.119
Pesticides (ug/kg = PPB)				
Aldrin	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND
4,4’-DDD	ND	ND	ND	ND
4,4’-DDE	ND	ND	ND	ND
4,4’-DDT	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND
Endrin	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND
Mirex	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA
PCBs (ug/kg = PPB)				
PCB-1016	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND
PCB-1248	ND	72.01	231.82	249.52
PCB-1254	ND	ND	ND	ND
PCB-1260	ND	ND	ND	61.78

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Great Miami River Parameter	RM 27.0 4-white bass (SOFC)	RM 27.0 3-channel catfish (SFFC)	RM 8.5 3-white bass (SOFC)	RM 8.5 3-channel catfish (SFFC)	RM 8.5 4-white bass (SOFC)
Metals (ug/g = PPM)					
Cadmium	<0.00599	<0.00576	<0.00594	<0.00599	<0.00626
Lead	0.174	0.194	0.0831	0.102	0.754
Mercury	0.0862	0.126	0.179	0.0815	0.196
Pesticides (ug/kg = PPB)					
Aldrin	ND	ND	ND	ND	ND
a-BHC	ND	ND	ND	ND	ND
b-BHC	ND	ND	ND	ND	ND
d-BHC	ND	ND	ND	ND	ND
y-BHC	ND	ND	ND	ND	ND
4,4'-DDD	ND	ND	ND	ND	ND
4,4'-DDE	ND	ND	16.59	ND	14.76
4,4'-DDT	ND	ND	ND	ND	ND
Dieldrin	ND	ND	ND	ND	ND
Endosulfane I	ND	ND	ND	ND	ND
Endosulfane II	ND	ND	ND	ND	ND
Endosulfane Sulfate	ND	ND	ND	ND	ND
Endrin	ND	ND	ND	ND	ND
Endrin Aldehyde	ND	ND	ND	ND	ND
Heptachlor	ND	ND	ND	ND	ND
Heptachlor Epoxide	ND	ND	ND	ND	ND
Methoxychlor	ND	ND	ND	ND	ND
Mirex	ND	ND	ND	ND	ND
Hexachlorobenzene	ND	ND	ND	ND	ND
Chlordane	ND	ND	ND	ND	ND
Toxaphene	NA	NA	NA	NA	NA
PCBs (ug/kg = PPB)					
PCB-1016	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND
PCB-1248	373.42	ND	325.95	234.58	158.64
PCB-1254	ND	ND	ND	ND	ND
PCB-1260	125.16	173.58	154.97	172.87	137.52

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Parameter	**Dicks Creek** (1996)		**Wolf Creek** (1987)		
	RM 1.4 1-channel catfish (SFF)	RM 1.4 1 carp (SFF)	RM 3.3 5-smallmouth bass (SFFC)	RM 3.3 5-rockbass (SOFC)	RM 3.3 5-white sucker (WBC)
Metals (ug/g = PPM)					
Cadmium	<0.0185	<0.0196	NA	NA	NA
Lead	<0.185	<0.196	NA	NA	NA
Mercury	0.0500	0.153	NA	NA	NA
Pesticides (ug/kg = PPB)					
Aldrin	ND	ND	NA	NA	NA
a-BHC	ND	ND	NA	NA	NA
b-BHC	ND	ND	NA	NA	NA
d-BHC	ND	ND	NA	NA	NA
y-BHC	ND	ND	NA	NA	NA
4,4’-DDD	ND	ND	NA	NA	NA
4,4’-DDE	26	ND	NA	NA	NA
4,4’-DDT	ND	ND	NA	NA	NA
Dieldrin	18	ND	NA	NA	NA
Endosulfane I	ND	ND	NA	NA	NA
Endosulfane II	ND	ND	NA	NA	NA
Endosulfane Sulfate	ND	ND	NA	NA	NA
Endrin	ND	ND	NA	NA	NA
Endrin Keytone	25	ND	NA	NA	NA
Endrin Aldehyde	ND	ND	NA	NA	NA
Heptachlor	ND	ND	NA	NA	NA
Heptachlor Epoxide	ND	ND	NA	NA	NA
Methoxychlor	ND	ND	NA	NA	NA
Mirex	ND	ND	NA	NA	NA
Hexachlorobenzene	ND	ND	NA	NA	NA
Chlordane	50	ND	NA	NA	NA
Trans-Nonachlor	ND	ND	NA	NA	NA
Toxaphene	NA	NA	NA	NA	NA
PCBs (ug/kg = PPB)					
PCB-1016	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND
PCB-1248	ND	220	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND
PCB-1260	620.0	ND	700.0	120.0	380.0

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Wolf Creek (1987) Parameter	RM 3.3 1-black bullhead (SOF)	RM 1.9 5-carp (WBC)	RM 1.9 5-smallmouth bass (SOFC)	RM 0.8 2-carp (WBC)	RM 0.8 5-white sucker (WBC)
Metals (ug/g = PPM)					
Cadmium	NA	NA	NA	NA	NA
Lead	NA	NA	NA	NA	NA
Mercury	NA	NA	NA	NA	NA
Pesticides (ug/kg = PPB)					
Aldrin	NA	NA	NA	NA	NA
a-BHC	NA	NA	NA	NA	NA
b-BHC	NA	NA	NA	NA	NA
d-BHC	NA	NA	NA	NA	NA
y-BHC	NA	NA	NA	NA	NA
4,4’-DDD	NA	NA	NA	NA	NA
4,4’-DDE	NA	NA	NA	NA	NA
4,4’-DDT	NA	NA	NA	NA	NA
Dieldrin	NA	NA	NA	NA	NA
Endosulfane I	NA	NA	NA	NA	NA
Endosulfane II	NA	NA	NA	NA	NA
Endosulfane Sulfate	NA	NA	NA	NA	NA
Endrin	NA	NA	NA	NA	NA
Endrin Aldehyde	NA	NA	NA	NA	NA
Heptachlor	NA	NA	NA	NA	NA
Heptachlor Epoxide	NA	NA	NA	NA	NA
Methoxychlor	NA	NA	NA	NA	NA
Mirex	NA	NA	NA	NA	NA
Hexachlorobenzene	NA	NA	NA	NA	NA
Chlordane	NA	NA	NA	NA	NA
Trans-Nonachlor	NA	NA	NA	NA	NA
Toxaphene	NA	NA	NA	NA	NA
PCBs (ug/kg = PPB)					
PCB-1016	ND	ND	ND	ND	ND
PCB-1221	ND	ND	ND	ND	ND
PCB-1232	ND	ND	ND	ND	ND
PCB-1242	ND	ND	ND	ND	ND
PCB-1248	ND	NA	ND	ND	ND
PCB-1254	ND	ND	ND	ND	ND
PCB-1260	150.0	2000.0	300.0	18000.0	9000.0

Appendix Table A-8. Summary of contaminant levels in fish tissue samples collected from the Great Miami River (1993), Dicks Creek (1987), and Wolf Creek (1996). Note: SOFC = skin on scaled fillet composite, SFFC = skin off fillet composite, WBC = whole body composite, ND = not detected [*i.e.*, below detection levels], and NA = not analyzed, continued.

Wolf Creek (1987) Parameter	RM 0.8 3-smallmouth bass (SFFC)	RM 0.0 3-channel catfish (WBC)
Metals (ug/g = PPM)		
Cadmium	NA	NA
Lead	NA	NA
Mercury	NA	NA
Pesticides (ug/kg = PPB)		
Aldrin	NA	ND
a-BHC	NA	ND
b-BHC	NA	ND
d-BHC	NA	ND
y-BHC	NA	ND
4,4’-DDD	NA	ND
4,4’-DDE	NA	79.4
4,4’-DDT	NA	ND
Dieldrin	NA	25.5
Endosulfane I	NA	ND
Endosulfane II	NA	ND
Endosulfane Sulfate	NA	ND
Endrin	NA	ND
Endrin Aldehyde	NA	ND
Heptachlor	NA	ND
Heptachlor Epoxide	NA	10.0
Methoxychlor	NA	ND
Mirex	NA	ND
Hexachlorobenzene	NA	NA
Chlordane	NA	ND
Trans-Nonachlor	NA	NA
Toxaphene	NA	ND
PCBs (ug/kg = PPB)		
PCB-1016	ND	ND
PCB-1221	ND	ND
PCB-1232	ND	ND
PCB-1242	ND	ND
PCB-1248	ND	68.8
PCB-1254	ND	ND
PCB-1260	3000.0	418.0

Appendix Table A-9

Aquatic macroinvertebrate summaries (species list) for sites in the Great Miami River study area, 1995

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 87.70

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
04964	*Mooreobdella microstoma*	+
05900	*Lirceus sp*	+
06201	*Hyalella azteca*	+
06700	*Crangonyx sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11120	*Baetis flavistriga*	+
11130	*Baetis intercalaris*	+
11670	*Procloeon irrubrum*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
34605	*Perlinella drymo*	+
45400	*Trichocorixa sp*	+
51600	*Polycentropus sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52520	*Hydropsyche bidens*	+
60300	*Dineutus sp*	+
60400	*Gyrinus sp*	+
65800	*Berosus sp*	+
68130	*Helichus sp*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
71100	*Hexatoma sp*	+
74100	*Simulium sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80430	*Cricotopus (C.) tremulus group*	+
80440	*Cricotopus (C.) trifascia group*	+
80870	*Hydrobaenus sp*	+
81460	*Orthocladius (O.) sp*	+
82730	*Chironomus (C.) decorus group*	+
83003	*Dicrotendipes fumidus*	+
83040	*Dicrotendipes neomodestus*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
85625	*Rheotanytarsus exiguus group*	+
87540	*Hemerodromia sp*	+
95100	*Physella sp*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 51

No. Qualitative Taxa: 51 ICI:

Number of Organisms: 0 Qual EPT: **17**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 85.90

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*		+
02600	*Nematomorpha*		+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	96	+
04637	*Batracobdella phalera*		+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
11130	*Baetis intercalaris*	30	+
11200	*Callibaetis sp*		+
12200	*Isonychia sp*	165	+
13400	*Stenacron sp*	6	+
13521	*Stenonema femoratum*	6	
13561	*Stenonema pulchellum*	208	+
13570	*Stenonema terminatum*	298	+
16700	*Tricorythodes sp*	209	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*	1	+
21300	*Hetaerina sp*	2	+
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
24900	*Gomphus sp*		+
45400	*Trichocorixa sp*		+
52200	*Cheumatopsyche sp*	654	+
52430	*Ceratopsyche morosa group*	138	+
52510	*Hydropsyche aerata*	22	+
52801	*Potamyia flava*	17	+
59420	*Nectopsyche pavida*		+
65800	*Berosus sp*		+
68075	*Psephenus herricki*		+
68707	*Dubiraphia quadrinotata*		+
68708	*Dubiraphia vittata group*		+
69400	*Stenelmis sp*	1	+
74100	*Simulium sp*	74	+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	601	
77800	*Helopelopia sp*	120	
79085	*Telopelopia okoboji*	120	+
80410	*Cricotopus (C.) sp*	120	+
80420	*Cricotopus (C.) bicinctus*		+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
82141	*Thienemanniella xena*	120	+
82820	*Cryptochironomus sp*		+
83003	*Dicrotendipes fumidus*		+
83300	*Glyptotendipes (G.) sp*	120	+
83820	*Microtendipes "caelum" (sensu Simpson & Bode, 1980)*	120	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	601	+
84540	*Polypedilum (Tripodura) scalaenum group*	120	
84960	*Pseudochironomus sp*		+
85230	*Cladotanytarsus mancus group*		+
85625	*Rheotanytarsus exiguus group*	12614	+
87501	*Empididae*	8	
93900	*Elimia sp*		+
95100	*Physella sp*		+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 29 Total Taxa: 59

No. Qualitative Taxa: 52 ICI: **46**

Number of Organisms: 16593 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 82.00

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	16	
01801	*Turbellaria*	2	+
03040	*Fredericella sp*	1	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	577	+
04664	*Helobdella stagnalis*		+
05800	*Caecidotea sp*		+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*	1	+
08250	*Orconectes (Procericambarus) rusticus*		+
11130	*Baetis intercalaris*		+
12200	*Isonychia sp*	40	+
13000	*Leucrocuta sp*		+
13400	*Stenacron sp*	74	+
13510	*Stenonema exiguum*	9	
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	115	+
13570	*Stenonema terminatum*	374	+
16700	*Tricorythodes sp*	50	+
17200	*Caenis sp*	66	+
18100	*Anthopotamus sp*	12	+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
45400	*Trichocorixa sp*		+
52200	*Cheumatopsyche sp*	483	+
52430	*Ceratopsyche morosa group*	101	+
52510	*Hydropsyche aerata*	5	+
52520	*Hydropsyche bidens*	1	
52801	*Potamyia flava*	5	+
53800	*Hydroptila sp*	37	+
59420	*Nectopsyche pavida*		+
69400	*Stenelmis sp*	19	+
71100	*Hexatoma sp*		+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	243	+
78140	*Labrundinia pilosella*		+
79085	*Telopelopia okoboji*	81	
80410	*Cricotopus (C.) sp*	81	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*		+
81460	*Orthocladius (O.) sp*	81	
82141	*Thienemanniella xena*		+
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*	81	
83003	*Dicrotendipes fumidus*	81	+
83300	*Glyptotendipes (G.) sp*	162	+
84300	*Phaenopsectra obediens group*	81	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	162	+
84470	*Polypedilum (P.) illinoense*		+
85625	*Rheotanytarsus exiguus group*	7364	+
87540	*Hemerodromia sp*	16	
93900	*Elimia sp*		+
95100	*Physella sp*		+
97601	*Corbicula fluminea*	16	
98600	*Sphaerium sp*	17	+
99100	*Pyganodon grandis*		+

No. Quantitative Taxa: 35 Total Taxa: 61

No. Qualitative Taxa: 50 ICI: **42**

Number of Organisms: 10456 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 80.70

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	64	
01801	*Turbellaria*		+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	2432	+
04682	*Placobdella montifera*		+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11130	*Baetis intercalaris*	21	+
12200	*Isonychia sp*	197	+
13000	*Leucrocuta sp*	1	
13400	*Stenacron sp*	92	+
13521	*Stenonema femoratum*	1	
13561	*Stenonema pulchellum*	580	+
13570	*Stenonema terminatum*	635	+
16700	*Tricorythodes sp*	229	+
17200	*Caenis sp*	17	+
18100	*Anthopotamus sp*	17	+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*	17	+
24900	*Gomphus sp*		+
47600	*Sialis sp*		+
52200	*Cheumatopsyche sp*	696	+
52430	*Ceratopsyche morosa group*	159	+
52510	*Hydropsyche aerata*	7	+
52560	*Hydropsyche orris*	10	
52801	*Potamyia flava*	2	
53501	*Hydroptilidae*	1	
68708	*Dubiraphia vittata group*	16	
68901	*Macronychus glabratus*	35	
69200	*Optioservus sp*		+
69400	*Stenelmis sp*	9	+
77800	*Helopelopia sp*	239	
80410	*Cricotopus (C.) sp*	120	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	359	+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
81631	*Parakiefferiella n.sp 1*		+
82730	*Chironomus (C.) decorus group*		+
83003	*Dicrotendipes fumidus*		+
83300	*Glyptotendipes (G.) sp*	120	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	239	
85625	*Rheotanytarsus exiguus group*	12331	+
87540	*Hemerodromia sp*	48	+
93900	*Elimia sp*	15	+
95100	*Physella sp*	8	+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*	19	+

No. Quantitative Taxa: 33 Total Taxa: 52

No. Qualitative Taxa: 40 ICI: **38**

Number of Organisms: 18737 Qual EPT: **11**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/11/95 River Code: 14-001 River: Great Miami River RM: 80.00 **A**

Taxa Code	Taxa	Quan	Qual
00401	*Spongillidae*		+
01801	*Turbellaria*	8	+
03121	*Paludicella articulata*	1	+
03360	*Plumatella sp*	2	+
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	129	
04964	*Mooreobdella microstoma*	2	+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*	45	
11130	*Baetis intercalaris*	173	+
12200	*Isonychia sp*	709	+
13000	*Leucrocuta sp*	120	+
13400	*Stenacron sp*	259	+
13521	*Stenonema femoratum*	7	+
13550	*Stenonema mexicanum integrum*	81	
13561	*Stenonema pulchellum*	555	+
13570	*Stenonema terminatum*	235	+
16700	*Tricorythodes sp*	325	+
17200	*Caenis sp*	101	+
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
48410	*Corydalus cornutus*	2	
52200	*Cheumatopsyche sp*	1392	+
52430	*Ceratopsyche morosa group*	168	+
52510	*Hydropsyche aerata*	49	+
52520	*Hydropsyche bidens*	32	
52560	*Hydropsyche orris*		+
52570	*Hydropsyche simulans*	1	
52801	*Potamyia flava*	15	
53800	*Hydroptila sp*	75	+
65800	*Berosus sp*	8	
66500	*Enochrus sp*		+
68075	*Psephenus herricki*		+
68700	*Dubiraphia sp*		+
68901	*Macronychus glabratus*	4	
69400	*Stenelmis sp*	80	+
74100	*Simulium sp*	73	+
77750	*Hayesomyia senata or Thienemannimyia norena*	66	
77800	*Helopelopia sp*		+
78450	*Nilotanypus fimbriatus*	66	
80310	*Cardiocladius obscurus*	66	+
80360	*Corynoneura "celeripes" (sensu Simpson & Bode, 1980)*	64	
80410	*Cricotopus (C.) sp*	397	
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	265	+
80440	*Cricotopus (C.) trifascia group*		+
81229	*Nanocladius (N.) crassicornus*	66	
81250	*Nanocladius (N.) minimus*	66	
82130	*Thienemanniella similis*	64	
82141	*Thienemanniella xena*	66	
82220	*Tvetenia discoloripes group*		+
83040	*Dicrotendipes neomodestus*	66	+
84040	*Parachironomus frequens*	66	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	132	+
84460	*Polypedilum (P.) fallax group*		+
84470	*Polypedilum (P.) illinoense*		+
84888	*Xenochironomus xenolabis*		+
85625	*Rheotanytarsus exiguus group*	4434	+
85840	*Tanytarsus guerlus group*	66	
93900	*Elimia sp*		+
95100	*Physella sp*	1	
96900	*Ferrissia sp*	35	
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 47 Total Taxa: 65
No. Qualitative Taxa: 44 ICI: **52**
Number of Organisms: 10639 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 80.00 **B**

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	16	
01801	*Turbellaria*		+
03040	*Fredericella sp*		+
03121	*Paludicella articulata*	1	+
03360	*Plumatella sp*		+
03600	*Oligochaeta*	2496	+
04637	*Batracobdella phalera*		+
04664	*Helobdella stagnalis*		+
04964	*Mooreobdella microstoma*	1	
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	26	+
12200	*Isonychia sp*	53	+
13000	*Leucrocuta sp*	1	
13400	*Stenacron sp*	1	+
13521	*Stenonema femoratum*	102	+
13561	*Stenonema pulchellum*	295	+
13570	*Stenonema terminatum*	350	+
16700	*Tricorythodes sp*	82	
17200	*Caenis sp*	171	
18100	*Anthopotamus sp*	42	+
21200	*Calopteryx sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
23909	*Boyeria vinosa*		+
31800	*Taeniopteryx sp*	16	
45400	*Trichocorixa sp*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	579	+
52430	*Ceratopsyche morosa group*	197	+
52510	*Hydropsyche aerata*	2	+
52520	*Hydropsyche bidens*	10	
52540	*Hydropsyche dicantha*	1	
52560	*Hydropsyche orris*	1	+
52570	*Hydropsyche simulans*		+
52801	*Potamyia flava*	22	
53800	*Hydroptila sp*	8	
59970	*Petrophila sp*	1	
65800	*Berosus sp*	8	
68075	*Psephenus herricki*		+
68700	*Dubiraphia sp*		+
68901	*Macronychus glabratus*	18	
69400	*Stenelmis sp*	36	+
71900	*Tipula sp*	1	
74100	*Simulium sp*	16	+
77500	*Conchapelopia sp*	66	
77750	*Hayesomyia senata or Thienemannimyia norena*	131	
78750	*Rheopelopia paramaculipennis*		+
79085	*Telopelopia okoboji*	131	
80370	*Corynoneura lobata*	32	
80410	*Cricotopus (C.) sp*	66	
80420	*Cricotopus (C.) bicinctus*	66	+
80430	*Cricotopus (C.) tremulus group*	197	+
81460	*Orthocladius (O.) sp*		+
81631	*Parakiefferiella n.sp 1*	66	
82141	*Thienemanniella xena*	96	
82820	*Cryptochironomus sp*	66	
83300	*Glyptotendipes (G.) sp*	66	+
84300	*Phaenopsectra obediens group*	131	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	262	+
85625	*Rheotanytarsus exiguus group*	6430	+
85800	*Tanytarsus sp*	66	
85840	*Tanytarsus guerlus group*	66	
87540	*Hemerodromia sp*		+
93900	*Elimia sp*		+
95100	*Physella sp*		+
96120	*Menetus (Micromenetus) dilatatus*	1	
96900	*Ferrissia sp*	11	
97601	*Corbicula fluminea*	16	+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 49 Total Taxa: 71

No. Qualitative Taxa: 43 ICI: **38**

Number of Organisms: 12520 Qual EPT: **12**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-001 River: Great Miami River RM: 76.40 **A**

Taxa Code	Taxa	Quan	Qual
00401	*Spongillidae*		+
01801	*Turbellaria*	141	+
03121	*Paludicella articulata*		+
03360	*Plumatella sp*	5	+
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	81	+
04666	*Helobdella triserialis*		+
05800	*Caecidotea sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
08601	*Hydracarina*	32	
11130	*Baetis intercalaris*	128	+
12200	*Isonychia sp*	1773	+
12924	*Heptagenia flavescens*	22	+
13000	*Leucrocuta sp*	289	+
13400	*Stenacron sp*	11	+
13510	*Stenonema exiguum*	33	+
13521	*Stenonema femoratum*	11	
13550	*Stenonema mexicanum integrum*	45	+
13561	*Stenonema pulchellum*	78	+
13570	*Stenonema terminatum*	223	+
16700	*Tricorythodes sp*	64	+
17200	*Caenis sp*	70	+
18100	*Anthopotamus sp*		+
18700	*Hexagenia sp*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
26700	*Macromia sp*		+
47600	*Sialis sp*	1	+
48410	*Corydalus cornutus*	1	
52200	*Cheumatopsyche sp*	2096	+
52430	*Ceratopsyche morosa group*	299	+
52510	*Hydropsyche aerata*	127	+
52520	*Hydropsyche bidens*	10	+
52560	*Hydropsyche orris*	1010	+
52580	*Hydropsyche valanis*	1	
52801	*Potamyia flava*	7	
53800	*Hydroptila sp*	9	+
65800	*Berosus sp*		+
68075	*Psephenus herricki*		+
68130	*Helichus sp*		+
68708	*Dubiraphia vittata group*	8	+
68901	*Macronychus glabratus*	4	+
69400	*Stenelmis sp*	27	+
74100	*Simulium sp*	15	+
77750	*Hayesomyia senata or Thienemannimyia norena*	67	+
78140	*Labrundinia pilosella*	8	
80310	*Cardiocladius obscurus*		+
80410	*Cricotopus (C.) sp*	22	
80420	*Cricotopus (C.) bicinctus*	45	
81229	*Nanocladius (N.) crassicornus*	67	
81240	*Nanocladius (N.) distinctus*	45	
81250	*Nanocladius (N.) minimus*	22	
82130	*Thienemanniella similis*	32	
82141	*Thienemanniella xena*	61	
82820	*Cryptochironomus sp*		+
83300	*Glyptotendipes (G.) sp*	22	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	246	
84470	*Polypedilum (P.) illinoense*		+
84520	*Polypedilum (Tripodura) halterale group*		+
84888	*Xenochironomus xenolabis*		+
85625	*Rheotanytarsus exiguus group*	1339	+
86100	*Chrysops sp*		+
87540	*Hemerodromia sp*	34	
93900	*Elimia sp*		+
95100	*Physella sp*		+
96930	*Laevapex fuscus*		+
97601	*Corbicula fluminea*	1	+
98600	*Sphaerium sp*	1	+
99280	*Lasmigona costata*		+

No. Quantitative Taxa: 47 Total Taxa: 74

No. Qualitative Taxa: 58 ICI: **56**

Number of Organisms: 8635 Qual EPT: **19**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 76.40 **B**

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	32	
01801	*Turbellaria*	2	+
03121	*Paludicella articulata*	20	
03360	*Plumatella sp*		+
03600	*Oligochaeta*	272	+
04664	*Helobdella stagnalis*		+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*		+
11130	*Baetis intercalaris*	60	+
12200	*Isonychia sp*	69	+
12924	*Heptagenia flavescens*	2	
13000	*Leucrocuta sp*	28	
13400	*Stenacron sp*	107	+
13510	*Stenonema exiguum*	2	
13521	*Stenonema femoratum*	2	+
13561	*Stenonema pulchellum*	242	+
13570	*Stenonema terminatum*	412	+
16700	*Tricorythodes sp*	51	+
17200	*Caenis sp*	16	+
18100	*Anthopotamus sp*		+
18600	*Ephemera sp*		+
18700	*Hexagenia sp*		+
21300	*Hetaerina sp*	48	
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
25620	*Stylurus spiniceps*		+
26700	*Macromia sp*		+
47600	*Sialis sp*		+
52200	*Cheumatopsyche sp*	1058	+
52430	*Ceratopsyche morosa group*	58	+
52510	*Hydropsyche aerata*	3	
52520	*Hydropsyche bidens*	2	
52560	*Hydropsyche orris*	408	+
52801	*Potamyia flava*	27	+
59970	*Petrophila sp*		+
65800	*Berosus sp*		+
68075	*Psephenus herricki*		+
68708	*Dubiraphia vittata group*		+
68901	*Macronychus glabratus*	2	+
69400	*Stenelmis sp*		+
71100	*Hexatoma sp*		+
71910	*Tipula abdominalis*	2	
74100	*Simulium sp*	59	+
77750	*Hayesomyia senata or Thienemannimyia norena*		+
80204	*Brillia flavifrons group*	65	
80370	*Corynoneura lobata*	16	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*	65	+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
82130	*Thienemanniella similis*	16	
82141	*Thienemanniella xena*	80	
83000	*Dicrotendipes sp*		+
83300	*Glyptotendipes (G.) sp*	129	+
84040	*Parachironomus frequens*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	323	
84520	*Polypedilum (Tripodura) halterale group*		+
84700	*Stenochironomus sp*		+
85500	*Paratanytarsus sp*	65	
85615	*Rheotanytarsus distinctissimus group*		+
85625	*Rheotanytarsus exiguus group*	5099	+
87540	*Hemerodromia sp*	64	+
93900	*Elimia sp*	1	+
95100	*Physella sp*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 36 Total Taxa: 73

No. Qualitative Taxa: 58 ICI: **44**

Number of Organisms: 8907 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 76.00

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	112	
01801	*Turbellaria*	43	+
01900	*Nemertea*	16	
03040	*Fredericella sp*	1	+
03121	*Paludicella articulata*	20	+
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*	1	+
03600	*Oligochaeta*	385	
04964	*Mooreobdella microstoma*		+
11130	*Baetis intercalaris*	23	
12200	*Isonychia sp*	49	+
13400	*Stenacron sp*	249	+
13521	*Stenonema femoratum*	4	+
13550	*Stenonema mexicanum integrum*	1	
13561	*Stenonema pulchellum*	174	
13570	*Stenonema terminatum*	157	+
16700	*Tricorythodes sp*	131	+
17200	*Caenis sp*	48	+
18100	*Anthopotamus sp*		+
18750	*Hexagenia limbata*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*	17	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24107	*Nasiaeschna pentacantha*		+
45400	*Trichocorixa sp*		+
47600	*Sialis sp*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	988	+
52430	*Ceratopsyche morosa group*	98	+
52510	*Hydropsyche aerata*	2	+
52560	*Hydropsyche orris*	172	+
52580	*Hydropsyche valanis*	25	
52801	*Potamyia flava*	6	
53800	*Hydroptila sp*	35	+
67800	*Tropisternus sp*		+
68601	*Ancyronyx variegata*	8	
69400	*Stenelmis sp*		+
71900	*Tipula sp*		+
74100	*Simulium sp*	19	
77750	*Hayesomyia senata or Thienemannimyia norena*	80	
77800	*Helopelopia sp*	80	
80370	*Corynoneura lobata*	37	
80410	*Cricotopus (C.) sp*	80	
80420	*Cricotopus (C.) bicinctus*	201	+
80430	*Cricotopus (C.) tremulus group*	241	
82141	*Thienemanniella xena*	37	
83040	*Dicrotendipes neomodestus*		+
83300	*Glyptotendipes (G.) sp*	40	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	362	
85625	*Rheotanytarsus exiguus group*	2894	+
87540	*Hemerodromia sp*	49	+
93900	*Elimia sp*		+
95100	*Physella sp*	2	
95907	*Gyraulus (Torquis) parvus*	21	
97601	*Corbicula fluminea*		+

No. Quantitative Taxa: 41 Total Taxa: 56

No. Qualitative Taxa: 36 ICI: **42**

Number of Organisms: 6910 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 75.70

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	112	
01801	*Turbellaria*	23	+
01900	*Nemertea*	80	
03040	*Fredericella sp*	10	+
03121	*Paludicella articulata*	20	+
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	20	+
12200	*Isonychia sp*	81	+
12924	*Heptagenia flavescens*	1	+
13400	*Stenacron sp*	247	+
13521	*Stenonema femoratum*	1	
13561	*Stenonema pulchellum*	155	+
13570	*Stenonema terminatum*	24	+
16700	*Tricorythodes sp*	81	+
17200	*Caenis sp*	16	+
18750	*Hexagenia limbata*		+
21300	*Hetaerina sp*	2	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
45100	*Palmacorixa sp*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	1419	+
52430	*Ceratopsyche morosa group*	167	
52510	*Hydropsyche aerata*	1	
52520	*Hydropsyche bidens*	11	
52560	*Hydropsyche orris*	59	+
52580	*Hydropsyche valanis*	6	+
52801	*Potamyia flava*	4	+
53800	*Hydroptila sp*	2	
59970	*Petrophila sp*	1	
60400	*Gyrinus sp*		+
69400	*Stenelmis sp*	16	+
73601	*Simuliidae*	1	
77500	*Conchapelopia sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	113	
78750	*Rheopelopia paramaculipennis*	57	
79085	*Telopelopia okoboji*	226	
80410	*Cricotopus (C.) sp*	113	
80420	*Cricotopus (C.) bicinctus*	226	+
80430	*Cricotopus (C.) tremulus group*	57	
80510	*Cricotopus (Isocladius) sylvestris group*		+
82141	*Thienemanniella xena*	48	
82820	*Cryptochironomus sp*	113	
83003	*Dicrotendipes fumidus*		+
83300	*Glyptotendipes (G.) sp*	283	+
83330	*Glyptotendipes (G.) barbipes*		+
83410	*Harnischia curtilamellata*	57	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	566	
85625	*Rheotanytarsus exiguus group*	4413	+
87540	*Hemerodromia sp*	16	
93900	*Elimia sp*	1	+
95100	*Physella sp*		+
97601	*Corbicula fluminea*	1	

No. Quantitative Taxa: 43 Total Taxa: 57

No. Qualitative Taxa: 36 ICI: **42**

Number of Organisms: 8852 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 72.40

Taxa Code	Taxa	Quan	Qual
00653	*Eunapius fragilis*		+
01320	*Hydra sp*	64	
01801	*Turbellaria*	40	+
03040	*Fredericella sp*		+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	464	+
04964	*Mooreobdella microstoma*	2	+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*		+
11130	*Baetis intercalaris*	3	+
11250	*Centroptilum sp (w/o hindwing pads)*		+
12200	*Isonychia sp*	181	+
13400	*Stenacron sp*	145	+
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	279	+
13570	*Stenonema terminatum*	198	+
16700	*Tricorythodes sp*	192	+
17200	*Caenis sp*	16	+
18100	*Anthopotamus sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
45400	*Trichocorixa sp*		+
47600	*Sialis sp*		+
52200	*Cheumatopsyche sp*	1971	+
52430	*Ceratopsyche morosa group*	186	+
52510	*Hydropsyche aerata*	59	+
52520	*Hydropsyche bidens*	59	
52560	*Hydropsyche orris*	543	+
52580	*Hydropsyche valanis*	53	
52801	*Potamyia flava*	308	+
59970	*Petrophila sp*	21	+
68075	*Psephenus herricki*		+
69400	*Stenelmis sp*		+
74100	*Simulium sp*	18	+
77120	*Ablabesmyia mallochi*		+
77500	*Conchapelopia sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*		+
77800	*Helopelopia sp*	137	
78140	*Labrundinia pilosella*	32	
78650	*Procladius sp*	137	
79085	*Telopelopia okoboji*		+
80410	*Cricotopus (C.) sp*	137	
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	137	+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
82141	*Thienemanniella xena*	32	+
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*		+
84430	*Polypedilum (P.) albicorne*	137	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	410	+
84470	*Polypedilum (P.) illinoense*		+
84888	*Xenochironomus xenolabis*		+
85625	*Rheotanytarsus exiguus group*	14342	+
87540	*Hemerodromia sp*	64	+
96900	*Ferrissia sp*	16	
98600	*Sphaerium sp*	2	+

No. Quantitative Taxa: 36 Total Taxa: 62

No. Qualitative Taxa: 52 ICI: **50**

Number of Organisms: 20389 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 08/02/95 River Code: 14-001 River: Great Miami River RM: 72.30 **A**

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11120	*Baetis flavistriga*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13560	*Stenonema pulchellum group*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
19102	*Ephoron album*	+
21300	*Hetaerina sp*	+
47600	*Sialis sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52520	*Hydropsyche bidens*	+
52560	*Hydropsyche orris*	+
52580	*Hydropsyche valanis*	+
59970	*Petrophila sp*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77500	*Conchapelopia sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
77800	*Helopelopia sp*	+
80440	*Cricotopus (C.) trifascia group*	+
81250	*Nanocladius (N.) minimus*	+
82730	*Chironomus (C.) decorus group*	+
83300	*Glyptotendipes (G.) sp*	+
84300	*Phaenopsectra obediens group*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84460	*Polypedilum (P.) fallax group*	+
84470	*Polypedilum (P.) illinoense*	+
84480	*Polypedilum (P.) laetum group*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
84750	*Stictochironomus sp*	+
85625	*Rheotanytarsus exiguus group*	+
87540	*Hemerodromia sp*	+
95100	*Physella sp*	+
96900	*Ferrissia sp*	+

No. Quantitative Taxa: 0 Total Taxa: 41

No. Qualitative Taxa: 41 ICI:

Number of Organisms: 0 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 72.30 **B**

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
06700	*Crangonyx sp*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
18100	*Anthopotamus sp*	+
21200	*Calopteryx sp*	+
22001	*Coenagrionidae*	+
47600	*Sialis sp*	+
48410	*Corydalus cornutus*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52560	*Hydropsyche orris*	+
53800	*Hydroptila sp*	+
69400	*Stenelmis sp*	+
72900	*Culex sp*	+
74100	*Simulium sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
77800	*Helopelopia sp*	+
80310	*Cardiocladius obscurus*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80430	*Cricotopus (C.) tremulus group*	+
80440	*Cricotopus (C.) trifascia group*	+
81460	*Orthocladius (O.) sp*	+
82730	*Chironomus (C.) decorus group*	+
82770	*Chironomus (C.) riparius group*	+
83003	*Dicrotendipes fumidus*	+
83040	*Dicrotendipes neomodestus*	+
83158	*Endochironomus nigricans*	+
83300	*Glyptotendipes (G.) sp*	+
84300	*Phaenopsectra obediens group*	+
84315	*Phaenopsectra flavipes*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84460	*Polypedilum (P.) fallax group*	+
84470	*Polypedilum (P.) illinoense*	+
84960	*Pseudochironomus sp*	+
85625	*Rheotanytarsus exiguus group*	+
95100	*Physella sp*	+

No. Quantitative Taxa:	0	Total Taxa:	42
No. Qualitative Taxa:	42	ICI:	
Number of Organisms:	0	Qual EPT:	**11**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 71.70

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*		+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	1920	+
04964	*Mooreobdella microstoma*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	9	+
12200	*Isonychia sp*	17	+
13400	*Stenacron sp*		+
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	72	+
13570	*Stenonema terminatum*	25	+
16700	*Tricorythodes sp*	96	
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
52200	*Cheumatopsyche sp*	1642	+
52315	*Diplectrona modesta*		+
52430	*Ceratopsyche morosa group*	158	+
52510	*Hydropsyche aerata*	196	+
52520	*Hydropsyche bidens*	42	
52560	*Hydropsyche orris*	234	+
52580	*Hydropsyche valanis*	44	+
52801	*Potamyia flava*	196	+
53800	*Hydroptila sp*	48	
59400	*Nectopsyche sp*		+
59970	*Petrophila sp*	2	
68075	*Psephenus herricki*		+
68130	*Helichus sp*		+
68901	*Macronychus glabratus*	1	
69400	*Stenelmis sp*	74	+
71900	*Tipula sp*		+
74100	*Simulium sp*	39	+
77750	*Hayesomyia senata or Thienemannimyia norena*	238	+
77800	*Helopelopia sp*		+
79085	*Telopelopia okoboji*	95	
80310	*Cardiocladius obscurus*	48	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*	143	+
80430	*Cricotopus (C.) tremulus group*	190	+
80440	*Cricotopus (C.) trifascia group*	333	+
80510	*Cricotopus (Isocladius) sylvestris group*	48	
80870	*Hydrobaenus sp*	48	+
81460	*Orthocladius (O.) sp*	95	+
82141	*Thienemanniella xena*	16	
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*	48	
83300	*Glyptotendipes (G.) sp*		+
84440	*Polypedilum (P.) aviceps*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	381	+
84470	*Polypedilum (P.) illinoense*		+
84790	*Tribelos fuscicorne*	48	
85625	*Rheotanytarsus exiguus group*	2142	+
87540	*Hemerodromia sp*	176	+
95100	*Physella sp*		+
97601	*Corbicula fluminea*	32	+
98200	*Pisidium sp*	2	
98600	*Sphaerium sp*	1	+
99100	*Pyganodon grandis*		+

No. Quantitative Taxa: 37 Total Taxa: 59

No. Qualitative Taxa: 46 ICI: **38**

Number of Organisms: 8900 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 08/02/95 River Code: 14-001 River: Great Miami River RM: 71.45 **A**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
06700	*Crangonyx sp*	+
11120	*Baetis flavistriga*	+
11650	*Procloeon sp (w/ hindwing pads)*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13560	*Stenonema pulchellum group*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
21300	*Hetaerina sp*	+
22300	*Argia sp*	+
47600	*Sialis sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52801	*Potamyia flava*	+
60900	*Peltodytes sp*	+
63900	*Laccophilus sp*	+
67800	*Tropisternus sp*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80370	*Corynoneura lobata*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
85625	*Rheotanytarsus exiguus group*	+
93900	*Elimia sp*	+
96900	*Ferrissia sp*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 33

No. Qualitative Taxa: 33 ICI:

Number of Organisms: 0 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 71.45 **B**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
06700	*Crangonyx sp*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
24900	*Gomphus sp*	+
45400	*Trichocorixa sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52560	*Hydropsyche orris*	+
52580	*Hydropsyche valanis*	+
53800	*Hydroptila sp*	+
59415	*Nectopsyche exquisita*	+
65800	*Berosus sp*	+
68075	*Psephenus herricki*	+
69400	*Stenelmis sp*	+
77120	*Ablabesmyia mallochi*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80430	*Cricotopus (C.) tremulus group*	+
80440	*Cricotopus (C.) trifascia group*	+
82730	*Chironomus (C.) decorus group*	+
82820	*Cryptochironomus sp*	+
83051	*Dicrotendipes simpsoni*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
85500	*Paratanytarsus sp*	+
85625	*Rheotanytarsus exiguus group*	+
95100	*Physella sp*	+
96900	*Ferrissia sp*	+
97601	*Corbicula fluminea*	+

No. Quantitative Taxa: 0 Total Taxa: 41

No. Qualitative Taxa: 41 ICI:

Number of Organisms: 0 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 70.50

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	16	
01801	*Turbellaria*	1	+
03121	*Paludicella articulata*	1	+
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	288	
06201	*Hyalella azteca*		+
11120	*Baetis flavistriga*	3	
11130	*Baetis intercalaris*	56	+
12200	*Isonychia sp*	69	+
13000	*Leucrocuta sp*		+
13400	*Stenacron sp*	119	+
13521	*Stenonema femoratum*	3	
13550	*Stenonema mexicanum integrum*	14	
13561	*Stenonema pulchellum*	391	+
13570	*Stenonema terminatum*	333	+
16700	*Tricorythodes sp*	96	+
17200	*Caenis sp*	16	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	1	
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
45400	*Trichocorixa sp*		+
51206	*Cyrnellus fraternus*	1	
51600	*Polycentropus sp*		+
52200	*Cheumatopsyche sp*	1248	+
52430	*Ceratopsyche morosa group*	81	+
52510	*Hydropsyche aerata*	28	+
52520	*Hydropsyche bidens*	25	
52560	*Hydropsyche orris*	210	+
52580	*Hydropsyche valanis*	3	
52801	*Potamyia flava*	13	
59400	*Nectopsyche sp*		+
59970	*Petrophila sp*		+
68075	*Psephenus herricki*		+
68901	*Macronychus glabratus*	1	
69400	*Stenelmis sp*	18	+
73601	*Simuliidae*	1	
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	145	+
77800	*Helopelopia sp*		+
79085	*Telopelopia okoboji*	72	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*	217	+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
82141	*Thienemanniella xena*	32	
83003	*Dicrotendipes fumidus*		+
83050	*Dicrotendipes lucifer*		+
83300	*Glyptotendipes (G.) sp*	579	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	434	+
84470	*Polypedilum (P.) illinoense*		+
85625	*Rheotanytarsus exiguus group*	6873	+
86900	*Myxosargus sp*		+
87540	*Hemerodromia sp*	32	
93900	*Elimia sp*		+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*		+

No. Quantitative Taxa: 36 Total Taxa: 59
No. Qualitative Taxa: 43 ICI: **46**
Number of Organisms: 11422 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 69.30

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	16	
01801	*Turbellaria*		+
03040	*Fredericella sp*		+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	144	+
04964	*Mooreobdella microstoma*		+
05800	*Caecidotea sp*	8	
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*	16	+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*	1	
11130	*Baetis intercalaris*	6	
12200	*Isonychia sp*	37	+
13000	*Leucrocuta sp*	45	
13400	*Stenacron sp*	511	+
13521	*Stenonema femoratum*		+
13550	*Stenonema mexicanum integrum*	45	
13561	*Stenonema pulchellum*	344	+
13570	*Stenonema terminatum*	595	+
16700	*Tricorythodes sp*	51	+
17200	*Caenis sp*	34	+
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
45400	*Trichocorixa sp*		+
47600	*Sialis sp*		+
51206	*Cyrnellus fraternus*	43	
52200	*Cheumatopsyche sp*	789	+
52430	*Ceratopsyche morosa group*	29	
52510	*Hydropsyche aerata*	18	+
52520	*Hydropsyche bidens*	24	+
52560	*Hydropsyche orris*	231	
52580	*Hydropsyche valanis*	18	
52801	*Potamyia flava*	73	
68075	*Psephenus herricki*		+
68601	*Ancyronyx variegata*	9	
69400	*Stenelmis sp*	3	+
74100	*Simulium sp*	1	
77750	*Hayesomyia senata or Thienemannimyia norena*	140	
79085	*Telopelopia okoboji*	70	
80370	*Corynoneura lobata*	16	
80870	*Hydrobaenus sp*		+
81250	*Nanocladius (N.) minimus*	70	
82141	*Thienemanniella xena*	70	
82710	*Chironomus (C.) sp*		+
83300	*Glyptotendipes (G.) sp*	350	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	490	
85625	*Rheotanytarsus exiguus group*	7427	+
85840	*Tanytarsus guerlus group*	70	
87540	*Hemerodromia sp*	80	
95100	*Physella sp*	24	+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*	1	

No. Quantitative Taxa: 39 Total Taxa: 58
No. Qualitative Taxa: 35 ICI: **48**
Number of Organisms: 11901 Qual EPT: **11**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 08/03/95 River Code: 14-001 River: Great Miami River RM: 69.20 **A**

Taxa Code	Taxa	Quan/Qual	Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+			
04935	*Erpobdella punctata punctata*	+			
04964	*Mooreobdella microstoma*	+			
05900	*Lirceus sp*	+			
06201	*Hyalella azteca*	+			
06700	*Crangonyx sp*	+			
08250	*Orconectes (Procericambarus) rusticus*	+			
11120	*Baetis flavistriga*	+			
11130	*Baetis intercalaris*	+			
12200	*Isonychia sp*	+			
13000	*Leucrocuta sp*	+			
13400	*Stenacron sp*	+			
13521	*Stenonema femoratum*	+			
13561	*Stenonema pulchellum*	+			
13570	*Stenonema terminatum*	+			
16700	*Tricorythodes sp*	+			
17200	*Caenis sp*	+			
19102	*Ephoron album*	+			
21300	*Hetaerina sp*	+			
22001	*Coenagrionidae*	+			
45400	*Trichocorixa sp*	+			
52200	*Cheumatopsyche sp*	+			
52430	*Ceratopsyche morosa group*	+			
52560	*Hydropsyche orris*	+			
68708	*Dubiraphia vittata group*	+			
68901	*Macronychus glabratus*	+			
69400	*Stenelmis sp*	+			
77120	*Ablabesmyia mallochi*	+			
77500	*Conchapelopia sp*	+			
77740	*Hayesomyia senata*	+			
82820	*Cryptochironomus sp*	+			
85625	*Rheotanytarsus exiguus group*	+			
85800	*Tanytarsus sp*	+			

No. Quantitative Taxa: 0 Total Taxa: 33

No. Qualitative Taxa: 33 ICI:

Number of Organisms: 0 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 69.20 **B**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03040	*Fredericella sp*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
04964	*Mooreobdella microstoma*	+
05900	*Lirceus sp*	+
06201	*Hyalella azteca*	+
06700	*Crangonyx sp*	+
11120	*Baetis flavistriga*	+
11130	*Baetis intercalaris*	+
11650	*Procloeon sp (w/ hindwing pads)*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21200	*Calopteryx sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
52200	*Cheumatopsyche sp*	+
52510	*Hydropsyche aerata*	+
52560	*Hydropsyche orris*	+
52580	*Hydropsyche valanis*	+
52801	*Potamyia flava*	+
68075	*Psephenus herricki*	+
68700	*Dubiraphia sp*	+
69400	*Stenelmis sp*	+
71910	*Tipula abdominalis*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
77800	*Helopelopia sp*	+
78750	*Rheopelopia paramaculipennis*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
81240	*Nanocladius (N.) distinctus*	+
82710	*Chironomus (C.) sp*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
85625	*Rheotanytarsus exiguus group*	+
95100	*Physella sp*	+
96900	*Ferrissia sp*	+
97601	*Corbicula fluminea*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 47

No. Qualitative Taxa: 47 ICI:

Number of Organisms: 0 Qual EPT: **17**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 68.80

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	33	+
01900	*Nemertea*	32	+
02960	*Paragordius sp*		+
03121	*Paludicella articulata*	1	+
03600	*Oligochaeta*	480	+
05800	*Caecidotea sp*	8	
05900	*Lirceus sp*	2	+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
08601	*Hydracarina*	64	
11130	*Baetis intercalaris*	27	+
12200	*Isonychia sp*	173	+
13561	*Stenonema pulchellum*	420	+
13570	*Stenonema terminatum*	104	+
16700	*Tricorythodes sp*	225	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
25620	*Stylurus spiniceps*		+
52200	*Cheumatopsyche sp*	3063	+
52430	*Ceratopsyche morosa group*	264	+
52510	*Hydropsyche aerata*	190	+
52520	*Hydropsyche bidens*	189	+
52560	*Hydropsyche orris*	1074	+
52570	*Hydropsyche simulans*	2	
52580	*Hydropsyche valanis*	79	+
52801	*Potamyia flava*	264	+
59970	*Petrophila sp*		+
68601	*Ancyronyx variegata*	3	
68901	*Macronychus glabratus*	2	
69400	*Stenelmis sp*	40	+
74100	*Simulium sp*	48	+
77750	*Hayesomyia senata or Thienemannimyia norena*	536	+
77800	*Helopelopia sp*		+
79085	*Telopelopia okoboji*	60	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	60	+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*	60	+
82141	*Thienemanniella xena*	32	
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*	119	+
84430	*Polypedilum (P.) albicorne*	60	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	238	+
84470	*Polypedilum (P.) illinoense*		+
85625	*Rheotanytarsus exiguus group*	4884	+
87540	*Hemerodromia sp*	352	+
97601	*Corbicula fluminea*	10	+
98600	*Sphaerium sp*	1	+

No. Quantitative Taxa: 37 Total Taxa: 53

No. Qualitative Taxa: 45 ICI: **44**

Number of Organisms: 13200 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 66.90

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	48	
01801	*Turbellaria*	10	+
03045	*Fredericella indica*		+
03121	*Paludicella articulata*	1	+
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	80	+
04964	*Mooreobdella microstoma*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
11120	*Baetis flavistriga*	5	+
11130	*Baetis intercalaris*	71	
11200	*Callibaetis sp*		+
12200	*Isonychia sp*	117	+
13400	*Stenacron sp*	240	+
13521	*Stenonema femoratum*	6	+
13550	*Stenonema mexicanum integrum*	47	
13561	*Stenonema pulchellum*	262	+
13570	*Stenonema terminatum*	312	+
16700	*Tricorythodes sp*	48	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
35560	*Isoperla similis*	1	
45400	*Trichocorixa sp*		+
50315	*Chimarra obscura*	3	
52200	*Cheumatopsyche sp*	1322	+
52430	*Ceratopsyche morosa group*	229	+
52510	*Hydropsyche aerata*	28	+
52520	*Hydropsyche bidens*	87	+
52560	*Hydropsyche orris*	229	+
52570	*Hydropsyche simulans*	1	
52580	*Hydropsyche valanis*	22	+
52801	*Potamyia flava*	67	
53800	*Hydroptila sp*		+
59970	*Petrophila sp*		+
60900	*Peltodytes sp*		+
68075	*Psephenus herricki*		+
68901	*Macronychus glabratus*	18	
69400	*Stenelmis sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	86	+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
82141	*Thienemanniella xena*	32	
82710	*Chironomus (C.) sp*		+
83040	*Dicrotendipes neomodestus*		+
83300	*Glyptotendipes (G.) sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	173	+
84470	*Polypedilum (P.) illinoense*		+
85400	*Micropsectra sp*		+
85625	*Rheotanytarsus exiguus group*	8893	+
87540	*Hemerodromia sp*	16	
93900	*Elimia sp*	37	+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 31 Total Taxa: 61

No. Qualitative Taxa: 50 ICI: **46**

Number of Organisms: 12492 Qual EPT: **17**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-001 River: Great Miami River RM: 64.35 **A**

Taxa Code	Taxa	Quan/Qual
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13510	*Stenonema exiguum*	+
13521	*Stenonema femoratum*	+
13550	*Stenonema mexicanum integrum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23909	*Boyeria vinosa*	+
52200	*Cheumatopsyche sp*	+
52560	*Hydropsyche orris*	+
52580	*Hydropsyche valanis*	+
69400	*Stenelmis sp*	+
80410	*Cricotopus (C.) sp*	+
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	+
82820	*Cryptochironomus sp*	+
83040	*Dicrotendipes neomodestus*	+
83300	*Glyptotendipes (G.) sp*	+
83310	*Glyptotendipes (Trichotendipes) amplus*	+
84040	*Parachironomus frequens*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
85625	*Rheotanytarsus exiguus group*	+
97601	*Corbicula fluminea*	+

Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa: 0 Total Taxa: 34

No. Qualitative Taxa: 34 ICI:

Number of Organisms: 0 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 64.35 **B**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03121	*Paludicella articulata*	+
03360	*Plumatella sp*	+
03451	*Urnatella gracilis*	+
03600	*Oligochaeta*	+
05900	*Lirceus sp*	+
06201	*Hyalella azteca*	+
06700	*Crangonyx sp*	+
11650	*Procloeon sp (w/ hindwing pads)*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
68201	*Scirtidae*	+
69400	*Stenelmis sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80430	*Cricotopus (C.) tremulus group*	+
83300	*Glyptotendipes (G.) sp*	+
85615	*Rheotanytarsus distinctissimus group*	+
85625	*Rheotanytarsus exiguus group*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 32

No. Qualitative Taxa: 32 ICI:

Number of Organisms: 0 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 64.30

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	64	
01801	*Turbellaria*	1	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	256	+
04964	*Mooreobdella microstoma*		+
05800	*Caecidotea sp*		+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*		+
11130	*Baetis intercalaris*	7	+
12200	*Isonychia sp*	75	+
13400	*Stenacron sp*	12	+
13521	*Stenonema femoratum*		+
13550	*Stenonema mexicanum integrum*	49	
13561	*Stenonema pulchellum*	343	+
13570	*Stenonema terminatum*	908	+
16700	*Tricorythodes sp*	128	+
17200	*Caenis sp*	96	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*		+
52200	*Cheumatopsyche sp*	2217	+
52430	*Ceratopsyche morosa group*	272	+
52510	*Hydropsyche aerata*	140	+
52520	*Hydropsyche bidens*	184	
52560	*Hydropsyche orris*	447	+
52570	*Hydropsyche simulans*	22	
52580	*Hydropsyche valanis*	26	
52801	*Potamyia flava*	51	+
53800	*Hydroptila sp*	32	+
59407	*Nectopsyche candida*	1	
59970	*Petrophila sp*		+
68075	*Psephenus herricki*		+
69400	*Stenelmis sp*	1	+
71910	*Tipula abdominalis*		+
74100	*Simulium sp*	1	
77750	*Hayesomyia senata or Thienemannimyia norena*	106	+
79085	*Telopelopia okoboji*	106	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
81460	*Orthocladius (O.) sp*		+
82710	*Chironomus (C.) sp*		+
83040	*Dicrotendipes neomodestus*		+
83158	*Endochironomus nigricans*		+
83300	*Glyptotendipes (G.) sp*	212	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	212	+
84540	*Polypedilum (Tripodura) scalaenum group*	106	
85625	*Rheotanytarsus exiguus group*	11770	+
87540	*Hemerodromia sp*	128	
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 33 Total Taxa: 58

No. Qualitative Taxa: 46 ICI: **50**

Number of Organisms: 17976 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 64.10

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	8	
01801	*Turbellaria*	20	+
03040	*Fredericella sp*		+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	320	+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*	11	+
11130	*Baetis intercalaris*	37	+
12200	*Isonychia sp*	165	+
12924	*Heptagenia flavescens*	1	
13000	*Leucrocuta sp*		+
13400	*Stenacron sp*	10	+
13521	*Stenonema femoratum*		+
13550	*Stenonema mexicanum integrum*	10	
13561	*Stenonema pulchellum*	255	+
13570	*Stenonema terminatum*	553	+
16700	*Tricorythodes sp*	96	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22300	*Argia sp*		+
48410	*Corydalus cornutus*		+
50315	*Chimarra obscura*	1	
52200	*Cheumatopsyche sp*	3032	+
52430	*Ceratopsyche morosa group*	918	+
52510	*Hydropsyche aerata*	200	+
52520	*Hydropsyche bidens*	344	+
52560	*Hydropsyche orris*	630	+
52570	*Hydropsyche simulans*	3	+
52580	*Hydropsyche valanis*	104	
52801	*Potamyia flava*	339	+
53800	*Hydroptila sp*	8	+
59970	*Petrophila sp*	1	+
65800	*Berosus sp*		+
68075	*Psephenus herricki*		+
68130	*Helichus sp*		+
68708	*Dubiraphia vittata group*		+
69400	*Stenelmis sp*	1	+
74100	*Simulium sp*	39	+
74501	*Ceratopogonidae*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	120	+
78140	*Labrundinia pilosella*		+
80310	*Cardiocladius obscurus*	120	+
80410	*Cricotopus (C.) sp*	120	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	120	+
80440	*Cricotopus (C.) trifascia group*	120	+
81460	*Orthocladius (O.) sp*		+
82141	*Thienemanniella xena*	120	
83300	*Glyptotendipes (G.) sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	721	+
85625	*Rheotanytarsus exiguus group*	10461	+
87540	*Hemerodromia sp*	64	
93900	*Elimia sp*		+
96120	*Menetus (Micromenetus) dilatatus*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 35 Total Taxa: 60

No. Qualitative Taxa: 52 ICI: **52**

Number of Organisms: 19073 Qual EPT: **19**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 62.60

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
05900	*Lirceus sp*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
48410	*Corydalus cornutus*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52520	*Hydropsyche bidens*	+
52560	*Hydropsyche orris*	+
53800	*Hydroptila sp*	+
59970	*Petrophila sp*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
77800	*Helopelopia sp*	+
80430	*Cricotopus (C.) tremulus group*	+
80440	*Cricotopus (C.) trifascia group*	+
81460	*Orthocladius (O.) sp*	+
82730	*Chironomus (C.) decorus group*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
85625	*Rheotanytarsus exiguus group*	+
85800	*Tanytarsus sp*	+
96900	*Ferrissia sp*	+
97601	*Corbicula fluminea*	+
98600	*Sphaerium sp*	+

Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa: 0 Total Taxa: 39
No. Qualitative Taxa: 39 ICI:
Number of Organisms: 0 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 60.20

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	32	
01801	*Turbellaria*	32	+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	96	+
11120	*Baetis flavistriga*		+
11130	*Baetis intercalaris*	84	+
12200	*Isonychia sp*	517	+
13400	*Stenacron sp*		+
13521	*Stenonema femoratum*		+
13550	*Stenonema mexicanum integrum*	10	
13561	*Stenonema pulchellum*	560	
13570	*Stenonema terminatum*	150	
16700	*Tricorythodes sp*	128	+
18100	*Anthopotamus sp*		+
22001	*Coenagrionidae*		+
24900	*Gomphus sp*		+
34605	*Perlinella drymo*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	2469	+
52430	*Ceratopsyche morosa group*	294	+
52510	*Hydropsyche aerata*	376	+
52520	*Hydropsyche bidens*	47	
52560	*Hydropsyche orris*	89	+
52570	*Hydropsyche simulans*	3	
52801	*Potamyia flava*	499	+
53800	*Hydroptila sp*	32	+
59970	*Petrophila sp*		+
68708	*Dubiraphia vittata group*	8	
68901	*Macronychus glabratus*	9	
69400	*Stenelmis sp*	143	+
74100	*Simulium sp*	54	+
77750	*Hayesomyia senata or Thienemannimyia norena*	1071	+
80410	*Cricotopus (C.) sp*	230	
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	918	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
85625	*Rheotanytarsus exiguus group*	6581	+
97601	*Corbicula fluminea*	1	+
98600	*Sphaerium sp*		+
99100	*Pyganodon grandis*		+

No. Quantitative Taxa: 28 Total Taxa: 45

No. Qualitative Taxa: 34 ICI: **44**

Number of Organisms: 14435 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/15/95 River Code: 14-001 River: Great Miami River RM: 59.65 **A**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
04964	*Mooreobdella microstoma*	+
06700	*Crangonyx sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13510	*Stenonema exiguum*	+
13521	*Stenonema femoratum*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
24900	*Gomphus sp*	+
26700	*Macromia sp*	+
42700	*Belostoma sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52520	*Hydropsyche bidens*	+
52560	*Hydropsyche orris*	+
52801	*Potamyia flava*	+
59970	*Petrophila sp*	+
67800	*Tropisternus sp*	+
68601	*Ancyronyx variegata*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80310	*Cardiocladius obscurus*	+
81201	*Nanocladius (N.) sp*	+
82121	*Thienemanniella n.sp 3*	+
83300	*Glyptotendipes (G.) sp*	+
83330	*Glyptotendipes (G.) barbipes*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+

Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa:	0	Total Taxa:	39
No. Qualitative Taxa:	39	ICI:	
Number of Organisms:	0	Qual EPT:	**14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 59.65 **B**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
26700	*Macromia sp*	+
45100	*Palmacorixa sp*	+
45400	*Trichocorixa sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52801	*Potamyia flava*	+
59970	*Petrophila sp*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
74501	*Ceratopogonidae*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80310	*Cardiocladius obscurus*	+
80420	*Cricotopus (C.) bicinctus*	+
80430	*Cricotopus (C.) tremulus group*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
85625	*Rheotanytarsus exiguus group*	+
95100	*Physella sp*	+
97601	*Corbicula fluminea*	+

No. Quantitative Taxa: 0 Total Taxa: 32

No. Qualitative Taxa: 32 ICI:

Number of Organisms: 0 Qual EPT: **10**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 59.10

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	8	
01801	*Turbellaria*	32	
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	8	+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	55	+
12200	*Isonychia sp*	101	+
13000	*Leucrocuta sp*	49	
13400	*Stenacron sp*	97	+
13521	*Stenonema femoratum*	49	
13550	*Stenonema mexicanum integrum*	12	
13561	*Stenonema pulchellum*	358	+
13570	*Stenonema terminatum*	470	+
16700	*Tricorythodes sp*	68	
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
26700	*Macromia sp*		+
45400	*Trichocorixa sp*		+
51206	*Cyrnellus fraternus*		+
52200	*Cheumatopsyche sp*	1608	+
52430	*Ceratopsyche morosa group*	247	+
52510	*Hydropsyche aerata*	287	+
52520	*Hydropsyche bidens*	46	
52560	*Hydropsyche orris*	34	
52580	*Hydropsyche valanis*	41	
52801	*Potamyia flava*	287	+
53800	*Hydroptila sp*		+
59970	*Petrophila sp*		+
63900	*Laccophilus sp*		+
68075	*Psephenus herricki*		+
68708	*Dubiraphia vittata group*		+
68901	*Macronychus glabratus*		+
69400	*Stenelmis sp*	1	+
74100	*Simulium sp*		+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	177	+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*	88	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	707	+
85625	*Rheotanytarsus exiguus group*	7956	+
85800	*Tanytarsus sp*		+
87540	*Hemerodromia sp*	32	
95100	*Physella sp*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*	7	+
99100	*Pyganodon grandis*		+
99280	*Lasmigona costata*		+

No. Quantitative Taxa: 29 Total Taxa: 60

No. Qualitative Taxa: 49 ICI: **48**

Number of Organisms: 12828 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 58.30

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	39	+
03121	*Paludicella articulata*	1	+
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*		+
03600	*Oligochaeta*	64	+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*	2	
11130	*Baetis intercalaris*	119	+
12200	*Isonychia sp*	101	+
12924	*Heptagenia flavescens*		+
13000	*Leucrocuta sp*	39	
13400	*Stenacron sp*	40	+
13521	*Stenonema femoratum*	11	+
13550	*Stenonema mexicanum integrum*	9	
13561	*Stenonema pulchellum*	206	+
13570	*Stenonema terminatum*	576	+
16700	*Tricorythodes sp*	16	+
17200	*Caenis sp*	8	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
44501	*Corixidae*		+
52200	*Cheumatopsyche sp*	2369	+
52430	*Ceratopsyche morosa group*	226	+
52510	*Hydropsyche aerata*	116	+
52520	*Hydropsyche bidens*	29	
52530	*Hydropsyche depravata group*	1	
52560	*Hydropsyche orris*	25	
52580	*Hydropsyche valanis*	3	
52801	*Potamyia flava*	510	+
53800	*Hydroptila sp*		+
59970	*Petrophila sp*		+
69400	*Stenelmis sp*	17	+
71910	*Tipula abdominalis*		+
74100	*Simulium sp*	3	+
77750	*Hayesomyia senata or Thienemannimyia norena*	242	+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
81460	*Orthocladius (O.) sp*		+
83300	*Glyptotendipes (G.) sp*	242	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	483	+
85625	*Rheotanytarsus exiguus group*	11834	+
87540	*Hemerodromia sp*	144	+
97601	*Corbicula fluminea*	1	

No. Quantitative Taxa: 32 Total Taxa: 46

No. Qualitative Taxa: 38 ICI: **48**

Number of Organisms: 17478 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/26/95 River Code: 14-001 River: Great Miami River RM: 55.00

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*		+
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	32	+
08250	*Orconectes (Procericambarus) rusticus*		+
11130	*Baetis intercalaris*	61	+
12200	*Isonychia sp*	133	+
13400	*Stenacron sp*	1	+
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	528	+
13570	*Stenonema terminatum*	96	+
16700	*Tricorythodes sp*		+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
26700	*Macromia sp*		+
48410	*Corydalus cornutus*	1	+
52200	*Cheumatopsyche sp*	2424	+
52430	*Ceratopsyche morosa group*	940	+
52510	*Hydropsyche aerata*	558	+
52520	*Hydropsyche bidens*	137	
52560	*Hydropsyche orris*	127	+
52570	*Hydropsyche simulans*	45	
52801	*Potamyia flava*	855	+
53800	*Hydroptila sp*	32	+
59407	*Nectopsyche candida*		+
59415	*Nectopsyche exquisita*		+
59970	*Petrophila sp*	33	+
69400	*Stenelmis sp*	4	+
74100	*Simulium sp*	101	
77750	*Hayesomyia senata or Thienemannimyia norena*	251	+
79085	*Telopelopia okoboji*		+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
81460	*Orthocladius (O.) sp*		+
83300	*Glyptotendipes (G.) sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	377	+
84520	*Polypedilum (Tripodura) halterale group*		+
84700	*Stenochironomus sp*		+
85625	*Rheotanytarsus exiguus group*	11180	+
85800	*Tanytarsus sp*		+
87540	*Hemerodromia sp*	96	
93900	*Elimia sp*		+
95100	*Physella sp*		+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*	1	+
99280	*Lasmigona costata*		+

No. Quantitative Taxa: 24 Total Taxa: 50

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

Number of Organisms: 18014 Qual EPT: **17**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/27/95 River Code: 14-001 River: Great Miami River RM: 51.50

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	13	+
03121	*Paludicella articulata*	1	+
03360	*Plumatella sp*	1	
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	708	
05900	*Lirceus sp*		+
11130	*Baetis intercalaris*	18	+
12200	*Isonychia sp*	202	+
13400	*Stenacron sp*	8	+
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	971	+
13570	*Stenonema terminatum*	180	+
16700	*Tricorythodes sp*	64	+
17200	*Caenis sp*	8	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
44501	*Corixidae*		+
52200	*Cheumatopsyche sp*	3252	+
52430	*Ceratopsyche morosa group*	558	+
52510	*Hydropsyche aerata*	92	+
52520	*Hydropsyche bidens*	282	
52560	*Hydropsyche orris*	141	
52570	*Hydropsyche simulans*	2	
52580	*Hydropsyche valanis*	2	
52801	*Potamyia flava*	903	+
53800	*Hydroptila sp*	129	+
59970	*Petrophila sp*		+
69400	*Stenelmis sp*	13	+
77750	*Hayesomyia senata or Thienemannimyia norena*	960	+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80870	*Hydrobaenus sp*		+
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	192	
81460	*Orthocladius (O.) sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	2112	+
84520	*Polypedilum (Tripodura) halterale group*	192	
84540	*Polypedilum (Tripodura) scalaenum group*	192	
85625	*Rheotanytarsus exiguus group*	26112	+
87540	*Hemerodromia sp*	128	+
93900	*Elimia sp*		+
97601	*Corbicula fluminea*	1	
98600	*Sphaerium sp*	1	+

No. Quantitative Taxa: 31 Total Taxa: 43

No. Qualitative Taxa: 32 ICI: **44**

Number of Organisms: 37439 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/27/95 River Code: 14-001 River: Great Miami River RM: 51.40

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*		+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	514	+
05900	*Lirceus sp*		+
13561	*Stenonema pulchellum*		+
22001	*Coenagrionidae*	1	
22300	*Argia sp*	1	
24900	*Gomphus sp*		+
26700	*Macromia sp*		+
52801	*Potamyia flava*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	4	
79085	*Telopelopia okoboji*	5	
80410	*Cricotopus (C.) sp*	2	
83300	*Glyptotendipes (G.) sp*	2	
84460	*Polypedilum (P.) fallax group*	1	
85625	*Rheotanytarsus exiguus group*	5	
87540	*Hemerodromia sp*	8	

No. Quantitative Taxa:	11	Total Taxa:	17
No. Qualitative Taxa:	7	ICI:	**8**
Number of Organisms:	544	Qual EPT:	**2**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/27/95 River Code: 14-001 River: Great Miami River RM: 51.30

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	2	
01801	*Turbellaria*	2	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*		+
03451	*Urnatella gracilis*	1	+
03600	*Oligochaeta*	222	+
04964	*Mooreobdella microstoma*	1	+
05900	*Lirceus sp*		+
11130	*Baetis intercalaris*	3	+
12200	*Isonychia sp*	24	+
13400	*Stenacron sp*	31	+
13521	*Stenonema femoratum*	1	+
13550	*Stenonema mexicanum integrum*	5	
13561	*Stenonema pulchellum*	174	+
13570	*Stenonema terminatum*	64	+
16700	*Tricorythodes sp*	2	+
17200	*Caenis sp*	11	
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	204	+
52430	*Ceratopsyche morosa group*	10	+
52510	*Hydropsyche aerata*	11	+
52560	*Hydropsyche orris*	4	
52801	*Potamyia flava*	10	+
59407	*Nectopsyche candida*	1	
59970	*Petrophila sp*		+
68601	*Ancyronyx variegata*	1	
69400	*Stenelmis sp*	19	+
71900	*Tipula sp*		+
72101	*Psychodidae*	1	
74501	*Ceratopogonidae*	8	
77750	*Hayesomyia senata or Thienemannimyia norena*	488	+
79085	*Telopelopia okoboji*	100	+
80420	*Cricotopus (C.) bicinctus*	12	
82730	*Chironomus (C.) decorus group*		+
83040	*Dicrotendipes neomodestus*	12	
83300	*Glyptotendipes (G.) sp*	100	+
84300	*Phaenopsectra obediens group*	25	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	63	+
84460	*Polypedilum (P.) fallax group*	13	
84540	*Polypedilum (Tripodura) scalaenum group*	12	
85625	*Rheotanytarsus exiguus group*	225	
87540	*Hemerodromia sp*	48	+
93900	*Elimia sp*	3	+
95100	*Physella sp*	1	

No. Quantitative Taxa: 39 Total Taxa: 48

No. Qualitative Taxa: 31 ICI: **38**

Number of Organisms: 1916 Qual EPT: **12**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/27/95 River Code: 14-001 River: Great Miami River RM: 50.90

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	3	+
03121	*Paludicella articulata*	1	
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	544	+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11130	*Baetis intercalaris*	20	+
12200	*Isonychia sp*	88	+
13000	*Leucrocuta sp*	1	
13400	*Stenacron sp*	159	+
13521	*Stenonema femoratum*	1	
13550	*Stenonema mexicanum integrum*	5	
13561	*Stenonema pulchellum*	294	+
13570	*Stenonema terminatum*	339	+
16700	*Tricorythodes sp*	37	
17200	*Caenis sp*	1	
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	1	
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24107	*Nasiaeschna pentacantha*		+
45400	*Trichocorixa sp*		+
52200	*Cheumatopsyche sp*	153	+
52430	*Ceratopsyche morosa group*	59	+
52510	*Hydropsyche aerata*	22	+
52520	*Hydropsyche bidens*	3	
52560	*Hydropsyche orris*	19	+
52570	*Hydropsyche simulans*	1	
52580	*Hydropsyche valanis*	4	+
52801	*Potamyia flava*	110	+
53800	*Hydroptila sp*	1	+
56001	*Limnephilidae*		+
59407	*Nectopsyche candida*	10	
59970	*Petrophila sp*		+
65800	*Berosus sp*		+
68075	*Psephenus herricki*		+
68901	*Macronychus glabratus*	1	
69400	*Stenelmis sp*	1	+
72101	*Psychodidae*	1	
74100	*Simulium sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	691	+
79085	*Telopelopia okoboji*	69	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
83300	*Glyptotendipes (G.) sp*	138	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	553	+
84470	*Polypedilum (P.) illinoense*		+
85625	*Rheotanytarsus exiguus group*	4837	+
93900	*Elimia sp*	21	+
95100	*Physella sp*		+

No. Quantitative Taxa: 34 Total Taxa: 52

No. Qualitative Taxa: 38 ICI: **38**

Number of Organisms: 8189 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/27/95 River Code: 14-001 River: Great Miami River RM: 49.30

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	65	
01801	*Turbellaria*	3	+
03121	*Paludicella articulata*	1	
03600	*Oligochaeta*	321	+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*		+
11130	*Baetis intercalaris*	9	+
12200	*Isonychia sp*	204	+
13400	*Stenacron sp*	109	+
13521	*Stenonema femoratum*	1	
13550	*Stenonema mexicanum integrum*	14	
13561	*Stenonema pulchellum*	342	+
13570	*Stenonema terminatum*	254	+
16700	*Tricorythodes sp*	33	
17200	*Caenis sp*	14	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*	1	
52200	*Cheumatopsyche sp*	240	+
52430	*Ceratopsyche morosa group*	99	+
52510	*Hydropsyche aerata*	28	+
52520	*Hydropsyche bidens*	2	
52540	*Hydropsyche dicantha*	2	
52560	*Hydropsyche orris*	19	
52570	*Hydropsyche simulans*	1	
52580	*Hydropsyche valanis*	3	+
52801	*Potamyia flava*	153	+
53800	*Hydroptila sp*	123	+
59407	*Nectopsyche candida*	16	
59970	*Petrophila sp*	8	+
68201	*Scirtidae*		+
68601	*Ancyronyx variegata*	1	
68901	*Macronychus glabratus*	2	
69400	*Stenelmis sp*	5	+
71100	*Hexatoma sp*		+
74100	*Simulium sp*	11	+
77750	*Hayesomyia senata or Thienemannimyia norena*	503	+
78650	*Procladius sp*		+
79085	*Telopelopia okoboji*	335	
80410	*Cricotopus (C.) sp*	168	
82770	*Chironomus (C.) riparius group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	1844	+
85625	*Rheotanytarsus exiguus group*	11902	+
87540	*Hemerodromia sp*	96	
93900	*Elimia sp*	9	+
95100	*Physella sp*		+
97601	*Corbicula fluminea*	8	+
99100	*Pyganodon grandis*		+

No. Quantitative Taxa: 39 Total Taxa: 52

No. Qualitative Taxa: 36 ICI: **40**

Number of Organisms: 16950 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/18/95 River Code: 14-001 River: Great Miami River RM: 48.20 **A**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
04964	*Mooreobdella microstoma*	+
05900	*Lirceus sp*	+
06700	*Crangonyx sp*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13550	*Stenonema mexicanum integrum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23909	*Boyeria vinosa*	+
24900	*Gomphus sp*	+
26700	*Macromia sp*	+
52200	*Cheumatopsyche sp*	+
52510	*Hydropsyche aerata*	+
52801	*Potamyia flava*	+
59407	*Nectopsyche candida*	+
59970	*Petrophila sp*	+
63900	*Laccophilus sp*	+
65800	*Berosus sp*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
80510	*Cricotopus (Isocladius) sylvestris group*	+
82121	*Thienemanniella n.sp 3*	+
82600	*Axarus sp*	+
82730	*Chironomus (C.) decorus group*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
85625	*Rheotanytarsus exiguus group*	+
93900	*Elimia sp*	+

No. Quantitative Taxa:	0	Total Taxa:	40
No. Qualitative Taxa:	40	ICI:	
Number of Organisms:	0	Qual EPT:	**11**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/30/95 River Code: 14-001 River: Great Miami River RM: 48.20 **B**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
04964	*Mooreobdella microstoma*	+
05900	*Lirceus sp*	+
06700	*Crangonyx sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23909	*Boyeria vinosa*	+
24900	*Gomphus sp*	+
45900	*Notonecta sp*	+
52200	*Cheumatopsyche sp*	+
52510	*Hydropsyche aerata*	+
52540	*Hydropsyche dicantha*	+
52801	*Potamyia flava*	+
53800	*Hydroptila sp*	+
67800	*Tropisternus sp*	+
77500	*Conchapelopia sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80510	*Cricotopus (Isocladius) sylvestris group*	+
82730	*Chironomus (C.) decorus group*	+
83300	*Glyptotendipes (G.) sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
85625	*Rheotanytarsus exiguus group*	+
93900	*Elimia sp*	+
98600	*Sphaerium sp*	+

Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa: 0 Total Taxa: 36
No. Qualitative Taxa: 36 ICI:
Number of Organisms: 0 Qual EPT: **12**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/30/95 River Code: 14-001 River: Great Miami River RM: 47.70

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	6	
01801	*Turbellaria*	27	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*		+
03600	*Oligochaeta*	234	+
04962	*Mooreobdella fervida*		+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
08601	*Hydracarina*	8	
11130	*Baetis intercalaris*	32	+
12200	*Isonychia sp*	125	+
13400	*Stenacron sp*	142	+
13510	*Stenonema exiguum*	1	
13521	*Stenonema femoratum*	2	
13550	*Stenonema mexicanum integrum*	9	
13561	*Stenonema pulchellum*	332	+
13570	*Stenonema terminatum*	352	+
16700	*Tricorythodes sp*	22	+
17200	*Caenis sp*	1	
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
31800	*Taeniopteryx sp*	8	
35001	*Perlodidae*	8	
52200	*Cheumatopsyche sp*	448	+
52430	*Ceratopsyche morosa group*	155	+
52510	*Hydropsyche aerata*	23	+
52520	*Hydropsyche bidens*	1	
52540	*Hydropsyche dicantha*	1	
52560	*Hydropsyche orris*	212	+
52570	*Hydropsyche simulans*	2	
52580	*Hydropsyche valanis*	1	+
52801	*Potamyia flava*	33	+
53800	*Hydroptila sp*	1	+
59970	*Petrophila sp*		+
68708	*Dubiraphia vittata group*		+
68901	*Macronychus glabratus*	1	
69400	*Stenelmis sp*	7	+
74100	*Simulium sp*	4	
77750	*Hayesomyia senata or Thienemannimyia norena*	529	+
78650	*Procladius sp*		+
80410	*Cricotopus (C.) sp*	96	+
80430	*Cricotopus (C.) tremulus group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	481	+
85625	*Rheotanytarsus exiguus group*	4614	+
87540	*Hemerodromia sp*	97	
93900	*Elimia sp*	94	+
97601	*Corbicula fluminea*	1	+
98600	*Sphaerium sp*		+
99100	*Pyganodon grandis*		+

No. Quantitative Taxa: 37 Total Taxa: 54

No. Qualitative Taxa: 39 ICI: **44**

Number of Organisms: 8111 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/30/95 River Code: 14-001 River: Great Miami River RM: 47.50

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	8	
01801	*Turbellaria*	33	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	265	+
04666	*Helobdella triserialis*	1	
04964	*Mooreobdella microstoma*		+
05800	*Caecidotea sp*	1	
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
08601	*Hydracarina*	1	
11130	*Baetis intercalaris*	3	+
12200	*Isonychia sp*	24	+
13400	*Stenacron sp*	102	+
13521	*Stenonema femoratum*	2	+
13550	*Stenonema mexicanum integrum*	1	
13561	*Stenonema pulchellum*	44	+
13570	*Stenonema terminatum*	87	+
16700	*Tricorythodes sp*	3	
17200	*Caenis sp*	40	+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*	1	+
22300	*Argia sp*		+
23909	*Boyeria vinosa*		+
26700	*Macromia sp*		+
31800	*Taeniopteryx sp*	8	
33501	*Capniidae*	1	
42700	*Belostoma sp*		+
44501	*Corixidae*		+
48410	*Corydalus cornutus*	1	+
52200	*Cheumatopsyche sp*	190	+
52430	*Ceratopsyche morosa group*	62	+
52510	*Hydropsyche aerata*	1	+
52520	*Hydropsyche bidens*	3	
52530	*Hydropsyche depravata group*	3	
52540	*Hydropsyche dicantha*	2	+
52560	*Hydropsyche orris*	60	+
52570	*Hydropsyche simulans*	15	+
52580	*Hydropsyche valanis*	1	+
52801	*Potamyia flava*	46	+
53800	*Hydroptila sp*		+
60900	*Peltodytes sp*		+
65800	*Berosus sp*		+
68075	*Psephenus herricki*		+
68901	*Macronychus glabratus*	3	
69400	*Stenelmis sp*	16	+
74100	*Simulium sp*	1	+
77750	*Hayesomyia senata or Thienemannimyia norena*	484	+
79085	*Telopelopia okoboji*	76	
80360	*Corynoneura "celeripes" (sensu Simpson & Bode, 1980)*	16	+
80420	*Cricotopus (C.) bicinctus*	25	+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
81650	*Parametriocnemus sp*	26	
82141	*Thienemanniella xena*	8	
83051	*Dicrotendipes simpsoni*	26	
83300	*Glyptotendipes (G.) sp*	25	+
84300	*Phaenopsectra obediens group*	26	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	229	+
84460	*Polypedilum (P.) fallax group*	25	
84520	*Polypedilum (Tripodura) halterale group*		+
84540	*Polypedilum (Tripodura) scalaenum group*	102	
85625	*Rheotanytarsus exiguus group*	1883	+
85814	*Tanytarsus glabrescens group*	25	
87540	*Hemerodromia sp*	168	
93900	*Elimia sp*	12	+
95100	*Physella sp*	1	+
96900	*Ferrissia sp*	1	+
97601	*Corbicula fluminea*	2	
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 53 Total Taxa: 72

No. Qualitative Taxa: 50 ICI: **40**

Number of Organisms: 4191 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/18/95 River Code: 14-001 River: Great Miami River RM: 45.65 **A**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11130	*Baetis intercalaris*	+
11200	*Callibaetis sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13510	*Stenonema exiguum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
24900	*Gomphus sp*	+
44501	*Corixidae*	+
52200	*Cheumatopsyche sp*	+
52510	*Hydropsyche aerata*	+
60900	*Peltodytes sp*	+
68075	*Psephenus herricki*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
80420	*Cricotopus (C.) bicinctus*	+
82730	*Chironomus (C.) decorus group*	+
82770	*Chironomus (C.) riparius group*	+
83040	*Dicrotendipes neomodestus*	+
84300	*Phaenopsectra obediens group*	+
84470	*Polypedilum (P.) illinoense*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
93900	*Elimia sp*	+
95100	*Physella sp*	+
96900	*Ferrissia sp*	+
97601	*Corbicula fluminea*	+

No. Quantitative Taxa: 0 Total Taxa: 35

No. Qualitative Taxa: 35 ICI:

Number of Organisms: 0 Qual EPT: **12**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/31/95 River Code: 14-001 River: Great Miami River RM: 45.65 **B**

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03042	*Fredericella australiensis*	+
03600	*Oligochaeta*	+
05900	*Lirceus sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
23909	*Boyeria vinosa*	+
24900	*Gomphus sp*	+
45400	*Trichocorixa sp*	+
47600	*Sialis sp*	+
51206	*Cyrnellus fraternus*	+
52200	*Cheumatopsyche sp*	+
52510	*Hydropsyche aerata*	+
52801	*Potamyia flava*	+
59407	*Nectopsyche candida*	+
68075	*Psephenus herricki*	+
68700	*Dubiraphia sp*	+
69400	*Stenelmis sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
78650	*Procladius sp*	+
79020	*Tanypus neopunctipennis*	+
82600	*Axarus sp*	+
82730	*Chironomus (C.) decorus group*	+
83040	*Dicrotendipes neomodestus*	+
83300	*Glyptotendipes (G.) sp*	+
83330	*Glyptotendipes (G.) barbipes*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84700	*Stenochironomus sp*	+
85625	*Rheotanytarsus exiguus group*	+
93900	*Elimia sp*	+
95100	*Physella sp*	+
96900	*Ferrissia sp*	+
97601	*Corbicula fluminea*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa:	0	Total Taxa:	40
No. Qualitative Taxa:	40	ICI:	
Number of Organisms:	0	Qual EPT:	**12**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/31/95 River Code: 14-001 River: Great Miami River RM: 45.50

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	16	
01801	*Turbellaria*	3	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	145	+
04962	*Mooreobdella fervida*	2	
05900	*Lirceus sp*	1	+
11130	*Baetis intercalaris*	2	+
12200	*Isonychia sp*	93	+
13400	*Stenacron sp*	154	+
13521	*Stenonema femoratum*	1	+
13561	*Stenonema pulchellum*	340	+
13570	*Stenonema terminatum*	380	+
16700	*Tricorythodes sp*	40	+
17200	*Caenis sp*	22	+
18100	*Anthopotamus sp*		+
18600	*Ephemera sp*		+
18750	*Hexagenia limbata*		+
21200	*Calopteryx sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	
24820	*Gomphurus externus*		+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*	1	
52200	*Cheumatopsyche sp*	557	+
52430	*Ceratopsyche morosa group*	84	+
52510	*Hydropsyche aerata*	18	
52540	*Hydropsyche dicantha*	64	+
52560	*Hydropsyche orris*	13	
52580	*Hydropsyche valanis*	2	+
52801	*Potamyia flava*	63	+
53800	*Hydroptila sp*	9	+
59407	*Nectopsyche candida*		+
59415	*Nectopsyche exquisita*	1	
59970	*Petrophila sp*		+
65800	*Berosus sp*	1	
68075	*Psephenus herricki*		+
68708	*Dubiraphia vittata group*	19	+
68901	*Macronychus glabratus*	1	
69400	*Stenelmis sp*	51	+
71900	*Tipula sp*		+
74501	*Ceratopogonidae*		+
77120	*Ablabesmyia mallochi*		+
77500	*Conchapelopia sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	1419	+
79085	*Telopelopia okoboji*	224	+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80870	*Hydrobaenus sp*		+
81201	*Nanocladius (N.) sp*		+
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	187	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
84750	*Stictochironomus sp*		+
85625	*Rheotanytarsus exiguus group*	1269	+
85814	*Tanytarsus glabrescens group*	37	
87540	*Hemerodromia sp*	32	
93900	*Elimia sp*	1	+
94400	*Fossaria sp*	1	
95100	*Physella sp*	8	+
98600	*Sphaerium sp*	4	+
99100	*Pyganodon grandis*		+
99180	*Strophitus undulatus undulatus*		+

No. Quantitative Taxa: 41 Total Taxa: 64

No. Qualitative Taxa: 50 ICI: **44**

Number of Organisms: 5269 Qual EPT: **18**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/19/95 River Code: 14-001 River: Great Miami River RM: 43.60

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
06700	*Crangonyx sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11130	*Baetis intercalaris*	+
11670	*Procloeon irrubrum*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13550	*Stenonema mexicanum integrum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
18750	*Hexagenia limbata*	+
21200	*Calopteryx sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23804	*Basiaeschna janata*	+
24900	*Gomphus sp*	+
44700	*Corisella sp*	+
45400	*Trichocorixa sp*	+
45900	*Notonecta sp*	+
52200	*Cheumatopsyche sp*	+
53800	*Hydroptila sp*	+
59970	*Petrophila sp*	+
60900	*Peltodytes sp*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
68708	*Dubiraphia vittata group*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
77120	*Ablabesmyia mallochi*	+
79085	*Telopelopia okoboji*	+
82820	*Cryptochironomus sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
93900	*Elimia sp*	+
97601	*Corbicula fluminea*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 42

No. Qualitative Taxa: 42 ICI:

Number of Organisms: 0 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/31/95 River Code: 14-001 River: Great Miami River RM: 43.30

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	107	
01801	*Turbellaria*	3	+
03121	*Paludicella articulata*	1	+
03600	*Oligochaeta*	228	+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
12200	*Isonychia sp*	54	+
13400	*Stenacron sp*	456	+
13521	*Stenonema femoratum*	12	+
13550	*Stenonema mexicanum integrum*	10	
13561	*Stenonema pulchellum*	99	+
13570	*Stenonema terminatum*	245	+
16700	*Tricorythodes sp*	66	+
17200	*Caenis sp*	8	+
18100	*Anthopotamus sp*	2	+
21300	*Hetaerina sp*	2	+
22001	*Coenagrionidae*		+
22300	*Argia sp*	12	+
24900	*Gomphus sp*		+
28705	*Pachydiplax longipennis*		+
34605	*Perlinella drymo*		+
44700	*Corisella sp*		+
45400	*Trichocorixa sp*		+
45900	*Notonecta sp*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	196	+
52430	*Ceratopsyche morosa group*	13	+
52510	*Hydropsyche aerata*	1	+
52540	*Hydropsyche dicantha*	2	
52560	*Hydropsyche orris*		+
52801	*Potamyia flava*	55	+
53800	*Hydroptila sp*		+
59407	*Nectopsyche candida*		+
59415	*Nectopsyche exquisita*	1	+
59970	*Petrophila sp*		+
60900	*Peltodytes sp*		+
68075	*Psephenus herricki*		+
68601	*Ancyronyx variegata*	1	
68901	*Macronychus glabratus*	1	
69400	*Stenelmis sp*	3	+
77750	*Hayesomyia senata or Thienemannimyia norena*	328	+
79085	*Telopelopia okoboji*	89	
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*	89	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	119	+
84540	*Polypedilum (Tripodura) scalaenum group*	30	+
85625	*Rheotanytarsus exiguus group*	1729	+
87540	*Hemerodromia sp*	204	
93900	*Elimia sp*	9	+
95100	*Physella sp*	2	+
96900	*Ferrissia sp*	3	
97601	*Corbicula fluminea*	2	+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 36 Total Taxa: 53

No. Qualitative Taxa: 43 ICI: **40**

Number of Organisms: 4183 Qual EPT: **17**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/31/95 River Code: 14-001 River: Great Miami River RM: 38.50

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	9	
01801	*Turbellaria*	18	+
03360	*Plumatella sp*		+
03600	*Oligochaeta*	64	+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*	10	+
08601	*Hydracarina*	8	+
12200	*Isonychia sp*	5	
13400	*Stenacron sp*	253	+
13510	*Stenonema exiguum*	1	
13521	*Stenonema femoratum*	1	+
13550	*Stenonema mexicanum integrum*	29	
13561	*Stenonema pulchellum*	90	+
13570	*Stenonema terminatum*	453	+
16700	*Tricorythodes sp*	123	+
17200	*Caenis sp*	45	+
18100	*Anthopotamus sp*		+
21200	*Calopteryx sp*	1	
21300	*Hetaerina sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*	6	+
24900	*Gomphus sp*		+
25610	*Stylurus notatus*		+
44700	*Corisella sp*		+
45400	*Trichocorixa sp*		+
51206	*Cyrnellus fraternus*	8	
52200	*Cheumatopsyche sp*	193	+
52430	*Ceratopsyche morosa group*	29	+
52510	*Hydropsyche aerata*	1	+
52540	*Hydropsyche dicantha*	5	+
52560	*Hydropsyche orris*	3	
52570	*Hydropsyche simulans*	2	
52580	*Hydropsyche valanis*	2	
52801	*Potamyia flava*	31	+
53800	*Hydroptila sp*		+
59407	*Nectopsyche candida*	1	+
65800	*Berosus sp*		+
68708	*Dubiraphia vittata group*		+
69400	*Stenelmis sp*	1	+
74501	*Ceratopogonidae*		+
77120	*Ablabesmyia mallochi*	187	
77750	*Hayesomyia senata or Thienemannimyia norena*	624	+
79085	*Telopelopia okoboji*	63	
82730	*Chironomus (C.) decorus group*		+
82770	*Chironomus (C.) riparius group*		+
82820	*Cryptochironomus sp*		+
83300	*Glyptotendipes (G.) sp*	1997	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	437	+
84520	*Polypedilum (Tripodura) halterale group*		+
85625	*Rheotanytarsus exiguus group*	4244	+
87540	*Hemerodromia sp*	97	
93900	*Elimia sp*		+
95100	*Physella sp*	55	+
97601	*Corbicula fluminea*		+

No. Quantitative Taxa: 36 Total Taxa: 55
No. Qualitative Taxa: 43 ICI: **42**
Number of Organisms: 9097 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/31/95 River Code: 14-001 River: Great Miami River RM: 38.20

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	22	
01801	*Turbellaria*	5	+
03121	*Paludicella articulata*	1	+
03360	*Plumatella sp*		+
03451	*Urnatella gracilis*	1	+
03600	*Oligochaeta*	72	+
05800	*Caecidotea sp*	1	
06201	*Hyalella azteca*		+
12200	*Isonychia sp*	6	
13400	*Stenacron sp*	422	+
13510	*Stenonema exiguum*	15	
13521	*Stenonema femoratum*	5	+
13550	*Stenonema mexicanum integrum*	36	
13561	*Stenonema pulchellum*	29	+
13570	*Stenonema terminatum*	300	+
16700	*Tricorythodes sp*	19	+
17200	*Caenis sp*	36	+
21200	*Calopteryx sp*	1	
21300	*Hetaerina sp*	3	+
22001	*Coenagrionidae*		+
22300	*Argia sp*	7	+
51206	*Cyrnellus fraternus*	4	
52200	*Cheumatopsyche sp*	47	+
52430	*Ceratopsyche morosa group*	3	+
52510	*Hydropsyche aerata*	1	+
52801	*Potamyia flava*	5	+
53800	*Hydroptila sp*		+
59407	*Nectopsyche candida*	1	+
59415	*Nectopsyche exquisita*		+
60900	*Peltodytes sp*		+
68075	*Psephenus herricki*		+
68601	*Ancyronyx variegata*	8	+
68708	*Dubiraphia vittata group*		+
69400	*Stenelmis sp*	2	
77130	*Ablabesmyia rhamphe group*	55	
77750	*Hayesomyia senata or Thienemannimyia norena*	327	+
79085	*Telopelopia okoboji*	164	+
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	54	
82730	*Chironomus (C.) decorus group*		+
83040	*Dicrotendipes neomodestus*	54	
83300	*Glyptotendipes (G.) sp*	927	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	109	+
84520	*Polypedilum (Tripodura) halterale group*	55	
84790	*Tribelos fuscicorne*	54	
85625	*Rheotanytarsus exiguus group*	2617	+
87540	*Hemerodromia sp*	8	
93900	*Elimia sp*	27	+
95100	*Physella sp*	4	+
96900	*Ferrissia sp*		+

No. Quantitative Taxa: 39 Total Taxa: 49

No. Qualitative Taxa: 35 ICI: **40**

Number of Organisms: 5507 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 37.00

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	58	
01801	*Turbellaria*	27	+
03360	*Plumatella sp*	1	
03451	*Urnatella gracilis*	2	
03600	*Oligochaeta*	56	+
04962	*Mooreobdella fervida*		+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*	1	
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	12	+
12200	*Isonychia sp*	294	+
13400	*Stenacron sp*	255	+
13510	*Stenonema exiguum*	37	+
13521	*Stenonema femoratum*	2	
13550	*Stenonema mexicanum integrum*	71	
13561	*Stenonema pulchellum*	297	+
13570	*Stenonema terminatum*	413	+
16700	*Tricorythodes sp*	118	+
17200	*Caenis sp*	2	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*	12	+
24820	*Gomphurus externus*		+
26700	*Macromia sp*		+
51206	*Cyrnellus fraternus*	23	
52200	*Cheumatopsyche sp*	1102	+
52430	*Ceratopsyche morosa group*	173	+
52510	*Hydropsyche aerata*	5	+
52520	*Hydropsyche bidens*	7	
52540	*Hydropsyche dicantha*	8	+
52560	*Hydropsyche orris*	112	+
52580	*Hydropsyche valanis*	7	+
52801	*Potamyia flava*	166	+
53800	*Hydroptila sp*	26	
59407	*Nectopsyche candida*	1	
68901	*Macronychus glabratus*	4	
69400	*Stenelmis sp*	30	+
74100	*Simulium sp*	1	+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	568	+
80440	*Cricotopus (C.) trifascia group*		+
82820	*Cryptochironomus sp*		+
83300	*Glyptotendipes (G.) sp*	2924	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	1056	+
85625	*Rheotanytarsus exiguus group*	3980	+
87540	*Hemerodromia sp*	73	
93900	*Elimia sp*	95	+
94400	*Fossaria sp*	8	
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 38 Total Taxa: 52
No. Qualitative Taxa: 39 ICI: **46**
Number of Organisms: 12027 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 34.30

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	72	
01801	*Turbellaria*	19	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	57	+
04601	*Glossiphoniidae*		+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*		+
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
08601	*Hydracarina*	8	
11130	*Baetis intercalaris*	13	+
12200	*Isonychia sp*	263	+
13400	*Stenacron sp*	24	+
13510	*Stenonema exiguum*	17	
13550	*Stenonema mexicanum integrum*	22	
13561	*Stenonema pulchellum*	257	+
13570	*Stenonema terminatum*	121	+
16700	*Tricorythodes sp*	88	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22300	*Argia sp*		+
24820	*Gomphurus externus*		+
45400	*Trichocorixa sp*		+
50315	*Chimarra obscura*	2	
51206	*Cyrnellus fraternus*	2	
52200	*Cheumatopsyche sp*	1083	+
52430	*Ceratopsyche morosa group*	711	+
52510	*Hydropsyche aerata*	143	+
52520	*Hydropsyche bidens*	10	
52540	*Hydropsyche dicantha*	4	+
52560	*Hydropsyche orris*	204	+
52580	*Hydropsyche valanis*	1	
52801	*Potamyia flava*	941	+
53800	*Hydroptila sp*	17	+
59407	*Nectopsyche candida*	1	
59415	*Nectopsyche exquisita*	1	
59970	*Petrophila sp*		+
63900	*Laccophilus sp*		+
68601	*Ancyronyx variegata*	1	
68901	*Macronychus glabratus*	1	+
69400	*Stenelmis sp*	3	+
74100	*Simulium sp*	56	+
77750	*Hayesomyia senata or Thienemannimyia norena*	1210	+
79085	*Telopelopia okoboji*		+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*		+
82141	*Thienemanniella xena*		+
82730	*Chironomus (C.) decorus group*		+
83003	*Dicrotendipes fumidus*		+
83040	*Dicrotendipes neomodestus*		+
83300	*Glyptotendipes (G.) sp*	454	+
84300	*Phaenopsectra obediens group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	4084	+
84470	*Polypedilum (P.) illinoense*		+
85625	*Rheotanytarsus exiguus group*	12556	+
87540	*Hemerodromia sp*	42	+
93900	*Elimia sp*		+
97601	*Corbicula fluminea*		+
98001	*Sphaeriidae*		+

No. Quantitative Taxa: 37 Total Taxa: 65

No. Qualitative Taxa: 51 ICI: **44**

Number of Organisms: 22491 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 33.60

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	32	
01801	*Turbellaria*	9	+
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	289	+
04962	*Mooreobdella fervida*		+
04964	*Mooreobdella microstoma*		+
06201	*Hyalella azteca*	76	+
11130	*Baetis intercalaris*	10	+
12200	*Isonychia sp*	46	+
13400	*Stenacron sp*	176	+
13510	*Stenonema exiguum*	18	
13521	*Stenonema femoratum*		+
13550	*Stenonema mexicanum integrum*	30	
13561	*Stenonema pulchellum*	191	+
13570	*Stenonema terminatum*	297	+
13590	*Stenonema vicarium*		+
16700	*Tricorythodes sp*	118	+
17200	*Caenis sp*	28	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	1	+
22300	*Argia sp*	12	+
24820	*Gomphurus externus*	1	+
34605	*Perlinella drymo*		+
45400	*Trichocorixa sp*		+
47600	*Sialis sp*		+
48410	*Corydalus cornutus*	1	
51206	*Cyrnellus fraternus*	2	
52200	*Cheumatopsyche sp*	574	+
52430	*Ceratopsyche morosa group*	11	+
52510	*Hydropsyche aerata*	60	+
52520	*Hydropsyche bidens*	5	
52540	*Hydropsyche dicantha*	1	
52560	*Hydropsyche orris*	43	
52801	*Potamyia flava*	239	+
59407	*Nectopsyche candida*	2	+
66500	*Enochrus sp*		+
68700	*Dubiraphia sp*	1	
69400	*Stenelmis sp*	1	+
77750	*Hayesomyia senata or Thienemannimyia norena*	931	+
80410	*Cricotopus (C.) sp*	72	+
81460	*Orthocladius (O.) sp*		+
83300	*Glyptotendipes (G.) sp*	2435	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	501	+
84540	*Polypedilum (Tripodura) scalaenum group*	72	
85625	*Rheotanytarsus exiguus group*	3653	+
87540	*Hemerodromia sp*	144	
93900	*Elimia sp*	1	+
95100	*Physella sp*	17	+
96900	*Ferrissia sp*	19	+
98600	*Sphaerium sp*	1	

No. Quantitative Taxa: 40 Total Taxa: 50

No. Qualitative Taxa: 37 ICI: **42**

Number of Organisms: 10121 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 31.60

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
04935	*Erpobdella punctata punctata*	+
08250	*Orconectes (Procericambarus) rusticus*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
18100	*Anthopotamus sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
24900	*Gomphus sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52520	*Hydropsyche bidens*	+
52801	*Potamyia flava*	+
53800	*Hydroptila sp*	+
59407	*Nectopsyche candida*	+
59415	*Nectopsyche exquisita*	+
65800	*Berosus sp*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
69400	*Stenelmis sp*	+
77120	*Ablabesmyia mallochi*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80420	*Cricotopus (C.) bicinctus*	+
82730	*Chironomus (C.) decorus group*	+
82770	*Chironomus (C.) riparius group*	+
83300	*Glyptotendipes (G.) sp*	+
93900	*Elimia sp*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 35

No. Qualitative Taxa: 35 ICI:

Number of Organisms: 0 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/23/95 River Code: 14-001 River: Great Miami River RM: 29.90

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	48	
01801	*Turbellaria*	22	+
03121	*Paludicella articulata*	1	
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	64	+
04964	*Mooreobdella microstoma*		+
08601	*Hydracarina*	16	
11130	*Baetis intercalaris*	44	+
12200	*Isonychia sp*	137	+
13400	*Stenacron sp*	29	+
13510	*Stenonema exiguum*	35	
13521	*Stenonema femoratum*		+
13550	*Stenonema mexicanum integrum*	41	
13561	*Stenonema pulchellum*	152	+
13570	*Stenonema terminatum*	434	+
16700	*Tricorythodes sp*	148	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	1	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
23909	*Boyeria vinosa*		+
26700	*Macromia sp*		+
45400	*Trichocorixa sp*		+
47600	*Sialis sp*		+
48410	*Corydalus cornutus*	1	+
50315	*Chimarra obscura*		+
51206	*Cyrnellus fraternus*	1	
52200	*Cheumatopsyche sp*	1552	+
52430	*Ceratopsyche morosa group*	232	+
52510	*Hydropsyche aerata*	103	+
52520	*Hydropsyche bidens*	30	
52560	*Hydropsyche orris*	746	+
52570	*Hydropsyche simulans*	2	
52580	*Hydropsyche valanis*	3	+
52801	*Potamyia flava*	3403	+
53800	*Hydroptila sp*	8	+
59407	*Nectopsyche candida*	2	
60900	*Peltodytes sp*		+
68130	*Helichus sp*		+
68901	*Macronychus glabratus*	2	
69400	*Stenelmis sp*	2	+
71100	*Hexatoma sp*		+
74100	*Simulium sp*	29	+
77750	*Hayesomyia senata or Thienemannimyia norena*	1189	+
77800	*Helopelopia sp*		+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*		+
83000	*Dicrotendipes sp*		+
83300	*Glyptotendipes (G.) sp*	132	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	5152	+
84520	*Polypedilum (Tripodura) halterale group*		+
84540	*Polypedilum (Tripodura) scalaenum group*		+
85625	*Rheotanytarsus exiguus group*	10567	+
87540	*Hemerodromia sp*	65	+
93900	*Elimia sp*		+
95100	*Physella sp*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 35 Total Taxa: 61

No. Qualitative Taxa: 51 ICI: **46**

Number of Organisms: 24394 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 27.10

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	2	+
03360	*Plumatella sp*		+
03451	*Urnatella gracilis*		+
03600	*Oligochaeta*	16	+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*	1	
06201	*Hyalella azteca*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	16	+
12200	*Isonychia sp*	184	+
13400	*Stenacron sp*	11	+
13510	*Stenonema exiguum*	7	
13550	*Stenonema mexicanum integrum*	3	
13561	*Stenonema pulchellum*	117	+
13570	*Stenonema terminatum*	170	+
16700	*Tricorythodes sp*	50	+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24820	*Gomphurus externus*		+
31800	*Taeniopteryx sp*	16	
52200	*Cheumatopsyche sp*	683	+
52430	*Ceratopsyche morosa group*	80	+
52510	*Hydropsyche aerata*	46	+
52520	*Hydropsyche bidens*	7	
52560	*Hydropsyche orris*	86	+
52570	*Hydropsyche simulans*	10	
52580	*Hydropsyche valanis*	5	+
52801	*Potamyia flava*	1995	+
53800	*Hydroptila sp*	16	+
59407	*Nectopsyche candida*	2	
59970	*Petrophila sp*	1	
69400	*Stenelmis sp*	34	+
74100	*Simulium sp*	2	+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	1855	+
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
83250	*Gillotia alboviridis*		+
83300	*Glyptotendipes (G.) sp*	137	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	1580	+
84520	*Polypedilum (Tripodura) halterale group*		+
84540	*Polypedilum (Tripodura) scalaenum group*		+
85625	*Rheotanytarsus exiguus group*	3916	+
87540	*Hemerodromia sp*	64	+
93900	*Elimia sp*		+
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*	1	+
98600	*Sphaerium sp*	3	+

No. Quantitative Taxa: 32 Total Taxa: 54

No. Qualitative Taxa: 45 ICI: **46**

Number of Organisms: 11116 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 24.70

Taxa Code	Taxa	Quan/Qual
00653	*Eunapius fragilis*	+
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
03600	*Oligochaeta*	+
04964	*Mooreobdella microstoma*	+
06700	*Crangonyx sp*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13561	*Stenonema pulchellum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
21200	*Calopteryx sp*	+
21300	*Hetaerina sp*	+
22300	*Argia sp*	+
48410	*Corydalus cornutus*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52510	*Hydropsyche aerata*	+
52520	*Hydropsyche bidens*	+
52560	*Hydropsyche orris*	+
52801	*Potamyia flava*	+
53800	*Hydroptila sp*	+
59970	*Petrophila sp*	+
69400	*Stenelmis sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80420	*Cricotopus (C.) bicinctus*	+
80440	*Cricotopus (C.) trifascia group*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
85625	*Rheotanytarsus exiguus group*	+
87540	*Hemerodromia sp*	+
93900	*Elimia sp*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa:	0	Total Taxa:	34
No. Qualitative Taxa:	34	ICI:	
Number of Organisms:	0	Qual EPT:	**13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 22.50

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	22	+
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*	1	+
03600	*Oligochaeta*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11130	*Baetis intercalaris*	26	+
11650	*Procloeon sp (w/ hindwing pads)*		+
12200	*Isonychia sp*	131	+
12924	*Heptagenia flavescens*		+
13400	*Stenacron sp*	55	+
13510	*Stenonema exiguum*	41	
13550	*Stenonema mexicanum integrum*	74	
13561	*Stenonema pulchellum*	85	+
13570	*Stenonema terminatum*	769	+
16700	*Tricorythodes sp*	111	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	8	
22001	*Coenagrionidae*		+
22300	*Argia sp*	2	+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*	1	
52200	*Cheumatopsyche sp*	649	+
52430	*Ceratopsyche morosa group*	174	+
52510	*Hydropsyche aerata*	28	+
52520	*Hydropsyche bidens*	6	
52540	*Hydropsyche dicantha*	1	
52560	*Hydropsyche orris*	322	
52570	*Hydropsyche simulans*		+
52801	*Potamyia flava*	3333	+
53800	*Hydroptila sp*		+
59407	*Nectopsyche candida*	1	
69400	*Stenelmis sp*	2	+
74100	*Simulium sp*	22	
77750	*Hayesomyia senata or Thienemannimyia norena*	549	+
78750	*Rheopelopia paramaculipennis*		+
80430	*Cricotopus (C.) tremulus group*		+
80440	*Cricotopus (C.) trifascia group*		+
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*	915	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	5306	+
84520	*Polypedilum (Tripodura) halterale group*		+
85625	*Rheotanytarsus exiguus group*	17566	+
87540	*Hemerodromia sp*	64	+
96900	*Ferrissia sp*	1	+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*	2	+

No. Quantitative Taxa:	31	Total Taxa:	47
No. Qualitative Taxa:	38	ICI:	**42**
Number of Organisms:	30268	Qual EPT:	**16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 17.90

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*		+
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*		+
11130	*Baetis intercalaris*	106	+
11670	*Procloeon irrubrum*		+
12200	*Isonychia sp*	435	+
13400	*Stenacron sp*		+
13510	*Stenonema exiguum*	2	+
13550	*Stenonema mexicanum integrum*	73	
13561	*Stenonema pulchellum*	204	+
13570	*Stenonema terminatum*	291	+
16700	*Tricorythodes sp*	66	
18100	*Anthopotamus sp*		+
21300	*Hetaerina sp*	2	
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*		+
52200	*Cheumatopsyche sp*	689	+
52430	*Ceratopsyche morosa group*	394	+
52510	*Hydropsyche aerata*	134	+
52520	*Hydropsyche bidens*	146	
52560	*Hydropsyche orris*	1391	+
52570	*Hydropsyche simulans*	19	
52580	*Hydropsyche valanis*	20	+
52801	*Potamyia flava*	5385	+
68901	*Macronychus glabratus*	16	
69400	*Stenelmis sp*	29	+
74100	*Simulium sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	2065	+
80410	*Cricotopus (C.) sp*		+
80430	*Cricotopus (C.) tremulus group*		+
83300	*Glyptotendipes (G.) sp*		+
84300	*Phaenopsectra obediens group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	4820	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
85625	*Rheotanytarsus exiguus group*	14459	+
87540	*Hemerodromia sp*	25	+
93900	*Elimia sp*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 25 Total Taxa: 41

No. Qualitative Taxa: 34 ICI: **42**

Number of Organisms: 30774 Qual EPT: **14**

06/11/98

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 14.80

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	8	
01801	*Turbellaria*	2	+
03451	*Urnatella gracilis*	8	
03600	*Oligochaeta*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11130	*Baetis intercalaris*	31	+
12200	*Isonychia sp*	297	+
12924	*Heptagenia flavescens*	2	
13400	*Stenacron sp*	46	+
13550	*Stenonema mexicanum integrum*	19	
13561	*Stenonema pulchellum*	139	+
13570	*Stenonema terminatum*	485	+
16700	*Tricorythodes sp*	18	+
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
22300	*Argia sp*		+
48410	*Corydalus cornutus*	3	+
52200	*Cheumatopsyche sp*	796	+
52430	*Ceratopsyche morosa group*	398	+
52510	*Hydropsyche aerata*	2	+
52520	*Hydropsyche bidens*	1034	+
52560	*Hydropsyche orris*	1353	+
52801	*Potamyia flava*	5410	+
68075	*Psephenus herricki*		+
69400	*Stenelmis sp*	1	+
74100	*Simulium sp*	97	+
77750	*Hayesomyia senata or Thienemannimyia norena*	1827	+
80440	*Cricotopus (C.) trifascia group*		+
81201	*Nanocladius (N.) sp*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*		+
83300	*Glyptotendipes (G.) sp*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	3288	+
85625	*Rheotanytarsus exiguus group*	11142	+
87540	*Hemerodromia sp*	144	
98600	*Sphaerium sp*		+

Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa: 24 Total Taxa: 37

No. Qualitative Taxa: 32 ICI: **42**

Number of Organisms: 26550 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/24/95 River Code: 14-001 River: Great Miami River RM: 9.50

Taxa Code	Taxa	Quan	Qual
01200	*Cordylophora lacustris*	1	
01320	*Hydra sp*	32	
01801	*Turbellaria*	2	+
03360	*Plumatella sp*	1	+
03451	*Urnatella gracilis*	128	
03600	*Oligochaeta*	416	+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	27	+
12200	*Isonychia sp*	177	+
13000	*Leucrocuta sp*	8	
13400	*Stenacron sp*	42	+
13550	*Stenonema mexicanum integrum*	25	
13561	*Stenonema pulchellum*	47	+
13570	*Stenonema terminatum*	225	+
16700	*Tricorythodes sp*	26	
17200	*Caenis sp*		+
18100	*Anthopotamus sp*		+
18750	*Hexagenia limbata*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
48410	*Corydalus cornutus*	1	+
51206	*Cyrnellus fraternus*	30	
52200	*Cheumatopsyche sp*	376	+
52430	*Ceratopsyche morosa group*	29	+
52510	*Hydropsyche aerata*		+
52520	*Hydropsyche bidens*	318	+
52560	*Hydropsyche orris*	579	+
52801	*Potamyia flava*	2634	+
53800	*Hydroptila sp*		+
59407	*Nectopsyche candida*	1	
68075	*Psephenus herricki*		+
69400	*Stenelmis sp*	2	+
74100	*Simulium sp*	20	+
77750	*Hayesomyia senata or Thienemannimyia norena*	480	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
81201	*Nanocladius (N.) sp*	480	
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
83300	*Glyptotendipes (G.) sp*	1920	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	6240	+
85625	*Rheotanytarsus exiguus group*	63840	+
87540	*Hemerodromia sp*	144	
93900	*Elimia sp*		+
98600	*Sphaerium sp*		+

No. Quantitative Taxa: 30 Total Taxa: 46

No. Qualitative Taxa: 36 ICI: **44**

Number of Organisms: 78251 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 8.40

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	1	+
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	259	+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
06800	*Gammarus sp*	2	
11130	*Baetis intercalaris*	5	+
12200	*Isonychia sp*	90	+
13000	*Leucrocuta sp*		+
13510	*Stenonema exiguum*	11	
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	8	+
13570	*Stenonema terminatum*	18	+
16700	*Tricorythodes sp*	27	+
17200	*Caenis sp*	1	
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
48410	*Corydalus cornutus*		+
52200	*Cheumatopsyche sp*	21	+
52430	*Ceratopsyche morosa group*	10	+
52510	*Hydropsyche aerata*	2	
52520	*Hydropsyche bidens*	6	
52560	*Hydropsyche orris*	161	
52580	*Hydropsyche valanis*		+
52801	*Potamyia flava*	5844	+
59407	*Nectopsyche candida*	9	
68130	*Helichus sp*		+
68901	*Macronychus glabratus*	3	
69400	*Stenelmis sp*	28	+
74100	*Simulium sp*	10	+
77750	*Hayesomyia senata or Thienemannimyia norena*	1377	+
80420	*Cricotopus (C.) bicinctus*		+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
83250	*Gillotia alboviridis*	125	+
83300	*Glyptotendipes (G.) sp*	250	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	4506	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
85625	*Rheotanytarsus exiguus group*	5758	+
87540	*Hemerodromia sp*	166	
98600	*Sphaerium sp*	11	+

No. Quantitative Taxa: 28 Total Taxa: 43

No. Qualitative Taxa: 33 ICI: **38**

Number of Organisms: 18710 Qual EPT: **11**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-001 River: Great Miami River RM: 5.70

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*		+
03360	*Plumatella sp*		+
03600	*Oligochaeta*	401	+
06700	*Crangonyx sp*		+
08601	*Hydracarina*	32	
11130	*Baetis intercalaris*	111	+
12200	*Isonychia sp*	141	+
12924	*Heptagenia flavescens*	1	+
13510	*Stenonema exiguum*	27	+
13550	*Stenonema mexicanum integrum*	1	
13561	*Stenonema pulchellum*	341	+
13570	*Stenonema terminatum*	52	+
16700	*Tricorythodes sp*	34	+
17200	*Caenis sp*	33	
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
24900	*Gomphus sp*	1	+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*	6	
50315	*Chimarra obscura*	1	
51300	*Neureclipsis sp*		+
52200	*Cheumatopsyche sp*	689	+
52430	*Ceratopsyche morosa group*	346	+
52510	*Hydropsyche aerata*		+
52520	*Hydropsyche bidens*	47	
52560	*Hydropsyche orris*	698	+
52570	*Hydropsyche simulans*	7	+
52801	*Potamyia flava*	3368	+
53800	*Hydroptila sp*		+
68601	*Ancyronyx variegata*	1	
68700	*Dubiraphia sp*	2	
68901	*Macronychus glabratus*	41	
69400	*Stenelmis sp*	12	+
70600	*Antocha sp*	1	
74100	*Simulium sp*	152	+
77750	*Hayesomyia senata or Thienemannimyia norena*	513	+
78140	*Labrundinia pilosella*		+
78650	*Procladius sp*		+
79085	*Telopelopia okoboji*	103	+
80420	*Cricotopus (C.) bicinctus*		+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*		+
83250	*Gillotia alboviridis*		+
83300	*Glyptotendipes (G.) sp*	51	+
83820	*Microtendipes "caelum" (sensu Simpson & Bode, 1980)*	51	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	1282	+
84540	*Polypedilum (Tripodura) scalaenum group*	51	
85625	*Rheotanytarsus exiguus group*	3229	+
87540	*Hemerodromia sp*	243	+
95100	*Physella sp*		+
99240	*Lasmigona complanata*		+

No. Quantitative Taxa: 34 Total Taxa: 52

No. Qualitative Taxa: 40 ICI: **42**

Number of Organisms: 12069 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/11/95 River Code: 14-029 River: Bear Creek RM: 12.10

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*	3	+
03600	*Oligochaeta*	46	+
05900	*Lirceus sp*	1	+
06730	*Crangonyx setodactylus*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11120	*Baetis flavistriga*	2	+
11651	*Procloeon sp (w/o hindwing pads)*		+
13000	*Leucrocuta sp*	1	+
13400	*Stenacron sp*	25	+
13521	*Stenonema femoratum*	1	+
17200	*Caenis sp*	59	+
21200	*Calopteryx sp*	1	+
22001	*Coenagrionidae*		+
47600	*Sialis sp*		+
50301	*Chimarra aterrima*		+
52200	*Cheumatopsyche sp*	9	+
58505	*Helicopsyche borealis*	78	+
63300	*Hydroporus sp*		+
68075	*Psephenus herricki*	12	+
68130	*Helichus sp*		+
68707	*Dubiraphia quadrinotata*		+
68708	*Dubiraphia vittata group*	2	+
69200	*Optioservus sp*	13	
69400	*Stenelmis sp*	162	+
71100	*Hexatoma sp*	1	+
71300	*Limonia sp*		+
71900	*Tipula sp*		+
72700	*Anopheles sp*		+
77500	*Conchapelopia sp*	22	+
77800	*Helopelopia sp*	6	+
80370	*Corynoneura lobata*	12	+
80410	*Cricotopus (C.) sp*	5	
81650	*Parametriocnemus sp*		+
82820	*Cryptochironomus sp*	5	
83040	*Dicrotendipes neomodestus*	72	
83820	*Microtendipes "caelum" (sensu Simpson & Bode, 1980)*		+
83840	*Microtendipes pedellus group*	149	+
84210	*Paratendipes albimanus or P. duplicatus*	248	+
84315	*Phaenopsectra flavipes*	11	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*		+
84460	*Polypedilum (P.) fallax group*	39	+
84470	*Polypedilum (P.) illinoense*		+
84540	*Polypedilum (Tripodura) scalaenum group*	61	+
84700	*Stenochironomus sp*	5	
84750	*Stictochironomus sp*		+
85501	*Paratanytarsus n.sp 1*	44	+
85800	*Tanytarsus sp*	5	
85814	*Tanytarsus glabrescens group*	6	+
95100	*Physella sp*	1	
98200	*Pisidium sp*	8	

No. Quantitative Taxa: 33 Total Taxa: 50

No. Qualitative Taxa: 41 ICI: **38**

Number of Organisms: 1115 Qual EPT: **9**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/06/95 River Code: 14-029 River: Bear Creek RM: 9.90

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
05900	*Lirceus sp*	+
08270	*Orconectes (Rhoadesius) sloanii*	+
11200	*Callibaetis sp*	+
13521	*Stenonema femoratum*	+
17200	*Caenis sp*	+
21200	*Calopteryx sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23600	*Aeshna sp*	+
23909	*Boyeria vinosa*	+
52200	*Cheumatopsyche sp*	+
52530	*Hydropsyche depravata group*	+
58505	*Helicopsyche borealis*	+
66700	*Helochares maculicollis*	+
67500	*Laccobius sp*	+
67700	*Paracymus sp*	+
67800	*Tropisternus sp*	+
68075	*Psephenus herricki*	+
68707	*Dubiraphia quadrinotata*	+
68708	*Dubiraphia vittata group*	+
69400	*Stenelmis sp*	+
70501	*Tipulidae*	+
72700	*Anopheles sp*	+
77500	*Conchapelopia sp*	+
77800	*Helopelopia sp*	+
78350	*Meropelopia sp*	+
78401	*Natarsia species A (sensu Roback, 1978)*	+
80370	*Corynoneura lobata*	+
81201	*Nanocladius (N.) sp*	+
82730	*Chironomus (C.) decorus group*	+
83040	*Dicrotendipes neomodestus*	+
83820	*Microtendipes "caelum" (sensu Simpson & Bode, 1980)*	+
83840	*Microtendipes pedellus group*	+
84210	*Paratendipes albimanus or P. duplicatus*	+
84315	*Phaenopsectra flavipes*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84460	*Polypedilum (P.) fallax group*	+
84470	*Polypedilum (P.) illinoense*	+
84480	*Polypedilum (P.) laetum group*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
84750	*Stictochironomus sp*	+
85500	*Paratanytarsus sp*	+
85625	*Rheotanytarsus exiguus group*	+
85814	*Tanytarsus glabrescens group*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 47

No. Qualitative Taxa: 47 ICI:

Number of Organisms: 0 Qual EPT: **6**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/06/95 River Code: 14-029 River: Bear Creek RM: 5.20

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
06201	*Hyalella azteca*	+
08250	*Orconectes (Procericambarus) rusticus*	+
08270	*Orconectes (Rhoadesius) sloanii*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18600	*Ephemera sp*	+
21200	*Calopteryx sp*	+
22001	*Coenagrionidae*	+
23909	*Boyeria vinosa*	+
24900	*Gomphus sp*	+
48410	*Corydalus cornutus*	+
50301	*Chimarra aterrima*	+
50315	*Chimarra obscura*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52530	*Hydropsyche depravata group*	+
53501	*Hydroptilidae*	+
58505	*Helicopsyche borealis*	+
65800	*Berosus sp*	+
67800	*Tropisternus sp*	+
68075	*Psephenus herricki*	+
68700	*Dubiraphia sp*	+
69400	*Stenelmis sp*	+
71900	*Tipula sp*	+
77500	*Conchapelopia sp*	+
78450	*Nilotanypus fimbriatus*	+
80360	*Corynoneura "celeripes" (sensu Simpson & Bode, 1980)*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80430	*Cricotopus (C.) tremulus group*	+
81650	*Parametriocnemus sp*	+
82101	*Thienemanniella n.sp 1*	+
83840	*Microtendipes pedellus group*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
85261	*Cladotanytarsus vanderwulpi group Type 1*	+
85625	*Rheotanytarsus exiguus group*	+
85800	*Tanytarsus sp*	+
85814	*Tanytarsus glabrescens group*	+
86100	*Chrysops sp*	+
87540	*Hemerodromia sp*	+
94400	*Fossaria sp*	+
95100	*Physella sp*	+
96900	*Ferrissia sp*	+

No. Quantitative Taxa: 0 Total Taxa: 50

No. Qualitative Taxa: 50 ICI:

Number of Organisms: 0 Qual EPT: **14**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/06/95 River Code: 14-029 River: Bear Creek RM: 2.10

Taxa Code	Taxa	Quan/Qual
06201	*Hyalella azteca*	+
06700	*Crangonyx sp*	+
11120	*Baetis flavistriga*	+
11130	*Baetis intercalaris*	+
11650	*Procloeon sp (w/ hindwing pads)*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13560	*Stenonema pulchellum group*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18600	*Ephemera sp*	+
21200	*Calopteryx sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23909	*Boyeria vinosa*	+
50315	*Chimarra obscura*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52530	*Hydropsyche depravata group*	+
53800	*Hydroptila sp*	+
58505	*Helicopsyche borealis*	+
59550	*Oecetis inconspicua complex sp A (sensu Floyd, 1995)*	+
68075	*Psephenus herricki*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
71900	*Tipula sp*	+
74501	*Ceratopogonidae*	+
77500	*Conchapelopia sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
80370	*Corynoneura lobata*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	+
82820	*Cryptochironomus sp*	+
83040	*Dicrotendipes neomodestus*	+
83820	*Microtendipes "caelum" (sensu Simpson & Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
85230	*Cladotanytarsus mancus group*	+
85264	*Cladotanytarsus vanderwulpi group Type 4*	+
85500	*Paratanytarsus sp*	+
85625	*Rheotanytarsus exiguus group*	+
87540	*Hemerodromia sp*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 45

No. Qualitative Taxa: 45 ICI:

Number of Organisms: 0 Qual EPT: **18**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-029 River: Bear Creek RM: 0.20

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
04935	*Erpobdella punctata punctata*	+
06201	*Hyalella azteca*	+
06700	*Crangonyx sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
13570	*Stenonema terminatum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
18100	*Anthopotamus sp*	+
18600	*Ephemera sp*	+
21200	*Calopteryx sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23909	*Boyeria vinosa*	+
24900	*Gomphus sp*	+
26700	*Macromia sp*	+
47600	*Sialis sp*	+
50315	*Chimarra obscura*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52530	*Hydropsyche depravata group*	+
53501	*Hydroptilidae*	+
58505	*Helicopsyche borealis*	+
66500	*Enochrus sp*	+
67800	*Tropisternus sp*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
68708	*Dubiraphia vittata group*	+
68901	*Macronychus glabratus*	+
74100	*Simulium sp*	+
77120	*Ablabesmyia mallochi*	+
77500	*Conchapelopia sp*	+
77740	*Hayesomyia senata*	+
77800	*Helopelopia sp*	+
80410	*Cricotopus (C.) sp*	+
80440	*Cricotopus (C.) trifascia group*	+
82730	*Chironomus (C.) decorus group*	+
82820	*Cryptochironomus sp*	+
84300	*Phaenopsectra obediens group*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
85625	*Rheotanytarsus exiguus group*	+
85720	*Stempellinella n.sp nr. flavidula*	+
87540	*Hemerodromia sp*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 52

No. Qualitative Taxa: 52 ICI:

Number of Organisms: 0 Qual EPT: **16**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/06/95 River Code: 14-036 River: Holes Creek RM: 5.60

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03360	*Plumatella sp*	+
11130	*Baetis intercalaris*	+
13400	*Stenacron sp*	+
22300	*Argia sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
68075	*Psephenus herricki*	+
69400	*Stenelmis sp*	+
71900	*Tipula sp*	+
77500	*Conchapelopia sp*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
93900	*Elimia sp*	+
97601	*Corbicula fluminea*	+

No. Quantitative Taxa: 0 Total Taxa: 14

No. Qualitative Taxa: 14 ICI:

Number of Organisms: 0 Qual EPT: **4**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/95 River Code: 14-036 River: Holes Creek RM: 4.30

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
11130	*Baetis intercalaris*	+
13000	*Leucrocuta sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
47600	*Sialis sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52530	*Hydropsyche depravata group*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77500	*Conchapelopia sp*	+
82100	*Thienemanniella sp*	+
85814	*Tanytarsus glabrescens group*	+
93900	*Elimia sp*	+
97601	*Corbicula fluminea*	+
98600	*Sphaerium sp*	+

Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa: 0 Total Taxa: 22
No. Qualitative Taxa: 22 ICI:
Number of Organisms: 0 Qual EPT: **7**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/06/95 River Code: 14-036 River: Holes Creek RM: 0.60

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
11130	*Baetis intercalaris*	+
12200	*Isonychia sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
21200	*Calopteryx sp*	+
22300	*Argia sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
68075	*Psephenus herricki*	+
69400	*Stenelmis sp*	+
70600	*Antocha sp*	+
77120	*Ablabesmyia mallochi*	+
77500	*Conchapelopia sp*	+
80420	*Cricotopus (C.) bicinctus*	+
83040	*Dicrotendipes neomodestus*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
85500	*Paratanytarsus sp*	+
85800	*Tanytarsus sp*	+
85814	*Tanytarsus glabrescens group*	+
96900	*Ferrissia sp*	+

No. Quantitative Taxa: 0 Total Taxa: 21

No. Qualitative Taxa: 21 ICI:

Number of Organisms: 0 Qual EPT: **6**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/05/95 River Code: 14-037 River: Wolf Creek RM: 16.60

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
04666	*Helobdella triserialis*	+
04935	*Erpobdella punctata punctata*	+
05800	*Caecidotea sp*	+
05900	*Lirceus sp*	+
06201	*Hyalella azteca*	+
06700	*Crangonyx sp*	+
08250	*Orconectes (Procericambarus) rusticus*	+
11120	*Baetis flavistriga*	+
11125	*Labiobaetis frondalis*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
17200	*Caenis sp*	+
21200	*Calopteryx sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
47600	*Sialis sp*	+
52200	*Cheumatopsyche sp*	+
60900	*Peltodytes sp*	+
68708	*Dubiraphia vittata group*	+
69400	*Stenelmis sp*	+
71900	*Tipula sp*	+
77500	*Conchapelopia sp*	+
78450	*Nilotanypus fimbriatus*	+
80370	*Corynoneura lobata*	+
82820	*Cryptochironomus sp*	+
84210	*Paratendipes albimanus or P. duplicatus*	+
84470	*Polypedilum (P.) illinoense*	+
84480	*Polypedilum (P.) laetum group*	+
85625	*Rheotanytarsus exiguus group*	+
85800	*Tanytarsus sp*	+
85814	*Tanytarsus glabrescens group*	+
96002	*Helisoma anceps anceps*	+
96264	*Planorbella (Pierosoma) pilsbryi*	+
98200	*Pisidium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 35

No. Qualitative Taxa: 35 ICI:

Number of Organisms: 0 Qual EPT: **6**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/05/95 River Code: 14-037 River: Wolf Creek RM: 15.00

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
04685	*Placobdella ornata*	+
05800	*Caecidotea sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
23600	*Aeshna sp*	+
52200	*Cheumatopsyche sp*	+
53800	*Hydroptila sp*	+
60900	*Peltodytes sp*	+
67700	*Paracymus sp*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77120	*Ablabesmyia mallochi*	+
77500	*Conchapelopia sp*	+
77800	*Helopelopia sp*	+
80430	*Cricotopus (C.) tremulus group*	+
81825	*Rheocricotopus (Psilocricotopus) robacki*	+
82141	*Thienemanniella xena*	+
84315	*Phaenopsectra flavipes*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
85625	*Rheotanytarsus exiguus group*	+
95100	*Physella sp*	+
96264	*Planorbella (Pierosoma) pilsbryi*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 27

No. Qualitative Taxa: 27 ICI:

Number of Organisms: 0 Qual EPT: **2**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/05/95 River Code: 14-037 River: Wolf Creek RM: 14.90

Taxa Code	Taxa	Quan/Qual	Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+			
03600	*Oligochaeta*	+			
04666	*Helobdella triserialis*	+			
04935	*Erpobdella punctata punctata*	+			
21200	*Calopteryx sp*	+			
22001	*Coenagrionidae*	+			
71900	*Tipula sp*	+			
74100	*Simulium sp*	+			
77500	*Conchapelopia sp*	+			
77800	*Helopelopia sp*	+			
82820	*Cryptochironomus sp*	+			
84210	*Paratendipes albimanus or P. duplicatus*	+			
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+			
84470	*Polypedilum (P.) illinoense*	+			
84540	*Polypedilum (Tripodura) scalaenum group*	+			
85625	*Rheotanytarsus exiguus group*	+			
85814	*Tanytarsus glabrescens group*	+			
87501	*Empididae*	+			

No. Quantitative Taxa: 0 Total Taxa: 18

No. Qualitative Taxa: 18 ICI:

Number of Organisms: 0 Qual EPT: **0**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/05/95 River Code: 14-037 River: Wolf Creek RM: 10.40

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
11120	*Baetis flavistriga*	+
12501	*Heptageniidae*	+
21200	*Calopteryx sp*	+
23909	*Boyeria vinosa*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
52530	*Hydropsyche depravata group*	+
53800	*Hydroptila sp*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
68708	*Dubiraphia vittata group*	+
69225	*Optioservus fastiditus*	+
69400	*Stenelmis sp*	+
74100	*Simulium sp*	+
77500	*Conchapelopia sp*	+
78450	*Nilotanypus fimbriatus*	+
80420	*Cricotopus (C.) bicinctus*	+
82141	*Thienemanniella xena*	+
82730	*Chironomus (C.) decorus group*	+
82820	*Cryptochironomus sp*	+
83820	*Microtendipes "caelum" (sensu Simpson & Bode, 1980)*	+
84210	*Paratendipes albimanus or P. duplicatus*	+
84300	*Phaenopsectra obediens group*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
84480	*Polypedilum (P.) laetum group*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
84750	*Stictochironomus sp*	+
85500	*Paratanytarsus sp*	+
85625	*Rheotanytarsus exiguus group*	+
85800	*Tanytarsus sp*	+
85814	*Tanytarsus glabrescens group*	+

No. Quantitative Taxa: 0 Total Taxa: 34

No. Qualitative Taxa: 34 ICI:

Number of Organisms: 0 Qual EPT: **6**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/05/95 River Code: 14-037 River: Wolf Creek RM: 6.00

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
11200	*Callibaetis sp*	+
13400	*Stenacron sp*	+
13521	*Stenonema femoratum*	+
16700	*Tricorythodes sp*	+
21200	*Calopteryx sp*	+
22001	*Coenagrionidae*	+
47600	*Sialis sp*	+
50315	*Chimarra obscura*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
68075	*Psephenus herricki*	+
68601	*Ancyronyx variegata*	+
68901	*Macronychus glabratus*	+
69400	*Stenelmis sp*	+
71100	*Hexatoma sp*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
77800	*Helopelopia sp*	+
80310	*Cardiocladius obscurus*	+
80410	*Cricotopus (C.) sp*	+
80430	*Cricotopus (C.) tremulus group*	+
82101	*Thienemanniella n.sp 1*	+
82141	*Thienemanniella xena*	+
82730	*Chironomus (C.) decorus group*	+
82820	*Cryptochironomus sp*	+
83040	*Dicrotendipes neomodestus*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
84540	*Polypedilum (Tripodura) scalaenum group*	+
84960	*Pseudochironomus sp*	+
85625	*Rheotanytarsus exiguus group*	+
85814	*Tanytarsus glabrescens group*	+

No. Quantitative Taxa: 0 Total Taxa: 32

No. Qualitative Taxa: 32 ICI:

Number of Organisms: 0 Qual EPT: **7**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-037 River: Wolf Creek RM: 0.10

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
05900	*Lirceus sp*	+
06700	*Crangonyx sp*	+
11130	*Baetis intercalaris*	+
11200	*Callibaetis sp*	+
12200	*Isonychia sp*	+
13000	*Leucrocuta sp*	+
13521	*Stenonema femoratum*	+
16700	*Tricorythodes sp*	+
17200	*Caenis sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
52200	*Cheumatopsyche sp*	+
52430	*Ceratopsyche morosa group*	+
53800	*Hydroptila sp*	+
63900	*Laccophilus sp*	+
65800	*Berosus sp*	+
66500	*Enochrus sp*	+
67800	*Tropisternus sp*	+
68075	*Psephenus herricki*	+
68708	*Dubiraphia vittata group*	+
69400	*Stenelmis sp*	+
72700	*Anopheles sp*	+
74501	*Ceratopogonidae*	+
77140	*Ablabesmyia peleensis*	+
77500	*Conchapelopia sp*	+
78650	*Procladius sp*	+
80310	*Cardiocladius obscurus*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80440	*Cricotopus (C.) trifascia group*	+
82730	*Chironomus (C.) decorus group*	+
82820	*Cryptochironomus sp*	+
83003	*Dicrotendipes fumidus*	+
83040	*Dicrotendipes neomodestus*	+
83300	*Glyptotendipes (G.) sp*	+
84300	*Phaenopsectra obediens group*	+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	+
84470	*Polypedilum (P.) illinoense*	+
85500	*Paratanytarsus sp*	+
85625	*Rheotanytarsus exiguus group*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 43

No. Qualitative Taxa: 43 ICI:

Number of Organisms: 0 Qual EPT: **10**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-089 River: Owl Creek RM: 0.10

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
03600	*Oligochaeta*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
82730	*Chironomus (C.) decorus group*	+
82770	*Chironomus (C.) riparius group*	+
84470	*Polypedilum (P.) illinoense*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 8

No. Qualitative Taxa: 8 ICI:

Number of Organisms: 0 Qual EPT: **0**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/03/95 River Code: 14-005 River: Paddy's Run RM: 4.90

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	3	
01418	*Craspedacusta sowerbyi*	2	
03600	*Oligochaeta*	54	+
05900	*Lirceus sp*		+
08270	*Orconectes (Rhoadesius) sloanii*		+
08601	*Hydracarina*	3	+
11650	*Procloeon sp (w/ hindwing pads)*	2	
13400	*Stenacron sp*	11	+
13521	*Stenonema femoratum*	61	+
17200	*Caenis sp*	11	
21200	*Calopteryx sp*		+
23909	*Boyeria vinosa*		+
42700	*Belostoma sp*		+
50301	*Chimarra aterrima*		+
50315	*Chimarra obscura*		+
52200	*Cheumatopsyche sp*	1	+
58505	*Helicopsyche borealis*	14	+
60900	*Peltodytes sp*		+
66200	*Cymbiodyta sp*		+
66500	*Enochrus sp*		+
67500	*Laccobius sp*		+
68025	*Ectopria sp*		+
68075	*Psephenus herricki*		+
68201	*Scirtidae*		+
68300	*Cyphon sp*		+
69400	*Stenelmis sp*		+
71900	*Tipula sp*		+
77120	*Ablabesmyia mallochi*	37	
77500	*Conchapelopia sp*	22	+
79400	*Zavrelimyia sp*		+
80410	*Cricotopus (C.) sp*		+
81650	*Parametriocnemus sp*		+
81825	*Rheocricotopus (Psilocricotopus) robacki*		+
83040	*Dicrotendipes neomodestus*	172	
83840	*Microtendipes pedellus group*	172	+
84210	*Paratendipes albimanus or P. duplicatus*	7	+
84300	*Phaenopsectra obediens group*	37	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*		+
84460	*Polypedilum (P.) fallax group*	37	+
84470	*Polypedilum (P.) illinoense*	15	+
84750	*Stictochironomus sp*	7	+
85500	*Paratanytarsus sp*	7	
85625	*Rheotanytarsus exiguus group*	7	
85814	*Tanytarsus glabrescens group*	97	
87540	*Hemerodromia sp*	2	
89001	*Sciomyzidae*		+
95100	*Physella sp*	7	+

No. Quantitative Taxa: 24 Total Taxa: 47

No. Qualitative Taxa: 36 ICI: **28**

Number of Organisms: 788 Qual EPT: **6**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-005 River: Paddy's Run RM: 3.30

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*	97	+
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	36	+
05900	*Lirceus sp*	4	+
11120	*Baetis flavistriga*	5	+
11130	*Baetis intercalaris*	1	+
11651	*Procloeon sp (w/o hindwing pads)*	12	
12200	*Isonychia sp*		+
13400	*Stenacron sp*	179	+
13521	*Stenonema femoratum*	308	+
17200	*Caenis sp*	188	+
21200	*Calopteryx sp*		+
22300	*Argia sp*		+
30000	*Plecoptera*	4	
50301	*Chimarra aterrima*		+
50315	*Chimarra obscura*		+
52200	*Cheumatopsyche sp*	3	+
52430	*Ceratopsyche morosa group*		+
52530	*Hydropsyche depravata group*		+
53501	*Hydroptilidae*		+
58505	*Helicopsyche borealis*		+
60900	*Peltodytes sp*		+
63300	*Hydroporus sp*		+
65800	*Berosus sp*		+
66500	*Enochrus sp*		+
67500	*Laccobius sp*		+
67800	*Tropisternus sp*		+
68075	*Psephenus herricki*		+
68708	*Dubiraphia vittata group*		+
69400	*Stenelmis sp*	8	+
71100	*Hexatoma sp*		+
71900	*Tipula sp*		+
74100	*Simulium sp*		+
77120	*Ablabesmyia mallochi*	161	+
77500	*Conchapelopia sp*	27	+
77750	*Hayesomyia senata or Thienemannimyia norena*		+
77800	*Helopelopia sp*	54	+
78140	*Labrundinia pilosella*	16	
78450	*Nilotanypus fimbriatus*		+
80370	*Corynoneura lobata*	224	
80410	*Cricotopus (C.) sp*	134	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*		+
81270	*Nanocladius (N.) spiniplenus*	13	
81690	*Paratrichocladius sp*	13	
83040	*Dicrotendipes neomodestus*	148	+
83840	*Microtendipes pedellus group*	188	
84020	*Parachironomus carinatus*	13	
84210	*Paratendipes albimanus or P. duplicatus*	161	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*		+
84460	*Polypedilum (P.) fallax group*	27	
84470	*Polypedilum (P.) illinoense*		+
84540	*Polypedilum (Tripodura) scalaenum group*	27	
85201	*Cladotanytarsus species group A*		+
85261	*Cladotanytarsus vanderwulpi group Type 1*	13	+
85500	*Paratanytarsus sp*	27	
85625	*Rheotanytarsus exiguus group*	13	
85800	*Tanytarsus sp*	67	+
85802	*Tanytarsus curticornis group*	13	
85814	*Tanytarsus glabrescens group*	215	+
85840	*Tanytarsus guerlus group*	27	
86200	*Tabanus sp*		+
87400	*Stratiomys sp*		+
87540	*Hemerodromia sp*	3	
95100	*Physella sp*	16	+

No. Quantitative Taxa: 36 Total Taxa: 65

No. Qualitative Taxa: 49 ICI: **42**

Number of Organisms: 2446 Qual EPT: **13**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/95 River Code: 14-018 River: Dicks Creek RM: 5.20

Taxa Code	Taxa	Quan/Qual	Taxa Code	Taxa	Quan/Qual
11200	*Callibaetis sp*	+			
66500	*Enochrus sp*	+			
67700	*Paracymus sp*	+			
69400	*Stenelmis sp*	+			
72700	*Anopheles sp*	+			
83380	*Goeldichironomus holoprasinus*	+			
87190	*Odontomyia (Catatasina) sp*	+			

No. Quantitative Taxa: 0 Total Taxa: 7

No. Qualitative Taxa: 7 ICI:

Number of Organisms: 0 Qual EPT: **1**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/95 River Code: 14-018 River: Dicks Creek RM: 4.70

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	2	
01801	*Turbellaria*	7	
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	46	+
11200	*Callibaetis sp*		+
22001	*Coenagrionidae*	3	+
22300	*Argia sp*	18	+
26700	*Macromia sp*		+
28800	*Pantala sp*		+
52200	*Cheumatopsyche sp*		+
52430	*Ceratopsyche morosa group*		+
53501	*Hydroptilidae*		+
60900	*Peltodytes sp*		+
65800	*Berosus sp*	4	+
69400	*Stenelmis sp*	3	+
71900	*Tipula sp*		+
77120	*Ablabesmyia mallochi*	1	
77500	*Conchapelopia sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*		+
78650	*Procladius sp*		+
80410	*Cricotopus (C.) sp*	2	+
80420	*Cricotopus (C.) bicinctus*	13	+
80430	*Cricotopus (C.) tremulus group*		+
81250	*Nanocladius (N.) minimus*	1	+
82730	*Chironomus (C.) decorus group*	1	+
82820	*Cryptochironomus sp*	1	
84040	*Parachironomus frequens*	1	
84470	*Polypedilum (P.) illinoense*	13	+
87501	*Empididae*		+
95100	*Physella sp*	190	+

No. Quantitative Taxa: 17 Total Taxa: 30

No. Qualitative Taxa: 24 ICI: **6**

Number of Organisms: 307 Qual EPT: **4**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/95 River Code: 14-018 River: Dicks Creek RM: 4.10

Taxa Code	Taxa	Quan/Qual
03600	*Oligochaeta*	+
11200	*Callibaetis sp*	+
16700	*Tricorythodes sp*	+
21300	*Hetaerina sp*	+
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
52200	*Cheumatopsyche sp*	+
53800	*Hydroptila sp*	+
60900	*Peltodytes sp*	+
65800	*Berosus sp*	+
66500	*Enochrus sp*	+
67500	*Laccobius sp*	+
67800	*Tropisternus sp*	+
68700	*Dubiraphia sp*	+
69400	*Stenelmis sp*	+
71900	*Tipula sp*	+
77120	*Ablabesmyia mallochi*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
79085	*Telopelopia okoboji*	+
80410	*Cricotopus (C.) sp*	+
80420	*Cricotopus (C.) bicinctus*	+
80430	*Cricotopus (C.) tremulus group*	+
80510	*Cricotopus (Isocladius) sylvestris group*	+
82730	*Chironomus (C.) decorus group*	+
82820	*Cryptochironomus sp*	+
83040	*Dicrotendipes neomodestus*	+
84470	*Polypedilum (P.) illinoense*	+
84960	*Pseudochironomus sp*	+
85814	*Tanytarsus glabrescens group*	+
95100	*Physella sp*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 31

No. Qualitative Taxa: 31 ICI:

Number of Organisms: 0 Qual EPT: **4**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/95 River Code: 14-018 River: Dicks Creek RM: 3.90

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*	11	
01900	*Nemertea*	1	
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	248	+
11200	*Callibaetis sp*		+
21300	*Hetaerina sp*	1	
22001	*Coenagrionidae*		+
22300	*Argia sp*	3	+
52200	*Cheumatopsyche sp*	3	
53800	*Hydroptila sp*	58	
65800	*Berosus sp*	51	
66500	*Enochrus sp*		+
68075	*Psephenus herricki*	1	
68700	*Dubiraphia sp*	1	
69400	*Stenelmis sp*	13	+
71500	*Ormosia sp*		+
71900	*Tipula sp*		+
74501	*Ceratopogonidae*	2	
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	45	+
79085	*Telopelopia okoboji*		+
80410	*Cricotopus (C.) sp*	11	
80420	*Cricotopus (C.) bicinctus*	402	+
82820	*Cryptochironomus sp*		+
84470	*Polypedilum (P.) illinoense*	402	+
87540	*Hemerodromia sp*	13	
95100	*Physella sp*	23	+

No. Quantitative Taxa:	19	Total Taxa:	27
No. Qualitative Taxa:	15	ICI:	**8**
Number of Organisms:	1290	Qual EPT:	**1**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/12/95 River Code: 14-018 River: Dicks Creek RM: 3.70

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*	20	
01900	*Nemertea*		+
03600	*Oligochaeta*	152	+
04964	*Mooreobdella microstoma*	1	+
13400	*Stenacron sp*	4	
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*	3	+
22300	*Argia sp*	17	+
28001	*Libellulidae*	1	
28955	*Libellula lydia*		+
52001	*Hydropsychidae*	3	
53800	*Hydroptila sp*	8	
60900	*Peltodytes sp*		+
65800	*Berosus sp*	49	
69400	*Stenelmis sp*	50	+
69930	*Lampyridae*		+
74501	*Ceratopogonidae*	28	+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	159	+
78450	*Nilotanypus fimbriatus*	4	
80420	*Cricotopus (C.) bicinctus*	317	+
80430	*Cricotopus (C.) tremulus group*		+
80510	*Cricotopus (Isocladius) sylvestris group*		+
82820	*Cryptochironomus sp*	26	
84470	*Polypedilum (P.) illinoense*	1058	+
87540	*Hemerodromia sp*	5	
89716	*Limnophora discreta*		+
95100	*Physella sp*	50	+

No. Quantitative Taxa: 19 Total Taxa: 28

No. Qualitative Taxa: 19 ICI: **12**

Number of Organisms: 1955 Qual EPT: **0**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-018 River: Dicks Creek RM: 2.80

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	138	
01801	*Turbellaria*	33	
03360	*Plumatella sp*	1	
03600	*Oligochaeta*	121	+
04666	*Helobdella triserialis*	46	+
04964	*Mooreobdella microstoma*		+
11200	*Callibaetis sp*		+
17200	*Caenis sp*	2	+
21300	*Hetaerina sp*	1	
22001	*Coenagrionidae*	73	+
22300	*Argia sp*	45	+
27307	*Epitheca (Epicordulia) princeps*		+
28955	*Libellula lydia*		+
42700	*Belostoma sp*		+
52200	*Cheumatopsyche sp*	9	+
53800	*Hydroptila sp*	115	+
65800	*Berosus sp*	49	+
69400	*Stenelmis sp*	5	+
74501	*Ceratopogonidae*	32	+
77120	*Ablabesmyia mallochi*		+
77500	*Conchapelopia sp*	85	+
77740	*Hayesomyia senata*	170	+
78401	*Natarsia species A (sensu Roback, 1978)*		+
79085	*Telopelopia okoboji*		+
80420	*Cricotopus (C.) bicinctus*	1019	+
80430	*Cricotopus (C.) tremulus group*		+
82730	*Chironomus (C.) decorus group*	42	+
82820	*Cryptochironomus sp*		+
83040	*Dicrotendipes neomodestus*	42	
84470	*Polypedilum (P.) illinoense*	3650	+
86200	*Tabanus sp*		+
94400	*Fossaria sp*	1	
95100	*Physella sp*	775	+

No. Quantitative Taxa: 22 Total Taxa: 33

No. Qualitative Taxa: 27 ICI: **12**

Number of Organisms: 6454 Qual EPT: **4**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-018 River: Dicks Creek RM: 2.60

Taxa Code	Taxa	Quan/Qual	
01320	*Hydra sp*	8	
01801	*Turbellaria*	1	+
03360	*Plumatella sp*	2	+
03600	*Oligochaeta*	353	+
04666	*Helobdella triserialis*	1	+
04964	*Mooreobdella microstoma*	1	+
11200	*Callibaetis sp*		+
17200	*Caenis sp*		+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*	3	+
22001	*Coenagrionidae*	3	+
22300	*Argia sp*	15	+
23804	*Basiaeschna janata*		+
28208	*Erythemis simplicicollis*	1	
48410	*Corydalus cornutus*	6	
52200	*Cheumatopsyche sp*	24	+
52540	*Hydropsyche dicantha*	247	
53800	*Hydroptila sp*	81	
59930	*Crambus sp*		+
60900	*Peltodytes sp*		+
65800	*Berosus sp*	63	+
69400	*Stenelmis sp*	211	+
77120	*Ablabesmyia mallochi*		+
77500	*Conchapelopia sp*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	79	+
79000	*Tanypus sp*		+
80420	*Cricotopus (C.) bicinctus*	1819	+
80430	*Cricotopus (C.) tremulus group*	237	+
82730	*Chironomus (C.) decorus group*	79	+
82820	*Cryptochironomus sp*		+
84470	*Polypedilum (P.) illinoense*	5930	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
87540	*Hemerodromia sp*	1	+
95100	*Physella sp*	235	+

No. Quantitative Taxa: 23 Total Taxa: 34

No. Qualitative Taxa: 29 ICI: **8**

Number of Organisms: 9400 Qual EPT: **3**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-018 River: Dicks Creek RM: 1.70

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*		+
03360	*Plumatella sp*		+
03600	*Oligochaeta*	45	+
04686	*Placobdella papillifera*		+
04962	*Mooreobdella fervida*		+
04964	*Mooreobdella microstoma*		+
05900	*Lirceus sp*	2	
06700	*Crangonyx sp*		+
08250	*Orconectes (Procericambarus) rusticus*		+
11200	*Callibaetis sp*		+
12200	*Isonychia sp*	2	+
16700	*Tricorythodes sp*		+
17200	*Caenis sp*		+
21200	*Calopteryx sp*		+
22001	*Coenagrionidae*	1	+
22300	*Argia sp*	31	+
27307	*Epitheca (Epicordulia) princeps*		+
28705	*Pachydiplax longipennis*		+
28955	*Libellula lydia*		+
44501	*Corixidae*		+
48410	*Corydalus cornutus*	1	
52200	*Cheumatopsyche sp*	10	+
52530	*Hydropsyche depravata group*	42	+
53800	*Hydroptila sp*		+
65800	*Berosus sp*	5	+
69400	*Stenelmis sp*	11	+
74501	*Ceratopogonidae*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	251	+
78450	*Nilotanypus fimbriatus*	4	+
78650	*Procladius sp*		+
80370	*Corynoneura lobata*	8	
80410	*Cricotopus (C.) sp*		+
80420	*Cricotopus (C.) bicinctus*	489	+
80430	*Cricotopus (C.) tremulus group*	12	
81250	*Nanocladius (N.) minimus*	50	
82141	*Thienemanniella xena*	8	
82820	*Cryptochironomus sp*		+
83300	*Glyptotendipes (G.) sp*	13	
84315	*Phaenopsectra flavipes*	13	
84460	*Polypedilum (P.) fallax group*	25	
84470	*Polypedilum (P.) illinoense*	589	+
84540	*Polypedilum (Tripodura) scalaenum group*	150	+
87540	*Hemerodromia sp*	74	+
95100	*Physella sp*	11	+
96900	*Ferrissia sp*	18	+
98200	*Pisidium sp*	1	

No. Quantitative Taxa: 26 Total Taxa: 46

No. Qualitative Taxa: 36 ICI: **16**

Number of Organisms: 1866 Qual EPT: **7**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/30/95 River Code: 14-018 River: Dicks Creek RM: 0.20

Taxa Code	Taxa	Quan/Qual	
03600	*Oligochaeta*	371	+
04964	*Mooreobdella microstoma*		+
05800	*Caecidotea sp*		+
17200	*Caenis sp*	11	+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*	1	+
22300	*Argia sp*	10	+
52200	*Cheumatopsyche sp*	2	+
52430	*Ceratopsyche morosa group*	2	+
52530	*Hydropsyche depravata group*		+
53800	*Hydroptila sp*		+
59550	*Oecetis inconspicua complex sp A (sensu Floyd, 1995)*	1	
65800	*Berosus sp*		+
71100	*Hexatoma sp*		+
71900	*Tipula sp*		+
74100	*Simulium sp*		+
74501	*Ceratopogonidae*	5	
77120	*Ablabesmyia mallochi*		+
77500	*Conchapelopia sp*	19	+
77750	*Hayesomyia senata or Thienemannimyia norena*	153	+
80370	*Corynoneura lobata*	3	
80420	*Cricotopus (C.) bicinctus*	62	+
80430	*Cricotopus (C.) tremulus group*	43	+
80870	*Hydrobaenus sp*		+
81460	*Orthocladius (O.) sp*		+
82730	*Chironomus (C.) decorus group*	5	+
82820	*Cryptochironomus sp*	10	+
83300	*Glyptotendipes (G.) sp*	5	
84315	*Phaenopsectra flavipes*	24	
84460	*Polypedilum (P.) fallax group*	34	
84470	*Polypedilum (P.) illinoense*		+
84540	*Polypedilum (Tripodura) scalaenum group*	67	
85500	*Paratanytarsus sp*	5	
85625	*Rheotanytarsus exiguus group*	14	
85814	*Tanytarsus glabrescens group*	14	
86100	*Chrysops sp*	2	
87540	*Hemerodromia sp*	31	
95100	*Physella sp*	84	+
96120	*Menetus (Micromenetus) dilatatus*	1	
96900	*Ferrissia sp*	7	+
97601	*Corbicula fluminea*	2	+
98001	*Sphaeriidae*		+

No. Quantitative Taxa: 28 Total Taxa: 43

No. Qualitative Taxa: 30 ICI: **20**

Number of Organisms: 988 Qual EPT: **5**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/11/95 River Code: 14-019 River: North Branch Dicks Creek RM: 1.00

Taxa Code	Taxa	Quan	Qual
01320	*Hydra sp*	34	
01801	*Turbellaria*	597	+
03600	*Oligochaeta*	1053	+
11200	*Callibaetis sp*		+
13521	*Stenonema femoratum*	2	
22001	*Coenagrionidae*		+
22300	*Argia sp*	3	+
42700	*Belostoma sp*		+
65800	*Berosus sp*	38	+
66500	*Enochrus sp*		+
67800	*Tropisternus sp*		+
69400	*Stenelmis sp*	82	+
74501	*Ceratopogonidae*	1	
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	8	
80420	*Cricotopus (C.) bicinctus*	145	+
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	3	
82820	*Cryptochironomus sp*		+
83300	*Glyptotendipes (G.) sp*	3	
84050	*Parachironomus "hirtalatus" (sensu Simpson & Bode, 1980)*	8	
84210	*Paratendipes albimanus or P. duplicatus*	11	+
84470	*Polypedilum (P.) illinoense*	6	
84540	*Polypedilum (Tripodura) scalaenum group*	6	
85814	*Tanytarsus glabrescens group*	19	+
87540	*Hemerodromia sp*	1	
98200	*Pisidium sp*	16	+

No. Quantitative Taxa: 19 Total Taxa: 26

No. Qualitative Taxa: 16 ICI: **8**

Number of Organisms: 2036 Qual EPT: **1**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/11/95 River Code: 14-019 River: North Branch Dicks Creek RM: 0.03

Taxa Code	Taxa	Quan/Qual
22001	*Coenagrionidae*	+
22300	*Argia sp*	+
28208	*Erythemis simplicicollis*	+
60900	*Peltodytes sp*	+
65800	*Berosus sp*	+
67800	*Tropisternus sp*	+
71300	*Limonia sp*	+
77120	*Ablabesmyia mallochi*	+
77750	*Hayesomyia senata or Thienemannimyia norena*	+
78120	*Labrundinia maculata*	+
80420	*Cricotopus (C.) bicinctus*	+
84470	*Polypedilum (P.) illinoense*	+
95100	*Physella sp*	+

No. Quantitative Taxa: 0 Total Taxa: 13

No. Qualitative Taxa: 13 ICI:

Number of Organisms: 0 Qual EPT: **0**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/14/95 River Code: 14-171 River: Mound Overflow Creek RM: 0.50

Taxa Code	Taxa	Quan/Qual
01801	*Turbellaria*	+
05900	*Lirceus sp*	+
07830	*Cambarus (Cambarus) ortmanni*	+
21200	*Calopteryx sp*	+
23600	*Aeshna sp*	+
47600	*Sialis sp*	+
52200	*Cheumatopsyche sp*	+
52315	*Diplectrona modesta*	+
52530	*Hydropsyche depravata group*	+
60900	*Peltodytes sp*	+
63300	*Hydroporus sp*	+
68075	*Psephenus herricki*	+
69400	*Stenelmis sp*	+
71900	*Tipula sp*	+
74100	*Simulium sp*	+
77120	*Ablabesmyia mallochi*	+
77500	*Conchapelopia sp*	+
80370	*Corynoneura lobata*	+
82141	*Thienemanniella xena*	+
84210	*Paratendipes albimanus or P. duplicatus*	+
84315	*Phaenopsectra flavipes*	+
84470	*Polypedilum (P.) illinoense*	+
84475	*Polypedilum (P.) ophioides*	+
86100	*Chrysops sp*	+
95100	*Physella sp*	+
98600	*Sphaerium sp*	+

No. Quantitative Taxa: 0 Total Taxa: 26

No. Qualitative Taxa: 26 ICI:

Number of Organisms: 0 Qual EPT: **3**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-300 River: Whitewater River RM: 8.10

Taxa Code	Taxa	Quan	Qual
00401	*Spongillidae*		+
03360	*Plumatella sp*	3	+
03451	*Urnatella gracilis*		+
03600	*Oligochaeta*	128	+
06700	*Crangonyx sp*		+
08270	*Orconectes (Rhoadesius) sloanii*		+
08601	*Hydracarina*	16	
11118	*Baetis dubius*		+
11130	*Baetis intercalaris*	433	+
11651	*Procloeon sp (w/o hindwing pads)*		+
12200	*Isonychia sp*	405	+
12924	*Heptagenia flavescens*	9	
13000	*Leucrocuta sp*		+
13400	*Stenacron sp*		+
13510	*Stenonema exiguum*	510	+
13561	*Stenonema pulchellum*	164	+
13570	*Stenonema terminatum*	36	+
16700	*Tricorythodes sp*	44	+
17200	*Caenis sp*	36	+
22001	*Coenagrionidae*		+
22300	*Argia sp*		+
24900	*Gomphus sp*		+
48410	*Corydalus cornutus*	23	+
51206	*Cyrnellus fraternus*		+
51300	*Neureclipsis sp*	9	+
52200	*Cheumatopsyche sp*	2157	+
52431	*Ceratopsyche morosa*	858	+
52540	*Hydropsyche dicantha*	89	
52560	*Hydropsyche orris*	34	
52570	*Hydropsyche simulans*	5	+
52801	*Potamyia flava*	58	+
53800	*Hydroptila sp*	33	+
67800	*Tropisternus sp*		+
68130	*Helichus sp*	1	+
68601	*Ancyronyx variegata*		+
68708	*Dubiraphia vittata group*		+
68901	*Macronychus glabratus*	21	+
69400	*Stenelmis sp*	8	+
74100	*Simulium sp*	869	+
77120	*Ablabesmyia mallochi*		+
77750	*Hayesomyia senata or Thienemannimyia norena*	56	+
78140	*Labrundinia pilosella*	16	+
79085	*Telopelopia okoboji*		+
80360	*Corynoneura "celeripes" (sensu Simpson & Bode, 1980)*	28	+
80410	*Cricotopus (C.) sp*	28	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	28	
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	56	
81250	*Nanocladius (N.) minimus*		+
82141	*Thienemanniella xena*	16	
82220	*Tvetenia discoloripes group*	28	+
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*		+
83040	*Dicrotendipes neomodestus*		+
84060	*Parachironomus pectinatellae*		+
84300	*Phaenopsectra obediens group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	420	+
84460	*Polypedilum (P.) fallax group*		+
84470	*Polypedilum (P.) illinoense*		+
84540	*Polypedilum (Tripodura) scalaenum group*		+
84612	*Saetheria tylus*		+
85261	*Cladotanytarsus vanderwulpi group Type 1*		+
85265	*Cladotanytarsus vanderwulpi group Type 5*		+
85615	*Rheotanytarsus distinctissimus group*	28	+
85625	*Rheotanytarsus exiguus group*	2747	+
85800	*Tanytarsus sp*		+
85814	*Tanytarsus glabrescens group*	84	
85840	*Tanytarsus guerlus group*		+
87540	*Hemerodromia sp*	48	+
97601	*Corbicula fluminea*		+
99680	*Leptodea fragilis*		+
99700	*Potamilus alatus*		+
99880	*Lampsilis ventricosa*		+

No. Quantitative Taxa: 37 Total Taxa: 73
No. Qualitative Taxa: 65 ICI: **52**
Number of Organisms: 9532 Qual EPT: **18**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 10/25/95 River Code: 14-300 River: Whitewater River RM: 7.00

Taxa Code	Taxa	Quan	Qual
01801	*Turbellaria*		+
03600	*Oligochaeta*	128	+
05900	*Lirceus sp*		+
06700	*Crangonyx sp*		+
08601	*Hydracarina*	32	
11020	*Acerpenna pygmaeus*	8	
11130	*Baetis intercalaris*	79	+
12200	*Isonychia sp*	104	+
12924	*Heptagenia flavescens*	11	
13400	*Stenacron sp*		+
13510	*Stenonema exiguum*	137	+
13521	*Stenonema femoratum*	11	
13540	*Stenonema mediopunctatum*	11	+
13561	*Stenonema pulchellum*	211	+
13570	*Stenonema terminatum*	433	+
16700	*Tricorythodes sp*	161	+
18100	*Anthopotamus sp*	1	+
21300	*Hetaerina sp*	1	+
22300	*Argia sp*		+
31800	*Taeniopteryx sp*	16	
33501	*Capniidae*		+
35001	*Perlodidae*	16	+
45400	*Trichocorixa sp*		+
48410	*Corydalus cornutus*	9	+
50315	*Chimarra obscura*	11	
51300	*Neureclipsis sp*	64	+
52200	*Cheumatopsyche sp*	1035	+
52430	*Ceratopsyche morosa group*	547	+
52540	*Hydropsyche dicantha*	56	
52560	*Hydropsyche orris*	2	
52570	*Hydropsyche simulans*	5	
52801	*Potamyia flava*	59	
53800	*Hydroptila sp*	32	+
59970	*Petrophila sp*	2	
65800	*Berosus sp*		+
67500	*Laccobius sp*		+
68601	*Ancyronyx variegata*	1	
68901	*Macronychus glabratus*	3	
69400	*Stenelmis sp*	18	+
70600	*Antocha sp*	1	
71900	*Tipula sp*		+
74100	*Simulium sp*	1	+
77120	*Ablabesmyia mallochi*	62	
77750	*Hayesomyia senata or Thienemannimyia norena*	186	+
79085	*Telopelopia okoboji*	62	
80310	*Cardiocladius obscurus*	124	
80410	*Cricotopus (C.) sp*	62	
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	124	+
80440	*Cricotopus (C.) trifascia group*		+
81460	*Orthocladius (O.) sp*	62	+
82220	*Tvetenia discoloripes group*	62	
83840	*Microtendipes pedellus group*	62	
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	62	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
85615	*Rheotanytarsus distinctissimus group*		+
85625	*Rheotanytarsus exiguus group*	4833	+
87540	*Hemerodromia sp*	193	
95100	*Physella sp*	1	+
97601	*Corbicula fluminea*	8	+

No. Quantitative Taxa: 46 Total Taxa: 60

No. Qualitative Taxa: 39 ICI: **52**

Number of Organisms: 9109 Qual EPT: **15**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-300 River: Whitewater River RM: 3.80

Taxa Code	Taxa	Quan	Qual
03360	*Plumatella sp*	1	+
03600	*Oligochaeta*	18	+
04964	*Mooreobdella microstoma*		+
06700	*Crangonyx sp*		+
11130	*Baetis intercalaris*	227	+
11200	*Callibaetis sp*		+
12200	*Isonychia sp*	213	+
12924	*Heptagenia flavescens*	9	
13000	*Leucrocuta sp*	9	+
13510	*Stenonema exiguum*	526	+
13550	*Stenonema mexicanum integrum*	19	+
13561	*Stenonema pulchellum*	122	+
13570	*Stenonema terminatum*	66	+
16700	*Tricorythodes sp*	262	+
17200	*Caenis sp*	25	+
18100	*Anthopotamus sp*		+
18700	*Hexagenia sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
22300	*Argia sp*	1	+
24900	*Gomphus sp*		+
47600	*Sialis sp*		+
48410	*Corydalus cornutus*	5	+
51300	*Neureclipsis sp*	28	+
52200	*Cheumatopsyche sp*	638	+
52430	*Ceratopsyche morosa group*	77	+
52540	*Hydropsyche dicantha*	72	
52560	*Hydropsyche orris*	31	+
52570	*Hydropsyche simulans*		+
52801	*Potamyia flava*	147	+
53800	*Hydroptila sp*	83	
59001	*Leptoceridae*	8	
60300	*Dineutus sp*		+
63900	*Laccophilus sp*		+
65800	*Berosus sp*	1	
67800	*Tropisternus sp*		+
68130	*Helichus sp*		+
68901	*Macronychus glabratus*	21	+
69400	*Stenelmis sp*	15	+
74100	*Simulium sp*	517	+
77120	*Ablabesmyia mallochi*		+
77130	*Ablabesmyia rhamphe group*		+
77740	*Hayesomyia senata*	132	
79085	*Telopelopia okoboji*		+
80360	*Corynoneura "celeripes" (sensu Simpson & Bode, 1980)*	96	
80410	*Cricotopus (C.) sp*	33	
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	99	+
82220	*Tvetenia discoloripes group*	33	
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*		+
83040	*Dicrotendipes neomodestus*	33	+
83300	*Glyptotendipes (G.) sp*		+
84116	*Paracladopelma nereis*		+
84155	*Paralauterborniella nigrohalteralis*		+
84300	*Phaenopsectra obediens group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	232	+
84460	*Polypedilum (P.) fallax group*	33	
84470	*Polypedilum (P.) illinoense*	33	+
84540	*Polypedilum (Tripodura) scalaenum group*		+
84612	*Saetheria tylus*		+
84790	*Tribelos fuscicorne*	66	
85230	*Cladotanytarsus mancus group*		+
85615	*Rheotanytarsus distinctissimus group*		+
85625	*Rheotanytarsus exiguus group*	2317	+
85800	*Tanytarsus sp*	33	+
85814	*Tanytarsus glabrescens group*	33	
85840	*Tanytarsus guerlus group*	298	
87540	*Hemerodromia sp*	18	
96900	*Ferrissia sp*		+
97601	*Corbicula fluminea*		+

No. Quantitative Taxa: 41 Total Taxa: 71

No. Qualitative Taxa: 57 ICI: **52**

Number of Organisms: 6630 Qual EPT: **18**

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-300 River: Whitewater River RM: 1.50

Taxa Code	Taxa	Quan/Qual	
01801	*Turbellaria*		+
03360	*Plumatella sp*	6	+
03451	*Urnatella gracilis*	1	
03600	*Oligochaeta*	16	+
08270	*Orconectes (Rhoadesius) sloanii*		+
11130	*Baetis intercalaris*	80	+
11600	*Paracloeodes sp 1*		+
12200	*Isonychia sp*	141	+
12924	*Heptagenia flavescens*	8	+
13000	*Leucrocuta sp*		+
13300	*Rhithrogena sp*		+
13400	*Stenacron sp*	4	
13510	*Stenonema exiguum*	358	+
13521	*Stenonema femoratum*		+
13561	*Stenonema pulchellum*	4	+
13570	*Stenonema terminatum*	28	+
16700	*Tricorythodes sp*	69	+
17200	*Caenis sp*	45	+
21200	*Calopteryx sp*		+
21300	*Hetaerina sp*		+
22001	*Coenagrionidae*		+
24900	*Gomphus sp*		+
44501	*Corixidae*		+
48410	*Corydalus cornutus*	20	+
50315	*Chimarra obscura*		+
51300	*Neureclipsis sp*	1	
52200	*Cheumatopsyche sp*	683	+
52430	*Ceratopsyche morosa group*	102	+
52520	*Hydropsyche bidens*	4	
52540	*Hydropsyche dicantha*	12	
52560	*Hydropsyche orris*	79	+
52570	*Hydropsyche simulans*	4	
52801	*Potamyia flava*	173	+
53800	*Hydroptila sp*	8	
59970	*Petrophila sp*		+
65800	*Berosus sp*	1	+
67500	*Laccobius sp*		+
68130	*Helichus sp*		+
68601	*Ancyronyx variegata*	8	+
68708	*Dubiraphia vittata group*		+
68901	*Macronychus glabratus*	11	
69400	*Stenelmis sp*		+
74100	*Simulium sp*	125	+
77120	*Ablabesmyia mallochi*		+
77740	*Hayesomyia senata*	28	+
78140	*Labrundinia pilosella*		+
78402	*Natarsia baltimoreus*		+
79085	*Telopelopia okoboji*	28	
80360	*Corynoneura "celeripes" (sensu Simpson & Bode, 1980)*	40	
80410	*Cricotopus (C.) sp*	57	+
80420	*Cricotopus (C.) bicinctus*		+
80430	*Cricotopus (C.) tremulus group*	28	
81231	*Nanocladius (N.) crassicornus or N. (N.) "rectinervis"*	28	
82121	*Thienemanniella n.sp 3*	8	
82220	*Tvetenia discoloripes group*	28	
82730	*Chironomus (C.) decorus group*		+
82820	*Cryptochironomus sp*		+
83040	*Dicrotendipes neomodestus*		+
84040	*Parachironomus frequens*		+
84300	*Phaenopsectra obediens group*		+
84450	*Polypedilum (P.) "convictum" (sensu Simpson and Bode, 1980)*	85	+
84470	*Polypedilum (P.) illinoense*		+
84520	*Polypedilum (Tripodura) halterale group*		+
84540	*Polypedilum (Tripodura) scalaenum group*	28	
84612	*Saetheria tylus*		+
84960	*Pseudochironomus sp*		+
85201	*Cladotanytarsus species group A*		+
85264	*Cladotanytarsus vanderwulpi group Type 4*		+
85265	*Cladotanytarsus vanderwulpi group Type 5*		+
85625	*Rheotanytarsus exiguus group*	1696	+
85800	*Tanytarsus sp*		+
85814	*Tanytarsus glabrescens group*		+
85840	*Tanytarsus guerlus group*	113	
87540	*Hemerodromia sp*	16	
93900	*Elimia sp*		+
95100	*Physella sp*		+
97601	*Corbicula fluminea*		+
98600	*Sphaerium sp*		+

Ohio EPA Monitoring and Assessment Section
Macroinvertebrate Collection

Collection Date: 09/13/95 River Code: 14-300 River: Whitewater River RM: 1.50

Taxa Code	Taxa	Quan/Qual	Taxa Code	Taxa	Quan/Qual

No. Quantitative Taxa:	39	Total Taxa:	78
No. Qualitative Taxa:	61	ICI:	**56**
Number of Organisms:	4174	Qual EPT:	**17**

Appendix Table A-10

Total catch summaries (species list) for fish sampling locations in the Great Miami River study area, 1995

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **87.30**	Basin: Great Miami River	Date Range: 08/22/95
	Time Fished: 5114 sec Drain Area: 1169.0 sq mi	Thru: 09/13/95
	Dist Fished: 1.00 km 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		1	1.00	0.25	0.18	0.15	182.00
GRASS PICKEREL		P	M	P	1	1.00	0.25	0.02	0.02	20.00
QUILLBACK CARPSUCKER	C	O	M		3	3.00	0.75	1.31	1.10	437.00
RIVER CARPSUCKER	C	O	M		1	1.00	0.25	0.48	0.40	478.00
BLACK REDHORSE	R	I	S	I	10	10.00	2.51	4.58	3.83	457.90
GOLDEN REDHORSE	R	I	S	M	79	79.00	19.85	35.75	29.90	452.52
SHORTHEAD REDHORSE	R	I	S	M	70	70.00	17.59	25.37	21.22	362.43
NORTHERN HOG SUCKER	R	I	S	M	17	17.00	4.27	2.72	2.28	160.06
WHITE SUCKER	W	O	S	T	1	1.00	0.25	0.19	0.16	194.00
COMMON CARP	G	O	M	T	15	15.00	3.77	16.46	13.76	1,097.00
SPOTFIN SHINER	N	I	M		28	28.00	7.04	0.07	0.06	2.39
SAND SHINER	N	I	M	M	1	1.00	0.25	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	4	4.00	1.01	0.01	0.01	3.50
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.25	1.40	1.17	1,400.00
CHANNEL CATFISH	F		C		6	6.00	1.51	6.08	5.09	1,014.00
BROOK SILVERSIDE		I	M	M	1	1.00	0.25	0.00	0.00	2.00
ROCK BASS	S	C	C		27	27.00	6.78	2.80	2.34	103.68
SMALLMOUTH BASS	F	C	C	M	73	73.00	18.34	20.07	16.79	274.99
GREEN SUNFISH	S	I	C	T	14	14.00	3.52	0.72	0.60	51.14
BLUEGILL SUNFISH	S	I	C	P	11	11.00	2.76	0.47	0.39	42.64
LONGEAR SUNFISH	S	I	C	M	29	29.00	7.29	0.58	0.49	20.00
LOGPERCH	D	I	S	M	2	2.00	0.50	0.02	0.02	9.50
GREENSIDE DARTER	D	I	S	M	2	2.00	0.50	0.01	0.01	3.00
SAUGER X WALLEYE	E	P			1	1.00	0.25	0.29	0.24	290.00
Mile Total					398	398.00		119.58		
Number of Species					22					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **85.20**	Basin: Great Miami River	Date Range: 08/22/95
	Time Fished: 4661 sec Drain Area: 1173.0 sq mi	Thru: 09/13/95
	Dist Fished: 1.03 km 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		10	9.83	1.97	0.67	0.68	67.40
NORTHERN PIKE	F	P	M		1	1.00	0.20	0.27	0.28	274.00
QUILLBACK CARPSUCKER	C	O	M		3	2.83	0.57	1.30	1.33	460.33
BLACK REDHORSE	R	I	S	I	3	2.89	0.58	1.45	1.49	503.33
GOLDEN REDHORSE	R	I	S	M	57	54.62	10.93	15.23	15.58	277.95
SHORTHEAD REDHORSE	R	I	S	M	125	122.40	24.48	21.52	22.01	176.31
NORTHERN HOG SUCKER	R	I	S	M	41	39.87	7.97	5.84	5.98	147.00
WHITE SUCKER	W	O	S	T	1	0.94	0.19	0.06	0.06	65.00
COMMON CARP	G	O	M	T	30	29.09	5.82	26.38	26.97	905.86
RIVER CHUB	N	I	N	I	2	1.94	0.39	0.11	0.11	58.50
SPOTFIN SHINER	N	I	M		64	60.89	12.18	0.15	0.16	2.52
SAND SHINER	N	I	M	M	2	1.89	0.38	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	3	2.89	0.58	0.01	0.01	3.33
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.20	1.20	1.23	1,200.00
CHANNEL CATFISH	F		C		3	2.89	0.58	2.63	2.69	891.67
STONECAT MADTOM		I	C	I	1	1.00	0.20	0.22	0.23	224.00
ROCK BASS	S	C	C		44	42.70	8.54	4.08	4.17	96.37
SMALLMOUTH BASS	F	C	C	M	49	47.64	9.53	13.32	13.63	280.22
GREEN SUNFISH	S	I	C	T	16	15.77	3.16	0.58	0.60	37.50
BLUEGILL SUNFISH	S	I	C	P	13	12.83	2.57	0.24	0.25	19.00
LONGEAR SUNFISH	S	I	C	M	38	37.38	7.48	0.99	1.02	26.45
LOGPERCH	D	I	S	M	4	3.83	0.77	0.03	0.03	6.50
GREENSIDE DARTER	D	I	S	M	2	1.94	0.39	0.01	0.01	5.50
SAUGER X WALLEYE	E	P			2	1.89	0.38	1.45	1.49	771.00
Mile Total					515	499.94		97.78		
Number of Species					22					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **83.30**	Basin: Great Miami River	Date Range: 08/22/95
	Time Fished: 4669 sec Drain Area: 1174.0 sq mi	Thru: 09/13/95
	Dist Fished: 1.00 km 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		14	14.00	3.47	0.11	0.11	8.14
GRASS PICKEREL		P	M	P	1	1.00	0.25	0.02	0.01	15.00
NORTHERN PIKE	F	P	M		1	1.00	0.25	1.00	0.96	1,000.00
QUILLBACK CARPSUCKER	C	O	M		3	3.00	0.74	1.91	1.83	635.67
RIVER CARPSUCKER	C	O	M		17	17.00	4.22	11.36	10.89	668.00
GOLDEN REDHORSE	R	I	S	M	65	65.00	16.13	15.08	14.45	231.94
SHORTHEAD REDHORSE	R	I	S	M	3	3.00	0.74	0.73	0.70	242.33
SPOTTED SUCKER	R	I	S		41	41.00	10.17	17.02	16.32	415.09
COMMON CARP	G	O	M	T	53	53.00	13.15	46.69	44.77	881.02
GOLDFISH	G	O	M	T	3	3.00	0.74	0.54	0.52	180.33
GOLDEN SHINER	N	I	M	T	2	2.00	0.50	0.02	0.02	10.00
SPOTFIN SHINER	N	I	M		2	2.00	0.50	0.00	0.00	1.50
BLACK BULLHEAD		I	C	P	7	7.00	1.74	0.56	0.54	80.14
WHITE CRAPPIE	S	I	C		5	5.00	1.24	0.12	0.11	23.60
BLACK CRAPPIE	S	I	C		1	1.00	0.25	0.04	0.04	38.00
SMALLMOUTH BASS	F	C	C	M	3	3.00	0.74	0.53	0.51	178.00
LARGEMOUTH BASS	F	C	C		12	12.00	2.98	5.21	5.00	434.50
GREEN SUNFISH	S	I	C	T	100	100.00	24.81	2.47	2.37	24.67
BLUEGILL SUNFISH	S	I	C	P	25	25.00	6.20	0.25	0.24	9.94
OR'GESPOTTED SUNFISH	S	I	C		4	4.00	0.99	0.06	0.06	14.75
LONGEAR SUNFISH	S	I	C	M	41	41.00	10.17	0.59	0.56	14.37
Mile Total					403	403.00		104.30		
Number of Species					21					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **82.00**	Basin: Great Miami River	Date Range: 08/23/95
	Time Fished: 4588 sec Drain Area: 1852.0 sq mi	Thru: 09/14/95
	Dist Fished: 1.00 km 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		46	46.00	5.14	2.67	2.51	58.14
QUILLBACK CARPSUCKER	C	O	M		32	32.00	3.58	13.99	13.15	437.27
RIVER CARPSUCKER	C	O	M		6	6.00	0.67	3.29	3.09	547.50
BLACK REDHORSE	R	I	S	I	1	1.00	0.11	0.58	0.55	580.00
GOLDEN REDHORSE	R	I	S	M	230	230.00	25.70	24.82	23.33	107.91
SHORTHEAD REDHORSE	R	I	S	M	100	100.00	11.17	15.34	14.42	153.45
NORTHERN HOG SUCKER	R	I	S	M	74	74.00	8.27	5.58	5.25	75.46
WHITE SUCKER	W	O	S	T	2	2.00	0.22	0.06	0.06	32.00
SPOTTED SUCKER	R	I	S		1	1.00	0.11	0.04	0.04	38.00
COMMON CARP	G	O	M	T	35	35.00	3.91	26.64	25.04	761.14
GOLDFISH	G	O	M	T	1	1.00	0.11	0.16	0.15	162.00
GOLDEN SHINER	N	I	M	T	17	17.00	1.90	0.25	0.24	14.71
RIVER CHUB	N	I	N	I	2	2.00	0.22	0.10	0.10	51.00
SILVER SHINER	N	I	S	I	3	3.00	0.34	0.02	0.02	7.67
STRIPED SHINER	N	I	S		2	2.00	0.22	0.02	0.02	10.00
SPOTFIN SHINER	N	I	M		14	14.00	1.56	0.06	0.05	3.93
BLUNTNOSE MINNOW	N	O	C	T	17	17.00	1.90	0.03	0.02	1.47
CENTRAL STONEROLLER	N	H	N		9	9.00	1.01	0.21	0.19	22.78
CHANNEL CATFISH	F		C		5	5.00	0.56	4.34	4.08	867.40
BLACK BULLHEAD		I	C	P	1	1.00	0.11	0.14	0.13	138.00
BROOK SILVERSIDE		I	M	M	1	1.00	0.11	0.00	0.00	2.00
WHITE CRAPPIE	S	I	C		1	1.00	0.11	0.02	0.02	18.00
BLACK CRAPPIE	S	I	C		5	5.00	0.56	0.28	0.26	55.80
ROCK BASS	S	C	C		21	21.00	2.35	0.73	0.69	34.86
SMALLMOUTH BASS	F	C	C	M	46	46.00	5.14	2.42	2.27	52.57
LARGEMOUTH BASS	F	C	C		13	13.00	1.45	0.57	0.54	43.92
GREEN SUNFISH	S	I	C	T	34	34.00	3.80	0.58	0.55	17.15
BLUEGILL SUNFISH	S	I	C	P	88	88.00	9.83	0.85	0.80	9.65
OR'GESPOTTED SUNFISH	S	I	C		10	10.00	1.12	0.07	0.07	7.30
LONGEAR SUNFISH	S	I	C	M	61	61.00	6.82	0.70	0.66	11.44
LOGPERCH	D	I	S	M	7	7.00	0.78	0.07	0.06	9.86
GREENSIDE DARTER	D	I	S	M	5	5.00	0.56	0.02	0.02	3.20
BANDED DARTER	D	I	S	I	2	2.00	0.22	0.00	0.00	1.00
SAUGER X WALLEYE	E	P			3	3.00	0.34	1.73	1.63	576.67
Mile Total					895	895.00		106.38		
Number of Species					33					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **80.70**	Basin: Great Miami River	Date Range: 08/23/95
	Time Fished: 4568 sec Drain Area: 2511.0 sq mi	Thru: 09/14/95
	Dist Fished: 1.00 km 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		29	29.00	3.17	2.03	1.33	70.14
NORTHERN PIKE	F	P	M		1	1.00	0.11	0.13	0.08	125.00
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.22	1.68	1.09	838.00
RIVER CARPSUCKER	C	O	M		1	1.00	0.11	0.36	0.24	364.00
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.11	0.39	0.25	390.00
BLACK REDHORSE	R	I	S	I	4	4.00	0.44	1.72	1.12	430.75
GOLDEN REDHORSE	R	I	S	M	242	242.00	26.42	37.13	24.23	153.42
SHORTHEAD REDHORSE	R	I	S	M	126	126.00	13.76	19.37	12.64	153.77
RIVER REDHORSE [S]	R	I	S	I	2	2.00	0.22	0.72	0.47	359.50
NORTHERN HOG SUCKER	R	I	S	M	26	26.00	2.84	3.54	2.31	136.12
SPOTTED SUCKER	R	I	S		11	11.00	1.20	0.43	0.28	39.36
COMMON CARP	G	O	M	T	42	42.00	4.59	64.50	42.09	1,535.78
GOLDFISH	G	O	M	T	7	7.00	0.76	1.77	1.15	252.14
GOLDEN SHINER	N	I	M	T	1	1.00	0.11	0.02	0.01	15.00
STRIPED SHINER	N	I	S		1	1.00	0.11	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		10	10.00	1.09	0.03	0.02	2.70
SAND SHINER	N	I	M	M	1	1.00	0.11	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	17	17.00	1.86	0.02	0.01	1.18
CHANNEL CATFISH	F		C		1	1.00	0.11	0.33	0.22	331.00
YELLOW BULLHEAD		I	C	T	1	1.00	0.11	0.18	0.12	180.00
WHITE CRAPPIE	S	I	C		4	4.00	0.44	0.15	0.10	37.75
BLACK CRAPPIE	S	I	C		7	7.00	0.76	0.59	0.38	84.14
ROCK BASS	S	C	C		30	30.00	3.28	0.99	0.65	33.00
SMALLMOUTH BASS	F	C	C	M	33	33.00	3.60	5.75	3.75	174.15
LARGEMOUTH BASS	F	C	C		24	24.00	2.62	4.08	2.66	169.96
GREEN SUNFISH	S	I	C	T	93	93.00	10.15	1.53	1.00	16.42
BLUEGILL SUNFISH	S	I	C	P	107	107.00	11.68	1.34	0.87	12.52
OR'GESPOTTED SUNFISH	S	I	C		18	18.00	1.97	0.13	0.09	7.39
LONGEAR SUNFISH	S	I	C	M	54	54.00	5.90	0.91	0.59	16.76
GREEN SF X BLUEGILL					2	2.00	0.22	0.07	0.05	36.00
GREEN SF X LONGEAR					2	2.00	0.22	0.07	0.04	33.00
GREEN SF X HYBRID					1	1.00	0.11	0.16	0.11	162.00
SAUGER	F	P	S		1	1.00	0.11	0.16	0.10	158.00
LOGPERCH	D	I	S	M	3	3.00	0.33	0.03	0.02	10.00
GREENSIDE DARTER	D	I	S	M	4	4.00	0.44	0.02	0.01	4.25
BANDED DARTER	D	I	S	I	1	1.00	0.11	0.00	0.00	1.00
RAINBOW DARTER	D	I	S	M	1	1.00	0.11	0.00	0.00	2.00
SAUGER X WALLEYE	E	P			5	5.00	0.55	2.92	1.91	584.40
Mile Total					916	916.00		153.24		
Number of Species					34					
Number of Hybrids					4					

Species List

River Code: **14-001** River Mile: **79.90**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4130 sec Drain Area: 2583.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 08/23/95 Thru: 09/14/95 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		46	46.00	6.86	4.82	3.75	104.87
QUILLBACK CARPSUCKER	C	O	M		4	4.00	0.60	1.73	1.34	431.50
RIVER CARPSUCKER	C	O	M		2	2.00	0.30	1.19	0.92	595.00
BLACK REDHORSE	R	I	S	I	22	22.00	3.28	8.42	6.54	382.50
GOLDEN REDHORSE	R	I	S	M	152	152.00	22.65	28.63	22.24	188.35
SHORTHEAD REDHORSE	R	I	S	M	266	266.00	39.64	46.60	36.20	175.19
RIVER REDHORSE [S]	R	I	S	I	4	4.00	0.60	4.84	3.76	1,211.00
NORTHERN HOG SUCKER	R	I	S	M	46	46.00	6.86	2.67	2.07	58.04
SPOTTED SUCKER	R	I	S		2	2.00	0.30	0.09	0.07	46.00
COMMON CARP	G	O	M	T	23	23.00	3.43	23.31	18.11	1,013.43
GOLDFISH	G	O	M	T	3	3.00	0.45	0.53	0.41	176.67
RIVER CHUB	N	I	N	I	1	1.00	0.15	0.01	0.01	11.00
SUCKERMOUTH MINNOW	N	I	S		3	3.00	0.45	0.00	0.00	0.67
SILVER SHINER	N	I	S	I	1	1.00	0.15	0.00	0.00	1.00
STRIPED SHINER	N	I	S		3	3.00	0.45	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		17	17.00	2.53	0.02	0.02	1.24
SAND SHINER	N	I	M	M	6	6.00	0.89	0.01	0.00	1.00
SILVERJAW MINNOW	N	I	M		1	1.00	0.15	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	2	2.00	0.30	0.00	0.00	1.50
CENTRAL STONEROLLER	N	H	N		2	2.00	0.30	0.02	0.02	11.50
ROCK BASS	S	C	C		6	6.00	0.89	0.13	0.10	22.17
SMALLMOUTH BASS	F	C	C	M	34	34.00	5.07	4.60	3.58	135.35
GREEN SUNFISH	S	I	C	T	2	2.00	0.30	0.03	0.03	17.00
BLUEGILL SUNFISH	S	I	C	P	7	7.00	1.04	0.13	0.10	18.71
LONGEAR SUNFISH	S	I	C	M	4	4.00	0.60	0.06	0.04	13.75
LOGPERCH	D	I	S	M	2	2.00	0.30	0.04	0.03	22.00
GREENSIDE DARTER	D	I	S	M	4	4.00	0.60	0.02	0.01	4.00
RAINBOW DARTER	D	I	S	M	3	3.00	0.45	0.01	0.01	2.33
SAUGER X WALLEYE	E	P			3	3.00	0.45	0.79	0.62	264.33
	Mile Total				671	671.00		128.72		
	Number of Species				28					
	Number of Hybrids				1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **78.10**	Basin: Great Miami River	Date Range: 08/23/95
	Time Fished: 3865 sec Drain Area: 2589.0 sq mi	Thru: 09/14/95
	Dist Fished: 1.00 km 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		13	13.00	3.83	1.28	2.16	98.08
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.29	0.56	0.95	560.00
RIVER CARPSUCKER	C	O	M		1	1.00	0.29	0.12	0.20	120.00
GOLDEN REDHORSE	R	I	S	M	95	95.00	28.02	20.22	34.27	212.80
SHORTHEAD REDHORSE	R	I	S	M	12	12.00	3.54	2.64	4.47	219.92
RIVER REDHORSE [S]	R	I	S	I	1	1.00	0.29	0.35	0.59	349.00
SPOTTED SUCKER	R	I	S		2	2.00	0.59	0.46	0.77	228.00
COMMON CARP	G	O	M	T	28	28.00	8.26	17.11	29.00	611.02
GOLDFISH	G	O	M	T	3	3.00	0.88	0.92	1.57	308.00
GOLDEN SHINER	N	I	M	T	11	11.00	3.24	0.40	0.68	36.73
STRIPED SHINER	N	I	S		1	1.00	0.29	0.03	0.05	32.00
SPOTFIN SHINER	N	I	M		1	1.00	0.29	0.00	0.00	2.00
BLUNTNOSE MINNOW	N	O	C	T	1	1.00	0.29	0.00	0.00	1.00
BLACK CRAPPIE	S	I	C		2	2.00	0.59	0.05	0.08	24.00
ROCK BASS	S	C	C		2	2.00	0.59	0.08	0.14	40.50
SMALLMOUTH BASS	F	C	C	M	33	33.00	9.73	10.84	18.38	328.55
LARGEMOUTH BASS	F	C	C		7	7.00	2.06	0.54	0.91	76.71
GREEN SUNFISH	S	I	C	T	11	11.00	3.24	0.44	0.75	40.00
BLUEGILL SUNFISH	S	I	C	P	37	37.00	10.91	0.80	1.36	21.68
LONGEAR SUNFISH	S	I	C	M	77	77.00	22.71	2.16	3.66	28.04
Mile Total					339	339.00		59.00		
Number of Species					20					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **77.10**	Basin: Great Miami River	Date Range: 08/23/95
	Time Fished: 4708 sec — Drain Area: 2591.0 sq mi	Thru: 09/14/95
	Dist Fished: 1.00 km — 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		39	39.00	8.25	2.29	2.68	58.59
QUILLBACK CARPSUCKER	C	O	M		13	13.00	2.75	7.67	8.99	590.23
RIVER CARPSUCKER	C	O	M		14	14.00	2.96	7.45	8.72	531.82
GOLDEN REDHORSE	R	I	S	M	109	109.00	23.04	21.26	24.90	195.01
SHORTHEAD REDHORSE	R	I	S	M	20	20.00	4.23	4.16	4.88	208.10
SPOTTED SUCKER	R	I	S		1	1.00	0.21	0.06	0.07	58.00
COMMON CARP	G	O	M	T	37	37.00	7.82	30.52	35.75	824.84
GOLDEN SHINER	N	I	M	T	3	3.00	0.63	0.08	0.09	26.67
STRIPED SHINER	N	I	S		8	8.00	1.69	0.01	0.01	0.88
BLUNTNOSE MINNOW	N	O	C	T	2	2.00	0.42	0.00	0.00	1.00
CHANNEL CATFISH	F		C		1	1.00	0.21	0.95	1.11	950.00
BROWN BULLHEAD		I	C	T	1	1.00	0.21	0.14	0.16	135.00
BL'KSTRIPE TOPMINNOW		I	M		1	1.00	0.21	0.00	0.00	2.00
WHITE BASS	F	P	M		1	1.00	0.21	0.01	0.01	10.00
BLACK CRAPPIE	S	I	C		4	4.00	0.85	0.14	0.16	34.25
ROCK BASS	S	C	C		6	6.00	1.27	0.21	0.25	35.17
SMALLMOUTH BASS	F	C	C	M	22	22.00	4.65	6.60	7.73	299.86
LARGEMOUTH BASS	F	C	C		7	7.00	1.48	0.19	0.23	27.57
GREEN SUNFISH	S	I	C	T	32	32.00	6.77	0.91	1.06	28.34
BLUEGILL SUNFISH	S	I	C	P	50	50.00	10.57	0.78	0.91	15.56
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.21	0.01	0.01	10.00
LONGEAR SUNFISH	S	I	C	M	99	99.00	20.93	1.64	1.92	16.54
GREEN SF X BLUEGILL					1	1.00	0.21	0.03	0.03	25.00
SAUGER X WALLEYE	E	P			1	1.00	0.21	0.28	0.33	280.00
Mile Total					473	473.00		85.36		
Number of Species					22					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **76.90**	Basin: Great Miami River	Date Range: 08/24/95
	Time Fished: 4911 sec Drain Area: 2591.0 sq mi	Thru: 09/15/95
	Dist Fished: 1.00 km 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		240	240.00	33.57	10.90	7.49	45.43
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.14	0.31	0.21	311.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.14	0.02	0.02	22.00
GOLDEN REDHORSE	R	I	S	M	74	74.00	10.35	18.79	12.91	253.94
SHORTHEAD REDHORSE	R	I	S	M	115	115.00	16.08	18.87	12.97	164.08
RIVER REDHORSE [S]	R	I	S	I	4	4.00	0.56	3.49	2.40	871.50
NORTHERN HOG SUCKER	R	I	S	M	45	45.00	6.29	3.81	2.62	84.64
COMMON CARP	G	O	M	T	50	50.00	6.99	71.65	49.23	1,433.04
GOLDFISH	G	O	M	T	1	1.00	0.14	0.37	0.26	372.00
RIVER CHUB	N	I	N	I	3	3.00	0.42	0.07	0.05	23.67
SUCKERMOUTH MINNOW	N	I	S		4	4.00	0.56	0.01	0.01	2.75
STRIPED SHINER	N	I	S		4	4.00	0.56	0.01	0.01	2.25
SPOTFIN SHINER	N	I	M		39	39.00	5.45	0.09	0.06	2.41
BLUNTNOSE MINNOW	N	O	C	T	1	1.00	0.14	0.01	0.00	5.00
CENTRAL STONEROLLER	N	H	N		1	1.00	0.14	0.00	0.00	1.00
CHANNEL CATFISH	F		C		4	4.00	0.56	3.85	2.65	963.00
BLACK CRAPPIE	S	I	C		2	2.00	0.28	0.06	0.04	32.00
ROCK BASS	S	C	C		2	2.00	0.28	0.13	0.09	64.50
SMALLMOUTH BASS	F	C	C	M	17	17.00	2.38	4.60	3.16	270.71
LARGEMOUTH BASS	F	C	C		12	12.00	1.68	2.95	2.03	245.92
GREEN SUNFISH	S	I	C	T	1	1.00	0.14	0.01	0.00	5.00
BLUEGILL SUNFISH	S	I	C	P	57	57.00	7.97	2.21	1.52	38.69
OR'GESPOTTED SUNFISH	S	I	C		7	7.00	0.98	0.04	0.03	5.43
LONGEAR SUNFISH	S	I	C	M	14	14.00	1.96	0.14	0.10	9.89
GREEN SF X HYBRID					1	1.00	0.14	0.05	0.04	52.00
BLACKSIDE DARTER	D	I	S		1	1.00	0.14	0.00	0.00	2.00
LOGPERCH	D	I	S	M	5	5.00	0.70	0.05	0.03	9.20
RAINBOW DARTER	D	I	S	M	1	1.00	0.14	0.00	0.00	1.00
SAUGER X WALLEYE	E	P			8	8.00	1.12	3.04	2.09	380.25
Mile Total					715	715.00		145.54		
Number of Species					27					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **76.10**	Basin: Great Miami River	Date Range: 08/24/95
	Time Fished: 1131 sec Drain Area: 2594.0 sq mi	Thru: 09/15/95
	Dist Fished: 0.20 km 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		2	10.00	0.57	1.46	0.41	146.00
QUILLBACK CARPSUCKER	C	O	M		1	5.00	0.28	2.86	0.81	571.00
BLACK REDHORSE	R	I	S	I	11	55.00	3.12	16.80	4.77	305.36
GOLDEN REDHORSE	R	I	S	M	45	225.00	12.75	74.88	21.28	332.82
SHORTHEAD REDHORSE	R	I	S	M	65	325.00	18.41	60.49	17.19	186.12
RIVER REDHORSE [S]	R	I	S	I	2	10.00	0.57	14.16	4.02	1,415.50
NORTHERN HOG SUCKER	R	I	S	M	8	40.00	2.27	5.85	1.66	146.13
COMMON CARP	G	O	M	T	11	55.00	3.12	85.45	24.29	1,553.64
SUCKERMOUTH MINNOW	N	I	S		1	5.00	0.28	0.01	0.00	2.00
STRIPED SHINER	N	I	S		4	20.00	1.13	0.17	0.05	8.50
SPOTFIN SHINER	N	I	M		36	180.00	10.20	0.53	0.15	2.97
SAND SHINER	N	I	M	M	1	5.00	0.28	0.01	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	99	495.00	28.05	0.52	0.15	1.04
CENTRAL STONEROLLER	N	H	N		1	5.00	0.28	0.01	0.00	2.00
COM. CARP X GOLDFISH	G	O		T	6	30.00	1.70	26.37	7.49	878.83
GRASS CARP	E		M		1	5.00	0.28	45.00	12.79	9,000.00
CHANNEL CATFISH	F		C		1	5.00	0.28	5.00	1.42	999.00
SMALLMOUTH BASS	F	C	C	M	19	95.00	5.38	9.29	2.64	97.74
LARGEMOUTH BASS	F	C	C		2	10.00	0.57	0.06	0.02	5.50
GREEN SUNFISH	S	I	C	T	4	20.00	1.13	0.20	0.06	9.75
BLUEGILL SUNFISH	S	I	C	P	20	100.00	5.67	0.68	0.19	6.75
LONGEAR SUNFISH	S	I	C	M	4	20.00	1.13	0.19	0.05	9.50
LOGPERCH	D	I	S	M	6	30.00	1.70	0.30	0.08	9.83
BANDED DARTER	D	I	S	I	1	5.00	0.28	0.01	0.00	1.00
SAUGER X WALLEYE	E	P			2	10.00	0.57	1.62	0.46	162.00
	Mile Total				353	1,765.00		351.86		
	Number of Species				23					
	Number of Hybrids				2					

Species List

River Code: **14-001** River Mile: **75.90**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4301 sec Drain Area: 2594.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 08/24/95 Thru: 09/15/95 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		54	54.00	8.45	4.06	2.98	75.19
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.16	0.66	0.48	658.00
BLACK REDHORSE	R	I	S	I	10	10.00	1.56	3.22	2.37	322.40
GOLDEN REDHORSE	R	I	S	M	101	101.00	15.81	28.80	21.17	285.10
SHORTHEAD REDHORSE	R	I	S	M	169	169.00	26.45	31.59	23.22	186.92
RIVER REDHORSE [S]	R	I	S	I	1	1.00	0.16	0.55	0.41	552.00
NORTHERN HOG SUCKER	R	I	S	M	24	24.00	3.76	2.10	1.54	87.54
COMMON CARP	G	O	M	T	34	34.00	5.32	43.78	32.18	1,287.50
GOLDFISH	G	O	M	T	2	2.00	0.31	1.34	0.98	667.50
SUCKERMOUTH MINNOW	N	I	S		1	1.00	0.16	0.00	0.00	1.00
STRIPED SHINER	N	I	S		11	11.00	1.72	0.08	0.06	7.45
SPOTFIN SHINER	N	I	M		69	69.00	10.80	0.16	0.12	2.36
SAND SHINER	N	I	M	M	1	1.00	0.16	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	14	14.00	2.19	0.02	0.01	1.29
CENTRAL STONEROLLER	N	H	N		2	2.00	0.31	0.00	0.00	1.50
CHANNEL CATFISH	F		C		3	3.00	0.47	3.01	2.21	1,003.33
ROCK BASS	S	C	C		8	8.00	1.25	1.05	0.77	131.25
SMALLMOUTH BASS	F	C	C	M	39	39.00	6.10	5.73	4.21	146.97
LARGEMOUTH BASS	F	C	C		14	14.00	2.19	4.53	3.33	323.86
GREEN SUNFISH	S	I	C	T	10	10.00	1.56	0.17	0.12	16.77
BLUEGILL SUNFISH	S	I	C	P	28	28.00	4.38	0.48	0.35	17.24
LONGEAR SUNFISH	S	I	C	M	24	24.00	3.76	0.39	0.29	16.24
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.16	0.04	0.03	38.00
B'GILL X PUMPKINSEED					1	1.00	0.16	0.03	0.02	32.00
GREEN SF X BLUEGILL					1	1.00	0.16	0.07	0.05	72.00
GREEN SF X LONGEAR					1	1.00	0.16	0.02	0.02	21.00
LOGPERCH	D	I	S	M	9	9.00	1.41	0.07	0.05	8.11
SAUGER X WALLEYE	E	P			6	6.00	0.94	4.08	3.00	679.33
Mile Total					639	639.00		136.04		
Number of Species					24					
Number of Hybrids					4					

Species List

River Code: **14-001** River Mile: **74.80**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 6152 sec Drain Area: 2598.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 08/29/95 Thru: 09/20/95 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		9	9.00	2.10	1.28	0.53	141.89
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.47	0.91	0.38	455.00
GOLDEN REDHORSE	R	I	S	M	73	73.00	17.06	15.81	6.62	216.61
SHORTHEAD REDHORSE	R	I	S	M	33	33.00	7.71	6.52	2.73	197.56
RIVER REDHORSE [S]	R	I	S	I	1	1.00	0.23	0.24	0.10	240.00
COMMON CARP	G	O	M	T	121	121.00	28.27	187.95	78.63	1,553.32
SUCKERMOUTH MINNOW	N	I	S		1	1.00	0.23	0.00	0.00	1.00
STRIPED SHINER	N	I	S		1	1.00	0.23	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		24	24.00	5.61	0.07	0.03	2.79
BLUNTNOSE MINNOW	N	O	C	T	12	12.00	2.80	0.01	0.00	0.75
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.23	1.15	0.48	1,150.00
CHANNEL CATFISH	F		C		5	5.00	1.17	6.05	2.53	1,209.00
WHITE CRAPPIE	S	I	C		2	2.00	0.47	0.04	0.02	19.50
BLACK CRAPPIE	S	I	C		3	3.00	0.70	0.33	0.14	111.33
ROCK BASS	S	C	C		7	7.00	1.64	0.75	0.31	106.71
SMALLMOUTH BASS	F	C	C	M	10	10.00	2.34	2.59	1.08	259.00
LARGEMOUTH BASS	F	C	C		30	30.00	7.01	12.63	5.28	420.90
GREEN SUNFISH	S	I	C	T	11	11.00	2.57	0.39	0.16	35.82
BLUEGILL SUNFISH	S	I	C	P	46	46.00	10.75	1.01	0.42	21.85
OR'GESPOTTED SUNFISH	S	I	C		2	2.00	0.47	0.01	0.00	2.50
LONGEAR SUNFISH	S	I	C	M	27	27.00	6.31	0.58	0.24	21.56
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.23	0.01	0.00	10.00
GREEN SF X HYBRID					1	1.00	0.23	0.01	0.00	10.00
RAINBOW DARTER	D	I	S	M	1	1.00	0.23	0.00	0.00	1.00
SAUGER X WALLEYE	E	P			4	4.00	0.93	0.71	0.30	176.50
Mile Total					428	428.00		239.03		
Number of Species					22					
Number of Hybrids					3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **73.30**	Basin: Great Miami River	Date Range: 08/29/95
	Time Fished: 6045 sec Drain Area: 2635.0 sq mi	Thru: 09/20/95
	Dist Fished: 1.00 km 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		71	71.00	16.86	3.69	3.16	52.01
QUILLBACK CARPSUCKER	C	O	M		3	3.00	0.71	1.55	1.33	516.00
GOLDEN REDHORSE	R	I	S	M	21	21.00	4.99	4.76	4.08	226.81
SHORTHEAD REDHORSE	R	I	S	M	17	17.00	4.04	3.68	3.15	216.65
SPOTTED SUCKER	R	I	S		3	3.00	0.71	0.59	0.51	196.67
COMMON CARP	G	O	M	T	39	39.00	9.26	70.74	60.56	1,813.85
STRIPED SHINER	N	I	S		1	1.00	0.24	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		2	2.00	0.48	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	3	3.00	0.71	0.00	0.00	1.00
CENTRAL STONEROLLER	N	H	N		1	1.00	0.24	0.00	0.00	2.00
CHANNEL CATFISH	F		C		6	6.00	1.43	5.99	5.13	999.00
WHITE BASS	F	P	M		1	1.00	0.24	0.24	0.21	240.00
WHITE CRAPPIE	S	I	C		8	8.00	1.90	0.74	0.63	92.13
ROCK BASS	S	C	C		5	5.00	1.19	0.35	0.30	69.00
SMALLMOUTH BASS	F	C	C	M	16	16.00	3.80	4.47	3.83	279.63
LARGEMOUTH BASS	F	C	C		37	37.00	8.79	14.37	12.30	388.34
GREEN SUNFISH	S	I	C	T	105	105.00	24.94	4.24	3.63	40.42
BLUEGILL SUNFISH	S	I	C	P	40	40.00	9.50	0.41	0.35	10.35
LONGEAR SUNFISH	S	I	C	M	40	40.00	9.50	0.66	0.56	16.38
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.24	0.02	0.01	15.00
SAUGER X WALLEYE	E	P			1	1.00	0.24	0.29	0.25	290.00
Mile Total					421	421.00		116.80		
Number of Species					20					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **71.60**	Basin: Great Miami River	Date Range: 08/29/95
	Time Fished: 4310 sec Drain Area: 2638.0 sq mi	Thru: 09/18/95
	Dist Fished: 1.00 km 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		100	100.00	13.87	16.56	7.73	165.61
QUILLBACK CARPSUCKER	C	O	M		7	7.00	0.97	2.85	1.33	407.43
BLACK REDHORSE	R	I	S	I	4	4.00	0.55	1.60	0.75	400.75
GOLDEN REDHORSE	R	I	S	M	119	119.00	16.50	38.47	17.97	323.31
SHORTHEAD REDHORSE	R	I	S	M	206	206.00	28.57	41.36	19.32	200.77
RIVER REDHORSE [S]	R	I	S	I	4	4.00	0.55	5.11	2.39	1,277.88
NORTHERN HOG SUCKER	R	I	S	M	13	13.00	1.80	2.81	1.31	216.08
COMMON CARP	G	O	M	T	48	48.00	6.66	72.05	33.65	1,501.00
GOLDFISH	G	O	M	T	1	1.00	0.14	0.31	0.14	309.00
RIVER CHUB	N	I	N	I	4	4.00	0.55	0.04	0.02	10.00
CREEK CHUB	N	G	N	T	1	1.00	0.14	0.00	0.00	3.00
SUCKERMOUTH MINNOW	N	I	S		5	5.00	0.69	0.03	0.01	6.40
STRIPED SHINER	N	I	S		5	5.00	0.69	0.01	0.01	2.40
SPOTFIN SHINER	N	I	M		54	54.00	7.49	0.13	0.06	2.41
SAND SHINER	N	I	M	M	1	1.00	0.14	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	6	6.00	0.83	0.01	0.00	1.67
CENTRAL STONEROLLER	N	H	N		10	10.00	1.39	0.09	0.04	8.50
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.14	0.65	0.30	650.00
CHANNEL CATFISH	F		C		16	16.00	2.22	11.54	5.39	721.31
FLATHEAD CATFISH	F	P	C		1	1.00	0.14	0.68	0.32	680.00
BROOK SILVERSIDE		I	M	M	2	2.00	0.28	0.00	0.00	2.00
ROCK BASS	S	C	C		2	2.00	0.28	0.10	0.04	47.50
SMALLMOUTH BASS	F	C	C	M	49	49.00	6.80	10.65	4.98	217.44
BLUEGILL SUNFISH	S	I	C	P	3	3.00	0.42	0.04	0.02	12.00
PUMPKINSEED SUNFISH	S	I	C	P	2	2.00	0.28	0.06	0.03	29.50
GREEN SF X HYBRID					2	2.00	0.28	0.03	0.01	16.00
WALLEYE	F	P	S		3	3.00	0.42	2.43	1.14	810.67
LOGPERCH	D	I	S	M	2	2.00	0.28	0.01	0.01	7.00
GREENSIDE DARTER	D	I	S	M	15	15.00	2.08	0.05	0.02	3.53
BANDED DARTER	D	I	S	I	13	13.00	1.80	0.02	0.01	1.46
RAINBOW DARTER	D	I	S	M	3	3.00	0.42	0.00	0.00	1.00
SAUGER X WALLEYE	E	P			19	19.00	2.64	6.40	2.99	337.05
Mile Total					721	721.00		214.12		
Number of Species					29					
Number of Hybrids					3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **71.45**	Basin: Great Miami River	Date Range: 08/29/95
	Time Fished: 1431 sec Drain Area: 2638.0 sq mi	Thru: 09/18/95
	Dist Fished: 0.20 km 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		5	25.00	4.24	2.20	0.83	87.80
GOLDEN REDHORSE	R	I	S	M	32	160.00	27.12	41.05	15.50	256.58
SHORTHEAD REDHORSE	R	I	S	M	21	105.00	17.80	25.87	9.77	246.33
COMMON CARP	G	O	M	T	13	65.00	11.02	91.34	34.49	1,405.23
EMERALD SHINER	N	I	S		1	5.00	0.85	0.01	0.00	1.00
SPOTFIN SHINER	N	I	M		4	20.00	3.39	0.07	0.02	3.25
BLUNTNOSE MINNOW	N	O	C	T	3	15.00	2.54	0.02	0.01	1.00
COM. CARP X GOLDFISH	G	O		T	14	70.00	11.86	47.28	17.86	675.43
CHANNEL CATFISH	F		C		7	35.00	5.93	39.75	15.01	1,135.71
SMALLMOUTH BASS	F	C	C	M	8	40.00	6.78	9.15	3.46	228.75
LARGEMOUTH BASS	F	C	C		1	5.00	0.85	4.61	1.74	922.00
GREEN SUNFISH	S	I	C	T	1	5.00	0.85	0.01	0.00	1.00
BLUEGILL SUNFISH	S	I	C	P	1	5.00	0.85	0.04	0.01	7.00
LOGPERCH	D	I	S	M	1	5.00	0.85	0.08	0.03	15.00
GREENSIDE DARTER	D	I	S	M	1	5.00	0.85	0.04	0.01	7.00
RAINBOW DARTER	D	I	S	M	1	5.00	0.85	0.01	0.00	1.00
SAUGER X WALLEYE	E	P			4	20.00	3.39	3.32	1.25	165.75
	Mile Total				118	590.00		264.80		
	Number of Species				15					
	Number of Hybrids				2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **69.90**	Basin: Great Miami River	Date Range: 08/29/95
	Time Fished: 4616 sec Drain Area: 2647.0 sq mi	Thru: 09/18/95
	Dist Fished: 1.00 km 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	3.38	1.80	1.55	163.82
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.62	1.30	1.12	650.00
GOLDEN REDHORSE	R	I	S	M	84	84.00	25.85	27.63	23.80	328.87
SHORTHEAD REDHORSE	R	I	S	M	112	112.00	34.46	29.82	25.69	266.24
RIVER REDHORSE [S]	R	I	S	I	2	2.00	0.62	3.22	2.77	1,610.00
COMMON CARP	G	O	M	T	20	20.00	6.15	28.27	24.36	1,413.60
RIVER CHUB	N	I	N	I	4	4.00	1.23	0.01	0.01	3.50
CREEK CHUB	N	G	N	T	1	1.00	0.31	0.01	0.01	10.00
SILVER SHINER	N	I	S	I	1	1.00	0.31	0.00	0.00	4.00
SPOTFIN SHINER	N	I	M		21	21.00	6.46	0.07	0.06	3.33
COM. CARP X GOLDFISH	G	O		T	3	3.00	0.92	1.71	1.48	571.33
CHANNEL CATFISH	F		C		12	12.00	3.69	9.53	8.21	793.75
FLATHEAD CATFISH	F	P	C		2	2.00	0.62	1.79	1.54	895.00
BROOK SILVERSIDE		I	M	M	2	2.00	0.62	0.00	0.00	2.00
ROCK BASS	S	C	C		9	9.00	2.77	1.53	1.31	169.44
SMALLMOUTH BASS	F	C	C	M	28	28.00	8.62	7.02	6.05	250.71
LARGEMOUTH BASS	F	C	C		1	1.00	0.31	0.01	0.01	10.00
BLUEGILL SUNFISH	S	I	C	P	1	1.00	0.31	0.05	0.04	45.00
LOGPERCH	D	I	S	M	2	2.00	0.62	0.03	0.02	14.50
GREENSIDE DARTER	D	I	S	M	1	1.00	0.31	0.00	0.00	2.00
BANDED DARTER	D	I	S	I	1	1.00	0.31	0.00	0.00	1.00
SAUGER X WALLEYE	E	P			5	5.00	1.54	2.25	1.94	450.00
	Mile Total				325	325.00		116.05		
	Number of Species				20					
	Number of Hybrids				2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **69.30**	Basin: Great Miami River	Date Range: 08/30/95
	Time Fished: 4916 sec — Drain Area: 2649.0 sq mi	Thru: 09/18/95
	Dist Fished: 1.00 km — 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	4.87	1.46	1.25	132.45
QUILLBACK CARPSUCKER	C	O	M		3	3.00	1.33	1.92	1.65	640.67
BLACK REDHORSE	R	I	S	I	1	1.00	0.44	0.28	0.24	282.00
GOLDEN REDHORSE	R	I	S	M	56	56.00	24.78	17.38	14.96	310.43
SHORTHEAD REDHORSE	R	I	S	M	38	38.00	16.81	9.98	8.59	262.64
NORTHERN HOG SUCKER	R	I	S	M	1	1.00	0.44	0.03	0.03	30.00
COMMON CARP	G	O	M	T	39	39.00	17.26	61.84	53.22	1,585.72
SILVER SHINER	N	I	S	I	1	1.00	0.44	0.01	0.01	8.00
SPOTFIN SHINER	N	I	M		28	28.00	12.39	0.05	0.04	1.64
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.44	0.85	0.73	850.00
CHANNEL CATFISH	F		C		7	7.00	3.10	5.93	5.10	846.57
FLATHEAD CATFISH	F	P	C		6	6.00	2.65	9.39	8.08	1,564.17
ROCK BASS	S	C	C		4	4.00	1.77	0.87	0.75	218.00
SMALLMOUTH BASS	F	C	C	M	20	20.00	8.85	3.81	3.28	190.35
LARGEMOUTH BASS	F	C	C		1	1.00	0.44	1.38	1.18	1,375.00
GREEN SUNFISH	S	I	C	T	1	1.00	0.44	0.00	0.00	3.00
GREEN SF X HYBRID					1	1.00	0.44	0.04	0.03	35.00
LOGPERCH	D	I	S	M	1	1.00	0.44	0.01	0.00	5.00
GREENSIDE DARTER	D	I	S	M	2	2.00	0.88	0.01	0.01	4.00
SAUGER X WALLEYE	E	P			4	4.00	1.77	0.99	0.85	246.50
Mile Total					226	226.00		116.20		
Number of Species					17					
Number of Hybrids					3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **69.20**	Basin: Great Miami River	Date Range: 08/30/95
	Time Fished: 1131 sec Drain Area: 2649.0 sq mi	Thru: 09/18/95
	Dist Fished: 0.20 km 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		9	45.00	13.04	7.33	4.37	162.78
GOLDEN REDHORSE	R	I	S	M	6	30.00	8.70	6.58	3.92	219.33
SHORTHEAD REDHORSE	R	I	S	M	3	15.00	4.35	3.67	2.18	244.33
COMMON CARP	G	O	M	T	21	105.00	30.43	109.86	65.48	1,046.29
RIVER CHUB	N	I	N	I	1	5.00	1.45	0.01	0.00	1.00
SPOTFIN SHINER	N	I	M		7	35.00	10.14	0.06	0.04	1.71
BLUNTNOSE MINNOW	N	O	C	T	1	5.00	1.45	0.01	0.00	1.00
COM. CARP X GOLDFISH	G	O		T	3	15.00	4.35	10.39	6.19	692.33
CHANNEL CATFISH	F		C		2	10.00	2.90	6.50	3.87	650.00
SMALLMOUTH BASS	F	C	C	M	6	30.00	8.70	11.12	6.63	370.67
GREEN SUNFISH	S	I	C	T	4	20.00	5.80	0.02	0.01	1.00
PUMPKINSEED SUNFISH	S	I	C	P	1	5.00	1.45	0.05	0.03	10.00
BANDED DARTER	D	I	S	I	1	5.00	1.45	0.01	0.00	1.00
SAUGER X WALLEYE	E	P			4	20.00	5.80	12.20	7.27	609.75
Mile Total					69	345.00		167.78		
Number of Species					12					
Number of Hybrids					2					

Species List

River Code: **14-001** River Mile: **69.00**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 5300 sec Drain Area: 2649.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 08/30/95 Thru: 09/18/95 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		34	34.00	7.42	2.55	1.21	75.12
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.44	1.12	0.53	560.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.22	0.32	0.15	315.00
GOLDEN REDHORSE	R	I	S	M	85	85.00	18.56	26.57	12.61	312.56
SHORTHEAD REDHORSE	R	I	S	M	86	86.00	18.78	20.62	9.79	239.78
RIVER REDHORSE [S]	R	I	S	I	2	2.00	0.44	1.58	0.75	789.00
NORTHERN HOG SUCKER	R	I	S	M	24	24.00	5.24	5.59	2.65	233.00
COMMON CARP	G	O	M	T	66	66.00	14.41	122.35	58.06	1,853.73
GOLDFISH	G	O	M	T	1	1.00	0.22	0.23	0.11	230.00
SUCKERMOUTH MINNOW	N	I	S		6	6.00	1.31	0.03	0.01	5.00
SILVER SHINER	N	I	S	I	6	6.00	1.31	0.03	0.01	4.83
SPOTFIN SHINER	N	I	M		32	32.00	6.99	0.07	0.03	2.16
BLUNTNOSE MINNOW	N	O	C	T	5	5.00	1.09	0.01	0.00	1.20
CENTRAL STONEROLLER	N	H	N		5	5.00	1.09	0.01	0.00	1.40
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.22	0.81	0.38	810.00
CHANNEL CATFISH	F		C		30	30.00	6.55	21.55	10.22	718.21
STONECAT MADTOM		I	C	I	2	2.00	0.44	0.03	0.02	16.50
BROOK SILVERSIDE		I	M	M	2	2.00	0.44	0.00	0.00	1.00
BLACK CRAPPIE	S	I	C		1	1.00	0.22	0.07	0.03	69.00
ROCK BASS	S	C	C		2	2.00	0.44	0.34	0.16	172.00
SMALLMOUTH BASS	F	C	C	M	12	12.00	2.62	3.74	1.77	311.50
GREEN SUNFISH	S	I	C	T	1	1.00	0.22	0.01	0.01	12.00
BLUEGILL SUNFISH	S	I	C	P	3	3.00	0.66	0.01	0.00	3.33
OR'GESPOTTED SUNFISH	S	I	C		2	2.00	0.44	0.01	0.00	3.50
LONGEAR SUNFISH	S	I	C	M	4	4.00	0.87	0.03	0.01	7.50
LOGPERCH	D	I	S	M	4	4.00	0.87	0.04	0.02	10.50
GREENSIDE DARTER	D	I	S	M	23	23.00	5.02	0.15	0.07	6.65
BANDED DARTER	D	I	S	I	11	11.00	2.40	0.01	0.01	1.09
RAINBOW DARTER	D	I	S	M	1	1.00	0.22	0.00	0.00	1.00
SAUGER X WALLEYE	E	P			4	4.00	0.87	2.85	1.35	712.50
Mile Total					458	458.00		210.72		
Number of Species					28					
Number of Hybrids					2					

Species List

River Code: 14-001	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **65.90**	Basin: Great Miami River	Date Range: 08/30/95
	Time Fished: 6322 sec Drain Area: 2713.0 sq mi	Thru: 09/19/95
	Dist Fished: 1.00 km 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		3	3.00	1.00	0.13	0.08	42.33
QUILLBACK CARPSUCKER	C	O	M		3	3.00	1.00	1.02	0.62	341.00
GOLDEN REDHORSE	R	I	S	M	70	70.00	23.33	12.45	7.52	177.85
SHORTHEAD REDHORSE	R	I	S	M	9	9.00	3.00	2.76	1.67	306.78
SPOTTED SUCKER	R	I	S		14	14.00	4.67	4.59	2.77	327.93
COMMON CARP	G	O	M	T	71	71.00	23.67	110.15	66.56	1,551.39
GOLDFISH	G	O	M	T	15	15.00	5.00	5.11	3.09	340.93
GOLDEN SHINER	N	I	M	T	14	14.00	4.67	0.29	0.18	21.00
SPOTFIN SHINER	N	I	M		5	5.00	1.67	0.01	0.00	1.60
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.33	1.11	0.67	1,110.00
CHANNEL CATFISH	F		C		31	31.00	10.33	20.78	12.56	670.37
WHITE CRAPPIE	S	I	C		8	8.00	2.67	0.10	0.06	12.50
BLACK CRAPPIE	S	I	C		1	1.00	0.33	0.03	0.02	30.00
ROCK BASS	S	C	C		1	1.00	0.33	0.05	0.03	51.00
SMALLMOUTH BASS	F	C	C	M	8	8.00	2.67	4.00	2.42	499.88
LARGEMOUTH BASS	F	C	C		5	5.00	1.67	1.79	1.08	357.20
GREEN SUNFISH	S	I	C	T	10	10.00	3.33	0.43	0.26	43.30
BLUEGILL SUNFISH	S	I	C	P	22	22.00	7.33	0.52	0.32	23.77
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.33	0.01	0.01	9.00
LONGEAR SUNFISH	S	I	C	M	6	6.00	2.00	0.10	0.06	16.33
PUMPKINSEED SUNFISH	S	I	C	P	2	2.00	0.67	0.04	0.02	20.50
Mile Total					300	300.00		165.48		
Number of Species					20					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **65.00**	Basin: Great Miami River	Date Range: 08/30/95
	Time Fished: 1204 sec Drain Area: 2715.0 sq mi	Thru: 09/19/95
	Dist Fished: 0.20 km 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		15	75.00	10.71	11.07	6.87	147.60
GOLDEN REDHORSE	R	I	S	M	40	200.00	28.57	37.92	23.52	189.58
SHORTHEAD REDHORSE	R	I	S	M	3	15.00	2.14	4.91	3.04	327.00
SPOTTED SUCKER	R	I	S		5	25.00	3.57	7.66	4.75	306.40
COMMON CARP	G	O	M	T	7	35.00	5.00	58.95	36.57	1,684.29
GOLDFISH	G	O	M	T	2	10.00	1.43	3.00	1.86	300.00
GOLDEN SHINER	N	I	M	T	13	65.00	9.29	0.85	0.53	13.08
STRIPED SHINER	N	I	S		1	5.00	0.71	0.11	0.07	22.00
BLUNTNOSE MINNOW	N	O	C	T	3	15.00	2.14	0.02	0.01	1.00
COM. CARP X GOLDFISH	G	O		T	7	35.00	5.00	29.22	18.13	834.71
WHITE CRAPPIE	S	I	C		2	10.00	1.43	0.19	0.12	19.00
LARGEMOUTH BASS	F	C	C		4	20.00	2.86	4.71	2.92	235.25
GREEN SUNFISH	S	I	C	T	13	65.00	9.29	0.58	0.36	8.92
BLUEGILL SUNFISH	S	I	C	P	17	85.00	12.14	1.40	0.87	16.47
LONGEAR SUNFISH	S	I	C	M	6	30.00	4.29	0.37	0.23	12.17
PUMPKINSEED SUNFISH	S	I	C	P	2	10.00	1.43	0.26	0.16	25.50
	Mile Total				140	700.00		161.19		
	Number of Species				15					
	Number of Hybrids				1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **64.80**	Basin: Great Miami River	Date Range: 08/30/95
	Time Fished: 4637 sec Drain Area: 2715.0 sq mi	Thru: 09/19/95
	Dist Fished: 1.00 km 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		9	9.00	2.40	0.63	0.56	70.22
QUILLBACK CARPSUCKER	C	O	M		8	8.00	2.13	4.94	4.38	617.88
GOLDEN REDHORSE	R	I	S	M	85	85.00	22.67	15.33	13.59	180.37
SHORTHEAD REDHORSE	R	I	S	M	4	4.00	1.07	1.38	1.22	343.75
WHITE SUCKER	W	O	S	T	1	1.00	0.27	0.45	0.40	450.00
SPOTTED SUCKER	R	I	S		29	29.00	7.73	7.96	7.06	274.62
COMMON CARP	G	O	M	T	40	40.00	10.67	63.59	56.39	1,589.82
GOLDFISH	G	O	M	T	24	24.00	6.40	9.43	8.36	392.76
GOLDEN SHINER	N	I	M	T	13	13.00	3.47	0.18	0.16	13.46
STRIPED SHINER	N	I	S		1	1.00	0.27	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	4	4.00	1.07	0.00	0.00	1.00
COM. CARP X GOLDFISH	G	O		T	2	2.00	0.53	1.41	1.25	705.00
CHANNEL CATFISH	F		C		4	4.00	1.07	2.53	2.24	632.50
WHITE BASS	F	P	M		1	1.00	0.27	0.02	0.02	20.00
WHITE CRAPPIE	S	I	C		7	7.00	1.87	0.12	0.10	16.86
SMALLMOUTH BASS	F	C	C	M	1	1.00	0.27	0.68	0.60	680.00
LARGEMOUTH BASS	F	C	C		9	9.00	2.40	1.92	1.70	213.00
GREEN SUNFISH	S	I	C	T	59	59.00	15.73	1.25	1.11	21.15
BLUEGILL SUNFISH	S	I	C	P	34	34.00	9.07	0.48	0.43	14.15
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.27	0.00	0.00	3.00
LONGEAR SUNFISH	S	I	C	M	34	34.00	9.07	0.43	0.38	12.50
REDEAR SUNFISH	E	I	C		4	4.00	1.07	0.04	0.04	10.50
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.27	0.01	0.01	12.00
Mile Total					375	375.00		112.78		
Number of Species					22					
Number of Hybrids					1					

Species List

River Code: **14-001** River Mile: **64.30**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 1280 sec Drain Area: 2718.0 sq mi Dist Fished: 0.20 km No of Passes: 2	Sample Date: **1995** Date Range: 08/30/95 Thru: 09/19/95 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		7	35.00	6.42	3.39	2.91	96.71
QUILLBACK CARPSUCKER	C	O	M		1	5.00	0.92	1.50	1.29	300.00
HIGHFIN CARPSUCKER	C	O	M		1	5.00	0.92	1.38	1.18	275.00
GOLDEN REDHORSE	R	I	S	M	26	130.00	23.85	29.88	25.67	229.82
SHORTHEAD REDHORSE	R	I	S	M	4	20.00	3.67	5.92	5.09	296.00
COMMON CARP	G	O	M	T	5	25.00	4.59	48.25	41.46	1,930.00
SILVER SHINER	N	I	S	I	1	5.00	0.92	0.02	0.02	4.00
ROSYFACE SHINER	N	I	S	I	3	15.00	2.75	0.03	0.02	1.67
SPOTFIN SHINER	N	I	M		33	165.00	30.28	0.42	0.36	2.55
SAND SHINER	N	I	M	M	1	5.00	0.92	0.01	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	3	15.00	2.75	0.05	0.04	3.33
CHANNEL CATFISH	F		C		5	25.00	4.59	12.20	10.48	487.80
BROOK SILVERSIDE		I	M	M	1	5.00	0.92	0.01	0.00	1.00
SMALLMOUTH BASS	F	C	C	M	6	30.00	5.50	7.37	6.33	245.67
LARGEMOUTH BASS	F	C	C		4	20.00	3.67	4.85	4.17	242.50
GREEN SUNFISH	S	I	C	T	1	5.00	0.92	0.10	0.09	20.00
BLUEGILL SUNFISH	S	I	C	P	2	10.00	1.83	0.61	0.52	60.50
REDEAR SUNFISH	E	I	C		2	10.00	1.83	0.34	0.29	33.50
LOGPERCH	D	I	S	M	3	15.00	2.75	0.10	0.09	6.67
Mile Total					109	545.00		116.39		
Number of Species					19					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **64.00**	Basin: Great Miami River	Date Range: 08/30/95
	Time Fished: 5120 sec — Drain Area: 2723.0 sq mi	Thru: 09/19/95
	Dist Fished: 1.00 km — 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		40	40.00	5.93	4.83	1.49	120.86
QUILLBACK CARPSUCKER	C	O	M		24	24.00	3.56	7.53	2.31	313.73
HIGHFIN CARPSUCKER	C	O	M		2	2.00	0.30	0.58	0.18	290.00
BLACK REDHORSE	R	I	S	I	18	18.00	2.67	10.00	3.07	555.36
GOLDEN REDHORSE	R	I	S	M	114	114.00	16.89	34.95	10.74	306.62
SHORTHEAD REDHORSE	R	I	S	M	116	116.00	17.19	34.18	10.50	294.62
NORTHERN HOG SUCKER	R	I	S	M	1	1.00	0.15	0.32	0.10	322.00
COMMON CARP	G	O	M	T	91	91.00	13.48	142.03	43.65	1,560.82
GOLDFISH	G	O	M	T	6	6.00	0.89	2.03	0.62	338.17
SILVER SHINER	N	I	S	I	1	1.00	0.15	0.01	0.00	5.00
ROSYFACE SHINER	N	I	S	I	1	1.00	0.15	0.00	0.00	3.00
STRIPED SHINER	N	I	S		1	1.00	0.15	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		73	73.00	10.81	0.19	0.06	2.66
BLUNTNOSE MINNOW	N	O	C	T	4	4.00	0.59	0.01	0.00	1.75
COM. CARP X GOLDFISH	G	O		T	6	6.00	0.89	4.71	1.45	785.33
CHANNEL CATFISH	F		C		82	82.00	12.15	55.38	17.02	675.37
FLATHEAD CATFISH	F	P	C		4	4.00	0.59	9.15	2.81	2,286.25
BROOK SILVERSIDE		I	M	M	4	4.00	0.59	0.01	0.00	1.75
WHITE BASS	F	P	M		1	1.00	0.15	0.01	0.00	12.00
ROCK BASS	S	C	C		4	4.00	0.59	0.65	0.20	162.25
SMALLMOUTH BASS	F	C	C	M	47	47.00	6.96	12.35	3.80	262.78
LARGEMOUTH BASS	F	C	C		1	1.00	0.15	0.03	0.01	29.00
GREEN SUNFISH	S	I	C	T	2	2.00	0.30	0.05	0.02	26.00
BLUEGILL SUNFISH	S	I	C	P	7	7.00	1.04	0.14	0.04	20.43
LONGEAR SUNFISH	S	I	C	M	3	3.00	0.44	0.08	0.02	25.33
REDEAR SUNFISH	E	I	C		1	1.00	0.15	0.03	0.01	30.00
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.15	0.04	0.01	42.00
SAUGER	F	P	S		1	1.00	0.15	0.31	0.10	310.00
LOGPERCH	D	I	S	M	6	6.00	0.89	0.05	0.02	8.83
GREENSIDE DARTER	D	I	S	M	2	2.00	0.30	0.01	0.00	7.00
SAUGER X WALLEYE	E	P			11	11.00	1.63	5.73	1.76	520.82
	Mile Total				675	675.00		325.40		
	Number of Species				29					
	Number of Hybrids				2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **63.30**	Basin: Great Miami River	Date Range: 08/31/95
	Time Fished: 2143 sec Drain Area: 2724.0 sq mi	Thru: 09/19/95
	Dist Fished: 1.00 km 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		7	7.00	1.06	0.72	0.27	102.14
QUILLBACK CARPSUCKER	C	O	M		12	12.00	1.81	3.93	1.49	327.58
BLACK REDHORSE	R	I	S	I	16	16.00	2.41	8.49	3.21	530.40
GOLDEN REDHORSE	R	I	S	M	163	163.00	24.59	45.96	17.39	281.95
SHORTHEAD REDHORSE	R	I	S	M	198	198.00	29.86	62.52	23.65	315.74
RIVER REDHORSE [S]	R	I	S	I	1	1.00	0.15	0.48	0.18	480.00
NORTHERN HOG SUCKER	R	I	S	M	18	18.00	2.71	6.67	2.52	370.33
COMMON CARP	G	O	M	T	70	70.00	10.56	84.67	32.03	1,209.62
GOLDFISH	G	O	M	T	7	7.00	1.06	2.17	0.82	309.43
SPOTFIN SHINER	N	I	M		32	32.00	4.83	0.10	0.04	3.25
COM. CARP X GOLDFISH	G	O		T	4	4.00	0.60	2.74	1.04	685.50
CHANNEL CATFISH	F		C		24	24.00	3.62	13.61	5.15	567.22
BROOK SILVERSIDE		I	M	M	1	1.00	0.15	0.00	0.00	1.00
BLACK CRAPPIE	S	I	C		13	13.00	1.96	6.45	2.44	496.38
ROCK BASS	S	C	C		9	9.00	1.36	0.82	0.31	91.11
SMALLMOUTH BASS	F	C	C	M	62	62.00	9.35	23.37	8.84	376.86
GREEN SUNFISH	S	I	C	T	3	3.00	0.45	0.21	0.08	69.00
BLUEGILL SUNFISH	S	I	C	P	2	2.00	0.30	0.05	0.02	23.50
LONGEAR SUNFISH	S	I	C	M	5	5.00	0.75	0.16	0.06	31.20
GREEN SF X HYBRID					1	1.00	0.15	0.07	0.03	72.00
LOGPERCH	D	I	S	M	8	8.00	1.21	0.09	0.03	10.63
GREENSIDE DARTER	D	I	S	M	4	4.00	0.60	0.03	0.01	6.25
SAUGER X WALLEYE	E	P			3	3.00	0.45	1.05	0.40	350.00
	Mile Total				663	663.00		264.33		
	Number of Species				20					
	Number of Hybrids				3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **62.10**	Basin: Great Miami River	Date Range: 08/31/95
	Time Fished: 4530 sec Drain Area: 2725.0 sq mi	Thru: 09/19/95
	Dist Fished: 1.00 km 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		9	9.00	2.57	0.97	0.61	107.67
QUILLBACK CARPSUCKER	C	O	M		12	12.00	3.43	3.70	2.31	308.33
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.29	0.13	0.08	130.00
BLACK REDHORSE	R	I	S	I	2	2.00	0.57	0.56	0.35	280.00
GOLDEN REDHORSE	R	I	S	M	100	100.00	28.57	22.95	14.34	229.46
SHORTHEAD REDHORSE	R	I	S	M	48	48.00	13.71	14.33	8.95	298.44
NORTHERN HOG SUCKER	R	I	S	M	10	10.00	2.86	2.71	1.69	270.90
COMMON CARP	G	O	M	T	51	51.00	14.57	84.29	52.68	1,652.75
GOLDFISH	G	O	M	T	3	3.00	0.86	0.98	0.61	325.33
SILVER SHINER	N	I	S	I	1	1.00	0.29	0.01	0.00	8.00
SPOTFIN SHINER	N	I	M		37	37.00	10.57	0.07	0.05	2.00
COM. CARP X GOLDFISH	G	O		T	3	3.00	0.86	2.80	1.75	933.33
CHANNEL CATFISH	F		C		29	29.00	8.29	16.49	10.31	568.64
FLATHEAD CATFISH	F	P	C		2	2.00	0.57	1.86	1.16	930.00
BROOK SILVERSIDE		I	M	M	1	1.00	0.29	0.00	0.00	1.00
BLACK CRAPPIE	S	I	C		2	2.00	0.57	0.30	0.19	148.50
SMALLMOUTH BASS	F	C	C	M	17	17.00	4.86	4.23	2.64	248.71
LARGEMOUTH BASS	F	C	C		6	6.00	1.71	1.66	1.04	276.50
BLUEGILL SUNFISH	S	I	C	P	7	7.00	2.00	0.36	0.23	51.71
OR'GESPOTTED SUNFISH	S	I	C		2	2.00	0.57	0.01	0.00	4.00
GREEN SF X HYBRID					1	1.00	0.29	0.19	0.12	190.00
SAUGER	F	P	S		1	1.00	0.29	0.23	0.14	230.00
YELLOW PERCH			M		1	1.00	0.29	0.00	0.00	3.00
LOGPERCH	D	I	S	M	1	1.00	0.29	0.01	0.01	12.00
SAUGER X WALLEYE	E	P			3	3.00	0.86	1.18	0.73	391.67
Mile Total					350	350.00		160.00		
Number of Species					22					
Number of Hybrids					3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **60.20**	Basin: Great Miami River	Date Range: 08/31/95
	Time Fished: 4581 sec Drain Area: 2728.0 sq mi	Thru: 09/20/95
	Dist Fished: 1.00 km 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
QUILLBACK CARPSUCKER	C	O	M		6	6.00	1.91	2.42	2.02	403.50
BLACK REDHORSE	R	I	S	I	23	23.00	7.32	11.31	9.45	491.70
GOLDEN REDHORSE	R	I	S	M	70	70.00	22.29	15.38	12.85	219.75
SHORTHEAD REDHORSE	R	I	S	M	21	21.00	6.69	7.01	5.86	334.00
NORTHERN HOG SUCKER	R	I	S	M	1	1.00	0.32	0.06	0.05	60.00
COMMON CARP	G	O	M	T	28	28.00	8.92	42.82	35.78	1,529.45
GOLDFISH	G	O	M	T	11	11.00	3.50	2.66	2.22	241.85
SPOTFIN SHINER	N	I	M		32	32.00	10.19	0.06	0.05	1.97
BLUNTNOSE MINNOW	N	O	C	T	2	2.00	0.64	0.00	0.00	1.00
CHANNEL CATFISH	F		C		39	39.00	12.42	19.37	16.18	496.58
FLATHEAD CATFISH	F	P	C		3	3.00	0.96	2.74	2.29	913.00
ROCK BASS	S	C	C		2	2.00	0.64	0.40	0.34	200.50
SMALLMOUTH BASS	F	C	C	M	46	46.00	14.65	11.70	9.77	254.27
GREEN SUNFISH	S	I	C	T	4	4.00	1.27	0.16	0.13	39.25
BLUEGILL SUNFISH	S	I	C	P	6	6.00	1.91	0.06	0.05	10.00
LONGEAR SUNFISH	S	I	C	M	9	9.00	2.87	0.24	0.20	27.00
PUMPKINSEED SUNFISH	S	I	C	P	4	4.00	1.27	0.14	0.12	35.25
GREEN SF X HYBRID					1	1.00	0.32	0.05	0.04	51.00
LOGPERCH	D	I	S	M	1	1.00	0.32	0.02	0.02	18.00
SAUGER X WALLEYE	E	P			5	5.00	1.59	3.07	2.57	614.40
Mile Total					314	314.00		119.68		
Number of Species					18					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **59.65**	Basin: Great Miami River	Date Range: 08/31/95
	Time Fished: 1258 sec Drain Area: 2729.0 sq mi	Thru: 09/20/95
	Dist Fished: 0.20 km 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		2	10.00	1.34	0.49	0.33	49.00
QUILLBACK CARPSUCKER	C	O	M		5	25.00	3.36	9.23	6.26	369.20
BLACK REDHORSE	R	I	S	I	6	30.00	4.03	18.79	12.74	626.17
GOLDEN REDHORSE	R	I	S	M	13	65.00	8.72	18.10	12.28	278.46
SHORTHEAD REDHORSE	R	I	S	M	11	55.00	7.38	16.55	11.22	300.82
COMMON CARP	G	O	M	T	10	50.00	6.71	49.10	33.31	982.00
SPOTFIN SHINER	N	I	M		66	330.00	44.30	0.80	0.54	2.42
BLUNTNOSE MINNOW	N	O	C	T	4	20.00	2.68	0.02	0.01	1.00
COM. CARP X GOLDFISH	G	O		T	2	10.00	1.34	6.86	4.65	685.50
CHANNEL CATFISH	F		C		3	15.00	2.01	6.29	4.26	419.00
WHITE BASS	F	P	M		1	5.00	0.67	0.10	0.06	19.00
SMALLMOUTH BASS	F	C	C	M	15	75.00	10.07	18.44	12.51	245.87
LARGEMOUTH BASS	F	C	C		2	10.00	1.34	1.15	0.78	115.00
BLUEGILL SUNFISH	S	I	C	P	1	5.00	0.67	0.25	0.17	49.00
PUMPKINSEED SUNFISH	S	I	C	P	2	10.00	1.34	0.35	0.23	34.50
LOGPERCH	D	I	S	M	3	15.00	2.01	0.15	0.10	10.00
GREENSIDE DARTER	D	I	S	M	2	10.00	1.34	0.02	0.01	2.00
SAUGER X WALLEYE	E	P			1	5.00	0.67	0.76	0.52	152.00
	Mile Total				149	745.00		147.42		
	Number of Species				16					
	Number of Hybrids				2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **59.40**	Basin: Great Miami River	Date Range: 08/31/95
	Time Fished: 5070 sec Drain Area: 2729.0 sq mi	Thru: 09/20/95
	Dist Fished: 1.00 km 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		1	1.00	0.28	0.27	0.15	269.00
QUILLBACK CARPSUCKER	C	O	M		11	11.00	3.06	3.86	2.13	350.85
BLACK REDHORSE	R	I	S	I	8	8.00	2.22	3.30	1.82	412.13
GOLDEN REDHORSE	R	I	S	M	98	98.00	27.22	21.81	12.04	222.58
SHORTHEAD REDHORSE	R	I	S	M	31	31.00	8.61	10.30	5.68	332.12
NORTHERN HOG SUCKER	R	I	S	M	6	6.00	1.67	0.41	0.23	69.00
COMMON CARP	G	O	M	T	45	45.00	12.50	60.36	33.33	1,341.35
GOLDFISH	G	O	M	T	9	9.00	2.50	2.60	1.43	288.33
STRIPED SHINER	N	I	S		1	1.00	0.28	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		29	29.00	8.06	0.05	0.03	1.80
BLUNTNOSE MINNOW	N	O	C	T	2	2.00	0.56	0.00	0.00	1.00
CHANNEL CATFISH	F		C		37	37.00	10.28	28.57	15.77	772.02
FLATHEAD CATFISH	F	P	C		13	13.00	3.61	27.29	15.07	2,099.15
WHITE BASS	F	P	M		1	1.00	0.28	0.01	0.01	10.00
ROCK BASS	S	C	C		3	3.00	0.83	0.51	0.28	169.67
SMALLMOUTH BASS	F	C	C	M	53	53.00	14.72	20.23	11.17	381.61
LARGEMOUTH BASS	F	C	C		5	5.00	1.39	0.96	0.53	191.20
GREEN SUNFISH	S	I	C	T	1	1.00	0.28	0.00	0.00	2.00
BLUEGILL SUNFISH	S	I	C	P	1	1.00	0.28	0.06	0.03	57.00
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.28	0.01	0.00	5.00
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.28	0.02	0.01	15.00
LOGPERCH	D	I	S	M	2	2.00	0.56	0.02	0.01	10.00
SAUGER X WALLEYE	E	P			1	1.00	0.28	0.50	0.28	500.00
Mile Total					360	360.00		181.11		
Number of Species					22					
Number of Hybrids					1					

Species List

River Code: **14-001** River Mile: **58.40**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 2088 sec Drain Area: 2791.0 sq mi Dist Fished: 0.50 km No of Passes: 1	Sample Date: **1995** Date Range: 08/31/95 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		13	26.00	7.03	3.51	3.40	134.85
BLACK REDHORSE	R	I	S	I	7	14.00	3.78	7.10	6.87	506.86
GOLDEN REDHORSE	R	I	S	M	76	152.00	41.08	31.80	30.80	209.19
SHORTHEAD REDHORSE	R	I	S	M	12	24.00	6.49	7.37	7.14	307.00
NORTHERN HOG SUCKER	R	I	S	M	2	4.00	1.08	1.13	1.09	281.50
COMMON CARP	G	O	M	T	10	20.00	5.41	17.28	16.74	864.20
GOLDFISH	G	O	M	T	7	14.00	3.78	4.63	4.49	331.00
SPOTFIN SHINER	N	I	M		10	20.00	5.41	0.04	0.04	2.00
CENTRAL STONEROLLER	N	H	N		3	6.00	1.62	0.04	0.04	6.67
COM. CARP X GOLDFISH	G	O		T	5	10.00	2.70	7.38	7.15	738.20
CHANNEL CATFISH	F		C		5	10.00	2.70	4.97	4.82	497.40
FLATHEAD CATFISH	F	P	C		2	4.00	1.08	1.80	1.74	450.00
BLACK CRAPPIE	S	I	C		3	6.00	1.62	0.64	0.62	106.00
ROCK BASS	S	C	C		1	2.00	0.54	0.36	0.35	182.00
SMALLMOUTH BASS	F	C	C	M	13	26.00	7.03	5.10	4.94	196.08
LARGEMOUTH BASS	F	C	C		1	2.00	0.54	0.32	0.31	158.00
GREEN SUNFISH	S	I	C	T	1	2.00	0.54	0.26	0.25	128.00
BLUEGILL SUNFISH	S	I	C	P	4	8.00	2.16	0.66	0.64	83.00
LOGPERCH	D	I	S	M	4	8.00	2.16	0.06	0.05	7.00
GREENSIDE DARTER	D	I	S	M	1	2.00	0.54	0.01	0.01	4.00
SAUGER X WALLEYE	E	P			5	10.00	2.70	8.78	8.51	878.00
Mile Total					185	370.00		103.23		
Number of Species					19					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **55.10**	Basin: Great Miami River	Date Range: 09/01/95
	Time Fished: 6415 sec Drain Area: 3117.0 sq mi	Thru: 09/21/95
	Dist Fished: 1.10 km 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		43	39.09	6.55	3.08	1.44	78.78
QUILLBACK CARPSUCKER	C	O	M		30	27.27	4.57	9.44	4.40	346.03
BLACK REDHORSE	R	I	S	I	17	15.45	2.59	6.37	2.97	412.12
GOLDEN REDHORSE	R	I	S	M	155	140.91	23.63	35.93	16.76	254.98
SHORTHEAD REDHORSE	R	I	S	M	75	68.18	11.43	25.19	11.75	369.49
NORTHERN HOG SUCKER	R	I	S	M	19	17.27	2.90	3.31	1.54	191.74
COMMON CARP	G	O	M	T	68	61.82	10.37	75.62	35.28	1,223.22
GOLDFISH	G	O	M	T	1	0.91	0.15	0.12	0.06	135.00
STRIPED SHINER	N	I	S		5	4.55	0.76	0.08	0.04	18.00
SPOTFIN SHINER	N	I	M		53	48.18	8.08	0.15	0.07	3.11
SAND SHINER	N	I	M	M	1	0.91	0.15	0.00	0.00	1.00
SILVERJAW MINNOW	N	I	M		1	0.91	0.15	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	2	1.82	0.30	0.01	0.00	4.50
COM. CARP X GOLDFISH	G	O		T	6	5.46	0.91	3.15	1.47	577.33
CHANNEL CATFISH	F		C		76	69.09	11.59	33.07	15.43	478.71
FLATHEAD CATFISH	F	P	C		7	6.36	1.07	6.22	2.90	977.86
BROOK SILVERSIDE		I	M	M	1	0.91	0.15	0.00	0.00	1.00
WHITE BASS	F	P	M		2	1.82	0.30	0.04	0.02	20.50
ROCK BASS	S	C	C		2	1.82	0.30	0.06	0.03	31.00
SMALLMOUTH BASS	F	C	C	M	52	47.27	7.93	10.41	4.86	220.26
LARGEMOUTH BASS	F	C	C		4	3.64	0.61	0.45	0.21	123.00
GREEN SUNFISH	S	I	C	T	8	7.27	1.22	0.20	0.09	28.00
BLUEGILL SUNFISH	S	I	C	P	18	16.36	2.74	0.37	0.17	22.89
LONGEAR SUNFISH	S	I	C	M	4	3.64	0.61	0.06	0.03	15.75
PUMPKINSEED SUNFISH	S	I	C	P	1	0.91	0.15	0.02	0.01	19.00
GREEN SF X HYBRID					1	0.91	0.15	0.01	0.00	9.00
GREENSIDE DARTER	D	I	S	M	3	2.73	0.46	0.03	0.01	9.67
SAUGER X WALLEYE	E	P			1	0.91	0.15	0.95	0.45	1,050.00
Mile Total					656	596.36		214.34		
Number of Species					25					
Number of Hybrids					3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **52.40**	Basin: Great Miami River	Date Range: 09/01/95
	Time Fished: 4400 sec Drain Area: 3133.0 sq mi	Thru: 09/21/95
	Dist Fished: 1.00 km 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		3	3.00	0.92	0.01	0.01	4.67
QUILLBACK CARPSUCKER	C	O	M		5	5.00	1.54	1.63	0.75	326.40
GOLDEN REDHORSE	R	I	S	M	110	110.00	33.85	16.78	7.69	152.57
COMMON CARP	G	O	M	T	88	88.00	27.08	182.62	83.72	2,075.17
GOLDFISH	G	O	M	T	16	16.00	4.92	5.51	2.53	344.63
STRIPED SHINER	N	I	S		1	1.00	0.31	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		10	10.00	3.08	0.02	0.01	2.20
BLUNTNOSE MINNOW	N	O	C	T	11	11.00	3.38	0.04	0.02	3.27
CHANNEL CATFISH	F		C		11	11.00	3.38	9.21	4.22	836.82
WHITE BASS	F	P	M		2	2.00	0.62	0.01	0.00	5.00
WHITE CRAPPIE	S	I	C		2	2.00	0.62	0.03	0.01	14.50
SMALLMOUTH BASS	F	C	C	M	4	4.00	1.23	1.20	0.55	301.00
LARGEMOUTH BASS	F	C	C		5	5.00	1.54	0.19	0.08	37.00
GREEN SUNFISH	S	I	C	T	17	17.00	5.23	0.26	0.12	15.13
BLUEGILL SUNFISH	S	I	C	P	8	8.00	2.46	0.07	0.03	8.63
OR'GESPOTTED SUNFISH	S	I	C		5	5.00	1.54	0.04	0.02	8.40
LONGEAR SUNFISH	S	I	C	M	19	19.00	5.85	0.29	0.13	15.37
REDEAR SUNFISH	E	I	C		1	1.00	0.31	0.02	0.01	22.00
PUMPKINSEED SUNFISH	S	I	C	P	5	5.00	1.54	0.14	0.07	28.60
GREEN SF X HYBRID					2	2.00	0.62	0.04	0.02	21.00
	Mile Total				325	325.00		218.12		
	Number of Species				19					
	Number of Hybrids				1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **52.00**	Basin: Great Miami River	Date Range: 09/05/95
	Time Fished: 4860 sec Drain Area: 3137.0 sq mi	Thru: 09/27/95
	Dist Fished: 1.00 km 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		35	35.00	4.12	3.91	2.25	111.80
QUILLBACK CARPSUCKER	C	O	M		7	7.00	0.82	3.26	1.87	465.29
RIVER CARPSUCKER	C	O	M		2	2.00	0.24	1.52	0.87	760.00
HIGHFIN CARPSUCKER	C	O	M		2	2.00	0.24	0.79	0.46	396.00
BLACK REDHORSE	R	I	S	I	20	20.00	2.36	8.50	4.89	425.15
GOLDEN REDHORSE	R	I	S	M	48	48.00	5.65	11.91	6.85	248.22
SHORTHEAD REDHORSE	R	I	S	M	69	69.00	8.13	21.65	12.45	313.76
RIVER REDHORSE [S]	R	I	S	I	4	4.00	0.47	5.98	3.44	1,495.00
NORTHERN HOG SUCKER	R	I	S	M	24	24.00	2.83	4.63	2.66	192.75
COMMON CARP	G	O	M	T	37	37.00	4.36	64.74	37.24	1,749.81
SUCKERMOUTH MINNOW	N	I	S		24	24.00	2.83	0.12	0.07	4.90
SILVER SHINER	N	I	S	I	2	2.00	0.24	0.01	0.01	6.50
ROSYFACE SHINER	N	I	S	I	3	3.00	0.35	0.00	0.00	1.00
ROSEFIN SHINER	N	I	S	M	1	1.00	0.12	0.00	0.00	1.00
STRIPED SHINER	N	I	S		8	8.00	0.94	0.06	0.03	7.13
SPOTFIN SHINER	N	I	M		305	305.00	35.92	0.74	0.43	2.43
SAND SHINER	N	I	M	M	15	15.00	1.77	0.02	0.01	1.40
BLUNTNOSE MINNOW	N	O	C	T	116	116.00	13.66	0.31	0.18	2.65
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.12	0.70	0.40	700.00
CHANNEL CATFISH	F		C		52	52.00	6.12	28.55	16.42	549.00
FLATHEAD CATFISH	F	P	C		2	2.00	0.24	0.33	0.19	164.00
WHITE CRAPPIE	S	I	C		1	1.00	0.12	0.10	0.06	101.00
SMALLMOUTH BASS	F	C	C	M	25	25.00	2.94	3.88	2.23	155.28
LARGEMOUTH BASS	F	C	C		2	2.00	0.24	0.79	0.45	395.50
GREEN SUNFISH	S	I	C	T	1	1.00	0.12	0.01	0.01	12.00
BLUEGILL SUNFISH	S	I	C	P	8	8.00	0.94	0.15	0.09	19.25
LONGEAR SUNFISH	S	I	C	M	6	6.00	0.71	0.07	0.04	12.00
GREEN SF X BLUEGILL					1	1.00	0.12	0.02	0.01	15.00
YELLOW PERCH			M		1	1.00	0.12	0.00	0.00	3.00
LOGPERCH	D	I	S	M	4	4.00	0.47	0.03	0.02	7.00
GREENSIDE DARTER	D	I	S	M	6	6.00	0.71	0.02	0.01	3.50
BANDED DARTER	D	I	S	I	3	3.00	0.35	0.00	0.00	1.33
SAUGER X WALLEYE	E	P			14	14.00	1.65	11.03	6.35	788.00
Mile Total					849	849.00		173.85		
Number of Species					30					
Number of Hybrids					3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **51.40**	Basin: Great Miami River	Date Range: 09/05/95
	Time Fished: 1266 sec — Drain Area: 3138.0 sq mi	Thru: 09/27/95
	Dist Fished: 0.20 km — 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
COMMON CARP	G	O	M	T	7	35.00	4.38	45.76	78.67	1,307.43
SILVER SHINER	N	I	S	I	2	10.00	1.25	0.04	0.07	4.00
ROSYFACE SHINER	N	I	S	I	1	5.00	0.63	0.01	0.01	1.00
ROSEFIN SHINER	N	I	S	M	1	5.00	0.63	0.01	0.01	1.00
SPOTFIN SHINER	N	I	M		106	530.00	66.25	1.34	2.30	2.53
SAND SHINER	N	I	M	M	14	70.00	8.75	0.13	0.22	1.86
BLUNTNOSE MINNOW	N	O	C	T	9	45.00	5.63	0.11	0.19	2.44
CHANNEL CATFISH	F		C		4	20.00	2.50	9.52	16.37	476.00
FLATHEAD CATFISH	F	P	C		1	5.00	0.63	0.08	0.14	16.00
SMALLMOUTH BASS	F	C	C	M	3	15.00	1.88	0.20	0.34	13.33
GREEN SUNFISH	S	I	C	T	2	10.00	1.25	0.08	0.13	7.50
BLUEGILL SUNFISH	S	I	C	P	7	35.00	4.38	0.81	1.39	23.14
OR'GESPOTTED SUNFISH	S	I	C		2	10.00	1.25	0.04	0.07	4.00
LONGEAR SUNFISH	S	I	C	M	1	5.00	0.63	0.05	0.09	10.00
Mile Total					160	800.00		58.17		
Number of Species					14					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **51.30**	Basin: Great Miami River	Date Range: 09/05/95
	Time Fished: 4026 sec Drain Area: 3138.0 sq mi	Thru: 09/27/95
	Dist Fished: 1.00 km 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		8	8.00	1.88	1.20	2.25	150.00
QUILLBACK CARPSUCKER	C	O	M		8	8.00	1.88	2.66	5.00	332.88
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.24	0.16	0.30	158.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.24	0.31	0.58	310.00
GOLDEN REDHORSE	R	I	S	M	11	11.00	2.59	3.11	5.84	283.00
SHORTHEAD REDHORSE	R	I	S	M	12	12.00	2.82	3.92	7.35	326.25
NORTHERN HOG SUCKER	R	I	S	M	1	1.00	0.24	0.07	0.14	72.00
COMMON CARP	G	O	M	T	15	15.00	3.53	22.73	42.65	1,515.33
SUCKERMOUTH MINNOW	N	I	S		2	2.00	0.47	0.01	0.02	5.00
SILVER SHINER	N	I	S	I	2	2.00	0.47	0.01	0.02	4.00
ROSYFACE SHINER	N	I	S	I	3	3.00	0.71	0.00	0.01	1.00
STRIPED SHINER	N	I	S		1	1.00	0.24	0.00	0.01	3.00
SPOTFIN SHINER	N	I	M		185	185.00	43.53	0.40	0.74	2.14
SAND SHINER	N	I	M	M	4	4.00	0.94	0.01	0.02	2.25
BLUNTNOSE MINNOW	N	O	C	T	82	82.00	19.29	0.16	0.30	1.96
CHANNEL CATFISH	F		C		14	14.00	3.29	9.44	17.71	674.29
FLATHEAD CATFISH	F	P	C		1	1.00	0.24	0.80	1.50	800.00
ROCK BASS	S	C	C		1	1.00	0.24	0.01	0.01	5.00
SMALLMOUTH BASS	F	C	C	M	28	28.00	6.59	2.84	5.33	101.50
LARGEMOUTH BASS	F	C	C		5	5.00	1.18	0.07	0.12	13.00
GREEN SUNFISH	S	I	C	T	5	5.00	1.18	0.05	0.09	9.20
BLUEGILL SUNFISH	S	I	C	P	23	23.00	5.41	0.31	0.58	13.35
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.24	0.01	0.02	12.00
LONGEAR SUNFISH	S	I	C	M	2	2.00	0.47	0.02	0.04	10.50
GREENSIDE DARTER	D	I	S	M	2	2.00	0.47	0.00	0.01	1.50
SAUGER X WALLEYE	E	P			7	7.00	1.65	5.00	9.38	713.86
Mile Total					425	425.00		53.29		
Number of Species					25					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **51.00**	Basin: Great Miami River	Date Range: 09/05/95
	Time Fished: 2803 sec Drain Area: 3138.0 sq mi	Thru: 09/27/95
	Dist Fished: 1.00 km 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		39	39.00	8.39	4.31	6.27	110.56
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.43	0.90	1.31	450.50
BLACK REDHORSE	R	I	S	I	3	3.00	0.65	0.05	0.07	15.67
GOLDEN REDHORSE	R	I	S	M	7	7.00	1.51	1.70	2.47	243.14
COMMON CARP	G	O	M	T	19	19.00	4.09	31.17	45.32	1,640.66
GOLDFISH	G	O	M	T	9	9.00	1.94	3.94	5.72	437.25
CREEK CHUB	N	G	N	T	2	2.00	0.43	0.00	0.01	2.00
SILVER SHINER	N	I	S	I	2	2.00	0.43	0.01	0.01	3.00
ROSYFACE SHINER	N	I	S	I	1	1.00	0.22	0.00	0.00	3.00
STRIPED SHINER	N	I	S		4	4.00	0.86	0.01	0.02	3.25
SPOTFIN SHINER	N	I	M		162	162.00	34.84	0.33	0.48	2.06
SAND SHINER	N	I	M	M	7	7.00	1.51	0.02	0.02	2.43
BLUNTNOSE MINNOW	N	O	C	T	79	79.00	16.99	0.14	0.20	1.71
CHANNEL CATFISH	F		C		11	11.00	2.37	9.65	14.04	877.64
FLATHEAD CATFISH	F	P	C		9	9.00	1.94	7.01	10.19	778.89
WHITE CRAPPIE	S	I	C		2	2.00	0.43	0.64	0.93	320.50
SMALLMOUTH BASS	F	C	C	M	30	30.00	6.45	3.94	5.73	131.33
LARGEMOUTH BASS	F	C	C		16	16.00	3.44	2.74	3.99	171.44
GREEN SUNFISH	S	I	C	T	8	8.00	1.72	0.15	0.22	19.13
BLUEGILL SUNFISH	S	I	C	P	33	33.00	7.10	0.47	0.68	14.16
LONGEAR SUNFISH	S	I	C	M	18	18.00	3.87	0.16	0.24	9.11
SAUGER X WALLEYE	E	P			2	2.00	0.43	1.43	2.07	713.50
Mile Total					465	465.00		68.78		
Number of Species					21					
Number of Hybrids					1					

Species List

River Code: 14-001 River Mile: 49.10	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 5656 sec Drain Area: 3190.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/05/95 Thru: 09/28/95 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		12	12.00	3.29	2.28	2.08	190.08
QUILLBACK CARPSUCKER	C	O	M		5	5.00	1.37	1.88	1.71	375.00
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.27	0.44	0.40	442.00
GOLDEN REDHORSE	R	I	S	M	17	17.00	4.66	4.15	3.79	244.24
SHORTHEAD REDHORSE	R	I	S	M	6	6.00	1.64	1.78	1.62	296.33
COMMON CARP	G	O	M	T	36	36.00	9.86	67.54	61.69	1,876.11
GOLDFISH	G	O	M	T	2	2.00	0.55	0.40	0.37	202.00
CREEK CHUB	N	G	N	T	2	2.00	0.55	0.01	0.01	4.50
ROSYFACE SHINER	N	I	S	I	5	5.00	1.37	0.01	0.01	1.20
STRIPED SHINER	N	I	S		119	119.00	32.60	0.29	0.26	2.42
SPOTFIN SHINER	N	I	M		16	16.00	4.38	0.05	0.04	2.80
BLUNTNOSE MINNOW	N	O	C	T	8	8.00	2.19	0.01	0.01	1.71
COM. CARP X GOLDFISH	G	O		T	2	2.00	0.55	0.79	0.72	392.50
CHANNEL CATFISH	F		C		18	18.00	4.93	8.41	7.68	467.23
WHITE CATFISH	E	I	C		1	1.00	0.27	0.85	0.78	850.00
FLATHEAD CATFISH	F	P	C		12	12.00	3.29	8.09	7.39	674.42
BLACK CRAPPIE	S	I	C		1	1.00	0.27	0.02	0.02	19.00
ROCK BASS	S	C	C		3	3.00	0.82	0.14	0.13	46.00
SMALLMOUTH BASS	F	C	C	M	59	59.00	16.16	10.95	10.00	185.61
LARGEMOUTH BASS	F	C	C		1	1.00	0.27	0.01	0.01	7.00
GREEN SUNFISH	S	I	C	T	13	13.00	3.56	0.21	0.19	16.31
BLUEGILL SUNFISH	S	I	C	P	3	3.00	0.82	0.02	0.02	7.33
LONGEAR SUNFISH	S	I	C	M	22	22.00	6.03	0.37	0.34	16.68
SAUGER X WALLEYE	E	P			1	1.00	0.27	0.79	0.72	790.00
Mile Total					365	365.00		109.48		
Number of Species					22					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **48.20**	Basin: Great Miami River	Date Range: 09/06/95
	Time Fished: 1216 sec Drain Area: 3191.0 sq mi	Thru: 09/28/95
	Dist Fished: 0.20 km 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		2	10.00	1.32	0.74	0.57	74.00
SHORTHEAD REDHORSE	R	I	S	M	1	5.00	0.66	1.30	1.01	260.00
COMMON CARP	G	O	M	T	9	45.00	5.96	63.45	49.21	1,409.93
SILVER SHINER	N	I	S	I	1	5.00	0.66	0.03	0.02	5.00
ROSYFACE SHINER	N	I	S	I	16	80.00	10.60	0.08	0.06	0.95
STRIPED SHINER	N	I	S		2	10.00	1.32	0.06	0.05	6.00
SPOTFIN SHINER	N	I	M		99	495.00	65.56	1.46	1.13	2.94
COM. CARP X GOLDFISH	G	O		T	7	35.00	4.64	35.88	27.83	1,025.00
CHANNEL CATFISH	F		C		7	35.00	4.64	19.91	15.44	568.86
SMALLMOUTH BASS	F	C	C	M	5	25.00	3.31	5.94	4.60	237.47
OR'GESPOTTED SUNFISH	S	I	C		2	10.00	1.32	0.10	0.08	10.00
Mile Total					151	755.00		128.92		
Number of Species					10					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **48.00**	Basin: Great Miami River	Date Range: 09/06/95
	Time Fished: 5347 sec — Drain Area: 3191.0 sq mi	Thru: 09/28/95
	Dist Fished: 1.00 km — 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		43	43.00	7.44	1.87	1.41	43.58
QUILLBACK CARPSUCKER	C	O	M		9	9.00	1.56	4.18	3.14	464.22
RIVER CARPSUCKER	C	O	M		1	1.00	0.17	0.66	0.50	662.00
BLACK REDHORSE	R	I	S	I	2	2.00	0.35	0.76	0.57	377.50
GOLDEN REDHORSE	R	I	S	M	10	10.00	1.73	3.85	2.89	384.90
SHORTHEAD REDHORSE	R	I	S	M	17	17.00	2.94	5.99	4.50	352.47
NORTHERN HOG SUCKER	R	I	S	M	2	2.00	0.35	0.23	0.17	114.00
COMMON CARP	G	O	M	T	48	48.00	8.30	79.49	59.67	1,655.98
BLACKNOSE DACE	N	G	S	T	1	1.00	0.17	0.00	0.00	2.00
CREEK CHUB	N	G	N	T	1	1.00	0.17	0.00	0.00	3.00
SUCKERMOUTH MINNOW	N	I	S		2	2.00	0.35	0.01	0.01	6.50
SILVER SHINER	N	I	S	I	2	2.00	0.35	0.01	0.01	6.00
ROSYFACE SHINER	N	I	S	I	1	1.00	0.17	0.00	0.00	1.00
STRIPED SHINER	N	I	S		1	1.00	0.17	0.01	0.01	13.00
SPOTFIN SHINER	N	I	M		263	263.00	45.50	0.76	0.57	2.90
SAND SHINER	N	I	M	M	1	1.00	0.17	0.00	0.00	2.00
BLUNTNOSE MINNOW	N	O	C	T	73	73.00	12.63	0.29	0.22	4.01
COM. CARP X GOLDFISH	G	O		T	3	3.00	0.52	3.70	2.78	1,233.33
CHANNEL CATFISH	F		C		27	27.00	4.67	18.44	13.84	682.96
FLATHEAD CATFISH	F	P	C		5	5.00	0.87	2.24	1.68	447.60
BROOK SILVERSIDE		I	M	M	1	1.00	0.17	0.00	0.00	1.00
WHITE BASS	F	P	M		2	2.00	0.35	0.52	0.39	260.50
SMALLMOUTH BASS	F	C	C	M	35	35.00	6.06	7.73	5.80	220.95
LARGEMOUTH BASS	F	C	C		3	3.00	0.52	0.02	0.02	6.67
GREEN SUNFISH	S	I	C	T	2	2.00	0.35	0.02	0.02	11.50
BLUEGILL SUNFISH	S	I	C	P	15	15.00	2.60	0.08	0.06	5.40
LONGEAR SUNFISH	S	I	C	M	1	1.00	0.17	0.02	0.01	18.00
LOGPERCH	D	I	S	M	3	3.00	0.52	0.02	0.02	7.33
SAUGER X WALLEYE	E	P			4	4.00	0.69	2.30	1.72	574.50
	Mile Total				578	578.00		133.22		
	Number of Species				27					
	Number of Hybrids				2					

Species List

River Code: **14-001** River Mile: **47.50**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4364 sec Drain Area: 3240.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/06/95 Thru: 09/28/95 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		14	14.00	2.95	0.58	0.42	41.21
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.42	0.92	0.67	461.50
RIVER CARPSUCKER	C	O	M		1	1.00	0.21	0.34	0.24	335.00
BLACK REDHORSE	R	I	S	I	6	6.00	1.27	2.66	1.92	442.67
GOLDEN REDHORSE	R	I	S	M	7	7.00	1.48	2.87	2.07	409.57
SHORTHEAD REDHORSE	R	I	S	M	33	33.00	6.96	10.57	7.64	320.24
NORTHERN HOG SUCKER	R	I	S	M	10	10.00	2.11	1.51	1.09	150.50
COMMON CARP	G	O	M	T	27	27.00	5.70	42.69	30.85	1,580.95
GOLDFISH	G	O	M	T	1	1.00	0.21	0.64	0.46	640.00
SUCKERMOUTH MINNOW	N	I	S		11	11.00	2.32	0.07	0.05	6.18
SILVER SHINER	N	I	S	I	2	2.00	0.42	0.00	0.00	1.00
ROSYFACE SHINER	N	I	S	I	16	16.00	3.38	0.05	0.03	2.85
STRIPED SHINER	N	I	S		8	8.00	1.69	0.03	0.02	3.50
SPOTFIN SHINER	N	I	M		162	162.00	34.18	0.47	0.34	2.90
SAND SHINER	N	I	M	M	3	3.00	0.63	0.01	0.01	2.67
FATHEAD MINNOW	N	O	C	T	1	1.00	0.21	0.00	0.00	2.00
BLUNTNOSE MINNOW	N	O	C	T	29	29.00	6.12	0.08	0.06	2.76
CHANNEL CATFISH	F		C		66	66.00	13.92	58.10	41.99	880.33
FLATHEAD CATFISH	F	P	C		9	9.00	1.90	10.90	7.88	1,210.89
WHITE BASS	F	P	M		1	1.00	0.21	0.02	0.01	18.00
ROCK BASS	S	C	C		5	5.00	1.05	0.19	0.14	37.80
SMALLMOUTH BASS	F	C	C	M	31	31.00	6.54	5.23	3.78	168.55
GREEN SUNFISH	S	I	C	T	3	3.00	0.63	0.03	0.02	10.33
BLUEGILL SUNFISH	S	I	C	P	4	4.00	0.84	0.01	0.01	2.50
LONGEAR SUNFISH	S	I	C	M	8	8.00	1.69	0.10	0.07	12.00
LOGPERCH	D	I	S	M	2	2.00	0.42	0.02	0.01	8.50
GREENSIDE DARTER	D	I	S	M	9	9.00	1.90	0.04	0.03	4.56
BANDED DARTER	D	I	S	I	2	2.00	0.42	0.00	0.00	1.50
SAUGER X WALLEYE	E	P			1	1.00	0.21	0.29	0.21	292.00
	Mile Total				474	474.00		138.38		
	Number of Species				28					
	Number of Hybrids				1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **45.65**	Basin: Great Miami River	Date Range: 09/06/95
	Time Fished: 943 sec Drain Area: 3271.0 sq mi	Thru: 09/28/95
	Dist Fished: 0.20 km 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		18	90.00	6.19	5.04	23.18	56.04
BLACK REDHORSE	R	I	S	I	1	5.00	0.34	2.60	11.95	520.00
GOLDEN REDHORSE	R	I	S	M	3	15.00	1.03	4.70	21.61	313.33
COMMON CARP	G	O	M	T	1	5.00	0.34	0.65	2.97	129.00
GOLDFISH	G	O	M	T	1	5.00	0.34	1.50	6.90	300.00
CREEK CHUB	N	G	N	T	1	5.00	0.34	0.01	0.02	1.00
SUCKERMOUTH MINNOW	N	I	S		6	30.00	2.06	0.13	0.60	4.33
SILVER SHINER	N	I	S	I	10	50.00	3.44	0.29	1.31	5.70
ROSYFACE SHINER	N	I	S	I	59	295.00	20.27	0.27	1.22	0.90
STRIPED SHINER	N	I	S		16	80.00	5.50	0.18	0.83	2.25
SPOTFIN SHINER	N	I	M		89	445.00	30.58	1.38	6.32	3.09
SAND SHINER	N	I	M	M	8	40.00	2.75	0.06	0.28	1.50
SILVERJAW MINNOW	N	I	M		6	30.00	2.06	0.05	0.23	1.67
FATHEAD MINNOW	N	O	C	T	1	5.00	0.34	0.02	0.07	3.00
BLUNTNOSE MINNOW	N	O	C	T	35	175.00	12.03	0.30	1.38	1.71
WHITE BASS	F	P	M		1	5.00	0.34	0.16	0.74	32.00
SMALLMOUTH BASS	F	C	C	M	3	15.00	1.03	3.41	15.68	227.33
LARGEMOUTH BASS	F	C	C		3	15.00	1.03	0.13	0.57	8.33
GREEN SUNFISH	S	I	C	T	21	105.00	7.22	0.68	3.13	6.48
BLUEGILL SUNFISH	S	I	C	P	4	20.00	1.37	0.05	0.21	2.25
OR'GESPOTTED SUNFISH	S	I	C		1	5.00	0.34	0.11	0.48	21.00
LONGEAR SUNFISH	S	I	C	M	1	5.00	0.34	0.01	0.05	2.00
GREEN SF X BLUEGILL					1	5.00	0.34	0.03	0.14	6.00
LOGPERCH	D	I	S	M	1	5.00	0.34	0.04	0.16	7.00
Mile Total					291	1,455.00		21.75		
Number of Species					23					
Number of Hybrids					1					

Species List

River Code: **14-001** River Mile: **45.50**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4474 sec Drain Area: 3271.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/06/95 Thru: 09/28/95 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		1	1.00	0.22	0.08	0.07	82.00
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.22	0.54	0.48	542.00
RIVER CARPSUCKER	C	O	M		1	1.00	0.22	0.45	0.40	450.00
GOLDEN REDHORSE	R	I	S	M	14	14.00	3.10	6.56	5.87	468.36
SHORTHEAD REDHORSE	R	I	S	M	6	6.00	1.33	1.81	1.62	302.33
COMMON CARP	G	O	M	T	24	24.00	5.32	49.73	44.48	2,072.10
GOLDFISH	G	O	M	T	1	1.00	0.22	0.02	0.02	20.00
SUCKERMOUTH MINNOW	N	I	S		3	3.00	0.67	0.02	0.02	6.33
SILVER SHINER	N	I	S	I	11	11.00	2.44	0.03	0.03	2.73
ROSYFACE SHINER	N	I	S	I	26	26.00	5.76	0.02	0.02	0.92
STRIPED SHINER	N	I	S		7	7.00	1.55	0.02	0.02	2.43
SPOTFIN SHINER	N	I	M		218	218.00	48.34	0.43	0.38	1.95
BLUNTNOSE MINNOW	N	O	C	T	56	56.00	12.42	0.14	0.12	2.42
CHANNEL CATFISH	F		C		51	51.00	11.31	34.18	30.57	670.20
FLATHEAD CATFISH	F	P	C		5	5.00	1.11	14.65	13.10	2,930.00
ROCK BASS	S	C	C		2	2.00	0.44	0.02	0.02	11.00
SMALLMOUTH BASS	F	C	C	M	15	15.00	3.33	3.06	2.74	203.93
GREEN SUNFISH	S	I	C	T	2	2.00	0.44	0.01	0.00	2.50
BLUEGILL SUNFISH	S	I	C	P	2	2.00	0.44	0.01	0.01	4.00
LONGEAR SUNFISH	S	I	C	M	2	2.00	0.44	0.01	0.01	4.50
LOGPERCH	D	I	S	M	1	1.00	0.22	0.01	0.01	9.00
GREENSIDE DARTER	D	I	S	M	2	2.00	0.44	0.01	0.01	3.00
Mile Total					451	451.00		111.79		
Number of Species					22					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **43.40**	Basin: Great Miami River	Date Range: 09/06/95
	Time Fished: 5971 sec Drain Area: 3276.0 sq mi	Thru: 10/03/95
	Dist Fished: 1.00 km 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		27	27.00	3.56	1.56	1.49	57.89
QUILLBACK CARPSUCKER	C	O	M		5	5.00	0.66	2.07	1.97	413.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.13	0.58	0.55	578.00
GOLDEN REDHORSE	R	I	S	M	17	17.00	2.24	5.21	4.96	306.47
SHORTHEAD REDHORSE	R	I	S	M	1	1.00	0.13	0.23	0.22	231.00
NORTHERN HOG SUCKER	R	I	S	M	3	3.00	0.40	0.63	0.60	208.33
COMMON CARP	G	O	M	T	29	29.00	3.82	65.97	62.84	2,274.78
GOLDFISH	G	O	M	T	3	3.00	0.40	0.30	0.28	98.33
SUCKERMOUTH MINNOW	N	I	S		3	3.00	0.40	0.02	0.02	6.33
SILVER SHINER	N	I	S	I	12	12.00	1.58	0.05	0.05	4.17
ROSYFACE SHINER	N	I	S	I	19	19.00	2.50	0.02	0.02	1.00
STRIPED SHINER	N	I	S		7	7.00	0.92	0.01	0.01	1.86
SPOTFIN SHINER	N	I	M		319	319.00	42.03	0.72	0.68	2.25
SAND SHINER	N	I	M	M	2	2.00	0.26	0.01	0.00	2.50
BLUNTNOSE MINNOW	N	O	C	T	175	175.00	23.06	0.35	0.33	1.99
COM. CARP X GOLDFISH	G	O		T	7	7.00	0.92	6.89	6.56	984.57
CHANNEL CATFISH	F		C		15	15.00	1.98	10.09	9.61	672.53
FLATHEAD CATFISH	F	P	C		6	6.00	0.79	5.57	5.31	928.83
WHITE BASS	F	P	M		4	4.00	0.53	0.11	0.10	27.25
ROCK BASS	S	C	C		2	2.00	0.26	0.01	0.01	4.00
SMALLMOUTH BASS	F	C	C	M	31	31.00	4.08	4.19	3.99	135.25
LARGEMOUTH BASS	F	C	C		1	1.00	0.13	0.01	0.01	10.00
GREEN SUNFISH	S	I	C	T	17	17.00	2.24	0.15	0.14	8.82
BLUEGILL SUNFISH	S	I	C	P	24	24.00	3.16	0.07	0.07	2.87
OR'GESPOTTED SUNFISH	S	I	C		9	9.00	1.19	0.05	0.04	5.11
LONGEAR SUNFISH	S	I	C	M	14	14.00	1.84	0.09	0.08	6.36
GREEN SF X LONGEAR					1	1.00	0.13	0.01	0.01	10.00
LOGPERCH	D	I	S	M	4	4.00	0.53	0.04	0.04	9.50
GREENSIDE DARTER	D	I	S	M	1	1.00	0.13	0.00	0.00	1.00
Mile Total					759	759.00		104.98		
Number of Species					27					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **40.60**	Basin: Great Miami River	Date Range: 09/07/95
	Time Fished: 5929 sec Drain Area: 3295.0 sq mi	Thru: 10/03/95
	Dist Fished: 1.00 km 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		21	21.00	3.34	0.47	0.35	22.57
QUILLBACK CARPSUCKER	C	O	M		14	14.00	2.23	7.23	5.39	516.50
RIVER CARPSUCKER	C	O	M		1	1.00	0.16	2.05	1.53	2,050.00
GOLDEN REDHORSE	R	I	S	M	31	31.00	4.94	8.66	6.46	279.25
SHORTHEAD REDHORSE	R	I	S	M	9	9.00	1.43	3.17	2.36	352.11
RIVER REDHORSE [S]	R	I	S	I	2	2.00	0.32	1.99	1.49	996.00
COMMON CARP	G	O	M	T	25	25.00	3.98	39.84	29.72	1,593.44
GOLDFISH	G	O	M	T	1	1.00	0.16	0.32	0.24	320.00
SUCKERMOUTH MINNOW	N	I	S		15	15.00	2.39	0.09	0.07	5.87
SILVER SHINER	N	I	S	I	5	5.00	0.80	0.03	0.03	6.80
ROSYFACE SHINER	N	I	S	I	4	4.00	0.64	0.01	0.01	1.75
STRIPED SHINER	N	I	S		6	6.00	0.96	0.08	0.06	14.00
SPOTFIN SHINER	N	I	M		267	267.00	42.52	0.69	0.52	2.59
SAND SHINER	N	I	M	M	10	10.00	1.59	0.02	0.02	2.14
BLUNTNOSE MINNOW	N	O	C	T	80	80.00	12.74	0.18	0.13	2.24
CENTRAL STONEROLLER	N	H	N		2	2.00	0.32	0.01	0.00	2.50
COM. CARP X GOLDFISH	G	O		T	3	3.00	0.48	4.05	3.02	1,350.00
CHANNEL CATFISH	F		C		23	23.00	3.66	20.60	15.37	895.61
FLATHEAD CATFISH	F	P	C		17	17.00	2.71	30.88	23.04	1,816.60
WHITE BASS	F	P	M		2	2.00	0.32	0.05	0.04	24.00
SMALLMOUTH BASS	F	C	C	M	64	64.00	10.19	13.28	9.91	207.49
LARGEMOUTH BASS	F	C	C		1	1.00	0.16	0.02	0.01	15.00
GREEN SUNFISH	S	I	C	T	2	2.00	0.32	0.07	0.05	33.00
BLUEGILL SUNFISH	S	I	C	P	3	3.00	0.48	0.00	0.00	1.33
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.16	0.01	0.01	10.00
LONGEAR SUNFISH	S	I	C	M	11	11.00	1.75	0.20	0.15	17.73
LOGPERCH	D	I	S	M	1	1.00	0.16	0.02	0.01	15.00
GREENSIDE DARTER	D	I	S	M	7	7.00	1.11	0.04	0.03	5.86
Mile Total					628	628.00		134.04		
Number of Species					27					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **38.30**	Basin: Great Miami River	Date Range: 09/07/95
	Time Fished: 5416 sec Drain Area: 3298.0 sq mi	Thru: 10/03/95
	Dist Fished: 1.00 km 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		18	18.00	4.10	1.09	1.24	60.44
QUILLBACK CARPSUCKER	C	O	M		5	5.00	1.14	2.14	2.44	428.60
RIVER CARPSUCKER	C	O	M		1	1.00	0.23	0.22	0.25	220.00
HIGHFIN CARPSUCKER	C	O	M		3	3.00	0.68	1.51	1.72	504.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.23	0.36	0.40	355.00
GOLDEN REDHORSE	R	I	S	M	46	46.00	10.48	6.38	7.27	138.66
SHORTHEAD REDHORSE	R	I	S	M	5	5.00	1.14	1.74	1.99	348.60
COMMON CARP	G	O	M	T	48	48.00	10.93	48.82	55.60	1,017.00
GOLDFISH	G	O	M	T	1	1.00	0.23	1.05	1.20	1,050.00
SUCKERMOUTH MINNOW	N	I	S		3	3.00	0.68	0.01	0.01	4.00
SILVER SHINER	N	I	S	I	1	1.00	0.23	0.01	0.01	8.00
STRIPED SHINER	N	I	S		2	2.00	0.46	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		56	56.00	12.76	0.14	0.16	2.55
BLUNTNOSE MINNOW	N	O	C	T	20	20.00	4.56	0.08	0.09	3.94
CHANNEL CATFISH	F		C		24	24.00	5.47	12.34	14.06	514.20
FLATHEAD CATFISH	F	P	C		6	6.00	1.37	1.70	1.94	283.17
ROCK BASS	S	C	C		1	1.00	0.23	0.06	0.07	58.00
SMALLMOUTH BASS	F	C	C	M	27	27.00	6.15	7.26	8.27	268.78
LARGEMOUTH BASS	F	C	C		13	13.00	2.96	1.29	1.47	99.23
GREEN SUNFISH	S	I	C	T	5	5.00	1.14	0.02	0.03	4.60
BLUEGILL SUNFISH	S	I	C	P	25	25.00	5.69	0.16	0.18	6.24
OR'GESPOTTED SUNFISH	S	I	C		11	11.00	2.51	0.08	0.09	6.91
LONGEAR SUNFISH	S	I	C	M	115	115.00	26.20	1.33	1.51	11.56
LOGPERCH	D	I	S	M	2	2.00	0.46	0.01	0.02	7.00
Mile Total					439	439.00		87.79		
Number of Species					24					
Number of Hybrids					0					

Species List

River Code: **14-001** River Mile: **37.00**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4348 sec Drain Area: 3628.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/08/95 Thru: 10/04/95 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		14	14.00	1.59	0.88	0.47	63.07
SMALLMOUTH BUFFALO	C	I	M		1	1.00	0.11	0.78	0.41	780.00
QUILLBACK CARPSUCKER	C	O	M		19	19.00	2.16	4.76	2.51	250.32
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.11	0.14	0.07	140.00
SILVER REDHORSE	R	I	S	M	2	2.00	0.23	2.40	1.26	1,200.00
BLACK REDHORSE	R	I	S	I	26	26.00	2.95	3.82	2.01	146.73
GOLDEN REDHORSE	R	I	S	M	417	417.00	47.33	51.74	27.27	124.08
SHORTHEAD REDHORSE	R	I	S	M	73	73.00	8.29	16.03	8.45	219.56
RIVER REDHORSE [S]	R	I	S	I	3	3.00	0.34	1.62	0.85	538.33
NORTHERN HOG SUCKER	R	I	S	M	4	4.00	0.45	0.16	0.09	40.50
COMMON CARP	G	O	M	T	61	61.00	6.92	68.55	36.13	1,123.80
GOLDFISH	G	O	M	T	1	1.00	0.11	0.13	0.07	129.00
SUCKERMOUTH MINNOW	N	I	S		2	2.00	0.23	0.01	0.00	4.00
SILVER SHINER	N	I	S	I	1	1.00	0.11	0.01	0.00	5.00
STRIPED SHINER	N	I	S		3	3.00	0.34	0.03	0.01	8.67
SPOTFIN SHINER	N	I	M		15	15.00	1.70	0.04	0.02	2.93
BLUNTNOSE MINNOW	N	O	C	T	22	22.00	2.50	0.06	0.03	2.64
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.11	1.60	0.84	1,600.00
CHANNEL CATFISH	F		C		40	40.00	4.54	19.11	10.07	477.79
FLATHEAD CATFISH	F	P	C		4	4.00	0.45	10.26	5.41	2,565.00
BLACK CRAPPIE	S	I	C		1	1.00	0.11	0.06	0.03	63.00
SMALLMOUTH BASS	F	C	C	M	21	21.00	2.38	4.24	2.23	201.76
LARGEMOUTH BASS	F	C	C		5	5.00	0.57	1.19	0.63	238.80
GREEN SUNFISH	S	I	C	T	3	3.00	0.34	0.02	0.01	6.00
BLUEGILL SUNFISH	S	I	C	P	15	15.00	1.70	0.05	0.02	3.00
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.11	0.00	0.00	3.00
LONGEAR SUNFISH	S	I	C	M	118	118.00	13.39	2.03	1.07	17.23
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.11	0.02	0.01	18.00
LOGPERCH	D	I	S	M	4	4.00	0.45	0.03	0.02	7.50
BANDED DARTER	D	I	S	I	2	2.00	0.23	0.00	0.00	1.00
	Mile Total				881	881.00		189.76		
	Number of Species				29					
	Number of Hybrids				1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **34.60**	Basin: Great Miami River	Date Range: 09/08/95
	Time Fished: 4085 sec — Drain Area: 3636.0 sq mi	Thru: 10/04/95
	Dist Fished: 1.00 km — 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		30	30.00	4.32	1.94	1.63	64.57
SMALLMOUTH BUFFALO	C	I	M		1	1.00	0.14	1.35	1.13	1,350.00
QUILLBACK CARPSUCKER	C	O	M		4	4.00	0.58	1.54	1.29	385.00
RIVER CARPSUCKER	C	O	M		10	10.00	1.44	13.18	11.06	1,318.20
BLACK REDHORSE	R	I	S	I	1	1.00	0.14	0.15	0.13	150.00
GOLDEN REDHORSE	R	I	S	M	106	106.00	15.27	12.19	10.23	115.04
SHORTHEAD REDHORSE	R	I	S	M	2	2.00	0.29	0.62	0.52	312.00
SPOTTED SUCKER	R	I	S		5	5.00	0.72	1.35	1.13	270.20
RIVER CS X QUILLBACK	C	O	M		1	1.00	0.14	0.65	0.55	650.00
COMMON CARP	G	O	M	T	58	58.00	8.36	59.48	49.92	1,025.54
GOLDFISH	G	O	M	T	9	9.00	1.30	2.66	2.23	295.56
EMERALD SHINER	N	I	S		2	2.00	0.29	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		5	5.00	0.72	0.01	0.01	2.00
SAND SHINER	N	I	M	M	2	2.00	0.29	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	46	46.00	6.63	0.08	0.07	1.76
COM. CARP X GOLDFISH	G	O		T	2	2.00	0.29	3.20	2.69	1,600.00
CHANNEL CATFISH	F		C		14	14.00	2.02	5.77	4.84	411.86
FLATHEAD CATFISH	F	P	C		10	10.00	1.44	5.73	4.81	572.60
WHITE BASS	F	P	M		1	1.00	0.14	0.02	0.01	17.00
WHITE CRAPPIE	S	I	C		6	6.00	0.86	0.21	0.17	34.67
BLACK CRAPPIE	S	I	C		4	4.00	0.58	0.41	0.34	102.25
SMALLMOUTH BASS	F	C	C	M	11	11.00	1.59	1.77	1.48	160.82
LARGEMOUTH BASS	F	C	C		34	34.00	4.90	2.70	2.26	79.31
GREEN SUNFISH	S	I	C	T	8	8.00	1.15	0.22	0.19	27.75
BLUEGILL SUNFISH	S	I	C	P	55	55.00	7.93	0.25	0.21	4.59
OR'GESPOTTED SUNFISH	S	I	C		25	25.00	3.60	0.12	0.10	4.67
LONGEAR SUNFISH	S	I	C	M	239	239.00	34.44	3.49	2.93	14.61
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.14	0.02	0.01	15.00
GREEN SF X LONGEAR					1	1.00	0.14	0.01	0.00	5.00
GREEN SF X HYBRID					1	1.00	0.14	0.05	0.04	49.00
	Mile Total				694	694.00		119.16		
	Number of Species				26					
	Number of Hybrids				4					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **34.20**	Basin: Great Miami River	Date Range: 09/07/95
	Time Fished: 4306 sec Drain Area: 3637.0 sq mi	Thru: 10/19/95
	Dist Fished: 1.00 km 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		60	60.00	7.86	6.60	2.73	110.04
MUSKELLUNGE [S]	F	P	M		1	1.00	0.13	2.00	0.83	2,000.00
BLACK BUFFALO	C	I	M		2	2.00	0.26	4.50	1.86	2,250.00
SMALLMOUTH BUFFALO	C	I	M		7	7.00	0.92	11.35	4.69	1,621.43
QUILLBACK CARPSUCKER	C	O	M		27	27.00	3.54	13.68	5.65	506.52
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.13	0.24	0.10	239.00
SILVER REDHORSE	R	I	S	M	4	4.00	0.52	6.75	2.79	1,687.50
BLACK REDHORSE	R	I	S	I	32	32.00	4.19	8.82	3.65	275.68
GOLDEN REDHORSE	R	I	S	M	127	127.00	16.64	39.51	16.33	311.12
SHORTHEAD REDHORSE	R	I	S	M	173	173.00	22.67	58.39	24.14	337.52
NORTHERN HOG SUCKER	R	I	S	M	18	18.00	2.36	7.00	2.89	388.83
COMMON CARP	G	O	M	T	8	8.00	1.05	15.51	6.41	1,938.13
SUCKERMOUTH MINNOW	N	I	S		3	3.00	0.39	0.01	0.00	3.67
SILVER SHINER	N	I	S	I	1	1.00	0.13	0.01	0.00	10.00
ROSYFACE SHINER	N	I	S	I	10	10.00	1.31	0.01	0.01	1.30
STRIPED SHINER	N	I	S		1	1.00	0.13	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		42	42.00	5.50	0.09	0.04	2.14
SAND SHINER	N	I	M	M	3	3.00	0.39	0.00	0.00	1.33
BLUNTNOSE MINNOW	N	O	C	T	2	2.00	0.26	0.00	0.00	1.50
CHANNEL CATFISH	F		C		48	48.00	6.29	15.93	6.59	331.91
FLATHEAD CATFISH	F	P	C		4	4.00	0.52	5.40	2.23	1,350.00
WHITE BASS	F	P	M		2	2.00	0.26	0.40	0.16	199.50
SMALLMOUTH BASS	F	C	C	M	10	10.00	1.31	1.33	0.55	133.20
LARGEMOUTH BASS	F	C	C		8	8.00	1.05	3.64	1.50	455.00
BLUEGILL SUNFISH	S	I	C	P	10	10.00	1.31	0.26	0.11	25.50
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.13	0.01	0.00	5.00
LONGEAR SUNFISH	S	I	C	M	17	17.00	2.23	0.34	0.14	20.00
REDEAR SUNFISH	E	I	C		1	1.00	0.13	0.02	0.01	19.00
SAUGER	F	P	S		1	1.00	0.13	0.50	0.21	500.00
SLENDERHEAD DARTER [S]	D	I	S	R	1	1.00	0.13	0.01	0.00	9.00
GREENSIDE DARTER	D	I	S	M	5	5.00	0.66	0.04	0.02	7.80
SAUGER X WALLEYE	E	P			32	32.00	4.19	23.82	9.85	744.39
FRESHWATER DRUM			M	P	101	101.00	13.24	15.76	6.51	156.05
	Mile Total				763	763.00		241.93		
	Number of Species				32					
	Number of Hybrids				1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **33.99**	Basin: Great Miami River	Date Range: 09/07/95
	Time Fished: 786 sec Drain Area: 3639.0 sq mi	Thru: 10/17/95
	Dist Fished: 0.30 km 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		21	65.00	9.96	6.10	3.61	87.81
SMALLMOUTH BUFFALO	C	I	M		1	2.50	0.38	5.75	3.40	2,300.00
QUILLBACK CARPSUCKER	C	O	M		5	15.00	2.30	8.55	5.06	562.00
RIVER CARPSUCKER	C	O	M		1	2.50	0.38	3.13	1.85	1,250.00
SILVER REDHORSE	R	I	S	M	1	2.50	0.38	4.25	2.51	1,700.00
BLACK REDHORSE	R	I	S	I	3	7.50	1.15	2.63	1.55	350.00
GOLDEN REDHORSE	R	I	S	M	7	20.00	3.07	5.43	3.21	294.29
SHORTHEAD REDHORSE	R	I	S	M	20	57.50	8.81	18.79	11.12	327.25
RIVER REDHORSE [S]	R	I	S	I	1	5.00	0.77	7.50	4.44	1,500.00
NORTHERN HOG SUCKER	R	I	S	M	13	37.50	5.75	15.42	9.12	450.31
COMMON CARP	G	O	M	T	7	20.00	3.07	36.39	21.53	1,902.14
SILVER SHINER	N	I	S	I	1	2.50	0.38	0.03	0.02	12.00
ROSYFACE SHINER	N	I	S	I	1	2.50	0.38	0.01	0.00	2.00
SPOTFIN SHINER	N	I	M		44	192.50	29.50	0.49	0.29	2.68
BLUNTNOSE MINNOW	N	O	C	T	6	30.00	4.60	0.03	0.02	1.00
CHANNEL CATFISH	F		C		17	45.00	6.90	12.89	7.63	297.47
FLATHEAD CATFISH	F	P	C		1	2.50	0.38	17.50	10.35	7,000.00
WHITE BASS	F	P	M		4	12.50	1.92	3.13	1.85	215.00
SMALLMOUTH BASS	F	C	C	M	3	10.00	1.53	1.50	0.89	191.67
BLUEGILL SUNFISH	S	I	C	P	3	15.00	2.30	0.19	0.11	12.33
OR'GESPOTTED SUNFISH	S	I	C		1	5.00	0.77	0.05	0.03	9.00
LONGEAR SUNFISH	S	I	C	M	5	22.50	3.45	0.77	0.45	32.20
PUMPKINSEED SUNFISH	S	I	C	P	1	5.00	0.77	0.05	0.03	10.00
GREENSIDE DARTER	D	I	S	M	1	5.00	0.77	0.04	0.02	8.00
SAUGER X WALLEYE	E	P			2	7.50	1.15	1.91	1.13	296.50
FRESHWATER DRUM			M	P	18	60.00	9.20	16.54	9.78	346.22
	Mile Total				188	652.50		169.01		
	Number of Species				25					
	Number of Hybrids				1					

Species List

River Code: **14-001** River Mile: **33.60**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4453 sec Drain Area: 3639.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/07/95 Thru: 10/17/95 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	0.31	2.68	1.14	1,340.00
BOWFIN		P	C		3	3.00	0.47	6.90	2.92	2,300.00
GIZZARD SHAD		O	M		139	139.00	21.58	17.71	7.50	127.38
BLACK BUFFALO	C	I	M		4	4.00	0.62	11.05	4.68	2,762.50
SMALLMOUTH BUFFALO	C	I	M		9	9.00	1.40	15.23	6.46	1,692.11
QUILLBACK CARPSUCKER	C	O	M		23	23.00	3.57	15.76	6.68	685.37
RIVER CARPSUCKER	C	O	M		26	26.00	4.04	18.34	7.78	705.53
HIGHFIN CARPSUCKER	C	O	M		5	5.00	0.78	1.56	0.66	311.40
SILVER REDHORSE	R	I	S	M	2	2.00	0.31	3.45	1.46	1,725.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.16	0.35	0.15	352.00
GOLDEN REDHORSE	R	I	S	M	32	32.00	4.97	17.14	7.26	535.59
SHORTHEAD REDHORSE	R	I	S	M	66	66.00	10.25	29.19	12.37	442.31
NORTHERN HOG SUCKER	R	I	S	M	14	14.00	2.17	4.92	2.09	351.50
COMMON CARP	G	O	M	T	18	18.00	2.80	32.82	13.91	1,823.06
EMERALD SHINER	N	I	S		1	1.00	0.16	0.00	0.00	3.00
ROSYFACE SHINER	N	I	S	I	6	6.00	0.93	0.01	0.00	1.67
SPOTFIN SHINER	N	I	M		89	89.00	13.82	0.16	0.07	1.79
SAND SHINER	N	I	M	M	8	8.00	1.24	0.01	0.01	1.57
SILVERJAW MINNOW	N	I	M		1	1.00	0.16	0.00	0.00	2.00
BULLHEAD MINNOW	N	O	C		8	8.00	1.24	0.01	0.00	1.29
BLUNTNOSE MINNOW	N	O	C	T	6	6.00	0.93	0.01	0.00	1.83
CHANNEL CATFISH	F		C		30	30.00	4.66	11.51	4.88	383.60
FLATHEAD CATFISH	F	P	C		5	5.00	0.78	13.60	5.76	2,719.00
WHITE BASS	F	P	M		3	3.00	0.47	0.50	0.21	167.67
WHITE CRAPPIE	S	I	C		1	1.00	0.16	0.31	0.13	310.00
BLACK CRAPPIE	S	I	C		1	1.00	0.16	0.08	0.03	80.00
SMALLMOUTH BASS	F	C	C	M	6	6.00	0.93	0.55	0.23	91.50
LARGEMOUTH BASS	F	C	C		8	8.00	1.24	4.25	1.80	530.63
BLUEGILL SUNFISH	S	I	C	P	15	15.00	2.33	0.18	0.08	12.00
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.16	0.00	0.00	3.00
LONGEAR SUNFISH	S	I	C	M	31	31.00	4.81	0.67	0.28	21.56
HYBRID X SUNFISH					2	2.00	0.31	0.08	0.03	37.50
SAUGER	F	P	S		2	2.00	0.31	0.69	0.29	345.00
WALLEYE	F	P	S		2	2.00	0.31	1.95	0.82	972.50
SLENDERHEAD DARTER [S]	D	I	S	R	1	1.00	0.16	0.01	0.00	6.00
SAUGER X WALLEYE	E	P			9	9.00	1.40	4.00	1.69	444.00
FRESHWATER DRUM			M	P	64	64.00	9.94	20.25	8.59	316.48
Mile Total					644	644.00		235.91		
Number of Species					35					
Number of Hybrids					2					

Species List

River Code: **14-001** River Mile: **32.00**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 1012 sec Drain Area: 3642.0 sq mi Dist Fished: 0.20 km No of Passes: 2	Sample Date: **1995** Date Range: 09/07/95 Thru: 10/17/95 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		2	10.00	1.92	0.73	0.80	72.50
QUILLBACK CARPSUCKER	C	O	M		1	5.00	0.96	3.52	3.89	704.00
RIVER CARPSUCKER	C	O	M		2	10.00	1.92	8.56	9.45	856.00
HIGHFIN CARPSUCKER	C	O	M		1	5.00	0.96	1.34	1.48	268.00
BLACK REDHORSE	R	I	S	I	2	10.00	1.92	4.00	4.42	400.00
GOLDEN REDHORSE	R	I	S	M	3	15.00	2.88	3.85	4.25	256.33
SHORTHEAD REDHORSE	R	I	S	M	2	10.00	1.92	4.70	5.19	470.00
NORTHERN HOG SUCKER	R	I	S	M	1	5.00	0.96	1.80	1.99	360.00
COMMON CARP	G	O	M	T	3	15.00	2.88	13.08	14.44	871.67
EMERALD SHINER	N	I	S		1	5.00	0.96	0.01	0.01	1.00
ROSYFACE SHINER	N	I	S	I	1	5.00	0.96	0.01	0.01	1.00
SPOTFIN SHINER	N	I	M		44	220.00	42.31	0.55	0.60	2.48
SAND SHINER	N	I	M	M	3	15.00	2.88	0.02	0.02	1.33
BULLHEAD MINNOW	N	O	C		1	5.00	0.96	0.01	0.01	2.00
BLUNTNOSE MINNOW	N	O	C	T	1	5.00	0.96	0.01	0.01	2.00
CHANNEL CATFISH	F		C		7	35.00	6.73	21.38	23.61	610.71
FLATHEAD CATFISH	F	P	C		1	5.00	0.96	3.50	3.87	700.00
WHITE CRAPPIE	S	I	C		1	5.00	0.96	0.60	0.66	120.00
SMALLMOUTH BASS	F	C	C	M	3	15.00	2.88	6.78	7.48	451.67
LARGEMOUTH BASS	F	C	C		2	10.00	1.92	0.80	0.88	80.00
BLUEGILL SUNFISH	S	I	C	P	3	15.00	2.88	0.20	0.22	13.00
LONGEAR SUNFISH	S	I	C	M	10	50.00	9.62	0.75	0.83	15.00
HYBRID X SUNFISH					1	5.00	0.96	0.30	0.33	60.00
SAUGER	F	P	S		1	5.00	0.96	2.30	2.54	460.00
SAUGER X WALLEYE	E	P			2	10.00	1.92	2.30	2.53	229.50
FRESHWATER DRUM			M	P	5	25.00	4.81	9.50	10.49	380.00
Mile Total					104	520.00		90.55		
Number of Species					24					
Number of Hybrids					2					

Species List

River Code: **14-001** River Mile: **31.80**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 3987 sec Drain Area: 3642.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/07/95 Thru: 10/17/95 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		38	38.00	16.10	4.37	3.56	115.07
SMALLMOUTH BUFFALO	C	I	M		8	8.00	3.39	8.42	6.85	1,051.88
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.85	1.63	1.32	812.50
RIVER CARPSUCKER	C	O	M		23	23.00	9.75	21.18	17.24	920.76
GOLDEN REDHORSE	R	I	S	M	1	1.00	0.42	0.03	0.02	30.00
SHORTHEAD REDHORSE	R	I	S	M	5	5.00	2.12	2.00	1.63	400.00
COMMON CARP	G	O	M	T	30	30.00	12.71	47.01	38.26	1,566.84
BLACKNOSE DACE	N	G	S	T	1	1.00	0.42	0.00	0.00	1.00
ROSYFACE SHINER	N	I	S	I	1	1.00	0.42	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		6	6.00	2.54	0.01	0.01	1.83
SAND SHINER	N	I	M	M	2	2.00	0.85	0.00	0.00	1.00
BULLHEAD MINNOW	N	O	C		2	2.00	0.85	0.00	0.00	2.00
BLUNTNOSE MINNOW	N	O	C	T	5	5.00	2.12	0.01	0.01	2.40
CENTRAL STONEROLLER	N	H	N		1	1.00	0.42	0.01	0.00	6.00
CHANNEL CATFISH	F		C		11	11.00	4.66	6.13	4.99	557.45
FLATHEAD CATFISH	F	P	C		26	26.00	11.02	19.14	15.58	736.20
WHITE BASS	F	P	M		3	3.00	1.27	0.31	0.25	104.00
WHITE CRAPPIE	S	I	C		2	2.00	0.85	0.17	0.13	82.50
SMALLMOUTH BASS	F	C	C	M	11	11.00	4.66	0.50	0.41	45.45
GREEN SUNFISH	S	I	C	T	1	1.00	0.42	0.01	0.00	6.00
BLUEGILL SUNFISH	S	I	C	P	4	4.00	1.69	0.21	0.17	51.75
LONGEAR SUNFISH	S	I	C	M	21	21.00	8.90	0.34	0.28	16.14
GREEN SF X BLUEGILL					1	1.00	0.42	0.00	0.00	2.00
SAUGER X WALLEYE	E	P			1	1.00	0.42	0.28	0.23	280.00
FRESHWATER DRUM			M	P	30	30.00	12.71	11.12	9.05	370.53
Mile Total					236	236.00		122.86		
Number of Species					23					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **30.00**	Basin: Great Miami River	Date Range: 09/11/95
	Time Fished: 4577 sec Drain Area: 3667.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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		5	5.00	1.08	3.63	2.11	725.80
GIZZARD SHAD		O	M		71	71.00	15.40	7.48	4.36	105.42
BLACK BUFFALO	C	I	M		4	4.00	0.87	8.51	4.96	2,126.25
SMALLMOUTH BUFFALO	C	I	M		7	7.00	1.52	10.85	6.32	1,549.71
QUILLBACK CARPSUCKER	C	O	M		3	3.00	0.65	1.96	1.14	653.33
RIVER CARPSUCKER	C	O	M		25	25.00	5.42	21.73	12.66	869.32
SILVER REDHORSE	R	I	S	M	2	2.00	0.43	2.55	1.49	1,275.00
GOLDEN REDHORSE	R	I	S	M	12	12.00	2.60	5.66	3.30	471.83
SHORTHEAD REDHORSE	R	I	S	M	15	15.00	3.25	8.72	5.08	581.07
NORTHERN HOG SUCKER	R	I	S	M	2	2.00	0.43	0.79	0.46	394.50
COMMON CARP	G	O	M	T	35	35.00	7.59	70.59	41.13	2,016.78
BLACKNOSE DACE	N	G	S	T	1	1.00	0.22	0.00	0.00	1.00
SUCKERMOUTH MINNOW	N	I	S		9	9.00	1.95	0.03	0.02	3.63
EMERALD SHINER	N	I	S		2	2.00	0.43	0.01	0.01	5.00
ROSYFACE SHINER	N	I	S	I	20	20.00	4.34	0.04	0.02	1.75
STRIPED SHINER	N	I	S		1	1.00	0.22	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		86	86.00	18.66	0.14	0.08	1.63
SAND SHINER	N	I	M	M	16	16.00	3.47	0.02	0.01	1.50
BLUNTNOSE MINNOW	N	O	C	T	25	25.00	5.42	0.03	0.02	1.36
CENTRAL STONEROLLER	N	H	N		19	19.00	4.12	0.08	0.04	4.05
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.22	1.05	0.61	1,050.00
CHANNEL CATFISH	F		C		13	13.00	2.82	10.05	5.85	772.69
FLATHEAD CATFISH	F	P	C		4	4.00	0.87	2.63	1.53	658.50
WHITE BASS	F	P	M		5	5.00	1.08	1.63	0.95	326.40
SMALLMOUTH BASS	F	C	C	M	7	7.00	1.52	0.07	0.04	10.29
BLUEGILL SUNFISH	S	I	C	P	7	7.00	1.52	0.06	0.03	8.29
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.22	0.00	0.00	1.00
LONGEAR SUNFISH	S	I	C	M	24	24.00	5.21	0.33	0.19	13.54
SAUGER X WALLEYE	E	P			2	2.00	0.43	0.58	0.34	288.00
FRESHWATER DRUM			M	P	37	37.00	8.03	12.39	7.22	334.97
Mile Total					461	461.00		171.61		
Number of Species					28					
Number of Hybrids					2					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **28.80**	Basin: Great Miami River	Date Range: 09/11/95
	Time Fished: 4553 sec Drain Area: 3669.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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	3.00	1.03	5.08	3.63	1,691.67
GIZZARD SHAD		O	M		17	17.00	5.84	2.10	1.50	123.53
BLACK BUFFALO	C	I	M		2	2.00	0.69	5.05	3.61	2,525.00
SMALLMOUTH BUFFALO	C	I	M		7	7.00	2.41	13.13	9.40	1,875.71
QUILLBACK CARPSUCKER	C	O	M		5	5.00	1.72	4.35	3.11	869.20
RIVER CARPSUCKER	C	O	M		27	27.00	9.28	21.60	15.46	799.85
GOLDEN REDHORSE	R	I	S	M	36	36.00	12.37	7.28	5.21	202.29
SHORTHEAD REDHORSE	R	I	S	M	16	16.00	5.50	8.83	6.32	551.88
NORTHERN HOG SUCKER	R	I	S	M	5	5.00	1.72	0.64	0.46	127.60
COMMON CARP	G	O	M	T	20	20.00	6.87	40.82	29.22	2,040.85
ROSYFACE SHINER	N	I	S	I	2	2.00	0.69	0.00	0.00	2.00
SPOTFIN SHINER	N	I	M		41	41.00	14.09	0.10	0.07	2.32
SAND SHINER	N	I	M	M	3	3.00	1.03	0.01	0.00	1.67
BULLHEAD MINNOW	N	O	C		3	3.00	1.03	0.01	0.00	1.67
BLUNTNOSE MINNOW	N	O	C	T	4	4.00	1.37	0.01	0.00	1.50
CENTRAL STONEROLLER	N	H	N		5	5.00	1.72	0.03	0.02	6.60
CHANNEL CATFISH	F		C		15	15.00	5.15	8.64	6.19	576.07
FLATHEAD CATFISH	F	P	C		6	6.00	2.06	2.59	1.86	432.00
STONECAT MADTOM		I	C	I	1	1.00	0.34	0.01	0.01	10.00
SMALLMOUTH BASS	F	C	C	M	16	16.00	5.50	1.07	0.76	66.56
SPOTTED BASS	F	C	C		1	1.00	0.34	0.01	0.01	9.00
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.34	0.01	0.01	8.00
LONGEAR SUNFISH	S	I	C	M	7	7.00	2.41	0.16	0.11	22.43
SAUGER	F	P	S		4	4.00	1.37	1.05	0.75	263.50
FRESHWATER DRUM			M	P	44	44.00	15.12	17.16	12.28	389.90
Mile Total					291	291.00		139.70		
Number of Species					25					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **25.80**	Basin: Great Miami River	Date Range: 09/11/95
	Time Fished: 4745 sec Drain Area: 3788.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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	0.57	0.10	0.07	51.00
GIZZARD SHAD		O	M		84	84.00	23.80	11.25	8.09	133.93
SMALLMOUTH BUFFALO	C	I	M		5	5.00	1.42	5.20	3.74	1,040.00
QUILLBACK CARPSUCKER	C	O	M		8	8.00	2.27	5.29	3.80	661.25
RIVER CARPSUCKER	C	O	M		25	25.00	7.08	19.75	14.19	789.83
GOLDEN REDHORSE	R	I	S	M	14	14.00	3.97	7.38	5.30	526.79
SHORTHEAD REDHORSE	R	I	S	M	1	1.00	0.28	0.62	0.45	621.00
SPOTTED SUCKER	R	I	S		1	1.00	0.28	0.49	0.35	490.00
COMMON CARP	G	O	M	T	29	29.00	8.22	62.45	44.89	2,153.54
EMERALD SHINER	N	I	S		2	2.00	0.57	0.01	0.01	3.50
ROSYFACE SHINER	N	I	S	I	1	1.00	0.28	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		31	31.00	8.78	0.06	0.04	1.87
SAND SHINER	N	I	M	M	1	1.00	0.28	0.00	0.00	1.00
BULLHEAD MINNOW	N	O	C		12	12.00	3.40	0.02	0.01	1.67
BLUNTNOSE MINNOW	N	O	C	T	12	12.00	3.40	0.02	0.02	1.75
CHANNEL CATFISH	F		C		8	8.00	2.27	3.71	2.67	463.63
FLATHEAD CATFISH	F	P	C		2	2.00	0.57	0.19	0.14	97.00
WHITE BASS	F	P	M		5	5.00	1.42	0.90	0.65	180.80
WHITE CRAPPIE	S	I	C		3	3.00	0.85	0.43	0.31	142.00
BLACK CRAPPIE	S	I	C		1	1.00	0.28	0.09	0.07	92.00
SMALLMOUTH BASS	F	C	C	M	6	6.00	1.70	0.07	0.05	11.17
SPOTTED BASS	F	C	C		1	1.00	0.28	0.02	0.01	20.00
LARGEMOUTH BASS	F	C	C		1	1.00	0.28	0.50	0.36	504.00
GREEN SUNFISH	S	I	C	T	1	1.00	0.28	0.01	0.01	10.00
BLUEGILL SUNFISH	S	I	C	P	8	8.00	2.27	0.09	0.07	11.50
OR'GESPOTTED SUNFISH	S	I	C		3	3.00	0.85	0.02	0.01	5.00
LONGEAR SUNFISH	S	I	C	M	22	22.00	6.23	0.21	0.15	9.55
SAUGER	F	P	S		5	5.00	1.42	1.31	0.94	261.20
FRESHWATER DRUM			M	P	59	59.00	16.71	18.94	13.61	321.03
Mile Total					353	353.00		139.12		
Number of Species					29					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **24.70**	Basin: Great Miami River	Date Range: 09/12/95
	Time Fished: 1135 sec Drain Area: 3793.0 sq mi	Thru: 10/18/95
	Dist Fished: 0.20 km 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		4	20.00	10.53	2.71	3.77	135.50
QUILLBACK CARPSUCKER	C	O	M		2	10.00	5.26	7.50	10.43	750.00
RIVER CARPSUCKER	C	O	M		3	15.00	7.89	12.63	17.56	841.67
BLACK REDHORSE	R	I	S	I	1	5.00	2.63	3.44	4.79	688.00
GOLDEN REDHORSE	R	I	S	M	4	20.00	10.53	11.95	16.62	597.50
SHORTHEAD REDHORSE	R	I	S	M	3	15.00	7.89	8.20	11.41	546.67
COMMON CARP	G	O	M	T	2	10.00	5.26	12.00	16.69	1,200.00
SPOTFIN SHINER	N	I	M		4	20.00	10.53	0.11	0.15	5.50
CHANNEL CATFISH	F		C		4	20.00	10.53	3.78	5.26	189.00
FLATHEAD CATFISH	F	P	C		2	10.00	5.26	0.45	0.63	45.00
STONECAT MADTOM		I	C	I	1	5.00	2.63	0.01	0.01	2.00
WHITE BASS	F	P	M		3	15.00	7.89	3.36	4.67	224.00
LARGEMOUTH BASS	F	C	C		1	5.00	2.63	0.80	1.11	160.00
FRESHWATER DRUM			M	P	4	20.00	10.53	4.95	6.89	247.50
Mile Total					38	190.00		71.89		
Number of Species					14					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **23.40**	Basin: Great Miami River	Date Range: 09/12/95
	Time Fished: 4674 sec Drain Area: 3796.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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	0.23	1.30	0.62	1,300.00
MOONEYE [S]		I	M	R	1	1.00	0.23	0.23	0.11	225.00
SKIPJACK HERRING		P	M		1	1.00	0.23	0.11	0.05	112.00
GIZZARD SHAD		O	M		108	108.00	24.77	14.76	7.00	136.68
BLACK BUFFALO	C	I	M		7	7.00	1.61	21.14	10.02	3,019.29
SMALLMOUTH BUFFALO	C	I	M		15	15.00	3.44	24.91	11.80	1,660.33
QUILLBACK CARPSUCKER	C	O	M		9	9.00	2.06	4.36	2.07	484.56
RIVER CARPSUCKER	C	O	M		17	17.00	3.90	12.64	5.99	743.24
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.23	0.47	0.22	474.00
SILVER REDHORSE	R	I	S	M	3	3.00	0.69	6.23	2.95	2,075.00
BLACK REDHORSE	R	I	S	I	1	1.00	0.23	0.86	0.41	858.00
GOLDEN REDHORSE	R	I	S	M	14	14.00	3.21	7.50	3.55	535.64
SHORTHEAD REDHORSE	R	I	S	M	16	16.00	3.67	10.80	5.12	674.75
RIVER REDHORSE [S]	R	I	S	I	2	2.00	0.46	2.67	1.27	1,335.00
NORTHERN HOG SUCKER	R	I	S	M	3	3.00	0.69	0.85	0.40	283.67
COMMON CARP	G	O	M	T	19	19.00	4.36	32.64	15.47	1,718.00
GOLDFISH	G	O	M	T	1	1.00	0.23	0.45	0.21	449.00
SUCKERMOUTH MINNOW	N	I	S		4	4.00	0.92	0.02	0.01	5.25
ROSYFACE SHINER	N	I	S	I	1	1.00	0.23	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		26	26.00	5.96	0.05	0.02	1.96
SAND SHINER	N	I	M	M	1	1.00	0.23	0.00	0.00	2.00
BULLHEAD MINNOW	N	O	C		8	8.00	1.83	0.01	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	3	3.00	0.69	0.00	0.00	1.33
CHANNEL CATFISH	F		C		42	42.00	9.63	26.02	12.33	619.56
FLATHEAD CATFISH	F	P	C		4	4.00	0.92	0.37	0.18	93.00
STONECAT MADTOM		I	C	I	1	1.00	0.23	0.01	0.00	5.00
WHITE BASS	F	P	M		4	4.00	0.92	0.78	0.37	194.75
WHITE CRAPPIE	S	I	C		1	1.00	0.23	0.15	0.07	148.00
SMALLMOUTH BASS	F	C	C	M	5	5.00	1.15	1.37	0.65	274.40
SPOTTED BASS	F	C	C		3	3.00	0.69	0.28	0.13	93.33
BLUEGILL SUNFISH	S	I	C	P	2	2.00	0.46	0.04	0.02	17.50
LONGEAR SUNFISH	S	I	C	M	1	1.00	0.23	0.04	0.02	40.00
SLENDERHEAD DARTER [S]	D	I	S	R	1	1.00	0.23	0.01	0.00	6.00
BANDED DARTER	D	I	S	I	1	1.00	0.23	0.00	0.00	1.00
FRESHWATER DRUM			M	P	109	109.00	25.00	39.96	18.94	366.58
Mile Total					436	436.00		211.00		
Number of Species					35					
Number of Hybrids					0					

Species List

River Code: **14-001** River Mile: **21.10**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 5193 sec Drain Area: 3814.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/12/95 Thru: 10/19/95 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
SKIPJACK HERRING		P	M		1	1.00	0.30	0.04	0.03	40.00
GIZZARD SHAD		O	M		79	79.00	24.09	9.48	7.05	120.00
BLACK BUFFALO	C	I	M		2	2.00	0.61	5.90	4.39	2,950.00
SMALLMOUTH BUFFALO	C	I	M		9	9.00	2.74	16.26	12.10	1,806.67
QUILLBACK CARPSUCKER	C	O	M		2	2.00	0.61	1.14	0.85	571.00
RIVER CARPSUCKER	C	O	M		12	12.00	3.66	11.27	8.38	938.83
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.30	0.47	0.35	472.00
GOLDEN REDHORSE	R	I	S	M	8	8.00	2.44	3.48	2.59	435.38
SHORTHEAD REDHORSE	R	I	S	M	4	4.00	1.22	2.30	1.71	575.75
NORTHERN HOG SUCKER	R	I	S	M	2	2.00	0.61	0.26	0.19	130.50
COMMON CARP	G	O	M	T	18	18.00	5.49	25.47	18.95	1,414.72
SUCKERMOUTH MINNOW	N	I	S		8	8.00	2.44	0.04	0.03	4.38
EMERALD SHINER	N	I	S		8	8.00	2.44	0.03	0.02	3.25
SPOTFIN SHINER	N	I	M		33	33.00	10.06	0.05	0.04	1.58
SAND SHINER	N	I	M	M	1	1.00	0.30	0.00	0.00	1.00
BULLHEAD MINNOW	N	O	C		12	12.00	3.66	0.02	0.01	1.25
BLUNTNOSE MINNOW	N	O	C	T	1	1.00	0.30	0.00	0.00	2.00
COM. CARP X GOLDFISH	G	O		T	2	2.00	0.61	2.00	1.49	1,000.00
CHANNEL CATFISH	F		C		21	21.00	6.40	13.25	9.86	630.86
FLATHEAD CATFISH	F	P	C		3	3.00	0.91	8.43	6.27	2,808.33
WHITE BASS	F	P	M		6	6.00	1.83	1.11	0.83	185.50
BLACK CRAPPIE	S	I	C		1	1.00	0.30	0.14	0.11	142.00
SMALLMOUTH BASS	F	C	C	M	9	9.00	2.74	0.97	0.72	107.44
SPOTTED BASS	F	C	C		2	2.00	0.61	0.39	0.29	192.50
GREEN SUNFISH	S	I	C	T	1	1.00	0.30	0.01	0.01	11.00
BLUEGILL SUNFISH	S	I	C	P	1	1.00	0.30	0.05	0.04	50.00
LONGEAR SUNFISH	S	I	C	M	2	2.00	0.61	0.01	0.00	3.00
SAUGER	F	P	S		1	1.00	0.30	0.13	0.10	132.00
FRESHWATER DRUM			M	P	78	78.00	23.78	31.73	23.61	406.82
Mile Total					328	328.00		134.41		
Number of Species					28					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **20.00**	Basin: Great Miami River	Date Range: 09/12/95
	Time Fished: 2116 sec Drain Area: 3831.0 sq mi	
	Dist Fished: 0.50 km No of Passes: 1	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	2.00	0.49	1.44	1.78	722.00
GIZZARD SHAD		O	M		74	148.00	36.27	20.30	24.98	137.18
SMALLMOUTH BUFFALO	C	I	M		3	6.00	1.47	4.66	5.74	777.33
QUILLBACK CARPSUCKER	C	O	M		1	2.00	0.49	0.90	1.10	449.00
RIVER CARPSUCKER	C	O	M		2	4.00	0.98	2.90	3.57	725.00
GOLDEN REDHORSE	R	I	S	M	9	18.00	4.41	4.36	5.36	242.11
COMMON CARP	G	O	M	T	6	12.00	2.94	21.65	26.64	1,804.17
EMERALD SHINER	N	I	S		7	14.00	3.43	0.04	0.04	2.57
SPOTFIN SHINER	N	I	M		2	4.00	0.98	0.00	0.00	1.00
BLUNTNOSE MINNOW	N	O	C	T	2	4.00	0.98	0.00	0.00	1.00
FLATHEAD CATFISH	F	P	C		1	2.00	0.49	0.18	0.22	90.00
WHITE BASS	F	P	M		2	4.00	0.98	0.53	0.65	133.00
WHITE CRAPPIE	S	I	C		4	8.00	1.96	0.97	1.19	121.25
SMALLMOUTH BASS	F	C	C	M	1	2.00	0.49	0.04	0.05	22.00
GREEN SUNFISH	S	I	C	T	3	6.00	1.47	0.01	0.01	1.67
BLUEGILL SUNFISH	S	I	C	P	15	30.00	7.35	0.50	0.61	16.60
LONGEAR SUNFISH	S	I	C	M	29	58.00	14.22	1.01	1.24	17.38
SAUGER	F	P	S		2	4.00	0.98	0.80	0.99	201.00
FRESHWATER DRUM			M	P	40	80.00	19.61	20.98	25.81	262.19
	Mile Total				204	408.00		81.28		
	Number of Species				19					
	Number of Hybrids				0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **16.90**	Basin: Great Miami River	Date Range: 09/12/95
	Time Fished: 5303 sec Drain Area: 3836.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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		34	34.00	14.66	6.68	4.43	196.32
BIGMOUTH BUFFALO	C	I	M		2	2.00	0.86	6.58	4.37	3,287.50
BLACK BUFFALO	C	I	M		3	3.00	1.29	7.90	5.25	2,633.33
SMALLMOUTH BUFFALO	C	I	M		15	15.00	6.47	24.22	16.08	1,614.47
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.43	0.85	0.56	850.00
RIVER CARPSUCKER	C	O	M		22	22.00	9.48	19.62	13.03	892.00
HIGHFIN CARPSUCKER	C	O	M		1	1.00	0.43	0.49	0.33	493.00
COMMON CARP	G	O	M	T	20	20.00	8.62	40.38	26.81	2,019.10
EMERALD SHINER	N	I	S		4	4.00	1.72	0.01	0.01	2.00
SPOTFIN SHINER	N	I	M		15	15.00	6.47	0.02	0.02	1.53
BULLHEAD MINNOW	N	O	C		5	5.00	2.16	0.01	0.00	1.20
BLUNTNOSE MINNOW	N	O	C	T	1	1.00	0.43	0.00	0.00	1.00
CHANNEL CATFISH	F		C		10	10.00	4.31	8.20	5.44	819.95
FLATHEAD CATFISH	F	P	C		17	17.00	7.33	14.30	9.49	841.18
BLACK CRAPPIE	S	I	C		1	1.00	0.43	0.06	0.04	60.00
SMALLMOUTH BASS	F	C	C	M	10	10.00	4.31	0.56	0.37	55.60
SPOTTED BASS	F	C	C		1	1.00	0.43	0.11	0.07	105.00
GREEN SUNFISH	S	I	C	T	3	3.00	1.29	0.04	0.03	14.33
BLUEGILL SUNFISH	S	I	C	P	7	7.00	3.02	0.10	0.07	14.00
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.43	0.00	0.00	2.00
LONGEAR SUNFISH	S	I	C	M	10	10.00	4.31	0.23	0.15	22.60
GREEN SF X HYBRID					1	1.00	0.43	0.04	0.03	39.00
FRESHWATER DRUM			M	P	48	48.00	20.69	20.23	13.43	421.35
Mile Total					232	232.00		150.61		
Number of Species					22					
Number of Hybrids					1					

Species List

River Code: **14-001**	Stream: **Great Miami River**		Sample Date: **1995**
River Mile: **14.80**	Basin: Great Miami River		Date Range: 09/13/95
	Time Fished: 5295 sec	Drain Area: 3865.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km	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	0.22	0.45	0.19	452.00
SKIPJACK HERRING		P	M		1	1.00	0.22	0.03	0.01	29.00
GIZZARD SHAD		O	M		108	108.00	23.89	11.95	4.95	110.67
BLACK BUFFALO	C	I	M		8	8.00	1.77	15.25	6.32	1,906.25
SMALLMOUTH BUFFALO	C	I	M		10	10.00	2.21	14.47	5.99	1,447.00
QUILLBACK CARPSUCKER	C	O	M		6	6.00	1.33	4.09	1.69	681.00
RIVER CARPSUCKER	C	O	M		27	27.00	5.97	21.80	9.03	807.41
SILVER REDHORSE	R	I	S	M	1	1.00	0.22	2.70	1.12	2,700.00
GOLDEN REDHORSE	R	I	S	M	10	10.00	2.21	5.09	2.11	509.00
SHORTHEAD REDHORSE	R	I	S	M	16	16.00	3.54	12.60	5.22	787.44
NORTHERN HOG SUCKER	R	I	S	M	2	2.00	0.44	0.82	0.34	409.00
COMMON CARP	G	O	M	T	34	34.00	7.52	70.86	29.35	2,084.17
SUCKERMOUTH MINNOW	N	I	S		1	1.00	0.22	0.00	0.00	4.00
SPOTFIN SHINER	N	I	M		7	7.00	1.55	0.01	0.01	1.86
BULLHEAD MINNOW	N	O	C		11	11.00	2.43	0.01	0.01	1.18
CENTRAL STONEROLLER	N	H	N		1	1.00	0.22	0.01	0.00	6.00
CHANNEL CATFISH	F		C		38	38.00	8.41	30.30	12.55	797.29
FLATHEAD CATFISH	F	P	C		7	7.00	1.55	3.31	1.37	472.29
STONECAT MADTOM		I	C	I	10	10.00	2.21	0.07	0.03	7.00
WHITE BASS	F	P	M		13	13.00	2.88	1.76	0.73	135.54
ROCK BASS	S	C	C		1	1.00	0.22	0.00	0.00	3.00
SMALLMOUTH BASS	F	C	C	M	11	11.00	2.43	1.42	0.59	129.00
SPOTTED BASS	F	C	C		1	1.00	0.22	0.08	0.03	78.00
BLUEGILL SUNFISH	S	I	C	P	1	1.00	0.22	0.01	0.00	8.00
LONGEAR SUNFISH	S	I	C	M	10	10.00	2.21	0.15	0.06	15.20
SAUGER	F	P	S		2	2.00	0.44	0.78	0.32	392.00
SLENDERHEAD DARTER [S]	D	I	S	R	4	4.00	0.88	0.01	0.00	2.75
FRESHWATER DRUM			M	P	110	110.00	24.34	43.39	17.97	394.49
Mile Total					452	452.00		241.43		
Number of Species					28					
Number of Hybrids					0					

Species List

River Code: **14-001** River Mile: **11.60**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 2382 sec Drain Area: 3872.0 sq mi Dist Fished: 0.50 km No of Passes: 1	Sample Date: **1995** Date Range: 09/13/95 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
MOONEYE [S]		I	M	R	1	2.00	0.56	0.36	0.23	178.00
SKIPJACK HERRING		P	M		1	2.00	0.56	0.03	0.02	17.00
GIZZARD SHAD		O	M		43	86.00	24.02	9.01	5.83	104.76
BLACK BUFFALO	C	I	M		6	12.00	3.35	33.20	21.49	2,766.67
SMALLMOUTH BUFFALO	C	I	M		9	18.00	5.03	32.92	21.31	1,828.89
RIVER CARPSUCKER	C	O	M		9	18.00	5.03	15.28	9.89	849.11
SILVER REDHORSE	R	I	S	M	1	2.00	0.56	2.60	1.68	1,300.00
GOLDEN REDHORSE	R	I	S	M	10	20.00	5.59	10.29	6.66	514.70
SHORTHEAD REDHORSE	R	I	S	M	5	10.00	2.79	6.19	4.01	618.80
COMMON CARP	G	O	M	T	4	8.00	2.23	12.92	8.36	1,615.00
GRAVEL CHUB	N	I	S	M	1	2.00	0.56	0.00	0.00	2.00
EMERALD SHINER	N	I	S		6	12.00	3.35	0.02	0.01	1.67
STRIPED SHINER	N	I	S		1	2.00	0.56	0.00	0.00	1.00
SPOTFIN SHINER	N	I	M		3	6.00	1.68	0.00	0.00	0.33
BLUNTNOSE MINNOW	N	O	C	T	3	6.00	1.68	0.00	0.00	0.67
CHANNEL CATFISH	F		C		4	8.00	2.23	2.20	1.42	274.75
WHITE BASS	F	P	M		14	28.00	7.82	4.98	3.23	177.93
SMALLMOUTH BASS	F	C	C	M	3	6.00	1.68	0.07	0.04	11.00
BLUEGILL SUNFISH	S	I	C	P	1	2.00	0.56	0.00	0.00	2.00
LONGEAR SUNFISH	S	I	C	M	1	2.00	0.56	0.02	0.01	11.00
FRESHWATER DRUM			M	P	53	106.00	29.61	24.36	15.77	229.80
Mile Total					179	358.00		154.47		
Number of Species					21					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **11.40**	Basin: Great Miami River	Date Range: 10/18/95
	Time Fished: 2220 sec Drain Area: 3872.0 sq mi	
	Dist Fished: 0.50 km No of Passes: 1	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		148	296.00	47.44	42.87	22.60	144.83
SMALLMOUTH BUFFALO	C	I	M		8	16.00	2.56	36.21	19.09	2,263.38
QUILLBACK CARPSUCKER	C	O	M		1	2.00	0.32	1.50	0.79	750.00
RIVER CARPSUCKER	C	O	M		8	16.00	2.56	13.30	7.01	831.38
GOLDEN REDHORSE	R	I	S	M	6	12.00	1.92	7.00	3.69	583.33
SHORTHEAD REDHORSE	R	I	S	M	9	18.00	2.88	15.32	8.07	851.00
RIVER REDHORSE [S]	R	I	S	I	1	2.00	0.32	2.00	1.05	1,000.00
NORTHERN HOG SUCKER	R	I	S	M	2	4.00	0.64	0.37	0.19	92.00
COMMON CARP	G	O	M	T	5	10.00	1.60	26.50	13.97	2,650.00
GRAVEL CHUB	N	I	S	M	6	12.00	1.92	0.08	0.04	7.00
SUCKERMOUTH MINNOW	N	I	S		36	72.00	11.54	0.51	0.27	7.11
EMERALD SHINER	N	I	S		6	12.00	1.92	0.04	0.02	3.33
SPOTFIN SHINER	N	I	M		17	34.00	5.45	0.06	0.03	1.65
SAND SHINER	N	I	M	M	2	4.00	0.64	0.01	0.00	1.50
BULLHEAD MINNOW	N	O	C		17	34.00	5.45	0.05	0.03	1.40
CHANNEL CATFISH	F		C		13	26.00	4.17	21.53	11.35	828.00
STONECAT MADTOM		I	C	I	1	2.00	0.32	0.04	0.02	18.00
WHITE BASS	F	P	M		2	4.00	0.64	0.37	0.20	92.50
SMALLMOUTH BASS	F	C	C	M	5	10.00	1.60	0.45	0.24	44.80
LONGEAR SUNFISH	S	I	C	M	2	4.00	0.64	0.01	0.01	3.50
SAUGER	F	P	S		1	2.00	0.32	0.91	0.48	456.00
FRESHWATER DRUM			M	P	16	32.00	5.13	20.60	10.86	643.75
Mile Total					312	624.00		189.73		
Number of Species					22					
Number of Hybrids					0					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **8.40**	Basin: Great Miami River	Date Range: 09/13/95
	Time Fished: 4907 sec Drain Area: 3879.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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	6.00	0.83	2.82	1.83	470.50
MOONEYE [S]		I	M	R	8	8.00	1.10	1.56	1.01	194.75
SKIPJACK HERRING		P	M		1	1.00	0.14	0.02	0.01	18.00
GIZZARD SHAD		O	M		383	383.00	52.83	24.31	15.76	63.46
THREADFIN SHAD		O	M		3	3.00	0.41	0.02	0.01	6.33
BLACK BUFFALO	C	I	M		10	10.00	1.38	22.61	14.66	2,260.50
SMALLMOUTH BUFFALO	C	I	M		12	12.00	1.66	14.57	9.45	1,214.17
QUILLBACK CARPSUCKER	C	O	M		9	9.00	1.24	6.29	4.08	698.78
RIVER CARPSUCKER	C	O	M		1	1.00	0.14	0.73	0.47	730.00
SILVER REDHORSE	R	I	S	M	4	4.00	0.55	6.64	4.30	1,660.00
GOLDEN REDHORSE	R	I	S	M	7	7.00	0.97	4.14	2.68	591.14
SHORTHEAD REDHORSE	R	I	S	M	13	13.00	1.79	9.40	6.09	722.69
RIVER REDHORSE [S]	R	I	S	I	2	2.00	0.28	3.00	1.95	1,500.00
NORTHERN HOG SUCKER	R	I	S	M	9	9.00	1.24	3.26	2.11	362.11
COMMON CARP	G	O	M	T	12	12.00	1.66	23.19	15.03	1,932.50
SILVER CHUB	N	I	M		4	4.00	0.55	0.03	0.02	6.50
GRAVEL CHUB	N	I	S	M	4	4.00	0.55	0.02	0.01	4.50
SUCKERMOUTH MINNOW	N	I	S		28	28.00	3.86	0.18	0.11	6.29
EMERALD SHINER	N	I	S		32	32.00	4.41	0.08	0.05	2.48
ROSYFACE SHINER	N	I	S	I	1	1.00	0.14	0.00	0.00	3.00
SPOTFIN SHINER	N	I	M		26	26.00	3.59	0.03	0.02	1.19
SAND SHINER	N	I	M	M	1	1.00	0.14	0.00	0.00	1.00
BULLHEAD MINNOW	N	O	C		19	19.00	2.62	0.02	0.01	0.95
BLUNTNOSE MINNOW	N	O	C	T	1	1.00	0.14	0.00	0.00	1.00
CENTRAL STONEROLLER	N	H	N		24	24.00	3.31	0.09	0.06	3.71
GRASS CARP	E		M		1	1.00	0.14	6.00	3.89	6,000.00
CHANNEL CATFISH	F		C		31	31.00	4.28	14.48	9.38	466.94
FLATHEAD CATFISH	F	P	C		1	1.00	0.14	1.05	0.68	1,050.00
STONECAT MADTOM		I	C	I	4	4.00	0.55	0.02	0.01	5.25
WHITE BASS	F	P	M		22	22.00	3.03	5.11	3.31	232.14
WHITE CRAPPIE	S	I	C		2	2.00	0.28	0.21	0.14	105.50
SMALLMOUTH BASS	F	C	C	M	3	3.00	0.41	0.05	0.03	16.67
LARGEMOUTH BASS	F	C	C		1	1.00	0.14	0.01	0.01	12.00
BLUEGILL SUNFISH	S	I	C	P	1	1.00	0.14	0.07	0.05	72.00
LONGEAR SUNFISH	S	I	C	M	5	5.00	0.69	0.03	0.02	5.00
SAUGER	F	P	S		1	1.00	0.14	0.18	0.12	178.00
SLENDERHEAD DARTER [S]	D	I	S	R	1	1.00	0.14	0.00	0.00	1.00
RAINBOW DARTER	D	I	S	M	2	2.00	0.28	0.00	0.00	1.00
FRESHWATER DRUM			M	P	30	30.00	4.14	4.06	2.63	135.17
Mile Total					725	725.00		154.24		
Number of Species					39					
Number of Hybrids					0					

Species List

River Code: 14-001	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **5.60**	Basin: Great Miami River	Date Range: 09/13/95
	Time Fished: 6185 sec Drain Area: 5356.0 sq mi	Thru: 10/18/95
	Dist Fished: 1.00 km 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	0.17	1.21	0.46	604.50
MOONEYE [S]		I	M	R	11	11.00	0.92	1.84	0.69	166.91
SKIPJACK HERRING		P	M		3	3.00	0.25	0.05	0.02	16.33
GIZZARD SHAD		O	M		950	950.00	79.23	59.72	22.60	62.86
THREADFIN SHAD		O	M		1	1.00	0.08	0.01	0.00	10.00
BLUE SUCKER [E]	R	I	S	R	2	2.00	0.17	2.48	0.94	1,237.50
BLACK BUFFALO	C	I	M		4	4.00	0.33	8.26	3.13	2,065.00
SMALLMOUTH BUFFALO	C	I	M		3	3.00	0.25	2.40	0.91	798.33
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.08	0.89	0.33	885.00
RIVER CARPSUCKER	C	O	M		7	7.00	0.58	5.82	2.20	831.86
SILVER REDHORSE	R	I	S	M	8	8.00	0.67	12.81	4.85	1,601.25
GOLDEN REDHORSE	R	I	S	M	14	14.00	1.17	9.46	3.58	676.00
SHORTHEAD REDHORSE	R	I	S	M	14	14.00	1.17	8.62	3.26	615.57
NORTHERN HOG SUCKER	R	I	S	M	10	10.00	0.83	1.72	0.65	171.60
COMMON CARP	G	O	M	T	30	30.00	2.50	70.47	26.67	2,348.83
SUCKERMOUTH MINNOW	N	I	S		1	1.00	0.08	0.00	0.00	2.00
EMERALD SHINER	N	I	S		28	28.00	2.34	0.09	0.03	3.04
SPOTFIN SHINER	N	I	M		4	4.00	0.33	0.00	0.00	0.50
CHANNEL CATFISH	F		C		45	45.00	3.75	50.48	19.10	1,121.84
FLATHEAD CATFISH	F	P	C		3	3.00	0.25	4.61	1.74	1,537.00
WHITE BASS	F	P	M		9	9.00	0.75	2.89	1.09	320.56
STR. BASS X WH. BASS	E				7	7.00	0.58	15.60	5.90	2,228.57
WHITE CRAPPIE	S	I	C		1	1.00	0.08	0.09	0.03	88.00
SMALLMOUTH BASS	F	C	C	M	3	3.00	0.25	0.77	0.29	257.33
BLUEGILL SUNFISH	S	I	C	P	1	1.00	0.08	0.07	0.02	65.00
LONGEAR SUNFISH	S	I	C	M	1	1.00	0.08	0.06	0.02	60.00
FRESHWATER DRUM			M	P	36	36.00	3.00	3.87	1.46	107.53
Mile Total					1,199	1,199.00		264.26		
Number of Species					26					
Number of Hybrids					1					

Species List

River Code: **14-001** River Mile: **3.90**	Stream: **Great Miami River** Basin: Great Miami River Time Fished: 4690 sec Drain Area: 5357.0 sq mi Dist Fished: 1.00 km No of Passes: 2	Sample Date: **1995** Date Range: 09/13/95 Thru: 10/04/95 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	1.10	0.66	1,100.00
MOONEYE [S]		I	M	R	3	3.00	0.74	0.47	0.29	157.33
GIZZARD SHAD		O	M		168	168.00	41.69	9.28	5.61	55.25
THREADFIN SHAD		O	M		1	1.00	0.25	0.00	0.00	1.00
SMALLMOUTH BUFFALO	C	I	M		6	6.00	1.49	5.05	3.05	840.83
QUILLBACK CARPSUCKER	C	O	M		1	1.00	0.25	0.01	0.00	8.00
RIVER CARPSUCKER	C	O	M		3	3.00	0.74	1.63	0.99	543.33
SILVER REDHORSE	R	I	S	M	1	1.00	0.25	2.05	1.24	2,050.00
GOLDEN REDHORSE	R	I	S	M	2	2.00	0.50	0.61	0.37	305.00
COMMON CARP	G	O	M	T	38	38.00	9.43	66.88	40.43	1,760.09
SILVER CHUB	N	I	M		2	2.00	0.50	0.01	0.00	4.00
EMERALD SHINER	N	I	S		50	50.00	12.41	0.12	0.07	2.32
SPOTFIN SHINER	N	I	M		2	2.00	0.50	0.01	0.01	7.00
BULLHEAD MINNOW	N	O	C		4	4.00	0.99	0.01	0.01	3.50
BLUNTNOSE MINNOW	N	O	C	T	1	1.00	0.25	0.00	0.00	1.00
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.25	0.65	0.39	650.00
CHANNEL CATFISH	F		C		13	13.00	3.23	12.34	7.46	949.00
FLATHEAD CATFISH	F	P	C		3	3.00	0.74	0.85	0.51	281.67
WHITE BASS	F	P	M		15	15.00	3.72	6.19	3.74	412.40
STRIPED BASS	E	P	M		1	1.00	0.25	1.50	0.91	1,500.00
STR. BASS X WH. BASS	E				22	22.00	5.46	48.70	29.43	2,213.41
SMALLMOUTH BASS	F	C	C	M	5	5.00	1.24	0.28	0.17	56.00
SPOTTED BASS	F	C	C		1	1.00	0.25	0.00	0.00	2.00
LARGEMOUTH BASS	F	C	C		6	6.00	1.49	2.28	1.38	379.83
GREEN SUNFISH	S	I	C	T	1	1.00	0.25	0.00	0.00	2.00
BLUEGILL SUNFISH	S	I	C	P	10	10.00	2.48	0.34	0.21	34.40
LONGEAR SUNFISH	S	I	C	M	5	5.00	1.24	0.03	0.02	6.40
PUMPKINSEED SUNFISH	S	I	C	P	1	1.00	0.25	0.12	0.07	115.00
B'GILL X PUMPKINSEED					1	1.00	0.25	0.05	0.03	51.00
SAUGER	F	P	S		2	2.00	0.50	1.31	0.79	655.00
FRESHWATER DRUM			M	P	33	33.00	8.19	3.57	2.16	108.25
	Mile Total				403	403.00		165.43		
	Number of Species				28					
	Number of Hybrids				3					

Species List

River Code: **14-001**	Stream: **Great Miami River**	Sample Date: **1995**
River Mile: **1.80**	Basin: Great Miami River	Date Range: 09/14/95
	Time Fished: 5751 sec Drain Area: 5370.0 sq mi	Thru: 10/04/95
	Dist Fished: 1.05 km 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
SKIPJACK HERRING		P	M		2	2.00	0.32	0.03	0.04	14.50
GIZZARD SHAD		O	M		149	144.73	23.10	6.21	8.51	42.46
THREADFIN SHAD		O	M		1	0.91	0.15	0.01	0.01	10.00
SMALLMOUTH BUFFALO	C	I	M		3	2.82	0.45	1.80	2.47	646.33
RIVER CARPSUCKER	C	O	M		6	5.64	0.90	0.55	0.75	93.50
COMMON CARP	G	O	M	T	32	30.91	4.93	45.75	62.72	1,479.90
EMERALD SHINER	N	I	S		207	195.64	31.22	0.38	0.52	1.95
SAND SHINER	N	I	M	M	1	0.91	0.15	0.00	0.00	1.00
BULLHEAD MINNOW	N	O	C		14	13.09	2.09	0.01	0.02	1.07
COM. CARP X GOLDFISH	G	O		T	1	1.00	0.16	0.85	1.17	850.00
CHANNEL CATFISH	F		C		6	5.91	0.94	1.57	2.15	267.67
WHITE BASS	F	P	M		22	21.64	3.45	3.96	5.43	181.96
STR. BASS X WH. BASS	E				15	13.82	2.21	1.84	2.53	134.00
WHITE CRAPPIE	S	I	C		5	4.64	0.74	0.42	0.58	92.60
SMALLMOUTH BASS	F	C	C	M	2	1.91	0.30	0.02	0.02	9.00
SPOTTED BASS	F	C	C		1	0.91	0.15	0.02	0.02	18.00
LARGEMOUTH BASS	F	C	C		3	2.82	0.45	1.49	2.04	544.33
GREEN SUNFISH	S	I	C	T	1	0.91	0.15	0.01	0.02	15.00
BLUEGILL SUNFISH	S	I	C	P	36	34.45	5.50	1.81	2.49	52.56
OR'GESPOTTED SUNFISH	S	I	C		1	1.00	0.16	0.02	0.03	20.00
LONGEAR SUNFISH	S	I	C	M	22	20.82	3.32	0.34	0.47	16.65
LONGEAR SF X B'GILL					1	1.00	0.16	0.07	0.10	70.00
SAUGER	F	P	S		6	5.82	0.93	2.18	2.98	381.83
SLENDERHEAD DARTER [S]	D	I	S	R	1	1.00	0.16	0.00	0.00	1.00
FRESHWATER DRUM			M	P	119	112.27	17.92	3.60	4.94	31.99
Mile Total					657	626.55		72.94		
Number of Species					22					
Number of Hybrids					3					

Species List

River Code: **14-029**	Stream: **Bear Creek**	Sample Date: **1995**
River Mile: **12.10**	Basin: Great Miami River	Date Range: 07/12/95
	Time Fished: 2064 sec Drain Area: 6.7 sq mi	
	Dist Fished: 0.15 km No of Passes: 1	Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
WHITE SUCKER	W	O	S	T	50	100.00	7.01			
BLACKNOSE DACE	N	G	S	T	110	220.00	15.43			
CREEK CHUB	N	G	N	T	146	292.00	20.48			
SOUTH. REDBELLY DACE	N	H	S		17	34.00	2.38			
STRIPED SHINER	N	I	S		45	90.00	6.31			
BLUNTNOSE MINNOW	N	O	C	T	6	12.00	0.84			
CENTRAL STONEROLLER	N	H	N		200	400.00	28.05			
LARGEMOUTH BASS	F	C	C		1	2.00	0.14			
GREEN SUNFISH	S	I	C	T	2	4.00	0.28			
BLUEGILL SUNFISH	S	I	C	P	11	22.00	1.54			
GREEN SF X HYBRID					1	2.00	0.14			
JOHNNY DARTER	D	I	C		27	54.00	3.79			
RAINBOW DARTER	D	I	S	M	63	126.00	8.84			
ORANGETHROAT DARTER	D	I	S		24	48.00	3.37			
FANTAIL DARTER	D	I	C		10	20.00	1.40			
Mile Total					713	1,426.00				
Number of Species					14					
Number of Hybrids					1					

Species List

River Code: **14-029**	Stream: **Bear Creek**	Sample Date: **1995**
River Mile: **9.90**	Basin: Great Miami River	Date Range: 07/12/95
	Time Fished: 3037 sec — Drain Area: 12.7 sq mi	
	Dist Fished: 0.15 km — No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
NORTHERN HOG SUCKER	R	I	S	M	25	50.00	2.34			
WHITE SUCKER	W	O	S	T	31	62.00	2.90			
BLACKNOSE DACE	N	G	S	T	35	70.00	3.27			
CREEK CHUB	N	G	N	T	56	112.00	5.24			
STRIPED SHINER	N	I	S		99	198.00	9.26			
SILVERJAW MINNOW	N	I	M		9	18.00	0.84			
FATHEAD MINNOW	N	O	C	T	1	2.00	0.09			
BLUNTNOSE MINNOW	N	O	C	T	6	12.00	0.56			
CENTRAL STONEROLLER	N	H	N		622	1,244.00	58.19			
YELLOW BULLHEAD		I	C	T	2	4.00	0.19			
ROCK BASS	S	C	C		7	14.00	0.65			
LARGEMOUTH BASS	F	C	C		2	4.00	0.19			
BLUEGILL SUNFISH	S	I	C	P	33	66.00	3.09			
GREEN SF X HYBRID					2	4.00	0.19			
EASTERN SAND DARTER [S]	D	I	S	R	1	2.00	0.09			
JOHNNY DARTER	D	I	C		4	8.00	0.37			
GREENSIDE DARTER	D	I	S	M	15	30.00	1.40			
RAINBOW DARTER	D	I	S	M	115	230.00	10.76			
FANTAIL DARTER	D	I	C		3	6.00	0.28			
MOTTLED SCULPIN		I	C		1	2.00	0.09			
Mile Total					1,069	2,138.00				
Number of Species					19					
Number of Hybrids					1					

Species List

River Code: **14-029**	Stream: **Bear Creek**	Sample Date: **1995**
River Mile: **5.20**	Basin: Great Miami River	Date Range: 07/12/95
	Time Fished: 2700 sec Drain Area: 32.5 sq mi	
	Dist Fished: 0.17 km No of Passes: 1	Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GOLDEN REDHORSE	R	I	S	M	25	44.12	4.78	18.56	14.31	420.67
NORTHERN HOG SUCKER	R	I	S	M	36	63.53	6.88	8.28	6.39	130.40
WHITE SUCKER	W	O	S	T	51	90.00	9.75	9.05	6.97	100.51
COMMON CARP	G	O	M	T	24	42.35	4.59	78.07	60.19	1,843.33
BIGEYE CHUB	N	I	S	I	1	1.77	0.19	0.00	0.00	2.00
CREEK CHUB	N	G	N	T	2	3.53	0.38	0.18	0.14	52.00
SILVER SHINER	N	I	S	I	24	42.35	4.59	0.13	0.10	3.13
STRIPED SHINER	N	I	S		65	114.71	12.43	2.75	2.12	23.94
SAND SHINER	N	I	M	M	63	111.18	12.05	0.23	0.18	2.05
SILVERJAW MINNOW	N	I	M		10	17.65	1.91	0.04	0.03	2.20
BLUNTNOSE MINNOW	N	O	C	T	2	3.53	0.38	0.00	0.00	1.00
CENTRAL STONEROLLER	N	H	N		88	155.29	16.83	0.88	0.68	5.68
COM. CARP X GOLDFISH	G	O		T	2	3.53	0.38	4.50	3.47	1,275.00
YELLOW BULLHEAD		I	C	T	3	5.29	0.57	0.39	0.30	73.00
BLACK CRAPPIE	S	I	C		2	3.53	0.38	0.20	0.15	57.00
ROCK BASS	S	C	C		15	26.47	2.87	2.24	1.73	84.56
SMALLMOUTH BASS	F	C	C	M	17	30.00	3.25	1.69	1.30	56.35
GREEN SUNFISH	S	I	C	T	4	7.06	0.76	0.18	0.14	26.00
BLUEGILL SUNFISH	S	I	C	P	71	125.29	13.58	1.87	1.44	14.90
GREEN SF X HYBRID					7	12.35	1.34	0.45	0.34	36.00
RAINBOW DARTER	D	I	S	M	11	19.41	2.10	0.02	0.01	1.00
Mile Total					523	922.94		129.71		
Number of Species					19					
Number of Hybrids					2					

Species List

River Code: **14-029**	Stream: **Bear Creek**	Sample Date: **1995**
River Mile: **2.10**	Basin: Great Miami River	Date Range: 07/12/95
	Time Fished: 2348 sec Drain Area: 37.8 sq mi	
	Dist Fished: 0.15 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GOLDEN REDHORSE	R	I	S	M	5	10.00	1.25	2.94	17.31	294.00
NORTHERN HOG SUCKER	R	I	S	M	33	66.00	8.27	3.86	22.75	58.55
CREEK CHUB	N	G	N	T	2	4.00	0.50	0.02	0.14	6.00
SILVER SHINER	N	I	S	I	1	2.00	0.25	0.00	0.02	2.00
STRIPED SHINER	N	I	S		18	36.00	4.51	0.36	2.14	10.11
SAND SHINER	N	I	M	M	7	14.00	1.75	0.04	0.24	2.86
CENTRAL STONEROLLER	N	H	N		258	516.00	64.66	5.24	30.84	10.15
ROCK BASS	S	C	C		10	20.00	2.51	1.55	9.10	77.30
SMALLMOUTH BASS	F	C	C	M	10	20.00	2.51	2.38	14.04	119.20
GREEN SUNFISH	S	I	C	T	5	10.00	1.25	0.10	0.60	10.20
BLUEGILL SUNFISH	S	I	C	P	7	14.00	1.75	0.24	1.40	17.00
GREENSIDE DARTER	D	I	S	M	9	18.00	2.26	0.08	0.49	4.67
RAINBOW DARTER	D	I	S	M	29	58.00	7.27	0.08	0.49	1.45
MOTTLED SCULPIN		I	C		5	10.00	1.25	0.07	0.41	7.00
	Mile Total				399	798.00		16.98		
	Number of Species				14					
	Number of Hybrids				0					

Species List

River Code: **14-029**	Stream: **Bear Creek**	Sample Date: **1995**
River Mile: **0.10**	Basin: Great Miami River	Date Range: 07/13/95
	Time Fished: 2815 sec — Drain Area: 53.7 sq mi	
	Dist Fished: 0.15 km — No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		68	136.00	27.31	11.69	78.61	85.93
GOLDEN REDHORSE	R	I	S	M	3	6.00	1.20	0.35	2.35	58.33
NORTHERN HOG SUCKER	R	I	S	M	38	76.00	15.26	0.64	4.30	8.42
SILVER SHINER	N	I	S	I	13	26.00	5.22	0.08	0.54	3.08
SPOTFIN SHINER	N	I	M		3	6.00	1.20	0.00	0.03	0.67
SAND SHINER	N	I	M	M	17	34.00	6.83	0.07	0.47	2.06
SILVERJAW MINNOW	N	I	M		1	2.00	0.40	0.00	0.03	2.00
BLUNTNOSE MINNOW	N	O	C	T	6	12.00	2.41	0.01	0.08	1.00
CENTRAL STONEROLLER	N	H	N		15	30.00	6.02	0.21	1.41	7.00
SMALLMOUTH BASS	F	C	C	M	5	10.00	2.01	0.02	0.15	2.20
LARGEMOUTH BASS	F	C	C		4	8.00	1.61	0.24	1.64	30.50
GREEN SUNFISH	S	I	C	T	22	44.00	8.84	0.22	1.48	5.00
BLUEGILL SUNFISH	S	I	C	P	36	72.00	14.46	0.46	3.12	6.45
LONGEAR SUNFISH	S	I	C	M	14	28.00	5.62	0.82	5.50	29.17
PUMPKINSEED SUNFISH	S	I	C	P	1	2.00	0.40	0.02	0.15	11.00
HYBRID X SUNFISH					2	4.00	0.80	0.02	0.12	4.50
RAINBOW DARTER	D	I	S	M	1	2.00	0.40	0.00	0.03	2.00
Mile Total					249	498.00		14.87		
Number of Species					16					
Number of Hybrids					1					

Species List

River Code: **14-036** River Mile: **4.30**	Stream: **Holes Creek** Basin: Great Miami River Time Fished: 1767 sec Drain Area: 17.0 sq mi Dist Fished: 0.15 km No of Passes: 1	Sample Date: **1995** Date Range: 07/13/95 Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
NORTHERN HOG SUCKER	R	I	S	M	12	24.00	1.48	1.13	14.05	46.91
WHITE SUCKER	W	O	S	T	21	42.00	2.59	0.91	11.40	21.75
BLACKNOSE DACE	N	G	S	T	2	4.00	0.25	0.01	0.07	1.50
CREEK CHUB	N	G	N	T	59	118.00	7.27	1.31	16.29	11.07
STRIPED SHINER	N	I	S		54	108.00	6.66	0.60	7.49	5.56
SAND SHINER	N	I	M	M	3	6.00	0.37	0.01	0.10	1.33
SILVERJAW MINNOW	N	I	M		4	8.00	0.49	0.02	0.27	2.75
BLUNTNOSE MINNOW	N	O	C	T	54	108.00	6.66	0.26	3.23	2.40
CENTRAL STONEROLLER	N	H	N		560	1,120.00	69.05	3.25	40.54	2.90
YELLOW BULLHEAD		I	C	T	2	4.00	0.25	0.24	2.99	60.00
WHITE CRAPPIE	S	I	C		1	2.00	0.12	0.02	0.22	9.00
LARGEMOUTH BASS	F	C	C		1	2.00	0.12	0.02	0.25	10.00
GREEN SUNFISH	S	I	C	T	4	8.00	0.49	0.17	2.10	21.00
FANTAIL DARTER	D	I	C		34	68.00	4.19	0.08	1.00	1.18
Mile Total					811	1,622.00		8.02		
Number of Species					14					
Number of Hybrids					0					

Species List

River Code: **14-036**	Stream: **Holes Creek**	Sample Date: **1995**
River Mile: **0.60**	Basin: Great Miami River	Date Range: 07/13/95
	Time Fished: 2340 sec Drain Area: 25.4 sq mi	
	Dist Fished: 0.15 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
NORTHERN HOG SUCKER	R	I	S	M	50	100.00	10.33	1.11	18.12	11.10
WHITE SUCKER	W	O	S	T	9	18.00	1.86	0.32	5.16	17.56
CREEK CHUB	N	G	N	T	29	58.00	5.99	0.51	8.33	8.79
STRIPED SHINER	N	I	S		22	44.00	4.55	0.34	5.62	7.82
SAND SHINER	N	I	M	M	7	14.00	1.45	0.01	0.23	1.00
SILVERJAW MINNOW	N	I	M		10	20.00	2.07	0.05	0.85	2.60
BLUNTNOSE MINNOW	N	O	C	T	160	320.00	33.06	0.88	14.30	2.74
CENTRAL STONEROLLER	N	H	N		168	336.00	34.71	2.07	33.81	6.16
SMALLMOUTH BASS	F	C	C	M	16	32.00	3.31	0.71	11.52	22.06
GREEN SUNFISH	S	I	C	T	9	18.00	1.86	0.12	1.89	6.44
BLUEGILL SUNFISH	S	I	C	P	1	2.00	0.21	0.01	0.10	3.00
RAINBOW DARTER	D	I	S	M	2	4.00	0.41	0.00	0.03	0.50
FANTAIL DARTER	D	I	C		1	2.00	0.21	0.00	0.03	1.00
Mile Total					484	968.00		6.13		
Number of Species					13					
Number of Hybrids					0					

Species List

River Code: **14-037**	Stream: **Wolf Creek**		Sample Date: **1995**
River Mile: **16.70**	Basin: Great Miami River		Date Range: 07/11/95
	Time Fished: 1900 sec	Drain Area: 3.5 sq mi	
	Dist Fished: 0.14 km	No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
WHITE SUCKER	W	O	S	T	6	12.86	1.75			
BLACKNOSE DACE	N	G	S	T	12	25.71	3.51			
CREEK CHUB	N	G	N	T	129	276.43	37.72			
STRIPED SHINER	N	I	S		3	6.43	0.88			
BLUNTNOSE MINNOW	N	O	C	T	53	113.57	15.50			
CENTRAL STONEROLLER	N	H	N		103	220.71	30.12			
BLUEGILL SUNFISH	S	I	C	P	4	8.57	1.17			
GREEN SF X HYBRID					3	6.43	0.88			
GREENSIDE DARTER	D	I	S	M	2	4.29	0.58			
RAINBOW DARTER	D	I	S	M	27	57.86	7.89			
Mile Total					342	732.86				
Number of Species					9					
Number of Hybrids					1					

Species List

River Code: **14-037**	Stream: **Wolf Creek**	Sample Date: **1995**
River Mile: **15.00**	Basin: Great Miami River	Date Range: 07/11/95
	Time Fished: 1657 sec Drain Area: 5.5 sq mi	
	Dist Fished: 0.10 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
WHITE SUCKER	W	O	S	T	7	21.00	2.19			
BLACKNOSE DACE	N	G	S	T	19	57.00	5.96			
CREEK CHUB	N	G	N	T	205	615.00	64.26			
STRIPED SHINER	N	I	S		1	3.00	0.31			
FATHEAD MINNOW	N	O	C	T	1	3.00	0.31			
BLUNTNOSE MINNOW	N	O	C	T	53	159.00	16.61			
CENTRAL STONEROLLER	N	H	N		26	78.00	8.15			
ROCK BASS	S	C	C		2	6.00	0.63			
GREEN SUNFISH	S	I	C	T	1	3.00	0.31			
BLUEGILL SUNFISH	S	I	C	P	2	6.00	0.63			
GREENSIDE DARTER	D	I	S	M	1	3.00	0.31			
RAINBOW DARTER	D	I	S	M	1	3.00	0.31			
	Mile Total				319	957.00				
	Number of Species				12					
	Number of Hybrids				0					

Species List

River Code: **14-037**	Stream: **Wolf Creek**	Sample Date: **1995**
River Mile: **14.90**	Basin: Great Miami River	Date Range: 07/11/95
	Time Fished: 2257 sec Drain Area: 5.6 sq mi	
	Dist Fished: 0.11 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
WHITE SUCKER	W	O	S	T	14	38.18	3.35			
BLACKNOSE DACE	N	G	S	T	26	70.91	6.22			
BLUNTNOSE MINNOW	N	O	C	T	25	68.18	5.98			
CENTRAL STONEROLLER	N	H	N		320	872.73	76.56			
GREEN SUNFISH	S	I	C	T	7	19.09	1.67			
BLUEGILL SUNFISH	S	I	C	P	23	62.73	5.50			
GREENSIDE DARTER	D	I	S	M	1	2.73	0.24			
RAINBOW DARTER	D	I	S	M	2	5.46	0.48			
Mile Total					418	1,140.00				
Number of Species					8					
Number of Hybrids					0					

Species List

River Code: 14-037	Stream: **Wolf Creek**	Sample Date: **1995**
River Mile: **10.40**	Basin: Great Miami River	Date Range: 07/11/95
	Time Fished: 3420 sec Drain Area: 14.0 sq mi	
	Dist Fished: 0.15 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
NORTHERN HOG SUCKER	R	I	S	M	4	8.00	0.86			
WHITE SUCKER	W	O	S	T	27	54.00	5.83			
BLACKNOSE DACE	N	G	S	T	12	24.00	2.59			
CREEK CHUB	N	G	N	T	114	228.00	24.62			
STRIPED SHINER	N	I	S		23	46.00	4.97			
SAND SHINER	N	I	M	M	1	2.00	0.22			
BLUNTNOSE MINNOW	N	O	C	T	11	22.00	2.38			
CENTRAL STONEROLLER	N	H	N		173	346.00	37.37			
ROCK BASS	S	C	C		5	10.00	1.08			
LARGEMOUTH BASS	F	C	C		1	2.00	0.22			
GREEN SUNFISH	S	I	C	T	8	16.00	1.73			
BLUEGILL SUNFISH	S	I	C	P	3	6.00	0.65			
GREEN SF X HYBRID					1	2.00	0.22			
JOHNNY DARTER	D	I	C		1	2.00	0.22			
GREENSIDE DARTER	D	I	S	M	7	14.00	1.51			
RAINBOW DARTER	D	I	S	M	70	140.00	15.12			
ORANGETHROAT DARTER	D	I	S		2	4.00	0.43			
	Mile Total				463	926.00				
	Number of Species				16					
	Number of Hybrids				1					

Species List

River Code: **14-037**	Stream: **Wolf Creek**	Sample Date: **1995**
River Mile: **6.10**	Basin: Great Miami River	Date Range: 07/11/95
	Time Fished: 2530 sec — Drain Area: 47.0 sq mi	
	Dist Fished: 0.15 km — No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
NORTHERN HOG SUCKER	R	I	S	M	51	102.00	4.67	1.02	2.73	9.98
WHITE SUCKER	W	O	S	T	26	52.00	2.38	1.32	3.55	25.46
CREEK CHUB	N	G	N	T	3	6.00	0.27	0.14	0.37	23.00
SILVER SHINER	N	I	S	I	7	14.00	0.64	0.04	0.12	3.17
STRIPED SHINER	N	I	S		39	78.00	3.57	0.60	1.60	7.67
SAND SHINER	N	I	M	M	9	18.00	0.82	0.04	0.10	2.00
BLUNTNOSE MINNOW	N	O	C	T	4	8.00	0.37	0.06	0.16	7.50
CENTRAL STONEROLLER	N	H	N		801	1,602.00	73.42	28.30	75.88	17.67
ROCK BASS	S	C	C		5	10.00	0.46	1.38	3.70	138.00
SMALLMOUTH BASS	F	C	C	M	20	40.00	1.83	3.86	10.35	96.46
LARGEMOUTH BASS	F	C	C		1	2.00	0.09	0.00	0.01	1.00
GREEN SF X HYBRID					1	2.00	0.09	0.06	0.17	32.00
GREENSIDE DARTER	D	I	S	M	40	80.00	3.67	0.28	0.76	3.55
RAINBOW DARTER	D	I	S	M	84	168.00	7.70	0.19	0.51	1.13
Mile Total					1,091	2,182.00		37.30		
Number of Species					13					
Number of Hybrids					1					

Species List

River Code: **14-037**	Stream: **Wolf Creek**	Sample Date: **1995**
River Mile: **0.20**	Basin: Great Miami River	Date Range: 07/11/95
	Time Fished: 4380 sec Drain Area: 71.8 sq mi	Thru: 08/18/95
	Dist Fished: 0.36 km No of Passes: 2	Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
QUILLBACK CARPSUCKER	C	O	M		7	6.56	2.58	1.95	4.57	296.71
BLACK REDHORSE	R	I	S	I	2	1.69	0.66	0.70	1.63	404.00
GOLDEN REDHORSE	R	I	S	M	49	42.56	16.77	16.56	38.89	385.64
SHORTHEAD REDHORSE	R	I	S	M	12	10.88	4.28	3.77	8.86	348.75
NORTHERN HOG SUCKER	R	I	S	M	24	18.75	7.39	1.21	2.85	62.71
WHITE SUCKER	W	O	S	T	8	6.56	2.58	1.29	3.02	188.75
COMMON CARP	G	O	M	T	11	9.75	3.84	10.68	25.08	1,052.09
SILVER SHINER	N	I	S	I	1	0.75	0.30	0.00	0.01	4.00
STRIPED SHINER	N	I	S		1	0.75	0.30	0.01	0.02	12.00
SAND SHINER	N	I	M	M	4	3.00	1.18	0.00	0.01	1.25
SILVERJAW MINNOW	N	I	M		1	0.75	0.30	0.00	0.00	1.00
CENTRAL STONEROLLER	N	H	N		9	6.75	2.66	0.12	0.28	17.50
CHANNEL CATFISH	F		C		2	1.69	0.66	1.09	2.57	653.50
YELLOW BULLHEAD		I	C	T	1	0.94	0.37	0.21	0.50	229.00
ROCK BASS	S	C	C		39	32.44	12.78	1.62	3.81	49.97
SMALLMOUTH BASS	F	C	C	M	47	42.19	16.62	2.25	5.28	53.87
LARGEMOUTH BASS	F	C	C		1	0.75	0.30	0.00	0.00	1.00
GREEN SUNFISH	S	I	C	T	63	51.38	20.24	0.94	2.21	18.36
BLUEGILL SUNFISH	S	I	C	P	4	3.38	1.33	0.10	0.22	27.75
LONGEAR SUNFISH	S	I	C	M	4	3.00	1.18	0.05	0.12	16.75
GREENSIDE DARTER	D	I	S	M	8	6.75	2.66	0.03	0.06	3.88
RAINBOW DARTER	D	I	S	M	3	2.63	1.03	0.00	0.01	1.00
	Mile Total				301	253.88		42.59		
	Number of Species				22					
	Number of Hybrids				0					

Species List

River Code: **14-038**	Stream: **Dry Run**	Sample Date: **1995**
River Mile: **0.20**	Basin: Great Miami River	Date Range: 07/20/95
	Time Fished: 2700 sec Drain Area: 7.8 sq mi	
	Dist Fished: 0.15 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
NORTHERN HOG SUCKER	R	I	S	M	1	2.00	0.12			
WHITE SUCKER	W	O	S	T	27	54.00	3.13			
BLACKNOSE DACE	N	G	S	T	5	10.00	0.58			
CREEK CHUB	N	G	N	T	68	136.00	7.88			
STRIPED SHINER	N	I	S		13	26.00	1.51			
SAND SHINER	N	I	M	M	38	76.00	4.40			
SILVERJAW MINNOW	N	I	M		16	32.00	1.85			
BLUNTNOSE MINNOW	N	O	C	T	2	4.00	0.23			
CENTRAL STONEROLLER	N	H	N		608	1,216.00	70.45			
ROCK BASS	S	C	C		2	4.00	0.23			
SMALLMOUTH BASS	F	C	C	M	5	10.00	0.58			
LARGEMOUTH BASS	F	C	C		2	4.00	0.23			
BLUEGILL SUNFISH	S	I	C	P	3	6.00	0.35			
GREENSIDE DARTER	D	I	S	M	1	2.00	0.12			
RAINBOW DARTER	D	I	S	M	72	144.00	8.34			
Mile Total					863	1,726.00				
Number of Species					15					
Number of Hybrids					0					

Species List

River Code: **14-089**	Stream: **Owl Creek**	Sample Date: **1995**
River Mile: **0.10**	Basin: Great Miami River	Date Range: 07/19/95
	Time Fished: 2700 sec Drain Area: 3.8 sq mi	
	Dist Fished: 0.15 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GOLDEN REDHORSE	R	I	S	M	1	2.00	2.13			
NORTHERN HOG SUCKER	R	I	S	M	1	2.00	2.13			
WHITE SUCKER	W	O	S	T	1	2.00	2.13			
SPOTTED SUCKER	R	I	S		1	2.00	2.13			
COMMON CARP	G	O	M	T	4	8.00	8.51			
CREEK CHUB	N	G	N	T	4	8.00	8.51			
SPOTFIN SHINER	N	I	M		1	2.00	2.13			
CENTRAL STONEROLLER	N	H	N		3	6.00	6.38			
GREEN SUNFISH	S	I	C	T	16	32.00	34.04			
BLUEGILL SUNFISH	S	I	C	P	3	6.00	6.38			
GREEN SF X BLUEGILL					1	2.00	2.13			
GREENSIDE DARTER	D	I	S	M	2	4.00	4.26			
RAINBOW DARTER	D	I	S	M	9	18.00	19.15			
Mile Total					47	94.00				
Number of Species					12					
Number of Hybrids					1					

Species List

River Code: 14-005	Stream: **Paddy's Run**	Sample Date: **1995**
River Mile: **4.70**	Basin: Great Miami River	Date Range: 08/15/95
	Time Fished: 10741 sec Drain Area: 6.0 sq mi	Thru: 10/03/95
	Dist Fished: 0.34 km No of Passes: 2	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		5	4.41	0.17			
WHITE SUCKER	W	O	S	T	171	150.88	5.86			
BLACKNOSE DACE	N	G	S	T	277	244.41	9.49			
CREEK CHUB	N	G	N	T	484	427.06	16.59			
SOUTH. REDBELLY DACE	N	H	S		206	181.76	7.06			
ROSEFIN SHINER	N	I	S	M	42	37.06	1.44			
STRIPED SHINER	N	I	S		244	215.29	8.36			
SILVERJAW MINNOW	N	I	M		60	52.94	2.06			
BLUNTNOSE MINNOW	N	O	C	T	237	209.12	8.12			
CENTRAL STONEROLLER	N	H	N		820	723.53	28.10			
YELLOW BULLHEAD		I	C	T	2	1.77	0.07			
SMALLMOUTH BASS	F	C	C	M	1	0.88	0.03			
GREEN SUNFISH	S	I	C	T	8	7.06	0.27			
BLUEGILL SUNFISH	S	I	C	P	30	26.47	1.03			
LONGEAR SUNFISH	S	I	C	M	47	41.47	1.61			
GREEN SF X LONGEAR					1	0.88	0.03			
JOHNNY DARTER	D	I	C		133	117.35	4.56			
ORANGETHROAT DARTER	D	I	S		95	83.82	3.26			
FANTAIL DARTER	D	I	C		55	48.53	1.88			
Mile Total					2,918	2,574.71				
Number of Species					18					
Number of Hybrids					1					

Species List

River Code: 14-005 River Mile: 3.30	Stream: **Paddy's Run** Basin: Great Miami River Time Fished: 10319 sec Drain Area: 10.3 sq mi Dist Fished: 0.32 km No of Passes: 2	Sample Date: **1995** Date Range: 08/14/95 Thru: 10/03/95 Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
WHITE SUCKER	W	O	S	T	19	17.81	0.48			
BLACKNOSE DACE	N	G	S	T	257	240.94	6.46			
CREEK CHUB	N	G	N	T	106	99.38	2.66			
SUCKERMOUTH MINNOW	N	I	S		17	15.94	0.43			
SOUTH. REDBELLY DACE	N	H	S		23	21.56	0.58			
ROSEFIN SHINER	N	I	S	M	24	22.50	0.60			
STRIPED SHINER	N	I	S		185	173.44	4.65			
SPOTFIN SHINER	N	I	M		1	0.94	0.03			
SAND SHINER	N	I	M	M	3	2.81	0.08			
SILVERJAW MINNOW	N	I	M		79	74.06	1.98			
BLUNTNOSE MINNOW	N	O	C	T	625	585.94	15.70			
CENTRAL STONEROLLER	N	H	N		2,138	2,004.38	53.72			
YELLOW BULLHEAD		I	C	T	14	13.13	0.35			
BLACK BULLHEAD		I	C	P	1	0.94	0.03			
STONECAT MADTOM		I	C	I	2	1.88	0.05			
SMALLMOUTH BASS	F	C	C	M	2	1.88	0.05			
LARGEMOUTH BASS	F	C	C		3	2.81	0.08			
GREEN SUNFISH	S	I	C	T	3	2.81	0.08			
BLUEGILL SUNFISH	S	I	C	P	2	1.88	0.05			
LONGEAR SUNFISH	S	I	C	M	11	10.31	0.28			
JOHNNY DARTER	D	I	C		106	99.38	2.66			
ORANGETHROAT DARTER	D	I	S		288	270.00	7.24			
FANTAIL DARTER	D	I	C		71	66.56	1.78			
Mile Total					3,980	3,731.25				
Number of Species					23					
Number of Hybrids					0					

Species List

River Code: **14-005**	Stream: **Paddy's Run**	Sample Date: **1995**
River Mile: **2.80**	Basin: Great Miami River	Date Range: 08/15/95
	Time Fished: 3585 sec Drain Area: 11.0 sq mi	Thru: 10/03/95
	Dist Fished: 0.34 km No of Passes: 2	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
WHITE SUCKER	W	O	S	T	4	3.53	1.06			
BLACKNOSE DACE	N	G	S	T	71	62.65	18.88			
CREEK CHUB	N	G	N	T	26	22.94	6.91			
SUCKERMOUTH MINNOW	N	I	S		3	2.65	0.80			
STRIPED SHINER	N	I	S		6	5.29	1.60			
SPOTFIN SHINER	N	I	M		2	1.76	0.53			
SILVERJAW MINNOW	N	I	M		8	7.06	2.13			
BLUNTNOSE MINNOW	N	O	C	T	35	30.88	9.31			
CENTRAL STONEROLLER	N	H	N		199	175.59	52.93			
YELLOW BULLHEAD		I	C	T	4	3.53	1.06			
BLUEGILL SUNFISH	S	I	C	P	1	0.88	0.27			
LONGEAR SUNFISH	S	I	C	M	5	4.41	1.33			
JOHNNY DARTER	D	I	C		3	2.65	0.80			
ORANGETHROAT DARTER	D	I	S		9	7.94	2.39			
NO FISH					0	0.00	0.00			
Mile Total					376	331.76				
Number of Species					14					
Number of Hybrids					0					

Species List

River Code: **14-005**	Stream: **Paddy's Run**	Sample Date: **1995**
River Mile: **0.20**	Basin: Great Miami River	Date Range: 08/14/95
	Time Fished: 1375 sec Drain Area: 16.0 sq mi	
	Dist Fished: 0.07 km No of Passes: 1	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
STRIPED SHINER	N	I	S		8	34.29	12.12			
SILVERJAW MINNOW	N	I	M		1	4.29	1.52			
BLUNTNOSE MINNOW	N	O	C	T	5	21.43	7.58			
CENTRAL STONEROLLER	N	H	N		2	8.57	3.03			
BLACK BULLHEAD		I	C	P	1	4.29	1.52			
LARGEMOUTH BASS	F	C	C		2	8.57	3.03			
GREEN SUNFISH	S	I	C	T	41	175.71	62.12			
BLUEGILL SUNFISH	S	I	C	P	5	21.43	7.58			
GREEN SF X BLUEGILL					1	4.29	1.52			
Mile Total					66	282.86				
Number of Species					8					
Number of Hybrids					1					

Species List

River Code: 14-018	Stream: **Dicks Creek**	Sample Date: **1995**
River Mile: **5.00**	Basin: Great Miami River	Date Range: 07/18/95
	Time Fished: 4410 sec — Drain Area: 17.0 sq mi	Thru: 08/21/95
	Dist Fished: 0.30 km — No of Passes: 2	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GOLDEN REDHORSE	R	I	S	M	1	1.00	0.27			
NORTHERN HOG SUCKER	R	I	S	M	6	6.00	1.60			
WHITE SUCKER	W	O	S	T	12	12.00	3.19			
COMMON CARP	G	O	M	T	10	10.00	2.66			
CREEK CHUB	N	G	N	T	22	22.00	5.85			
SUCKERMOUTH MINNOW	N	I	S		85	85.00	22.61			
STRIPED SHINER	N	I	S		18	18.00	4.79			
SPOTFIN SHINER	N	I	M		3	3.00	0.80			
SAND SHINER	N	I	M	M	29	29.00	7.71			
BLUNTNOSE MINNOW	N	O	C	T	21	21.00	5.59			
CENTRAL STONEROLLER	N	H	N		114	114.00	30.32			
CHANNEL CATFISH	F		C		2	2.00	0.53			
YELLOW BULLHEAD		I	C	T	1	1.00	0.27			
BLACK BULLHEAD		I	C	P	1	1.00	0.27			
SMALLMOUTH BASS	F	C	C	M	3	3.00	0.80			
LARGEMOUTH BASS	F	C	C		3	3.00	0.80			
GREEN SUNFISH	S	I	C	T	11	11.00	2.93			
BLUEGILL SUNFISH	S	I	C	P	25	25.00	6.65			
LONGEAR SUNFISH	S	I	C	M	1	1.00	0.27			
GREENSIDE DARTER	D	I	S	M	6	6.00	1.60			
RAINBOW DARTER	D	I	S	M	1	1.00	0.27			
ORANGETHROAT DARTER	D	I	S		1	1.00	0.27			
Mile Total					376	376.00				
Number of Species					22					
Number of Hybrids					0					

Species List

River Code: **14-018**	Stream: **Dicks Creek**		Sample Date: **1995**
River Mile: **4.40**	Basin: Great Miami River		Date Range: 07/19/95
	Time Fished: 5557 sec	Drain Area: 39.0 sq mi	Thru: 08/22/95
	Dist Fished: 0.30 km	No of Passes: 2	Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
QUILLBACK CARPSUCKER	C	O	M		9	9.00	0.74	0.64	2.49	71.00
BLACK REDHORSE	R	I	S	I	3	3.00	0.25	0.08	0.29	25.00
GOLDEN REDHORSE	R	I	S	M	42	42.00	3.44	1.25	4.86	29.64
NORTHERN HOG SUCKER	R	I	S	M	45	45.00	3.68	2.28	8.88	50.56
WHITE SUCKER	W	O	S	T	5	5.00	0.41	0.16	0.60	31.00
COMMON CARP	G	O	M	T	20	20.00	1.64	4.25	16.59	212.62
CREEK CHUB	N	G	N	T	5	5.00	0.41	0.11	0.43	22.00
SUCKERMOUTH MINNOW	N	I	S		221	221.00	18.09	1.02	3.96	4.59
STRIPED SHINER	N	I	S		34	34.00	2.78	0.73	2.83	21.32
SPOTFIN SHINER	N	I	M		7	7.00	0.57	0.02	0.07	2.71
SAND SHINER	N	I	M	M	236	236.00	19.31	0.40	1.55	1.68
SILVERJAW MINNOW	N	I	M		16	16.00	1.31	0.02	0.09	1.38
BLUNTNOSE MINNOW	N	O	C	T	101	101.00	8.27	0.16	0.61	1.54
CENTRAL STONEROLLER	N	H	N		212	212.00	17.35	2.52	9.83	11.89
CHANNEL CATFISH	F		C		2	2.00	0.16	2.80	10.92	1,400.00
YELLOW BULLHEAD		I	C	T	6	6.00	0.49	0.95	3.70	158.17
SMALLMOUTH BASS	F	C	C	M	18	18.00	1.47	1.99	7.77	110.67
LARGEMOUTH BASS	F	C	C		17	17.00	1.39	2.36	9.20	138.79
GREEN SUNFISH	S	I	C	T	100	100.00	8.18	1.57	6.13	15.72
BLUEGILL SUNFISH	S	I	C	P	59	59.00	4.83	1.47	5.74	24.95
LONGEAR SUNFISH	S	I	C	M	20	20.00	1.64	0.70	2.73	35.03
GREEN SF X HYBRID					1	1.00	0.08	0.01	0.04	9.00
GREENSIDE DARTER	D	I	S	M	41	41.00	3.36	0.17	0.67	4.20
RAINBOW DARTER	D	I	S	M	1	1.00	0.08	0.00	0.00	1.00
ORANGETHROAT DARTER	D	I	S		1	1.00	0.08	0.00	0.00	1.00
	Mile Total				1,222	1,222.00		25.63		
	Number of Species				24					
	Number of Hybrids				1					

Species List

River Code: **14-018** River Mile: **3.00**	Stream: **Dicks Creek** Basin: Great Miami River Time Fished: 3480 sec Drain Area: 42.0 sq mi Dist Fished: 0.34 km No of Passes: 2	Sample Date: **1995** Date Range: 07/19/95 Thru: 08/21/95 Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		49	43.24	29.17	0.30	2.83	6.94
QUILLBACK CARPSUCKER	C	O	M		4	3.53	2.38	0.21	2.00	60.00
BLACK REDHORSE	R	I	S	I	1	0.88	0.60	0.50	4.76	572.00
GOLDEN REDHORSE	R	I	S	M	3	2.65	1.79	0.37	3.52	141.00
NORTHERN HOG SUCKER	R	I	S	M	7	6.18	4.17	0.17	1.56	26.71
WHITE SUCKER	W	O	S	T	4	3.53	2.38	0.19	1.82	54.75
COMMON CARP	G	O	M	T	11	9.71	6.55	7.36	69.41	758.36
GOLDFISH	G	O	M	T	1	0.88	0.60	0.13	1.20	144.00
STRIPED SHINER	N	I	S		1	0.88	0.60	0.04	0.41	50.00
SPOTFIN SHINER	N	I	M		2	1.76	1.19	0.01	0.05	3.00
BLUNTNOSE MINNOW	N	O	C	T	9	7.94	5.36	0.02	0.21	2.78
CENTRAL STONEROLLER	N	H	N		1	0.88	0.60	0.03	0.24	29.00
YELLOW BULLHEAD		I	C	T	2	1.77	1.19	0.15	1.46	87.50
SMALLMOUTH BASS	F	C	C	M	1	0.88	0.60	0.05	0.48	58.00
LARGEMOUTH BASS	F	C	C		2	1.76	1.19	0.00	0.02	1.00
GREEN SUNFISH	S	I	C	T	35	30.88	20.83	0.43	4.03	13.82
BLUEGILL SUNFISH	S	I	C	P	19	16.77	11.31	0.34	3.16	20.00
LONGEAR SUNFISH	S	I	C	M	16	14.12	9.52	0.30	2.85	21.38
Mile Total					168	148.24		10.60		
Number of Species					18					
Number of Hybrids					0					

Species List

River Code: **14-018**	Stream: **Dicks Creek**	Sample Date: **1995**
River Mile: **2.60**	Basin: Great Miami River	Date Range: 07/19/95
	Time Fished: 5160 sec Drain Area: 44.5 sq mi	Thru: 08/21/95
	Dist Fished: 0.54 km No of Passes: 2	Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		2	1.11	0.84	0.04	0.72	40.00
BLACK REDHORSE	R	I	S	I	4	2.22	1.68	0.28	4.50	125.50
GOLDEN REDHORSE	R	I	S	M	11	6.11	4.62	1.31	21.04	213.70
NORTHERN HOG SUCKER	R	I	S	M	20	11.11	8.40	0.48	7.74	43.25
WHITE SUCKER	W	O	S	T	3	1.67	1.26	0.08	1.36	50.67
COMMON CARP	G	O	M	T	11	6.11	4.62	2.11	34.07	346.05
GOLDFISH	G	O	M	T	3	1.67	1.26	0.37	6.03	224.33
SUCKERMOUTH MINNOW	N	I	S		3	1.67	1.26	0.01	0.10	4.00
ROSYFACE SHINER	N	I	S	I	3	1.67	1.26	0.00	0.02	1.00
STRIPED SHINER	N	I	S		9	5.00	3.78	0.05	0.74	9.22
SPOTFIN SHINER	N	I	M		14	7.78	5.88	0.02	0.39	3.07
SAND SHINER	N	I	M	M	10	5.56	4.20	0.01	0.18	2.00
FATHEAD MINNOW	N	O	C	T	1	0.56	0.42	0.00	0.01	1.00
BLUNTNOSE MINNOW	N	O	C	T	32	17.78	13.45	0.07	1.13	3.94
CENTRAL STONEROLLER	N	H	N		9	5.00	3.78	0.06	0.89	11.11
COM. CARP X GOLDFISH	G	O		T	1	0.56	0.42	0.37	5.99	670.00
YELLOW BULLHEAD		I	C	T	1	0.56	0.42	0.01	0.08	9.00
ROCK BASS	S	C	C		1	0.56	0.42	0.02	0.25	28.00
SMALLMOUTH BASS	F	C	C	M	1	0.56	0.42	0.06	0.96	107.00
LARGEMOUTH BASS	F	C	C		6	3.33	2.52	0.01	0.14	2.67
GREEN SUNFISH	S	I	C	T	55	30.56	23.11	0.66	10.63	21.61
BLUEGILL SUNFISH	S	I	C	P	17	9.44	7.14	0.04	0.59	3.88
LONGEAR SUNFISH	S	I	C	M	20	11.11	8.40	0.14	2.19	12.22
PUMPKINSEED SUNFISH	S	I	C	P	1	0.56	0.42	0.01	0.23	25.00
	Mile Total				238	132.22		6.21		
	Number of Species				23					
	Number of Hybrids				1					

Species List

River Code: **14-018**	Stream: **Dicks Creek**	Sample Date: **1995**
River Mile: **2.40**	Basin: Great Miami River	Date Range: 07/19/95
	Time Fished: 4138 sec Drain Area: 45.0 sq mi	Thru: 08/21/95
	Dist Fished: 0.36 km No of Passes: 2	Sampler Type: D

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		4	3.33	4.30	0.18	0.93	54.50
BLACK REDHORSE	R	I	S	I	1	0.83	1.08	0.52	2.63	619.00
GOLDEN REDHORSE	R	I	S	M	1	0.83	1.08	0.04	0.19	45.00
COMMON CARP	G	O	M	T	15	12.50	16.13	18.20	92.79	1,455.79
BLACKNOSE DACE	N	G	S	T	1	0.83	1.08	0.00	0.01	1.00
CREEK CHUB	N	G	N	T	2	1.67	2.15	0.02	0.08	9.00
SUCKERMOUTH MINNOW	N	I	S		6	5.00	6.45	0.02	0.10	3.83
ROSYFACE SHINER	N	I	S	I	1	0.83	1.08	0.00	0.01	1.00
STRIPED SHINER	N	I	S		2	1.67	2.15	0.01	0.06	7.50
SPOTFIN SHINER	N	I	M		5	4.17	5.38	0.01	0.07	3.40
BLUNTNOSE MINNOW	N	O	C	T	11	9.17	11.83	0.05	0.23	4.91
ROCK BASS	S	C	C		1	0.83	1.08	0.01	0.04	10.00
GREEN SUNFISH	S	I	C	T	39	32.50	41.94	0.52	2.66	16.03
BLUEGILL SUNFISH	S	I	C	P	2	1.67	2.15	0.03	0.17	20.00
LONGEAR SUNFISH	S	I	C	M	1	0.83	1.08	0.01	0.05	11.00
GREENSIDE DARTER	D	I	S	M	1	0.83	1.08	0.00	0.01	1.00
Mile Total					93	77.50		19.61		
Number of Species					16					
Number of Hybrids					0					

Species List

River Code: **14-018**	Stream: **Dicks Creek**	Sample Date: **1995**
River Mile: **0.40**	Basin: Great Miami River	Date Range: 07/18/95
	Time Fished: 4933 sec Drain Area: 47.5 sq mi	Thru: 08/21/95
	Dist Fished: 0.36 km No of Passes: 2	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		3	2.50	1.69	0.05	2.22	20.00
GOLDEN REDHORSE	R	I	S	M	1	0.83	0.56	0.01	0.38	10.00
NORTHERN HOG SUCKER	R	I	S	M	7	5.83	3.93	0.13	5.96	23.00
WHITE SUCKER	W	O	S	T	1	0.83	0.56	0.04	1.56	42.00
COMMON CARP	G	O	M	T	1	0.83	0.56	1.25	55.62	1,500.00
CREEK CHUB	N	G	N	T	4	3.33	2.25	0.01	0.60	4.00
SUCKERMOUTH MINNOW	N	I	S		12	10.00	6.74	0.03	1.51	3.42
ROSYFACE SHINER	N	I	S	I	1	0.83	0.56	0.00	0.04	1.00
STRIPED SHINER	N	I	S		2	1.67	1.12	0.02	0.71	9.50
SPOTFIN SHINER	N	I	M		3	2.50	1.69	0.01	0.22	2.00
SAND SHINER	N	I	M	M	15	12.50	8.43	0.02	0.78	1.40
BLUNTNOSE MINNOW	N	O	C	T	73	60.83	41.01	0.08	3.72	1.37
CENTRAL STONEROLLER	N	H	N		3	2.50	1.69	0.03	1.11	10.00
CHANNEL CATFISH	F		C		1	0.83	0.56	0.18	8.16	220.00
ROCK BASS	S	C	C		4	3.33	2.25	0.09	3.92	26.50
SMALLMOUTH BASS	F	C	C	M	1	0.83	0.56	0.03	1.49	40.00
LARGEMOUTH BASS	F	C	C		1	0.83	0.56	0.00	0.04	1.00
GREEN SUNFISH	S	I	C	T	25	20.83	14.05	0.22	9.61	10.36
BLUEGILL SUNFISH	S	I	C	P	3	2.50	1.69	0.01	0.29	2.67
LONGEAR SUNFISH	S	I	C	M	1	0.83	0.56	0.02	1.00	27.00
LOGPERCH	D	I	S	M	1	0.83	0.56	0.00	0.11	3.00
GREENSIDE DARTER	D	I	S	M	12	10.00	6.74	0.02	0.85	1.92
BANDED DARTER	D	I	S	I	2	1.67	1.12	0.00	0.07	1.00
ORANGETHROAT DARTER	D	I	S		1	0.83	0.56	0.00	0.04	1.00
	Mile Total				178	148.33		2.25		
	Number of Species				24					
	Number of Hybrids				0					

Species List

River Code: **14-019** River Mile: **1.00**	Stream: **North Branch Dicks Creek** Basin: Great Miami River Time Fished: 3780 sec Drain Area: 7.2 sq mi Dist Fished: 0.30 km No of Passes: 2	Sample Date: **1995** Date Range: 07/18/95 Thru: 08/21/95 Sampler Type: D E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GIZZARD SHAD		O	M		1	1.00	0.04			
WHITE SUCKER	W	O	S	T	19	19.00	0.70			
COMMON CARP	G	O	M	T	2	2.00	0.07			
BLACKNOSE DACE	N	G	S	T	82	82.00	3.02			
CREEK CHUB	N	G	N	T	436	436.00	16.04			
SUCKERMOUTH MINNOW	N	I	S		86	86.00	3.16			
SOUTH. REDBELLY DACE	N	H	S		18	18.00	0.66			
STRIPED SHINER	N	I	S		21	21.00	0.77			
SAND SHINER	N	I	M	M	1	1.00	0.04			
SILVERJAW MINNOW	N	I	M		12	12.00	0.44			
FATHEAD MINNOW	N	O	C	T	18	18.00	0.66			
BLUNTNOSE MINNOW	N	O	C	T	34	34.00	1.25			
CENTRAL STONEROLLER	N	H	N		1,879	1,879.00	69.13			
BLACK BULLHEAD		I	C	P	3	3.00	0.11			
LARGEMOUTH BASS	F	C	C		21	21.00	0.77			
GREEN SUNFISH	S	I	C	T	11	11.00	0.40			
BLUEGILL SUNFISH	S	I	C	P	11	11.00	0.40			
LONGEAR SUNFISH	S	I	C	M	1	1.00	0.04			
JOHNNY DARTER	D	I	C		24	24.00	0.88			
GREENSIDE DARTER	D	I	S	M	1	1.00	0.04			
RAINBOW DARTER	D	I	S	M	6	6.00	0.22			
ORANGETHROAT DARTER	D	I	S		31	31.00	1.14			
	Mile Total				2,718	2,718.00				
	Number of Species				22					
	Number of Hybrids				0					

Species List

River Code: 14-019	Stream: **North Branch Dicks Creek**	Sample Date: **1995**
River Mile: **0.10**	Basin: Great Miami River	Date Range: 07/18/95
	Time Fished: 4380 sec Drain Area: 8.0 sq mi	Thru: 08/21/95
	Dist Fished: 0.28 km No of Passes: 2	Sampler Type: D E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GOLDEN REDHORSE	R	I	S	M	3	3.21	0.32			
NORTHERN HOG SUCKER	R	I	S	M	3	3.21	0.32			
WHITE SUCKER	W	O	S	T	4	4.29	0.43			
COMMON CARP	G	O	M	T	2	2.14	0.21			
BLACKNOSE DACE	N	G	S	T	1	1.07	0.11			
CREEK CHUB	N	G	N	T	71	76.07	7.61			
SUCKERMOUTH MINNOW	N	I	S		165	176.79	17.68			
ROSYFACE SHINER	N	I	S	I	1	1.07	0.11			
ROSEFIN SHINER	N	I	S	M	1	1.07	0.11			
STRIPED SHINER	N	I	S		16	17.14	1.71			
SPOTFIN SHINER	N	I	M		2	2.14	0.21			
SAND SHINER	N	I	M	M	61	65.36	6.54			
SILVERJAW MINNOW	N	I	M		1	1.07	0.11			
BLUNTNOSE MINNOW	N	O	C	T	47	50.36	5.04			
CENTRAL STONEROLLER	N	H	N		531	568.93	56.91			
LARGEMOUTH BASS	F	C	C		1	1.07	0.11			
GREEN SUNFISH	S	I	C	T	6	6.43	0.64			
BLUEGILL SUNFISH	S	I	C	P	5	5.36	0.54			
GREENSIDE DARTER	D	I	S	M	8	8.57	0.86			
RAINBOW DARTER	D	I	S	M	3	3.21	0.32			
ORANGETHROAT DARTER	D	I	S		1	1.07	0.11			
Mile Total					933	999.64				
Number of Species					21					
Number of Hybrids					0					

Species List

River Code: **14-171**	Stream: **Mound Overflow Creek**	Sample Date: **1995**
River Mile: **0.20**	Basin: Great Miami River	Date Range: 08/14/95
	Time Fished: 6443 sec Drain Area: 3.1 sq mi	Thru: 10/03/95
	Dist Fished: 0.34 km No of Passes: 2	Sampler Type: E

Species Name / ODNR status	IBI Grp	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave(gm) Weight
GOLDEN REDHORSE	R	I	S	M	3	2.65	0.53			
WHITE SUCKER	W	O	S	T	16	14.12	2.81			
COMMON CARP	G	O	M	T	2	1.76	0.35			
GOLDEN SHINER	N	I	M	T	3	2.65	0.53			
BLACKNOSE DACE	N	G	S	T	1	0.88	0.18			
CREEK CHUB	N	G	N	T	98	86.47	17.22			
STRIPED SHINER	N	I	S		36	31.76	6.33			
SPOTFIN SHINER	N	I	M		5	4.41	0.88			
SILVERJAW MINNOW	N	I	M		1	0.88	0.18			
BLUNTNOSE MINNOW	N	O	C	T	22	19.41	3.87			
CENTRAL STONEROLLER	N	H	N		13	11.47	2.28			
CHANNEL CATFISH	F		C		5	4.41	0.88			
YELLOW BULLHEAD		I	C	T	21	18.53	3.69			
BLACK BULLHEAD		I	C	P	4	3.53	0.70			
TADPOLE MADTOM		I	C		8	7.06	1.41			
LARGEMOUTH BASS	F	C	C		22	19.41	3.87			
GREEN SUNFISH	S	I	C	T	227	200.29	39.89			
BLUEGILL SUNFISH	S	I	C	P	78	68.82	13.71			
PUMPKINSEED SUNFISH	S	I	C	P	3	2.65	0.53			
GREEN SF X BLUEGILL					1	0.88	0.18			
Mile Total					569	502.06				
Number of Species					19					
Number of Hybrids					1					

Species List

River Code: **14-300**	Stream: **Whitewater River**		Sample Date: **1995**
River Mile: **7.70**	Basin: Great Miami River		Date Range: 09/26/95
	Time Fished: 2754 sec	Drain Area: 1369.0 sq mi	
	Dist Fished: 0.47 km	No of Passes: 1	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
MOONEYE [S]		I	M	R	2	4.26	0.68	0.77	0.36	180.00
GIZZARD SHAD		O	M		93	197.87	31.74	19.22	8.97	97.13
SMALLMOUTH BUFFALO	C	I	M		1	2.13	0.34	4.95	2.31	2,325.00
QUILLBACK CARPSUCKER	C	O	M		8	17.02	2.73	6.03	2.82	354.50
RIVER CARPSUCKER	C	O	M		9	19.15	3.07	11.22	5.24	585.78
HIGHFIN CARPSUCKER	C	O	M		13	27.66	4.44	8.12	3.79	293.38
SILVER REDHORSE	R	I	S	M	6	12.77	2.05	9.04	4.22	708.17
BLACK REDHORSE	R	I	S	I	32	68.09	10.92	31.24	14.59	458.88
GOLDEN REDHORSE	R	I	S	M	41	87.23	13.99	35.76	16.69	409.89
SHORTHEAD REDHORSE	R	I	S	M	16	34.04	5.46	12.82	5.99	376.60
RIVER REDHORSE [S]	R	I	S	I	1	2.13	0.34	5.98	2.79	2,810.00
NORTHERN HOG SUCKER	R	I	S	M	10	21.28	3.41	4.28	2.00	201.20
COMMON CARP	G	O	M	T	12	25.53	4.10	47.96	22.39	1,878.33
SPOTFIN SHINER	N	I	M		8	17.02	2.73	0.03	0.01	1.75
BLUNTNOSE MINNOW	N	O	C	T	1	2.13	0.34	0.00	0.00	2.00
CENTRAL STONEROLLER	N	H	N		9	19.15	3.07	0.06	0.03	3.33
CHANNEL CATFISH	F		C		6	12.77	2.05	7.84	3.66	613.83
STONECAT MADTOM		I	C	I	1	2.13	0.34	0.00	0.00	2.00
WHITE BASS	F	P	M		3	6.38	1.02	0.69	0.32	108.67
SMALLMOUTH BASS	F	C	C	M	2	4.26	0.68	2.75	1.28	645.00
SPOTTED BASS	F	C	C		1	2.13	0.34	0.02	0.01	10.00
LONGEAR SUNFISH	S	I	C	M	9	19.15	3.07	0.47	0.22	24.78
PUMPKINSEED SUNFISH	S	I	C	P	1	2.13	0.34	0.02	0.01	7.00
SAUGER	F	P	S		2	4.26	0.68	0.70	0.33	164.50
GREENSIDE DARTER	D	I	S	M	1	2.13	0.34	0.02	0.01	10.00
FRESHWATER DRUM			M	P	5	10.64	1.71	4.19	1.96	394.20
	Mile Total				293	623.40		214.18		
	Number of Species				26					
	Number of Hybrids				0					

Species List

River Code: **14-300** River Mile: **7.20**	Stream: **Whitewater River** Basin: Great Miami River Time Fished: 3278 sec Drain Area: 1370.0 sq mi Dist Fished: 0.50 km No of Passes: 1	Sample Date: **1995** Date Range: 09/26/95 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
SKIPJACK HERRING		P	M		1	2.00	0.23	0.05	0.01	23.00
GIZZARD SHAD		O	M		74	148.00	17.29	15.20	4.70	102.70
SMALLMOUTH BUFFALO	C	I	M		1	2.00	0.23	0.96	0.30	482.00
QUILLBACK CARPSUCKER	C	O	M		2	4.00	0.47	2.72	0.84	681.00
RIVER CARPSUCKER	C	O	M		6	12.00	1.40	5.94	1.84	495.17
HIGHFIN CARPSUCKER	C	O	M		6	12.00	1.40	4.35	1.34	362.20
SILVER REDHORSE	R	I	S	M	9	18.00	2.10	20.68	6.39	1,148.67
BLACK REDHORSE	R	I	S	I	18	36.00	4.21	14.55	4.50	404.17
GOLDEN REDHORSE	R	I	S	M	121	242.00	28.27	75.53	23.34	312.10
SHORTHEAD REDHORSE	R	I	S	M	16	32.00	3.74	13.31	4.11	415.80
NORTHERN HOG SUCKER	R	I	S	M	16	32.00	3.74	4.12	1.27	128.75
COMMON CARP	G	O	M	T	19	38.00	4.44	55.88	17.27	1,470.47
ROSYFACE SHINER	N	I	S	I	4	8.00	0.93	0.02	0.00	2.00
SPOTFIN SHINER	N	I	M		7	14.00	1.64	0.06	0.02	4.57
CENTRAL STONEROLLER	N	H	N		3	6.00	0.70	0.21	0.07	35.67
CHANNEL CATFISH	F		C		43	86.00	10.05	75.12	23.21	873.47
YELLOW BULLHEAD		I	C	T	1	2.00	0.23	0.04	0.01	21.00
FLATHEAD CATFISH	F	P	C		1	2.00	0.23	12.00	3.71	6,000.00
STONECAT MADTOM		I	C	I	2	4.00	0.47	0.06	0.02	15.50
WHITE BASS	F	P	M		8	16.00	1.87	2.77	0.86	173.14
WHITE CRAPPIE	S	I	C		1	2.00	0.23	0.12	0.04	60.00
ROCK BASS	S	C	C		5	10.00	1.17	0.41	0.13	41.40
SMALLMOUTH BASS	F	C	C	M	2	4.00	0.47	0.84	0.26	209.00
SPOTTED BASS	F	C	C		6	12.00	1.40	0.33	0.10	27.50
BLUEGILL SUNFISH	S	I	C	P	1	2.00	0.23	0.02	0.01	10.00
LONGEAR SUNFISH	S	I	C	M	27	54.00	6.31	0.87	0.27	16.11
SAUGER	F	P	S		1	2.00	0.23	0.22	0.07	108.00
WALLEYE	F	P	S		1	2.00	0.23	2.10	0.65	1,050.00
LOGPERCH	D	I	S	M	2	4.00	0.47	0.07	0.02	16.50
GREENSIDE DARTER	D	I	S	M	1	2.00	0.23	0.01	0.00	7.00
BANDED DARTER	D	I	S	I	1	2.00	0.23	0.00	0.00	2.00
FRESHWATER DRUM			M	P	22	44.00	5.14	15.06	4.65	342.20
	Mile Total				428	856.00		323.61		
	Number of Species				32					
	Number of Hybrids				0					

Species List

River Code: **14-300**	Stream: **Whitewater River**	Sample Date: **1995**
River Mile: **4.70**	Basin: Great Miami River	Date Range: 10/04/95
	Time Fished: 3057 sec Drain Area: 1382.0 sq mi	
	Dist Fished: 0.50 km No of Passes: 1	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
MOONEYE [S]		I	M	R	3	6.00	0.66	1.25	0.41	208.50
SKIPJACK HERRING		P	M		1	2.00	0.22	0.04	0.01	22.00
GIZZARD SHAD		O	M		48	96.00	10.50	11.55	3.82	120.31
QUILLBACK CARPSUCKER	C	O	M		16	32.00	3.50	16.35	5.41	510.88
RIVER CARPSUCKER	C	O	M		2	4.00	0.44	3.00	0.99	750.00
HIGHFIN CARPSUCKER	C	O	M		5	10.00	1.09	2.91	0.96	290.60
SILVER REDHORSE	R	I	S	M	7	14.00	1.53	18.54	6.13	1,324.43
BLACK REDHORSE	R	I	S	I	44	88.00	9.63	46.26	15.31	525.73
GOLDEN REDHORSE	R	I	S	M	51	102.00	11.16	39.98	13.23	391.98
SHORTHEAD REDHORSE	R	I	S	M	11	22.00	2.41	8.90	2.94	404.55
NORTHERN HOG SUCKER	R	I	S	M	20	40.00	4.38	4.60	1.52	115.00
COMMON CARP	G	O	M	T	17	34.00	3.72	61.20	20.25	1,800.00
GRAVEL CHUB	N	I	S	M	49	98.00	10.72	0.36	0.12	3.63
CREEK CHUB	N	G	N	T	2	4.00	0.44	0.01	0.00	3.00
SUCKERMOUTH MINNOW	N	I	S		5	10.00	1.09	0.08	0.03	7.60
EMERALD SHINER	N	I	S		6	12.00	1.31	0.05	0.02	4.17
SPOTFIN SHINER	N	I	M		21	42.00	4.60	0.10	0.03	2.48
SAND SHINER	N	I	M	M	5	10.00	1.09	0.02	0.01	1.80
BULLHEAD MINNOW	N	O	C		1	2.00	0.22	0.00	0.00	2.00
BLUNTNOSE MINNOW	N	O	C	T	8	16.00	1.75	0.05	0.02	2.88
CENTRAL STONEROLLER	N	H	N		30	60.00	6.56	0.43	0.14	7.17
CHANNEL CATFISH	F		C		31	62.00	6.78	54.11	17.90	872.76
FLATHEAD CATFISH	F	P	C		3	6.00	0.66	13.44	4.45	2,240.67
STONECAT MADTOM		I	C	I	3	6.00	0.66	0.11	0.04	18.00
WHITE BASS	F	P	M		1	2.00	0.22	0.12	0.04	60.00
WHITE CRAPPIE	S	I	C		1	2.00	0.22	0.03	0.01	16.00
ROCK BASS	S	C	C		1	2.00	0.22	0.11	0.04	55.00
SMALLMOUTH BASS	F	C	C	M	15	30.00	3.28	5.44	1.80	181.40
SPOTTED BASS	F	C	C		7	14.00	1.53	1.34	0.44	96.00
GREEN SUNFISH	S	I	C	T	2	4.00	0.44	0.01	0.00	3.50
BLUEGILL SUNFISH	S	I	C	P	1	2.00	0.22	0.01	0.00	4.00
LONGEAR SUNFISH	S	I	C	M	18	36.00	3.94	0.67	0.22	18.72
SAUGER	F	P	S		2	4.00	0.44	1.18	0.39	294.50
BANDED DARTER	D	I	S	I	3	6.00	0.66	0.02	0.01	2.67
FRESHWATER DRUM			M	P	17	34.00	3.72	9.97	3.30	293.33
Mile Total					457	914.00		302.26		
Number of Species					35					
Number of Hybrids					0					

Species List

River Code: **14-300**	Stream: **Whitewater River**	Sample Date: **1995**
River Mile: **0.80**	Basin: Great Miami River	Date Range: 10/04/95
	Time Fished: 3178 sec Drain Area: 1483.0 sq mi	
	Dist Fished: 0.50 km No of Passes: 1	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
MOONEYE [S]		I	M	R	1	2.00	0.23	0.38	0.12	190.00
GIZZARD SHAD		O	M		41	82.00	9.60	9.07	2.91	110.63
SMALLMOUTH BUFFALO	C	I	M		1	2.00	0.23	0.69	0.22	344.00
QUILLBACK CARPSUCKER	C	O	M		1	2.00	0.23	1.14	0.37	572.00
RIVER CARPSUCKER	C	O	M		1	2.00	0.23	1.90	0.61	950.00
HIGHFIN CARPSUCKER	C	O	M		1	2.00	0.23	0.10	0.03	50.00
SILVER REDHORSE	R	I	S	M	6	12.00	1.41	3.40	1.09	283.33
BLACK REDHORSE	R	I	S	I	34	68.00	7.96	31.78	10.19	467.39
GOLDEN REDHORSE	R	I	S	M	99	198.00	23.19	74.98	24.03	378.69
SHORTHEAD REDHORSE	R	I	S	M	13	26.00	3.04	12.20	3.91	469.23
NORTHERN HOG SUCKER	R	I	S	M	56	112.00	13.11	18.39	5.89	164.15
COMMON CARP	G	O	M	T	28	56.00	6.56	112.96	36.20	2,017.11
GRAVEL CHUB	N	I	S	M	19	38.00	4.45	0.21	0.07	5.58
SUCKERMOUTH MINNOW	N	I	S		15	30.00	3.51	0.22	0.07	7.27
EMERALD SHINER	N	I	S		13	26.00	3.04	0.11	0.03	4.08
BULLHEAD MINNOW	N	O	C		2	4.00	0.47	0.01	0.00	3.00
CENTRAL STONEROLLER	N	H	N		16	32.00	3.75	0.19	0.06	5.88
CHANNEL CATFISH	F		C		19	38.00	4.45	30.35	9.73	798.68
NORTHERN MADTOM [E]		I	C	R	1	2.00	0.23	0.00	0.00	2.00
WHITE BASS	F	P	M		3	6.00	0.70	0.45	0.14	75.33
WHITE CRAPPIE	S	I	C		6	12.00	1.41	0.81	0.26	67.67
SMALLMOUTH BASS	F	C	C	M	7	14.00	1.64	1.07	0.34	76.29
SPOTTED BASS	F	C	C		6	12.00	1.41	2.55	0.82	212.67
LARGEMOUTH BASS	F	C	C		2	4.00	0.47	0.04	0.01	10.50
GREEN SUNFISH	S	I	C	T	2	4.00	0.47	0.01	0.00	3.00
BLUEGILL SUNFISH	S	I	C	P	8	16.00	1.87	0.21	0.07	13.13
OR'GESPOTTED SUNFISH	S	I	C		1	2.00	0.23	0.01	0.00	6.00
LONGEAR SUNFISH	S	I	C	M	14	28.00	3.28	0.30	0.10	10.64
REDEAR SUNFISH	E	I	C		1	2.00	0.23	0.04	0.01	22.00
SAUGER	F	P	S		1	2.00	0.23	0.81	0.26	406.00
FRESHWATER DRUM			M	P	9	18.00	2.11	7.65	2.45	425.00
	Mile Total				427	854.00		312.04		
	Number of Species				31					
	Number of Hybrids				0					