Appendices to Biological and Water Quality Study of Southwest Ohio River Tributaries, 2014.

Butler, Hamilton, Brown, and Clermont Counties, Ohio

Division of Surface Water
August 11, 2016

Appendices to
Biological and Water Quality Study
of Southwest Ohio River Tributaries, 2014
Technical Report Number DSW/EAS 2016-06-01

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Appendix Table A - Notice to Users

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 and Gallant 1988), 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.

____. 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.

____. 1989a. 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.

____. 1989b. 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.

____. 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, the following new publications by the Ohio EPA have become available. These publications should also be consulted as they represent the latest information and analyses used by the Ohio EPA to implement the biological criteria.

DeShon, J.E. 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.

Ohio Environmental Protection Agency. 2006. Methods for assessing habitat in flowing waters: Using the Qualitative Habitat Evaluation Index (QHEI). Ohio EPA Tech. Bull. EAS/2006-06-1. Revised by the Midwest Biodiversity Institute for Div. of Surface Water, Ecol. Assess. Sect., Groveport, Ohio.

____2015a. 2015 Updates to Biological criteria for the protection of aquatic life: Volume II and Volume II Addendum. Users manual for biological field assessment of Ohio surface waters. Division of Surface Water, Ecological Assessment Section, Columbus, Ohio. May 8, 2015.

____2015b. Biological criteria for the protection of aquatic life: Volume III. Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities. Division of Surface Water, Ecological Assessment Section, Columbus, Ohio. September 23, 2015.

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. 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. 1995a. 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. 1995b. 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. and E.T. Rankin. 1995c. 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.

Yoder, C.O. and M.A. Smith. 1999. Using fish assemblages in a State biological assessment and criteria program: essential concepts and considerations, pp. 17-63. in T. Simon (ed.). Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities. CRC Press, Boca Raton, FL.

These documents and this report may be obtained by contacting:

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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 the Ohio EPA conducts biosurveys in 4-5 watersheds study areas with an aggregate total of 250-300 sampling sites.

The 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 the Ohio EPA (*e.g.,* NPDES permits, Director's Orders, the Ohio Water Quality Standards [OAC 3745-1], Water Quality Permit Support Documents [WQPSDs]), and are eventually incorporated into State Water Quality Management Plans, the Ohio Nonpoint Source Assessment, and the biennial Integrated Water Quality Monitoring and Assessment Report (305[b] and 303[d]).

Hierarchy of Indicators

A carefully conceived ambient monitoring approach, using cost-effective indicators consisting 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 includes a hierarchical continuum from administrative to true environmental indicators (Figure 1). 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 uptake and/or assimilation (tissue contamination, biomarkers, wasteload allocation); and, 6) changes in health, ecology, or other effects (ecological condition, pathogens). 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 Integrated Report, the Ohio Nonpoint Source Assessment, and other technical bulletins.

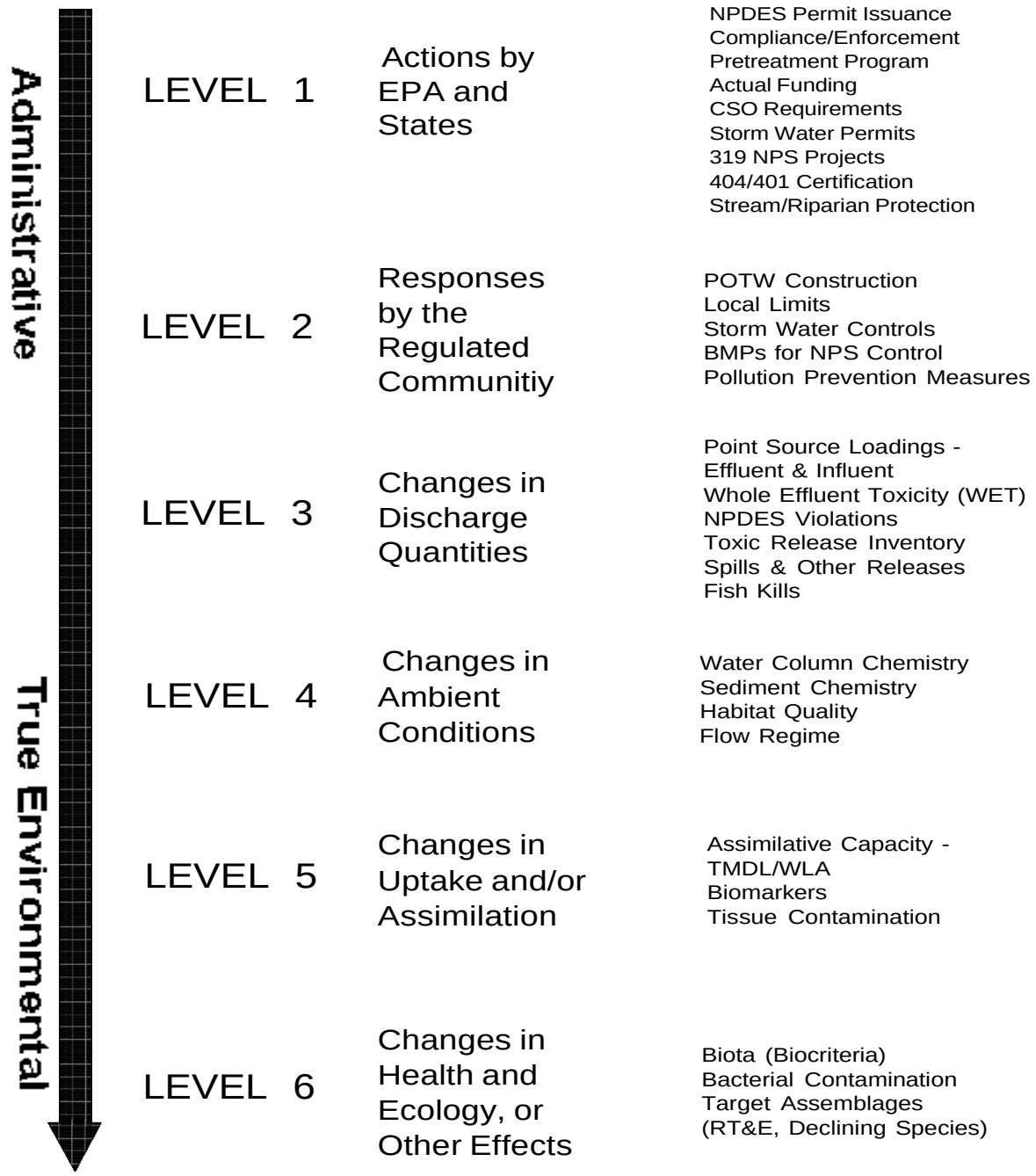

Figure 1. Hierarchy of administrative and environmental indicators which can be used for water quality management activities such as monitoring and assessment, reporting, and the evaluation of overall program effectiveness. This is patterned after a model developed by the U.S. EPA.

Ohio Water Quality Standards: Designated Aquatic Life Use

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 coldwater 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 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 WQS 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 can be having a water depth of at least one meter over an area of at least 100 square feet or, lacking this, where frequent human contact is a reasonable expectation. If a water body does not meet either criterion, the SCR use applies. The attainment status of PCR and SCR is determined using bacterial indicators (*e.g.,* fecal coliform, *E. coli)* and the criteria for each are specified in the Ohio WQS.

Attainment of recreation uses are evaluated based on monitored bacteria levels. The Ohio Water Quality Standards state that all waters should be free from any public health nuisance associated with raw or poorly treated sewage (Administrative Code 3745-1-04, Part F). Additional criteria (Administrative Code 3745-1-07) apply to waters that are designated as suitable for full body contact such as swimming (PCR) or for partial body contact such as wading (SCR). These standards were developed to protect human health, because even though fecal coliform bacteria are relatively harmless in most cases, their presence indicates that the water has been contaminated with fecal matter.

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.

MECHANISMS FOR WATER QUALITY IMPAIRMENT

The following paragraphs are provided to present the varied causes of impairment that affect the resource quality of lotic systems in Ohio. While the various perturbations are presented under separate headings, it is important to remember that they are often interrelated and cumulative in terms of the detrimental impact that can result.

Habitat and Flow Alterations

Habitat alteration, such as channelization, negatively impacts biological communities directly by limiting the complexity of living spaces available to aquatic organisms. Consequently, fish and macroinvertebrate communities are not as diverse. Indirect impacts include the removal of riparian trees and field tiling to facilitate drainage. Following a rain event, most of the water is quickly removed from tiled fields rather than filtering through the soil, recharging ground water, and reaching the stream at a lower volume and more sustained rate. As a result, small streams more frequently go dry or become intermittent. Urbanization impacts include removal of riparian trees, influx of storm water runoff, straightening and piping of stream channels, and riparian vegetation removal.

Tree shade is important because it limits the energy input from the sun, moderates water temperature, and limits evaporation. Removal of the tree canopy further degrades conditions because it eliminates an important source of coarse organic matter essential for a balanced ecosystem. Riparian vegetation aids in nutrient uptake, may decrease runoff rate into streams, and helps keep soil in place. Erosion impacts channelized streams more severely due to the lack of a riparian buffer zone to slow runoff, trap sediment and stabilize banks. Additionally, deep trapezoidal channels lack a functioning flood plain and therefore cannot expel sediment as would occur during flood events along natural watercourses. The confinement of flow within an artificially deep channel accelerates the movement of water downstream, exacerbating flooding of neighboring properties.

The lack of water movement under low flow conditions can exacerbate impacts from organic loading and nutrient enrichment by limiting re-aeration of the stream. The amount of oxygen soluble in water decreases as temperature increases. This is one reason why tree shade is so important. The two main sources of oxygen in water are diffusion from the atmosphere and plant photosynthesis. Turbulence at the water surface is critical because it increases surface area and promotes diffusion, but channelization eliminates turbulence produced by riffles, meanders, and debris snags. Plant photosynthesis produces oxygen, but at night, respiration reverses the process and consumes oxygen. Conversely, oxygen concentrations can become supersaturated during the day, due to abnormally high amounts of photosynthesis, causing gas bubble stress to both fish and invertebrate communities. Oxygen is also used by bacteria that decay dead organic matter. Nutrient enrichment can promote the growth of nuisance algae that subsequently dies and serves as food for bacteria. Under these conditions, oxygen can be depleted unless it is replenished from the air.

Siltation and Sedimentation

Whenever the natural flow regime is altered to facilitate drainage, increased amounts of sediment are likely to enter streams either by overland transport or increased bank erosion. The removal of wooded riparian areas furthers the erosion process. Channelization keeps all but the highest flow events confined within the artificially high banks. As a result, areas that were formerly flood plains and allowed for the removal of sediment from the primary stream channel no longer serve this function. As water

levels fall following a rain event, interstitial spaces between larger rocks fill with sand and silt and the diversity of available habitat to support fish and macroinvertebrates is reduced. Silt also can clog the gills of both fish and macroinvertebrates, reduce visibility thereby excluding site feeding fish species, and smother the nests of lithophilic fishes. Lithophilic spawning fish require clean substrates with interstitial voids in which to deposit eggs. Conversely, pioneering species benefit. They are generalists and best suited for exploiting disturbed and less heterogeneous habitats. The net result is a lower diversity of aquatic species compared with a typical warmwater stream with natural habitats.

Sediment also impacts water quality, recreation, and drinking water. Nutrients absorbed to soil particles remain trapped in the watercourse. Likewise, bacteria, pathogens, and pesticides which also attach to suspended or bedload sediments become concentrated in waterways where the channel is functionally isolated from the landscape. Community drinking water systems address these issues with more costly advanced treatment technologies.

Nutrient Enrichment

The element of greatest concern is phosphorus because it is critical for plant growth and is often the limiting nutrient. The form that can be readily used by plants and therefore can stimulate nuisance algae blooms is orthophosphate (PO_4^{3-}). The amount of phosphorus tied up in the nucleic acids of food and waste is actually quite low. This organic material is eventually converted to orthophosphate by bacteria. The amount of orthophosphate contained in synthetic detergents is a great concern however. It was for this reason that the General Assembly of the State of Ohio enacted a law in 1990 to limit phosphorus content in household laundry detergents sold in the Lake Erie drainage basin to 0.5% by weight. Inputs of phosphorus originate from both point and nonpoint sources. Most of the phosphorus discharged by point sources is soluble. Another characteristic of point sources is they have a continuous impact and are human in origin, for instance, effluents from municipal sewage treatment plants. The contribution from failed on-lot septic systems can also be significant, especially if they are concentrated in a small area. The phosphorus concentration in raw waste water is generally 8-10 mg/l and after secondary treatment is generally 4-6 mg/l. Further removal requires the added cost of chemical addition. The most common methods use the addition of lime or alum to form a precipitate, so most phosphorus (80%) ends up in the sludge.

A characteristic of phosphorus discharged by nonpoint sources is that the impact is intermittent and associated with storm water runoff. Most of this phosphorus is bound tightly to soil particles and enters streams from erosion, although some comes from tile drainage. Urban storm water is more of a concern if combined sewer overflows are involved. The impact from rural storm water varies depending on land use and management practices and includes contributions from livestock feedlots and pastures and row crop agriculture. Crop fertilizer includes granular inorganic types and organic types such as manure or sewage sludge. Pasture land is especially a concern if the livestock have access to the stream. Large feedlots with manure storage lagoons create the potential for overflows and accidental spills. Land management is an issue because erosion is worse on streams without any riparian buffer zone to trap runoff. The impact is worse in streams that are channelized because they no longer have a functioning flood plain and cannot expel sediment during flooding. Oxygen levels must also be considered, because phosphorus is released from sediment at higher rates under anoxic conditions.

There is no numerical phosphorus criterion established in the Ohio Water Quality Standards, but there is a narrative criterion that states phosphorus should be limited to the extent necessary to prevent nuisance growths of algae and weeds (Administrative Code, 3745-1-04, Part E). Phosphorus loadings from large volume point source dischargers in the Lake Erie drainage basin are regulated by NPDES permit limits. The permit limit is a concentration of 1.0 mg/l in final effluent. Research conducted by the Ohio EPA indicates that a significant correlation exists between phosphorus and the health of aquatic communities (Miltner and Rankin, 1998). It was concluded that biological community performance in

headwater and wadeable streams was highest where phosphorus concentrations were lowest. It was also determined that the lowest phosphorus concentrations were associated with the highest quality habitats, supporting the notion that habitat is a critical component of stream function. The report recommends WWH total phosphorus targets of 0.08 mg/l in headwater streams (<20 mi^2 watershed size), 0.10 mg/l in wadeable streams (>20-200 mi^2) and 0.17 mg/l in small rivers (>200-1000 mi^2).

Organic Enrichment and Low Dissolved Oxygen

The amount of oxygen soluble in water is low and it decreases as temperature increases. This is one reason why tree shade is so important. The two main sources of oxygen in water are diffusion from the atmosphere and plant photosynthesis. Turbulence at the water surface is critical because it increases surface area and promotes diffusion. Drainage practices such as channelization eliminate turbulence produced by riffles, meanders, and debris snags. Although plant photosynthesis produces oxygen by day, it is consumed by the reverse process of respiration at night. Oxygen is also consumed by bacteria that decay organic matter, so it can be easily depleted unless it is replenished from the air. Sources of organic matter include poorly treated waste water, sewage bypasses, and dead plants and algae. Dissolved oxygen criteria are established in the Ohio Water Quality Standards to protect aquatic life. The minimum and average limits are tiered values and linked to use designations (Administrative Code 3745 -1-07, Table 7-1).

Ammonia

Ammonia enters streams as a component of fertilizer and manure run-off and wastewater effluent. Ammonia gas (NH_3) readily dissolves in water to form the compound ammonium hydroxide (NH_4OH). In aquatic ecosystems, equilibrium is established as ammonia shifts from a gas to undissociated ammonium hydroxide to the dissociated ammonium ion (NH_4+). Under normal conditions (neutral pH 7.0 and temperature 25°C), almost none of the total ammonia is present as gas, only 0.55% is present as ammonium hydroxide, and the rest is ammonium ion. Alkaline pH shifts the equation toward gaseous ammonia production, so the amount of ammonium hydroxide increases. This is important because while the ammonium ion is almost harmless to aquatic life, ammonium hydroxide is very toxic and can reduce growth and reproduction or cause mortality.

The concentration of ammonia in raw sewage is high, sometimes as much as 20-30 mg/l. Treatment to remove ammonia involves gaseous stripping to the atmosphere, biological nitrification and de-nitrification, and assimilation into plant and animal biomass. The nitrification process requires a long detention time and aerobic conditions like that provided in extended aeration treatment plants. Under these conditions, bacteria first convert ammonia to nitrite (*Nitrosomonas*) and then to nitrate (*Nitrobacter*). Nitrate can then be reduced by the de-nitrification process (*Pseudomonas*) and nitrogen gas and carbon dioxide are produced as by-products.

Ammonia criteria are established in the Ohio Water Quality Standards to protect aquatic life. The maximum and average limits are tiered values based on sample pH and temperature and linked to use designations (Administrative Code 3745-1-07, Tables 7-2 through 7-8).

Metals

Metals can be toxic to aquatic life and hazardous to human health. Although they are naturally occurring elements many are extensively used in manufacturing and are byproducts of human activity. Certain metals like copper and zinc are essential in the human diet, but excessive levels are usually detrimental. Lead and mercury are of particular concern because they often trigger fish consumption advisories. Mercury is used in the production of chlorine gas and caustic soda and in the manufacture of batteries and fluorescent light bulbs. In the environment it forms inorganic salts, but bacteria convert these to methyl-mercury and this organic form builds up in the tissues of fish. Extended exposure can damage

the brain, kidneys, and developing fetus. The Ohio Department of Health (ODH) issued a statewide fish consumption advisory in 1997 advising women of child bearing age and children six and under not to eat more than one meal per week of any species of fish from waters of the state because of mercury. Lead is used in batteries, pipes, and paints and is emitted from burning fossil fuels. It affects the central nervous system and damages the kidneys and reproductive system. Copper is mined extensively and used to manufacture wire, sheet metal, and pipes. Ingesting large amounts can cause liver and kidney damage. Zinc is a by-product of mining, steel production, and coal burning and used in alloys such as brass and bronze. Ingesting large amounts can cause stomach cramps, nausea, and vomiting.

Metals criteria are established in the Ohio Water Quality Standards to protect human health, wildlife, and aquatic life. Three levels of aquatic life standards are established (Administrative Code 3745-1-07, Table 7-1) and limits for some elements are based on water hardness (Administrative Code 3745-1-07, Table 7-9). Human health and wildlife standards are linked to either the Lake Erie (Administrative Code 3745-1-33, Table 33- 2) or Ohio River (Administrative Code 3745-1-34, Table 34-1) drainage basins. The drainage basins also have limits for additional elements not established elsewhere that are identified as Tier I and Tier II values.

Bacteria

High concentrations of either fecal coliform bacteria or *Escherichia coli* (*E. coli*) in a lake or stream may indicate contamination with human pathogens. People can be exposed to contaminated water while wading, swimming, and fishing. Fecal coliform bacteria are relatively harmless in most cases, but their presence indicates that the water has been contaminated with feces from a warm-blooded animal. Although intestinal organisms eventually die off outside the body, some will remain virulent for a period of time and may be dangerous sources of infection. This is especially a problem if the feces contained pathogens or disease producing bacteria and viruses. Reactions to exposure can range from an isolated illness such as skin rash, sore throat, or ear infection to a more serious wide spread epidemic. Some types of bacteria that are a concern include *Escherichia*, which cause diarrhea and urinary tract infections, *Salmonella*, which cause typhoid fever and gastroenteritis (food poisoning), and *Shigella*, which cause severe gastroenteritis or bacterial dysentery. Some types of viruses that are a concern include polio, hepatitis A, and encephalitis. Disease causing microorganisms such as cryptosporidium and giardia are also a concern.

Since fecal coliform bacteria are associated with warm-blooded animals, there are both human and animal sources. Human sources, including effluent from sewage treatment plants or discharges by on-lot septic systems, are a more continuous problem. Bacterial contamination from combined sewer overflows are associated with wet weather events. Animal sources are usually more intermittent and are also associated with rainfall, except when domestic livestock have access to the water. Large livestock farms store manure in holding lagoons and this creates the potential for an accidental spill. Liquid manure applied as fertilizer is a runoff problem if not managed properly and it sometimes seeps into field tiles.

Bacteria criteria for the recreational use are established in the Ohio Water Quality Standards to protect human health. The maximum and average limits are tiered *E. coli* values and linked to use designation, but only apply during the May 1-October 15 recreation season (Administrative Code 3745-1-07, Table 7-13). The standards also state that streams must be free of any public health nuisance associated with raw or poorly treated sewage during dry weather conditions (Administrative Code 3745-1-04, Part F).

Sediment Contamination

Chemical quality of sediment is a concern because many pollutants bind strongly to soil particles and are persistent in the environment. Some of these compounds accumulate in the aquatic food chain and trigger fish consumption advisories, but others are simply a contact hazard because they cause skin cancer and tumors. The physical and chemical nature of sediment is determined by local geology, land use, and contribution from manmade sources. As some materials enter the water column they are attracted to the surface electrical charges associated with suspended silt and clay particles. Others simply sink to the bottom due to their high specific gravity. Sediment layers form as suspended particles settle, accumulate, and combine with other organic and inorganic materials. Sediment is the most physically, chemically, and biologically reactive at the water interface because this is where it is affected by sunlight, current, wave action, and benthic organisms. Assessment of the chemical nature of this layer can be used to predict ecological impact.

Sediment data are evaluated using Ohio Sediment Reference Values (SRVs; Ohio EPA 2008), along with guidelines established in *Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems* (MacDonald *et.al*. 2000), and *Ecological Screening Levels (ESLs)* (U.S. EPA 2003). The Ohio EPA system was derived from samples collected at ecoregional reference sites. Specific SRVs are site specific ecoregional based metals concentrations and are used to identify contaminated stream reaches. The MacDonald guidelines are consensus based using previously developed values. The system predicts that sediments below the threshold effect concentration (TEC) are absent of toxicity and those greater than the probable effect concentration (PEC) are toxic. ESL values, considered protective benchmarks, were derived by US EPA Region 5 using a variety of sources and methods.

Sediment samples collected by the Ohio EPA are measured for a number of physical and chemical properties. Physical attributes included percent particle size distribution (sand ≥60µ, silt 5-59µ, clay ≤4µ), percent solids, and percent organic carbon. Most locations sampled had an abundance of sediment, and no difficulties were experienced in locating ample volumes of sediment for analysis. Fine grained sediments are deposited in flood plains of natural streams during periods of high flow. This scenario changes if the stream is impounded by a dam or channelized. Chemical attributes included metals, volatile and semi-volatile organic compounds, pesticides, and polychlorinated biphenyls (PCBs).

MATERIALS and METHODS

All biological, chemical, and physical habitat data collection, processing, and analysis methods and procedures adhere to those specified in the Surface Water Field Sampling Manual for water column chemisty, bacteria and flows (Ohio EPA 2013), Biological Criteria for the Protection of Aquatic Life, Volumes II - III (Ohio EPA 1987b, 1989a, 1989b, 2015a, 2015b), and The Qualitative Habitat Evaluation Index (QHEI): Rationale, Methods, and Application (Rankin 1989).

Determining Use Attainment Status

Use attainment status is a term describing the degree to which environmental indicators are either above or below criteria specified by the Ohio Water Quality Standards (WQS; Ohio Administrative Code 3745-1). Assessing aquatic use attainment status involves a primary reliance on the Ohio EPA biological criteria (OAC 3745-1-07; Table 7-15). These are confined to ambient assessments and apply to rivers and streams outside of mixing zones. Numerical biological criteria are based on multimetric biological indices including the IBI and MIwb, indices measuring the response of the fish community, and the ICI, which indicates the response of the macroinvertebrate community. Three attainment status results are possible at each sampling location - full, partial, or non-attainment. Full attainment means that all of the applicable indices meet the biocriteria. Partial attainment means that one or more of the applicable indices fails to meet the biocriteria. Non-attainment means that none of the applicable indices meet the

biocriteria or one of the organism groups reflects poor or very poor performance. An aquatic life use attainment table is constructed based on the sampling results and is arranged from upstream to downstream and includes the sampling locations indicated by river mile, the applicable biological indices, the use attainment status (*i.e.,* full, partial, or non), the Qualitative Habitat Evaluation Index (QHEI), and a sampling location description.

Habitat Assessment

Physical habitat was evaluated using the QHEI developed by the Ohio EPA for streams and rivers in Ohio (Rankin 1989 and 1995, Ohio EPA 2006). 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 habitat characteristics 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 reflect habitat conditions which have the ability to support exceptional warmwater faunas.

Sediment and Surface Water Assessment

Fine grain sediment samples were collected in the upper 4 inches of bottom material at each location using decontaminated stainless steel scoops and excavated using nitrile gloves. Decontamination of sediment sampling equipment followed the procedures outlined in the Ohio EPA sediment sampling guidance manual (Ohio EPA 2012). Sediment grab samples were homogenized in stainless steel pans (material for VOC analysis was not homogenized), transferred into glass jars with teflon® lined lids, placed on ice (to maintain 4°C) in a cooler, and shipped to Ohio EPA Division of Environmental Services. Sediment data is reported on a dry weight basis. Surface water samples were collected, preserved and delivered in appropriate containers to Ohio EPA Division of Environmental Services. Surface water samples were evaluated using comparisons to Ohio Water Quality Standards criteria, reference conditions, or published literature. Sediment evaluations were conducted using guidelines established in MacDonald et al. (2000), U.S. EPA (2003) and Ohio EPA (2008).

Recreation Use Assessment

Recreation use attainment was determined using the criteria established in OAC 3745-1-41:

1) *E. coli* is the only indicator organism used to evaluate recreation.
2) The recreation season extends from May 1 – Oct. 31.
3) Geometric mean content is computed on a seasonal basis.
4) Geometric mean content is the sole basis of use attainment status when 2 or more samples are taken.
5) Primary Contact Recreation (PCR) includes three separate categories each with specific numerical criteria: Class A – high use paddling streams, Class B – most typical streams and Class C – historically channelized streams that drain < 3.1 mi^2.

Macroinvertebrate Community Assessment

Macroinvertebrates were collected from artificial substrates and from the natural habitats. The artificial substrate collection provided quantitative data and consisted of a composite sample of five modified Hester-Dendy multiple-plate samplers colonized for six weeks. At the time of the artificial substrate

collection, a qualitative multihabitat composite sample was also collected. This sampling effort consisted of an inventory of all observed macroinvertebrate taxa from the natural habitats at each site with no attempt to quantify populations other than notations on the predominance of specific taxa or taxa groups within major macrohabitat types (e.g., riffle, run, pool, margin). Detailed discussion of macroinvertebrate field and laboratory procedures is contained in Biological Criteria for the Protection of Aquatic Life: Volume III, Standardized Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities (Ohio EPA 1989b, 2015b).

Fish Community Assessment

Fish were sampled using pulsed DC electrofishing methods. Fish were processed in the field, and included identifying each individual to species, counting, weighing, and recording any external abnormalities. Discussion of the fish community assessment methodology used in this report is contained in Biological Criteria for the Protection of Aquatic Life: Volume III, Standardized Biological Field Sampling and Laboratory Methods for Assessing Fish and Macroinvertebrate Communities (Ohio EPA 1989b, 2015b).

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 used to judge aquatic life use attainment and impairment (partial and non-attainment). The rationale for using the biological criteria, within a weight of evidence framework, has been extensively discussed elsewhere (Karr *et al.* 1986; Karr 1991; Ohio EPA 1987a, Ohio EPA 1987b; 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, land use data, and biological results (Yoder and Rankin 1995a, 1995b, and 1995c). 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. The reliability of the identification of probable causes and sources is increased where many such prior associations have been identified, or have been experimentally or statistically linked together. 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), in this document we are referring to the process for evaluating biological integrity and causes or sources associated with observed impairments, not whether human health and ecosystem health are analogous concepts.

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Appendix Table B – Inorganic Chemistry Results

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**
River Mile:	**1.2**	Location:	E. FK. MILL CREEK UPST. BUTLER CO. UPPER MILL CREEK WWTP
Basin:	Mill Creek	Drainage:	9.0 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	134	248	226	189	197	208
Aluminum (ug/L)	661		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	39		48		48	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	50.7		80.3		71.5	
Chloride (mg/L)	82.1	119	112	92.4	108	115
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	22	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	552	910	849	693	806	853
Copper, Low Level (ug/L)	2.8		< 2		2.2	
Hardness, Total (mg/L)	179		288		256	
Iron (ug/L)	1060		235		109	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	12.8		21.2		18.7	
Manganese (ug/L)	56		41		83	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.3		2		< 2	
Nitrate+Nitrite (mg/L)	.5	.27	< .1	.12	< .1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	3.2		2.7		2.9	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	47.2		63		67.7	
Solids, Total Dissolved (mg/L)	328	522	488	408	458	476
Strontium (ug/L)	202		328		295	
Sulfate (mg/L)	23.8	43.5	38.2	31.7	32.8	43.4
TKN (mg/L)	.7	.35	.39	.37	.28	.24
Total Phosphorus (mg/L)	.087	.072	.06	.071	.071	.054
Total Suspended Solids (mg/L)	17	< 5	8	< 5	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	574	874	730	653	811	844
DissolvedOxygen(mg/L)	6.58	8.42	11.79	9.18	8.83	8.63
pH(su)	7.89	8.1	8.34	8.24	7.96	8.03
Saturation(percent)	77.9	89.9	135.6	107.9	110.2	88.3
Temperature(deg C)	23.8	18.4	22.2	23.4	26.56	16.32
UncorrectedConductance(umhos/cm)				.63	0	0

River Code:	**10-006-000**	Stream:	**TWELVEMILE CREEK**
River Mile:	**2.1**	Location:	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN
Basin:	Southwest Ohio River Tribs	Drainage:	18.3 sq mi

Sample Type: Inorganic	**04-22-2014**	**05-15-2014**	**06-26-2014**	**07-09-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**	**10-08-2014**	**11-10-2014**
Alkalinity (mg/L)	199	94.9	129		178	140	175	158	174	173	
Aluminum (ug/L)	< 200	5560	1150	267	260	403	271	208	< 200	< 200	< 200
Ammonia (mg/L)	< .05	.38	< .05	< .05	.061	< .05	.069	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	2.6	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Barium (ug/L)	32	69	30	48	43	31	36	35	35	31	34
Cadmium (ug/L)	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2
Calcium (mg/L)	82.2	41.3	47.3	68.4	65	51.7	60.5	53.9	64.6	67.5	79.4
CBOD20 (mg/L)				6							4.9
Chloride (mg/L)	32.5	34.3	28.1	48.8	47.7	29.2	37.1	29.2	36.2	38.8	54.8
Chlorophyll_a (ug/L)				14.3							
Chromium (ug/L)	< 2	5.1	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)	< 20	33	21		< 20	< 20	< 20	< 20	< 20	< 20	
Conductivity (umhos/cm)	551	327	404		577	414	485	435	511	538	
Copper, Low Level (ug/L)	< 2	6.6	2.3	< 2	< 2	< 2	< 2	2.1	< 2	< 2	< 2
Hardness, Total (mg/L)	262	136	153	226	219	165	198	176	206	215	254
Iron (ug/L)	91	7980	1310	488	416	591	411	339	264	121	126
Lead (ug/L)	< 2	7.5	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Magnesium (mg/L)	13.9	8	8.4	13.4	13.7	8.8	11.4	10.1	10.9	11.4	14.9
Manganese (ug/L)	23	419	68	224	106	81	87	107	149	30	< 10
Mercury (ug/L)						< .2	< .2	< .2	< .2	< .2	
Nickel (ug/L)	< 2	6.9	2.7	2.2	2.5	< 2	< 2	< 2	2.2	2.7	2.5
Nitrate+Nitrite (mg/L)	.13	1.14	1.01	.11	.29	.44	.58	.24	.44	1.77	.58
Nitrite (mg/L)	< .02	.027	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	< .01	.382	.137	.025	.029	.066	.057	.059	.053	.189	.048
Pheophytin_a (ug/L)				6.2							
Potassium (mg/L)	2.5	7.3	4.4	4.6	4.9	3.8	4.6	4.9	3.9	5.1	4.6
Selenium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Sodium (mg/L)	17.5	11.8	15.7	26.3	27.1	19.2	23.6	19.7	23.8	26.7	35.3
Solids, Total Dissolved (mg/L)	322	238	248	326	328	250	304	248	288	312	374
Strontium (ug/L)	314	130	196	324	340	221	290	254	291	280	347
Sulfate (mg/L)	42.2	18.2	25.5	34.1	39	26.8	32.9	20.6	35.1	41.2	51.7
TKN (mg/L)	.34	1.2	.46	.33	.37	.32	.36	.36	.36	.38	< .2
Total Phosphorus (mg/L)	< .01	.666	.169	.044	.037	.066	.068	.065	.066	.189	.062
Total Suspended Solids (mg/L)	< 5	236	19	18	6	< 5	9	8	6	< 5	< 5
Zinc (ug/L)	< 10	26	< 10	< 10	< 10	< 10	< 10	17	< 10	< 10	< 10
CorrectedConductance(umhos/cm)	522	321	397	473	548	392	480	442.3	502	518	645.5
DissolvedOxygen(mg/L)	14.97	11.85	9.31	9.2	6.38	11.85	8.78	7.74	5.38	9.48	16.28
Flow(cfs)				.195							
GageHeight(ft)	13.63	12.29	13.64	13.96	13.92	13.91	13.91	13.89	13.89	13.73	13.77
pH(su)	8.61	8.02	8.11	8.03	7.95	8.15	8.17	8.12	7.91	8.05	8.38

Saturation(percent)	156.7	120.9	108.7	112.9	69.5	130.4	102.3	96.7	53.9	90.9	143
Temperature(deg C)	17.49	16.28	23.05	24.37	19.4	19.98	22.92	26.7	15.4	13.4	9.6
UncorrectedConductance(umhos/cm)	0	0	0			0	0	.46	.41	.4	

River Code:	**10-001-000**	Stream:	**FIVEMILE CREEK**
River Mile:	**2.4**	Location:	FIVEMILE CREEK @ FIVE MILE RD.
Basin:	Southwest Ohio River Tribs	Drainage:	3.4 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	147	179	157	163	150	172
Aluminum (ug/L)	< 200		< 200		237	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	30		30		42	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	53		57.2		70.5	
Chloride (mg/L)	96.3	108	109	114	110	158
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	662	744	750	751	746	943
Copper, Low Level (ug/L)	2.3		2.2		2.6	
Hardness, Total (mg/L)	176		190		235	
Iron (ug/L)	99		< 50		406	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	10.5		11.4		14.2	
Manganese (ug/L)	< 10		< 10		27	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	< 2		< 2		2.3	
Nitrate+Nitrite (mg/L)	.39	.18	.12	.1	.11	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.2		2.1		3.1	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	54.9		61.5		70.5	
Solids, Total Dissolved (mg/L)	386	416	422	432	420	514
Strontium (ug/L)	239		255		334	
Sulfate (mg/L)	36	40.8	40.8	45.2	51	60.5
TKN (mg/L)	.25	.35	.2	.27	.42	.5
Total Phosphorus (mg/L)	.024	.023	.02	.025	.039	< .01
Total Suspended Solids (mg/L)	< 5	< 5	9	< 5	47	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	669	731	644	688	754	951
DissolvedOxygen(mg/L)	7.48	8.91	11	9.22	8.75	11.18
pH(su)	8.2	8.32	8.38	8.46	8.06	8.21
Saturation(percent)	87.2	101.2	120.9	109.8	112	113.8
Temperature(deg C)	22.9	21.6	19.91	24.03	27.98	16.1
UncorrectedConductance(umhos/cm)			0	0	0	0

River Code:	**10-003-001**	Stream:	**Trib. To Tenmile Creek (3.58)**
River Mile:	**0.0**	Location:	TRIB. TO TENMILE CREEK (3.58) SW OF AMELIA @ ST. RT 749
Basin:	Southwest Ohio River Tribs	Drainage:	3.5 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	211	193	193	187	188	200
Aluminum (ug/L)	< 200		< 200		338	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	34		33		39	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	77.2		76.1		74.6	
Chloride (mg/L)	55.6	51	58	43.6	55.7	63.2
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	672	623	646	549	625	664
Copper, Low Level (ug/L)	< 2		< 2		2.7	
Hardness, Total (mg/L)	261		257		253	
Iron (ug/L)	155		64		548	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	16.6		16.3		16.2	
Manganese (ug/L)	10		< 10		33	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.5		< 2		2.4	
Nitrate+Nitrite (mg/L)	.27	.1	.1	.12	.15	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.9		2.7		3.6	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	34.2		36.2		38.3	
Solids, Total Dissolved (mg/L)	390	350	398	334	368	390
Strontium (ug/L)	352		348		375	
Sulfate (mg/L)	58.1	52.8	53.4	47.4	44	52.5
TKN (mg/L)	.4	.29	.27	.22	.22	< .2
Total Phosphorus (mg/L)	.054	.095	.038	.041	.036	.014
Total Suspended Solids (mg/L)	< 5	< 5	< 5	< 5	5	< 5
Zinc (ug/L)	< 10		< 10		18	
CorrectedConductance(umhos/cm)	661	591	594	541	581	659
DissolvedOxygen(mg/L)	7.48	8.43	10.48	8.7	6.32	8.89
pH(su)	8.1	8.09	8.15	8.08	7.98	8.15
Saturation(percent)	85.3	90.4	113.7	96.8	76.9	89.6
Temperature(deg C)	21.76	18.6	19.27	20.48	25.2	15.6
UncorrectedConductance(umhos/cm)	0		0	0	.58	.54

River Code:	**10-003-000**	Stream:	**TENMILE CREEK**
River Mile:	**3.6**	Location:	TENMILE CREEK SW OF AMELIA, DST. POND RUN RD.
Basin:	Southwest Ohio River Tribs	Drainage:	5.7 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	192	216	197	193	223	217
Aluminum (ug/L)	423		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	31		34		39	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	67.7		77		84.8	
Chloride (mg/L)	46.9	50.4	54.9	38.4	50	58.7
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	565	631	630	518	627	660
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	218		253		272	
Iron (ug/L)	514		114		152	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	11.9		14.7		14.6	
Manganese (ug/L)	31		15		20	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.4		< 2		< 2	
Nitrate+Nitrite (mg/L)	.43	< .1	.12	.28	.15	.11
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.8		2.5		3	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	28.2		33		32.5	
Solids, Total Dissolved (mg/L)	324	362	378	298	378	382
Strontium (ug/L)	252		315		316	
Sulfate (mg/L)	33.6	37.5	46.8	29.5	33.1	44.8
TKN (mg/L)	.34	< .2	< .2	< .2	< .2	.24
Total Phosphorus (mg/L)	.084	.021	.05	.044	.054	.024
Total Suspended Solids (mg/L)	9	< 5	< 5	13	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	557	597		504	644	654
DissolvedOxygen(mg/L)	8.63	9.71		9.88	7.69	8.38
pH(su)	8.17	8.26		8.23	8.25	8.14
Saturation(percent)	98.2	103.6		111.5	92.4	84
Temperature(deg C)	21.7	18.4		21.23	24.5	15.5
UncorrectedConductance(umhos/cm)	0			0	.64	.54

River Code:	**10-011-000**	Stream:	**BOAT RUN**
River Mile:	**0.2**	Location:	BOAT RUN SE OF NEW RICHMOND @ U.S. RT. 52
Basin:	Southwest Ohio River Tribs	Drainage:	3.6 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	235	231	212	241	209	222
Aluminum (ug/L)	< 200		300		749	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	32		26		33	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	104		84.8		92.6	
Chloride (mg/L)	46.6	44.1	39.7	43.1	37.4	45.3
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	679	660	622	657	590	636
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	319		260		283	
Iron (ug/L)	275		504		1270	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	14.3		11.6		12.6	
Manganese (ug/L)	15		23		53	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.7		2.5		2.9	
Nitrate+Nitrite (mg/L)	.75	.19	.15	.23	.17	.11
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	3.1		2.6		3.4	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	23		20.3		23	
Solids, Total Dissolved (mg/L)	414	384	392	392	358	380
Strontium (ug/L)	419		333		369	
Sulfate (mg/L)	61.1	52.3	54.2	59.6	46.2	55.6
TKN (mg/L)	.29	.22	.21	< .2	.2	< .2
Total Phosphorus (mg/L)	.021	.05	.054	.047	.087	.024
Total Suspended Solids (mg/L)	7	21	11	< 5	49	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	681	687		603	593	651
DissolvedOxygen(mg/L)	13.47	7.03		6.65	4.53	8.43
pH(su)	7.99	7.9		7.9	7.42	7.79
Saturation(percent)	159	76.7		79.9	54	87.7
Temperature(deg C)	23.57	19.5		24.54	24.12	17.16
UncorrectedConductance(umhos/cm)	0			0	0	0

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**
River Mile:	**6.9**	Location:	BIG INDIAN CREEK S OF POINT ISABEL @ ST. RT. 222
Basin:	Southwest Ohio River Tribs	Drainage:	10.8 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	204	222	198	202	162	171
Aluminum (ug/L)	< 200		238		209	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	.053	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	50		61		44	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	70.9		61.6		51.2	
Chloride (mg/L)	31.1	33.3	32.9	35.9	23	28
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	511	564	531	510	404	458
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	242		217		171	
Iron (ug/L)	195		342		325	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	15.7		15.4		10.4	
Manganese (ug/L)	118		227		248	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.3		2		< 2	
Nitrate+Nitrite (mg/L)	.36	< .1	< .1	< .1	.26	.42
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	5.4		4.4		3.8	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	14		17.2		20.9	
Solids, Total Dissolved (mg/L)	302	320	294	292	240	254
Strontium (ug/L)	223		245		179	
Sulfate (mg/L)	23.8	31.1	28.4	27.5	20.5	22.9
TKN (mg/L)	.31	.52	.32	.22	.27	< .2
Total Phosphorus (mg/L)	.036	.048	.023	.046	.077	.052
Total Suspended Solids (mg/L)	6	< 5	16	< 5	6	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	530	553	403	471	408	475
DissolvedOxygen(mg/L)	9.68	3.67	10.31	6.95	8.17	9.24
pH(su)	7.93	7.75	7.99	7.79	7.73	7.85
Saturation(percent)	123.9	40.3	109.6	81.9	104.2	94.8
Temperature(deg C)	27.99	19.9	18.26	23.53	27.83	16.55
UncorrectedConductance(umhos/cm)	0		0	0	0	0

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**
River Mile:	**8.7**	Location:	BIG INDIAN CREEK NEAR MT. OLIVE @ BRAUN RD, UPST. BEECH RUN
Basin:	Southwest Ohio River Tribs	Drainage:	5.4 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	233	245	222	218	162	174
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	.063	< .05	< .05	.057	< .05
Arsenic (ug/L)	< 2		< 2		2.6	
Barium (ug/L)	59		57		59	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	79.9		63		54	
Chloride (mg/L)	19.6	28.8	18.5	15.3	13.7	15.5
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	514	533	495	457	376	403
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	276		219		178	
Iron (ug/L)	215		194		590	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	18.5		15.1		10.6	
Manganese (ug/L)	119		391		674	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.6		< 2		2	
Nitrate+Nitrite (mg/L)	.47	< .1	< .1	.12	.11	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	4.8		3.7		4.7	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	8.3		10.3		9.1	
Solids, Total Dissolved (mg/L)	310	296	272	260	228	222
Strontium (ug/L)	210		168		141	
Sulfate (mg/L)	20.1	24.8	20.8	19.9	14.4	13
TKN (mg/L)	.37	.4	.3	.25	.51	.31
Total Phosphorus (mg/L)	.088	.065	.047	.077	.135	.035
Total Suspended Solids (mg/L)	23	6	< 5	< 5	< 5	5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	517	523	439	433	385	412.1
DissolvedOxygen(mg/L)	7.99	2.92	8.04	5.28	8.86	5.97
pH(su)	7.99	7.64	8.33	7.98	7.94	7.9
Saturation(percent)	94.5	31.3	92.3	63.3	112.4	63.5
Temperature(deg C)	23.7	18.6	22.1	24.5	27.53	18.3
UncorrectedConductance(umhos/cm)	0			.43	0	.36

River Code:	**10-010-000**	Stream:	**LITTLE INDIAN CREEK**
River Mile:	**0.9**	Location:	LITTLE INDIAN CREEK E OF MOSCOW, ADJ. LAUREL MOSCOW RD.
Basin:	Southwest Ohio River Tribs	Drainage:	4.9 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	190	254	233	204	204	228
Aluminum (ug/L)	216		211		303	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	37		46		57	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	67.6		86.4		95.6	
Chloride (mg/L)	37.6	47.2	44.5	28.7	58.5	63
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	562	746	661	524	679	728
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	231		286		312	
Iron (ug/L)	269		320		505	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	15		17		17.7	
Manganese (ug/L)	19		41		80	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	< 2		2.1		2.1	
Nitrate+Nitrite (mg/L)	< .1	.31	.14	.21	< .1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.3		2.2		2.9	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	19		21		32.7	
Solids, Total Dissolved (mg/L)	340	416	396	322	404	430
Strontium (ug/L)	262		306		345	
Sulfate (mg/L)	43.7	54.2	50.7	38.6	65.1	69.3
TKN (mg/L)	.61	< .2	< .2	< .2	.24	< .2
Total Phosphorus (mg/L)	.01	< .01	.016	.027	< .01	< .01
Total Suspended Solids (mg/L)	5	32	< 5	6	23	7
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	559	707	121	483	681	671
DissolvedOxygen(mg/L)	8.12	7.09	9.66	8.6	9.15	10.28
pH(su)	8.21	7.5	7.71	7.76	7.86	7.71
Saturation(percent)	102.6	78.4	105.3	98.1	110.2	105
Temperature(deg C)	27.3	20.2	19.56	21.85	24.63	16.29
UncorrectedConductance(umhos/cm)		0	0	0	0	0

River Code:	**10-021-000**	Stream:	**MAPLE CREEK**
River Mile:	**1.6**	Location:	MAPLE CREEK N OF NEVILLE @ MAPLE CREEK RD.
Basin:	Southwest Ohio River Tribs	Drainage:	7.7 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	202	241	209	201	197	200
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	.061	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	38		46		42	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	69		87.6		74.2	
Chloride (mg/L)	26.6	31.8	26.3	22.3	21.4	29.9
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	516	644	601	515	485	521
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	224		279		238	
Iron (ug/L)	141		159		152	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	12.5		14.7		12.8	
Manganese (ug/L)	49		70		38	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.1		2.2		< 2	
Nitrate+Nitrite (mg/L)	< .1	< .1	.27	.13	.1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.5		2.6		2.7	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	14.1		15.7		14.4	
Solids, Total Dissolved (mg/L)	308	360	376	310	284	274
Strontium (ug/L)	254		302		262	
Sulfate (mg/L)	36.5	33.7	66.7	48.7	33.4	36.8
TKN (mg/L)	.21	.22	.2	< .2	< .2	.77
Total Phosphorus (mg/L)	.02	.017	.023	.042	.022	< .01
Total Suspended Solids (mg/L)	< 5	< 5	17	37	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	512	600	567	494	482.5	522
DissolvedOxygen(mg/L)	8.82	4.63	9.26	8.11	4.55	8.41
pH(su)	8.23	7.5	7.85	7.85	7.86	8.09
Saturation(percent)	109	49.9	98.8	93.2	52.7	83.4
Temperature(deg C)	26.1	18.94	18.42	22.16	22.7	14.95
UncorrectedConductance(umhos/cm)		0	0	0	.46	0

River Code:	**10-024-000**	Stream:	**CROOKED RUN**
River Mile:	**0.7**	Location:	CROOKED RUN AT CHILO @ OLD CARNTOWN RD.
Basin:	Southwest Ohio River Tribs	Drainage:	0.9 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	260	195	186	172	198	194
Aluminum (ug/L)	201		< 200		304	
Ammonia (mg/L)	.218	.123	< .05	.093	.137	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	32		26		47	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	93		60.4		84.3	
Chloride (mg/L)	38	30.7	25.9	25.6	58.7	50.3
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	20	< 20	< 20	21
Conductivity (umhos/cm)	662	558	465	440	633	588
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	284		192		262	
Iron (ug/L)	315		338		642	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	12.6		9.9		12.5	
Manganese (ug/L)	692		473		1520	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	3.2		2.1		2.3	
Nitrate+Nitrite (mg/L)	.19	.2	.21	.21	.24	.18
Nitrite (mg/L)	.042	.034	.022	.021	.028	< .02
Potassium (mg/L)	3.2		3.4		3.8	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	18.8		16		34.2	
Solids, Total Dissolved (mg/L)	400	302	266	268	384	340
Strontium (ug/L)	342		230		327	
Sulfate (mg/L)	38.4	21.7	19.1	24.4	46	42.5
TKN (mg/L)	.77	.56	.48	.47	.43	.36
Total Phosphorus (mg/L)	.053	.088	.065	.083	.069	.05
Total Suspended Solids (mg/L)	13	15	< 5	7	6	6
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	649	510	442	424	629	584
DissolvedOxygen(mg/L)	2.05	3.26	3.17	2.67	1.85	4.47
pH(su)	7.69	7.5	7.46	7.55	7.62	7.7
Saturation(percent)	23.4	35.2	33.3	30.5	21.4	44.4
Temperature(deg C)	21.8	18.98	17.74	21.92	22.4	15.02
UncorrectedConductance(umhos/cm)		0	0	0	.6	0

River Code:	**10-030-000**	Stream:	**EAST BRANCH BULLSKIN CREEK**
River Mile:	**0.4**	Location:	E. BR. BULLSKIN CREEK NW OF HIGGINSPORT @ DUNBAR RD.
Basin:	Southwest Ohio River Tribs	Drainage:	15.8 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	188	220	205	228	154	221
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	39		38		37	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	62.7		69.3		57.8	
Chloride (mg/L)	26.7	23.7	18.1	18.4	17.3	15.2
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	468	531	493	503	411	499
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	217		233		199	
Iron (ug/L)	127		53		186	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	14.6		14.5		13.2	
Manganese (ug/L)	11		< 10		23	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.2		< 2		< 2	
Nitrate+Nitrite (mg/L)	.38	.1	.11	.33	.1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	7.7		4.7		4.9	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	7.9		7.4		12	
Solids, Total Dissolved (mg/L)	282	304	282	290	242	288
Strontium (ug/L)	205		209		226	
Sulfate (mg/L)	21	24.2	26.1	29.9	31.6	31.2
TKN (mg/L)	< .2	< .2	< .2	< .2	< .2	< .2
Total Phosphorus (mg/L)	.049	.066	.049	.06	.05	.038
Total Suspended Solids (mg/L)	13	8	< 5	< 5	6	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	457.3		468	469	407.6	500
DissolvedOxygen(mg/L)	9.47		9.86	8.19	7.29	8.47
pH(su)	8.37		8.06	7.84	7.94	7.84
Saturation(percent)	114.9		109.1	98.5	94.2	89.1
Temperature(deg C)	25		20.22	24.56	28.6	17.73
UncorrectedConductance(umhos/cm)			0	0	.44	0

River Code:	**10-030-000**	Stream:	**EAST BRANCH BULLSKIN CREEK**
River Mile:	**4.7**	Location:	E. BR. BULLSKIN CREEK NNW OF HIGGINSPORT @ LANG RD.
Basin:	Southwest Ohio River Tribs	Drainage:	10.5 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-26-2014**	**09-18-2014**	**10-16-2014**
Alkalinity (mg/L)	185	252	246	179	222	157
Aluminum (ug/L)	1180		< 200	372		309
Ammonia (mg/L)	< .05	.086	.072	.076	.138	< .05
Arsenic (ug/L)	< 2		2.1	2.3		2
Barium (ug/L)	56		60	83		48
Cadmium (ug/L)	< .2		< .2	< .2		< .2
Calcium (mg/L)	62.6		71.8	59.8		57.3
Chloride (mg/L)	31.7	17.2	12.7	9.8	10	24.9
Chromium (ug/L)	< 2		< 2	< 2		< 2
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	26
Conductivity (umhos/cm)	492	558	514	393	461	439
Copper, Low Level (ug/L)	< 2		< 2	< 2		< 2
Hardness, Total (mg/L)	221		249	204		197
Iron (ug/L)	1250		231	414		380
Lead (ug/L)	< 2		< 2	< 2		< 2
Magnesium (mg/L)	15.6		16.9	13.3		13.2
Manganese (ug/L)	125		617	806		107
Mercury (ug/L)			< .2	< .2		< .2
Nickel (ug/L)	2.9		2.2	< 2		2
Nitrate+Nitrite (mg/L)	1.61	< .1	< .1	.1	< .1	.12
Nitrite (mg/L)	.057	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)						.258
Potassium (mg/L)	10.8		3.9	4.5		10.5
Selenium (ug/L)	< 2		< 2	< 2		< 2
Sodium (mg/L)	6.7		< 5	< 5		12.2
Solids, Total Dissolved (mg/L)	296	312	288	228	258	264
Strontium (ug/L)	175		162	138		142
Sulfate (mg/L)	20.8	18.2	17.2	15	19	28.8
TKN (mg/L)	.38	.6	.41	.29	.4	.51
Total Phosphorus (mg/L)	.18	.055	.072	.071	.03	.283
Total Suspended Solids (mg/L)	31	29	20	8	12	6
Zinc (ug/L)	< 10		< 10	< 10		< 10
CorrectedConductance(umhos/cm)	480.2	547	423	391	453.5	416
DissolvedOxygen(mg/L)	8.91	2.65	3.6	5.14	3.86	8.71
pH(su)	8.11	7.58	7.65	7.46	7.36	7.79
Saturation(percent)	107.8	28.5	38.5	59.7	39.2	85.1
Temperature(deg C)	24.9	18.8	18.5	22.76	16	14.25
UncorrectedConductance(umhos/cm)				0	.38	0

River Code:	**10-031-000**	Stream:	**MIDDLE BRANCH BULLSKIN CREEK**
River Mile:	**0.1**	Location:	M. BR. BULLSKIN CREEK SE OF FELICITY, UPST. BULLSKIN RD.
Basin:	Southwest Ohio River Tribs	Drainage:	5.4 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	185	198	188	184	172	180
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	37		43		41	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	57.7		69.1		57.2	
Chloride (mg/L)	28.2	16.7	25.8	23	16.1	16.2
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	460	510	509	464	413	428
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	202		234		193	
Iron (ug/L)	243		171		220	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	14		14.9		12.1	
Manganese (ug/L)	52		49		72	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.2		< 2		< 2	
Nitrate+Nitrite (mg/L)	.11	< .1	.12	.18	.12	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	5.9		4.6		4.9	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	14		13.4		10.9	
Solids, Total Dissolved (mg/L)	274	288	302	270	242	234
Strontium (ug/L)	233		252		213	
Sulfate (mg/L)	23.4	15.6	35.3	35.4	25.5	24.6
TKN (mg/L)	.3	.34	.26	.54	.42	2.24
Total Phosphorus (mg/L)	.052	.04	.042	.062	.056	.023
Total Suspended Solids (mg/L)	5	10	10	6	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	440.6	488.4	431	439.5	417	419.4
DissolvedOxygen(mg/L)	8.41	5.41	9.47	6.6	8.22	8.38
pH(su)	8.47	7.96	8.24	8.02	7.9	8.08
Saturation(percent)	111.7	60.2	103.1	77.8	96.6	84.8
Temperature(deg C)	30.2	20.5	19.4	23.6	23.41	15.9
UncorrectedConductance(umhos/cm)				.43	0	.35

River Code:	**10-032-000**	Stream:	**WEST BRANCH BULLSKIN CREEK**
River Mile:	**4.7**	Location:	W. BR. BULLSKIN CREEK NE OF FELICITY @ MT. ZION RD.
Basin:	Southwest Ohio River Tribs	Drainage:	5.7 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	198	173	166	178	168	182
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	41		41		43	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	60.2		62.3		59	
Chloride (mg/L)	21.4	19.9	22.5	15.9	12.9	15.2
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	20	< 20	< 20
Conductivity (umhos/cm)	474	434	468	430	410	415
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	211		210		196	
Iron (ug/L)	97		59		85	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	14.7		13.1		11.7	
Manganese (ug/L)	55		116		115	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.4		< 2		< 2	
Nitrate+Nitrite (mg/L)	.14	< .1	< .1	.1	.11	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	7.5		5.5		6.7	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	10.1		12		9.2	
Solids, Total Dissolved (mg/L)	280	254	286	250	230	232
Strontium (ug/L)	202		179		171	
Sulfate (mg/L)	21.1	18.9	42.8	31.1	26.1	24
TKN (mg/L)	.31	.71	< .2	< .2	.29	.2
Total Phosphorus (mg/L)	.092	.081	.078	.14	.141	.108
Total Suspended Solids (mg/L)	< 5	10	< 5	< 5	< 5	25
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	453.6		391	366.1	410	405.1
DissolvedOxygen(mg/L)	11.95		8.65	4.97	8.85	11.09
pH(su)	8.23		8.29	7.89	7.83	8.25
Saturation(percent)	148		93.4	59.5	109.1	124.9
Temperature(deg C)	26.2		19	24.4	25.97	21.2
UncorrectedConductance(umhos/cm)				.36	0	.38

River Code:	**10-023-001**	Stream:	**Trib To Bear Creek (6.85)**
River Mile:	**0.6**	Location:	TRIB TO BEAR CREEK (6.85), 650 FT DST FELICITY WWTP
Basin:	Southwest Ohio River Tribs	Drainage:	0.1 sq mi

Sample Type: Inorganic	**08-12-2014**	**08-26-2014**	**09-18-2014**	**10-16-2014**
Alkalinity (mg/L)	163	210	215	138
Aluminum (ug/L)	266	< 200	< 200	224
Ammonia (mg/L)		< .05	.08	< .05
Arsenic (ug/L)	< 2	< 2	2	< 2
Barium (ug/L)	20	20	23	26
Cadmium (ug/L)	< .2	< .2	< .2	< .2
Calcium (mg/L)	51.2	73.4	90	49.3
Chloride (mg/L)	52.3	164	151	45.5
Chromium (ug/L)	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)		< 20	27	20
Conductivity (umhos/cm)	495	1260	1220	485
Copper, Low Level (ug/L)	4.2	16.7	17.2	3.8
Hardness, Total (mg/L)	171	262	324	172
Iron (ug/L)	448	102	194	371
Lead (ug/L)	< 2	< 2	< 2	< 2
Magnesium (mg/L)	10.5	19	24	11.8
Manganese (ug/L)	35	15	29	47
Mercury (ug/L)	< .2	< .2	< .2	< .2
Nickel (ug/L)	< 2	2.7	3.5	< 2
Nitrate+Nitrite (mg/L)		24	28.9	3.9
Nitrite (mg/L)	< .02	.023	.071	< .02
Orthophosphate, dissolved (mg/L)	.574	3.03	3.91	
Potassium (mg/L)	2.4	10.8	12	3.3
Selenium (ug/L)	< 2	< 2	< 2	< 2
Sodium (mg/L)	33	162	120	32.2
Solids, Total Dissolved (mg/L)	276	732	724	272
Strontium (ug/L)	143	233	272	154
Sulfate (mg/L)	14.5	61.6	67.3	22.1
TKN (mg/L)		1.19	1.14	.62
Total Phosphorus (mg/L)		3.14	4.07	.571
Total Suspended Solids (mg/L)	< 5	< 5	25	< 5
Zinc (ug/L)	< 10	25	32	< 10
CorrectedConductance(umhos/cm)	735	1011	1205	465
DissolvedOxygen(mg/L)	6.08	8.06	6.66	9.75
pH(su)	7.9	7.94	7.95	7.81
Saturation(percent)	70.8	96.6	73.9	99.3
Temperature(deg C)	22.8	24.33	20.3	16.18
UncorrectedConductance(umhos/cm)	.71	0	1.1	0

River Code:	**23-001-000**	Stream:	**MILL CREEK**
River Mile:	**16.6**	Location:	MILL CREEK AT SHARONVILLE @ SHARON RD.
Basin:	Mill Creek	Drainage:	50.5 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	124		188	176	219	190	196
Aluminum (ug/L)	1290	414		393		372	
Ammonia (mg/L)	< .05	.127	< .05	< .05	.072	.065	.052
Arsenic (ug/L)	2.1	2.2		< 2		< 2	
Barium (ug/L)	49	60		55		58	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	47.9	78.1		65		71.9	
CBOD20 (mg/L)		6.9					
Chloride (mg/L)	107	292	159	151	226	179	193
Chlorophyll_a (ug/L)		5.2					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	20		21	< 20	< 20	20	22
Conductivity (umhos/cm)	669		1150	1060	1620	1440	1460
Copper, Low Level (ug/L)	3.6	4.5		2.6		3.7	
Hardness, Total (mg/L)	173	298		238		270	
Iron (ug/L)	2250	648		641		568	
Lead (ug/L)	2	< 2		< 2		< 2	
Magnesium (mg/L)	12.9	25		18.4		22	
Manganese (ug/L)	163	157		96		110	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	3.5	3.8		2.8		3.5	
Nitrate+Nitrite (mg/L)	.61	.45	.77	1.22	3.48	4.01	3.75
Nitrite (mg/L)	< .02	.052	< .02	< .02	.03	.03	.029
Orthophosphate, dissolved (mg/L)	.087	.617	.051	.091	.193	.127	.636
Pheophytin_a (ug/L)		3.2					
Potassium (mg/L)	3.8	10.7		6.5		11	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	70.1	301		118		209	
Solids, Total Dissolved (mg/L)	372	1130	646	600	940	840	852
Strontium (ug/L)	193	331		265		327	
Sulfate (mg/L)	49.9	305	121	101	244	206	224
TKN (mg/L)	.43	.85	.55	.62	.95	.94	.99
Total Phosphorus (mg/L)	.188	.71	.088	.133	.225	.175	.691
Total Suspended Solids (mg/L)	67	20	24	18	< 5	13	8
Zinc (ug/L)	18	15		13		13	
CorrectedConductance(umhos/cm)	639	1896	1117	1009	1534		1330
DissolvedOxygen(mg/L)	7.39	7.01	9.24	9.53	6.75		9.35
pH(su)	7.88	7.69	7.97	8.02	7.68		7.85
Saturation(percent)	89.4	83.2	106.9	111.6	75.9		98
Temperature(deg C)	24.89	22.35	22.43	23.08	20.89		17.43

UncorrectedConductance(umhos/cm)	0		0	0	0		0

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**
River Mile:	**1.9**	Location:	E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.
Basin:	Mill Creek	Drainage:	8.1 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	157		269	246	213	254	266
Aluminum (ug/L)	910	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2		< 2		2.1	
Barium (ug/L)	43	65		53		63	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	55.7	104		91.7		94.5	
CBOD20 (mg/L)		5.8					
Chloride (mg/L)	73.2	162	124	114	102	126	136
Chlorophyll_a (ug/L)		7					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	550		970	910	785	985	1020
Copper, Low Level (ug/L)	3.3	< 2		< 2		2.4	
Hardness, Total (mg/L)	195	370		322		331	
Iron (ug/L)	1420	135		167		270	
Lead (ug/L)	< 2	< 2		< 2		< 2	
Magnesium (mg/L)	13.5	26.9		22.5		23.1	
Manganese (ug/L)	63	64		67		136	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	2.6	2.4		2.1		2.1	
Nitrate+Nitrite (mg/L)	.68	< .1	.28	.1	.18	.12	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.124	.039	.065	.051	.067	.075	.062
Pheophytin_a (ug/L)		1.5					
Potassium (mg/L)	3.7	3.1		2.7		3.2	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	42	85.6		63.2		78.8	
Solids, Total Dissolved (mg/L)	336	634	544	522	452	568	570
Strontium (ug/L)	227	429		365		377	
Sulfate (mg/L)	27.1	50.5	46.1	41.5	35.2	43.5	48.3
TKN (mg/L)	.64	.52	.63	.36	.37	.31	.42
Total Phosphorus (mg/L)	.14	.053	.079	.059	.076	.086	.071
Total Suspended Solids (mg/L)	23	5	< 5	< 5	< 5	< 5	6
Zinc (ug/L)	< 10	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	564	1087	955	792	747	978	1002
DissolvedOxygen(mg/L)	7.4	11.52	9.29	9.2	8.06	8.45	8.89
pH(su)	7.99	8.16	8.16	8.23	8.13	7.82	7.9
Saturation(percent)	85.7	146.7	103.2	104.7	94.3	102.6	88.6
Temperature(deg C)	22.6	26.32	20.3	21.6	23.1	25.08	15.08

UncorrectedConductance(umhos/cm)					.72	0	0

River Code:	**10-002-000**	Stream:	**EIGHTMILE CREEK**
River Mile:	**0.2**	Location:	EIGHTMILE CREEK NEAR CINCINNATI @ U.S. RT. 52
Basin:	Southwest Ohio River Tribs	Drainage:	3.9 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	166	176	173	195	169	167
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	31		32		34	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	70.4		76.3		75	
Chloride (mg/L)	72.7	88.1	108	149	81.5	106
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	634	723	801	1010	701	780
Copper, Low Level (ug/L)	2.1		2		2.3	
Hardness, Total (mg/L)	225		250		242	
Iron (ug/L)	81		< 50		< 50	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	11.9		14.5		13.2	
Manganese (ug/L)	< 10		10		< 10	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.1		< 2		< 2	
Nitrate+Nitrite (mg/L)	.94	.51	.21	.78	.35	.27
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	3.2		3.1		3.4	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	43.6		65.4		55.7	
Solids, Total Dissolved (mg/L)	378	410	474	556	406	446
Strontium (ug/L)	314		353		351	
Sulfate (mg/L)	42.8	44.6	56.8	75.9	53.1	57.2
TKN (mg/L)	.27	.24	.27	.3	.22	.21
Total Phosphorus (mg/L)	.053	.034	.042	.028	.048	.033
Total Suspended Solids (mg/L)	< 5	< 5	< 5	< 5	< 5	< 5
Zinc (ug/L)	< 10		< 10		12	
CorrectedConductance(umhos/cm)	630	685	756	981	711	782
DissolvedOxygen(mg/L)	8.51	8.57	15.91	6.12	5.42	9.59
pH(su)	7.86	8.15	8.57	7.73	7.85	8.4
Saturation(percent)	97.4	92.3	182.1	68.3	63.5	99
Temperature(deg C)	21.96	18.9	21.9	20.58	23.2	16.8
UncorrectedConductance(umhos/cm)	0		0	0	.69	.66

River Code:	**23-007-000**	Stream:	**MUDDY CREEK**
River Mile:	**2.0**	Location:	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.
Basin:	Mill Creek	Drainage:	12.1 sq mi

Sample Type: Inorganic	**04-22-2014**	**05-15-2014**	**06-25-2014**	**07-09-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**	**10-08-2014**	**11-10-2014**
Alkalinity (mg/L)	230	103	122		196	201	197	225	212	139	
Aluminum (ug/L)	< 200	725	468	< 200	< 200	465	208	< 200	< 200	< 200	< 200
Ammonia (mg/L)	< .05	.216	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Barium (ug/L)	33	21	22	38	33	37	31	43	33	22	40
Cadmium (ug/L)	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2
Calcium (mg/L)	107	40.6	49	93	82	84.4	74.9	95.8	85.6	57.4	107
CBOD20 (mg/L)				4.8							4.9
Chloride (mg/L)	70.6	56.6	45.4	86.7	73.4	74.3	60.3	71.2	75.8	46.6	85.7
Chlorophyll_a (ug/L)				1.7							
Chromium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20		< 20	< 20	< 20	< 20	< 20	< 20	
Conductivity (umhos/cm)	799	438	441		720	699	627	726	721	494	
Copper, Low Level (ug/L)	< 2	4.6	3.2	< 2	2.3	2.3	2.1	< 2	< 2	2.6	< 2
Hardness, Total (mg/L)	337	129	154	290	257	263	234	294	265	179	330
Iron (ug/L)	108	1160	710	65	384	871	366	153	92	205	62
Lead (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Magnesium (mg/L)	17	6.6	7.8	14	12.8	12.6	11.3	13.4	12.5	8.6	15.2
Manganese (ug/L)	30	38	32	33	82	135	63	157	63	34	60
Mercury (ug/L)						< .2	< .2	< .2	< .2	< .2	
Nickel (ug/L)	2.4	2.2	2	2.2	2.5	2.5	2.1	2.3	2.4	2.2	3.1
Nitrate+Nitrite (mg/L)	.1	1.16	.82	< .1	.1	.1	.2	< .1	.12	.64	< .1
Nitrite (mg/L)	< .02	.053	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.032	.112	.108	.062	.073	.063	.079	.078	.059	.098	.047
Pheophytin_a (ug/L)				< 1.4							
Potassium (mg/L)	2.4	2.2	2.6	3.3	2.9	3	3	3.4	2.7	2.6	3.4
Selenium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Sodium (mg/L)	38.6	32.6	27.6	47.7	43.5	42.8	38.3	45.3	43.2	30.5	51.1
Solids, Total Dissolved (mg/L)	478	254	256	458	410	414	372	414	416	276	492
Strontium (ug/L)	415	154	200	382	340	337	307	380	334	223	413
Sulfate (mg/L)	72.3	22	28.3	55.1	43.3	44.6	44.2	43.7	45.5	37.9	58.3
TKN (mg/L)	.47	.94	.28	.2	.2	.23	.25	.21	< .2	.22	< .2
Total Phosphorus (mg/L)	< .01	.161	.129	.102	.064	.081	.109	.068	.04	.118	.058
Total Suspended Solids (mg/L)	< 5	23	8	< 5	< 5	19	20	< 5	< 5	< 5	< 5
Zinc (ug/L)	< 10	< 10	11	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CorrectedConductance(umhos/cm)	740	432	434	771		669	597	761	660	494	843
DissolvedOxygen(mg/L)	15.56	10.02	8.06	15.37		12.58	12.79	10.7	15.3	9.5	15.17
Flow(cfs)				.401							
GageHeight(ft)	33.76	31.09	33.2	33.94		33.95	33.94	34.01	33.93	33.48	33.96
pH(su)	8.34	8.09	7.95	7.83		7.91	7.97	7.84	7.94	7.58	7.6

Saturation(percent)	156	103.1	93.8	205.6		141.7	148.6	129	156.4	89	134.7
Temperature(deg C)	15.44	16.69	22.9	26.13		21.12	22.76	24.7	16.32	12.36	10
UncorrectedConductance(umhos/cm)	0		0			0	0	0	0	0	

River Code:	**10-003-000**	Stream:	**TENMILE CREEK**
River Mile:	**1.2**	Location:	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52
Basin:	Southwest Ohio River Tribs	Drainage:	12.6 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	184		207	192	203	204	215
Aluminum (ug/L)	251	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2		< 2		< 2	
Barium (ug/L)	31	40		37		41	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	67.4	88.6		78.3		78.9	
CBOD20 (mg/L)		5.8					
Chloride (mg/L)	40.2	56.8	48.1	46.6	39.7	44.3	50.6
Chlorophyll_a (ug/L)		.5					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	565		638	596	547	577	626
Copper, Low Level (ug/L)	< 2	< 2		< 2		< 2	
Hardness, Total (mg/L)	218	289		252		253	
Iron (ug/L)	375	412		239		306	
Lead (ug/L)	< 2	< 2		< 2		< 2	
Magnesium (mg/L)	12	16.5		13.6		13.6	
Manganese (ug/L)	89	79		93		149	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	2.3	2		< 2		< 2	
Nitrate+Nitrite (mg/L)	.2	< .1	< .1	< .1	.13	< .1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.027	.018	.012	.015	.021	.028	.022
Pheophytin_a (ug/L)		4.6					
Potassium (mg/L)	2.7	2.9		2.4		2.8	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	23.9	31.8		27.3		27.9	
Solids, Total Dissolved (mg/L)	320	414	364	354	340	352	356
Strontium (ug/L)	275	366		305		314	
Sulfate (mg/L)	34.9	58	42.6	41.1	38.3	33.4	40.7
TKN (mg/L)	.33	< .2	.24	< .2	.21	.21	.21
Total Phosphorus (mg/L)	.027	.02	.019	.018	.039	.032	.028
Total Suspended Solids (mg/L)	5	26	15	14	18	< 5	< 5
Zinc (ug/L)	< 10	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	517	664	595	564	535	601	607
DissolvedOxygen(mg/L)	8.55	9.96	8.93	10.83	8.76	6.82	9.24
pH(su)	8.07	8.14	8.17	8.14	8.01	8.04	8.14
Saturation(percent)	101	128.4	96.5	118.8	98.7	81.5	93.3
Temperature(deg C)	23.68	27.01	19	19.81	21.15	24.2	15.8

UncorrectedConductance(umhos/cm)	0			0	0	.59	.5

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**
River Mile:	**1.7**	Location:	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756
Basin:	Southwest Ohio River Tribs	Drainage:	37.7 sq mi

Sample Type: Inorganic	**04-22-2014**	**05-15-2014**	**06-24-2014**	**07-10-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**	**10-08-2014**	**11-10-2014**
Alkalinity (mg/L)	192	117	175		174	156	184	154	173	163	
Aluminum (ug/L)	< 200	3190	266	< 200	< 200	< 200	< 200	< 200	< 200	267	< 200
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Barium (ug/L)	28	38	43	60	43	31	35	40	36	35	36
Cadmium (ug/L)	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2
Calcium (mg/L)	76.7	48	70.3	67.3	70.4	54.3	68.5	61.3	64.5	72.7	85.3
CBOD20 (mg/L)				5.8							< 3
Chloride (mg/L)	24.6	15.9	30.6	29.8	33.9	24.4	30.6	21.3	28.4	25.7	40.8
Chromium (ug/L)	< 2	2.9	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)	< 20	113	< 20		< 20	< 20	< 20	< 20	< 20	< 20	
Conductivity (umhos/cm)	526	315	496		539	447	498	427	485	524	
Copper, Low Level (ug/L)	< 2	3.9	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Hardness, Total (mg/L)	246	149	232	226	235	178	220	202	213	233	276
Iron (ug/L)	90	4820	478	369	145	133	186	248	90	387	133
Lead (ug/L)	< 2	3.3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Magnesium (mg/L)	13.3	7	13.6	14.1	14.4	10.2	12	11.9	12.6	12.4	15.4
Manganese (ug/L)	10	151	57	270	59	46	42	79	43	38	28
Mercury (ug/L)						< .2	< .2	< .2	< .2	< .2	
Nickel (ug/L)	< 2	4.6	2.5	< 2	2	< 2	< 2	< 2	< 2	2.7	2.3
Nitrate+Nitrite (mg/L)	< .1	.5	.29	< .1	.1	< .1	.13	< .1	< .1	.12	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	< .01	.086	.013	.01	< .01	< .01	.014	.013	< .01	.037	.012
Potassium (mg/L)	< 2	3.3	4.7	4.6	4	3.1	3.2	4.3	3.6	4.8	3.8
Selenium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Sodium (mg/L)	13.1	8.8	15.2	16.1	19.3	13.2	17.7	14.8	17.6	16.8	22.2
Solids, Total Dissolved (mg/L)	308	228	304	312	318	258	298	246	282	306	360
Strontium (ug/L)	287	159	311	316	345	247	295	279	300	323	365
Sulfate (mg/L)	40.8	19.1	41.4	49.4	52.9	41.7	45.6	38.7	45.5	65.6	63.8
TKN (mg/L)	.29	.6	.3	< .2	.31	.29	< .2	1.34	.2	.23	< .2
Total Phosphorus (mg/L)	< .01	.194	.051	.016	.018	.014	.029	.025	< .01	.048	.017
Total Suspended Solids (mg/L)	< 5	98	11	5	< 5	< 5	< 5	6	< 5	5	< 5
Zinc (ug/L)	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CorrectedConductance(umhos/cm)	488	313	390	506	536	419	461	435	303	503	611
DissolvedOxygen(mg/L)	11.62	12.15	9.26	6.04	8.19	13.72	10.32	11.07	12.75	8.51	12.45
Flow(cfs)				.221							1.059
GageHeight(ft)	30.65	29.6	31	31.04	31.02	31.02	30.92	30.98	31.05	30.81	30.98
pH(su)	8.42	8.11	8.37	7.67	7.98	8.35	8.23	8.17	8.17	8.04	8.33
Saturation(percent)	126	121.6	119.9	73.5	91.8	156.8	129.5	140.9	138.8	87.1	111.8
Temperature(deg C)	19.22	15.37	28.69	24.01	20.9	21.93	26.92	27.74	19.45	16.4	10.5

UncorrectedConductance(umhos/cm)	0	0	0			0	0	0	0	.42	

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**
River Mile:	**1.1**	Location:	BUTLER CO. UPPER MILL CREEK REGIONAL WWTP 001 OUTFALL
Basin:	Mill Creek	Drainage:	9.0 sq mi

Sample Type: Inorganic	**07-30-2014**
Alkalinity (mg/L)	207
Aluminum (ug/L)	< 200
Ammonia (mg/L)	< .05
Arsenic (ug/L)	< 2
Barium (ug/L)	25
BOD5 (mg/L)	< 2
Cadmium (ug/L)	< .2
Calcium (mg/L)	65.1
Chloride (mg/L)	238
Chromium (ug/L)	< 2
COD, Chemical Oxygen Demand (mg/L)	25
Conductivity (umhos/cm)	1680
Copper, Low Level (ug/L)	3.7
Hardness, Total (mg/L)	254
Iron (ug/L)	< 50
Lead (ug/L)	< 2
Magnesium (mg/L)	22.2
Manganese (ug/L)	11
Mercury (ug/L)	< .2
Nickel (ug/L)	3
Nitrate+Nitrite (mg/L)	4.05
Nitrite (mg/L)	.038
Orthophosphate, dissolved (mg/L)	.27
Potassium (mg/L)	15.7
Selenium (ug/L)	< 2
Sodium (mg/L)	237
Solids, Total Dissolved (mg/L)	998
Strontium (ug/L)	305
Sulfate (mg/L)	261
TKN (mg/L)	1.09
Total Phosphorus (mg/L)	.344
Total Suspended Solids (mg/L)	< 5
Zinc (ug/L)	25
CorrectedConductance(umhos/cm)	1549
DissolvedOxygen(mg/L)	8.34
pH(su)	7.92
Saturation(percent)	96.4
Temperature(deg C)	22.3

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**
River Mile:	**3.2**	Location:	E. FK. MILL CREEK NEAR WEST CHESTER @ WEST CHESTER RD.
Basin:	Mill Creek	Drainage:	5.0 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	158	265	278	248	292	274
Aluminum (ug/L)	671		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	38		57		66	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	55.7		108		108	
Chloride (mg/L)	63.3	135	145	121	145	124
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	26	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	529	1010	1070	927	1120	1000
Copper, Low Level (ug/L)	3.5		2.5		2.2	
Hardness, Total (mg/L)	195		369		373	
Iron (ug/L)	1090		115		374	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	13.5		24.2		25.1	
Manganese (ug/L)	41		87		195	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.5		2.3		2.3	
Nitrate+Nitrite (mg/L)	.86	.25	< .1	.16	.21	.14
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	4.1		2.9		3.5	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	37.4		80		97.9	
Solids, Total Dissolved (mg/L)	328	594	632	512	620	586
Strontium (ug/L)	232		422		439	
Sulfate (mg/L)	30.5	52.8	51.1	41.6	46.2	51.4
TKN (mg/L)	.75	.4	.42	.34	.29	.26
Total Phosphorus (mg/L)	.17	.076	.08	.14	.096	.07
Total Suspended Solids (mg/L)	11	< 5	< 5	7	< 5	5
Zinc (ug/L)	< 10		< 10		18	
CorrectedConductance(umhos/cm)	555	984	863	880		990
DissolvedOxygen(mg/L)	7.56	8.46	8.2	7.2		7.79
pH(su)	7.81	8.03	7.96	7.9		7.51
Saturation(percent)	86.5	90.1	88.5	80.3		76.9
Temperature(deg C)	21.9	18.2	18.9	20.6		14.65
UncorrectedConductance(umhos/cm)				.81		0

River Code:	**23-007-000**	Stream:	**MUDDY CREEK**
River Mile:	**5.4**	Location:	MUDDY CREEK NEAR CHEVIOT @ EBENEZER RD.
Basin:	Mill Creek	Drainage:	7.6 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	88.5	146	152	130	152	127
Aluminum (ug/L)	447		201		< 200	
Ammonia (mg/L)	.096	.105	.235	.115	.102	.073
Arsenic (ug/L)	< 2		2.6		2.8	
Barium (ug/L)	23		34		32	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	33.9		50.7		59.3	
Chloride (mg/L)	37.3	72.5	47.4	35.5	65.2	59.2
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	22
Conductivity (umhos/cm)	330	572	455	372	538	497
Copper, Low Level (ug/L)	2.9		< 2		< 2	
Hardness, Total (mg/L)	106		161		186	
Iron (ug/L)	685		924		344	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	5.1		8.4		9.3	
Manganese (ug/L)	77		540		123	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	< 2		< 2		< 2	
Nitrate+Nitrite (mg/L)	.98	.12	< .1	.12	.17	.3
Nitrite (mg/L)	.088	< .02	.022	< .02	< .02	.042
Potassium (mg/L)	2.2		2.4		2.6	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	23.8		29.3		42.1	
Solids, Total Dissolved (mg/L)	188	322	260	214	324	288
Strontium (ug/L)	115		186		217	
Sulfate (mg/L)	16.8	19.3	11.7	12.3	14.9	28.5
TKN (mg/L)	.63	.46	.64	.49	.44	.51
Total Phosphorus (mg/L)	.189	.317	.582	.413	.353	.186
Total Suspended Solids (mg/L)	5	< 5	6	10	< 5	< 5
Zinc (ug/L)	29		< 10		< 10	
CorrectedConductance(umhos/cm)	230	553	436		559	456
DissolvedOxygen(mg/L)	6.92	4.8	3.54		10.69	8.98
pH(su)	7.72	7.6	7.52		8.6	7.83
Saturation(percent)	80.5	52.2	38.7		132.3	90.3
Temperature(deg C)	22.84	19.36	19.73		26.16	15.6
UncorrectedConductance(umhos/cm)	0	0	0		0	0

River Code:	**23-008-000**	Stream:	**RAPID RUN**
River Mile:	**1.2**	Location:	RAPID RUN NEAR CINCINNATI @ BENDER RD.
Basin:	Mill Creek	Drainage:	5.8 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	122	157	149	157	184	149
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	24		30		42	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	54.1		68.7		92.7	
Chloride (mg/L)	55.9	90.9	84.3	73.7	86.7	112
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	27
Conductivity (umhos/cm)	489	746	683	691	800	832
Copper, Low Level (ug/L)	3.2		2.4		2.4	
Hardness, Total (mg/L)	173		220		296	
Iron (ug/L)	243		< 50		< 50	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	9.2		11.7		15.7	
Manganese (ug/L)	< 10		< 10		< 10	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	< 2		< 2		2.1	
Nitrate+Nitrite (mg/L)	1.56	.48	.35	.75	.15	.46
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	3.2		3.3		4.3	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	34.5		47.8		54.3	
Solids, Total Dissolved (mg/L)	290	422	412	406	466	480
Strontium (ug/L)	284		374		506	
Sulfate (mg/L)	46.5	64.1	65.2	77.7	87.3	83.2
TKN (mg/L)	.44	.28	.22	1.57	.22	.25
Total Phosphorus (mg/L)	.067	.038	.041	.036	.039	.041
Total Suspended Solids (mg/L)	< 5	< 5	< 5	< 5	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	508	712		655	845	761
DissolvedOxygen(mg/L)	7.75	5.75		7.35	4.07	15.83
pH(su)	7.98	7.64		7.56	7.36	8.34
Saturation(percent)	90.5	65.9		84.6	48	168.7
Temperature(deg C)	23.03	22.06		22.21	23.59	18.31
UncorrectedConductance(umhos/cm)	0	0		0	0	0

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**
River Mile:	**0.8**	Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.
Basin:	Mill Creek	Drainage:	9.2 sq mi

Sample Type: Inorganic	**03-17-2015**	**04-22-2014**	**05-15-2014**	**06-25-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**	**10-08-2014**	**11-10-2014**
Alkalinity (mg/L)		251	191	187		239	215	207	215	199	197	
Aluminum (ug/L)	246	< 200	820	563	211	< 200	< 200	< 200	< 200	327	< 200	< 200
Ammonia (mg/L)	.104	< .05	.945	< .05	< .05	.061	< .05	.066	< .05	.073	< .05	< .05
Arsenic (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Barium (ug/L)	42	40	38	32	24	31	28	22	27	17	27	18
BOD5 (mg/L)		2.6	4.1	2.1		< 2	< 2	< 2	< 2	< 2	< 2	
Cadmium (ug/L)	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2
Calcium (mg/L)	97.5	79.9	62.2	58.6	64.9	69.3	65.6	57.3	63.3	61.3	56.8	53.3
CBOD20 (mg/L)	6.4		8.3		7.2							6.5
Chloride (mg/L)	231	343	92.8	175	352	260	220	235	280	268	207	257
Chlorophyll_a (ug/L)					1.3							
Chromium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)		22	< 20	< 20		< 20	< 20	31	22	27	< 20	
Conductivity (umhos/cm)		1980	791	1120		1830	1540	1820	1940	1860	1520	
Copper, Low Level (ug/L)	2.9	3.9	3.8	3.5	5.1	3.5	3.2	4	6.1	4.1	3.3	4
Hardness, Total (mg/L)	353	307	219	220	258	264	254	229	251	240	218	225
Iron (ug/L)	77	91	1350	841	111	123	125	77	127	205	138	81
Lead (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Magnesium (mg/L)	26.6	26.2	15.5	17.9	23.4	22	21.9	20.9	22.5	21.2	18.5	22.4
Manganese (ug/L)	23	38	80	49	27	22	17	11	15	14	17	13
Mercury (ug/L)							< .2	< .2	< .2	< .2	< .2	
Nickel (ug/L)	2.6	3	3.1	2.8	3.5	3.1	3.1	3.7	3.1	4	3.4	3.3
Nitrate+Nitrite (mg/L)	3.36	.15	1.01	1.09	.31	2.2	3.47	5.55	4.96	6.89	1.6	5.64
Nitrite (mg/L)	< .02	< .02	.038	.03	< .02	.026	.03	.033	.035	.041	.026	.063
Orthophosphate, dissolved (mg/L)	.439	.086	.106	.638	.472	.096	.259	.319	.13	1.12	.194	.407
Pheophytin_a (ug/L)					< 1.4							
Potassium (mg/L)	6.3	8.9	4.5	8.8	16.4	14.5	14	15.9	15.8	16.6	14.4	16.7
Selenium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Sodium (mg/L)	179	272	71.4	155	393	289	208	314	314	261	212	297
Solids, Total Dissolved (mg/L)	886	1120	456	662	1360	1080	916	1100	1180	1100	884	1110
Strontium (ug/L)	375	346	231	262	301	318	306	284	322	283	266	275
Sulfate (mg/L)	188	244	69.1	125	387	275	217	348	328	307	222	347
TKN (mg/L)	1.64	1.07	2.37	.96	1.14	.92	1.02	1.16	1.14	1.33	.93	1.08
Total Phosphorus (mg/L)	.503	.069	.193	.455	.577	.137	.309	.372	.207	1.25	.176	.492
Total Suspended Solids (mg/L)	< 5	6	57	26	< 5	< 5	< 5	< 5	< 5	13	10	5
Zinc (ug/L)	19	22	10	16	29	33	24	50	29	29	23	19
CorrectedConductance(umhos/cm)	1506	1805	616	1158		1672	1422	1712	1964		1551	1868
DissolvedOxygen(mg/L)	11.03	10.58	10.18	7.69		7.06	7.04	6.38	8.44		8.36	8.83
Flow(cfs)												12.997
GageHeight(ft)	9.7	10.29	8.79	9.81		10.08	10.13	10.26	10.18		10.18	10.4

pH(su)	8.04	7.84	8.03	7.93		7.99	7.99	7.94	7.78		7.74	7.9
Saturation(percent)	103.5	107.8	104.5	89.3		79.6	80.7	74.2	102		92.7	96.2
Temperature(deg C)	12.3	16.04	16.58	22.6		21	21.9	22.6	24.62		20.24	19.3
UncorrectedConductance(umhos/cm)		0	0					1.63	0		0	

River Code:	**23-001-014**	Stream:	**TOWN RUN (16.91) DST. GLENDALE AVE. AT GLENDALE**
River Mile:	**0.7**	Location:	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.
Basin:	Mill Creek	Drainage:	2.1 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	169		188	205	180	185	177
Aluminum (ug/L)	203	< 200		< 200		< 200	
Ammonia (mg/L)	.392	1.27	.054	< .05	.075	< .05	.109
Arsenic (ug/L)	2.2	2		2.2		2.9	
Barium (ug/L)	45	64		52		45	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	61.9	78.8		71.1		74.1	
CBOD20 (mg/L)		8.7					
Chloride (mg/L)	129	199	241	173	136	143	168
Chlorophyll_a (ug/L)		6.4					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		< 20	< 20	< 20	< 20	21
Conductivity (umhos/cm)	794		1240	1080	909	1000	990
Copper, Low Level (ug/L)	3.9	2.4		2.2		3	
Hardness, Total (mg/L)	223	322		294		286	
Iron (ug/L)	402	398		175		137	
Lead (ug/L)	< 2	< 2		< 2		< 2	
Magnesium (mg/L)	16.5	30.5		28.4		24.4	
Manganese (ug/L)	60	109		59		59	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	2	2.6		2.2		2.4	
Nitrate+Nitrite (mg/L)	1.85	1.01	3.32	1.66	1.56	4.07	.63
Nitrite (mg/L)	.183	.606	.029	.023	.024	< .02	.046
Orthophosphate, dissolved (mg/L)	.122	.224	.098	.35	.454	.794	.418
Pheophytin_a (ug/L)		3					
Potassium (mg/L)	2.9	5.5		5.8		6	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	76.6	105		101		99.3	
Solids, Total Dissolved (mg/L)	450	700	696	610	514	580	568
Strontium (ug/L)	274	446		421		423	
Sulfate (mg/L)	30.2	65.2	62.1	57.1	51.3	55.2	50.8
TKN (mg/L)	.84	2.05	.59	.7	.64	.58	1.28
Total Phosphorus (mg/L)	.14	.302	.112	.363	.501	.845	.503
Total Suspended Solids (mg/L)	6	24	< 5	< 5	< 5	< 5	21
Zinc (ug/L)	< 10	< 10		11		11	
CorrectedConductance(umhos/cm)	768	1116	1204	1021	854	1031	914
DissolvedOxygen(mg/L)	7.96	6.55	9.32	9.12	8.34	8.4	9.27
pH(su)	7.9	7.73	8.07	8.06	7.83	7.91	7.88
Saturation(percent)	91.8	77.8	106.7	104.3	94.1	101	98.1
Temperature(deg C)	22.33	22.54	21.91	21.81	21.18	24.52	17.94

UncorrectedConductance(umhos/cm)	0		0	0	0	0	0

River Code:	**23-001-000**	Stream:	**MILL CREEK**
River Mile:	**17.6**	Location:	MILL CREEK NE OF GLENDALE @ KEMPER RD.
Basin:	Mill Creek	Drainage:	44.8 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	127		190	174	223	183	204
Aluminum (ug/L)	1340	330		374		326	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	.059	< .05	< .05
Arsenic (ug/L)	2.1	< 2		< 2		< 2	
Barium (ug/L)	48	44		51		43	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	48.2	70		61.4		64.1	
CBOD20 (mg/L)		6.5					
Chloride (mg/L)	113	303	168	144	228	191	235
Chlorophyll_a (ug/L)		4.3					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		28	< 20	< 20	21	31
Conductivity (umhos/cm)	715		1190	1030	1710	1540	1580
Copper, Low Level (ug/L)	3.6	4.3		2.5		4.5	
Hardness, Total (mg/L)	175	270		227		248	
Iron (ug/L)	2240	352		613		388	
Lead (ug/L)	2	< 2		< 2		< 2	
Magnesium (mg/L)	13.2	23.1		17.8		21.4	
Manganese (ug/L)	166	77		94		69	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	3.3	3.3		2.7		3	
Nitrate+Nitrite (mg/L)	.45	.22	.9	1.21	4.51	4.5	4.58
Nitrite (mg/L)	< .02	< .02	< .02	< .02	.026	.033	.034
Orthophosphate, dissolved (mg/L)	.176	.334	.046	.085	.204	.103	.708
Pheophytin_a (ug/L)		2.7					
Potassium (mg/L)	4.2	11.7		6.4		12.2	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	77.5	305		117		221	
Solids, Total Dissolved (mg/L)	392	1140	680	580	1020	910	922
Strontium (ug/L)	196	305		255		310	
Sulfate (mg/L)	55.9	313	133	102	295	231	241
TKN (mg/L)	.44	.68	.67	.77	1.17	1.89	.56
Total Phosphorus (mg/L)	.253	.387	.094	.128	.228	.14	.726
Total Suspended Solids (mg/L)	67	10	21	13	22	8	< 5
Zinc (ug/L)	19	23		14		23	
CorrectedConductance(umhos/cm)	723	1550	1149	912	1632	1556	1557
DissolvedOxygen(mg/L)	7.81	12.55	8.68	7.84	10.18	11.9	11.04
pH(su)	7.94	8.29	8.12	7.88	8.41	8.06	8.27
Saturation(percent)	95	158	100.4	89	121.6	151.5	123
Temperature(deg C)	25.18	25.58	22.5	21.5	24.1	27.54	20.42

UncorrectedConductance(umhos/cm)	0				1.6	0	0

River Code:	**23-001-000**	Stream:	**MILL CREEK**
River Mile:	**26.4**	Location:	MILL CREEK E OF HAMILTON @ LIBERTY-FAIRFIELD RD.
Basin:	Mill Creek	Drainage:	3.9 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	200	254	236	268	231	254
Aluminum (ug/L)	< 200		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	39		53		58	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	71.8		97.7		100	
Chloride (mg/L)	89.6	95.6	107	109	92.5	92.3
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	786	956	960	1000	923	919
Copper, Low Level (ug/L)	2.2		< 2		2.2	
Hardness, Total (mg/L)	268		366		385	
Iron (ug/L)	109		70		118	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	21.6		29.6		32.8	
Manganese (ug/L)	17		33		29	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.2		2.2		2.4	
Nitrate+Nitrite (mg/L)	.6	.42	.2	.25	.33	.41
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.7		2.6		3.6	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	52		57.6		59.8	
Solids, Total Dissolved (mg/L)	482	572	580	572	552	568
Strontium (ug/L)	393		528		564	
Sulfate (mg/L)	69.6	94	90.8	95	105	92.5
TKN (mg/L)	.36	.27	.31	.35	1.14	.24
Total Phosphorus (mg/L)	.035	.041	.044	.036	.052	.027
Total Suspended Solids (mg/L)	< 5	< 5	< 5	< 5	< 5	< 5
Zinc (ug/L)	< 10		< 10		35	
CorrectedConductance(umhos/cm)	797	922	913	944	925	843
DissolvedOxygen(mg/L)	7.82	9.33	9.33	8.26	9.43	12.25
pH(su)	8.09	8.11	7.91	7.93	8.24	8.03
Saturation(percent)	87.3	95.6	96.9	89.3	113.7	119.4
Temperature(deg C)	20.7	16.4	17.04	18.98	24.68	14.09
UncorrectedConductance(umhos/cm)		0	0	0	0	0

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**
River Mile:	**0.0**	Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ MOUTH
Basin:	Mill Creek	Drainage:	9.7 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	176	239	206	207	193	200
Aluminum (ug/L)	819		< 200		203	
Ammonia (mg/L)	< .05	.052	< .05	.062	< .05	.051
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	36		28		29	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	58.3		66.2		68	
Chloride (mg/L)	163	247	216	240	247	264
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	26	20	24
Conductivity (umhos/cm)	1050	1740	1510	1840	1820	1830
Copper, Low Level (ug/L)	3.6		3.2		4.6	
Hardness, Total (mg/L)	218		256		267	
Iron (ug/L)	1300		191		147	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	17.5		22		23.6	
Manganese (ug/L)	70		20		19	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	3		3.1		3.1	
Nitrate+Nitrite (mg/L)	1.14	2.17	3.55	5.66	5.98	6.57
Nitrite (mg/L)	.026	.044	.035	.031	.046	.059
Potassium (mg/L)	8.5		13.3		16.8	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	143		206		301	
Solids, Total Dissolved (mg/L)	616	1030	884	1110	1100	1090
Strontium (ug/L)	256		307		342	
Sulfate (mg/L)	111	243	200	336	298	314
TKN (mg/L)	.85	.84	1.05	1.25	.89	.9
Total Phosphorus (mg/L)	.501	.13	.262	.327	.165	1.22
Total Suspended Solids (mg/L)	37	15	5	< 5	< 5	< 5
Zinc (ug/L)	19		23		23	
CorrectedConductance(umhos/cm)	1111	1661	1356	1743	1811	1818
DissolvedOxygen(mg/L)	8.02	9.67	10.64	10.77	13.18	10.48
pH(su)	8.02	8.17	8.24	8.43	8.23	8.26
Saturation(percent)	94.2	111.7	122.6	127.7	164	119.5
Temperature(deg C)	23.2	22.3	22.2	23.7	26.24	21.57
UncorrectedConductance(umhos/cm)				1.7	0	0

River Code:	**23-001-000**	Stream:	**MILL CREEK**
River Mile:	**18.0**	Location:	MILL CREEK 30 FT. UPST. CONFL E. FK. MILL CREEK
Basin:	Mill Creek	Drainage:	32.5 sq mi

Sample Type: Inorganic	**06-25-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	105	138	144	233	150	175
Aluminum (ug/L)	2090		677		531	
Ammonia (mg/L)	< .05	< .05	< .05	.057	.052	< .05
Arsenic (ug/L)	2.3		< 2		2.3	
Barium (ug/L)	56		64		64	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	45		56.5		57.9	
Chloride (mg/L)	87.7	100	100	146	107	143
Chromium (ug/L)	2.3		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	512	684	655	976	719	899
Copper, Low Level (ug/L)	4.2		2.1		2.4	
Hardness, Total (mg/L)	161		200		211	
Iron (ug/L)	3440		1080		890	
Lead (ug/L)	2.9		< 2		< 2	
Magnesium (mg/L)	11.9		14.3		16.1	
Manganese (ug/L)	248		150		197	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	3.8		2.3		2.1	
Nitrate+Nitrite (mg/L)	.19	.14	< .1	.17	.15	.14
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.6		2.1		2.6	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	48		52.1		64.5	
Solids, Total Dissolved (mg/L)	294	402	386	538	420	492
Strontium (ug/L)	172		207		241	
Sulfate (mg/L)	25.7	28.9	28.8	43.8	31.2	44.3
TKN (mg/L)	.33	.36	.39	.75	.37	.29
Total Phosphorus (mg/L)	.111	.063	.065	.025	.057	.032
Total Suspended Solids (mg/L)	74	34	29	< 5	10	11
Zinc (ug/L)	24		< 10		< 10	
CorrectedConductance(umhos/cm)	549	639	574	935	730	882
DissolvedOxygen(mg/L)	6.46	8.71	7.55	6.53	7.99	8.95
pH(su)	7.81	8	7.9	7.9	7.7	7.91
Saturation(percent)	78.6	100.9	86.7	77.6	104.6	93.8
Temperature(deg C)	25.2	22.6	22.1	23.8	29.34	17.51
UncorrectedConductance(umhos/cm)				.92	0	0

River Code:	**23-001-000**	Stream:	**MILL CREEK**
River Mile:	**18.7**	Location:	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.
Basin:	Mill Creek	Drainage:	27.0 sq mi

Sample Type: Inorganic	**03-17-2015**	**04-22-2014**	**05-15-2014**	**06-25-2014**	**07-10-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**	**10-08-2014**	**11-10-2014**
Alkalinity (mg/L)		238	140	109		136	136	250	142	185	107	
Aluminum (ug/L)	889	759	1810	1800	235	864	806	< 200	228	432	892	< 200
Ammonia (mg/L)	.05	< .05	.095	< .05	.075	< .05	< .05	.097	.106	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2	< 2	2.2	< 2	2.1	< 2	< 2	2.2	< 2	< 2	< 2
Barium (ug/L)	61	75	48	54	72	64	66	82	61	63	45	67
Cadmium (ug/L)	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2
Calcium (mg/L)	87.3	90.6	51.5	44.8	79.7	54.2	53.8	90.9	56.2	73.1	44.2	86.4
CBOD20 (mg/L)	7.3				5.9							6.3
Chloride (mg/L)	239	153	77.1	83.6	116	94.4	96.9	127	99	135	75.2	123
Chlorophyll_a (ug/L)					4.2							
Chromium (ug/L)	< 2	< 2	2.5	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)		< 20	< 20	< 20		< 20	< 20	< 20	< 20	23	< 20	
Conductivity (umhos/cm)		1060	563	500		647	634	923	682	895	522	
Copper, Low Level (ug/L)	3.2	2.4	4.5	3.5	< 2	2.3	2.2	< 2	3	2.1	2.8	< 2
Hardness, Total (mg/L)	306	336	179	161	291	195	193	332	209	262	158	315
Iron (ug/L)	1490	1230	2850	2950	418	1360	1260	209	389	661	1330	250
Lead (ug/L)	< 2	< 2	2.2	2.3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Magnesium (mg/L)	21.4	26.7	12.3	11.9	22.4	14.5	14.3	25.6	16.7	19.2	11.6	24.2
Manganese (ug/L)	162	226	161	227	140	170	160	153	136	88	104	104
Mercury (ug/L)							< .2	< .2	< .2	< .2	< .2	
Nickel (ug/L)	3.5	3.5	3.8	3.5	2.3	2.6	2.7	2.2	< 2	2.8	2.8	3.1
Nitrate+Nitrite (mg/L)	.67	.38	.77	.18	.34	.16	< .1	.23	.2	.18	.12	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.031	.011	.061	.021	.036	.014	.016	.029	.036	.033	.038	.024
Pheophytin_a (ug/L)					3.8							
Potassium (mg/L)	2.9	< 2	2.9	2.6	2.4	2.4	2.2	2.2	2.4	2.8	2.6	3.6
Selenium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Sodium (mg/L)	120	79.6	41.4	45.4	57.2	51.3	50.3	62	56.7	74.1	41.3	66.7
Solids, Total Dissolved (mg/L)	656	588	324	292	500	378	382	516	386	502	306	550
Strontium (ug/L)	313	357	181	172	309	208	206	345	236	290	177	367
Sulfate (mg/L)	49	60.2	28.2	25.3	44.6	28.2	27.7	40.8	30.3	46.4	32.4	60.6
TKN (mg/L)	.72	.62	1.02	.38	.31	.35	.38	.37	.48	.39	.32	.27
Total Phosphorus (mg/L)	.088	< .01	.177	.07	.045	.064	.066	.029	.056	.052	.047	.028
Total Suspended Solids (mg/L)	44	34	89	87	10	34	36	< 5	< 5	13	29	< 5
Zinc (ug/L)	10	< 10	13	17	< 10	< 10	< 10	< 10	< 10	< 10	10	< 10
CorrectedConductance(umhos/cm)	1167	978	555	555	823	610	583	881	689	879	526	925
DissolvedOxygen(mg/L)	10.07	8.71	8.04	6.22	4.01	6.74	7.03	4.97	5.47	8.43	8.96	9.01
Flow(cfs)	54				3.727							1.392
GageHeight(ft)	14.15	14.67	11.83	13.62	15.04	14.72	14.77	15.25	15.14	15.03	14.5	15.125
pH(su)	7.88	7.74	7.84	7.76	7.59	7.78	7.83	7.59	7.47	7.85	7.6	7.6
Saturation(percent)	91.6	89.8	85.7	75.3	47.8	75.8	79.7	54.9	68.8	86.5	87.4	76.5

Temperature(deg C)	11	16.67	18.39	25	22.69	21.1	21.4	20	26.99	16.47	14.13	8.1
UncorrectedConductance(umhos/cm)		0						.8	0	0	0	

River Code:	**23-001-000**	Stream:	**MILL CREEK**
River Mile:	**22.1**	Location:	MILL CREEK NEAR PORT UNION @ ST. RT. 747
Basin:	Mill Creek	Drainage:	20.6 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	158	195	192	235	207	223
Aluminum (ug/L)	850		331		268	
Ammonia (mg/L)	< .05	.05	< .05	.079	.074	< .05
Arsenic (ug/L)	< 2		< 2		2.2	
Barium (ug/L)	46		57		68	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	60		75.7		87.2	
Chloride (mg/L)	91.5	115	118	133	110	99.8
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	672	848	842	968	864	846
Copper, Low Level (ug/L)	2.7		< 2		2	
Hardness, Total (mg/L)	217		284		319	
Iron (ug/L)	1250		560		379	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	16.2		23		24.5	
Manganese (ug/L)	121		196		310	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.7		2.1		2.4	
Nitrate+Nitrite (mg/L)	.72	.69	.44	.24	.33	.33
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	2.5		2.5		3	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	46.7		59		65.6	
Solids, Total Dissolved (mg/L)	406	452	494	534	486	490
Strontium (ug/L)	248		290		359	
Sulfate (mg/L)	35.8	38.3	45.1	50.9	49.3	55.6
TKN (mg/L)	.46	.46	.34	.38	.45	.3
Total Phosphorus (mg/L)	.076	.071	.052	.059	.057	.044
Total Suspended Solids (mg/L)	21	13	7	9	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	670	804	781	906	901	793
DissolvedOxygen(mg/L)	6.04	6.23	6.94	5.82	7.58	8.98
pH(su)	7.79	7.68	7.43	7.6	7.6	7.78
Saturation(percent)	69.4	66.9	73.9	65.1	94.4	88.8
Temperature(deg C)	22.2	18.74	18.24	20.69	26.46	14.75
UncorrectedConductance(umhos/cm)		0	0	0	0	0

River Code:	**10-004-000**	Stream:	**NINEMILE CREEK**
River Mile:	**0.8**	Location:	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.
Basin:	Southwest Ohio River Tribs	Drainage:	8.1 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-09-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	219		216	227	287	211	225
Aluminum (ug/L)	< 200	368		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2		< 2		< 2	
Barium (ug/L)	32	28		35		37	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	84	67.2		93.1		85.7	
CBOD20 (mg/L)		< 3					
Chloride (mg/L)	72	55.2	56.8	70.2	64.6	56.6	65.4
Chlorophyll_a (ug/L)		1.7					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	726		646	718	758	645	688
Copper, Low Level (ug/L)	< 2	< 2		< 2		< 2	
Hardness, Total (mg/L)	270	216		294		272	
Iron (ug/L)	103	477		71		190	
Lead (ug/L)	< 2	< 2		< 2		< 2	
Magnesium (mg/L)	14.6	11.7		14.9		14	
Manganese (ug/L)	18	20		34		133	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	2.8	2		2.1		< 2	
Nitrate+Nitrite (mg/L)	.34	.32	< .1	< .1	< .1	.11	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.038	.03	.023	.019	.021	.027	.025
Pheophytin_a (ug/L)		< .7					
Potassium (mg/L)	2.8	2.4		2.4		2.8	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	37.5	29.7		36.9		33.8	
Solids, Total Dissolved (mg/L)	428	328	352	412	450	386	402
Strontium (ug/L)	347	273		357		347	
Sulfate (mg/L)	44.7	37	35.3	42.9	47.5	36.1	42.2
TKN (mg/L)	.28	< .2	.22	< .2	< .2	< .2	< .2
Total Phosphorus (mg/L)	.028	.039	.02	.019	.019	.022	.026
Total Suspended Solids (mg/L)	< 5	8	5	< 5	< 5	< 5	7
Zinc (ug/L)	< 10	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	679	559	590	686	750	657	688
DissolvedOxygen(mg/L)	8.08	10.26	8.72	11.26	7.72	5.27	9.15
pH(su)	7.92	8.02	7.92	7.91	7.7	7.71	7.79
Saturation(percent)	91.8	125.1	93.5	127.1	87	62.7	94.3
Temperature(deg C)	21.53	24.01	18.6	21.22	21.14	24	16.7

UncorrectedConductance(umhos/cm)	0			0	0	.65	.58

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**
River Mile:	**4.9**	Location:	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743
Basin:	Southwest Ohio River Tribs	Drainage:	27.4 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-10-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	168		180	169	168	145	165
Aluminum (ug/L)	< 200	333		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2		< 2		< 2	
Barium (ug/L)	46	52		44		42	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	61.5	61.3		60.3		54.8	
CBOD20 (mg/L)		9.3					
Chloride (mg/L)	33.6	33.5	38.4	43.4	37.5	19.6	26.4
Chlorophyll_a (ug/L)		15					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	485		523	552	503	402	449
Copper, Low Level (ug/L)	< 2	< 2		< 2		< 2	
Hardness, Total (mg/L)	212	214		208		188	
Iron (ug/L)	159	483		152		217	
Lead (ug/L)	< 2	< 2		< 2		< 2	
Magnesium (mg/L)	14.3	14.8		13.9		12.5	
Manganese (ug/L)	39	70		81		100	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	2.2	2.1		2.1		< 2	
Nitrate+Nitrite (mg/L)	.36	< .1	< .1	< .1	.1	.1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.044	< .01	.011	.02	.021	.038	.021
Pheophytin_a (ug/L)		6.1					
Potassium (mg/L)	5.6	5.6		4.4		5	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	15.8	16.7		22.2		14.7	
Solids, Total Dissolved (mg/L)	292	284	290	322	286	226	254
Strontium (ug/L)	235	243		242		221	
Sulfate (mg/L)	28.6	29.9	32.4	45.4	43.7	28.7	34.8
TKN (mg/L)	.32	.38	.34	.26	.27	.27	< .2
Total Phosphorus (mg/L)	.043	.035	.023	.021	.027	.042	.022
Total Suspended Solids (mg/L)	5	25	12	11	11	< 5	< 5
Zinc (ug/L)	< 10	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	468		516	523		410	463
DissolvedOxygen(mg/L)	8.53		6.53	10.05		7.38	10.58
pH(su)	8.1		7.97	8.06		7.93	8.04
Saturation(percent)	106.1		71.8	113.6		91.9	113.2
Temperature(deg C)	26.43		19.9	21.32		26.51	18.57

UncorrectedConductance(umhos/cm)	0			0		0	0

River Code:	**10-016-000**	Stream:	**NORTH FORK INDIAN CREEK**
River Mile:	**0.9**	Location:	N. FK. INDIAN CREEK @ LAUREL - POINT ISABEL RD.
Basin:	Southwest Ohio River Tribs	Drainage:	10.9 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	218	217	172	202	177	200
Aluminum (ug/L)	207		< 200		< 200	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	38		26		34	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	84.6		61.5		71.3	
Chloride (mg/L)	29.4	23.9	21.3	25.5	27.1	34.4
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	544	532	459	495	464	510
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	264		192		223	
Iron (ug/L)	313		88		189	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	12.8		9.4		10.9	
Manganese (ug/L)	46		33		52	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.6		< 2		< 2	
Nitrate+Nitrite (mg/L)	.44	.11	.1	.13	.1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	3.8		2.9		4.1	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	15.5		11.8		17.2	
Solids, Total Dissolved (mg/L)	322	308	262	288	276	280
Strontium (ug/L)	316		236		282	
Sulfate (mg/L)	33.4	35.6	26.6	34.8	26.2	31.5
TKN (mg/L)	.22	.26	< .2	< .2	.31	.3
Total Phosphorus (mg/L)	.076	.046	.031	.056	.045	.016
Total Suspended Solids (mg/L)	40	5	< 5	6	12	60
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	471	532	430	459	469	527
DissolvedOxygen(mg/L)	10.2	8.16	13.95	9.57	10.21	11.8
pH(su)	8.14	8.01	8.18	8.16	7.93	8.04
Saturation(percent)	123.3	88.6	151.7	116.5	125.6	121
Temperature(deg C)	24.89	19.3	19.36	25.27	25.85	16.52
UncorrectedConductance(umhos/cm)	0		0	0	0	0

River Code:	**10-027-000**	Stream:	**BULLSKIN CREEK**
River Mile:	**4.4**	Location:	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.
Basin:	Southwest Ohio River Tribs	Drainage:	27.7 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-10-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	182		190	183	176	163	168
Aluminum (ug/L)	< 200	< 200		744		280	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2		< 2		< 2	
Barium (ug/L)	40	43		46		44	
Cadmium (ug/L)	< .2	< .2		< .2		< .2	
Calcium (mg/L)	59.3	68.8		68.4		62.1	
CBOD20 (mg/L)		5.7					
Chloride (mg/L)	24.2	25	25.2	19.9	20.4	18.5	16.6
Chlorophyll_a (ug/L)		.9					
Chromium (ug/L)	< 2	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20		< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	461		543	495	468	434	420
Copper, Low Level (ug/L)	< 2	< 2		< 2		< 2	
Hardness, Total (mg/L)	204	232		229		211	
Iron (ug/L)	175	243		1460		506	
Lead (ug/L)	< 2	< 2		< 2		< 2	
Magnesium (mg/L)	13.7	14.5		14.2		13.7	
Manganese (ug/L)	99	32		181		136	
Mercury (ug/L)				< .2		< .2	
Nickel (ug/L)	2.2	< 2		2.8		< 2	
Nitrate+Nitrite (mg/L)	< .1	< .1	< .1	.14	.14	< .1	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	.044	.056	.027	.03	.037	.017	.033
Pheophytin_a (ug/L)		< 1.4					
Potassium (mg/L)	5.4	5.1		4.2		4.8	
Selenium (ug/L)	< 2	< 2		< 2		< 2	
Sodium (mg/L)	12.3	13.6		11.2		11.9	
Solids, Total Dissolved (mg/L)	276	280	284	284	276	242	240
Strontium (ug/L)	236	256		241		236	
Sulfate (mg/L)	25	26.1	26.3	43.5	46.5	34.3	31.4
TKN (mg/L)	.28	< .2	< .2	< .2	.2	.22	< .2
Total Phosphorus (mg/L)	.014	.042	.032	.038	.047	.037	.021
Total Suspended Solids (mg/L)	9	7	7	6	9	11	< 5
Zinc (ug/L)	< 10	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	461.4	488	495	471	457	432.3	420
DissolvedOxygen(mg/L)	6.9	8.7	9.58	8.62	9.35	8.26	9.45
pH(su)	8.03	7.51	7.64	8.03	7.96	7.99	8.04
Saturation(percent)	87.3	117.3	118.3	98.1	118.5	108.6	102
Temperature(deg C)	27.4	29.59	26.03	21.69	27.48	29.6	18.99

UncorrectedConductance(umhos/cm)			0	0	0	.47	0

River Code:	**10-027-000**	Stream:	**BULLSKIN CREEK**
River Mile:	**3.0**	Location:	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.
Basin:	Southwest Ohio River Tribs	Drainage:	48.0 sq mi

Sample Type: Inorganic	**04-22-2014**	**05-15-2014**	**06-24-2014**	**07-10-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**	**10-08-2014**	**11-10-2014**
Alkalinity (mg/L)	184	172	161		179	180	177	163	179	142	
Aluminum (ug/L)	< 200	3390	< 200	< 200	574	< 200	< 200	< 200	< 200	1730	< 200
Ammonia (mg/L)	< .05	< .05	< .1	< .05	< .05	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Barium (ug/L)	33	62	36	46	51	39	43	44	44	41	36
Cadmium (ug/L)	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2	< .2
Calcium (mg/L)	66.1	65.6	52.1	62.8	65.4	60.7	59.7	57.1	62.4	47.8	77.8
CBOD20 (mg/L)				5.7							< 3
Chloride (mg/L)	18.3	18.8	26.8	26.5	26.5	18.3	20.8	19.8	18.6	14.9	27.8
Chlorophyll_a (ug/L)				4.6							
Chromium (ug/L)	< 2	2.8	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20		< 20	< 20	151	< 20	< 20	< 20	
Conductivity (umhos/cm)	465	426	420		512	461	445	419	449	359	
Copper, Low Level (ug/L)	< 2	3.3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2.3	< 2
Hardness, Total (mg/L)	226	216	187	218	225	206	204	199	211	163	261
Iron (ug/L)	79	5260	144	155	826	191	150	175	175	2230	< 50
Lead (ug/L)	< 2	3.7	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Magnesium (mg/L)	14.8	12.6	13.8	14.8	14.9	13.1	13.3	13.7	13.5	10.5	16.3
Manganese (ug/L)	13	251	54	81	246	75	140	84	109	99	14
Mercury (ug/L)						< .2	< .2	< .2	< .2	< .2	
Nickel (ug/L)	< 2	4.8	2	< 2	2.3	< 2	< 2	< 2	< 2	3.1	2.2
Nitrate+Nitrite (mg/L)	< .1	.67	< .1	< .1	< .1	< .1	< .1	< .1	< .1	.38	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02	< .02
Orthophosphate, dissolved (mg/L)	< .01	.079	.028	.021	.016	.014	.01	.015	.011	.17	.018
Pheophytin_a (ug/L)				2.7							
Potassium (mg/L)	< 2	3.9	6.8	5.3	5.1	3.9	4	5	4	6.2	4.1
Selenium (ug/L)	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Sodium (mg/L)	9.2	8.6	10	11.5	12.3	9.3	10.8	11.8	11.5	8.1	13.6
Solids, Total Dissolved (mg/L)	272	260	256	266	280	258	262	240	242	234	314
Strontium (ug/L)	214	176	207	233	239	214	221	226	231	156	265
Sulfate (mg/L)	28.6	19.8	22.2	24.7	24.1	34.3	34.2	30.9	30.8	26.1	44
TKN (mg/L)	.36	.34	.31	.36	1.09	< .2	.2	.24	< .4	.41	< .2
Total Phosphorus (mg/L)	< .01	.199	< .01	.07	.041	.021	.023	.025	< .01	.237	.013
Total Suspended Solids (mg/L)	< 5	88	< 5	17	11	25	< 5	< 5	< 5	34	< 5
Zinc (ug/L)	< 10	11	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
CorrectedConductance(umhos/cm)	433	423	412.9	459	482	435	420	412.4	424	348	548.1
DissolvedOxygen(mg/L)	11.94	11.92	9.7	9.04	10.89	10.62	9.93	8.21	11.5	10.02	12.23
GageHeight(ft)	15.51	14.82	15.65	15.79	15.81	15.69	15.75		15.79	15.48	16.675
pH(su)	8.55	8.23	8.48	8.24	7.95	8.21	8.15	8.36	8.36	7.68	8.29
Saturation(percent)	131.6	124	123.3	121.3	123.9	121	127.7	112.8	132.5	96.1	104.8

Temperature(deg C)	20.06	17.19	27.7	29.36	21.67	21.73	28.32	32.2	22.32	13.4	8.6
UncorrectedConductance(umhos/cm)	0	0			0	0	0	.47	0	.27	

River Code:	**10-032-000**	Stream:	**WEST BRANCH BULLSKIN CREEK**
River Mile:	**0.6**	Location:	W. BR. BULLSKIN CREEK E OF FELICITY @ RICHEY RD.
Basin:	Southwest Ohio River Tribs	Drainage:	25.0 sq mi

Sample Type: Inorganic	**06-24-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	174	169	178	159	121	149
Aluminum (ug/L)	< 200		315		637	
Ammonia (mg/L)	< .05	< .05	< .05	.086	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	48		47		43	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	63.7		58.2		44.7	
Chloride (mg/L)	28.2	34	23.2	20.4	11.6	14.3
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	449	457	428	370	313	350
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	215		199		147	
Iron (ug/L)	178		519		914	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	13.6		13		8.6	
Manganese (ug/L)	166		195		228	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.3		2.1		2.1	
Nitrate+Nitrite (mg/L)	< .1	< .1	< .1	< .1	.11	< .1
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	5.6		4.9		5.5	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	11.5		10.9		7.8	
Solids, Total Dissolved (mg/L)	276	254	232	210	178	200
Strontium (ug/L)	208		208		145	
Sulfate (mg/L)	18.6	14.9	12	14.3	14.9	16.7
TKN (mg/L)	.42	.69	.36	.45	.42	.35
Total Phosphorus (mg/L)	.026	.04	.038	.08	.075	.047
Total Suspended Solids (mg/L)	7	15	17	20	18	6
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	427.5	440.4	382	362	317	346.5
DissolvedOxygen(mg/L)	12.14	5.56	8.56	7.61	12.52	9.92
pH(su)	8.63	8.22	8.4	7.88	8.17	8.3
Saturation(percent)	166.5	63.3	99.7	94.2	157.4	105.7
Temperature(deg C)	32	21.7	22.9	26.2	27.07	18.4
UncorrectedConductance(umhos/cm)				.37	0	.3

River Code:	**10-023-000**	Stream:	**BEAR CREEK**
River Mile:	**5.3**	Location:	BEAR CREEK @ CHILO CEMETERY-MCKENDREE CHAPEL RD.
Basin:	Southwest Ohio River Tribs	Drainage:	4.8 sq mi

Sample Type: Inorganic	**08-12-2014**	**08-26-2014**	**09-18-2014**	**10-16-2014**
Alkalinity (mg/L)	226	221	213	185
Aluminum (ug/L)	< 200	< 200	< 200	< 200
Ammonia (mg/L)	< .05	< .05	< .05	< .05
Arsenic (ug/L)	2.7	2.2	2.1	< 2
Barium (ug/L)	46	47	41	33
Cadmium (ug/L)	< .2	< .2	< .2	< .2
Calcium (mg/L)	74.3	72.4	72.3	62.8
Chloride (mg/L)	121	76.2	88.4	49.8
Chromium (ug/L)	< 2	< 2	< 2	< 2
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	969	722	793	572
Copper, Low Level (ug/L)	5.4	2.7	3	2.6
Hardness, Total (mg/L)	250	243	246	216
Iron (ug/L)	139	151	71	171
Lead (ug/L)	< 2	< 2	< 2	< 2
Magnesium (mg/L)	15.6	15.2	15.9	14.3
Manganese (ug/L)	18	50	21	20
Mercury (ug/L)	< .2	< .2	< .2	< .2
Nickel (ug/L)	3.3	2.7	2.9	2
Nitrate+Nitrite (mg/L)	9.37	2.21	4.8	2.49
Nitrite (mg/L)	.023	< .02	< .02	< .02
Potassium (mg/L)	6.5	6.5	6.3	6.2
Selenium (ug/L)	< 2	< 2	< 2	< 2
Sodium (mg/L)	97.4	66.7	72.6	36.7
Solids, Total Dissolved (mg/L)	548	408	452	324
Strontium (ug/L)	222	223	223	198
Sulfate (mg/L)	51.5	33.8	82.4	31.4
TKN (mg/L)	.62	.56	.24	2.21
Total Phosphorus (mg/L)	.903	.485	.56	.498
Total Suspended Solids (mg/L)	< 5	< 5	< 5	5
Zinc (ug/L)	< 10	< 10	< 10	< 10
CorrectedConductance(umhos/cm)	926	714	789	550
DissolvedOxygen(mg/L)	9.05	6	9.83	10.92
pH(su)	8.15	8.04	8.08	7.97
Saturation(percent)	104.4	69.8	97.1	107.1
Temperature(deg C)	22.27	22.8	14.67	14.42
UncorrectedConductance(umhos/cm)	0	.68	0	0

River Code:	**10-023-000**	Stream:	**BEAR CREEK**
River Mile:	**2.4**	Location:	BEAR CREEK NW OF CHILO, ADJ. BEAR CREEK RD.
Basin:	Southwest Ohio River Tribs	Drainage:	7.7 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-16-2014**	**07-29-2014**	**08-12-2014**	**08-26-2014**	**09-18-2014**
Alkalinity (mg/L)	219	338	217	202	207	224
Aluminum (ug/L)	< 200		< 200		203	
Ammonia (mg/L)	< .05	.062	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	46		48		51	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	75		76.9		74.8	
Chloride (mg/L)	45.4	56.8	61	59.4	51.5	65
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	< 20
Conductivity (umhos/cm)	605	873	657	598	596	669
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	246		249		241	
Iron (ug/L)	379		342		458	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	14.3		13.8		13.2	
Manganese (ug/L)	196		204		253	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.6		2.7		2.3	
Nitrate+Nitrite (mg/L)	< .1	< .1	.11	.11	.19	.13
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	4		3.9		4.6	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	23.4		29.6		36.5	
Solids, Total Dissolved (mg/L)	348	484	376	342	338	364
Strontium (ug/L)	262		247		251	
Sulfate (mg/L)	33.7	33.2	32.8	32.7	30.3	30.7
TKN (mg/L)	.3	.43	.25	1.07	.69	.21
Total Phosphorus (mg/L)	.051	.041	.057	.07	.059	.037
Total Suspended Solids (mg/L)	< 5	17	< 5	8	< 5	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	598	843	327	577	591	666
DissolvedOxygen(mg/L)	7.67	6.17	9.01	7.81	6.36	8.45
pH(su)	7.96	7.49	7.8	7.85	7.84	7.79
Saturation(percent)	92.1	66.6	96.7	89.9	74.2	84.2
Temperature(deg C)	24.5	18.98	18.72	22.23	23	15.15
UncorrectedConductance(umhos/cm)		0	0	0	.57	0

River Code:	**10-006-000**	Stream:	**TWELVEMILE CREEK**
River Mile:	**6.4**	Location:	TWELVEMILE CREEK @ LAUREL-LINDALE RD.
Basin:	Southwest Ohio River Tribs	Drainage:	6.8 sq mi

Sample Type: Inorganic	**06-26-2014**	**07-17-2014**	**07-30-2014**	**08-13-2014**	**08-27-2014**	**09-17-2014**
Alkalinity (mg/L)	128	215	178	196	160	210
Aluminum (ug/L)	550		< 200		390	
Ammonia (mg/L)	< .05	< .05	< .05	< .05	< .05	< .05
Arsenic (ug/L)	< 2		< 2		< 2	
Barium (ug/L)	31		35		36	
Cadmium (ug/L)	< .2		< .2		< .2	
Calcium (mg/L)	46.2		62.9		57.3	
Chloride (mg/L)	34.3	38.8	34.3	34.7	29.3	40.3
Chromium (ug/L)	< 2		< 2		< 2	
COD, Chemical Oxygen Demand (mg/L)	< 20	< 20	< 20	< 20	< 20	276
Conductivity (umhos/cm)	404	584	478	503	427	555
Copper, Low Level (ug/L)	< 2		< 2		< 2	
Hardness, Total (mg/L)	150		203		185	
Iron (ug/L)	735		151		543	
Lead (ug/L)	< 2		< 2		< 2	
Magnesium (mg/L)	8.4		11.1		10.3	
Manganese (ug/L)	60		24		71	
Mercury (ug/L)			< .2		< .2	
Nickel (ug/L)	2.2		< 2		2	
Nitrate+Nitrite (mg/L)	1.42	.32	.46	.64	.18	.13
Nitrite (mg/L)	< .02	< .02	< .02	< .02	< .02	< .02
Potassium (mg/L)	6.3		4.6		6.4	
Selenium (ug/L)	< 2		< 2		< 2	
Sodium (mg/L)	13.8		18.9		14.1	
Solids, Total Dissolved (mg/L)	256	332	282	296	264	314
Strontium (ug/L)	151		199		191	
Sulfate (mg/L)	24	32.4	22.1	28.1	13.1	26.1
TKN (mg/L)	.61	.45	.24	.33	.47	.21
Total Phosphorus (mg/L)	.221	.082	.134	.121	.155	.061
Total Suspended Solids (mg/L)	16	< 5	< 5	6	14	< 5
Zinc (ug/L)	< 10		< 10		< 10	
CorrectedConductance(umhos/cm)	278	556	451	491	430.5	543
DissolvedOxygen(mg/L)	8.88	9.1	9.86	8.5	8.14	8.92
pH(su)	8.22	8.13	8.23	8.24	8.25	7.86
Saturation(percent)	101.6	92.5	101.5	95	98.1	86.4
Temperature(deg C)	22.01	16	16.73	20.8	24.8	13.9
UncorrectedConductance(umhos/cm)	0		0	0	.43	.43

Appendix Table C – Organic Water Chemitry Results

Appendix Table A-2. Water sampling results (µg/l) for pesticides and polychlorinated biphenyls (PCBs) from the Southwest Ohio River Tributaries watersheds, 2014.
(Values above the detection limit are highlighted.)

Site Location:	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.							SWDO Map # 3	
River Mile: 18.69								Storet ID: Q01W05	
Date Sampled	**04/22/14**	**05/15/14**	**06/25/14**	**07/17/14**	**07/30/14**	**08/13/14**	**09/18/14**	**10/08/14**	
Organochlorine Pesticides (USEPA Method 608)									
Aldrin	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021 UJ	
a-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
b-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
d-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
y-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Chlordane	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.22	< 0.21	
4,4'-DDD	< 0.0062	< 0.0063	< 0.0063	< 0.0062	< 0.0062	< 0.0062	< 0.0065	< 0.0063	
4,4'-DDE	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
4,4'-DDT	< 0.0062	< 0.0063	< 0.0063	< 0.0062	< 0.0062	< 0.0062	< 0.0065	< 0.0063	
Dieldrin	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Endosulfan I	< 0.0021	< 0.0021	0.0031	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Endosulfan II	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Endosulfan sulfate	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.022	< 0.021	
Endrin	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Endrin aldehyde	< 0.0062	< 0.0063	< 0.0063	< 0.0062	< 0.0062	< 0.0062	< 0.0065	< 0.0063	
Heptachlor	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Heptachlor epoxide	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Hexachlorobenzene	0.0073 B,J-	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	
Methoxychlor	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.01	
Mirex	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.01	
Toxaphene	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.22	< 0.21	
Carbamate Pesticides (USEPA Method 531.1)									
Aldicarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Aldicarb sulfone	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Aldicarb sulfoxide	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Carbaryl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Carbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
3-Hydroxycarbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	0.5	
Methiocarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Methomyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Oxamyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Propoxur	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Glyphosate (USEPA Method 547)									
Glyphosate	< 5	< 5	< 5	< 5.0	< 5	< 5	< 5 PT	< 5 PT	
Acid Herbicides (USEPA Method 525.2)									
Acetochlor	< 0.2	0.21 J	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Alachlor	< 0.2	< 0.21 UJ	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Atrazine	< 0.2	0.65 J	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Benzo[a]pyrene	< 0.51 R	< 0.53 UJ	< 0.53	< 0.53	< 0.54	< 0.54	< 0.52	< 0.52	
bis(2-Ethylhexyl)adipate	< 0.51	< 0.53 UJ	< 0.53	< 0.53	< 0.54	< 0.54	4.47 J	< 0.52	
bis(2-Ethylhexyl)phthalate	< 0.51	0.98 J,J-	< 0.53	< 0.53	0.63	< 0.54	< 0.52	< 0.52	
Butachlor	< 0.2	< 0.21 UJ	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Cyanazine	< 0.21	< 0.2 UJ	< 0.22	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	
Metolachlor	< 0.2	< 0.21 UJ	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Metribuzin	< 0.2	< 0.21 UJ	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Pentachlorophenol	< 5.1	< 5.26 UJ	< 5.29	< 5.26	< 5.38	< 5.43	< 5.21	< 5.15	
Propachlor	< 0.2	< 0.21 UJ	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Simazine	< 0.2	0.63 J	< 0.21	< 0.21	< 0.22	< 0.22	< 0.21	< 0.21	
Chlorinated Acid Herbicides (USEPA Method 515.1)									
Acifluorfen	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	
Dalapon	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	
Dicamba	< 0.21	0.4	< 0.22	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	
Dinoseb	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	
2,4-D	< 0.21	1.52	0.75	< 0.21	< 0.21	< 0.22	0.49	0.56 J-	
2,4,5-TP	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	
Pentachlorophenol	< 0.1	< 0.1	< 0.11	< 0.1	< 0.11	< 0.11	< 0.1	< 0.11	
Picloram	< 0.21	< 0.21	< 0.22 UJ	< 0.21 UJ	< 0.21	< 0.22	< 0.21	< 0.21 UJ	

Appendix Table A-2. Continued.

Site Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.							SWDO Map # 12	
River Mile: 0.76								Storet ID: Q01P01	
Date Sampled	**04/22/14**	**05/15/14**	**06/25/14**	**07/17/14**	**07/30/14**	**08/13/14**	**09/17/14**	**10/08/14**	
Organochlorine Pesticides (USEPA Method 608)									
Aldrin	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023 UJ	
a-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
b-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
d-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
y-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	0.0021	< 0.0022	< 0.0023	
Chlordane	< 0.21	< 0.21	< 0.23	< 0.2	< 0.21	< 0.21	< 0.22	< 0.23	
4,4'-DDD	< 0.0062	< 0.0062	< 0.0067	< 0.0061	< 0.0062	< 0.0062	< 0.0066	< 0.007	
4,4'-DDE	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
4,4'-DDT	< 0.0062	< 0.0062	< 0.0067	< 0.0061	< 0.0062	< 0.0062	< 0.0066	< 0.007	
Dieldrin	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Endosulfan I	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Endosulfan II	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Endosulfan sulfate	< 0.021	< 0.021	< 0.022	< 0.02	< 0.021	< 0.021	< 0.022	< 0.023	
Endrin	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Endrin aldehyde	< 0.0062	< 0.0062	< 0.0067	< 0.0061	< 0.0062	< 0.0062	< 0.0066	< 0.007	
Heptachlor	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Heptachlor epoxide	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Hexachlorobenzene	< 0.0021	< 0.0021	< 0.0022	< 0.002	< 0.0021	< 0.0021	< 0.0022	< 0.0023	
Methoxychlor	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.012	
Mirex	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.012	
Toxaphene	< 0.21	< 0.21	< 0.23	< 0.2	< 0.21	< 0.21	< 0.22	< 0.23	
Carbamate Pesticides (USEPA Method 531.1)									
Aldicarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Aldicarb sulfone	0.53 PT	< 0.5	< 0.5	0.73	0.62	< 0.5 PT	< 0.5	< 0.5	
Aldicarb sulfoxide	< 0.5 PT	< 0.5	< 0.5	0.54	0.59	< 0.5 PT	< 0.5	< 0.5	
Carbaryl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Carbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
3-Hydroxycarbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Methiocarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Methomyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Oxamyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Propoxur	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	
Glyphosate (USEPA Method 547)									
Glyphosate	< 5	< 5	< 5	< 5	< 5	< 5	< 5 PT	< 5 PT	
Acid Herbicides (USEPA Method 525.2)									
Acetochlor	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Alachlor	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Atrazine	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Benzo[a]pyrene	< 0.51 R	< 0.53 UJ	< 0.52 UJ	< 0.52	< 0.53	< 0.53	< 0.54	< 0.55	
bis(2-Ethylhexyl)adipate	< 0.51	< 0.53 UJ	< 0.52 UJ	< 0.52	< 0.53	< 0.53	< 0.54	0.68 J	
bis(2-Ethylhexyl)phthalate	0.57	1.58 J,J-	< 0.52 UJ	< 0.52	< 0.53	< 0.53	0.54	< 0.55	
Butachlor	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Cyanazine	< 0.22	< 0.21	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.21	< 0.22	
Metolachlor	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Metribuzin	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Pentachlorophenol	< 5.08	< 5.26 UJ	< 5.24 UJ	< 5.24	< 5.29	< 5.32	< 5.38	< 5.49	
Propachlor	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Simazine	< 0.2	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.21	< 0.22	< 0.22	
Chlorinated Acid Herbicides (USEPA Method 515.1)									
Acifluorfen	< 0.21	< 0.2	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.21	
Dalapon	< 0.21	< 0.2	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.21	
Dicamba	< 0.21	0.27	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.21	
Dinoseb	< 0.21	< 0.2	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.21	
2,4-D	< 0.21	0.82	0.67	< 0.2	< 0.21	< 0.21	< 0.21	< 0.21 UJ	
2,4,5-TP	< 0.21	< 0.2	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.21	
Pentachlorophenol	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.1	< 0.1	< 0.11	
Picloram	< 0.21	< 0.2	< 0.22 UJ	< 0.2 UJ	< 0.21	< 0.21	< 0.21	< 0.21 UJ	

Appendix Table A-2. Continued.

Site Location:	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.							SWDO Map # 17	
River Mile: 1.96								Storet ID: 609040	
Date Sampled	**04/22/14**	**05/15/14**	**06/25/14**	**07/17/14**	**07/30/14**	**08/13/14**	**09/17/14**	**10/08/14**	**5/15/2014-DUP**
Organochlorine Pesticides (USEPA Method 608)									
Aldrin	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002 UJ	< 0.0021
a-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
b-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
d-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
y-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Chlordane	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21
4,4'-DDD	< 0.0063	< 0.0062	< 0.0063	< 0.0061	< 0.0063	< 0.0062	< 0.0063	< 0.0061	< 0.0063
4,4'-DDE	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
4,4'-DDT	< 0.0063	< 0.0062	< 0.0063	< 0.0061	< 0.0063	< 0.0062	< 0.0063	< 0.0061	< 0.0063
Dieldrin	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Endosulfan I	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Endosulfan II	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Endosulfan sulfate	< 0.021	< 0.021	< 0.021	< 0.02	< 0.021	< 0.021	< 0.021	< 0.02	< 0.021
Endrin	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Endrin aldehyde	< 0.0063	< 0.0062	< 0.0063	< 0.0061	< 0.0063	< 0.0062	< 0.0063	< 0.0061	< 0.0063
Heptachlor	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Heptachlor epoxide	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Hexachlorobenzene	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021	< 0.0021	< 0.0021	< 0.002	< 0.0021
Methoxychlor	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.01	< 0.011	< 0.01	< 0.011
Mirex	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.01	< 0.011	< 0.01	< 0.011
Toxaphene	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21
Carbamate Pesticides (USEPA Method 531.1)									
Aldicarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Aldicarb sulfone	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Aldicarb sulfoxide	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Carbaryl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Carbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
3-Hydroxycarbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	0.61	< 0.5 UJ
Methiocarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Methomyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Oxamyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Propoxur	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5 UJ
Glyphosate (USEPA Method 547)									
Glyphosate	5.3	< 5	< 5	< 5.0	< 5	< 5	< 5 PT	< 5 PT	< 5
Acid Herbicides (USEPA Method 525.2)									
Acetochlor	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Alachlor	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Atrazine	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	0.3 J
Benzo[a]pyrene	< 0.51 R	< 0.51	< 0.52	< 0.55	< 0.52	< 0.55	< 0.52	< 0.57	< 0.52 UJ
bis(2-Ethylhexyl)adipate	< 0.51	< 0.51	0.55	< 0.55	< 0.52	< 0.55	< 0.52	< 0.57	< 0.52 UJ
bis(2-Ethylhexyl)phthalate	0.57	0.91 J-	0.73	< 0.55	0.73	< 0.55	< 0.52	0.57	1.06 J,J-
Butachlor	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Cyanazine	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21 UJ	< 0.21	< 0.21
Metolachlor	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Metribuzin	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Pentachlorophenol	< 5.08	< 5.1	< 5.24	< 5.49	< 5.15	< 5.49	< 5.24	< 5.71	< 5.21 UJ
Propachlor	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Simazine	< 0.2	< 0.2	< 0.21	< 0.22	< 0.21	< 0.22	< 0.21	< 0.23	< 0.21 UJ
Chlorinated Acid Herbicides (USEPA Method 515.1)									
Acifluorfen	< 0.21	< 0.21	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.23	< 0.2
Dalapon	< 0.21	< 0.21	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.23	< 0.2
Dicamba	< 0.21	0.3	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.23	0.22
Dinoseb	< 0.21	< 0.21	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.23	< 0.2
2,4-D	< 0.21	0.89	0.45	< 0.2	< 0.21	< 0.21	< 0.21	< 0.23	0.95
2,4,5-TP	< 0.21	< 0.21	< 0.22	< 0.2	< 0.21	< 0.21	< 0.21	< 0.23	< 0.2
Pentachlorophenol	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.11	< 0.1	< 0.11	< 0.1
Picloram	< 0.21	< 0.21	< 0.22 UJ	< 0.2 UJ	< 0.21	< 0.21	< 0.21	< 0.23	< 0.2

Appendix Table A-2. Continued.

Site Location	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.							SWDO Map # 19
River Mile: 2.96								Storet ID: X01W08
Date Sampled	**04/22/14**	**05/15/14**	**06/24/14**	**07/16/14**	**07/29/14**	**08/12/14**	**09/18/14**	**10/08/14**
Organochlorine Pesticides (USEPA Method 608)								
Aldrin	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002 UJ
a-BHC	< 0.0021	< 0.0021	0.013	0.0046	< 0.0021	< 0.0022	0.0032	0.0077
b-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
d-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
y-BHC	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Chlordane	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.22	< 0.21	< 0.2
4,4'-DDD	< 0.0062	< 0.0064	< 0.0063	< 0.0062	< 0.0062	< 0.0065	< 0.0062	< 0.0061
4,4'-DDE	< 0.0021	< 0.0021	0.0034	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
4,4'-DDT	< 0.0062	< 0.0064	< 0.0063	< 0.0062	< 0.0062	< 0.0065	< 0.0062	< 0.0061
Dieldrin	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Endosulfan I	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Endosulfan II	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Endosulfan sulfate	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.022	< 0.021	< 0.02
Endrin	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Endrin aldehyde	< 0.0062	< 0.0064	< 0.0063	< 0.0062	< 0.0062	< 0.0065	< 0.0062	< 0.0061
Heptachlor	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Heptachlor epoxide	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Hexachlorobenzene	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.002
Methoxychlor	< 0.01	< 0.011	< 0.011	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01
Mirex	< 0.01	< 0.011	< 0.011	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01
Toxaphene	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.22	< 0.21	< 0.2
Carbamate Pesticides (USEPA Method 531.1)								
Aldicarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Aldicarb sulfone	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Aldicarb sulfoxide	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Carbaryl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Carbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
3-Hydroxycarbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Methiocarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Methomyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Oxamyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Propoxur	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5
Glyphosate (USEPA Method 547)								
Glyphosate	< 5	< 5	< 5	< 5	< 5	< 5	< 5 PT	< 5 PT
Acid Herbicides (USEPA Method 525.2)								
Acetochlor	< 0.21	0.37	< 0.22	< 0.21	< 0.23	< 0.22	< 0.21 UJ	< 0.2
Alachlor	< 0.21	< 0.21	< 0.22	< 0.21	< 0.23	< 0.22	< 0.21 UJ	0.24
Atrazine	< 0.21	3.25	< 0.22	< 0.21	< 0.23	0.24	< 0.21 UJ	< 0.2
Benzo[a]pyrene	< 0.53 R	< 0.52	< 0.55	< 0.53	< 0.57	< 0.54	< 0.53 UJ	< 0.51
bis(2-Ethylhexyl)adipate	< 0.53	< 0.52	< 0.55	< 0.53	< 0.57	< 0.54	0.63 J	< 0.51
bis(2-Ethylhexyl)phthalate	< 0.53	0.73 J-	< 0.55	< 0.53	< 0.57	< 0.54	0.54 J	< 0.51
Butachlor	< 0.21	< 0.21	< 0.22	< 0.21	< 0.23	< 0.22	< 0.21 UJ	0.29
Cyanazine	< 0.22	< 0.21 UJ	< 0.22 UJ	< 0.21	< 0.22	< 0.22	< 0.21 UJ	< 0.21
Metolachlor	< 0.21	0.45	0.53	< 0.21	< 0.23	< 0.22	< 0.21 UJ	0.25
Metribuzin	< 0.21	1.15	< 0.22	< 0.21	< 0.23	< 0.22	< 0.21 UJ	< 0.2
Pentachlorophenol	< 5.26	< 5.15	< 5.49	< 5.29	< 5.65	< 5.41	< 5.32 UJ	< 5.1
Propachlor	< 0.21	< 0.21	< 0.22	< 0.21	< 0.23	< 0.22	< 0.21 UJ	< 0.2
Simazine	< 0.21	< 0.21	< 0.22	< 0.21	< 0.23	< 0.22	< 0.21 UJ	< 0.2
Chlorinated Acid Herbicides (USEPA Method 515.1)								
Acifluorfen	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.2	< 0.22
Dalapon	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.2	< 0.22
Dicamba	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.2	< 0.22
Dinoseb	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.2	< 0.22
2,4-D	< 0.21	0.29	< 0.21	< 0.21	< 0.21	< 0.21	< 0.2	< 0.22 UJ
2,4,5-TP	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.2	< 0.22
Pentachlorophenol	< 0.1	< 0.1	< 0.11	< 0.11	< 0.11	< 0.1	< 0.1	< 0.11
Picloram	< 0.21	< 0.21	< 0.21 UJ	< 0.21 UJ	< 0.21	< 0.21	< 0.2	< 0.22 UJ

Appendix Table A-2. Continued.

Site Location:	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756							SWDO Map # 32	
River Mile: 1.71								Storet ID: 609080	
Date Sampled	**04/22/14**	**05/15/14**	**06/24/14**	**07/16/14**	**07/29/14**	**08/12/14**	**09/18/14**	**10/08/14**	**6/24/2014-DUP**
Organochlorine Pesticides (USEPA Method 608)									
Aldrin	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021 UJ	< 0.22
a-BHC	< 0.0021	< 0.0021	0.011	0.0025	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022
b-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022
d-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022
y-BHC	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022
Chlordane	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.0022
4,4'-DDD	< 0.0063	< 0.0062	< 0.0065	< 0.0062	< 0.0062	< 0.0062	< 0.0064	< 0.0063	0.0096
4,4'-DDE	< 0.0021	< 0.0021	0.0036	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0065
4,4'-DDT	< 0.0063	< 0.0062	< 0.0065	< 0.0062	< 0.0062	< 0.0062	< 0.0064	< 0.0063	< 0.0065
Dieldrin	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.022
Endosulfan I	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022
Endosulfan II	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0065
Endosulfan sulfate	< 0.021	< 0.021	< 0.022	< 0.021	< 0.021	< 0.021	< 0.021	< 0.021	< 0.0022
Endrin	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0022
Endrin aldehyde	< 0.0063	< 0.0062	< 0.0065	< 0.0062	< 0.0062	< 0.0062	< 0.0064	< 0.0063	< 0.0022
Heptachlor	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.011
Heptachlor epoxide	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.011
Hexachlorobenzene	< 0.0021	< 0.0021	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.0021	< 0.22
Methoxychlor	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.01	0.003
Mirex	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.01	< 0.011	< 0.01	< 0.0022
Toxaphene	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.0022
Carbamate Pesticides (USEPA Method 531.1)									
Aldicarb	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Aldicarb sulfone	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Aldicarb sulfoxide	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Carbaryl	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Carbofuran	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
3-Hydroxycarbofuran	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	0.54	< 0.5
Methiocarb	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Methomyl	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Oxamyl	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Propoxur	< 0.5 PT,UJ	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Glyphosate (USEPA Method 547)									
Glyphosate	< 5	< 5	< 5	< 5	< 5	< 5	< 5 PT	< 5 PT	< 5
Acid Herbicides (USEPA Method 525.2)									
Acetochlor	< 0.2	0.27 J	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	0.58
Alachlor	< 0.2	< 0.22 UJ	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21
Atrazine	< 0.2	1.29 J	< 0.22	0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21
Benzo[a]pyrene	< 0.51 R	< 0.55 UJ	< 0.54	< 0.53	< 0.54	< 0.53	< 0.53	< 0.51	< 0.21
bis(2-Ethylhexyl)adipate	< 0.51	< 0.55 UJ	< 0.54	< 0.53	< 0.54	< 0.53	< 0.53	< 0.51	< 0.52
bis(2-Ethylhexyl)phthalate	< 0.51	1.25 J,J-	< 0.54	< 0.53	0.6	1.06	< 0.53	< 0.51	< 0.21
Butachlor	< 0.2	< 0.22 UJ	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21
Cyanazine	< 0.22	< 0.21	< 0.21 UJ	< 0.21	< 0.21 UJ	< 0.21 UJ	< 0.22 UJ	< 0.21	< 0.21
Metolachlor	< 0.2	0.23 J	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 5.24
Metribuzin	< 0.2	< 0.22 UJ	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.21
Pentachlorophenol	< 5.1	< 5.52 UJ	< 5.43	< 5.32	< 5.38	< 5.32	< 5.32	< 5.13	< 0.21
Propachlor	< 0.2	< 0.22 UJ	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.52
Simazine	< 0.2	< 0.22 UJ	< 0.22	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21	< 0.22 UJ
Chlorinated Acid Herbicides (USEPA Method 515.1)									
Acifluorfen	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.22	< 0.21	< 0.22
Dalapon	< 0.21	< 0.21	< 0.21	< 0.2 UJ	< 0.21	< 0.21	< 0.22	< 0.21	< 0.22
Dicamba	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.22	< 0.21	< 0.22
Dinoseb	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.22	< 0.21	< 0.22
2,4-D	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.22	< 0.21 UJ	< 0.22
2,4,5-TP	< 0.21	< 0.21	< 0.21	< 0.2	< 0.21	< 0.21	< 0.22	< 0.21	< 0.22
Pentachlorophenol	< 0.1	< 0.1	< 0.11	< 0.1	< 0.1	< 0.11	< 0.11	< 0.1	< 0.11
Picloram	< 0.21	< 0.21	< 0.21 Uj	< 0.2	< 0.21	< 0.21	< 0.22	< 0.21 UJ	< 0.22 UJ

Appendix Table A-2. Continued.

Site Location:	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN							SWDO Map # 36	
River Mile: 2.08								Storet ID: 302534	
Date Sampled	**04/22/14**	**05/15/14**	**06/26/14**	**07/17/14**	**07/30/14**	**08/13/14**	**09/17/14**	**10/08/14**	**7/17/2014-DUP**
Organochlorine Pesticides (USEPA Method 608)									
Aldrin	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021 UJ	< 0.002
a-BHC	< 0.0022	< 0.0022	0.007	0.0032	< 0.0022	< 0.0021	0.0026	0.0051	0.0029
b-BHC	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
d-BHC	< 0.0022	< 0.0022	0.0045	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
y-BHC	< 0.0022	0.0058	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Chlordane	< 0.22	< 0.22	ns	< 0.2	< 0.22	< 0.21	< 0.21	< 0.21	< 0.2
4,4'-DDD	< 0.0065	< 0.0067	< 0.0062	< 0.0061	< 0.0066	< 0.0062	< 0.0062	< 0.0063	< 0.006
4,4'-DDE	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
4,4'-DDT	< 0.0065	0.0085	< 0.0062	< 0.0061	< 0.0066	< 0.0062	< 0.0062	< 0.0063	< 0.006
Dieldrin	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Endosulfan I	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Endosulfan II	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Endosulfan sulfate	< 0.022	< 0.022	< 0.021	< 0.02	< 0.022	< 0.021	< 0.021	< 0.021	< 0.02
Endrin	< 0.0022	0.0032	0.0034	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Endrin aldehyde	< 0.0065	< 0.0067	< 0.0062	< 0.0061	< 0.0066	< 0.0062	< 0.0062	< 0.0063	< 0.006
Heptachlor	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Heptachlor epoxide	< 0.0022	< 0.0022	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Hexachlorobenzene	< 0.0022	0.0032 J-	< 0.0021	< 0.002	< 0.0022	< 0.0021	< 0.0021	< 0.0021	< 0.002
Methoxychlor	< 0.011	< 0.011	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.011	< 0.01
Mirex	< 0.011	< 0.011	< 0.01	< 0.01	< 0.011	< 0.01	< 0.01	< 0.011	< 0.01
Toxaphene	< 0.22	< 0.22	< 0.21	< 0.2	< 0.22	< 0.21	< 0.21	< 0.21	< 0.2
Carbamate Pesticides (USEPA Method 531.1)									
Aldicarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Aldicarb sulfone	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Aldicarb sulfoxide	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Carbaryl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Carbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
3-Hydroxycarbofuran	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	1.14	< 0.5
Methiocarb	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Methomyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	0.62	< 0.5 PT	< 0.5	< 0.5	< 0.5
Oxamyl	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Propoxur	< 0.5 PT	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 PT	< 0.5	< 0.5	< 0.5
Glyphosate (USEPA Method 547)									
Glyphosate	< 5	< 5	< 5	< 5	< 5	< 5	< 5 PT	< 5 PT	< 5
Acid Herbicides (USEPA Method 525.2)									
Acetochlor	< 0.2	6.44	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	1.4	< 0.22
Alachlor	< 0.2	< 2.3	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	< 0.21	< 0.22
Atrazine	< 0.2	23.2	< 0.21 UJ	0.27	< 0.22	0.25 J	< 0.21	< 0.21	0.27
Benzo[a]pyrene	< 0.51 R	< 5.75	< 0.53 UJ	< 0.52	< 0.54	< 0.53 UJ	< 0.52	< 0.21	< 0.54
bis(2-Ethylhexyl)adipate	< 0.51	< 5.75	< 0.53 UJ	< 0.52	< 0.54	< 0.53 UJ	< 0.52	< 0.52	< 0.54
bis(2-Ethylhexyl)phthalate	< 0.51	< 5.75	3.09 J	0.91	< 0.54	< 0.53 UJ	< 0.52	< 0.21	0.98
Butachlor	< 0.2	< 2.3	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	< 0.21	< 0.22
Cyanazine	< 0.21	< 0.21	< 0.21	< 0.21	< 0.21	< 0.22	< 0.21	< 0.21	< 0.21 UJ
Metolachlor	< 0.2	2.3	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	< 5.15	< 0.22
Metribuzin	< 0.2	6.78	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	< 0.21	< 0.22
Pentachlorophenol	< 5.1	< 57.5	< 5.32 UJ	< 5.15	< 5.41	< 5.26 UJ	< 5.21	< 0.21	< 5.41
Propachlor	< 0.2	< 2.3	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	< 0.52	< 0.22
Simazine	< 0.2	< 2.3	< 0.21 UJ	< 0.21	< 0.22	< 0.21 UJ	< 0.21	< 0.21	< 0.22
Chlorinated Acid Herbicides (USEPA Method 515.1)									
Acifluorfen	< 0.21	< 0.21	< 0.22	< 0.2	< 0.25	< 0.21	< 0.21	< 0.22	< 0.2
Dalapon	< 0.21	< 0.21	< 0.22	< 0.2	< 0.25	< 0.21	< 0.21	< 0.22	< 0.2
Dicamba	< 0.21	< 0.21	< 0.22	< 0.2	< 0.25	< 0.21	< 0.21	< 0.22	< 0.2
Dinoseb	< 0.21	< 0.21	< 0.22	< 0.2	< 0.25	< 0.21	< 0.21	< 0.22	< 0.2
2,4-D	< 0.21	0.97	< 0.22	< 0.2	< 0.25	< 0.21	< 0.21	< 0.22 UJ	< 0.2
2,4,5-TP	< 0.21	< 0.21	< 0.22	< 0.2	< 0.25	< 0.21	< 0.21	< 0.22	< 0.2
Pentachlorophenol	< 0.1	< 0.11	< 0.11	< 0.1	< 0.13	< 0.11	< 0.1	< 0.11	< 0.1
Picloram	< 0.21	< 0.21	< 0.22	< 0.2 UJ	< 0.25	< 0.21	< 0.21	< 0.22 UJ	< 0.2 UJ

Appendix Table A-2. Continued.

<	Less than the method detection limit (MDL value reported with the less than symbol).
J	The analyte was positively identified, the associated numerical value is estimated.
J-	The analyte was positively identified, the associated numerical value is estimated, but the actual value may be lower.
J+	The analyte was positively identified, the associated numerical value is estimated, but the actual value may be higher.
U	Analyte result is reported with the value between its reported quantitation limit and its lowest calibration standard.
UJ	The analyte was not detected above the sample quantitation limit (QL). However, the reported QL is estimated.
B	Analyte result is estimated. Analyte was detected in the associated method/trip/field blank as well as in the sample .
PT	Reported result is estimated because the sample was not analyzed within the required holding time.
ns	No sample

Appendix Table D – Water Quality Sonde Results

Sonde Survey 1: 7/9/2014 – 7/11/2014

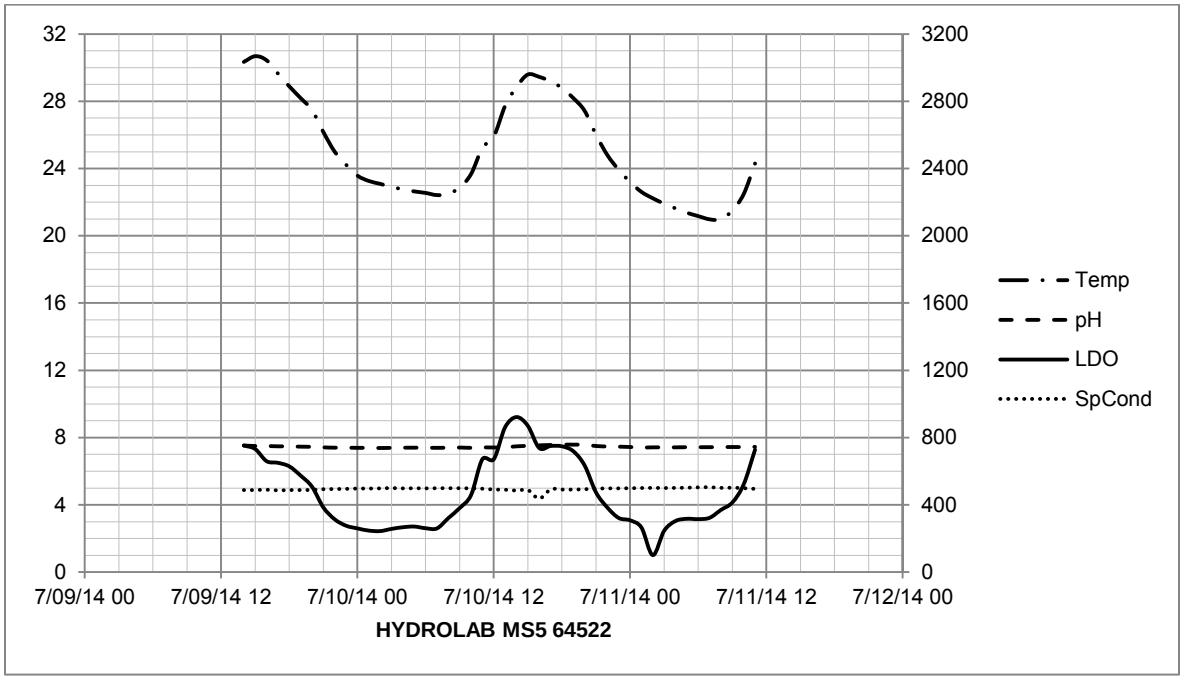

Figure 1: Plot of hourly data collected by a water quality sonde on Bullskin Creek NE of Cedron at Dunbar Rd. (RM 4.38; STORET: X01W07). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

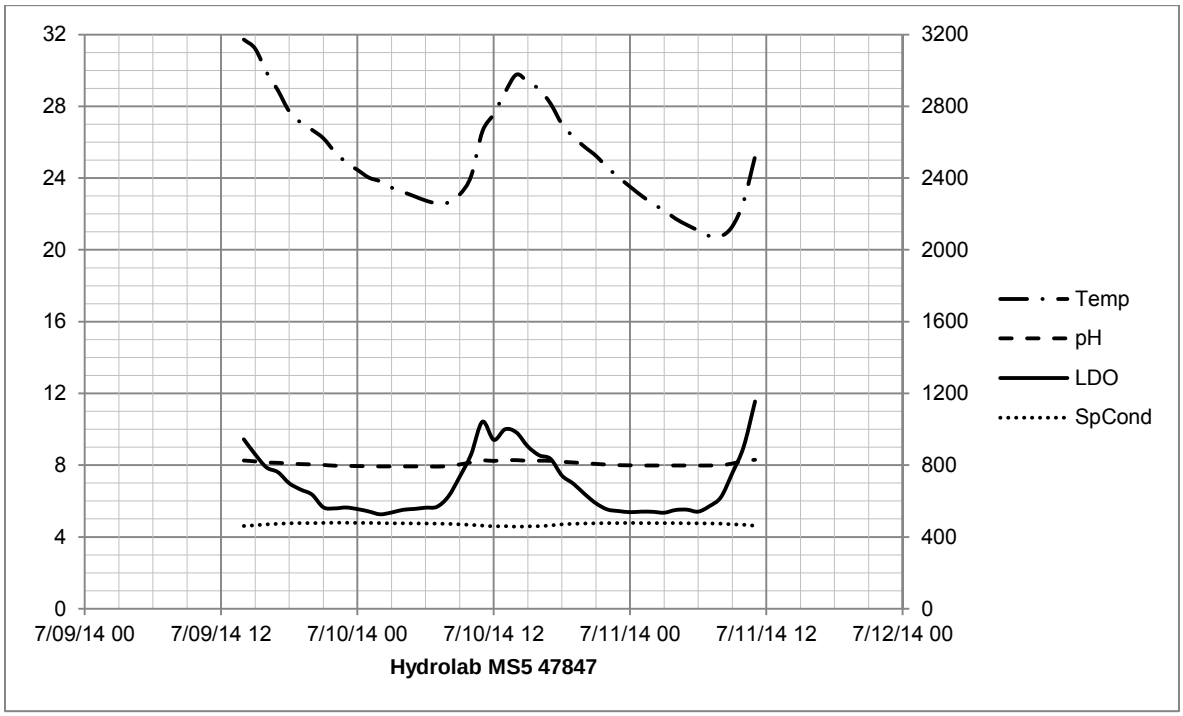

Figure 2: Plot of hourly data collected by a water quality sonde on Bullskin Creek at Felicity Cedron Rural Rd. (RM 2.96; STORET: X01W08). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

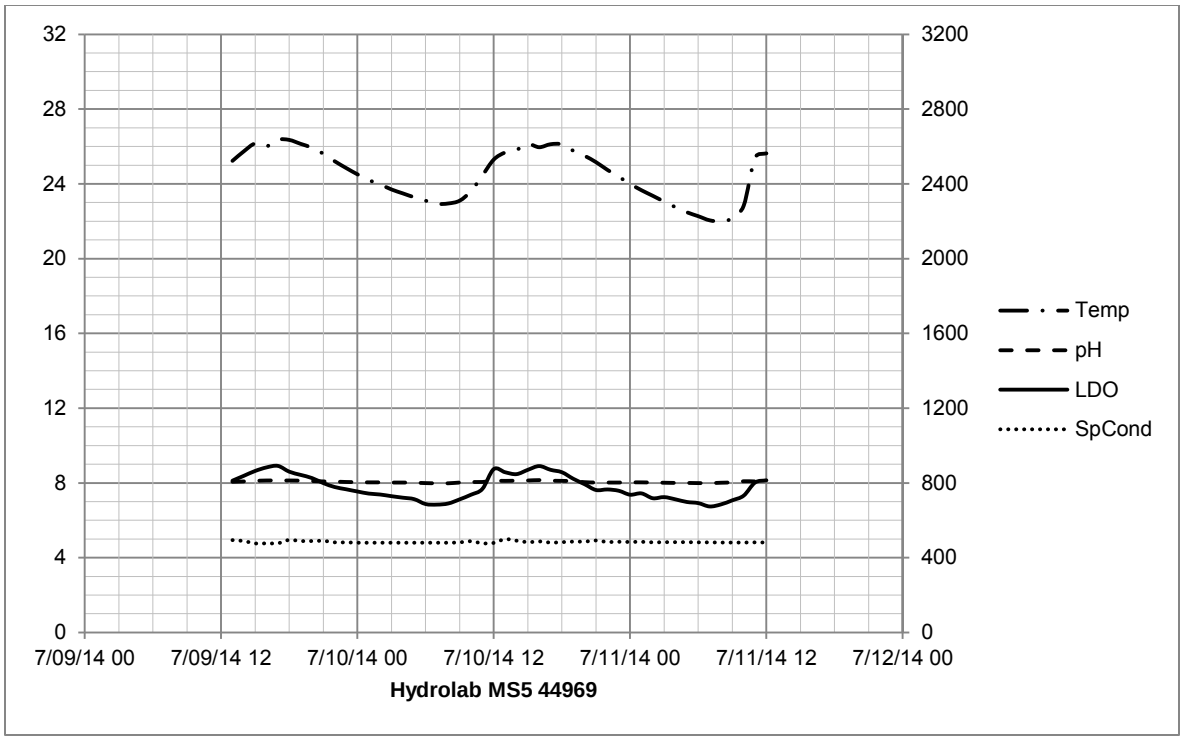

Figure 3: Plot of hourly data collected by a water quality sonde on Big Indian Creek E of Point Pleasant at SR 743 (RM 4.89; STORET: X01W04). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

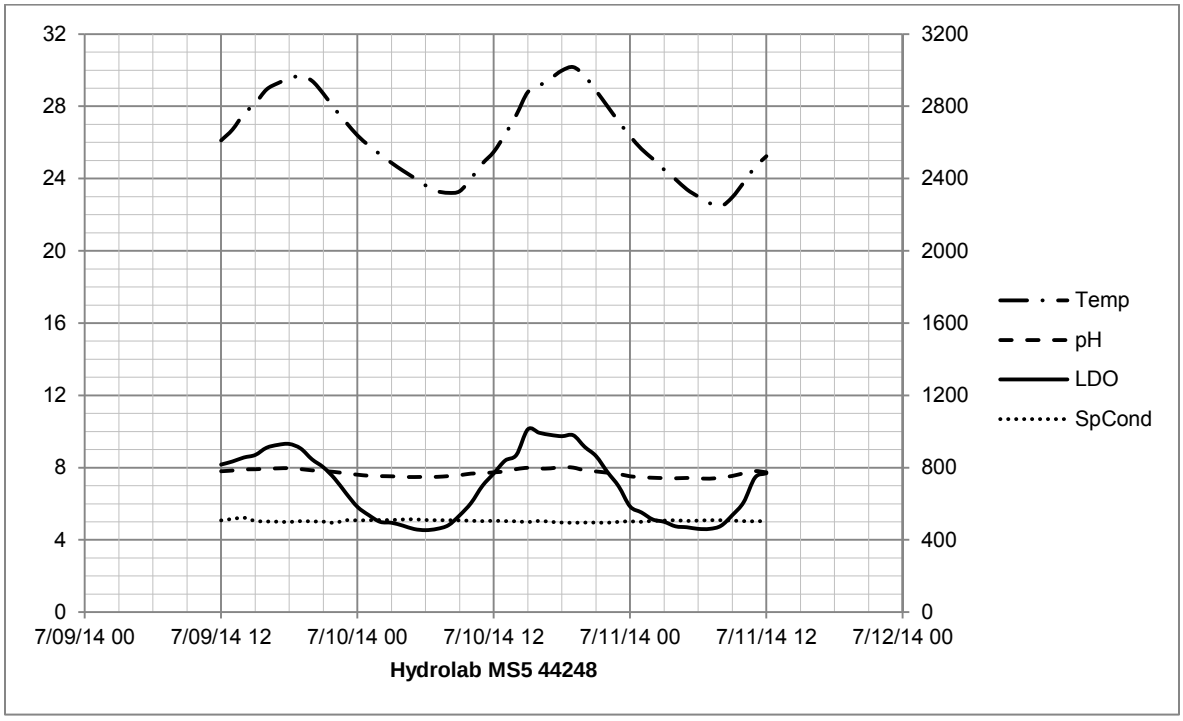

Figure 4: Plot of hourly data collected by a water quality sonde on Big Indian Creek at Point Pleasant at SR 756 (RM 1.71; STORET: 609080). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

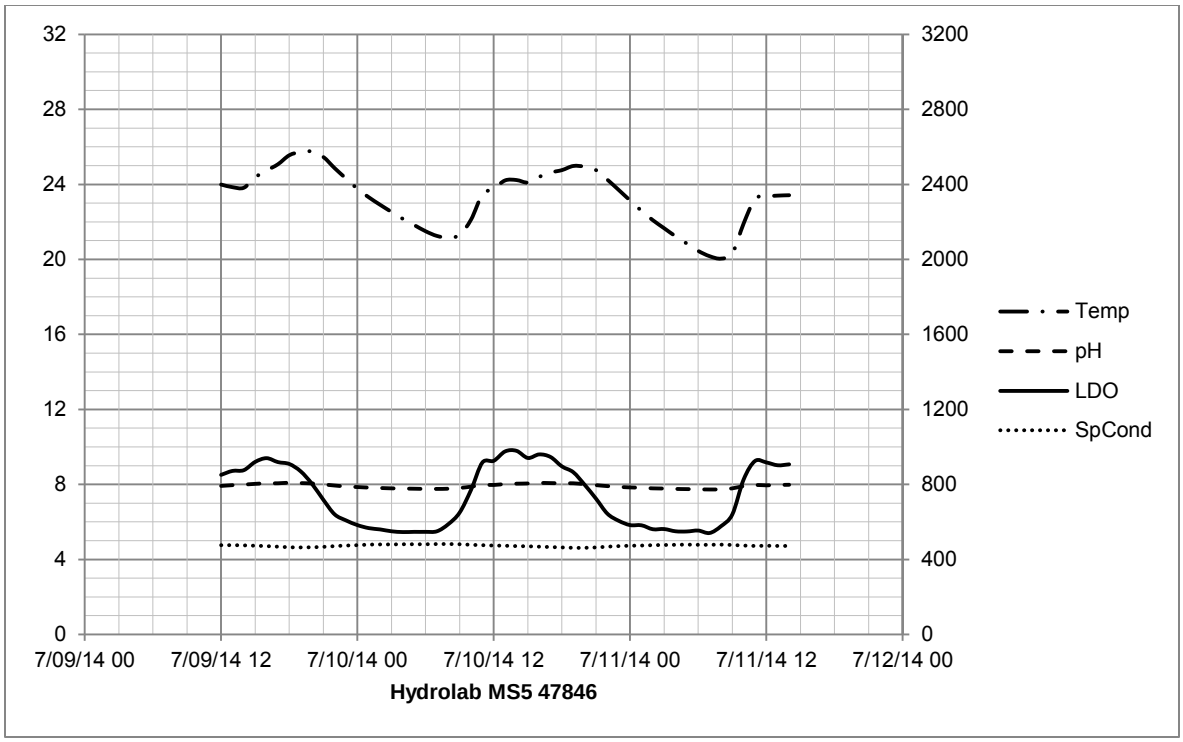

Figure 5: Plot of hourly data collected by a water quality sonde on Twelvemile Creek at Fagins Run Rd. (RM 2.08; STORET: 302534). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

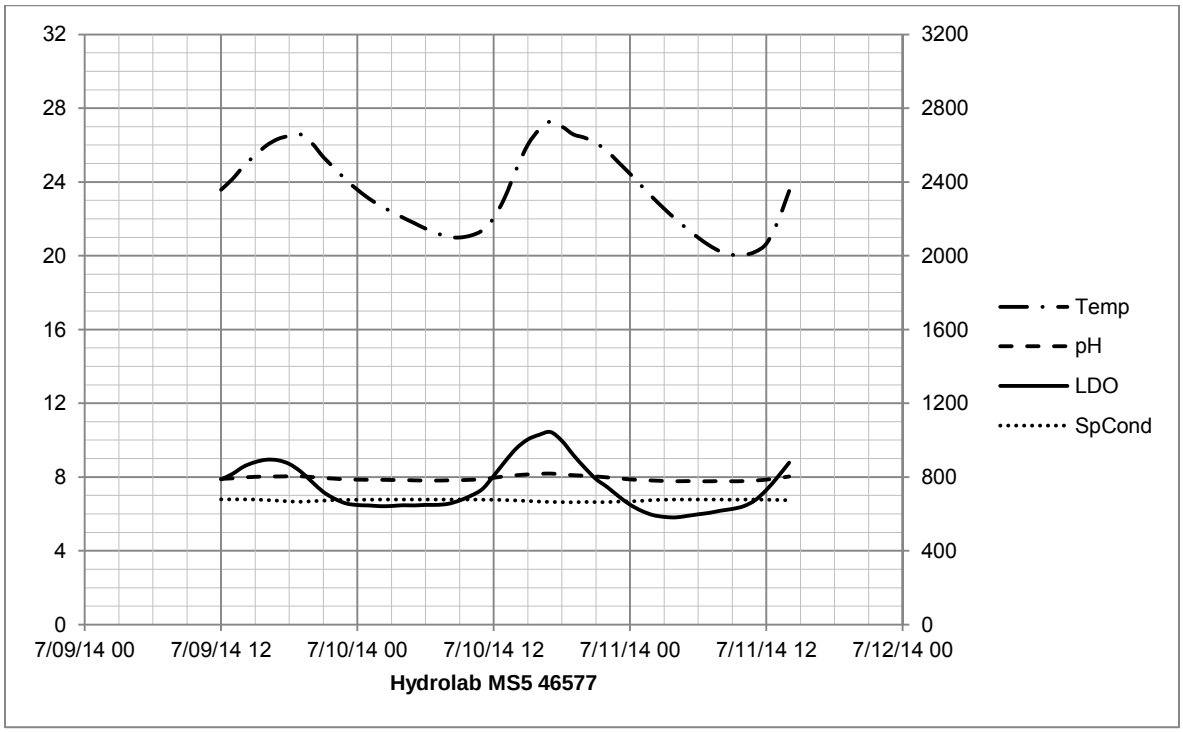

Figure 6: Plot of hourly data collected by a water quality sonde on Tenmile Creek near Palestine @ US Rt 52 (RM 1.17; STORET: 609050). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

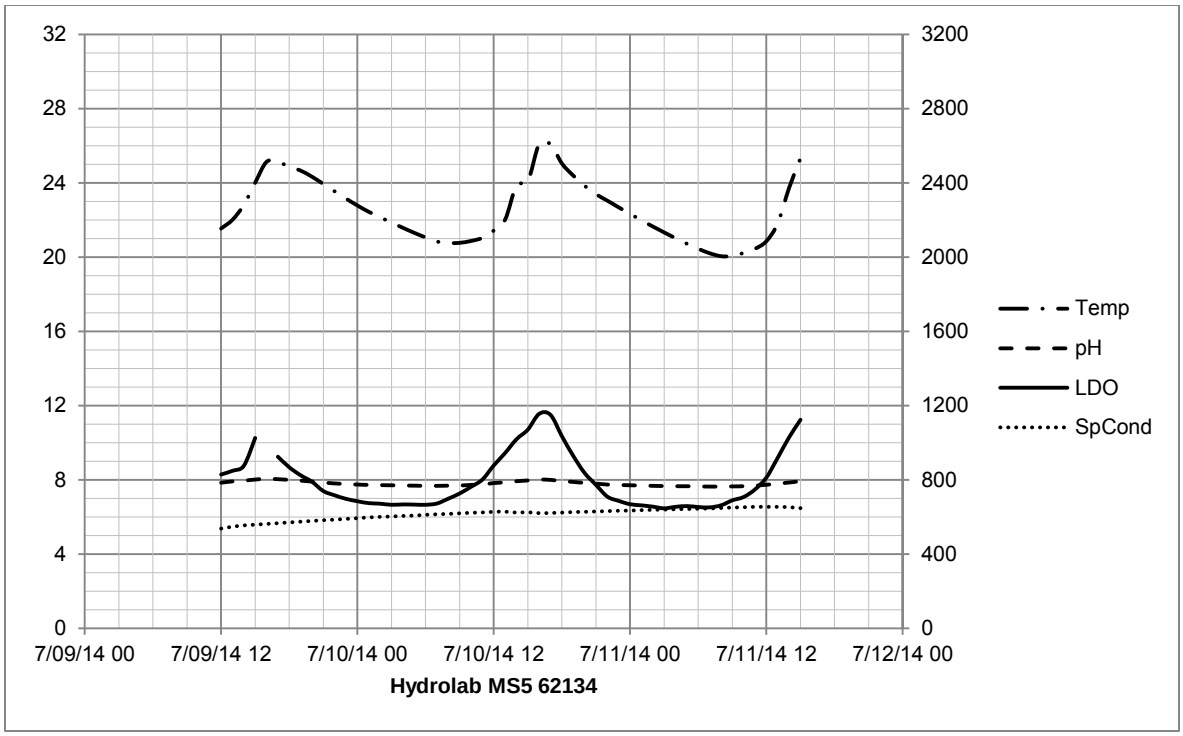

Figure 7: Plot of hourly data collected by a water quality sonde Ninemile Creek upst WWTP at Locust Corner Rd. (RM 0.79; STORET: X01W01). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

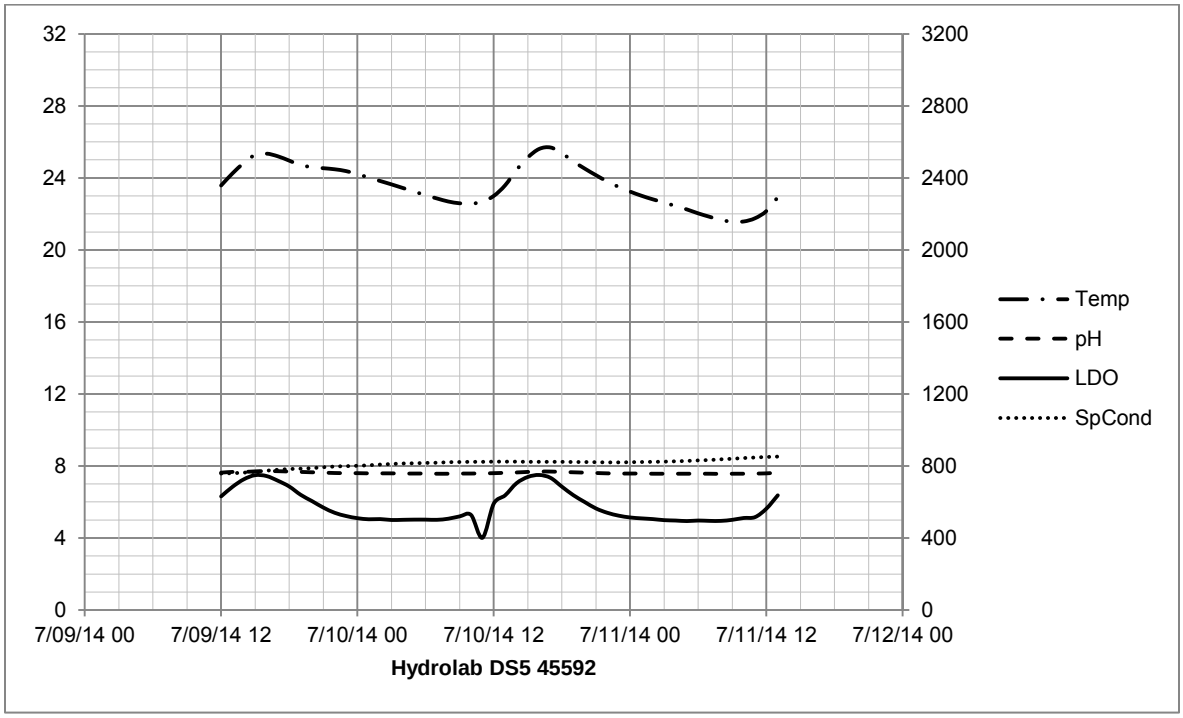

Figure 8: Plot of hourly data collected by a water quality sonde on Mill Creek near Crescentville at Crescentville Rd. (RM 18.69; STORET: Q01W05). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

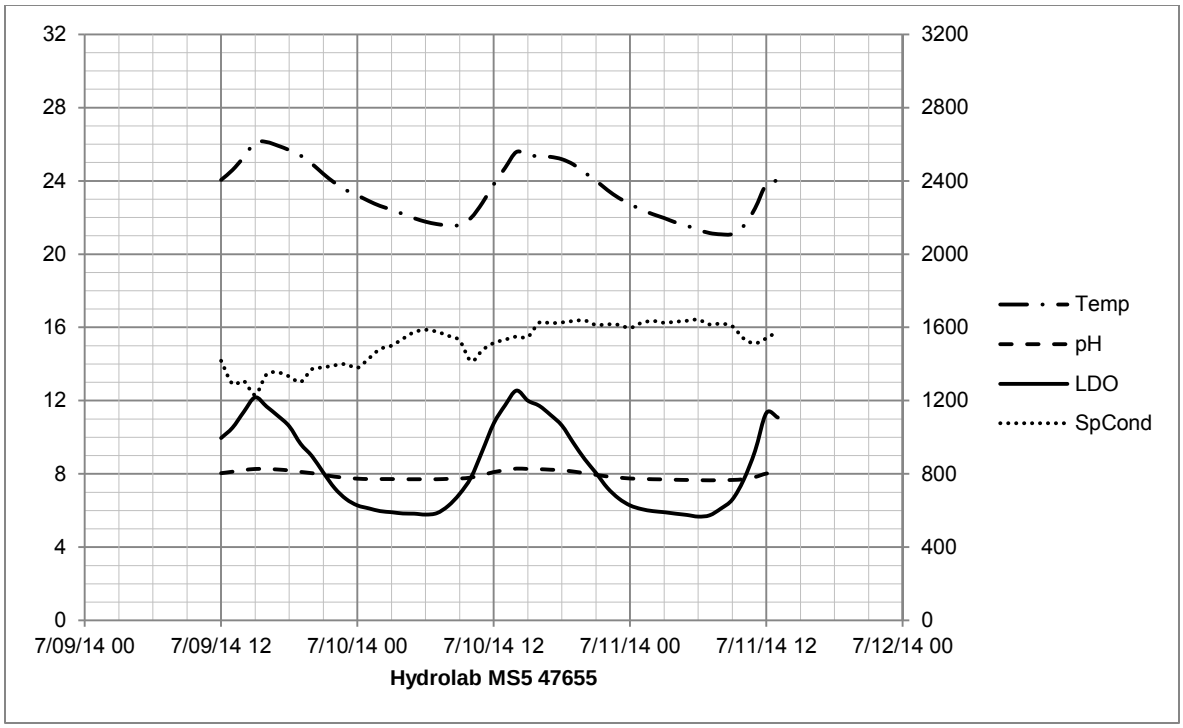

Figure 9: Plot of hourly data collected by a water quality sonde on Mill Creek NE of Glendale at Kemper Rd. (RM 17.61; STORET: Q01S17). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

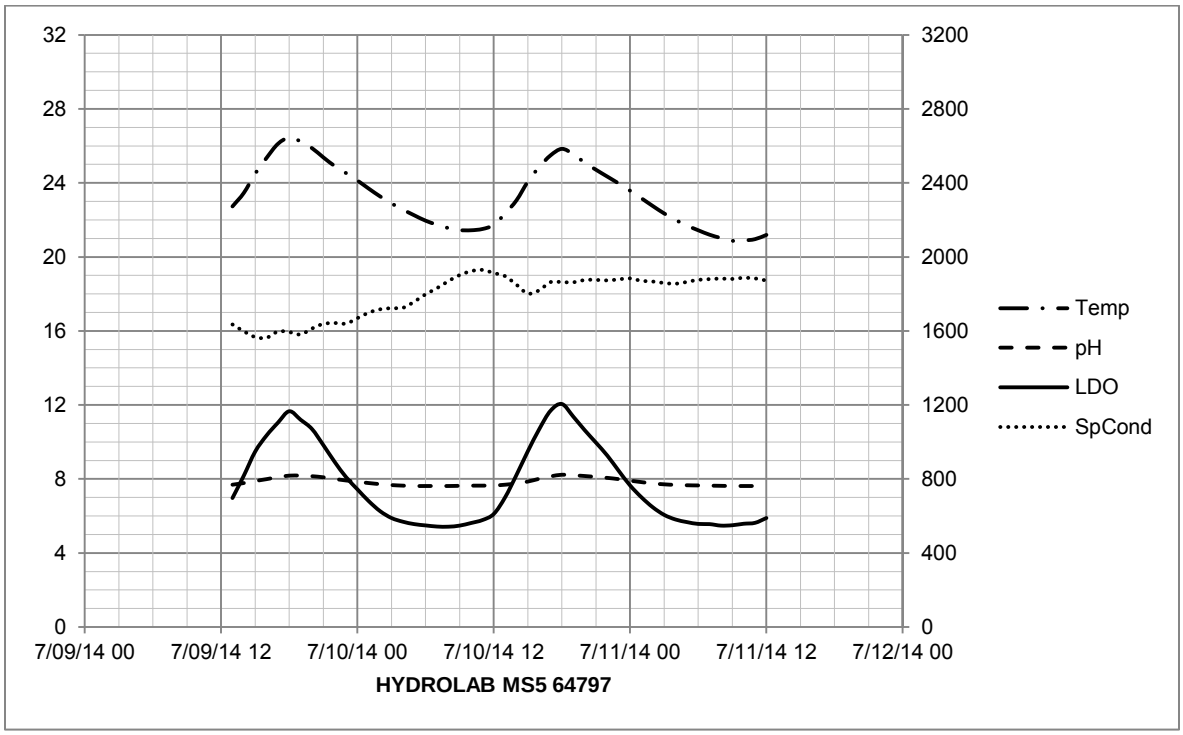

Figure 10: Plot of hourly data collected by a water quality sonde on Mill Creek at Sharonville @ Sharon Rd. (RM 16.57; STORET: 600400). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

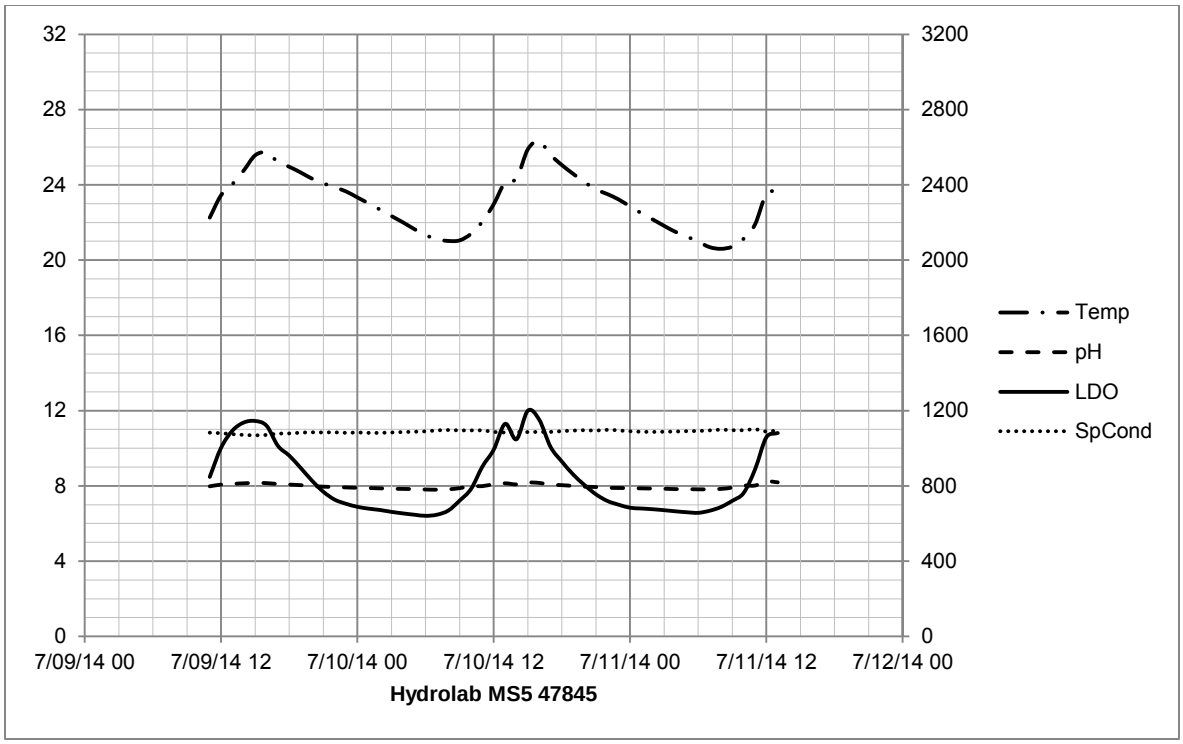

Figure 11: Plot of hourly data collected by a water quality sonde on East Fork Mill Creek near West Chester at Allen Rd. (RM 1.85; STORET: 600460). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

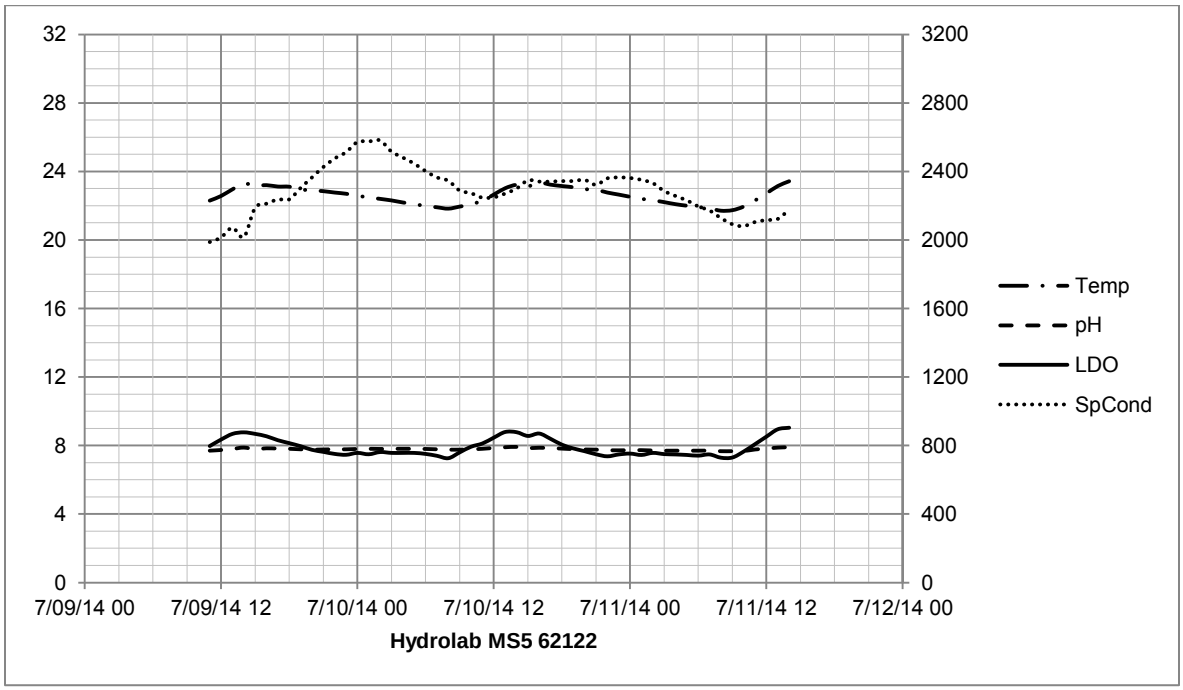

Figure 12: Plot of hourly data collected by a water quality sonde on East Fork Mill Creek near Crescentville at Crescentville Rd. (RM 0.76; STORET: Q01P01). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

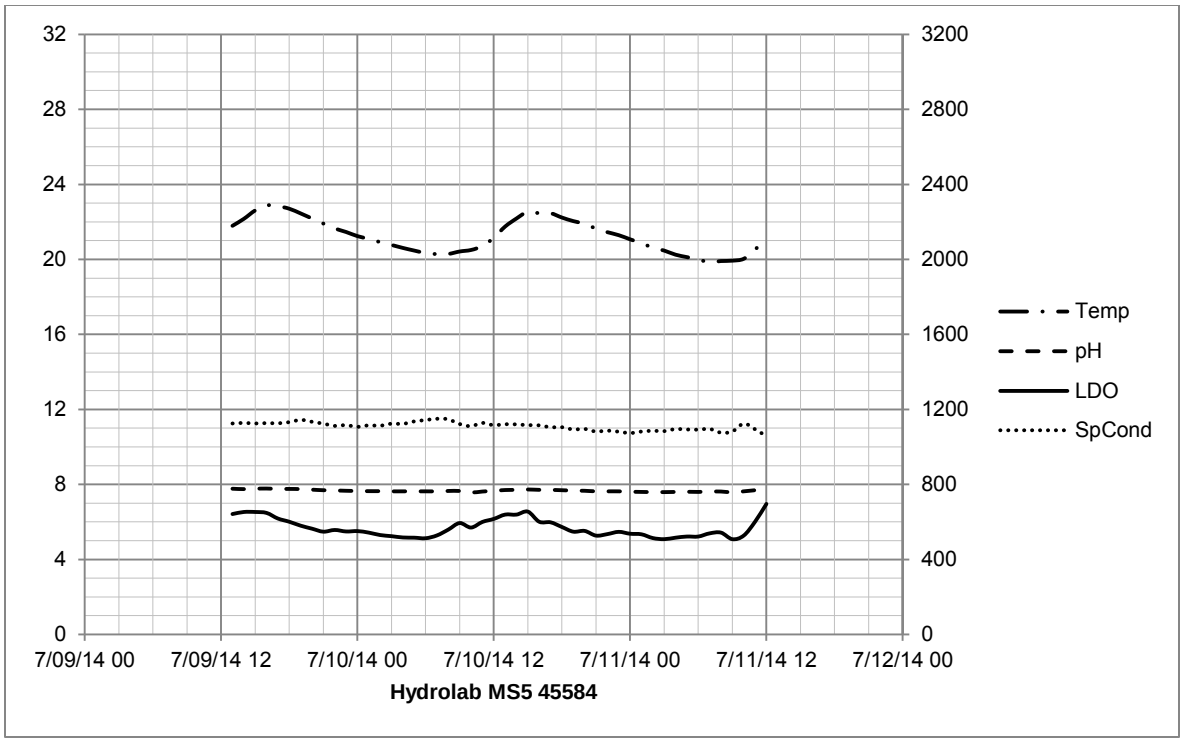

Figure 13: Plot of hourly data collected by a water quality sonde on Town Run dst Glendale WWTP at Chester Rd. (RM 0.67; STORET: Q01S02). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

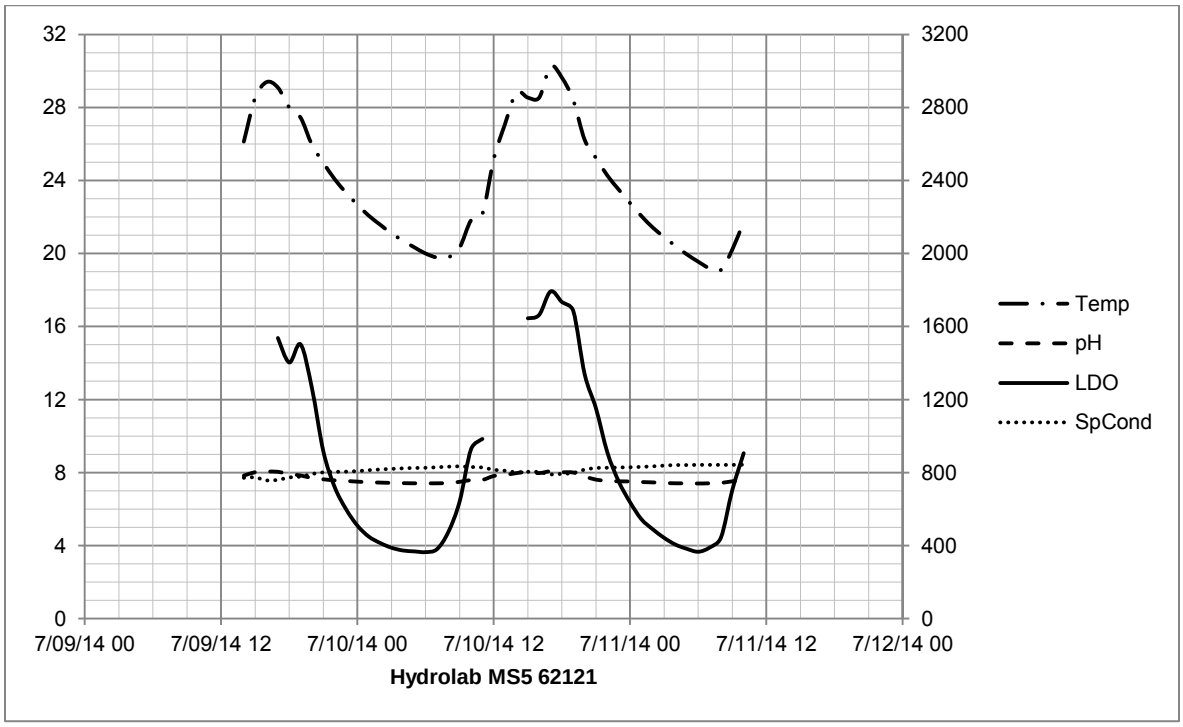

Figure 14: Plot of hourly data collected by a water quality sonde on Muddy Creek near Cincinnati at Hillside Rd. (RM 1.96; STORET: 609040). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

Sonde Survey 2: 2/27/2015 – 3/17/2015

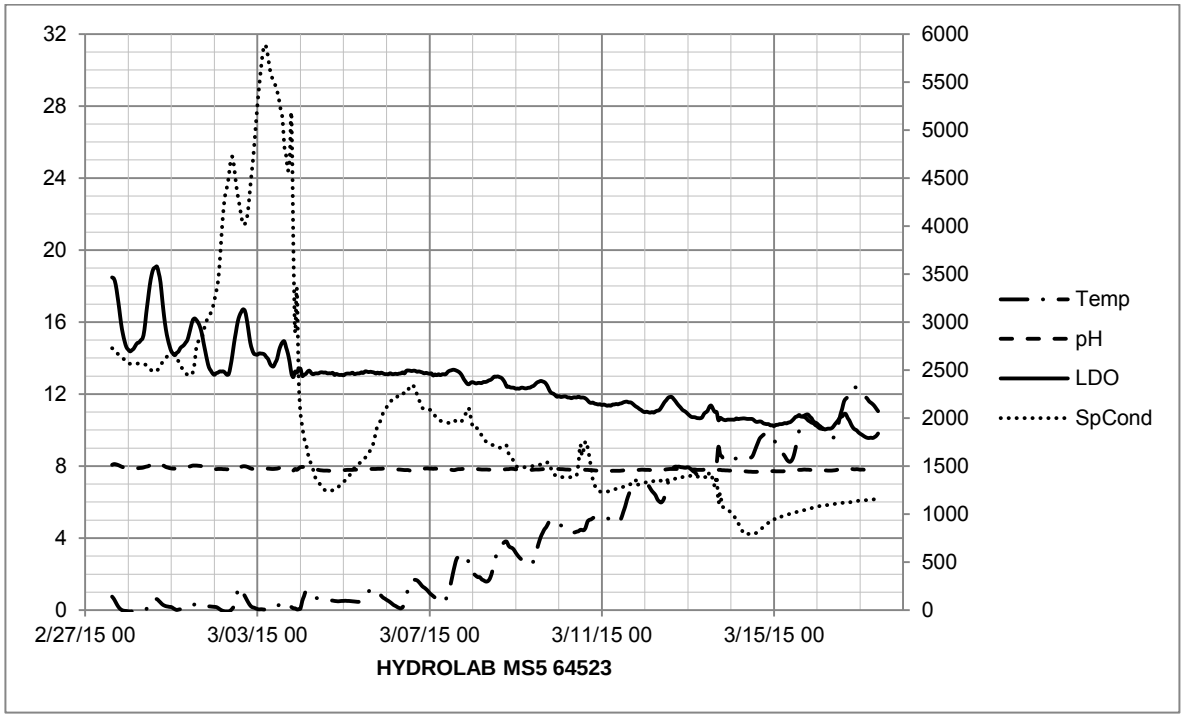

Figure 15: Plot of hourly data collected by a water quality sonde on Mill Creek near Crescentville at Crescentville Rd. (RM 18.69; STORET: Q01W05). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

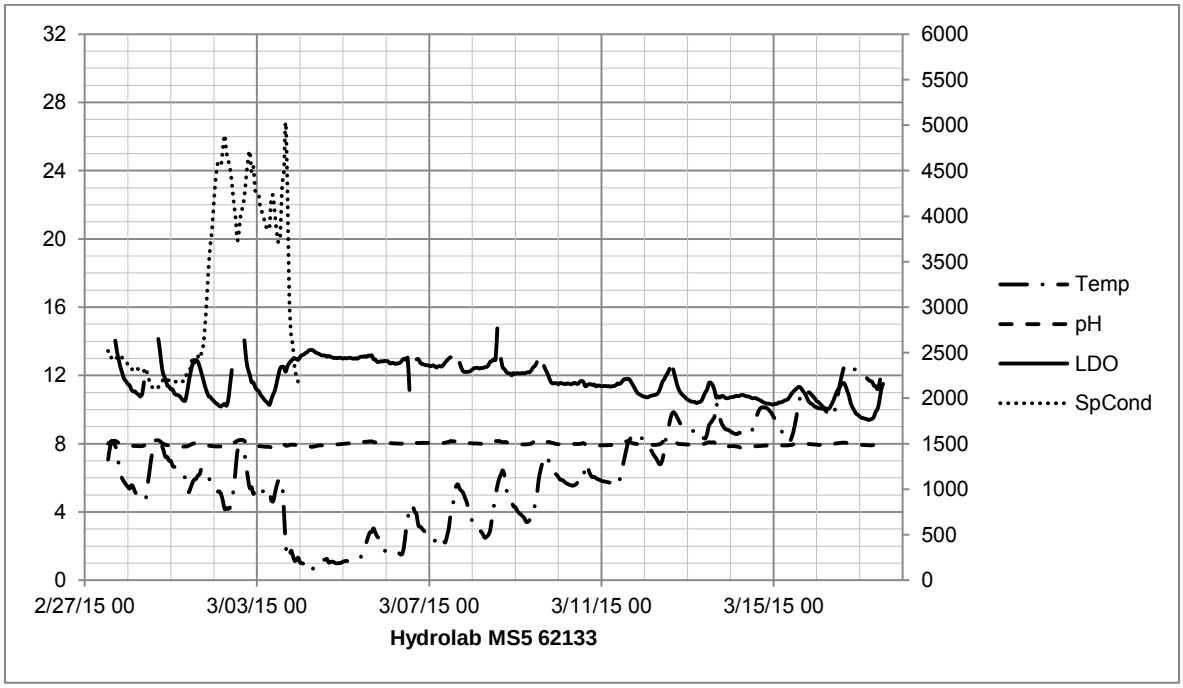

Figure 16: Plot of hourly data collected by a water quality sonde on Mill Creek NE of Glendale at Kemper Rd. (RM 17.61; STORET: Q01S17). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

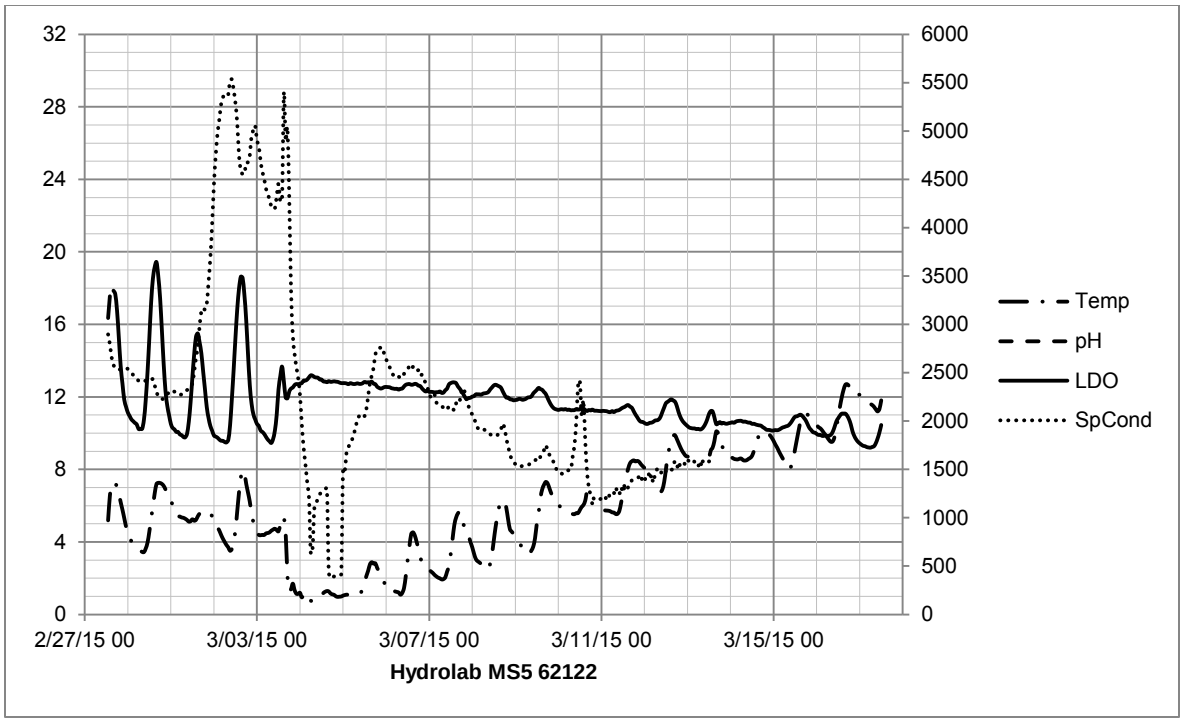

Figure 17: Plot of hourly data collected by a water quality sonde on Mill Creek at Sharonville at Sharon Rd. (RM 16.57; STORET: 600400). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

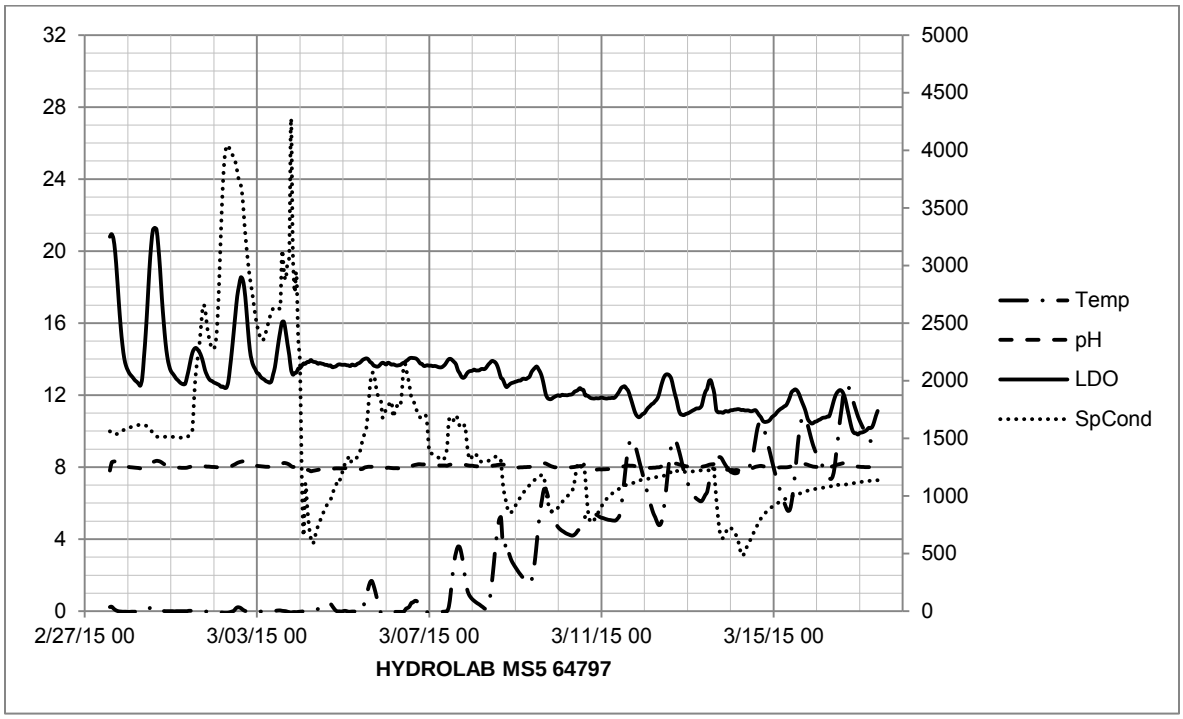

Figure 18: Plot of hourly data collected by a water quality sonde on East Fork Mill Creek near West Chester at Allen Rd. (RM 1.85; STORET: 600460). Temperature (°C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

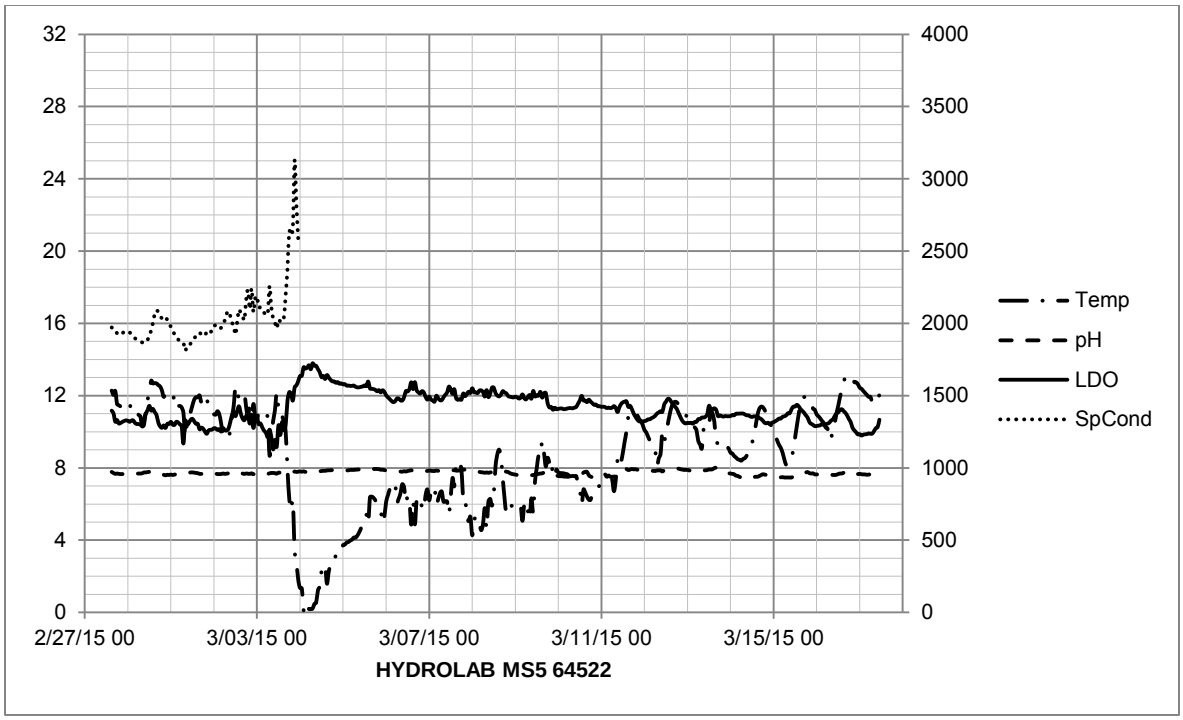

Figure 19: Plot of hourly data collected by a water quality sonde on East Fork Mill Creek near Crescentville at Crescentville Rd. (RM 0.76; STORET: Q01P01). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

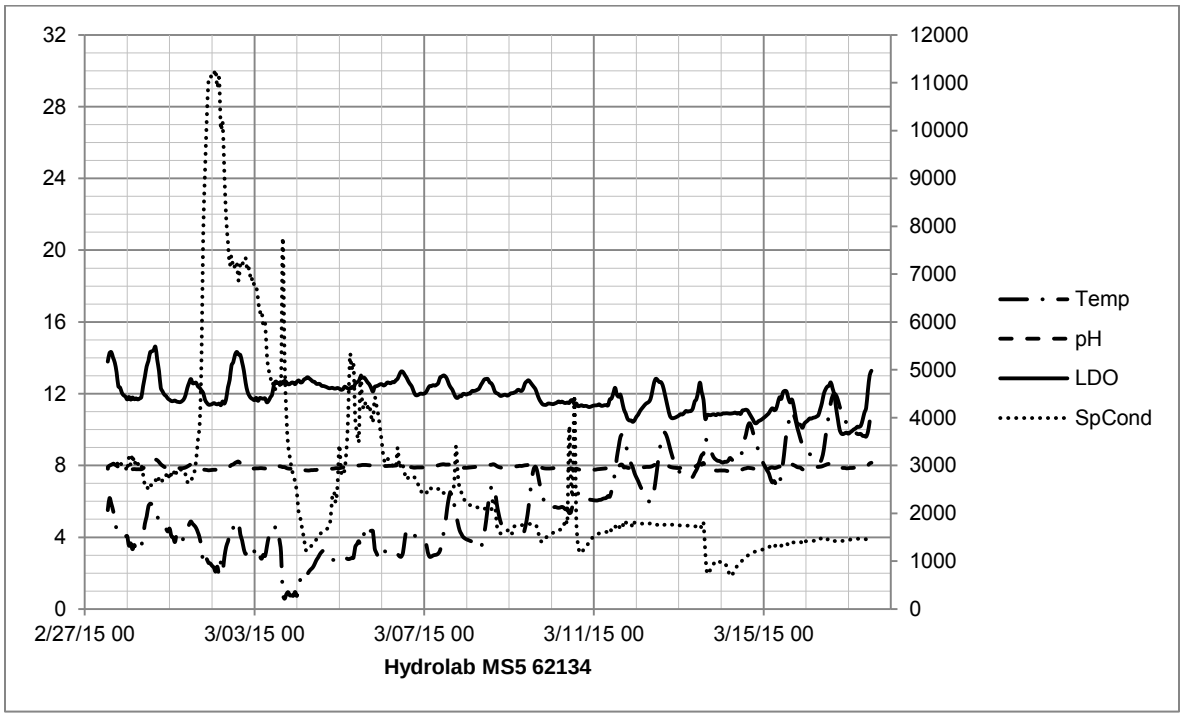

Figure 20: Plot of hourly data collected by a water quality sonde on Town Run dst Glendale WWTP at Chester Rd. (RM 0.67; STORET: Q01S02). Temperature (^{o}C), luminescent dissolved oxygen (mg/L), pH (S.U.), and specific conductance (µS/cm) are included; all are referenced to the primary (left) axis except specific conductance.

Appendix Table E – Benthic Chlorophyll_a Results

Survey 1 - Benthic Chl-a

Sample Date	Station Id	Location	Parameter	Result	Qualifier	Units	RL
6/24/2014	609040	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.	Chlorophyll_a	195		mg/m2	7.1
6/24/2014	609040	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.	Pheophytin_a	61.7	J	mg/m2	35.5
6/24/2014	Q01S02	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.	Chlorophyll_a	175		mg/m2	6.7
6/24/2014	Q01S02	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.	Pheophytin_a	80.7	J	mg/m2	33.6
6/25/2014	X01W01	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.	Chlorophyll_a	136		mg/m2	4.2
6/25/2014	X01W01	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.	Pheophytin_a	34.0	J	mg/m2	20.9
6/25/2014	609050	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52	Chlorophyll_a	58.9		mg/m2	4.4
6/25/2014	609050	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52	Pheophytin_a	<21.9	UJ	mg/m2	21.9
6/25/2014	302534	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN	Chlorophyll_a	104		mg/m2	4.5
6/25/2014	302534	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN	Pheophytin_a	31.4	J	mg/m2	22.7
6/25/2014	X01W04	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743	Chlorophyll_a	115		mg/m2	6.8
6/25/2014	X01W04	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743	Pheophytin_a	<33.8	UJ	mg/m2	33.8
6/25/2014	609080	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756	Chlorophyll_a	137		mg/m2	9
6/25/2014	609080	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756	Pheophytin_a	<44.9	UJ	mg/m2	44.9
6/24/2014	X01W07	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.	Chlorophyll_a	113		mg/m2	5.1
6/24/2014	X01W07	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.	Pheophytin_a	<25.5	UJ	mg/m2	25.5
6/24/2014	X01W08	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.	Chlorophyll_a	150		mg/m2	6
6/24/2014	X01W08	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.	Pheophytin_a	64.1	J	mg/m2	29.8

Survey 2 - Benthic Chl-a

Sample Date	Station Id	Location	Parameter	Result	Qualifier	Units	RL
7/10/2014	609040	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.	Chlorophyll_a	138		mg/m2	7.7
7/10/2014	609040	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.	Pheophytin_a	58.4	J	mg/m2	38.6
7/10/2014	Q01W05	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.	Chlorophyll_a	198		mg/m2	5.5
7/10/2014	Q01W05	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.	Pheophytin_a	70.4	J	mg/m2	27.3
7/10/2014	Q01S17	MILL CREEK NE OF GLENDALE @ KEMPER RD.	Chlorophyll_a	171		mg/m2	4.9
7/10/2014	Q01S17	MILL CREEK NE OF GLENDALE @ KEMPER RD.	Pheophytin_a	49.1	J	mg/m2	24.3
7/10/2014	600400	MILL CREEK AT SHARONVILLE @ SHARON RD.	Chlorophyll_a	615		mg/m2	4.9
7/10/2014	600400	MILL CREEK AT SHARONVILLE @ SHARON RD.	Pheophytin_a	60.1	J	mg/m2	24.6
7/10/2014	600460	E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.	Chlorophyll_a	266		mg/m2	5.3
7/10/2014	600460	E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.	Pheophytin_a	96.5	J	mg/m2	26.4
7/10/2014	Q01P01	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD. Dup (AVERAGE)	Chlorophyll_a	271.5		mg/m2	5.3
7/10/2014	Q01P01	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD. Dup (AVERAGE)	Pheophytin_a	42.4	J	mg/m2	26.4
7/10/2014	Q01S02	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.	Chlorophyll_a	375		mg/m2	3.9
7/10/2014	Q01S02	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.	Pheophytin_a	101	J	mg/m2	19.7
7/9/2014	X01W01	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.	Chlorophyll_a	152		mg/m2	6.7
7/9/2014	X01W01	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.	Pheophytin_a	37.4	J	mg/m2	33.3
7/10/2014	609050	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52	Chlorophyll_a	56.0		mg/m2	7
7/10/2014	609050	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52	Pheophytin_a	<35.2	UJ	mg/m2	35.2
7/9/2014	302534	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN	Chlorophyll_a	174		mg/m2	6.9
7/9/2014	302534	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN	Pheophytin_a	68.0	J	mg/m2	34.5
7/10/2014	X01W04	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743	Chlorophyll_a	55.8		mg/m2	6
7/10/2014	X01W04	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743	Pheophytin_a	<30.1	UJ	mg/m2	30.1
7/10/2014	609080	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756	Chlorophyll_a	54.2		mg/m2	8.8
7/10/2014	609080	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756	Pheophytin_a	<44.1	UJ	mg/m2	44.1
7/10/2014	X01W07	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.	Chlorophyll_a	58.0		mg/m2	6.1
7/10/2014	X01W07	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.	Pheophytin_a	<30.4	UJ	mg/m2	30.4
7/10/2014	X01W08	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.	Chlorophyll_a	109		mg/m2	0.8
7/10/2014	X01W08	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.	Pheophytin_a	48.1	J	mg/m2	3.9

Survey 2 - Sestonic Chl-a

Sample Date	Station Id	Location	Parameter	Result	Qualifier	Units	RL
7/10/2014	609040	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.	Chlorophyll_a	1.7		ug/L	0.3
7/10/2014	609040	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.	Pheophytin_a	<1.4	UJ	ug/L	1.4
7/10/2014	Q01W05	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.	Chlorophyll_a	4.2		ug/L	0.3
7/10/2014	Q01W05	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.	Pheophytin_a	3.8	J	ug/L	1.4
7/10/2014	Q01S17	MILL CREEK NE OF GLENDALE @ KEMPER RD.	Chlorophyll_a	4.3		ug/L	0.3
7/10/2014	Q01S17	MILL CREEK NE OF GLENDALE @ KEMPER RD.	Pheophytin_a	2.7	J	ug/L	1.4
7/10/2014	600400	MILL CREEK AT SHARONVILLE @ SHARON RD.	Chlorophyll_a	5.2		ug/L	0.3
7/10/2014	600400	MILL CREEK AT SHARONVILLE @ SHARON RD.	Pheophytin_a	3.2	J	ug/L	1.4
7/10/2014	600460	E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.	Chlorophyll_a	7.0		ug/L	0.3
7/10/2014	600460	E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.	Pheophytin_a	1.5	J	ug/L	1.4
7/10/2014	Q01P01	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.	Chlorophyll_a	1.3		ug/L	0.3
7/10/2014	Q01P01	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.	Pheophytin_a	<1.4	UJ	ug/L	1.4
7/10/2014	Q01S02	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.	Chlorophyll_a	6.4		ug/L	0.3
7/10/2014	Q01S02	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.	Pheophytin_a	3.0	J	ug/L	1.4
7/9/2014	X01W01	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.	Chlorophyll_a	1.7		ug/L	0.1
7/9/2014	X01W01	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.	Pheophytin_a	<0.7	UJ	ug/L	0.7
7/10/2014	609050	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52	Chlorophyll_a	0.5		ug/L	0.3
7/10/2014	609050	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52	Pheophytin_a	4.6	J	ug/L	1.4
7/9/2014	302534	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN	Chlorophyll_a	14.3		ug/L	0.3
7/9/2014	302534	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN	Pheophytin_a	6.2	J	ug/L	1.4
7/10/2014	X01W04	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743	Chlorophyll_a	15.0		ug/L	0.3
7/10/2014	X01W04	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743	Pheophytin_a	6.1	J	ug/L	1.4
7/10/2014	609080	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756 Dup (AVERAGE)	Chlorophyll_a	3.6		ug/L	0.3
7/10/2014	609080	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756 Dup (AVERAGE)	Pheophytin_a	<1.4	UJ	ug/L	1.4
7/10/2014	X01W07	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.	Chlorophyll_a	0.9		ug/L	0.3
7/10/2014	X01W07	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.	Pheophytin_a	<1.4	UJ	ug/L	1.4
7/10/2014	X01W08	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.	Chlorophyll_a	4.6		ug/L	0.3
7/10/2014	X01W08	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.	Pheophytin_a	2.7	J	ug/L	1.4

Appendix Table F – Fish Species and Abundance Results

River Code:	**10-001-000**	Stream:	**FIVEMILE CREEK**			Sample Date:	**2014-06-18**
River Mile:	**2.4**	Location:	FIVEMILE CREEK @ FIVE MILE RD.				
Time Fished:	1800 sec	Drainage:	3.4 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	39	78.00	9.26	0.00	NA	0.00
Western Blacknose Dace		G	S	T	101	202.00	23.99	0.00	NA	0.00
Creek Chub		G	N	T	125	250.00	29.69	0.00	NA	0.00
Central Stoneroller		H	N	N	148	296.00	35.15	0.00	NA	0.00
Green Sunfish		I	C	T	1	2.00	0.24	0.00	NA	0.00
Bluegill Sunfish		I	C	P	3	6.00	0.71	0.00	NA	0.00
Green SF x Bluegill SF				N	2	4.00	0.48	0.00	NA	0.00
Rainbow Darter		I	S	M	2	4.00	0.48	0.00	NA	0.00
			Data Totals:		421	842.00		0.00		
			Number of Species:		8					
			Number of Hybrids:		1					

River Code:	**10-002-000**	Stream:	**EIGHTMILE CREEK**			Sample Date:	**2014-06-18**
River Mile:	**0.2**	Location:	EIGHTMILE CREEK NEAR CINCINNATI @ U.S. RT. 52				
Time Fished:	1800 sec	Drainage:	3.9 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	1	2.00	0.45	0.00	NA	0.00
White Sucker		O	S	T	7	14.00	3.17	0.00	NA	0.00
Western Blacknose Dace		G	S	T	3	6.00	1.36	0.00	NA	0.00
Creek Chub		G	N	T	8	16.00	3.62	0.00	NA	0.00
Striped Shiner		I	S	N	1	2.00	0.45	0.00	NA	0.00
Bluntnose Minnow		O	C	T	5	10.00	2.26	0.00	NA	0.00
Central Stoneroller		H	N	N	40	80.00	18.10	0.00	NA	0.00
Bluegill Sunfish		I	C	P	2	4.00	0.90	0.00	NA	0.00
Rainbow Darter		I	S	M	80	160.00	36.20	0.00	NA	0.00
Fantail Darter		I	C	N	74	148.00	33.48	0.00	NA	0.00
			Data Totals:		221	442.00		0.00		
			Number of Species:		10					
			Number of Hybrids:		0					

River Code:	**10-003-000**	Stream:	**TENMILE CREEK**			Sample Date:	**2014-06-26**
River Mile:	**3.6**	Location:	TENMILE CREEK SW OF AMELIA, DST. POND RUN RD.				
Time Fished:	1800 sec	Drainage:	5.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	6	12.00	0.54	0.00	NA	0.00
Western Blacknose Dace		G	S	T	34	68.00	3.08	0.00	NA	0.00
Creek Chub		G	N	T	99	198.00	8.98	0.00	NA	0.00
Striped Shiner		I	S	N	3	6.00	0.27	0.00	NA	0.00
Silverjaw Minnow		I	M	N	11	22.00	1.00	0.00	NA	0.00
Bluntnose Minnow		O	C	T	20	40.00	1.81	0.00	NA	0.00
Central Stoneroller		H	N	N	502	1004.00	45.51	0.00	NA	0.00
Smallmouth Bass		C	C	M	1	2.00	0.09	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.09	0.00	NA	0.00
Green Sunfish		I	C	T	5	10.00	0.45	0.00	NA	0.00
Johnny Darter		I	C	N	4	8.00	0.36	0.00	NA	0.00
Rainbow Darter		I	S	M	217	434.00	19.67	0.00	NA	0.00
Fantail Darter		I	C	N	200	400.00	18.13	0.00	NA	0.00
			Data Totals:		1103	2206.00		0.00		
			Number of Species:		13					
			Number of Hybrids:		0					

River Code:	**10-003-000**	Stream:	**TENMILE CREEK**			Sample Date:	**2014-06-23**
River Mile:	**1.2**	Location:	TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52				
Time Fished:	1800 sec	Drainage:	12.6 sq mi	Depth:		Data Source:	
Dist Fished:	0.18 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	3	5.14	1.20	0.00	NA	0.00
Golden Shiner		I	M	T	2	3.43	0.80	0.00	NA	0.00
Striped Shiner		I	S	N	17	29.14	6.77	0.00	NA	0.00
Spotfin Shiner		I	M	N	3	5.14	1.20	0.00	NA	0.00
Sand Shiner		I	M	M	6	10.29	2.39	0.00	NA	0.00
Silverjaw Minnow		I	M	N	2	3.43	0.80	0.00	NA	0.00
Bluntnose Minnow		O	C	T	19	32.57	7.57	0.00	NA	0.00
Central Stoneroller		H	N	N	47	80.57	18.73	0.00	NA	0.00
Yellow Bullhead		I	C	T	3	5.14	1.20	0.00	NA	0.00
Rock Bass		C	C	N	10	17.14	3.98	0.00	NA	0.00
Smallmouth Bass		C	C	M	4	6.86	1.59	0.00	NA	0.00
Largemouth Bass		C	C	N	3	5.14	1.20	0.00	NA	0.00
Green Sunfish		I	C	T	51	87.43	20.32	0.00	NA	0.00
Bluegill Sunfish		I	C	P	2	3.43	0.80	0.00	NA	0.00
Longear Sunfish		I	C	M	23	39.43	9.16	0.00	NA	0.00
Johnny Darter		I	C	N	2	3.43	0.80	0.00	NA	0.00
Rainbow Darter		I	S	M	35	60.00	13.94	0.00	NA	0.00
Fantail Darter		I	C	N	19	32.57	7.57	0.00	NA	0.00
			Data Totals:		251	430.29		0.00		
			Number of Species:		18					
			Number of Hybrids:		0					

River Code:	**10-003-001**	Stream:	**Trib. To Tenmile Creek (3.58)**			Sample Date:	**2014-06-26**
River Mile:	**0.0**	Location:	TRIB. TO TENMILE CREEK (3.58) SW OF AMELIA @ ST. RT 749				
Time Fished:	1800 sec	Drainage:	3.5 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	1	2.00	0.12	0.00	NA	0.00
White Sucker		O	S	T	8	16.00	0.97	0.00	NA	0.00
Western Blacknose Dace		G	S	T	48	96.00	5.79	0.00	NA	0.00
Creek Chub		G	N	T	105	210.00	12.67	0.00	NA	0.00
Striped Shiner		I	S	N	1	2.00	0.12	0.00	NA	0.00
Bluntnose Minnow		O	C	T	17	34.00	2.05	0.00	NA	0.00
Central Stoneroller		H	N	N	517	1034.00	62.36	0.00	NA	0.00
Largemouth Bass		C	C	N	7	14.00	0.84	0.00	NA	0.00
Green Sunfish		I	C	T	8	16.00	0.97	0.00	NA	0.00
Bluegill Sunfish		I	C	P	16	32.00	1.93	0.00	NA	0.00
Green SF x Bluegill SF				N	1	2.00	0.12	0.00	NA	0.00
Johnny Darter		I	C	N	2	4.00	0.24	0.00	NA	0.00
Rainbow Darter		I	S	M	22	44.00	2.65	0.00	NA	0.00
Fantail Darter		I	C	N	76	152.00	9.17	0.00	NA	0.00
			Data Totals:		829	1658.00		0.00		
			Number of Species:		14					
			Number of Hybrids:		1					

River Code:	**10-004-000**	Stream:	**NINEMILE CREEK**			Sample Date:	**2014-06-23**
River Mile:	**0.8**	Location:	NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.				
Time Fished:	1800 sec	Drainage:	8.1 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	A	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	7	14.00	1.28	0.00	NA	0.00
White Sucker		O	S	T	7	14.00	1.28	0.00	NA	0.00
Western Blacknose Dace		G	S	T	14	28.00	2.55	0.00	NA	0.00
Creek Chub		G	N	T	60	120.00	10.93	0.00	NA	0.00
Striped Shiner		I	S	N	2	4.00	0.36	0.00	NA	0.00
Bluntnose Minnow		O	C	T	18	36.00	3.28	0.00	NA	0.00
Central Stoneroller		H	N	N	154	308.00	28.05	0.00	NA	0.00
Smallmouth Bass		C	C	M	2	4.00	0.36	0.00	NA	0.00
Green Sunfish		I	C	T	7	14.00	1.28	0.00	NA	0.00
Bluegill Sunfish		I	C	P	4	8.00	0.73	0.00	NA	0.00
Longear Sunfish		I	C	M	1	2.00	0.18	0.00	NA	0.00
Greenside Darter		I	S	M	1	2.00	0.18	0.00	NA	0.00
Rainbow Darter		I	S	M	115	230.00	20.95	0.00	NA	0.00
Fantail Darter		I	C	N	157	314.00	28.60	0.00	NA	0.00
			Data Totals:		549	1098.00		0.00		
			Number of Species:		14					
			Number of Hybrids:		0					

River Code:	**10-006-000**	Stream:	**TWELVEMILE CREEK**			Sample Date:	**2014-06-30**
River Mile:	**6.4**	Location:	TWELVEMILE CREEK @ LAUREL-LINDALE RD.				
Time Fished:	1800 sec	Drainage:	6.8 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	29	58.00	4.52	0.00	NA	0.00
Creek Chub		G	N	T	88	176.00	13.73	0.00	NA	0.00
Bluntnose Minnow		O	C	T	187	374.00	29.17	0.00	NA	0.00
Central Stoneroller		H	N	N	133	266.00	20.75	0.00	NA	0.00
Largemouth Bass		C	C	N	5	10.00	0.78	0.00	NA	0.00
Green Sunfish		I	C	T	8	16.00	1.25	0.00	NA	0.00
Johnny Darter		I	C	N	30	60.00	4.68	0.00	NA	0.00
Fantail Darter		I	C	N	161	322.00	25.12	0.00	NA	0.00
			Data Totals:		641	1282.00		0.00		
			Number of Species:		8					
			Number of Hybrids:		0					

River Code:	**10-006-000**	Stream:	**TWELVEMILE CREEK**			Sample Date:	**2014-06-30**
River Mile:	**2.1**	Location:	TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN				
Time Fished:	1800 sec	Drainage:	18.3 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	2	4.00	0.26	0.00	NA	0.00
Northern Hog Sucker		I	S	M	15	30.00	1.98	0.00	NA	0.00
White Sucker		O	S	T	2	4.00	0.26	0.00	NA	0.00
Common Carp		O	M	T	1	2.00	0.13	0.00	NA	0.00
Western Blacknose Dace		G	S	T	1	2.00	0.13	0.00	NA	0.00
Creek Chub		G	N	T	40	80.00	5.28	0.00	NA	0.00
Emerald Shiner		I	M	N	9	18.00	1.19	0.00	NA	0.00
Redfin Shiner		I	N	N	2	4.00	0.26	0.00	NA	0.00
Mimic Shiner		I	M	I	9	18.00	1.19	0.00	NA	0.00
Bluntnose Minnow		O	C	T	9	18.00	1.19	0.00	NA	0.00
Central Stoneroller		H	N	N	334	668.00	44.06	0.00	NA	0.00
Yellow Bullhead		I	C	T	4	8.00	0.53	0.00	NA	0.00
Rock Bass		C	C	N	11	22.00	1.45	0.00	NA	0.00
Smallmouth Bass		C	C	M	2	4.00	0.26	0.00	NA	0.00
Spotted Bass		C	C	N	1	2.00	0.13	0.00	NA	0.00
Green Sunfish		I	C	T	5	10.00	0.66	0.00	NA	0.00
Bluegill Sunfish		I	C	P	7	14.00	0.92	0.00	NA	0.00
Longear Sunfish		I	C	M	13	26.00	1.72	0.00	NA	0.00
Johnny Darter		I	C	N	11	22.00	1.45	0.00	NA	0.00
Greenside Darter		I	S	M	48	96.00	6.33	0.00	NA	0.00
Rainbow Darter		I	S	M	191	382.00	25.20	0.00	NA	0.00
Fantail Darter		I	C	N	41	82.00	5.41	0.00	NA	0.00
			Data Totals:		758	1516.00		0.00		
			Number of Species:		22					
			Number of Hybrids:		0					

River Code:	**10-010-000**	Stream:	**LITTLE INDIAN CREEK**			Sample Date:	**2014-07-03**
River Mile:	**0.9**	Location:	LITTLE INDIAN CREEK E OF MOSCOW, ADJ. LAUREL MOSCOW RD.				
Time Fished:	1800 sec	Drainage:	4.9 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	1	2.00	0.16	0.00	NA	0.00
White Sucker		O	S	T	1	2.00	0.16	0.00	NA	0.00
Western Blacknose Dace		G	S	T	18	36.00	2.89	0.00	NA	0.00
Creek Chub		G	N	T	80	160.00	12.84	0.00	NA	0.00
Silverjaw Minnow		I	M	N	1	2.00	0.16	0.00	NA	0.00
Bluntnose Minnow		O	C	T	126	252.00	20.22	0.00	NA	0.00
Central Stoneroller		H	N	N	258	516.00	41.41	0.00	NA	0.00
Rock Bass		C	C	N	1	2.00	0.16	0.00	NA	0.00
Smallmouth Bass		C	C	M	6	12.00	0.96	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.16	0.00	NA	0.00
Green Sunfish		I	C	T	23	46.00	3.69	0.00	NA	0.00
Bluegill Sunfish		I	C	P	10	20.00	1.61	0.00	NA	0.00
Longear Sunfish		I	C	M	7	14.00	1.12	0.00	NA	0.00
Green SF x Bluegill SF				N	1	2.00	0.16	0.00	NA	0.00
Johnny Darter		I	C	N	4	8.00	0.64	0.00	NA	0.00
Greenside Darter		I	S	M	7	14.00	1.12	0.00	NA	0.00
Rainbow Darter		I	S	M	13	26.00	2.09	0.00	NA	0.00
Fantail Darter		I	C	N	65	130.00	10.43	0.00	NA	0.00
			Data Totals:		623	1246.00		0.00		
			Number of Species:		18					
			Number of Hybrids:		1					

River Code:	**10-011-000**	Stream:	**BOAT RUN**			Sample Date:	**2014-06-30**
River Mile:	**0.2**	Location:	BOAT RUN SE OF NEW RICHMOND @ U.S. RT. 52				
Time Fished:	1800 sec	Drainage:	3.6 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	40	80.00	4.96	0.00	NA	0.00
Creek Chub		G	N	T	40	80.00	4.96	0.00	NA	0.00
Bluntnose Minnow		O	C	T	21	42.00	2.61	0.00	NA	0.00
Central Stoneroller		H	N	N	635	1270.00	78.78	0.00	NA	0.00
Western Mosquitofish		I	N	N	1	2.00	0.12	0.00	NA	0.00
Smallmouth Bass		C	C	M	3	6.00	0.37	0.00	NA	0.00
Green Sunfish		I	C	T	6	12.00	0.74	0.00	NA	0.00
Bluegill Sunfish		I	C	P	1	2.00	0.12	0.00	NA	0.00
Longear Sunfish		I	C	M	1	2.00	0.12	0.00	NA	0.00
Green SF x Bluegill SF				N	1	2.00	0.12	0.00	NA	0.00
Johnny Darter		I	C	N	4	8.00	0.50	0.00	NA	0.00
Greenside Darter		I	S	M	1	2.00	0.12	0.00	NA	0.00
Rainbow Darter		I	S	M	39	78.00	4.84	0.00	NA	0.00
Fantail Darter		I	C	N	13	26.00	1.61	0.00	NA	0.00
			Data Totals:		806	1612.00		0.00		
			Number of Species:		14					
			Number of Hybrids:		1					

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**			Sample Date:	**2014-07-02**
River Mile:	**8.7**	Location:	BIG INDIAN CREEK NEAR MT. OLIVE @ BRAUN RD, UPST. BEECH RUN				
Time Fished:	1800 sec	Drainage:	5.4 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	7	14.00	1.03	0.00	NA	0.00
Creek Chub		G	N	T	93	186.00	13.68	0.00	NA	0.00
Silverjaw Minnow		I	M	N	3	6.00	0.44	0.00	NA	0.00
Bluntnose Minnow		O	C	T	207	414.00	30.44	0.00	NA	0.00
Central Stoneroller		H	N	N	187	374.00	27.50	0.00	NA	0.00
Yellow Bullhead		I	C	T	3	6.00	0.44	0.00	NA	0.00
Largemouth Bass		C	C	N	3	6.00	0.44	0.00	NA	0.00
Green Sunfish		I	C	T	11	22.00	1.62	0.00	NA	0.00
Bluegill Sunfish		I	C	P	11	22.00	1.62	0.00	NA	0.00
Green SF x Bluegill SF				N	1	2.00	0.15	0.00	NA	0.00
Johnny Darter		I	C	N	40	80.00	5.88	0.00	NA	0.00
Fantail Darter		I	C	N	114	228.00	16.76	0.00	NA	0.00
			Data Totals:		680	1360.00		0.00		
			Number of Species:		12					
			Number of Hybrids:		1					

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**			Sample Date:	**2014-07-03**
River Mile:	**6.9**	Location:	BIG INDIAN CREEK S OF POINT ISABEL @ ST. RT. 222				
Time Fished:	1800 sec	Drainage:	10.8 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	19	38.00	5.43	0.00	NA	0.00
White Sucker		O	S	T	1	2.00	0.29	0.00	NA	0.00
Creek Chub		G	N	T	2	4.00	0.57	0.00	NA	0.00
Bluntnose Minnow		O	C	T	39	78.00	11.14	0.00	NA	0.00
Central Stoneroller		H	N	N	17	34.00	4.86	0.00	NA	0.00
Yellow Bullhead		I	C	T	8	16.00	2.29	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.29	0.00	NA	0.00
Warmouth Sunfish		C	C	N	7	14.00	2.00	0.00	NA	0.00
Green Sunfish		I	C	T	70	140.00	20.00	0.00	NA	0.00
Bluegill Sunfish		I	C	P	73	146.00	20.86	0.00	NA	0.00
Longear Sunfish		I	C	M	52	104.00	14.86	0.00	NA	0.00
Green SF x Bluegill SF				N	2	4.00	0.57	0.00	NA	0.00
Johnny Darter		I	C	N	10	20.00	2.86	0.00	NA	0.00
Greenside Darter		I	S	M	26	52.00	7.43	0.00	NA	0.00
Rainbow Darter		I	S	M	8	16.00	2.29	0.00	NA	0.00
Fantail Darter		I	C	N	15	30.00	4.29	0.00	NA	0.00
			Data Totals:		350	700.00		0.00		
			Number of Species:		16					
			Number of Hybrids:		1					

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**	Sample Date:	**2014-08-26**
River Mile:	**4.9**	Location:	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743		
Time Fished:	1800 sec	Drainage:	27.4 sq mi	Depth:	Data Source:
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	14	28.00	2.59	0.43	5.62	15.43
White Sucker		O	S	T	1	2.00	0.19	0.03	0.39	15.00
Creek Chub		G	N	T	53	106.00	9.81	1.47	19.12	13.87
Scarlet Shiner		I	S	M	32	64.00	5.93	0.13	1.66	2.00
Bluntnose Minnow		O	C	T	85	170.00	15.74	0.35	4.55	2.06
Central Stoneroller		H	N	N	169	338.00	31.30	2.21	28.75	6.54
Smallmouth Bass		C	C	M	8	16.00	1.48	0.21	2.78	13.38
Warmouth Sunfish		C	C	N	1	2.00	0.19	0.09	1.22	47.00
Green Sunfish		I	C	T	17	34.00	3.15	0.74	9.67	21.87
Bluegill Sunfish		I	C	P	32	64.00	5.93	0.28	3.61	4.33
Longear Sunfish		I	C	M	54	108.00	10.00	1.44	18.78	13.37
Johnny Darter		I	C	N	8	16.00	1.48	0.01	0.13	0.63
Greenside Darter		I	S	M	22	44.00	4.07	0.15	1.91	3.33
Rainbow Darter		I	S	M	16	32.00	2.96	0.04	0.56	1.33
Fantail Darter		I	C	N	28	56.00	5.19	0.10	1.25	1.71
			Data Totals:		540	1080.00		7.69		
			Number of Species:		15					
			Number of Hybrids:		0					

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**	Sample Date:	**2014-07-24**
River Mile:	**4.9**	Location:	BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743		
Time Fished:	1800 sec	Drainage:	27.4 sq mi	Depth:	Data Source:
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	8	16.00	0.86	0.36	3.69	22.25
White Sucker		O	S	T	1	2.00	0.11	0.04	0.39	19.00
Creek Chub		G	N	T	69	138.00	7.44	1.44	14.92	10.44
Scarlet Shiner		I	S	M	5	10.00	0.54	0.02	0.19	1.80
Silverjaw Minnow		I	M	N	10	20.00	1.08	0.04	0.37	1.80
Bluntnose Minnow		O	C	T	235	470.00	25.32	1.04	10.75	2.21
Central Stoneroller		H	N	N	406	812.00	43.75	3.90	40.36	4.80
Smallmouth Bass		C	C	M	3	6.00	0.32	0.90	9.32	150.00
Green Sunfish		I	C	T	4	8.00	0.43	0.20	2.07	25.00
Bluegill Sunfish		I	C	P	34	68.00	3.66	0.27	2.82	4.00
Longear Sunfish		I	C	M	31	62.00	3.34	1.03	10.68	16.65
Johnny Darter		I	C	N	19	38.00	2.05	0.04	0.44	1.11
Greenside Darter		I	S	M	47	94.00	5.06	0.22	2.32	2.38
Rainbow Darter		I	S	M	18	36.00	1.94	0.04	0.41	1.11
Fantail Darter		I	C	N	38	76.00	4.09	0.12	1.28	1.62
			Data Totals:		928	1856.00		9.66		
			Number of Species:		15					
			Number of Hybrids:		0					

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**			Sample Date:	**2014-07-30**
River Mile:	**1.7**	Location:	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756				
Time Fished:	1800 sec	Drainage:	37.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Quillback		O	M	N	1	2.00	0.24	0.03	0.15	15.00
Northern Hog Sucker		I	S	M	31	62.00	7.40	0.88	4.43	14.19
Creek Chub		G	N	T	1	2.00	0.24	0.02	0.10	10.00
Scarlet Shiner		I	S	M	1	2.00	0.24	0.00	0.02	2.00
Spotfin Shiner		I	M	N	7	14.00	1.67	0.06	0.28	4.00
Sand Shiner		I	M	M	4	8.00	0.95	0.01	0.05	1.25
Mimic Shiner		I	M	I	1	2.00	0.24	0.00	0.01	1.00
Silverjaw Minnow		I	M	N	14	28.00	3.34	0.04	0.20	1.43
Bluntnose Minnow		O	C	T	23	46.00	5.49	0.14	0.72	3.09
Central Stoneroller		H	N	N	47	94.00	11.22	0.36	1.82	3.84
Channel Catfish			C	N	3	6.00	0.72	7.50	37.78	1250.00
Yellow Bullhead		I	C	T	2	4.00	0.48	0.17	0.84	41.50
Rock Bass		C	C	N	3	6.00	0.72	0.42	2.12	70.00
Smallmouth Bass		C	C	M	13	26.00	3.10	7.00	35.26	269.23
Spotted Bass		C	C	N	1	2.00	0.24	0.64	3.22	320.00
Green Sunfish		I	C	T	5	10.00	1.19	0.28	1.39	27.60
Bluegill Sunfish		I	C	P	24	48.00	5.73	0.33	1.64	6.78
Longear Sunfish		I	C	M	28	56.00	6.68	1.34	6.73	23.85
Green SF x Bluegill SF				N	1	2.00	0.24	0.07	0.35	35.00
Johnny Darter		I	C	N	11	22.00	2.63	0.02	0.10	0.88
Greenside Darter		I	S	M	126	252.00	30.07	0.46	2.32	1.83
Rainbow Darter		I	S	M	49	98.00	11.69	0.07	0.33	0.67
Fantail Darter		I	C	N	23	46.00	5.49	0.03	0.13	0.58
			Data Totals:		419	838.00		19.85		
			Number of Species:		23					
			Number of Hybrids:		1					

River Code:	**10-012-000**	Stream:	**BIG INDIAN CREEK**			Sample Date:	**2014-07-02**
River Mile:	**1.7**	Location:	BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756				
Time Fished:	1800 sec	Drainage:	37.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	2	4.00	0.21	0.15	0.77	37.00
Creek Chub		G	N	T	1	2.00	0.11	0.00	0.02	2.00
Scarlet Shiner		I	S	M	5	10.00	0.53	0.02	0.13	2.40
Spotfin Shiner		I	M	N	1	2.00	0.11	0.00	0.02	2.00
Silverjaw Minnow		I	M	N	2	4.00	0.21	0.01	0.03	1.50
Bluntnose Minnow		O	C	T	69	138.00	7.28	0.55	2.86	3.97
Central Stoneroller		H	N	N	558	1116.00	58.86	11.14	58.21	9.98
Yellow Bullhead		I	C	T	10	20.00	1.05	0.92	4.81	46.00
Smallmouth Bass		C	C	M	13	26.00	1.37	1.15	6.00	44.15
Green Sunfish		I	C	T	13	26.00	1.37	0.59	3.06	22.54
Bluegill Sunfish		I	C	P	9	18.00	0.95	0.15	0.77	8.22
Longear Sunfish		I	C	M	93	186.00	9.81	3.50	18.29	18.82
Greenside Darter		I	S	M	73	146.00	7.70	0.62	3.24	4.25
Rainbow Darter		I	S	M	69	138.00	7.28	0.27	1.42	1.97
Fantail Darter		I	C	N	30	60.00	3.16	0.07	0.36	1.13
			Data Totals:		948	1896.00		19.14		
			Number of Species:		15					
			Number of Hybrids:		0					

River Code:	**10-016-000**	Stream:	**NORTH FORK INDIAN CREEK**			Sample Date:	**2014-07-02**
River Mile:	**0.9**	Location:	N. FK. INDIAN CREEK @ LAUREL - POINT ISABEL RD.				
Time Fished:	1800 sec	Drainage:	10.9 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	8	16.00	0.74	0.00	0.00	0.00
White Sucker		O	S	T	50	100.00	4.64	0.00	0.00	0.00
Western Blacknose Dace		G	S	T	67	134.00	6.22	0.00	0.00	0.00
Creek Chub		G	N	T	84	168.00	7.80	0.00	0.00	0.00
Redfin Shiner		I	N	N	1	2.00	0.09	0.00	0.00	0.00
Silverjaw Minnow		I	M	N	5	10.00	0.46	0.00	0.00	0.00
Bluntnose Minnow		O	C	T	197	394.00	18.29	1.21	23.60	3.07
Central Stoneroller		H	N	N	395	790.00	36.68	3.91	76.40	4.95
Yellow Bullhead		I	C	T	3	6.00	0.28	0.00	0.00	0.00
Largemouth Bass		C	C	N	1	2.00	0.09	0.00	0.00	0.00
Green Sunfish		I	C	T	14	28.00	1.30	0.00	0.00	0.00
Bluegill Sunfish		I	C	P	1	2.00	0.09	0.00	0.00	0.00
Green SF x Bluegill SF				N	2	4.00	0.19	0.00	0.00	0.00
Johnny Darter		I	C	N	57	114.00	5.29	0.00	0.00	0.00
Greenside Darter		I	S	M	5	10.00	0.46	0.00	0.00	0.00
Rainbow Darter		I	S	M	71	142.00	6.59	0.00	0.00	0.00
Fantail Darter		I	C	N	116	232.00	10.77	0.00	0.00	0.00
			Data Totals:		1077	2154.00		5.12		
			Number of Species:		17					
			Number of Hybrids:		1					

River Code:	**10-021-000**	Stream:	**MAPLE CREEK**			Sample Date:	**2014-07-03**
River Mile:	**1.6**	Location:	MAPLE CREEK N OF NEVILLE @ MAPLE CREEK RD.				
Time Fished:	1800 sec	Drainage:	7.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	1	2.00	0.13	0.00	NA	0.00
White Sucker		O	S	T	1	2.00	0.13	0.00	NA	0.00
Western Blacknose Dace		G	S	T	117	234.00	15.35	0.00	NA	0.00
Creek Chub		G	N	T	106	212.00	13.91	0.00	NA	0.00
Scarlet Shiner		I	S	M	2	4.00	0.26	0.00	NA	0.00
Striped Shiner		I	S	N	44	88.00	5.77	0.00	NA	0.00
Sand Shiner		I	M	M	1	2.00	0.13	0.00	NA	0.00
Bluntnose Minnow		O	C	T	87	174.00	11.42	0.00	NA	0.00
Central Stoneroller		H	N	N	270	540.00	35.43	0.00	NA	0.00
Yellow Bullhead		I	C	T	2	4.00	0.26	0.00	NA	0.00
Smallmouth Bass		C	C	M	6	12.00	0.79	0.00	NA	0.00
Green Sunfish		I	C	T	4	8.00	0.52	0.00	NA	0.00
Bluegill Sunfish		I	C	P	2	4.00	0.26	0.00	NA	0.00
Longear Sunfish		I	C	M	3	6.00	0.39	0.00	NA	0.00
Greenside Darter		I	S	M	19	38.00	2.49	0.00	NA	0.00
Rainbow Darter		I	S	M	70	140.00	9.19	0.00	NA	0.00
Fantail Darter		I	C	N	27	54.00	3.54	0.00	NA	0.00
			Data Totals:		762	1524.00		0.00		
			Number of Species:		17					
			Number of Hybrids:		0					

River Code:	**10-023-000**	Stream:	**BEAR CREEK**			Sample Date:	**2014-08-26**
River Mile:	**5.3**	Location:	BEAR CREEK @ CHILO CEMETERY-MCKENDREE CHAPEL RD.				
Time Fished:	1800 sec	Drainage:	4.8 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	3	6.00	0.29	0.00	NA	0.00
Western Blacknose Dace		G	S	T	166	332.00	15.85	0.00	NA	0.00
Creek Chub		G	N	T	320	640.00	30.56	0.00	NA	0.00
Silverjaw Minnow		I	M	N	5	10.00	0.48	0.00	NA	0.00
Bluntnose Minnow		O	C	T	20	40.00	1.91	0.00	NA	0.00
Central Stoneroller		H	N	N	285	570.00	27.22	0.00	NA	0.00
Yellow Bullhead		I	C	T	10	20.00	0.96	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.10	0.00	NA	0.00
Green Sunfish		I	C	T	28	56.00	2.67	0.00	NA	0.00
Bluegill Sunfish		I	C	P	15	30.00	1.43	0.00	NA	0.00
Hybrid x Sunfish				N	3	6.00	0.29	0.00	NA	0.00
Johnny Darter		I	C	N	39	78.00	3.72	0.00	NA	0.00
Fantail Darter		I	C	N	152	304.00	14.52	0.00	NA	0.00
			Data Totals:		1047	2094.00		0.00		
			Number of Species:		13					
			Number of Hybrids:		1					

River Code:	**10-023-000**	Stream:	**BEAR CREEK**			Sample Date:	**2014-07-03**
River Mile:	**2.4**	Location:	BEAR CREEK NW OF CHILO, ADJ. BEAR CREEK RD.				
Time Fished:	1800 sec	Drainage:	7.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	1	2.00	0.23	0.00	NA	0.00
Western Blacknose Dace		G	S	T	62	124.00	14.19	0.00	NA	0.00
Creek Chub		G	N	T	55	110.00	12.59	0.00	NA	0.00
Scarlet Shiner		I	S	M	2	4.00	0.46	0.00	NA	0.00
Bluntnose Minnow		O	C	T	17	34.00	3.89	0.00	NA	0.00
Central Stoneroller		H	N	N	107	214.00	24.49	0.00	NA	0.00
Yellow Bullhead		I	C	T	1	2.00	0.23	0.00	NA	0.00
Smallmouth Bass		C	C	M	2	4.00	0.46	0.00	NA	0.00
Green Sunfish		I	C	T	11	22.00	2.52	0.00	NA	0.00
Bluegill Sunfish		I	C	P	2	4.00	0.46	0.00	NA	0.00
Longear Sunfish		I	C	M	16	32.00	3.66	0.00	NA	0.00
Green SF x Bluegill SF				N	2	4.00	0.46	0.00	NA	0.00
Johnny Darter		I	C	N	10	20.00	2.29	0.00	NA	0.00
Greenside Darter		I	S	M	5	10.00	1.14	0.00	NA	0.00
Rainbow Darter		I	S	M	64	128.00	14.65	0.00	NA	0.00
Fantail Darter		I	C	N	80	160.00	18.31	0.00	NA	0.00
			Data Totals:		437	874.00		0.00		
			Number of Species:		16					
			Number of Hybrids:		1					

River Code:	**10-023-001**	Stream:	**Trib To Bear Creek (6.85)**			Sample Date:	**2014-08-26**
River Mile:	**0.6**	Location:	TRIB TO BEAR CREEK (6.85), 650 FT DST FELICITY WWTP				
Time Fished:	1800 sec	Drainage:	0.1 sq mi	Depth:		Data Source:	
Dist Fished:	0.1 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Western Blacknose Dace		G	S	T	10	30.00	4.50	0.00	NA	0.00
Creek Chub		G	N	T	207	621.00	93.24	0.00	NA	0.00
Central Stoneroller		H	N	N	1	3.00	0.45	0.00	NA	0.00
Black Bullhead		I	C	P	1	3.00	0.45	0.00	NA	0.00
Largemouth Bass		C	C	N	1	3.00	0.45	0.00	NA	0.00
Green Sunfish		I	C	T	2	6.00	0.90	0.00	NA	0.00
			Data Totals:		222	666.00		0.00		
			Number of Species:		6					
			Number of Hybrids:		0					

River Code:	**10-027-000**	Stream:	**BULLSKIN CREEK**			Sample Date:	**2014-07-30**
River Mile:	**4.4**	Location:	BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.				
Time Fished:	1800 sec	Drainage:	27.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	4	8.00	0.65	0.22	2.26	27.00
White Sucker		O	S	T	1	2.00	0.16	0.04	0.40	19.00
Western Blacknose Dace		G	S	T	1	2.00	0.16	0.01	0.08	4.00
Creek Chub		G	N	T	17	34.00	2.76	0.27	2.85	8.00
Scarlet Shiner		I	S	M	2	4.00	0.33	0.02	0.21	5.00
Striped Shiner		I	S	N	4	8.00	0.65	0.02	0.17	2.00
Silverjaw Minnow		I	M	N	4	8.00	0.65	0.02	0.25	3.00
Bluntnose Minnow		O	C	T	3	6.00	0.49	0.02	0.23	3.67
Central Stoneroller		H	N	N	439	878.00	71.38	6.15	64.36	7.00
Yellow Bullhead		I	C	T	1	2.00	0.16	0.01	0.10	5.00
Smallmouth Bass		C	C	M	2	4.00	0.33	1.04	10.89	260.00
Green Sunfish		I	C	T	5	10.00	0.81	0.25	2.62	25.00
Bluegill Sunfish		I	C	P	12	24.00	1.95	0.53	5.53	22.00
Longear Sunfish		I	C	M	9	18.00	1.46	0.40	4.15	22.00
Johnny Darter		I	C	N	15	30.00	2.44	0.03	0.31	1.00
Greenside Darter		I	S	M	67	134.00	10.89	0.47	4.90	3.49
Rainbow Darter		I	S	M	13	26.00	2.11	0.03	0.31	1.15
Fantail Darter		I	C	N	16	32.00	2.60	0.04	0.38	1.13
			Data Totals:		615	1230.00		9.55		
			Number of Species:		18					
			Number of Hybrids:		0					

River Code:	**10-027-000**	Stream:	**BULLSKIN CREEK**			Sample Date:	**2014-09-30**
River Mile:	**3.0**	Location:	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.				
Time Fished:	2677 sec	Drainage:	48.0 sq mi	Depth:		Data Source:	
Dist Fished:	0.2 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Golden Redhorse		I	S	M	4	6.00	0.25	0.06	0.47	9.75
Northern Hog Sucker		I	S	M	61	91.50	3.74	1.10	8.75	11.97
White Sucker		O	S	T	21	31.50	1.29	0.86	6.88	27.33
Western Blacknose Dace		G	S	T	36	54.00	2.21	0.09	0.71	1.64
Creek Chub		G	N	T	96	144.00	5.88	0.94	7.55	6.56
Scarlet Shiner		I	S	M	29	43.50	1.78	0.06	0.47	1.34
Striped Shiner		I	S	N	1	1.50	0.06	0.01	0.10	8.00
Silverjaw Minnow		I	M	N	159	238.50	9.74	0.30	2.39	1.25
Bluntnose Minnow		O	C	T	495	742.50	30.33	0.84	6.68	1.13
Central Stoneroller		H	N	N	347	520.50	21.26	2.81	22.48	5.40
Yellow Bullhead		I	C	T	33	49.50	2.02	1.08	8.64	21.84
Smallmouth Bass		C	C	M	22	33.00	1.35	0.78	6.27	23.76
Green Sunfish		I	C	T	32	48.00	1.96	1.75	13.95	36.38
Longear Sunfish		I	C	M	185	277.50	11.34	1.53	12.22	5.51
Johnny Darter		I	C	N	25	37.50	1.53	0.05	0.41	1.36
Greenside Darter		I	S	M	41	61.50	2.51	0.18	1.44	2.92
Rainbow Darter		I	S	M	4	6.00	0.25	0.01	0.10	2.00
Fantail Darter		I	C	N	41	61.50	2.51	0.07	0.53	1.08
			Data Totals:		1632	2448.00		12.51		
			Number of Species:		18					
			Number of Hybrids:		0					

River Code:	**10-027-000**	Stream:	**BULLSKIN CREEK**			Sample Date:	**2014-07-16**
River Mile:	**3.0**	Location:	BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.				
Time Fished:	1800 sec	Drainage:	48.0 sq mi	Depth:		Data Source:	
Dist Fished:	0.19 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	34	53.68	6.71	1.45	13.73	26.97
White Sucker		O	S	T	3	4.74	0.59	0.13	1.23	27.33
Western Blacknose Dace		G	S	T	1	1.58	0.20	0.01	0.06	4.00
Creek Chub		G	N	T	69	108.95	13.61	0.43	4.04	3.91
Bluntnose Minnow		O	C	T	54	85.26	10.65	0.33	3.11	3.85
Central Stoneroller		H	N	N	140	221.05	27.61	1.55	14.68	7.00
Yellow Bullhead		I	C	T	16	25.26	3.16	0.03	0.31	1.31
Smallmouth Bass		C	C	M	14	22.11	2.76	3.79	35.94	171.43
Green Sunfish		I	C	T	13	20.53	2.56	0.58	5.54	28.46
Bluegill Sunfish		I	C	P	10	15.79	1.97	0.23	2.20	14.70
Longear Sunfish		I	C	M	47	74.21	9.27	1.62	15.40	21.87
Green SF x Bluegill SF				N	1	1.58	0.20	0.04	0.37	25.00
Johnny Darter		I	C	N	3	4.74	0.59	0.00	0.04	1.00
Greenside Darter		I	S	M	48	75.79	9.47	0.27	2.55	3.54
Rainbow Darter		I	S	M	2	3.16	0.39	0.00	0.04	1.50
Fantail Darter		I	C	N	52	82.11	10.26	0.08	0.73	0.94
			Data Totals:		507	800.53		10.54		
			Number of Species:		16					
			Number of Hybrids:		1					

River Code:	**10-030-000**	Stream:	**EAST BRANCH BULLSKIN CREEK**	Sample Date:	**2014-08-27**
River Mile:	**4.7**	Location:	E. BR. BULLSKIN CREEK NNW OF HIGGINSPORT @ LANG RD.		
Time Fished:	1800 sec	Drainage:	10.5 sq mi	Depth:	Data Source:
Dist Fished:	0.18 km	Basin:	Southwest Ohio River Tribs	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	24	41.14	6.76	0.00	NA	0.00
Common Carp		O	M	T	1	1.71	0.28	0.00	NA	0.00
Creek Chub		G	N	T	54	92.57	15.21	0.00	NA	0.00
Silverjaw Minnow		I	M	N	6	10.29	1.69	0.00	NA	0.00
Bluntnose Minnow		O	C	T	25	42.86	7.04	0.00	NA	0.00
Central Stoneroller		H	N	N	34	58.29	9.58	0.00	NA	0.00
Yellow Bullhead		I	C	T	6	10.29	1.69	0.00	NA	0.00
Largemouth Bass		C	C	N	8	13.71	2.25	0.00	NA	0.00
Green Sunfish		I	C	T	14	24.00	3.94	0.00	NA	0.00
Bluegill Sunfish		I	C	P	69	118.29	19.44	0.00	NA	0.00
Hybrid x Sunfish				N	1	1.71	0.28	0.00	NA	0.00
Johnny Darter		I	C	N	45	77.14	12.68	0.00	NA	0.00
Fantail Darter		I	C	N	68	116.57	19.15	0.00	NA	0.00
			Data Totals:		355	608.57		0.00		
			Number of Species:		13					
			Number of Hybrids:		1					

River Code:	**10-030-000**	Stream:	**EAST BRANCH BULLSKIN CREEK**	Sample Date:	**2014-07-16**
River Mile:	**0.4**	Location:	E. BR. BULLSKIN CREEK NW OF HIGGINSPORT @ DUNBAR RD.		
Time Fished:	1800 sec	Drainage:	15.8 sq mi	Depth:	Data Source:
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	8	16.00	1.69	0.00	NA	0.00
White Sucker		O	S	T	12	24.00	2.54	0.00	NA	0.00
Creek Chub		G	N	T	11	22.00	2.33	0.00	NA	0.00
Rosyface Shiner		I	S	I	2	4.00	0.42	0.00	NA	0.00
Bluntnose Minnow		O	C	T	8	16.00	1.69	0.00	NA	0.00
Central Stoneroller		H	N	N	286	572.00	60.59	0.00	NA	0.00
Yellow Bullhead		I	C	T	3	6.00	0.64	0.00	NA	0.00
Smallmouth Bass		C	C	M	7	14.00	1.48	0.00	NA	0.00
Green Sunfish		I	C	T	3	6.00	0.64	0.00	NA	0.00
Bluegill Sunfish		I	C	P	2	4.00	0.42	0.00	NA	0.00
Johnny Darter		I	C	N	1	2.00	0.21	0.00	NA	0.00
Greenside Darter		I	S	M	27	54.00	5.72	0.00	NA	0.00
Rainbow Darter		I	S	M	11	22.00	2.33	0.00	NA	0.00
Fantail Darter		I	C	N	91	182.00	19.28	0.00	NA	0.00
			Data Totals:		472	944.00		0.00		
			Number of Species:		14					
			Number of Hybrids:		0					

River Code:	**10-031-000**	Stream:	**MIDDLE BRANCH BULLSKIN CREEK**			Sample Date:	**2014-07-30**
River Mile:	**0.1**	Location:	M. BR. BULLSKIN CREEK SE OF FELICITY, UPST. BULLSKIN RD.				
Time Fished:	1800 sec	Drainage:	5.4 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	1	2.00	0.14	0.00	0.00	0.00
Western Blacknose Dace		G	S	T	70	140.00	9.74	0.00	0.00	0.00
Creek Chub		G	N	T	210	420.00	29.21	3.55	51.16	8.46
Silverjaw Minnow		I	M	N	7	14.00	0.97	0.00	0.00	0.00
Bluntnose Minnow		O	C	T	19	38.00	2.64	0.00	0.00	0.00
Central Stoneroller		H	N	N	310	620.00	43.12	3.39	48.84	5.47
Bluegill Sunfish		I	C	P	1	2.00	0.14	0.00	0.00	0.00
Johnny Darter		I	C	N	6	12.00	0.83	0.00	0.00	0.00
Greenside Darter		I	S	M	3	6.00	0.42	0.00	0.00	0.00
Rainbow Darter		I	S	M	1	2.00	0.14	0.00	0.00	0.00
Fantail Darter		I	C	N	91	182.00	12.66	0.00	0.00	0.00
			Data Totals:		719	1438.00		6.94		
			Number of Species:		11					
			Number of Hybrids:		0					

River Code:	**10-032-000**	Stream:	**WEST BRANCH BULLSKIN CREEK**			Sample Date:	**2014-07-30**
River Mile:	**0.6**	Location:	W. BR. BULLSKIN CREEK E OF FELICITY @ RICHEY RD.				
Time Fished:	1800 sec	Drainage:	25.0 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Southwest Ohio River Tribs	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Golden Redhorse		I	S	M	2	4.00	0.38	0.06	0.73	15.00
Northern Hog Sucker		I	S	M	8	16.00	1.52	0.90	11.02	56.25
White Sucker		O	S	T	24	48.00	4.56	1.66	20.29	34.52
Creek Chub		G	N	T	24	48.00	4.56	0.46	5.58	9.50
Scarlet Shiner		I	S	M	11	22.00	2.09	0.04	0.54	2.00
Striped Shiner		I	S	N	14	28.00	2.66	0.23	2.85	8.31
Silverjaw Minnow		I	M	N	10	20.00	1.90	0.01	0.15	0.63
Bluntnose Minnow		O	C	T	87	174.00	16.54	0.38	4.65	2.18
Central Stoneroller		H	N	N	192	384.00	36.50	1.62	19.77	4.21
Yellow Bullhead		I	C	T	2	4.00	0.38	0.54	6.61	135.00
Smallmouth Bass		C	C	M	1	2.00	0.19	0.70	8.57	350.00
Green Sunfish		I	C	T	15	30.00	2.85	0.89	10.86	29.58
Bluegill Sunfish		I	C	P	8	16.00	1.52	0.07	0.84	4.29
Longear Sunfish		I	C	M	5	10.00	0.95	0.32	3.92	32.00
Johnny Darter		I	C	N	42	84.00	7.98	0.06	0.70	0.68
Greenside Darter		I	S	M	45	90.00	8.56	0.12	1.48	1.34
Rainbow Darter		I	S	M	9	18.00	1.71	0.04	0.47	2.11
Fantail Darter		I	C	N	27	54.00	5.13	0.08	0.97	1.46
			Data Totals:		526	1052.00		8.17		
			Number of Species:		18					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-07-17**
River Mile:	**26.4**	Location:	MILL CREEK E OF HAMILTON @ LIBERTY-FAIRFIELD RD.				
Time Fished:	1800 sec	Drainage:	3.9 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	1	2.00	0.20	0.00	NA	0.00
Western Blacknose Dace		G	S	T	1	2.00	0.20	0.00	NA	0.00
Creek Chub		G	N	T	57	114.00	11.20	0.00	NA	0.00
Striped Shiner		I	S	N	11	22.00	2.16	0.00	NA	0.00
Silverjaw Minnow		I	M	N	18	36.00	3.54	0.00	NA	0.00
Bluntnose Minnow		O	C	T	11	22.00	2.16	0.00	NA	0.00
Central Stoneroller		H	N	N	265	530.00	52.06	0.00	NA	0.00
Yellow Bullhead		I	C	T	7	14.00	1.38	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.20	0.00	NA	0.00
Green Sunfish		I	C	T	10	20.00	1.96	0.00	NA	0.00
Bluegill Sunfish		I	C	P	7	14.00	1.38	0.00	NA	0.00
Johnny Darter		I	C	N	28	56.00	5.50	0.00	NA	0.00
Rainbow Darter		I	S	M	92	184.00	18.07	0.00	NA	0.00
			Data Totals:		509	1018.00		0.00		
			Number of Species:		13					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-08-25**
River Mile:	**22.1**	Location:	MILL CREEK NEAR PORT UNION @ ST. RT. 747				
Time Fished:	2700 sec	Drainage:	20.6 sq mi	Depth:		Data Source:	
Dist Fished:	0.2 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	1	1.50	0.24	0.09	2.35	58.00
White Sucker		O	S	T	6	9.00	1.45	0.27	7.29	30.00
Common Carp		O	M	T	1	1.50	0.24	0.23	6.07	150.00
Western Blacknose Dace		G	S	T	1	1.50	0.24	0.00	0.08	2.00
Creek Chub		G	N	T	29	43.50	6.99	0.39	10.49	8.93
Striped Shiner		I	S	N	15	22.50	3.61	0.32	8.50	14.00
Spotfin Shiner		I	M	N	1	1.50	0.24	0.00	0.12	3.00
Silverjaw Minnow		I	M	N	1	1.50	0.24	0.00	0.12	3.00
Bluntnose Minnow		O	C	T	20	30.00	4.82	0.09	2.35	2.90
Central Stoneroller		H	N	N	172	258.00	41.45	1.19	31.99	4.59
Largemouth Bass		C	C	N	7	10.50	1.69	0.32	8.71	30.71
Green Sunfish		I	C	T	13	19.50	3.13	0.12	3.16	6.00
Bluegill Sunfish		I	C	P	31	46.50	7.47	0.50	13.48	10.73
Hybrid x Sunfish				N	1	1.50	0.24	0.03	0.89	22.00
Johnny Darter		I	C	N	62	93.00	14.94	0.09	2.47	0.98
Rainbow Darter		I	S	M	54	81.00	13.01	0.07	1.93	0.88
			Data Totals:		415	622.50		3.70		
			Number of Species:		16					
			Number of Hybrids:		1					

River Code:	**23-001-000**	Stream:	**MILL CREEK**	Sample Date:	**2014-07-24**
River Mile:	**22.1**	Location:	MILL CREEK NEAR PORT UNION @ ST. RT. 747		
Time Fished:	2700 sec	Drainage:	20.6 sq mi	Depth:	Data Source:
Dist Fished:	0.2 km	Basin:	Mill Creek	Flow: N	Sampler Type: D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	10	15.00	1.30	1.02	11.03	68.20
White Sucker		O	S	T	4	6.00	0.52	0.42	4.56	70.50
Common Carp		O	M	T	2	3.00	0.26	1.39	14.96	462.50
Creek Chub		G	N	T	66	99.00	8.57	0.47	5.09	4.77
Striped Shiner		I	S	N	114	171.00	14.81	0.77	8.25	4.47
Spotfin Shiner		I	M	N	3	4.50	0.39	0.03	0.34	7.00
Silverjaw Minnow		I	M	N	10	15.00	1.30	0.06	0.63	3.90
Bluntnose Minnow		O	C	T	159	238.50	20.65	0.90	9.76	3.79
Central Stoneroller		H	N	N	178	267.00	23.12	1.84	19.84	6.89
Yellow Bullhead		I	C	T	1	1.50	0.13	0.05	0.52	32.00
White Crappie		I	C	N	1	1.50	0.13	0.11	1.16	72.00
Largemouth Bass		C	C	N	1	1.50	0.13	0.09	0.97	60.00
Green Sunfish		I	C	T	55	82.50	7.14	0.86	9.31	10.47
Bluegill Sunfish		I	C	P	55	82.50	7.14	1.05	11.32	12.73
Green SF x Bluegill SF				N	2	3.00	0.26	0.10	1.10	34.00
Johnny Darter		I	C	N	39	58.50	5.06	0.03	0.30	0.47
Rainbow Darter		I	S	M	70	105.00	9.09	0.08	0.86	0.76
			Data Totals:		770	1155.00		9.27		
			Number of Species:		17					
			Number of Hybrids:		1					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-08-26**
River Mile:	**18.7**	Location:	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.				
Time Fished:	1800 sec	Drainage:	27.0 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	7	14.00	9.33	0.64	6.30	45.71
White Sucker		O	S	T	4	8.00	5.33	0.46	4.53	57.50
Common Carp		O	M	T	2	4.00	2.67	7.00	68.90	1750.00
Spotfin Shiner		I	M	N	6	12.00	8.00	0.08	0.79	6.67
Bluntnose Minnow		O	C	T	2	4.00	2.67	0.01	0.10	2.50
Central Stoneroller		H	N	N	8	16.00	10.67	0.05	0.53	3.38
Largemouth Bass		C	C	N	3	6.00	4.00	0.48	4.76	80.67
Green Sunfish		I	C	T	20	40.00	26.67	0.53	5.22	13.25
Bluegill Sunfish		I	C	P	20	40.00	26.67	0.77	7.58	19.25
Hybrid x Sunfish				N	1	2.00	1.33	0.12	1.22	62.00
Rainbow Darter		I	S	M	2	4.00	2.67	0.01	0.08	2.00
			Data Totals:		75	150.00		10.16		
			Number of Species:		11					
			Number of Hybrids:		1					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-07-23**
River Mile:	**18.7**	Location:	MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.				
Time Fished:	1800 sec	Drainage:	27.0 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	6	12.00	5.94	0.57	12.72	47.67
White Sucker		O	S	T	1	2.00	0.99	0.01	0.22	5.00
Common Carp		O	M	T	1	2.00	0.99	1.00	22.24	500.00
Creek Chub		G	N	T	5	10.00	4.95	0.02	0.49	2.20
Spotfin Shiner		I	M	N	16	32.00	15.84	0.18	4.07	5.71
Central Stoneroller		H	N	N	5	10.00	4.95	0.22	4.94	22.20
Yellow Bullhead		I	C	T	1	2.00	0.99	0.09	2.00	45.00
Largemouth Bass		C	C	N	1	2.00	0.99	0.02	0.40	9.00
Green Sunfish		I	C	T	38	76.00	37.62	1.31	29.11	17.22
Bluegill Sunfish		I	C	P	25	50.00	24.75	1.06	23.63	21.25
Johnny Darter		I	C	N	1	2.00	0.99	0.00	0.09	2.00
Rainbow Darter		I	S	M	1	2.00	0.99	0.00	0.09	2.00
			Data Totals:		101	202.00		4.50		
			Number of Species:		12					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-08-25**
River Mile:	**18.0**	Location:	MILL CREEK 30 FT. UPST. CONFL E. FK. MILL CREEK				
Time Fished:	2700 sec	Drainage:	32.5 sq mi	Depth:		Data Source:	
Dist Fished:	0.2 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	7	10.50	4.00	0.65	5.30	61.71
White Sucker		O	S	T	5	7.50	2.86	1.43	11.65	190.00
Common Carp		O	M	T	3	4.50	1.71	4.67	38.15	1037.33
Spotfin Shiner		I	M	N	16	24.00	9.14	0.12	0.96	4.88
Bluntnose Minnow		O	C	T	1	1.50	0.57	0.00	0.02	2.00
Common Carp x Goldfish		O	M	T	1	1.50	0.57	1.13	9.19	750.00
Largemouth Bass		C	C	N	1	1.50	0.57	0.27	2.21	180.00
Green Sunfish		I	C	T	55	82.50	31.43	1.49	12.21	18.11
Bluegill Sunfish		I	C	P	82	123.00	46.86	2.48	20.23	20.13
Johnny Darter		I	C	N	1	1.50	0.57	0.00	0.01	1.00
Rainbow Darter		I	S	M	2	3.00	1.14	0.01	0.05	2.00
Fantail Darter		I	C	N	1	1.50	0.57	0.00	0.02	2.00
			Data Totals:		175	262.50		12.24		
			Number of Species:		12					
			Number of Hybrids:		1					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-07-22**
River Mile:	**18.0**	Location:	MILL CREEK 30 FT. UPST. CONFL E. FK. MILL CREEK				
Time Fished:	1800 sec	Drainage:	32.5 sq mi	Depth:		Data Source:	
Dist Fished:	0.19 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	7	11.05	3.68	1.00	14.59	90.83
White Sucker		O	S	T	9	14.21	4.74	0.08	1.16	5.63
Common Carp		O	M	T	1	1.58	0.53	2.05	29.84	1300.00
Spotfin Shiner		I	M	N	30	47.37	15.79	0.23	3.37	4.90
Bluntnose Minnow		O	C	T	12	18.95	6.32	0.08	1.15	4.17
Central Stoneroller		H	N	N	7	11.05	3.68	0.01	0.18	1.14
Largemouth Bass		C	C	N	1	1.58	0.53	0.02	0.23	10.00
Green Sunfish		I	C	T	40	63.16	21.05	1.34	19.55	21.29
Bluegill Sunfish		I	C	P	79	124.74	41.58	2.05	29.81	16.44
Johnny Darter		I	C	N	1	1.58	0.53	0.00	0.02	1.00
Rainbow Darter		I	S	M	3	4.74	1.58	0.01	0.09	1.33
			Data Totals:		190	300.00		6.88		
			Number of Species:		11					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-08-26**
River Mile:	**17.6**	Location:	MILL CREEK NE OF GLENDALE @ KEMPER RD.				
Time Fished:	1800 sec	Drainage:	44.8 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	3	6.00	2.59	0.22	2.12	36.67
White Sucker		O	S	T	21	42.00	18.10	0.38	3.66	9.05
Common Carp		O	M	T	5	10.00	4.31	7.32	70.49	732.00
Creek Chub		G	N	T	3	6.00	2.59	0.02	0.19	3.33
Spotfin Shiner		I	M	N	3	6.00	2.59	0.02	0.17	3.00
Sand Shiner		I	M	M	3	6.00	2.59	0.01	0.10	1.67
Central Stoneroller		H	N	N	14	28.00	12.07	0.36	3.47	12.86
Channel Catfish			C	N	1	2.00	0.86	0.01	0.06	3.00
Yellow Bullhead		I	C	T	5	10.00	4.31	0.39	3.76	39.00
Largemouth Bass		C	C	N	1	2.00	0.86	0.35	3.37	175.00
Green Sunfish		I	C	T	17	34.00	14.66	0.63	6.11	18.65
Bluegill Sunfish		I	C	P	25	50.00	21.55	0.65	6.26	13.00
Johnny Darter		I	C	N	3	6.00	2.59	0.01	0.06	1.00
Rainbow Darter		I	S	M	12	24.00	10.34	0.02	0.19	0.83
			Data Totals:		116	232.00		10.38		
			Number of Species:		14					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-07-29**
River Mile:	**17.6**	Location:	MILL CREEK NE OF GLENDALE @ KEMPER RD.				
Time Fished:	1800 sec	Drainage:	44.8 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	8	16.00	3.07	2.02	22.48	126.25
White Sucker		O	S	T	63	126.00	24.14	0.72	8.01	5.71
Common Carp		O	M	T	2	4.00	0.77	3.08	34.28	770.00
Striped Shiner		I	S	N	1	2.00	0.38	0.06	0.67	30.00
Spotfin Shiner		I	M	N	35	70.00	13.41	0.42	4.72	6.06
Sand Shiner		I	M	M	36	72.00	13.79	0.23	2.56	3.19
Silverjaw Minnow		I	M	N	2	4.00	0.77	0.01	0.13	3.00
Central Stoneroller		H	N	N	19	38.00	7.28	0.44	4.90	11.58
Yellow Bullhead		I	C	T	1	2.00	0.38	0.10	1.07	48.00
Largemouth Bass		C	C	N	1	2.00	0.38	0.01	0.13	6.00
Green Sunfish		I	C	T	22	44.00	8.43	0.63	7.00	14.29
Bluegill Sunfish		I	C	P	54	108.00	20.69	1.22	13.61	11.32
Johnny Darter		I	C	N	8	16.00	3.07	0.02	0.22	1.25
Rainbow Darter		I	S	M	9	18.00	3.45	0.02	0.22	1.11
			Data Totals:		261	522.00		8.99		
			Number of Species:		14					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-08-26**
River Mile:	**16.6**	Location:	MILL CREEK AT SHARONVILLE @ SHARON RD.				
Time Fished:	1800 sec	Drainage:	50.5 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Northern Hog Sucker		I	S	M	1	2.00	0.76	0.33	12.32	165.00
Western Blacknose Dace		G	S	T	1	2.00	0.76	0.00	0.15	2.00
Creek Chub		G	N	T	1	2.00	0.76	0.00	0.15	2.00
Spotfin Shiner		I	M	N	3	6.00	2.29	0.04	1.57	7.00
Central Stoneroller		H	N	N	75	150.00	57.25	0.68	25.39	4.53
Yellow Bullhead		I	C	T	6	12.00	4.58	0.48	17.77	39.67
Largemouth Bass		C	C	N	1	2.00	0.76	0.02	0.75	10.00
Green Sunfish		I	C	T	23	46.00	17.56	0.80	29.87	17.39
Bluegill Sunfish		I	C	P	13	26.00	9.92	0.30	11.35	11.69
Rainbow Darter		I	S	M	7	14.00	5.34	0.02	0.67	1.29
			Data Totals:		131	262.00		2.68		
			Number of Species:		10					
			Number of Hybrids:		0					

River Code:	**23-001-000**	Stream:	**MILL CREEK**			Sample Date:	**2014-07-29**
River Mile:	**16.6**	Location:	MILL CREEK AT SHARONVILLE @ SHARON RD.				
Time Fished:	1800 sec	Drainage:	50.5 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	9	18.00	3.64	0.10	2.46	5.56
Creek Chub		G	N	T	27	54.00	10.93	0.09	2.10	1.58
Striped Shiner		I	S	N	3	6.00	1.21	0.06	1.38	9.33
Spotfin Shiner		I	M	N	38	76.00	15.38	0.52	12.69	6.79
Bluntnose Minnow		O	C	T	1	2.00	0.40	0.01	0.15	3.00
Central Stoneroller		H	N	N	69	138.00	27.94	0.58	14.19	4.18
Yellow Bullhead		I	C	T	1	2.00	0.40	0.01	0.20	4.00
Largemouth Bass		C	C	N	1	2.00	0.40	0.01	0.30	6.00
Green Sunfish		I	C	T	49	98.00	19.84	1.75	43.05	17.86
Bluegill Sunfish		I	C	P	35	70.00	14.17	0.93	22.79	13.24
Rainbow Darter		I	S	M	14	28.00	5.67	0.03	0.69	1.00
			Data Totals:		247	494.00		4.06		
			Number of Species:		11					
			Number of Hybrids:		0					

River Code:	**23-001-014**	Stream:	**TOWN RUN (16.91) DST. GLENDALE AVE. AT GLENDALE**	Sample Date:	**2014-07-23**
River Mile:	**0.7**	Location:	TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.		
Time Fished:	1800 sec	Drainage:	2.1 sq mi	Depth:	Data Source:
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	57	114.00	11.80	0.00	NA	0.00
Western Blacknose Dace		G	S	T	1	2.00	0.21	0.00	NA	0.00
Creek Chub		G	N	T	100	200.00	20.70	0.00	NA	0.00
Central Stoneroller		H	N	N	206	412.00	42.65	0.00	NA	0.00
Green Sunfish		I	C	T	114	228.00	23.60	0.00	NA	0.00
Bluegill Sunfish		I	C	P	5	10.00	1.04	0.00	NA	0.00
			Data Totals:		483	966.00		0.00		
			Number of Species:		6					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**	Sample Date:	**2014-07-15**
River Mile:	**3.2**	Location:	E. FK. MILL CREEK NEAR WEST CHESTER @ WEST CHESTER RD.		
Time Fished:	1800 sec	Drainage:	5.0 sq mi	Depth:	Data Source:
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	23	46.00	4.24	0.00	NA	0.00
Creek Chub		G	N	T	19	38.00	3.51	0.00	NA	0.00
Striped Shiner		I	S	N	6	12.00	1.11	0.00	NA	0.00
Bluntnose Minnow		O	C	T	4	8.00	0.74	0.00	NA	0.00
Central Stoneroller		H	N	N	174	348.00	32.10	0.00	NA	0.00
Yellow Bullhead		I	C	T	3	6.00	0.55	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.18	0.00	NA	0.00
Green Sunfish		I	C	T	50	100.00	9.23	0.00	NA	0.00
Bluegill Sunfish		I	C	P	25	50.00	4.61	0.00	NA	0.00
Johnny Darter		I	C	N	17	34.00	3.14	0.00	NA	0.00
Rainbow Darter		I	S	M	216	432.00	39.85	0.00	NA	0.00
Fantail Darter		I	C	N	4	8.00	0.74	0.00	NA	0.00
			Data Totals:		542	1084.00		0.00		
			Number of Species:		12					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**			Sample Date:	**2014-07-17**
River Mile:	**1.9**	Location:	E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.				
Time Fished:	1800 sec	Drainage:	8.1 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	13	26.00	2.05	0.00	NA	0.00
Creek Chub		G	N	T	1	2.00	0.16	0.00	NA	0.00
Central Stoneroller		H	N	N	52	104.00	8.20	0.00	NA	0.00
Yellow Bullhead		I	C	T	2	4.00	0.32	0.00	NA	0.00
Largemouth Bass		C	C	N	13	26.00	2.05	0.00	NA	0.00
Green Sunfish		I	C	T	52	104.00	8.20	0.00	NA	0.00
Bluegill Sunfish		I	C	P	271	542.00	42.74	0.00	NA	0.00
Johnny Darter		I	C	N	13	26.00	2.05	0.00	NA	0.00
Rainbow Darter		I	S	M	217	434.00	34.23	0.00	NA	0.00
			Data Totals:		634	1268.00		0.00		
			Number of Species:		9					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**	Sample Date:	**2014-07-17**
River Mile:	**1.2**	Location:	E. FK. MILL CREEK UPST. BUTLER CO. UPPER MILL CREEK WWTP		
Time Fished:	1800 sec	Drainage:	9.0 sq mi	Depth:	Data Source:
Dist Fished:	0.16 km	Basin:	Mill Creek	Flow: N	Sampler Type: E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	1	1.89	0.15	0.00	NA	0.00
Creek Chub		G	N	T	15	28.30	2.30	0.00	NA	0.00
Central Stoneroller		H	N	N	391	737.74	59.88	0.00	NA	0.00
Yellow Bullhead		I	C	T	3	5.66	0.46	0.00	NA	0.00
Black Bullhead		I	C	P	1	1.89	0.15	0.00	NA	0.00
Largemouth Bass		C	C	N	4	7.55	0.61	0.00	NA	0.00
Green Sunfish		I	C	T	44	83.02	6.74	0.00	NA	0.00
Bluegill Sunfish		I	C	P	156	294.34	23.89	0.00	NA	0.00
Johnny Darter		I	C	N	15	28.30	2.30	0.00	NA	0.00
Rainbow Darter		I	S	M	23	43.40	3.52	0.00	NA	0.00
			Data Totals:		653	1232.08		0.00		
			Number of Species:		10					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**			Sample Date:	**2014-07-17**
River Mile:	**0.8**	Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.				
Time Fished:	1800 sec	Drainage:	9.2 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	1	2.00	0.96	0.00	NA	0.00
Common Carp		O	M	T	2	4.00	1.92	0.00	NA	0.00
Creek Chub		G	N	T	4	8.00	3.85	0.00	NA	0.00
Spotfin Shiner		I	M	N	1	2.00	0.96	0.00	NA	0.00
Central Stoneroller		H	N	N	11	22.00	10.58	0.00	NA	0.00
Yellow Bullhead		I	C	T	8	16.00	7.69	0.00	NA	0.00
Largemouth Bass		C	C	N	1	2.00	0.96	0.00	NA	0.00
Green Sunfish		I	C	T	35	70.00	33.65	0.00	NA	0.00
Bluegill Sunfish		I	C	P	38	76.00	36.54	0.00	NA	0.00
Rainbow Darter		I	S	M	3	6.00	2.88	0.00	NA	0.00
			Data Totals:		104	208.00		0.00		
			Number of Species:		10					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**			Sample Date:	**2014-09-19**
River Mile:	**0.0**	Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ MOUTH				
Time Fished:	2700 sec	Drainage:	9.7 sq mi	Depth:		Data Source:	
Dist Fished:	0.2 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	8	12.00	6.96	1.20	17.44	100.00
Common Carp		O	M	T	1	1.50	0.87	2.10	30.53	1400.00
Spotfin Shiner		I	M	N	14	21.00	12.17	0.14	1.96	6.43
Central Stoneroller		H	N	N	3	4.50	2.61	0.07	1.05	16.00
Yellow Bullhead		I	C	T	1	1.50	0.87	0.01	0.09	4.00
Largemouth Bass		C	C	N	1	1.50	0.87	0.34	4.91	225.00
Green Sunfish		I	C	T	47	70.50	40.87	1.26	18.33	17.89
Bluegill Sunfish		I	C	P	36	54.00	31.30	1.76	25.60	32.62
Johnny Darter		I	C	N	3	4.50	2.61	0.00	0.07	1.00
Rainbow Darter		I	S	M	1	1.50	0.87	0.00	0.02	1.00
			Data Totals:		115	172.50		6.88		
			Number of Species:		10					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**	Sample Date:	**2014-08-25**
River Mile:	**0.0**	Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ MOUTH		
Time Fished:	2700 sec	Drainage:	9.7 sq mi	Depth:	Data Source:
Dist Fished:	0.2 km	Basin:	Mill Creek	Flow: N	Sampler Type: D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	6	9.00	4.14	1.19	23.17	131.67
White Sucker		O	S	T	16	24.00	11.03	0.34	6.57	14.00
Common Carp		O	M	T	1	1.50	0.69	0.92	17.89	610.00
Central Stoneroller		H	N	N	33	49.50	22.76	0.15	3.03	3.13
Yellow Bullhead		I	C	T	1	1.50	0.69	0.01	0.15	5.00
Green Sunfish		I	C	T	35	52.50	24.14	0.93	18.12	17.65
Bluegill Sunfish		I	C	P	48	72.00	33.10	1.58	30.80	21.88
Johnny Darter		I	C	N	3	4.50	2.07	0.01	0.15	1.67
Rainbow Darter		I	S	M	2	3.00	1.38	0.01	0.12	2.00
			Data Totals:		145	217.50		5.11		
			Number of Species:		9					
			Number of Hybrids:		0					

River Code:	**23-006-000**	Stream:	**EAST FORK MILL CREEK**	Sample Date:	**2014-07-22**
River Mile:	**0.0**	Location:	E. FK. MILL CREEK NEAR CRESCENTVILLE @ MOUTH		
Time Fished:	1800 sec	Drainage:	9.7 sq mi	Depth:	Data Source:
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow: N	Sampler Type: D

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Gizzard Shad		O	M	N	7	14.00	4.49	1.60	14.87	114.57
White Sucker		O	S	T	5	10.00	3.21	3.13	29.02	313.00
Spotfin Shiner		I	M	N	5	10.00	3.21	0.09	0.87	9.40
Central Stoneroller		H	N	N	1	2.00	0.64	0.00	0.04	2.00
Yellow Bullhead		I	C	T	5	10.00	3.21	1.47	13.63	147.00
Largemouth Bass		C	C	N	1	2.00	0.64	0.62	5.75	310.00
Green Sunfish		I	C	T	72	144.00	46.15	2.43	22.57	16.90
Bluegill Sunfish		I	C	P	58	116.00	37.18	1.43	13.22	12.29
Rainbow Darter		I	S	M	2	4.00	1.28	0.00	0.04	1.00
			Data Totals:		156	312.00		10.79		
			Number of Species:		9					
			Number of Hybrids:		0					

River Code:	**23-007-000**	Stream:	**MUDDY CREEK**			Sample Date:	**2014-06-26**
River Mile:	**5.4**	Location:	MUDDY CREEK NEAR CHEVIOT @ EBENEZER RD.				
Time Fished:	1500 sec	Drainage:	7.6 sq mi	Depth:		Data Source:	
Dist Fished:	0.13 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Green Sunfish		I	C	T	48	110.77	100.00	0.00	NA	0.00
			Data Totals:		48	110.77		0.00		
			Number of Species:		1					
			Number of Hybrids:		0					

River Code:	**23-007-000**	Stream:	**MUDDY CREEK**			Sample Date:	**2014-06-26**
River Mile:	**2.0**	Location:	MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.				
Time Fished:	3600 sec	Drainage:	12.1 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
White Sucker		O	S	T	1	2.00	0.07	0.00	NA	0.00
Western Blacknose Dace		G	S	T	150	300.00	10.68	0.00	NA	0.00
Creek Chub		G	N	T	67	134.00	4.77	0.00	NA	0.00
Sand Shiner		I	M	M	11	22.00	0.78	0.00	NA	0.00
Bluntnose Minnow		O	C	T	359	718.00	25.55	0.00	NA	0.00
Central Stoneroller		H	N	N	668	1336.00	47.54	0.00	NA	0.00
Yellow Bullhead		I	C	T	3	6.00	0.21	0.00	NA	0.00
Green Sunfish		I	C	T	18	36.00	1.28	0.00	NA	0.00
Bluegill Sunfish		I	C	P	3	6.00	0.21	0.00	NA	0.00
Longear Sunfish		I	C	M	43	86.00	3.06	0.00	NA	0.00
Green SF x Hybrid				N	2	4.00	0.14	0.00	NA	0.00
Rainbow Darter		I	S	M	80	160.00	5.69	0.00	NA	0.00
			Data Totals:		1405	2810.00		0.00		
			Number of Species:		12					
			Number of Hybrids:		1					

River Code:	**23-008-000**	Stream:	**RAPID RUN**			Sample Date:	**2014-06-26**
River Mile:	**1.2**	Location:	RAPID RUN NEAR CINCINNATI @ BENDER RD.				
Time Fished:	3600 sec	Drainage:	5.8 sq mi	Depth:		Data Source:	
Dist Fished:	0.15 km	Basin:	Mill Creek	Flow:	N	Sampler Type:	E

Species Name	IBI GRP	Feed Guild	Breed Guild	Tol	# of Fish	Relative Number	% by Number	Relative Weight	% by Weight	Ave Weight (gm)
Western Blacknose Dace		G	S	T	36	72.00	9.68	0.00	NA	0.00
Creek Chub		G	N	T	125	250.00	33.60	0.00	NA	0.00
Central Stoneroller		H	N	N	209	418.00	56.18	0.00	NA	0.00
Green Sunfish		I	C	T	1	2.00	0.27	0.00	NA	0.00
Bluegill Sunfish		I	C	P	1	2.00	0.27	0.00	NA	0.00
			Data Totals:		372	744.00		0.00		
			Number of Species:		5					
			Number of Hybrids:		0					

Appendix Table G – Fish Metric, IBI, and MIwb Results

Headwater Sites				Number of					Percent of Individuals							
River Mile	Type	Date	DA (sq mi)	Total Species	Minnow Species	Headwater Species	Sensitive Species	Darter Sculpin Species	Simple Lithophils	Tolerant Fishes	Omni-vores	Pioneering	Insect-ivores	DELT Anomalies	Rel Nol minus tolerants/ (0.3km)	IBI
FIVEMILE CREEK (10-001)																
Year: 2014																
2.37	E	6/18/2014	3.0	8(3)	3(3)	1(1)	1(1)	1(1)	33.7(3)	63.2(1)	9.3(5)	29.9(5)	1.0(1)	0.0(5)	310(3)	32
EIGHTMILE CREEK (10-002)																
Year: 2014																
0.18	E	6/18/2014	4.0	10(5)	5(3)	2(3)	2(3)	2(3)	41.6(5)	10.4(5)	5.4(5)	5.9(5)	71.0(5)	0.0(5)	396(5)	50
TENMILE CREEK (10-003)																
Year: 2014																
3.61	E	6/26/2014	6.0	13(5)	6(5)	2(3)	3(3)	3(3)	23.6(3)	14.3(5)	1.8(5)	12.6(5)	40.0(5)	0.0(5)	1890(5)	52
1.17	E	6/23/2014	13.0	18(3)	7(5)	1(1)	5(3)	3(3)	21.9(1)	29.9(5)	7.6(5)	29.5(5)	67.0(5)	0.0(5)	302(3)	46
Trib. To Tenmile Creek (3.58) (10-003)																
Year: 2014																
0.01	E	6/26/2014	4.0	14(5)	5(3)	2(3)	2(3)	3(5)	9.7(5)	22.4(5)	3.0(5)	15.9(5)	15.0(1)	0.0(5)	1286(5)	50
NINEMILE CREEK (10-004)																
Year: 2014																
0.79	E	6/23/2014	8.0	14(5)	5(3)	2(3)	5(5)	3(3)	26.6(5)	19.3(5)	4.6(5)	15.5(5)	54.0(5)	0.0(5)	886(5)	54
TWELVEMILE CREEK (10-006)																
Year: 2014																
6.44	E	6/30/2014	7.0	8(5)	3(3)	1(1)	0(1)	2(3)	4.5(1)	48.7(3)	33.7(1)	48.8(3)	31.0(3)	0.0(5)	658(5)	32
2.08	E	6/30/2014	18.0	22(5)	7(5)	2(3)	6(3)	4(3)	33.9(3)	8.2(5)	1.9(5)	8.6(5)	47.0(3)	0.0(5)	1392(5)	50
LITTLE INDIAN CREEK (10-010)																
Year: 2014																
0.85	E	7/3/2014	5.0	18(5)	5(3)	2(3)	5(5)	4(5)	6.4(5)	39.8(3)	20.4(3)	37.6(3)	21.0(3)	0.0(5)	750(5)	48

Headwater Sites				Number of					Percent of Individuals							
River Mile	Type	Date	DA (sq mi)	Total Species	Minnow Species	Headwater Species	Sensitive Species	Darter Sculpin Species	Simple Lithophils	Tolerant Fishes	Omni-vores	Pioneering	Insect-ivores	DELT Anomalies	Rel Nol minus tolerants/ (0.3km)	IBI
BOAT RUN (10-011)																
Year: 2014																
0.20	E	6/30/2014	4.0	14(5)	3(3)	1(1)	4(5)	4(5)	9.9(3)	13.3(5)	7.6(5)	8.8(5)	8.0(1)	0.0(5)	1398(5)	48
BIG INDIAN CREEK (10-012)																
Year: 2014																
8.70	E	7/2/2014	5.0	12(5)	4(3)	1(1)	0(1)	2(3)	1.0(1)	47.2(3)	31.5(1)	52.1(3)	27.0(3)	0.0(5)	718(5)	32
6.90	E	7/3/2014	11.0	16(3)	3(1)	1(1)	4(3)	4(3)	15.4(3)	34.3(3)	11.4(5)	34.6(3)	80.0(5)	0.0(5)	460(3)	40
NORTH FORK INDIAN CREEK (10-016)																
Year: 2014																
0.93	E	7/2/2014	11.0	17(5)	6(3)	2(3)	3(3)	4(3)	18.7(3)	38.5(3)	22.9(3)	33.2(3)	26.0(3)	0.0(5)	1324(5)	42
MAPLE CREEK (10-021)																
Year: 2014																
1.62	E	7/3/2014	8.0	17(5)	7(5)	2(3)	7(5)	3(3)	33.3(5)	41.6(3)	11.6(5)	25.9(5)	23.0(3)	0.0(5)	890(5)	52
BEAR CREEK (10-023)																
Year: 2014																
5.30	E	8/26/2014	5.0	13(5)	5(3)	2(3)	0(1)	2(3)	16.1(1)	52.2(3)	2.2(5)	39.4(3)	24.0(3)	0.0(5)	1000(5)	40
2.43	E	7/3/2014	8.0	16(3)	5(3)	2(3)	5(5)	4(5)	30.7(3)	33.6(5)	4.1(5)	21.3(5)	44.0(5)	0.0(5)	580(3)	52
Trib To Bear Creek (6.85) (10-023)																
Year: 2014																
0.55	E	8/26/2014	0.0	6(1)	3(3)	1(1)	0(1)	0(1)	4.5(3)	98.7(1)	0.0(5)	94.1(1)	1.0(1)	0.0(5)	9(1)	26
EAST BRANCH BULLSKIN CREEK (10-030)																
Year: 2014																
4.70	E	8/27/2014	11.0	13(3)	4(3)	1(1)	0(1)	2(3)	6.8(1)	34.9(3)	14.1(5)	40.6(3)	59.0(5)	0.0(5)	396(3)	36
0.40	E	7/16/2014	16.0	14(5)	4(3)	1(1)	5(3)	4(3)	12.7(3)	7.8(5)	4.2(5)	4.9(5)	31.0(3)	0.0(5)	870(5)	44

Headwater Sites

				Number of					Percent of Individuals							
River Mile	Type	Date	DA (sq mi)	Total Species	Minnow Species	Headwater Species	Sensitive Species	Darter Sculpin Species	Simple Lithophils	Tolerant Fishes	Omni-vores	Pioneering	Insect-ivores	DELT Anomalies	Rel Nol minus tolerants/ (0.3km)	IBI
MIDDLE BRANCH BULLSKIN CREEK (10-031)																
Year: 2014																
0.05	E	7/30/2014	5.0	11(5)	5(3)	2(3)	2(1)	4(5)	10.4(3)	41.7(3)	2.8(5)	33.7(3)	15.0(1)	0.0(5)	838(5)	40
MILL CREEK (23-001)																
Year: 2014																
26.35	E	7/17/2014	4.0	13(5)	6(5)	1(1)	1(1)	2(3)	20.6(3)	17.1(5)	2.4(5)	24.4(5)	34.0(5)	0.0(5)	844(5)	48
TOWN RUN (16.91) DST. GLENDALE AVE. AT GLENDALE (23-001)																
Year: 2014																
0.67	E	7/23/2014	2.0	6(5)	3(3)	1(1)	0(1)	0(1)	12.0(3)	56.3(3)	11.8(3)	44.3(3)	25.0(3)	0.0(5)	422(5)	34
EAST FORK MILL CREEK (23-006)																
Year: 2014																
3.17	E	7/15/2014	5.0	12(5)	4(3)	1(1)	1(1)	3(3)	45.2(3)	18.3(5)	5.0(5)	16.6(5)	59.0(5)	0.0(5)	886(5)	46
1.85	E	7/17/2014	8.0	9(5)	2(1)	0(1)	1(1)	2(3)	36.3(1)	10.7(5)	2.1(5)	10.4(5)	88.0(5)	0.0(5)	1132(5)	40
1.15	E	7/17/2014	9.0	10(5)	2(1)	0(1)	1(1)	2(3)	3.7(1)	9.7(5)	0.2(5)	11.3(5)	37.0(3)	0.0(5)	1113(5)	38
0.76	E	7/17/2014	9.0	10(1)	3(1)	0(1)	1(1)	1(1)	3.9(1)	48.1(3)	2.9(5)	37.5(3)	82.0(5)	2.0(3)	108(1)	28
0.01	D	9/19/2014	10.0	10(1)	2(1)	0(1)	1(1)	2(3)	7.8(1)	49.6(3)	7.8(5)	43.5(3)	89.0(5)	2.0(3)	87(1)	30
	D	8/25/2014	10.0	9(1)	1(1)	0(1)	1(1)	2(3)	12.4(1)	36.6(3)	15.9(5)	26.2(5)	61.0(5)	0.0(5)	138(1)	34
	D	7/22/2014	10.0	9(1)	2(1)	0(1)	1(1)	1(1)	4.5(1)	52.6(3)	7.7(5)	46.2(3)	91.0(5)	1.0(5)	148(1)	30
MUDDY CREEK (23-007)																
Year: 2014																
5.40	E	6/26/2014	8.0	1(1)	0(1)	0(1)	0(1)	0(1)	0.0(1)	100.0(1)	0.0(5)	100.0(1)	100.0(5)	0.0(5)	0(1)	24
1.96	E	6/26/2014	12.0	12(5)	5(3)	1(1)	3(3)	1(1)	16.4(1)	42.6(3)	25.6(3)	31.6(3)	11.0(1)	0.0(5)	1614(5)	32
RAPID RUN (23-008)																
Year: 2014																
1.15	E	6/26/2014	6.0	5(3)	3(3)	1(1)	0(1)	0(1)	9.7(1)	43.6(3)	0.0(5)	33.9(3)	1.0(1)	0.0(5)	420(3)	28

Wading Sites				Number of					Percent of Individuals						Rel. No. minus		
River Mile	Type	Date	DA (sq mi)	Total Species	Sunfish Species	Sucker Species	Intolerant Species	Darter Species	Simple Lithophils	Tolerant Fishes	Omni-vores	Top Carni-vores	Insect-ivores	DELT Anomalies	tolerants/ (0.3km)	**IBI**	**MIwb**
BIG INDIAN CREEK (10-012)																	
Year: 2014																	
4.89	E	8/26/2014	27.0	15(5)	4(5)	2(3)	0(1)	4(5)	15.7(1)	28.9(3)	15.9(5)	1.7(3)	41.0(3)	0.0(5)	768(5)	42	8.4
	E	7/24/2014	27.0	15(5)	3(3)	2(3)	0(1)	4(5)	8.5(1)	33.3(3)	25.4(3)	0.3(1)	23.0(1)	0.0(5)	1238(5)	34	8.2
1.71	E	7/30/2014	38.0	23(5)	4(5)	2(3)	1(1)	4(3)	49.4(5)	7.4(5)	5.7(5)	4.1(3)	78.0(5)	0.0(5)	776(5)	50	8.9
	E	7/2/2014	38.0	15(5)	3(3)	1(1)	0(1)	3(3)	15.7(1)	9.8(5)	7.3(5)	1.4(3)	32.0(3)	0.0(5)	1710(5)	38	8.1
BULLSKIN CREEK (10-027)																	
Year: 2014																	
4.38	E	7/30/2014	28.0	18(5)	3(3)	2(3)	0(1)	4(5)	15.0(1)	4.6(5)	0.7(5)	0.3(1)	25.0(1)	0.0(5)	1174(5)	40	7.2
2.96	E	9/30/2014	48.0	18(5)	2(3)	3(3)	0(1)	4(3)	12.1(1)	43.7(3)	31.6(3)	1.4(3)	38.0(3)	0.0(5)	1378(5)	36	9.1
	E	7/16/2014	48.0	16(3)	3(3)	2(3)	0(1)	4(3)	17.4(1)	30.8(3)	11.2(5)	2.8(3)	44.0(3)	0.0(5)	554(3)	36	8.4
WEST BRANCH BULLSKIN CREEK (10-032)																	
Year: 2014																	
0.59	E	7/30/2014	25.0	18(3)	3(3)	3(5)	0(1)	4(5)	21.5(3)	28.9(5)	21.1(3)	0.2(1)	38.0(3)	0.0(5)	748(3)	42	8.5
MILL CREEK (23-001)																	
Year: 2014																	
22.06	D	8/25/2014	21.0	16(3)	2(3)	1(1)	0(1)	2(3)	18.3(3)	16.9(5)	6.8(5)	1.7(3)	43.0(3)	0.0(5)	518(3)	38	7.7
	D	7/24/2014	21.0	17(3)	3(3)	1(1)	0(1)	2(3)	24.4(3)	37.3(3)	22.7(3)	0.1(1)	45.0(3)	0.0(5)	724(3)	32	8.5
18.69	E	8/26/2014	27.0	11(1)	2(3)	1(1)	0(1)	1(1)	8.0(1)	37.3(3)	20.0(3)	4.0(3)	64.0(5)	0.0(5)	94(1)	30	5.8
	E	7/23/2014	27.0	12(1)	2(3)	1(1)	0(1)	2(3)	2.0(1)	45.5(3)	7.9(5)	1.0(1)	81.0(5)	0.0(5)	110(1)	32	6.2
17.96	D	8/25/2014	33.0	12(1)	2(3)	1(1)	0(1)	3(3)	4.0(1)	37.1(3)	9.7(5)	0.6(1)	90.0(5)	0.0(5)	165(1)	32	6.3
	D	7/22/2014	33.0	11(3)	2(3)	1(1)	0(1)	2(1)	6.3(1)	32.6(3)	15.3(5)	0.5(1)	81.0(5)	0.0(5)	202(3)	32	6.5
17.61	E	8/26/2014	45.0	14(1)	2(3)	1(1)	0(1)	2(1)	28.5(3)	44.0(3)	25.0(3)	0.9(1)	59.0(5)	0.0(5)	130(1)	30	6.1
	E	7/29/2014	45.0	14(3)	2(3)	1(1)	0(1)	2(1)	28.0(3)	33.7(3)	28.0(3)	0.4(1)	64.0(5)	0.0(5)	346(3)	32	7.6
16.57	E	8/26/2014	51.0	10(3)	2(3)	1(1)	0(1)	1(1)	6.9(1)	23.7(5)	0.0(5)	0.8(1)	40.0(3)	0.0(5)	200(3)	30	5.9
	E	7/29/2014	51.0	11(3)	2(3)	1(1)	0(1)	1(1)	10.5(1)	35.2(3)	4.1(5)	0.4(1)	57.0(5)	0.0(5)	320(3)	32	6.7

Appendix Table H – Macroinvertbrate ICI Metric Results

Appendix Table H. Invertebrate Community Index metrics for stations sampled in the Southwest Ohio River Tributaries, 2014.

RM	Drainage Area (sq mi)	Number of Taxa				Percent Composition					QUAL EPT	Eco-region	ICI
		Total	Mayfly	Caddisfly	Dipteran	Mayfly	Caddisfly	Tany-tarsini	Other Dipt/NI	Tolerant Organisms			
23-001-000	**MILL CREEK**												
22.06	20.6	40 (6)	4 (2)	3 (6)	21 (6)	7.6 (2)	20.4 (6)	31.0 (6)	40.2 (4)	4.6 (6)	8 (4)	IP	48
18.69	27.0	29 (4)	2 (0)	5 (6)	15 (4)	6.7 (2)	46.8 (6)	19.1 (4)	27.0 (6)	2.6 (6)	6 (2)	IP	40
17.96	32.5	44 (6)	5 (4)	7 (6)	20 (6)	11.4 (2)	29.1 (6)	23.0 (4)	36.0 (4)	8.4 (4)	9 (4)	IP	46
17.61	44.8	39 (6)	3 (2)	5 (6)	20 (6)	2.1 (2)	18.0 (6)	33.2 (6)	46.4 (2)	9.9 (4)	8 (2)	IP	42
16.57	50.5	40 (6)	3 (2)	6 (6)	21 (6)	0.6 (2)	15.9 (6)	40.0 (6)	43.2 (4)	6.1 (6)	6 (2)	IP	46
23-006-000	**EAST FORK MILL CREEK**												
0.76	9.2	29 (4)	3 (2)	4 (6)	14 (4)	1.8 (2)	33.0 (6)	39.8 (6)	25.1 (6)	4.7 (6)	5 (2)	IP	44
0.01	9.7	26 (4)	0 (0)	5 (6)	14 (4)	0.0 (0)	16.8 (6)	49.1 (6)	33.7 (4)	12.6 (4)	4 (2)	IP	36

Appendix Table I – Macroinvertebrate Collection Results

Station: 302685 FIVEMILE CREEK @ FIVE MILE RD.

Rivercode: 10-001-000 River Mile: 2.37

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
25	6	4	1	25		4		Marginally Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
11120	Baetis flavistriga	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71910	Tipula abdominalis	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
78350	Meropelopia sp	+
78601	Pentaneura inyoensis	+
83003	Dicrotendipes fumidus	+
83040	Dicrotendipes neomodestus	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	+
84750	Stictochironomus sp	+
85500	Paratanytarsus sp	+

Station: 609010 EIGHTMILE CREEK NEAR CINCINNATI @ U.S. RT. 52

Rivercode: 10-002-000 River Mile: 0.18

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
31	12	8	1	31		8		Very Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
13521	Stenonema femoratum	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71900	Tipula sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77750	Hayesomyia senata or Thienemannimyia norena	+
82820	Cryptochironomus sp	+
83003	Dicrotendipes fumidus	+
83040	Dicrotendipes neomodestus	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84440	Polypedilum (Uresipedilum) aviceps	+
84450	Polypedilum (Uresipedilum) flavum	+
85800	Tanytarsus sp	+

Station: 302687 TENMILE CREEK SW OF AMELIA, DST. POND RUN RD.

Rivercode: 10-003-000 River Mile: 3.61

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
32	12	7	1	32		7		Good	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
07820	Cambarus (Cambarus) sp A	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13000	Leucrocuta sp	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
15000	Paraleptophlebia sp	+
17200	Caenis sp	+
50301	Chimarra aterrima	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
63300	Hydroporini	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71100	Hexatoma sp	+
74100	Simulium sp	+
77800	Helopelopia sp	+
81650	Parametriocnemus sp	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84750	Stictochironomus sp	+
85800	Tanytarsus sp	+
86200	Tabanus sp	+

Station: 609050 TENMILE CREEK NEAR PALESTINE @ U.S. RT. 52

Rivercode: 10-003-000 River Mile: 1.17

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
51	15	8	0	51		8		Very Good	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11651	Procloeon sp (w/o hindwing pads)	+
11670	Procloeon viridoculare	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
15000	Paraleptophlebia sp	+
17200	Caenis sp	+
18700	Hexagenia sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
47600	Sialis sp	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
58505	Helicopsyche borealis	+
59570	Oecetis nocturna	+
63300	Hydroporini	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
68130	Helichus sp	+
68901	Macronychus glabratus	+
69400	Stenelmis sp	+
71100	Hexatoma sp	+
74100	Simulium sp	+
74501	Ceratopogonidae	+
77115	Ablabesmyia janta	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78200	Larsia sp	+
78655	Procladius (Holotanypus) sp	+
80430	Cricotopus (C.) tremulus group	+
82730	Chironomus (C.) decorus group	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84520	Polypedilum (Tripodura) halterale group	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
84800	Tribelos jucundum	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
87540	Hemerodromia sp	+

Station: 302686 TRIB. TO TENMILE CREEK (3.58) SW OF AMELIA @ ST. RT 749

Rivercode: 10-003-001 River Mile: 0.01

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
49	15	8	3	49		8		Very Good	ABOVE NOR

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
06904	Synurella dentata	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11430	Diphetor hageni	+
11651	Procloeon sp (w/o hindwing pads)	+
13521	Stenonema femoratum	+
15000	Paraleptophlebia sp	+
17200	Caenis sp	+
50301	Chimarra aterrima	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
52315	Diplectrona modesta	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
57400	Neophylax sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71300	Limonia sp	+
71900	Tipula sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77750	Hayesomyia senata or Thienemannimyia norena	+
77800	Helopelopia sp	+
78655	Procladius (Holotanypus) sp	+
79720	Diamesa sp	+
80410	Cricotopus (C.) sp	+
81650	Parametriocnemus sp	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84750	Stictochironomus sp	+
84960	Pseudochironomus sp	+
85500	Paratanytarsus sp	+
85800	Tanytarsus sp	+
85818	Tanytarsus glabrescens group sp 4	+
85821	Tanytarsus glabrescens group sp 7	+
87400	Stratiomys sp	+
89716	Limnophora discreta	+
94400	Fossaria sp	+

Station: X01W01 NINEMILE CREEK UPST. WWTP @ LOCUST CORNER RD.

Rivercode: 10-004-000 River Mile: 0.79

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
44	12	8	2	44		8		Very Good	ABOVE NOR

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
07820	Cambarus (Cambarus) sp A	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11250	Neocloeon sp	+
11430	Diphetor hageni	+
11650	Procloeon sp (w/ hindwing pads)	+
13521	Stenonema femoratum	+
22001	Coenagrionidae	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
57400	Neophylax sp	+
63300	Hydroporini	+
68075	Psephenus herricki	+
68130	Helichus sp	+
69400	Stenelmis sp	+
71300	Limonia sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
78350	Meropelopia sp	+
80410	Cricotopus (C.) sp	+
80420	Cricotopus (C.) bicinctus	+
80430	Cricotopus (C.) tremulus group	+
81650	Parametriocnemus sp	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+
84612	Saetheria tylus	+
84750	Stictochironomus sp	+
85500	Paratanytarsus sp	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
86200	Tabanus sp	+
94400	Fossaria sp	+

Station: X01W13 TWELVEMILE CREEK @ LAUREL-LINDALE RD.

Rivercode: 10-006-000 River Mile: 6.44

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
29	8	4	1	29		4		Marginally Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
04664	Helobdella stagnalis	+
04964	Erpobdella microstoma	+
06904	Synurella dentata	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13521	Stenonema femoratum	+
21200	Calopteryx sp	+
50301	Chimarra aterrima	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
57400	Neophylax sp	+
58505	Helicopsyche borealis	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71910	Tipula abdominalis	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
78401	Natarsia species A (sensu Roback, 1978)	+
81650	Parametriocnemus sp	+
81825	Rheocricotopus (Psilocricotopus) robacki	+
82700	Chironomus sp	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+

Station: 302534 TWELVEMILE CREEK @ FAGINS RUN RD DST FAGINS RUN

Rivercode: 10-006-000 River Mile: 2.08

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
48	13	9	0	48		9		Very Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
04664	Helobdella stagnalis	+
04686	Placobdella papillifera	+
04964	Erpobdella microstoma	+
04968	Erpobdella tetragon	+
05800	Caecidotea sp	+
08250	Orconectes (Procericambarus) rusticus	+
11020	Acerpenna pygmaea	+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
11651	Procloeon sp (w/o hindwing pads)	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
14950	Leptophlebia sp or Paraleptophlebia sp	+
17200	Caenis sp	+
21200	Calopteryx sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
58505	Helicopsyche borealis	+
59740	Triaenodes perna	+
59970	Petrophila sp	+
60900	Peltodytes sp	+
68075	Psephenus herricki	+
68130	Helichus sp	+
69400	Stenelmis sp	+
77120	Ablabesmyia mallochi	+
77355	Clinotanypus pinguis	+
77800	Helopelopia sp	+
78200	Larsia sp	+
78655	Procladius (Holotanypus) sp	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85201	Cladotanytarsus species group A	+
85500	Paratanytarsus sp	+
98200	Pisidium sp	+
98600	Sphaerium sp	+

Station: 302692 LITTLE INDIAN CREEK E OF MOSCOW, ADJ. LAUREL MOSCOW RD.

Rivercode: 10-010-000 River Mile: 0.85

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
48	11	6	0	48		6		Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
06700	Crangonyx sp	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11650	Procloeon sp (w/ hindwing pads)	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
34700	Agnetina capitata complex	+
44501	Corixidae	+
47600	Sialis sp	+
50301	Chimarra aterrima	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
57400	Neophylax sp	+
63300	Hydroporini	+
66500	Enochrus sp	+
67500	Laccobius sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71900	Tipula sp	+
72700	Anopheles sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
78655	Procladius (Holotanypus) sp	+
82820	Cryptochironomus sp	+
82824	Cryptochironomus ponderosus	+
83000	Dicrotendipes sp	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	+
84750	Stictochironomus sp	+
84960	Pseudochironomus sp	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
85818	Tanytarsus glabrescens group sp 4	+
85821	Tanytarsus glabrescens group sp 7	+
87501	Empididae	+
94400	Fossaria sp	+
95100	Physella sp	+
98200	Pisidium sp	+

Station: 302688 BOAT RUN SE OF NEW RICHMOND @ U.S. RT. 52

Rivercode: 10-011-000 River Mile: 0.20

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
28	10	5	0	28		5		Marginally Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05800	Caecidotea sp	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11245	Anafroptilum sp or Neocloeon sp	+
11430	Diphetor hageni	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
45300	Sigara sp	+
50301	Chimarra aterrima	+
52200	Cheumatopsyche sp	+
63300	Hydroporini	+
67500	Laccobius sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
71700	Pilaria sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78401	Natarsia species A (sensu Roback, 1978)	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
85625	Rheotanytarsus sp	+

Station: 302691 BIG INDIAN CREEK NEAR MT. OLIVE @ BRAUN RD, UPST. BEECH RUN

Rivercode: 10-012-000 River Mile: 8.70

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
43	7	5	0	43		5		Marginally Good	INTERMITTE

	Taxa	Quant/Qual
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
06201	Hyalella azteca	+
08250	Orconectes (Procericambarus) rusticus	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
17200	Caenis sp	+
22300	Argia sp	+
23804	Basiaeschna janata	+
24107	Nasiaeschna pentacantha	+
43570	Neoplea sp	+
45300	Sigara sp	+
51400	Nyctiophylax sp	+
60900	Peltodytes sp	+
65800	Berosus sp	+
66500	Enochrus sp	+
67800	Tropisternus sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
72700	Anopheles sp	+
77120	Ablabesmyia mallochi	+
78101	Labrundinia becki	+
78200	Larsia sp	+
78401	Natarsia species A (sensu Roback, 1978)	+
78655	Procladius (Holotanypus) sp	+
80370	Corynoneura lobata	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83300	Glyptotendipes (G.) sp	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
85500	Paratanytarsus sp	+
87400	Stratiomys sp	+
94400	Fossaria sp	+
95100	Physella sp	+
96120	Menetus (Micromenetus) dilatatus	+
98200	Pisidium sp	+

Station: 302689 BIG INDIAN CREEK S OF POINT ISABEL @ ST. RT. 222

Rivercode: 10-012-000 River Mile: 6.90

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
46	10	6	0	46		6		Good	LOW

	Taxa	Quant/Qual
03360	Plumatella sp	+
03600	Oligochaeta	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11200	Callibaetis sp	+
11650	Procloeon sp (w/ hindwing pads)	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
17200	Caenis sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
28208	Erythemis simplicicollis	+
45400	Trichocorixa sp	+
50315	Chimarra obscura	+
51400	Nyctiophylax sp	+
52200	Cheumatopsyche sp	+
58505	Helicopsyche borealis	+
60900	Peltodytes sp	+
65800	Berosus sp	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
68130	Helichus sp	+
69400	Stenelmis sp	+
72700	Anopheles sp	+
74501	Ceratopogonidae	+
77120	Ablabesmyia mallochi	+
77800	Helopelopia sp	+
78200	Larsia sp	+
78655	Procladius (Holotanypus) sp	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
82885	Cryptotendipes pseudotener	+
83040	Dicrotendipes neomodestus	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84520	Polypedilum (Tripodura) halterale group	+
85230	Cladotanytarsus mancus group	+
86200	Tabanus sp	+
87400	Stratiomys sp	+
94400	Fossaria sp	+
95100	Physella sp	+
96002	Helisoma anceps anceps	+
96900	Ferrissia sp	+
97601	Corbicula fluminea	+

Station: X01W04 BIG INDIAN CREEK E OF POINT PLEASANT @ ST. RT. 743

Rivercode: 10-012-000 River Mile: 4.89

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
40	9	7	0	40		7		Marginally Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
08250	Orconectes (Procericambarus) rusticus	+
11020	Acerpenna pygmaea	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
27400	Neurocordulia sp	+
43570	Neoplea sp	+
44501	Corixidae	+
48410	Corydalus cornutus	+
50315	Chimarra obscura	+
51400	Nyctiophylax sp	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
58505	Helicopsyche borealis	+
60300	Dineutus sp	+
60900	Peltodytes sp	+
63900	Laccophilus sp	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
70900	Gonomyia sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
78655	Procladius (Holotanypus) sp	+
80351	Corynoneura caudicula	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83840	Microtendipes pedellus group	+
84450	Polypedilum (Uresipedilum) flavum	+
84520	Polypedilum (Tripodura) halterale group	+
84540	Polypedilum (Tripodura) scalaenum group	+
85821	Tanytarsus glabrescens group sp 7	+
86200	Tabanus sp	+
87400	Stratiomys sp	+
87701	Syrphidae	+
97601	Corbicula fluminea	+
98200	Pisidium sp	+

Station: 609080 BIG INDIAN CREEK AT POINT PLEASANT @ ST. RT. 756

Rivercode: 10-012-000 River Mile: 1.71

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
46	12	7	0	46		7		Good	LOW

	Taxa	Quant/Qual
03600	Oligochaeta	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
11650	Procloeon sp (w/ hindwing pads)	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
23804	Basiaeschna janata	+
28955	Plathemis lydia	+
45400	Trichocorixa sp	+
48410	Corydalus cornutus	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
52540	Hydropsyche dicantha	+
59570	Oecetis nocturna	+
60900	Peltodytes sp	+
63900	Laccophilus sp	+
65800	Berosus sp	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
68130	Helichus sp	+
69400	Stenelmis sp	+
69713	Lutrochus laticeps	+
72700	Anopheles sp	+
74501	Ceratopogonidae	+
77120	Ablabesmyia mallochi	+
78655	Procladius (Holotanypus) sp	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	+
84520	Polypedilum (Tripodura) halterale group	+
84540	Polypedilum (Tripodura) scalaenum group	+
85230	Cladotanytarsus mancus group	+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
87400	Stratiomys sp	+
95100	Physella sp	+
97601	Corbicula fluminea	+

Station: X01W06 N. FK. INDIAN CREEK @ LAUREL - POINT ISABEL RD.

Rivercode: 10-016-000 River Mile: 0.93

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
45	13	9	0	45		9		Very Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
08250	Orconectes (Procericambarus) rusticus	+
11020	Acerpenna pygmaea	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11651	Procloeon sp (w/o hindwing pads)	+
11670	Procloeon viridoculare	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
21200	Calopteryx sp	+
22001	Coenagrionidae	+
24900	Gomphus sp	+
48410	Corydalus cornutus	+
50315	Chimarra obscura	+
51400	Nyctiophylax sp	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
58505	Helicopsyche borealis	+
60900	Peltodytes sp	+
63300	Hydroporini	+
65800	Berosus sp	+
66500	Enochrus sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
72700	Anopheles sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78140	Labrundinia pilosella	+
78655	Procladius (Holotanypus) sp	+
80370	Corynoneura lobata	+
80420	Cricotopus (C.) bicinctus	+
82730	Chironomus (C.) decorus group	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
98600	Sphaerium sp	+

Station: 302693 MAPLE CREEK N OF NEVILLE @ MAPLE CREEK RD.

Rivercode: 10-021-000 River Mile: 1.62

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
30	8	3	0	30		3		Marginally Good	LOW

	Taxa	Quant/Qual
02600	Nematomorpha	+
03600	Oligochaeta	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11430	Diphetor hageni	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
17200	Caenis sp	+
47600	Sialis sp	+
48620	Nigronia serricornis	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
72700	Anopheles sp	+
77800	Helopelopia sp	+
78655	Procladius (Holotanypus) sp	+
82820	Cryptochironomus sp	+
82824	Cryptochironomus ponderosus	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84750	Stictochironomus sp	+
85625	Rheotanytarsus sp	+
95100	Physella sp	+
98001	Sphaeriidae	+

Station: X01W11 BEAR CREEK @ CHILO CEMETERY-MCKENDREE CHAPEL RD.

Rivercode: 10-023-000 River Mile: 5.30

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
49	13	7	0	49		7		Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
11245	Anafroptilum sp or Neocloeon sp	+
11651	Procloeon sp (w/o hindwing pads)	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
21200	Calopteryx sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
27500	Somatochlora sp	+
28955	Plathemis lydia	+
43570	Neoplea sp	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
51400	Nyctiophylax sp	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
58505	Helicopsyche borealis	+
67800	Tropisternus sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71900	Tipula sp	+
72700	Anopheles sp	+
74100	Simulium sp	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78140	Labrundinia pilosella	+
78655	Procladius (Holotanypus) sp	+
81825	Rheocricotopus (Psilocricotopus) robacki	+
82730	Chironomus (C.) decorus group	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+
84960	Pseudochironomus sp	+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
86100	Chrysops sp	+
95100	Physella sp	+

Station: X01W12 BEAR CREEK NW OF CHILO, ADJ. BEAR CREEK RD.

Rivercode: 10-023-000 River Mile: 2.43

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
43	12	7	1	43		7		Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
04964	Erpobdella microstoma	+
05800	Caecidotea sp	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
11250	Neocloeon sp	+
11670	Procloeon viridoculare	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
17200	Caenis sp	+
23804	Basiaeschna janata	+
45300	Sigara sp	+
45400	Trichocorixa sp	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
58505	Helicopsyche borealis	+
63300	Hydroporini	+
65800	Berosus sp	+
67500	Laccobius sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
69713	Lutrochus laticeps	+
72700	Anopheles sp	+
77500	Conchapelopia sp	+
77750	Hayesomyia senata or Thienemannimyia norena	+
78401	Natarsia species A (sensu Roback, 1978)	+
78655	Procladius (Holotanypus) sp	+
80430	Cricotopus (C.) tremulus group	+
81650	Parametriocnemus sp	+
81825	Rheocricotopus (Psilocricotopus) robacki	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
84210	Paratendipes albimanus or P. duplicatus	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85230	Cladotanytarsus mancus group	+
85500	Paratanytarsus sp	+

Station: 302763 TRIB TO BEAR CREEK (6.85), 650 FT DST FELICITY WWTP

Rivercode: 10-023-001 River Mile: 0.55

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
10	2	0	0	10		0		Poor	LOW

	Taxa	Quant/Qual
03600	Oligochaeta	+
04968	Erpobdella tetragon	+
07800	Cambarus sp	+
17200	Caenis sp	+
22001	Coenagrionidae	+
52200	Cheumatopsyche sp	+
74100	Simulium sp	+
82141	Thienemanniella xena	+
95100	Physella sp	+
98200	Pisidium sp	+

Station: 302694 CROOKED RUN AT CHILO @ OLD CARNTOWN RD.

Rivercode: 10-024-000 River Mile: 0.70

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
17	0	0	0	17		0		Poor	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05494	Taphromysis louisianae	+
05800	Caecidotea sp	+
05900	Lirceus sp	+
06810	Gammarus fasciatus	+
47600	Sialis sp	+
67800	Tropisternus sp	+
74501	Ceratopogonidae	+
78401	Natarsia species A (sensu Roback, 1978)	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
84210	Paratendipes albimanus or P. duplicatus	+
84750	Stictochironomus sp	+
84800	Tribelos jucundum	+
95100	Physella sp	+
98001	Sphaeriidae	+

Station: X01W07 BULLSKIN CREEK NE OF CEDRON @ DUNBAR RD.

Rivercode: 10-027-000 River Mile: 4.38

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
45	9	5	0	45		5		Marginally Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11130	Baetis intercalaris	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
45400	Trichocorixa sp	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52540	Hydropsyche dicantha	+
53800	Hydroptila sp	+
60300	Dineutus sp	+
60900	Peltodytes sp	+
65800	Berosus sp	+
66500	Enochrus sp	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
68708	Dubiraphia vittata group	+
68901	Macronychus glabratus	+
69400	Stenelmis sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
80410	Cricotopus (C.) 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	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
87400	Stratiomys sp	+
89501	Ephydridae	+
95100	Physella sp	+

Station: X01W08 BULLSKIN CREEK @ FELICITY CEDRON RURAL RD.

Rivercode: 10-027-000 River Mile: 2.96

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
48	13	11	0	48		11		Very Good	LOW

	Taxa	Quant/Qual
03360	Plumatella sp	+
03600	Oligochaeta	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
11651	Procloeon sp (w/o hindwing pads)	+
11670	Procloeon viridoculare	+
12200	Isonychia sp	+
13521	Stenonema femoratum	+
13561	Maccaffertium pulchellum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
28500	Libellula sp	+
48410	Corydalus cornutus	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
52540	Hydropsyche dicantha	+
58505	Helicopsyche borealis	+
60900	Peltodytes sp	+
65800	Berosus sp	+
66500	Enochrus sp	+
67500	Laccobius sp	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
69713	Lutrochus laticeps	+
72700	Anopheles sp	+
77800	Helopelopia sp	+
78401	Natarsia species A (sensu Roback, 1978)	+
78655	Procladius (Holotanypus) sp	+
81270	Nanocladius (N.) spiniplenus	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84540	Polypedilum (Tripodura) scalaenum group	+
84960	Pseudochironomus sp	+
85200	Cladotanytarsus sp	+
85625	Rheotanytarsus sp	+
85803	Tanytarsus sp 3	+
85818	Tanytarsus glabrescens group sp 4	+
87501	Empididae	+
95100	Physella sp	+
98600	Sphaerium sp	+

Station: 302696 E. BR. BULLSKIN CREEK NNW OF HIGGINSPORT @ LANG RD.

Rivercode: 10-030-000 River Mile: 4.70

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
37	9	7	1	37		7		Good	LOW

	Taxa	Quant/Qual
03600	Oligochaeta	+
06904	Synurella dentata	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11130	Baetis intercalaris	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
23909	Boyeria vinosa	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
58505	Helicopsyche borealis	+
60900	Peltodytes sp	+
68075	Psephenus herricki	+
68707	Dubiraphia quadrinotata	+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
78655	Procladius (Holotanypus) sp	+
80410	Cricotopus (C.) sp	+
81650	Parametriocnemus sp	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84470	Polypedilum (P.) illinoense	+
84520	Polypedilum (Tripodura) halterale group	+
84540	Polypedilum (Tripodura) scalaenum group	+
84612	Saetheria tylus	+
84750	Stictochironomus sp	+
85615	Rheotanytarsus pellucidus	+
85800	Tanytarsus sp	+
98600	Sphaerium sp	+

Station: 302695 E. BR. BULLSKIN CREEK NW OF HIGGINSPORT @ DUNBAR RD.

Rivercode: 10-030-000 River Mile: 0.40

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
50	16	11	2	50		11		Very Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
02600	Nematomorpha	+
03600	Oligochaeta	+
06830	Gammarus minus	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11250	Neocloeon sp	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
11670	Procloeon viridoculare	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
34300	Neoperla clymene complex	+
45300	Sigara sp	+
47600	Sialis sp	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
60900	Peltodytes sp	+
65800	Berosus sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78140	Labrundinia pilosella	+
78350	Meropelopia sp	+
78401	Natarsia species A (sensu Roback, 1978)	+
78655	Procladius (Holotanypus) sp	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84490	Polypedilum (Cerobregma) ontario	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85230	Cladotanytarsus mancus group	+
85800	Tanytarsus sp	+
85818	Tanytarsus glabrescens group sp 4	+
85840	Tanytarsus sepp	+
95100	Physella sp	+

Station: 302697 M. BR. BULLSKIN CREEK SE OF FELICITY, UPST. BULLSKIN RD.

Rivercode: 10-031-000 River Mile: 0.05

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
39	10	8	0	39		8		Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
04680	Placobdella sp	+
05900	Lirceus sp	+
06904	Synurella dentata	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
12200	Isonychia sp	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
27500	Somatochlora sp	+
45300	Sigara sp	+
48410	Corydalus cornutus	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
66500	Enochrus sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
72700	Anopheles sp	+
74100	Simulium sp	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
80420	Cricotopus (C.) bicinctus	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84490	Polypedilum (Cerobregma) ontario	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85500	Paratanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
95100	Physella sp	+

Station: 302698 W. BR. BULLSKIN CREEK NE OF FELICITY @ MT. ZION RD.

Rivercode: 10-032-000 River Mile: 4.65

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
39	9	5	0	39		5		Marginally Good	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
04964	Erpobdella microstoma	+
06904	Synurella dentata	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11650	Procloeon sp (w/ hindwing pads)	+
11651	Procloeon sp (w/o hindwing pads)	+
13521	Stenonema femoratum	+
22001	Coenagrionidae	+
44501	Corixidae	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
60900	Peltodytes sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
72700	Anopheles sp	+
77120	Ablabesmyia mallochi	+
77750	Hayesomyia senata or Thienemannimyia norena	+
78601	Pentaneura inyoensis	+
78655	Procladius (Holotanypus) sp	+
79100	Thienemannimyia group	+
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85500	Paratanytarsus sp	+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
95100	Physella sp	+
98200	Pisidium sp	+

Station: X01W09 W. BR. BULLSKIN CREEK E OF FELICITY @ RICHEY RD.

Rivercode: 10-032-000 River Mile: 0.59

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
52	12	6	0	52		6		Good	LOW

	Taxa	Quant/Qual
03360	Plumatella sp	+
03600	Oligochaeta	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11020	Acerpenna pygmaea	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
11650	Procloeon sp (w/ hindwing pads)	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
14600	Choroterpes basalis	+
17200	Caenis sp	+
21200	Calopteryx sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
23804	Basiaeschna janata	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
59915	Acentria sp	+
60900	Peltodytes sp	+
63900	Laccophilus sp	+
66500	Enochrus sp	+
67800	Tropisternus sp	+
68075	Psephenus herricki	+
68130	Helichus sp	+
69400	Stenelmis sp	+
71900	Tipula sp	+
72700	Anopheles sp	+
74100	Simulium sp	+
74501	Ceratopogonidae	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78200	Larsia sp	+
78655	Procladius (Holotanypus) sp	+
80430	Cricotopus (C.) tremulus group	+
82730	Chironomus (C.) decorus group	+
82824	Cryptochironomus ponderosus	+
83040	Dicrotendipes neomodestus	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84490	Polypedilum (Cerobregma) ontario	+
84540	Polypedilum (Tripodura) scalaenum group	+
85625	Rheotanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
86200	Tabanus sp	+
95100	Physella sp	+
98600	Sphaerium sp	+

Station: Q01S19 MILL CREEK E OF HAMILTON @ LIBERTY-FAIRFIELD RD.

Rivercode: 23-001-000 River Mile: 26.35

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
40	10	4	2	40		4		Fair	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
06700	Crangonyx sp	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
21200	Calopteryx sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
50301	Chimarra aterrima	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	+
71900	Tipula sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
79720	Diamesa sp	+
80740	Eukiefferiella claripennis group	+
81650	Parametriocnemus sp	+
81825	Rheocricotopus (Psilocricotopus) robacki	+
82820	Cryptochironomus sp	+
83003	Dicrotendipes fumidus	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84470	Polypedilum (P.) illinoense	+
84700	Stenochironomus sp	+
84750	Stictochironomus sp	+
85500	Paratanytarsus sp	+
85800	Tanytarsus sp	+

Station: Q01W08 MILL CREEK NEAR PORT UNION @ ST. RT. 747

Rivercode: 23-001-000 River Mile: 22.06

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
56	8	4	2	72	4,412	4	48	N/A	0.50 LOW

	Taxa	Quant/Qual
00653	Eunapius fragilis	+
01320	Hydra sp	1
01801	Turbellaria	+
03360	Plumatella sp	2+
03600	Oligochaeta	128+
04664	Helobdella stagnalis	1
04935	Erpobdella punctata punctata	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
06700	Crangonyx sp	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	14+
11130	Baetis intercalaris	205+
11650	Procloeon sp (w/ hindwing pads)	+
13521	Stenonema femoratum	27+
17200	Caenis sp	88+
21200	Calopteryx sp	+
22001	Coenagrionidae	1+
22300	Argia sp	1+
23704	Anax junius	+
52200	Cheumatopsyche sp	828+
52430	Ceratopsyche morosa group	52+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	19
65800	Berosus sp	5+
67800	Tropisternus sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	16+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	17+
71900	Tipula sp	1+
74100	Simulium sp	+
77500	Conchapelopia sp	142+
77750	Hayesomyia senata or Thienemannimyia norena	+
77800	Helopelopia sp	28
78140	Labrundinia pilosella	+
78350	Meropelopia sp	+
78401	Natarsia species A (sensu Roback, 1978)	+
78450	Nilotanypus fimbriatus	114
80370	Corynoneura lobata	240
80420	Cricotopus (C.) bicinctus	+
80430	Cricotopus (C.) tremulus group	57
81270	Nanocladius (N.) spiniplenus	28
81650	Parametriocnemus sp	28
82121	Thienemanniella lobapodema	28
82141	Thienemanniella xena	31
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
82824	Cryptochironomus ponderosus	+
83003	Dicrotendipes fumidus	28+
83040	Dicrotendipes neomodestus	28+
83158	Endochironomus nigricans	28
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84300	Phaenopsectra obediens group	+
84450	Polypedilum (Uresipedilum) flavum	769+
84470	Polypedilum (P.) illinoense	57+
84540	Polypedilum (Tripodura) scalaenum group	+
84612	Saetheria tylus	+
84700	Stenochironomus sp	+
84960	Pseudochironomus sp	+
85500	Paratanytarsus sp	114
85625	Rheotanytarsus sp	342+
85800	Tanytarsus sp	28+
85818	Tanytarsus glabrescens group sp 4	57
85821	Tanytarsus glabrescens group sp 7	797+
85840	Tanytarsus sepp	28
87501	Empididae	+
96120	Menetus (Micromenetus) dilatatus	8+
96264	Planorbella (Pierosoma) pilsbryi	+
96900	Ferrissia sp	18
97601	Corbicula fluminea	+
98600	Sphaerium sp	8+

Station: Q01W05 MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.

Rivercode: 23-001-000 River Mile: 18.69

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
34	6	2	0	46	10,055	2	40	N/A	1.38 LOW

	Taxa	Quant/Qual
00653	Eunapius fragilis	+
01320	Hydra sp	26
01801	Turbellaria	736+
03600	Oligochaeta	16
08250	Orconectes (Procericambarus) rusticus	+
11130	Baetis intercalaris	672+
13521	Stenonema femoratum	1+
17200	Caenis sp	+
22001	Coenagrionidae	2+
22300	Argia sp	4+
51206	Cyrnellus fraternus	8
52200	Cheumatopsyche sp	3,983+
52430	Ceratopsyche morosa group	166+
52530	Hydropsyche depravata group	531+
53800	Hydroptila sp	16
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	39+
74100	Simulium sp	45+
74501	Ceratopogonidae	+
77120	Ablabesmyia mallochi	+
77750	Hayesomyia senata or Thienemannimyia norena	137+
77800	Helopelopia sp	+
78140	Labrundinia pilosella	+
78450	Nilotanypus fimbriatus	112
78655	Procladius (Holotanypus) sp	+
79020	Tanypus neopunctipennis	+
80370	Corynoneura lobata	16
80420	Cricotopus (C.) bicinctus	69
80430	Cricotopus (C.) tremulus group	34
81240	Nanocladius (N.) distinctus	137
81250	Nanocladius (N.) minimus	172
81825	Rheocricotopus (Psilocricotopus) robacki	34
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83300	Glyptotendipes (G.) sp	34+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
84315	Phaenopsectra flavipes	+
84450	Polypedilum (Uresipedilum) flavum	995+
84470	Polypedilum (P.) illinoense	34+
84540	Polypedilum (Tripodura) scalaenum group	+
85625	Rheotanytarsus sp	1,475+
85821	Tanytarsus glabrescens group sp 7	446
87540	Hemerodromia sp	99+
96120	Menetus (Micromenetus) dilatatus	+
97601	Corbicula fluminea	16+
98600	Sphaerium sp	+

Station: Q01W03 MILL CREEK 30 FT. UPST. CONFL E. FK. MILL CREEK

Rivercode: 23-001-000 River Mile: 17.96

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
54	9	0	0	72	10,311	5	46	N/A	0.30 LOW

	Taxa	Quant/Qual
00653	Eunapius fragilis	+
01320	Hydra sp	281
01801	Turbellaria	184+
03360	Plumatella sp	1+
03600	Oligochaeta	477+
04661	Helobdella elongata	+
04664	Helobdella stagnalis	+
04666	Helobdella papillata	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11130	Baetis intercalaris	1,152+
11200	Callibaetis sp	+
13521	Stenonema femoratum	2+
13561	Maccaffertium pulchellum	1
16700	Tricorythodes sp	18
17200	Caenis sp	3+
21001	Calopterygidae	+
21200	Calopteryx sp	1
21300	Hetaerina sp	1
22001	Coenagrionidae	1+
22300	Argia sp	38+
23704	Anax junius	+
27307	Epitheca (Epicordulia) princeps	+
50301	Chimarra aterrima	1
50315	Chimarra obscura	1
51206	Cyrnellus fraternus	28+
52200	Cheumatopsyche sp	2,903+
52430	Ceratopsyche morosa group	16
52530	Hydropsyche depravata group	8+
53800	Hydroptila sp	48+
59500	Oecetis sp	+
65800	Berosus sp	+
68700	Dubiraphia sp	+
69400	Stenelmis sp	11+
71900	Tipula sp	1+
72700	Anopheles sp	+
74100	Simulium sp	+
74501	Ceratopogonidae	+
74650	Atrichopogon sp	1
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	215
77750	Hayesomyia senata or Thienemannimyia norena	323+
78450	Nilotanypus fimbriatus	215
78655	Procladius (Holotanypus) sp	+
80370	Corynoneura lobata	64
80420	Cricotopus (C.) bicinctus	108+
80430	Cricotopus (C.) tremulus group	+
80510	Cricotopus (Isocladius) sylvestris group	+
81231	Nanocladius (N.) crassicornus or N. (N.) rectinervis	108
81250	Nanocladius (N.) minimus	215
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
82824	Cryptochironomus ponderosus	+
83040	Dicrotendipes neomodestus	+
83158	Endochironomus nigricans	+
83300	Glyptotendipes (G.) sp	108+
84300	Phaenopsectra obediens group	54
84450	Polypedilum (Uresipedilum) flavum	807+
84470	Polypedilum (P.) illinoense	269+
84540	Polypedilum (Tripodura) scalaenum group	54+
84960	Pseudochironomus sp	54
85500	Paratanytarsus sp	54
85625	Rheotanytarsus sp	1,345+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	861+
85840	Tanytarsus sepp	108+
87540	Hemerodromia sp	65+
95100	Physella sp	+
96120	Menetus (Micromenetus) dilatatus	24
96900	Ferrissia sp	8+
97601	Corbicula fluminea	74+

Station: Q01S17 MILL CREEK NE OF GLENDALE @ KEMPER RD.

Rivercode: 23-001-000 River Mile: 17.61

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
38	8	2	0	60	7,625	4	42	N/A	0.70 NORMAL

	Taxa	Quant/Qual
01320	Hydra sp	49
01801	Turbellaria	88+
03360	Plumatella sp	1
03600	Oligochaeta	360
04661	Helobdella elongata	+
04664	Helobdella stagnalis	+
04666	Helobdella papillata	+
04687	Placobdella parasitica	+
04964	Erpobdella microstoma	+
06700	Crangonyx sp	+
08601	Hydrachnidia	+
11120	Baetis flavistriga	130+
11130	Baetis intercalaris	+
11200	Callibaetis sp	+
16700	Tricorythodes sp	32
17200	Caenis sp	1
21200	Calopteryx sp	+
22001	Coenagrionidae	9+
22300	Argia sp	12+
51206	Cyrnellus fraternus	85+
52200	Cheumatopsyche sp	837+
52430	Ceratopsyche morosa group	83+
52530	Hydropsyche depravata group	17+
53800	Hydroptila sp	352+
59970	Petrophila sp	2+
60900	Peltodytes sp	+
65800	Berosus sp	1+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	+
74100	Simulium sp	+
77500	Conchapelopia sp	377
77750	Hayesomyia senata or Thienemannimyia norena	215
78450	Nilotanypus fimbriatus	193
78500	Paramerina fragilis	+
78601	Pentaneura inyoensis	54
78655	Procladius (Holotanypus) sp	+
80370	Corynoneura lobata	32
80420	Cricotopus (C.) bicinctus	377+
81231	Nanocladius (N.) crassicornus or N. (N.) rectinervis	269
81250	Nanocladius (N.) minimus	161
81825	Rheocricotopus (Psilocricotopus) robacki	54
82100	Thienemanniella sp	54
82730	Chironomus (C.) decorus group	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	484+
83158	Endochironomus nigricans	54
83300	Glyptotendipes (G.) sp	54
84450	Polypedilum (Uresipedilum) flavum	538+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+
84960	Pseudochironomus sp	54
85265	Cladotanytarsus vanderwulpi group sp 5	54
85625	Rheotanytarsus sp	323
85800	Tanytarsus sp	161+
85821	Tanytarsus glabrescens group sp 7	1,991
87540	Hemerodromia sp	18
95100	Physella sp	1+
96900	Ferrissia sp	16
97601	Corbicula fluminea	+
98600	Sphaerium sp	32+

Station: 600400 MILL CREEK AT SHARONVILLE @ SHARON RD.

Rivercode: 23-001-000 River Mile: 16.57

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
37	6	3	0	55	6,860	5	46	N/A	0.50 NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	102+
03360	Plumatella sp	1+
03600	Oligochaeta	96+
04680	Placobdella sp	+
04964	Erpobdella microstoma	+
06700	Crangonyx sp	+
08601	Hydrachnidia	16+
11130	Baetis intercalaris	33+
13521	Stenonema femoratum	9
16700	Tricorythodes sp	1
21200	Calopteryx sp	+
22001	Coenagrionidae	8+
22300	Argia sp	5+
50315	Chimarra obscura	+
51206	Cyrnellus fraternus	26
52200	Cheumatopsyche sp	907+
52430	Ceratopsyche morosa group	27+
52530	Hydropsyche depravata group	23+
52570	Hydropsyche simulans	4
53800	Hydroptila sp	106+
59970	Petrophila sp	+
65800	Berosus sp	1
68130	Helichus sp	+
69400	Stenelmis sp	3+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77130	Ablabesmyia rhamphe group	46+
77500	Conchapelopia sp	372
77750	Hayesomyia senata or Thienemannimyia norena	465+
78450	Nilotanypus fimbriatus	93
78655	Procladius (Holotanypus) sp	+
80420	Cricotopus (C.) bicinctus	186+
80430	Cricotopus (C.) tremulus group	93+
81240	Nanocladius (N.) distinctus	93
82141	Thienemanniella xena	46
82730	Chironomus (C.) decorus group	+
82824	Cryptochironomus ponderosus	+
83000	Dicrotendipes sp	46
83002	Dicrotendipes modestus	46
83003	Dicrotendipes fumidus	46+
83040	Dicrotendipes neomodestus	604+
83300	Glyptotendipes (G.) sp	46
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	372
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	93+
85500	Paratanytarsus sp	232
85625	Rheotanytarsus sp	186
85800	Tanytarsus sp	372+
85821	Tanytarsus glabrescens group sp 7	1,859+
85840	Tanytarsus sepp	93
87540	Hemerodromia sp	9
95100	Physella sp	+
96900	Ferrissia sp	40
97601	Corbicula fluminea	54+

Station: Q01S02 TOWN RUN (16.91) DST. GLENDALE WWTP @ CHESTER RD.

Rivercode: 23-001-014 River Mile: 0.67

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
28	3	0	1	28		0		Poor	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
04664	Helobdella stagnalis	+
04964	Erpobdella microstoma	+
06700	Crangonyx sp	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
22001	Coenagrionidae	+
53800	Hydroptila sp	+
68025	Ectopria sp	+
69400	Stenelmis sp	+
71900	Tipula sp	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78350	Meropelopia sp	+
80420	Cricotopus (C.) bicinctus	+
80430	Cricotopus (C.) tremulus group	+
82730	Chironomus (C.) decorus group	+
83040	Dicrotendipes neomodestus	+
84210	Paratendipes albimanus or P. duplicatus	+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+
84960	Pseudochironomus sp	+
85500	Paratanytarsus sp	+
85625	Rheotanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+

Station: Q01G01 E. FK. MILL CREEK NEAR WEST CHESTER @ WEST CHESTER RD.

Rivercode: 23-006-000 River Mile: 3.17

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
44	9	4	3	44		4		Marginally Good	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
06904	Synurella dentata	+
07820	Cambarus (Cambarus) sp A	+
08250	Orconectes (Procericambarus) rusticus	+
08601	Hydrachnidia	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
21200	Calopteryx sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
50301	Chimarra aterrima	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
63900	Laccophilus sp	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71900	Tipula sp	+
74100	Simulium sp	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78350	Meropelopia sp	+
78401	Natarsia species A (sensu Roback, 1978)	+
79720	Diamesa sp	+
81650	Parametriocnemus sp	+
81825	Rheocricotopus (Psilocricotopus) robacki	+
82820	Cryptochironomus sp	+
83003	Dicrotendipes fumidus	+
83840	Microtendipes pedellus group	+
83900	Nilothauma sp	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84460	Polypedilum (P.) fallax group	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
87540	Hemerodromia sp	+
95100	Physella sp	+

Station: 600460 E. FK. MILL CREEK NEAR WEST CHESTER @ ALLEN RD.

Rivercode: 23-006-000 River Mile: 1.85

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
41	10	6	0	41		6		Marginally Good	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
04935	Erpobdella punctata punctata	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
06904	Synurella dentata	+
07875	Cambarus (Tubericambarus)polychromatus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
22300	Argia sp	+
27500	Somatochlora sp	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
65800	Berosus sp	+
68075	Psephenus herricki	+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	+
71900	Tipula sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
77800	Helopelopia sp	+
78655	Procladius (Holotanypus) sp	+
81825	Rheocricotopus (Psilocricotopus) robacki	+
82820	Cryptochironomus sp	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
84210	Paratendipes albimanus or P. duplicatus	+
84450	Polypedilum (Uresipedilum) flavum	+
84540	Polypedilum (Tripodura) scalaenum group	+
85230	Cladotanytarsus mancus group	+
85261	Cladotanytarsus venderwulpi	+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	+
95100	Physella sp	+

Station: 301418 E. FK. MILL CREEK UPST. BUTLER CO. UPPER MILL CREEK WWTP

Rivercode: 23-006-000 River Mile: 1.15

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
51	12	7	0	51		7		Good	NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
08250	Orconectes (Procericambarus) rusticus	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13400	Stenacron sp	+
13521	Stenonema femoratum	+
17200	Caenis sp	+
22001	Coenagrionidae	+
27001	Corduliidae	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
52200	Cheumatopsyche sp	+
52430	Ceratopsyche morosa group	+
52530	Hydropsyche depravata group	+
53800	Hydroptila sp	+
59720	Triaenodes ignitus	+
60900	Peltodytes sp	+
63300	Hydroporini	+
65800	Berosus sp	+
67500	Laccobius sp	+
68025	Ectopria sp	+
68075	Psephenus herricki	+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	+
71900	Tipula sp	+
74100	Simulium sp	+
77355	Clinotanypus pinguis	+
77500	Conchapelopia sp	+
77750	Hayesomyia senata or Thienemannimyia norena	+
77800	Helopelopia sp	+
78140	Labrundinia pilosella	+
78655	Procladius (Holotanypus) sp	+
80420	Cricotopus (C.) bicinctus	+
82824	Cryptochironomus ponderosus	+
83040	Dicrotendipes neomodestus	+
83820	Microtendipes caelum (sensu Simpson & Bode, 1980)	+
83840	Microtendipes pedellus group	+
83900	Nilothauma sp	+
84210	Paratendipes albimanus or P. duplicatus	+
84300	Phaenopsectra obediens group	+
84540	Polypedilum (Tripodura) scalaenum group	+
84750	Stictochironomus sp	+
85230	Cladotanytarsus mancus group	+
85500	Paratanytarsus sp	+
85615	Rheotanytarsus pellucidus	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+
94400	Fossaria sp	+
95100	Physella sp	+

Station: Q01P01 E. FK. MILL CREEK NEAR CRESCENTVILLE @ CRESCENTVILLE RD.

Rivercode: 23-006-000 River Mile: 0.76

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
36	5	2	0	48	7,546	4	44	N/A	0.50 NORMAL

	Taxa	Quant/Qual
01320	Hydra sp	138
01801	Turbellaria	55+
03121	Paludicella articulata	+
03360	Plumatella sp	1+
03600	Oligochaeta	160
04685	Placobdella ornata	+
05900	Lirceus sp	+
06700	Crangonyx sp	1+
11130	Baetis intercalaris	1+
13521	Stenonema femoratum	1+
17200	Caenis sp	133+
22001	Coenagrionidae	+
22300	Argia sp	21+
52200	Cheumatopsyche sp	2,239+
52430	Ceratopsyche morosa group	119
52530	Hydropsyche depravata group	122+
53800	Hydroptila sp	8
60900	Peltodytes sp	+
65800	Berosus sp	1
68025	Ectopria sp	+
68075	Psephenus herricki	+
68708	Dubiraphia vittata group	+
69400	Stenelmis sp	1+
71300	Limonia sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	49
77750	Hayesomyia senata or Thienemannimyia norena	443+
78450	Nilotanypus fimbriatus	49
78655	Procladius (Holotanypus) sp	+
80420	Cricotopus (C.) bicinctus	197+
81250	Nanocladius (N.) minimus	98
82101	Thienemanniella taurocapita	49
82730	Chironomus (C.) decorus group	+
83040	Dicrotendipes neomodestus	345+
83840	Microtendipes pedellus group	49
83900	Nilothauma sp	98
84450	Polypedilum (Uresipedilum) flavum	148+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+
84700	Stenochironomus sp	+
84750	Stictochironomus sp	+
85500	Paratanytarsus sp	49
85625	Rheotanytarsus sp	443+
85800	Tanytarsus sp	+
85821	Tanytarsus glabrescens group sp 7	2,511+
87540	Hemerodromia sp	17+
95100	Physella sp	+
97601	Corbicula fluminea	+

Station: Q01S24 E. FK. MILL CREEK NEAR CRESCENTVILLE @ MOUTH

Rivercode: 23-006-000 River Mile: 0.01

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
28	4	1	0	36	11,941	2	36	N/A	1.30 NORMAL

	Taxa	Quant/Qual
01801	Turbellaria	423+
03600	Oligochaeta	416+
05900	Lirceus sp	+
08601	Hydrachnidia	96
22001	Coenagrionidae	+
22300	Argia sp	41+
43570	Neoplea sp	+
52200	Cheumatopsyche sp	1,664+
52430	Ceratopsyche morosa group	48+
52530	Hydropsyche depravata group	80+
53800	Hydroptila sp	209+
59570	Oecetis nocturna	1
59970	Petrophila sp	4
60900	Peltodytes sp	+
65800	Berosus sp	2+
74501	Ceratopogonidae	109+
77750	Hayesomyia senata or Thienemannimyia norena	109+
78655	Procladius (Holotanypus) sp	+
80410	Cricotopus (C.) sp	+
80420	Cricotopus (C.) bicinctus	869+
81231	Nanocladius (N.) crassicornus or N. (N.) rectinervis	217
82730	Chironomus (C.) decorus group	+
83002	Dicrotendipes modestus	+
83040	Dicrotendipes neomodestus	651+
83300	Glyptotendipes (G.) sp	217
84450	Polypedilum (Uresipedilum) flavum	543+
84470	Polypedilum (P.) illinoense	217+
84540	Polypedilum (Tripodura) scalaenum group	+
84960	Pseudochironomus sp	109+
85230	Cladotanytarsus mancus group	217+
85625	Rheotanytarsus sp	435
85821	Tanytarsus glabrescens group sp 7	5,106+
85840	Tanytarsus sepp	109
87540	Hemerodromia sp	12
95100	Physella sp	+
97601	Corbicula fluminea	37+

Station: Q01K23 MUDDY CREEK NEAR CHEVIOT @ EBENEZER RD.

Rivercode: 23-007-000 River Mile: 5.40

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
23	1	0	0	23		0		Poor	LOW

	Taxa	Quant/Qual
00556	Ephydatia fluviatilis	+
01801	Turbellaria	+
03360	Plumatella sp	+
03600	Oligochaeta	+
04664	Helobdella stagnalis	+
04964	Erpobdella microstoma	+
05900	Lirceus sp	+
49200	Climacia sp	+
52530	Hydropsyche depravata group	+
60900	Peltodytes sp	+
74100	Simulium sp	+
77500	Conchapelopia sp	+
80410	Cricotopus (C.) sp	+
82730	Chironomus (C.) decorus group	+
83003	Dicrotendipes fumidus	+
83040	Dicrotendipes neomodestus	+
83051	Dicrotendipes simpsoni	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
84540	Polypedilum (Tripodura) scalaenum group	+
84888	Xenochironomus xenolabis	+
95100	Physella sp	+
96120	Menetus (Micromenetus) dilatatus	+

Station: 609040 MUDDY CREEK NEAR CINCINNATI @ HILLSIDE RD.

Rivercode: 23-007-000 River Mile: 1.96

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
32	8	4	1	32		4		Marginally Good	LOW

	Taxa	Quant/Qual
00556	Ephydatia fluviatilis	+
01801	Turbellaria	+
03360	Plumatella sp	+
05900	Lirceus sp	+
06904	Synurella dentata	+
11120	Baetis flavistriga	+
11130	Baetis intercalaris	+
13521	Stenonema femoratum	+
22001	Coenagrionidae	+
50301	Chimarra aterrima	+
50315	Chimarra obscura	+
51600	Polycentropus sp	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
68075	Psephenus herricki	+
69400	Stenelmis sp	+
71900	Tipula sp	+
72700	Anopheles sp	+
74100	Simulium sp	+
77800	Helopelopia sp	+
78200	Larsia sp	+
80410	Cricotopus (C.) sp	+
80420	Cricotopus (C.) bicinctus	+
80440	Cricotopus (C.) trifascia	+
81650	Parametriocnemus sp	+
82820	Cryptochironomus sp	+
83003	Dicrotendipes fumidus	+
83840	Microtendipes pedellus group	+
84450	Polypedilum (Uresipedilum) flavum	+
84540	Polypedilum (Tripodura) scalaenum group	+
85625	Rheotanytarsus sp	+
85800	Tanytarsus sp	+

Station: Q01K24 RAPID RUN NEAR CINCINNATI @ BENDER RD.

Rivercode: 23-008-000 River Mile: 1.15

Qual Taxa	Qual EPT	Qual Sensitive	Coldwater	Total Taxa	Total Number	Sensitive Taxa	ICI	Narrative	Flow
23	4	1	1	23		1		Fair	LOW

	Taxa	Quant/Qual
01801	Turbellaria	+
03600	Oligochaeta	+
05900	Lirceus sp	+
11120	Baetis flavistriga	+
44501	Corixidae	+
50301	Chimarra aterrima	+
52200	Cheumatopsyche sp	+
52530	Hydropsyche depravata group	+
69400	Stenelmis sp	+
71910	Tipula abdominalis	+
74100	Simulium sp	+
77120	Ablabesmyia mallochi	+
77500	Conchapelopia sp	+
80430	Cricotopus (C.) tremulus group	+
80740	Eukiefferiella claripennis group	+
81650	Parametriocnemus sp	+
83003	Dicrotendipes fumidus	+
83840	Microtendipes pedellus group	+
84450	Polypedilum (Uresipedilum) flavum	+
84470	Polypedilum (P.) illinoense	+
85625	Rheotanytarsus sp	+
95100	Physella sp	+
96120	Menetus (Micromenetus) dilatatus	+