CHAPTER 2

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2.0 CHAPTER 2 SYSTEM CHARACTERIZATION

This Chapter of the LTCP addresses the City's characterization of its CSS and receiving waters, including both monitoring and modeling activities.

2.1 *PUBLIC PARTICIPATION AND AGENCY INTERACTION*

Wastewater in the City of Fort Wayne is collected by a system of combined and separated sanitary sewers. Combined sewers account for approximately one-third of the total length of the City's publicly owned sewers. Combined wastewater flows to the City's Water Pollution Control Plant (WPCP) for treatment. The WPCP provides secondary treatment with effluent wastewater discharged to the Maumee River. During wet weather conditions, excess flows are conveyed to the St. Joseph, St. Mary's, and Maumee Rivers, Spy Run Creek, Baldwin Ditch, Wayne Natural Drain #4 and Harvester Drain through combined sewer overflow (CSO) outfalls.

Water quality in Fort Wayne's receiving streams is affected by multiple sources in addition to CSOs. Therefore, a watershed-based strategy has been used for characterizing the receiving streams.

In 1995 the City formed a citizen-member Sewer Taskforce to help consider wet-weather issues faced by the City. The taskforce was asked to become informed about sewer issues, recommend actions to address those issues, and recommend ways to pay for the actions recommended. This group, (called the Sewer Advisory Group today) has since continued to serve and provide the City with valuable public input on all major sewer issues.

The City initiated a program in 1997 to further identify water quality problems and to develop water quality goals, priorities and solutions. The program is detailed in *Community Based Water Quality Goals for the Upper Maumee Watershed* dated 1998, by Malcolm Pirnie. As a result of the program, the City initiated a "Total Quality Watershed Management" approach to coordinate various water related efforts.

Seventy-five individuals, consisting of representatives and employees of City departments, community leaders and representatives of other organizations (these organizations include the Sewer Advisory Group, St. Joseph River Watershed Initiative, Soil and Water Conservation, Fort Wayne Chamber of Commerce, American Electric Power, Agriculture Industry, Fort Wayne Journal Gazette, City of New Haven, Adams Center Landfill, and representative of Lugar & Coats Office) with an interest in water quality were interviewed. A detailed discussion of these interviews can be found in Chapter 2 "Stakeholder Interviews" and Appendix C of *Community Based Water Quality Goals for the Upper Maumee Watershed* completed by Malcolm Pirnie in 1998. Below is a summary of the comments:

- The highest priority of watershed management should be the protection of drinking water and public health as it relates to drinking water.
- The attainment of the fishable, swimmable designated uses was possible and necessary, but was not practical or affordable.
- The current uses of the rivers primarily consisted of biking, running, and walking on the river greenway with some fishing and boating. No full-body-contact recreational uses were identified within river segments downstream of CSOs.
- Silt and litter/debris were listed as the top detractor from river aesthetics. Floatables were listed at the bottom of the same list.
- There was wide agreement public education and increased funding would be necessary to accomplish river improvements.
- Interviewees were willing to spend up to $10 per month more to get better quality rivers. They felt their neighbors would be willing to pay about half that amount.

Three workshops were also held. Approximately thirty of the seventy-five individuals who participated in the above-described interviews attended at least one of three workshops held. Eight persons participated in all three workshops.

The focus areas of the workshops were on the Upper Maumee and the St. Joseph Watershed. The workshops resulted in the identification of water-quality issues and the establishment of community water quality goals. Water quality issues that participants ranked as the highest priorities were:

- Drinking Water
- Habitat
- *E. coli*
- Odor
- Debris and Litter

Of Fort Wayne's three rivers, EPA's watershed index lists the St. Joseph River as having the highest water quality concerns. Such is at least partially due to a relative lack of information about the Maumee and St. Mary's Rivers and that the St. Joseph River is the City's drinking water source (The intake point for the City's Three Rivers Water Filtration Plant is within the St. Joseph River, upstream of the St. Joseph Dam near Coliseum Blvd. Importantly, this location is also upstream of all of the City's CSO outfalls). While not impacted by CSOs, interviewees nonetheless expressed concerns about pollutant sources upstream of the St. Joseph Dam. Although there seems to be at least some community interest in both the Maumee and St. Joseph River watersheds, little interest was apparent for the St. Mary's River watershed. This may be at least somewhat attributable to the relatively low flow of the St. Mary's River and its shallow depth.

The City's engagement with regulatory agencies concerning CSO issues began long ago. Efforts toward a final LTCP began shortly after EPA's 1994 issuance of its CSO Control Policy. The City submitted a draft technical component of the LTCP to EPA and IDEM in 1999 and a complete draft in 2001. EPA responded with comments to the complete

draft in 2002. An active dialog between the City, IDEM and EPA has since been ongoing. Pursuant to administrative orders issued by EPA in 1995 and 1996, the City submitted a Combined Sewer System Operational Plan and SSO Elimination Plan to EPA and IDEM in 1996.

2.2. *OBJECTIVE OF SYSTEM CHARACTERIZATION*

To help obtain a more detailed understanding of existing conditions of the City's CSS and receiving waters, the City conducted a detailed system characterization. The process led to the establishment of baseline conditions (including CSO impacts), determination of receiving water goals, and the identification of potential CSO controls. An understanding of baseline conditions is important in predicting the effectiveness of the proposed CSO controls.

2.3 *IMPLEMENTATION OF THE NINE MINIMUM CONTROLS*

The City's Amended Combined Sewer System Operational Plan (CSSOP) submitted to EPA and IDEM on November 16, 2007 details the implementation of each NMC.

2.4 *COMPILATION AND ANALYSIS OF EXISTING DATA*

2.4.1 Watershed Characteristics and Mapping

The City is located in Allen County in northeast Indiana. Fort Wayne's 2003 population was 220,486. Fort Wayne is centered around the confluence of three rivers: the St. Joseph which originates near Hillsdale, Michigan and flows from the northeast; the St. Mary's River which originates near Celina, Ohio and flows from the southwest; and the Maumee River which is formed by the confluence of the St. Joseph and St. Mary's Rivers in downtown Fort Wayne. The Maumee River flows east to New Haven, Indiana, then northeast and discharges to Lake Erie at Toledo, Ohio.

Fort Wayne's defined watersheds include several water bodies and the entire land area that drains into them. The watersheds for the St. Joseph, St. Mary's and Maumee Rivers are shown in Figure 1. The USGS has subdivided these watersheds into hydrologic units (HU). The smallest unit is a 14-digit unit. Figure 2 shows the 14-digit HUs in Allen County. These HUs are also the basis for identifying stream segments. IDEM uses these segment identifiers to report water quality in their 303(d) and 305(b) reports. Identified stream segments are shown in Figure 3. Allen County has further subdivided watersheds into areas that can be identified with local ditches and streams. See Figure 4.

Table 2.4.1.1 below shows the watershed characteristics in Fort Wayne. The watershed characteristics within Fort Wayne are relatively similar. The land is mostly used for residential and commercial purposes. The majority of the City's industrial uses are located within the Maumee watershed.

Table 2.4.1.1
Watershed Characteristics

Watershed Name	Acres	HU	Land Use Description
St. Joseph River-Schoppman Drain	7,128	04100003100040	Mostly residential with some commercial and industrial use
St. Mary's River-Spy Run Creek	9,863	04100004060060	Residential with some commercial and industrial use
St. Mary's River-Junk Ditch	11,382	04100004060050	Primarily residential with some commercial
ND #4 (St. Mary's tributary) Shed No. 31D	1,090	04100004060050	Mostly residential, parks and recreation, and small open spaces
St. Mary's River-Snyder Ditch	12,655	0400004060030	Residential and some commercial
Maumee River-River Haven	9,177	0400005010010	Mostly industrial, transportation/utilities, parks & recreation, some residential
Baldwin Ditch (Maumee tributary) Shed No. 32B	970	0400005010010	Transportation/utilities, parks & recreation, residential
Harvester Drain (Maumee tributary) Shed No. 11J	1,545	0400005010010	Mostly industrial, some residential and commercial

Fort Wayne's long-term water quality goals, as identified in 1997 through the community workshops described above, are detailed in Table 2.4.1.2.

Table 2.4.1.2
Initial Long-Term Water Resource Goals for Fort Wayne, Indiana

Watershed Name	Current Uses	Known Problems	Qualitative Assessment of Importance	Long-Term Goals
St. Joseph River-Schoppman Drain	Aesthetics, River Greenway, Recreation - fishing, some boating, drinking water intake for the City, wildlife habitat	CSOs, stormwater, septic tanks, SSDs	Most important town waterbody resource	Meet swimmable and fishable water quality standards
St. Mary's River-Junk Ditch	Aesthetics, River Greenway, fishing and boating, wildlife habitat, wetlands nature area	CSOs, stormwater, flooding, agriculture	Second most important for drainage and stormwater runoff	Meet swimmable and fishable water quality standards
St. Mary's River-Snyder Ditch	Aesthetics, River Greenway, fishing and boating, wildlife habitat	CSOs, stormwater, agriculture, TMDL for *E. coli* on Snyder Ditch	Third most important for drainage and stormwater runoff	Meet swimmable and fishable water quality standards
ND#4 (St. Mary's tributary)	Aesthetics, wildlife habitat, drainage	CSOs, stormwater	Minor importance-drainage ditch	Meet swimmable and fishable WQS
Maumee River-River Haven	Aesthetics, River Greenway, some fishing and boating.	CSOs, stormwater, Industrial area, CSO ponds	Fourth most important	Meet swimmable and fishable WQS
Baldwin Ditch (Maumee tributary)	Aesthetics, wildlife habitat, drainage	CSOs, stormwater	Minor importance – drainage ditch	Meet swimmable and fishable WQS
Harvester Drain (Maumee tributary)	Aesthetics, wildlife habitat	CSOs, stormwater, industrial area	Minor importance-drainage ditch	Meet swimmable and fishable WQS
St. Mary's River-Spy Run Creek	Aesthetics, River Greenway, some fishing and boating, wildlife habitat	CSOs, stormwater, excess flooding, significant industrial area	Significant importance for drainage and stormwater runoff	Meet swimmable and fishable WQS

Table 2.4.1.3 contains existing data sources available to characterize watersheds.

Table 2.4.1.3
Data Sources Available to Characterize Watersheds

Description	Source
Environmental	
Land Use	Master Plan – Figure III – 1 and figure III – 2; and page 11 (1994) State of Indiana GIS – Environmental layer CSO Operational Plan – appendix B, figure B-2 (1996) Storm Water Quality Management Plan – Part B – Sections 2.2, 3.4, 3.5, 2.2 (2004)
Recreational and Open Areas	Storm Water Quality Management Plan – Part B – Section 3.6.3 (Identification of Sensitive Areas) (2004) Recreational Waterbody Uses City's White Paper on Water Quality – Existing Conditions, Uses and Goals – CH.2
Soils and Bedrock Geology	Master Plan – Page 12 (1994) USGS Low Flow Characteristics of Indiana Streams (1996) CSO Facility Plan – Section 2.3 (1982) Hydrology of Allen County – CH. 2 (1994) Indiana State GIS – Geology layer
Natural Resources	Water Power, mineral deposits, gas, oil, electric – No sources
Temperature	NOAA USGS Low Flow Characteristics of Indiana Streams – Page 7 (1996) CSO Facility Plan – Section 2.2 (1982)
Precipitation	USGS Low Flow Characteristics of Indiana Streams – Pages 227-230 (1996) CSO Facility Plan – Sections 9.3, figure 2.2 (1982) Master Plan – Page 13 (1996) 2001 LTCP – Appendix A
Hydrology	Hydrology of Allen County (1994) CSO Facility Plan – Section 2.4 (1982) Flood Maps Indiana State GIS – Hydrology layer Topography - USGS topographic maps and hydrologic unit codes GIS contour maps GRW contour maps FIRM maps County Surveyors maps
Infrastructure	
Roads and Highways	Street Maps (hard copy and GIS)
Storm Drainage System	Record Drawings Sewer Maps (hard copy and GIS)
Sanitary Sewer & Combined Sewer Systems	Record Drawings Sewer Maps (hard copy and GIS) Master Plans (1994) Combined Sewer Relief Plan CSSCIP Preliminary Design Reports XPSWMM Model
Treatment Facilities	Record Drawings Facility Plans
Other Utilities	Utility Engineering Department
Potential Sources	
Landfills	NPDES permit list; Indiana State GIS – environmental layer
Waste Handling Areas	Waste treatment storage disposal, waste transfer stations, open dump sites, septic storage sites – Indiana State GIS –environmental layer
Salt Storage Facilities	City, County, State Highway department
Vehicle Maintenance Facilities	No sources
Underground Tanks	No sources
NPDES Discharges	NPDES List of permitees

Municipal	
Population	Census tracts from Planning GIS; City interactive map
Zoning	Planning GIS
Pollution Control Facilities	WPCP operating and maintenance manuals
Land Ownership	City Assessor's maps
Regulations and Ordinances	City codes (utility zoning), BPW rules & Regulations
BMP's	
Retention/Detention Ponds	Development Services (City Utilities)
Flood Control Structures	Levees, Relief Channel
Municipal Source Control BMPs	Sewer ordinances; stormwater ordinance; pollution prevention; CSSOP

Source input and receiving water data are important to understand the current status of the receiving waters and what affects that status. Table 2.4.1.4 contains existing data sources available to characterize receiving waters.

Table 2.4.1.4
Data Sources Available to Characterize Receiving Waters

Description	Source
Source Inputs (Flow and Quality)	
CSO	1996 LTCP River Sampling Program (outfalls), 2005 River Sampling Program, SIU Discharge Reports
Stormwater	Stormwater Map Atlas
Receiving Water	
Physiographic and Bathymetric Data	USGS Gages – Stages; UAA White Paper (table 2-1), Impact Characterization of CSOs Final Report 1998 - Chapter 7 (Dry weather Calculations), Impact Characterization of CSOs – Addendum 1999 - Chapter 3, Dam plans, Relief Channel plans
Flow Characteristics	USGS Gauge records, CE QUAL model
Sediment Data	None
Water Quality Data	IDEM 303(d) reports, 1996 LTCP Sampling Program (river), 2005 Sampling Program, IDEM river sampling program 2002, City sampling program 2000-2004
Fisheries Data	Fish consumption advisory,
Benthos Data	*Report on the federal and Indiana listed mussels (family Unionidae) of the St. Joseph, St. Mary's and Maumee Rivers and Spy Run in Fort Wayne, Indiana* (2005)
Biomonitoring Data	No sources available
Federal Standards and Criteria	CWA, CSO policy, CFR
State Standards and Criteria	IAC, NPDES permit

Analysis of Existing Data

Existing information and data was assessed and will be discussed in further detail throughout this Chapter.

- The City conducted field studies and assessed area maps, and developed XPSWMM models to determine flow and other hydraulic characteristics of the collection system. The information collected was adequate in order to understand the CSS. The City has made extensive efforts to document its collection system data. Collection system data is discussed and analyzed in sections 2.4.2, 2.5.2 and 2.6.1 of this Chapter.

- Possible pollutants of concern and discharge reports from significant industrial users were analyzed to characterize CSO and non-CSO sources. The City also collected information during wet weather events to assess the affect of these pollutants. CSO and non-CSO source characterization are discussed and analyzed in sections 2.4.3, 2.5.2 and 2.6.1 of this Chapter.

- Extensive data exists on Fort Wayne's receiving waters. Two significant river sampling programs took place on Fort Wayne's receiving waters in addition to weekly and monthly monitoring and sampling efforts long conducted by the City. The data demonstrates that Fort Wayne's receiving waters are not meeting currently designated water quality standards at all times. A biological study was conducted in 2005 to identify any sensitive areas within the receiving waters. The biological study (*Report on the Federal and Indiana listed mussels (family Unionidae) of the St. Joseph, St. Mary's and Maumee Rivers and Spy Run in Fort Wayne, Indiana (2005))* concluded that the City's CSO discharges were not adversely impacting any endangered or threatened species. The City submitted said study to EPA and IDEM shortly after its completion. Receiving water data is discussed and analyzed in sections 2.4.4, 2.5.3 and 2.6.2 of this Chapter.

- The City's utility maintenance department conducts daily inspections of the combined sewer system. This data is analyzed to determine the existence, volume and duration of CSOs.

Potential Pollution Sources

In addition to CSOs, a number of possible pollutant sources exist within the Fort Wayne's watersheds. Stormwater discharges and discharges from regulated industries, are but two of the possible other sources. Understanding land uses within a watershed help identify pollutant sources. Land use and sewer service area information can be found within the City's Master Plan – Figure III-1 and figure III-2. Additional land use information can be found in the City's GIS system, CSS Operation Plan and Storm Water Quality Management Plan – Part B.

Nonstructural Controls

Nonstructural controls provide pollution control by reducing the amount of runoff and improving the runoff quality that enters the receiving waters. Regulations and ordinances, municipal source control BMPs and zoning all assist in regulating pollution prevention. Nonstructural control practices are used to prevent the source of pollution at the source when possible to reduce contaminants entering receiving waters. The City participates in a variety of nonstructural control practices. Table 2.4.1.5 below describes City nonstructural control efforts. Each control aids in reducing pollutant at the source. The City's Zoning Ordinance and Land Use Management plan help control development plans within each watershed. Detailed information of each solid waste management control is located in the receiving water discussion below.

Table 2.4.1.5
Nonstructural Control Efforts

Nonstructural control	Stormwater Management (within City Utilities)	Floodplain management	Zoning Ordinance	Subdivision Control Ordinance	Garbage and Refuse (City Code of Ordinances)	Sewer Use Ordinance
Scope of regulation	Reduce pollutants entering receiving streams caused by stormwater runoff	Regulates development within floodways	Specify zoning districts based on existing or proposed development. Use and classification of land	Provide for land division under Comprehensive Plan; promote utilization of land to promote health and safety and assure the best possible environment	Reduce potential solids and pollutants from entering the receiving streams and to make for a cleaner, healthier environment through various practices	Regulates sewer use in the City
Runoff Quantity contro						
Open space	Forested riparian areas along streams	Discourages development in open spaces within a floodplain	Establish standards for development	No subdivisions shall be built in the City within the floodplain. Keep floodplain areas open.	None specified	BPW approval for expansion of sewers outside corporate limits
Post development flov control	Detention and Retention Basins	None specified	Required to maintain structures	None specified	None specified	None specified
Additional controls						
Solids controls	Erosion control	Permits are required for working in floodplains; Erosion control	None specified	Development permits required	Reduces solids from entering into the CSS or Stormwater system	Reduces floatable from entering the streams
Other pollution contro	Minimize agricultural runoff	None specified	Establishes permitted and prohibited land use	Assesses floodplain areas and zoning prior to approving plan	Reduces bacteria, wastes, and pollutants from entering receiving streams	Federal pretreatment standards for SIUs, prior approval of certain wastes

2.4.2 Collection System Understanding

EPA's 1994 CSO Control Policy recommends that the municipality "*…evaluate the nature and extent of its combined sewer system through evaluation of available sewer system records, field inspections and other activities necessary to understand the number, location and frequency of overflows and their location relative to sensitive areas and to pollution sources in the collection system, such as indirect significant industrial users"* (Part II.C.1.b).

The objectives of existing data analysis and field investigation are:

- To determine the current level of understanding and knowledge of the CSS
- To assess the design and current operating conditions of the CSS

- To identify the data that still need to be collected through the monitoring and modeling program

2.4.2.1 Review of Historical Information

The purpose of reviewing historical information is to compile, catalogue, and review information on the design and construction of the CSS and to evaluate how the CSS operates, particularly how it responds to wet weather.

Design and construction information was collected concerning the:

- location and capacity of the WPCP
- location and capacity of the interceptor system
- location and operation of flow regulating structures
- location of all CSO outfalls

Table 2.4.2.1 contains an inventory of existing sources of information used to identify and describe the above items.

Table 2.4.2.1
Inventory of Existing Sources to Describe the CSS

DESCRIPTION	SOURCE
Location and capacity of the WPCP	Sewer Maps (hard copy and GIS) Record Drawings WPCP Facilities Planning Study May, 1998 Stress Test Report
Location and capacity of the interceptor system	Sewer Maps (hard copy and GIS) Record Drawings XP SWMM model documentation (dendograms)
Location and operation of flow regulating structures	Sewer Maps Record Drawings 1976 Regulator drawings 1998 review of 1976 regulator drawings
Location of all CSO outfalls	Sewer Maps Field information CSO Solids and Floatables Tech Memo – Pictures

Information was also gathered to analyze the following:

- CSS drainage areas
- Rainfall throughout the CSS drainage area
- Sources of discharge into the CSS
- CSS hydraulics

Table 2.4.2.2 contains an inventory of existing sources of information that provide analysis or data for analysis of the above items.

Table 2.4.2.2
Inventory of Existing Sources to Analyze the CSS

DESCRIPTION	SOURCE
CSS drainage area	Sewer Maps Topographic maps Subbasin Manuals
CSS drainage area rainfall	1994 Sewer Master Plan 2001 draft LTCP Appendix A City of Fort Wayne's CSO area Rainfall Monitoring Data
Sources of discharge into the CSS	Pre-Treatment program records Sewer tap permit records Land use maps Aerial photographs
CSS hydraulics	1994 Sewer Master Plan model 1999 XPSWMM Model development and calibration CSSCIP Preliminary Design Reports

2.4.2.2 Study Area Mapping

Mapping can improve one's understanding of the CSS and how it was designed to work. Three types of maps have been prepared to graphically illustrate features of the CSS. The first is a general CSS map. It shows the WPCP, interceptor sewers system, CSS subbasins, CSS trunk sewer system, diversion structures, CSO discharge points, receiving water bodies, river crossings, and outlying separate sanitary sewer areas draining to the CSS. This map illustrates where flow comes from, how flows combine, and how flows are transported to the WPCP. See Figure 5. The second type of map is a CSS sampling map. It shows sampling sites such as river sampling and overflow sampling locations. It also shows rain gauge and river gauge sites. This map helps illustrate the completeness of sampling information. See Figure 6. The third type of map is the subbasin map. The City has developed one of these maps for each of the City's 40 CSS subbasins. Each shows CSS drainage areas, general land uses, CSS subbasin sewers, regulators, CSO discharge points, sampling access points, and non-domestic discharges to the CSS. These maps provide detailed information on how the CSS was designed to work and on the area drained by the CSS. Copies of each CSS subbasin map can be found in the PDS Library at the City.

2.4.2.3 System Field Investigation

While mapping helps to clarify how the CSS was designed, field investigations provide information on its operation and condition. The City has undertaken a number of field investigations to increase its knowledge of the CSS. Table 2.4.2.3 lists some of activities undertaken to verify record drawings and sewer maps.

Table 2.4.2.3
Activities to Verify Record Drawings and Sewer Maps

ACTIVITY	PURPOSE
1998 Diversion Structure Investigations	Provide drawings of CSS diversion structures
GIS Map updating program	Update GIS sewer maps any time field operations discover information not shown correctly on the GIS sewer maps
CSO Area Storm Water Inventory October, 2001	Verify the accuracy of the City's sewer maps in 2 quarter sections
1976 Regulator Survey	Provide regulator drawings to explain the operation
1998 Regulator Survey	Verify physical descriptions in the 1976 Regulator Survey

Table 2.4.2.4 lists some of the activities that were undertaken to identify facility characteristics that are not normally shown on record drawings or sewer maps.

Table 2.4.2.4
Activities to Identify Facility Characteristics

ACTIVITY	PURPOSE
Preparation of visual inspection procedures	Identifies when CSO discharge points are submerged
Development of manual for each subbasin	Summarizes inspection and operational info and miscellaneous site/area aspects of each outfall, regulator and CSS system

Table 2.4.2.5 lists some of the activities that were/are undertaken to determine the condition and operability of CSS facilities.

Table 2.4.2.5
Activities to Determine the Condition and Operability of CSS Facilities

ACTIVITY	PURPOSE
1976 Regulator Survey	Evaluate the condition of system regulators
1997 Regulator Evaluation Study	Evaluate the condition of all mechanical regulators, established inspection and maintenance procedures
Catch Basin Cleaning Program	Catch Basins are inspected for damage
Sewer Televising Program	Identify structural defects in the CSS and verify sewer mapping
Manhole Inspection Program	Identifies the condition of manholes
Tide Gate Inspection Program	Identifies the condition of tide gates
Regulator Inspection and Maintenance Program	Identifies and repairs mechanical regulator deficiencies

Table 2.4.2.6 lists some of the activities undertaken to detect dry weather overflows.

Table 2.4.2.6
Activities to Detect Dry Weather Flows

ACTIVITY	PURPOSE
CSO Dry Weather Inspection Program	Detect dry weather overflows and determine their causes
CSO Flow Monitoring Program	Detect dry weather overflows, measure their volume, and initiate corrective action.

Field investigations were also used to collect preliminary information of sewer flows. The City completed a number of temporary flow monitoring studies and has established a permanent CSO flow monitoring program. Below is a list of the most recent flow monitoring studies.

- 1996 CSO flow monitoring
- 1997 Interceptor system flow monitoring
- 2001 St. Joseph subbasin flow monitoring
- 2004-Current CSO flow monitoring (the monitoring includes the use of flow meters and pump data) - as collected for CSO outfall monitoring requirements

2.4.2.4 Preliminary CSS Hydraulic Analysis

A XPSWMM hydraulic model of the City's interceptor system was developed during the preparation of the 1994 Sewer Master Plan. The model was not calibrated at that time but it did provide a preliminary understanding of the operation of the City's interceptor system. A system schematic, or dendogram, was created using this model to visually represent how the system worked. The documentation of these efforts can be found in the City's 1994 Sewer Master Plan.

Between 1997 and 1999 the original XPSWMM model was refined and calibrated. Thirty-eight subbasin models were developed and calibrated and all the models were combined into a single Full System Model. The documentation of these efforts can be found in the *Combined Sewer System Analysis,* January 1999. EPA and IDEM approved the City's model for LTCP development purposes in 2005.

2.4.2.5 Additional Activities

The City has made extensive efforts to document the condition of its collection system. Between mapping efforts, the use of historical documents, and efforts related to the development of the City's model, the City has developed a comprehensive understanding (relative to the fact that the City's sewer system was constructed over a 130 year period and includes more than 1,239 miles of sewers (as of July 2006)) the location, size, condition, and flow characteristics of the CSS. The City's documentation includes the location, design, condition, and operation of structures within the CSS. However, new information will continue to be discovered as design and construction of new facilities is undertaken. The City has developed procedures to incorporate new information into its knowledge base as it becomes available.

The City has identified the activity level of all CSO outfalls, the threshold rain event that usually triggers overflows at particular CSO outfalls, and the approximate magnitude of CSO discharges will be during a given rain event. A summary of this information can be found in CSSOP Chapter 9. The City has also identified which interceptors surcharge under certain wet-weather conditions and the associated causes. A detailed study was conducted and presented in Chapter 2 of the City's CSSOP on the feasibility of reducing CSOs through the use of inline storage, i.e., by raising overflow weirs.

2.4.3 CSO and Non-CSO Source Characterization

The objectives of existing data analysis and field investigation are:

- To determine the current level of understanding and knowledge of CSS overflows and non-CSO pollutant sources
- To identify relative impacts of CSOs and non-CSO sources of pollution on receiving water quality
- To identify the data gaps and methods to fill those gaps through the monitoring and modeling program

2.4.3.1 Characterization of Combined Sewage and CSOs

2.4.3.1.1 Historical Data Review

The City reviewed available historical data to help identify pollutants of concern, their concentrations, their volumes, and likely pollutant sources. The characteristics of the WPCP influent were first studied. Results of these studies can be found in:

- 1994 Sewer Master Plan, Section III.F.1.b, pp 39-41
- *Significant Industrial Users' Impact on Combined Sewer Overflow – Finding Report* dated September 24, 2004, pp 56-57
- CSSOP Chapter 3

Discharge reports from significant industrial users were also reviewed to identify possible pollutants of concern. The result of this review can be found in:

- *Significant Industrial Users' Impact on Combined Sewer Overflow – Finding Report* dated September 24, 2004, pp 59
- CSSOP Chapter 3

The above-referenced report yielded a list of pollutants observed in the collection system. The information reviewed did not characterize CSO discharges, only what might be found in CSOs given the characteristics of insystem flows.

In order to characterize CSO discharges, the City conducted two CSO sampling programs. The details of those programs are discussed in Section 2.5.2.1 of this Chapter. CSO flow monitoring was also done during the two CSO sampling programs and a permanent CSO flow monitoring program was implemented in 2004. All regulators with upstream SIU discharges were identified during the preparation of CSSOP Chapter 3 and sampled during the sampling programs.

2.4.3.1.2 Mapping

Figure 6 shows the regulators that were sampled for both the 1996 LTCP River Sampling Program and the 2005 River Sampling Program Figure 7 shows the location of SIUs as of 2006.

2.4.3.2 Characterization of Non-CSO Pollutant Sources

The City's watershed mapping efforts identified several non-CSO pollutant sources. These sources include stormwater sources, upstream septic areas, upstream agricultural areas, and upstream community pollution.

2.4.4 Receiving Waters

The main impetus for CSO control is attainment of water quality standards, including designated uses. To this end, the review of existing information should include characterization of CSO impacts and other watershed pollutant sources and their effects as completely as possible.

The objectives of existing data analysis and field investigation were:

- To determine the current level of understanding and knowledge concerning receiving waters
- To assess any known CSO impacts on receiving waters
- To identify the data that still needs to be collected through the monitoring and modeling program

2.4.4.1 Review of Historical Data

The purpose of reviewing historical information is to establish the status of each receiving water body impacted by CSOs. To accomplish this purpose, information needs to be gathered to identify and describe the following:

- Sensitive areas
- Water quality standards (WQS) and attainment of WQS
- Problems attributable to CSOs
- Hydraulic characteristics
- Other sources of pollutants – quantity of pollutants
- Water quality upstream of CSOs
- Ecologic and aesthetic conditions of the receiving waters

Table 2.4.4.1 below contains existing data sources available to describe the above items.

Table 2.4.4.1
Data to Describe CSO Impacted Waters

Description	Source
Sensitive areas	CSO control policy, *Report on the federal and Indiana listed mussels (family Unionidae) of the St. Joseph, St. Mary's and Maumee Rivers and Spy Run in Fort Wayne, Indiana* (2005), Community Based Water Quality Goals for the Upper Maumee Watershed, *Recreational Waterbody Uses in Fort Wayne's Combined Sewer Area* (2005)
WQS and attainment of WQS	IDEM 303(d) report, Fish Consumption Advisory Report, CWA, IAC – Indiana Environmental Rules: Water, IDEM river sampling program 2002, City sampling program 2000-2004, 2005 sampling program, 1996 LTCP sampling program, IDEM 305 (b) report, 304 (l) report, 319 report
Problems attributable to CSOs	Chapter 9 CSS Operation Plan
Hydraulic Characteristics	Low-Flow Characteristics of Indiana Streams, USGS gauge records, Hydrology of Allen County 1994 CE QUAL model documentation
Other Pollutant sources – quantity of pollutants	Operating reports of NPDES permits, IDEM SSO reports, Storm Water Part II NPDES permit, Allen County Health Department's septic tank study
Water quality upstream of CSOs	1996 LTCP sampling program by Malcolm Pirnie, City sampling program 2000-2004, St. Joseph Watershed Initiative 2004 Water Quality Sampling Report
Ecologic and aesthetic conditions of receiving waters	*Report on the federal and Indiana listed mussels (family Unionidae) of the St. Joseph, St. Mary's and Maumee Rivers and Spy Run in Fort Wayne, Indiana* (2005)

2.4.4.2 Mapping

Mapping improves the understanding of the receiving water characteristics. Three maps have been prepared to graphically illustrate the characteristics of Fort Wayne's receiving waters.

The first map is an overall representation of the receiving waters. It shows the location of dams, sampling sites, bridges, USGS stations, pump stations, rain gauges, CSO outfall points, 14-digit hydrological unit areas, public access points and parks. See Figure 8. The second map is actually a series of WQS excursion maps. These maps identify which streams are currently exceeding WQS and for what parameter. They can be found in Chapter 9 of the CSSOP. The third map is the Land Use Map found in the 1994 Master Plan – Figure III. This map describes the land use within Fort Wayne's service area.

2.4.4.3 Field Investigations

Field investigations provide information to characterize areas of the receiving waters not adequately described by existing documents. Field investigations also identify physical features of the receiving waters. The City has conducted several river characterization studies, including field investigations, to increase knowledge of the receiving waters. Table 2.4.4.2 lists some activities that were undertaken to characterize the rivers and Table 2.4.4.3 illustrates characteristics of the City's receiving streams.

Table 2.4.4.2
Activities to Characterize the City's Rivers

Purpose	**Activity**
Differences in depth and width	Recreational use survey (2005), Recreation river bank characterization (2005), 1997-1998 water quality model development
Tributaries	River bank characterization – canoe trip, (2005)
Point sources	CSO inspections, Storm Water NPDES permit application
Suspected non-point sources	No sources
Plant growth and vegetation	Recreational use survey (2005), Recreation river bank characterization (2005), canoe trip
Riparian zones along banks	Recreational use survey (2005), Recreation river bank characterization (2005), canoe trip
Access points	Recreational use survey (2005), Recreation riverbank characterization (2005), canoe trip. Dan Wire – Sewer Advisory Group member
Wildlife	No sources
Aquatic life	*Report on the federal and Indiana listed mussels (family Unionidae) of the St. Joseph, St. Mary's and Maumee Rivers and Spy Run in Fort Wayne, IN* (2005)
Floatable Material	2004 Floatable Study

Table 2.4.4.3
Stream Characteristics

Parameter	Stream			
	St. Joseph	**Maumee**	**St. Mary's**	**Spy Run**
USGS Gage Number	04180500	04183000	04182000	04182810
Drainage Area (at Gage)	1060 mi^2	1967 mi^2	762 mi^2	14.0 mi^2
7Q10 Flow (at Gage)	64.0 cfs [a]	78.0 cfs [c]	9.8 cfs [b]	1.5 cfs [a]
Annual Average Flow (at Gage)	1061 cfs [a]	1772 cfs [c]	613 cfs [b]	18.1 cfs [a]
Typical Dry Weather Surface Width	161 ft [g]	159 ft [h]	110 ft [i]	NA
Typical Dry Weather Cross Sect. Area of Flow	928 ft^2 [g]	486 ft^2 [h]	122 ft^2 [i]	NA
Typical Dry Weather Depth of Flow	5.2 ft [g]	3.1 ft [h]	1.1 ft [i]	NA
Typical Dry Weather Depth of Channel	8.6 ft [g]	5.0 ft [h]	2.0 ft [i]	NA
Typical Bed Slope of Channel	0.9 ft/mile [g]	0.3 ft/mile [h]	1.4 ft/mile [i]	NA
Maximum Water Temperature	81 F	82 F	82 F	NA
Minimum Water Temperature	32 F (as liquid)	32 F (as liquid)	32 F (as liquid)	NA

Notes:
NA = not available
[a] For the period of October 1983 – September 2000
[b] For the period of October 1931 – September 1933 and October 1934 – September 2000
[c] For the period of October 1956 – September 2000
[d] For the period of May 1964 – September 1991
[e] "Typical Dry Weather" values based on modeled conditions preceding a storm event on October 30, 1996.
[f] Water temperature statistics derived from City of Fort Wayne water-quality sampling program at six stations located at the upstream and downstream points of each river in the study area between August 1996 and October 2000.
[g] St. Joseph River characteristics shown for the 8.5 mile-long reach from upstream gage to City Utilities Dam. For the 4.3 mile-long reach extending downstream from the City Utilities Dam to the Hosey Dam, the average dry-weather width is 148 ft, flow area is 522 ft^2, average depth is 3.2 ft, average channel depth is 5.4 ft, and the typical bed slope is 2.4 ft/mile.
[h] Maumee River characteristics shown for the 6.0 mile-long reach from Hosey Dam downstream to the gage at Landin Road.
[i] St. Mary's River characteristics shown for the 11.5 mile-long reach from upstream gage to confluence.

Pollutants from both point and non-point sources are discharged to the receiving waters. Municipal and industrial point sources locations are known and have been analyzed through extensive monitoring. Specific information on non-point source pollutants are limited to land use maps which help define potential pollutant sources within each watershed.

2.5 *COMBINED SEWER SYSTEM AND RECEIVING WATER MONITORING*

2.5.1 Monitoring Plan Development

The steps required to develop a monitoring plan are:

- Define the short- and long- term objectives
- Decide whether to use a model
- Identify data needs
- Identify sampling criteria
- Develop data management and analysis procedures
- Address implementation issues

2.5.2 Combined Sewer System Monitoring

As described below, the City devoted significant efforts to identify system flow characteristics and the pollutants in its combined sewage through several flow monitoring programs. The first of these programs, identified throughout this chapter as the "1996 LTCP Sampling Program," was conducted by the City to help it characterize its flows and discharges. The second program, identified throughout this chapter as the "1997 Sewer System Flow Monitoring Program," implemented a system-wide flow monitoring effort to collect model calibration data. The third program, identified throughout this chapter as the "2005 Sampling Program," was conducted in cooperation with IDEM and EPA at the agencies' request to address perceived data gaps. These efforts produced a list of pollutants whose concentrations were measured at representative regulator overflow points. All regulators downstream of SIUs were sampled. The flow monitoring associated with these programs has given the City necessary information on insystem flow characteristics and the discharge volumes for each regulator. Watershed mapping identified pollutant sources for each regulator. Through these efforts and others described in this Chapter, average pollutant concentrations for all pollutants of concern were determined as necessary to support an evaluation of long-term CSO control alternatives.

The objectives to be accomplished by combined sewer system monitoring are:

- Determination of CSO pollutant concentrations.
- Support for model input, calibration, and verification.

Each of these objectives will be discussed individually below.

2.5.2.1 Determine CSO Pollution Concentrations

Concentrations of pollutants during overflows at various locations, during a range of rain events, and for discrete time periods during the rain events were needed to properly capture the characteristics of CSO pollution concentrations.

In 1996 the City undertook a CSO sampling program. This sampling program is described in detail in the *Impact Characterization of Combined Sewer Overflows* completed with Addendum in January 1999, by Malcolm Pirnie. It entailed sampling of 7 locations listed and depicted at Table 3-3 and Figure 2-1 of the *Impact Characterization of Combined Sewer Overflows, Final Report*. The selection of these representative sites is explained at Attachment 1.

Only storms that followed 72 hours of dry weather, and which had a total depth of more than 0.2", were sampled. Four storms that met these criteria were monitored during the study period. The characteristics of these storms are shown in Table 2.5.2.1.

Table 2.5.2.1
1996 Rain Summary

	Storm 1	Storm 2	Storm 3	Storm 4
DATE	9/21/96	9/27/96	10/10/96	10/29/96
DAY OF WEEK	Saturday	Friday	Thursday	Tuesday
START TIME	8:45 AM	1:45 AM	9:45 PM	11:00 PM
DURATION	11 HRS	23 HRS	7 HRS	1.25 HRS
TOTAL DEPTH	1.4"	1.65"	.70"	.41"
MAX. INTENSITY	.76 in/hr	.52 in/hr	.18 in/hr	1.44 in/hr
RECURRENCE INTERVAL	5 months	5 months	<2 months	<2 months

The program utilized automatic samplers, equipped with 24 one-liter bottles and programmed to fill one bottle every 15 minutes after receiving an initial flow signal from the accompanying flow meter. In addition, grab samples were collected at each location for bacteria analysis. An explanation of the parameters analyzed and associated sampling protocols is given in section 3.3 of the *Impact Characterization of Combined Sewer Overflows, Final Report.*

The following pollutants were sampled:

- *E. coli*
- Fecal Coliform
- TSS
- CBOD
- DO
- pH
- Temperature
- NH_3-N
- P
- Metals
- Volatiles
- Acids
- PCBs
- Pesticides
- Total Cyanide

The sampling results are presented in Appendix B of the *Impact Characterization of Combined Sewer Overflows*, *Final Report*. In general all pollutants exhibited a "first-flush effect". That is, they were found to have higher concentrations during the early stages of overflows than during the later stages of the overflow. The pollutant concentrations also showed greater variation by storm than by location. Both of these observations can be expected given that pollutants have a tendency to build up in sewers during dry weather and are flushed at the start of overflows.

Table 2.5.2.2 contains the arithmetic mean of all samples, the range of location means, and the range of event means for each parameter. The variation during the rain events are shown graphically in figures 4-1a to 4-39 of the *Impact Characterization of Combined Sewer Overflows, Final Report.*

Table 2.5.2.2
POLLUTANT ANALYSIS SUMMARY

Pollutant	Unit	Avg.	Sample Range	Location Range	Event Range	90th Percentile Value	Standard Deviation
TSS	mg/l	238	564-43	325-158	450-68	549	179
CBOD5	mg/l	67	244-3	92-36	139-18	162	67
Total Phosphorus	mg/l	1.65	4.75-.11	2.34-.64	3.44-.55	3.65	1.45
Ammonia	mg/l	3.15	9.34-.17	4.82-.87	4.27-2.24	5.73	2.27
E.coli	Col/ 100 ml	99,589	317,601-14,900	137,350-53,050	158,343-24,000	200,600	75,478
Cadmium	mg/l	.005	.010-.005	.006-.005	.006-.005	.005	.001
Chromium	mg/l	.025	.026-.005	.069-.005	.042-.013	.040	.049
Copper	mg/l	.099	.38-.055	.161-.018	.201-.025	.218	.101
Lead	mg/l	.053	.160-.005	.088-.019	.086-.014	.123	.045
Nickel	mg/l	.039	.620-.005	.161-.015	.110-.009	.030	.114
Silver	mg/l	.026	.530-.005	.138-.005	.083-.005	.013	.099
Zinc	mg/l	.195	.760-.005	.298-.090	.354-.063	.456	.187
Dissolved Oxygen	mg/l	7.82	9.24-3.77	8.62-6.58	8.47-6.91	5.61	1.35

In 2005 the City undertook a second CSO sampling program. The sampling was done between April 20, 2005 and May 19, 2005 according to a sampling plan approved by EPA and IDEM.

Samples were taken at 3 locations. These are listed in Table 2.5.2.3 and shown on Figure 6. These sites were chosen because they were the only regulators with active SIU dischargers upstream that had not been previously sampled.

Table 2.5.2.3
Combined Sewer Overflow Sampling Locations

Regulator SIP No.	Regulator Permit No.	Name	Location	River
L06-086	025	Fort Wayne Newspapers	Northwest corner of Ewing and Superior	St. Mary's
P06-014	057	Glasgow	North side of Wayne west of Glasgow	Maumee
Q06-057	057	Plant Regulator	North side of Dwenger in front of new headworks	Maumee

Only storms that followed 72 hours of dry weather and had a total depth of more than 0.2" were sampled. Three storms that met these criteria were monitored during this study. The characteristics of these storms are shown in Table 2.5.2.4.

Table 2.5.2.4
2005 Rain Summary

	Storm 1	Storm 2	Storm 3
Date	4/20/05	5/13/05	5/19/05
Day of Week	Wednesday	Friday	Thursday
Start Time	11:15 AM	3:15 PM	8:00 AM
Duration	9.75 hrs	7.25 hrs	4.5 hrs
Total Depth	.39"	.70"	.62"
Max. Intensity	.27 in/hr	.48 in/hr	.39 in/hr
Recurrence Interval	<2 month	<2 month	<2 month

Attempts were made to get 3 grab samples for each site during each rain event. The first sample was taken shortly after the overflow began. Two more samples were taken at 30 to 60 minute intervals.

The following pollutants were sampled:

- TSS
- CBOD5
- Total Phosphorus
- Ammonia
- E Coli
- Cadmium
- Chromium
- Copper
- Lead
- Nickel
- Silver
- Zinc
- Dissolved Oxygen

The sampling results are presented in Attachment 2. Table 2.5.2.5 contains the arithmetic means of all samples.

Table 2.5.2.5
2005 POLLUTANT ANALYSIS SUMMARY

Pollutant	Unit	Avg.	90th Percentile Value	Standard Deviation
TSS	mg/l	329	487	156
CBOD5	mg/l	122	192	71
Total Phosphorus	mg/l	1.27	2.03	.72
Ammonia	mg/l	3.38	5.51	2.14
E. coli	Col/ 100 ml	327,566	650,199	285,574
Cadmium	mg/l	.003	.007	.004
Chromium	mg/l	.038	.076	.030
Copper	mg/l	.101	.169	.065
Lead	mg/l	.055	.106	.041
Nickel	mg/l	.094	.183	.090
Silver	mg/l	.011	.029	.021
Zinc	mg/l	.326	.486	.159
Dissolved Oxygen	mg/l	6.53	2.14	3.71

The results were generally consistent with the 1996 study data. An exception was observed with respect to location 57B, the WPCP regulator. *E. coli* concentrations were higher at that location than expected and dissolved oxygen concentrations were lower than expected. It was also noted that overflows at this location began later in a rain event than at other regulators and the overflows continued longer. All these observations can be explained by the much longer travel time of pollutants to the WPCP than to other sampling locations.

Both sampling studies showed that pollutant concentrations generally vary more from rain event to rain event than from site to site. They also tended to exhibit first flush effects. Pathogens are present in expected concentrations in all overflows. They also show that some metals such as copper show up intermittently in the first flush at several sites. Other pollutants included in the analysis were not found in significant concentrations.

2.5.2.2 Support Model Input, Calibration, and Verification.

The City developed a system of models to serve as wet-weather analysis tools. The components of this modeling system are discussed in the *Combined Sewer System Analysis, Report,* completed in January 1999 by Malcolm Pirnie. A dry-weather flow model, wet-weather surface runoff model, wet-weather infiltration and inflow model, and hydraulic collection system model were used to:

- Predict the wet weather performance of the CSS including portions of the CSS that have not been monitored extensively.
- Predict CSO occurrences and volumes for rain events of interest

- Develop CSO statistics such as annual number of CSOs and percent of combined sewage captured.
- Evaluate and select long-term CSO control alternatives.
- Evaluate and optimize control alternatives.

The City undertook the 1997 Sewer System Flow Monitoring Program to develop and calibrate the above models. This flow monitoring project is described in detail in the project report *1997 Pitometer Sewer System Flow Monitoring Services*. A brief discussion of that project follows.

> The 1997 flow monitoring study was conducted during the months of April, May, and June. Sixty flow meters and 10 rain gauges were installed. Flow velocity and depth were recorded at 15-minute intervals. Rainfall totals were also recorded at 15-minute intervals. Twelve rain events of more than .1-inch were recorded during this period.

Management and analysis of the data collected in this study are discussed in Sections 3.2 and 5 of the 1999 C*ombined Sewer System Analysis Report.* The City's collection systems models were developed and calibrated with this data.

The CSO sampling data described above in Section 2.5.2.1 was used in part of calibrating the City's water quality model. The water quality modeling process is described below in section 2.5.3.3.

2.5.2.3 Evaluate the Effectiveness of the NMCs.

The City's CSSOP addresses, by chapter, the City's evaluation of the effectiveness of its implementation of the NMCs.

2.5.3 Receiving Water Monitoring

As will be detailed below, the City made extensive efforts to characterize the condition of the receiving waters through monitoring and field investigation efforts. This included the following activities:

- Assessing the possible presence of sensitive areas through an endangered species study and recreational use study
- Assessing receiving water quality through sampling programs and analysis of hydraulic characteristics and operating reports from NPDES permits and through field investigations.

Hydraulic characteristics of the receiving waters are known for the Spy Run Creek, St. Mary's, St. Joseph and the Maumee Rivers. USGS has established a number of monitoring stations to measure stream flow and are located on each of the receiving streams listed above (note: the Spy Run Creek station has been deactivated by the USGS, but historical data is available). USGS provides information on annual total, annual mean, highest daily mean, and lowest daily mean and annually 7-day minimum.

There are significant structures that influence both the hydraulic and physical characteristics of the receiving water bodies. The St. Joseph Dam, located downstream of Coliseum Blvd. on the St. Joseph River, was constructed to pool water for the Fort Wayne Water Filtration Plant water intake. The Hosey Dam located upstream of Anthony Blvd. on the Maumee is used to regulate river flow to access CSO outfalls and to control the river level during the dry season to reduce odor and improve aesthetics.

The objectives of the receiving water monitoring are to:

- Assess the attainment of WQS, including designated uses
- Establish baseline conditions in the receiving waters
- Evaluate the impacts of CSOs on receiving water quality
- Support model input, calibration and verification

2.5.3.1 Assess the Attainment of WQS, including Designated Uses

The results of five sampling programs have been used by the City to evaluate impacts of CSOs upon receiving waters. The first two studies, the 1996 LTCP Sampling Program and the 2005 Sampling Program introduced previously in Section 2.5.2.1 above,, included instream sampling to characterize the receiving streams. The third study consists of ongoing monitoring efforts have conducted by the City weekly during the recreational season, while the fourth study is a monthly program conducted in coordination with IDEM. The results of these two ongoing programs have helped to verify the findings from the 1996 LTCP Sampling Program and the 2005 Sampling Program. The last study was a pollutant-specific analysis concerning DO excursions observed during the ongoing monitoring efforts. A description of each study is provided below.

Table 2.5.3.1

River Sampling Studies

Data Source	Locations	Frequency	Years	Parameter Group
1996 LTCP Sampling Program (Malcolm Pirnie)	Mayhew Bridge – St. Joseph Tennessee Bridge – St. Joseph Ferguson Bridge – St. Mary's Harrison Bridge – St. Mary's Landin Bridge – Maumee Anthony Bridge - Maumee	11 dry weather samples (8/6 – 11/3) 4 rain events - 12 grab samples per event at each site	1996	TSS, $CBOD_5$, total phosphorus, NH_3-N, *E. coli*, fecal coliform, pH, DO, total cyanide, hardness, volatiles, PCBs, pesticides, temp, metals - Cd, Cr, Cu, Pb, Hg, Ni, Ag, & Zn
2005 Sampling Program (City of Fort Wayne)	Baldwin U = Upstream Baldwin Ditch Baldwin D = Downstream Baldwin Ditch Spy Run U = Upstream Spy Run Creek Spy Run D = Downstream Spy Run Creek Relief RCD-1 = The Maumee relief channel where Baldwin ditch enters the relief channel and upstream of the rock dam Relief RC-4 = Downstream of the rock dam and upstream of Pond 3 outfall in the relief channel River MR-6 = Parallel to RC-4 in the Maumee River Lower Relief LRC-5 = Downstream of Coliseum Bridge River MR-7 = Downstream of Coliseum Bridge	2 dry weather samples (3/29) and (4/15) 2 rain events - **5/13** (sample 5/13, 5/14, 5/15, 5/16) - **5/19** (sample 5/19, 5/20, 5/21, 5/22) - 1 grab sample per day	2005	DO, NH_3-N, pH, TDS, TSS, *E. coli*, Phosphorus, $CBOD_5$, metals - Ag, Cd, Cr, Cu, Pb, Ni, Zn
Recreational Season Weekly Sampling Program (City of Fort Wayne)	Mayhew Bridge – St. Joseph Tennessee Bridge – St. Joseph Ferguson Bridge – St. Mary's Spy Run Bridge – St. Mary's Landin Bridge – Maumee Anthony Bridge – Maumee	Weekly (April-October)	2001-current	DO, pH, NH_3-N, total phosphorus, TSS, TDS, *E. coli*, temp, depth
Year-Round Monthly Sampling (City and IDEM)	Hursh Rd. Bridge – Cedar Creek Mayhew Bridge – St. Joseph Tennessee Bridge – St. Joseph Ferguson Bridge – St. Mary's Spy Run Bridge – St. Mary's Anthony Blvd. – Maumee WPCP – Maumee SR 101 Bridge – Maumee	Monthly	2002-current	Chloride, COD, cyanide, fluoride, NH_3-N, phosphorus, sulfate, $TBOD_5$, TDS, TKN, TOC, TS, TSS, DO, pH, temp, hardness, metals - As, Cd, Cr, Cu, Re, Pb, Mn, Hg, Ni, Zn
Short-Term DO Monitoring (City of Fort Wayne)	Harrison Bridge – St. Mary's Lawton Park Footbridge – Spy Run Creek Tecumseh Bridge – Maumee St. Mary's - DO isolation - Elizabeth St. Bridge - Clinton St. Bridge - State St. Bridge - Oakridge Bridge	- Samples collected each working day between 8/23/04 – 10/28/04 - Continuous sampling every hour 10/28/04 – 11/18/04	2004	DO, temp, depth

The results of the sampling program are discussed below. The Indiana Administrative Code states that the "Criterion Continuous Concentration" (CCC) is an estimate of the highest concentration of material an aquatic community can be exposed to indefinitely. The "Criterion Maximum Concentration" (CMC) is an estimate of the highest concentration of material an aquatic community can "briefly" be exposed to. *E. coli* is the indicator organism for pathogens. *E. coli* standards are not expressed as CCC/MCM values, but rather in terms of a geometric mean and single sample maximum: 125 colonies per 100 ml, based on a geometric mean of 5 samples over a 30-day period and a maximum *E. coli* count of 235 colonies per 100 ml in any one sample.

1996 LTCP Sampling Program (Malcolm Pirnie Study)

The 1996 Malcolm Pirnie sampling data can be found in Appendix A and Appendix C of *Impact Characterization of Combined Sewer Overflows, Final Report* completed in 1998. The 1996 Malcolm Pirnie dry weather sampling results on the St. Joseph, St. Mary's and Maumee Rivers showed geometric means of *E. coli* samples during dry weather as listed below:

- Mayhew at St. Joseph = 90 colonies/100 ml
- Tennessee at St. Joseph = 106 colonies/100 ml
- Ferguson at St. Mary's = 240 colonies/100 ml
- Harrison at St. Mary's = 314 colonies/100 ml
- Anthony at Maumee = 192 colonies/100 ml
- Landin at Maumee = 238 colonies/100 ml

There were no metal CMC excursions observed. There were, however, metal sample concentrations that exceeded CCC standards for cadmium and copper. These appear to be isolated incidents rather than chronic conditions. Table 2.5.3.2 shows the samples that exceeded CCC standards for cadmium and copper during dry weather.

Table 2.5.3.2
Cadmium and Copper Concentrations in Dry Weather

Parameter	Date	Time	Location	Hardness (mg/l $CaCO_3$)	CCC Allowable (ug/l)	CMC Allowable (ug/l)	Actual (ug/l)
Cadmium	8/6/96	12:55 p.m.	Tennessee @ St. Joseph	328	6.2	17	13
Copper	10/16/96	11:10 a.m.	Harrison @ St. Mary's	308	24	40	26

No other parameters exceeded WQS in dry weather sampling.

The 1996 Malcolm Pirnie wet weather sampling results on the St. Joseph, St. Mary's and Maumee Rivers showed geometric mean *E. coli* concentrations as listed in Table 2.5.3.3.

Table 2.5.3.3
***E. coli* Concentrations in Wet Weather**
(Geometric Mean of All Samples Collected During an Event)

River Sampling Site	Event 1	Event 2	Event 3	Event 4
Mayhew at St. Joseph	413	1,444	341	427
Tennessee at St. Joseph	2,599	2,381	650	1,158
Ferguson at St. Mary's	800	5,070	1,238	610
Harrison at St. Mary's	14,823	20,957	2,785	6,779
Anthony at Maumee	7,078	7,312	11,270	7,379
Landin at Maumee	2,292	9,198	1,134	2,758

There were no metal CMC excursions observed. There were metal concentrations that exceeded CCC standards for cadmium and copper. These appear to be isolated incidents

rather than chronic conditions. Table 2.5.3.4 shows the samples that exceeded the CCC for cadmium and copper during wet weather.

Table 2.5.3.4
Cadmium and Copper Concentrations in Wet Weather

Parameter	Event	Data	Time	Location	Hardness (mg/l $CaCO_3$)	CCC Allowable (ug/l)	CMC Allowable (ug/l)	Actual (ug/l)
Cadmium	1	9/21/96	7:35 p.m.	Mayhew @ St. Joseph	302	5.9	16	10
Cadmium	1	9/22/96	4:15 p.m.	Tennessee @ St. Joseph	266	5.3	14	10
Copper	2	9/27/96	9:30 a.m.	Harrison @ St. Mary's	217	18	28	20

In summary, parameters met water quality standards most of the time on the St. Joseph, St. Mary's and Maumee Rivers during dry weather. *E. coli* did not meet WQS at Ferguson Road on the St. Mary's, Harrison Street on the St. Mary's or Landin Road on the Maumee River. Note, however, that the geometric mean values for the dry-weather sampling events are calculated over a longer period than the 30 days specified in the WQS. There were traces of cadmium detected at the Tennessee Bridge on the St. Joseph River and copper at the Harrison Bridge on the St. Mary's River. Copper and cadmium did not exceed CMC limits. However, they did exceed the CCC limits on two occasions. This appears to be an isolated incident of metal excursions rather than a chronic condition.

In terms of wet weather, parameters met WQS most of the time on the St. Joseph, St. Mary's and Maumee Rivers. However, the *E. coli* concentrations are clearly elevated and exceeded the geometric mean WQS at each sampling site for all four wet weather events. Note, however, that the geometric mean values for the sampling events are calculated over a much shorter period than the 30 days specified in the WQS. Cadmium exceeded CCC WQS at the Mayhew and Tennessee bridges on the St. Joseph River once. Copper exceeded CCC WQS at Harrison Bridge on the St. Mary's River once. These metals did not exceed the CMC limits. Again, this appears to be an isolated incident of metal excursions rather than a chronic condition.

These studies made it clear that the primary pollutant of concern is *E. coli* for LTCP purposes. Cadmium and copper appeared to be secondary pollutants of concern.

2005 City of Fort Wayne Study

The City's 2005 sampling data can be found in Attachment 3. The 2005 Sampling Program collected data on the Maumee River relief channel, Maumee River, Baldwin Ditch and Spy Run Creek. Specific sampling locations were identified previously in Table 2.5.3.1.

Arithmetic means of *E. coli* samples during dry weather are listed below:

Sampling Site	Average
Baldwin U	2,943
Baldwin D	547
Spy Run U	207
Spy Run D	174.5
Relief RCD1	188.5
Relief RC4	160
Lrelief LRC5	21.5
River MR6	100.5
River MR7	191

There were no acute limit WQS excursions for any parameter during dry weather. Ammonia exceeded the chronic limit WQS for dry weather at RCD1 once. Table 2.5.3.5 shows this sample.

Table 2.5.3.5
Ammonia Concentrations in Dry Weather

Parameter	Location	Acute limits	Chronic Limits	3/29/05 Actual (mg/l)	4/15/05 Actual (mg/l)
Ammonia	Relief RCD1	.6777 – 28.48	.1545 – 2.48	2.63	3.52

All other parameters met WQS for dry weather sampling.

Arithmetic means of *E. coli* samples during wet weather are listed below:

Sampling Site	Average Event 1	Average Event 2
Baldwin U	48,728	64,486
Baldwin D	53,985	20,349
Spy Run U	3,775	8,788
Spy Run D	12,965	6,523
Relief RCD1	70,608	50,840
Relief RC4	10,143	2,237
Lrelief LRC5	3,410	1,764
River MR6	3,708	2,951
River MR7	2,312	1,116

There were no acute limit WQS excursions for any parameter observed during wet weather. Ammonia exceeded the chronic limit WQS for wet weather at RCD1 for events 1 and 2. Table 2.5.3.6 shows this result.

Table 2.5.3.6
Ammonia Concentrations in Wet Weather

Parameter	Location	Acute limits	Chronic Limits	Event 1 (5/15/05) Actual (mg/l)	Event 2 (5/21/05) Actual (mg/l)	Event 2 (5/22/05) Actual (mg/l)
Ammonia	Relief RCD1	.6777 – 28.48	.1545 – 2.48	2.81	4	3.69

All other parameters met WQS for wet weather sampling.

In summary, parameters met WQS most of the time on the Maumee River relief channel, Maumee River, Baldwin Ditch and Spy Run Creek during results for dry weather. *E. coli* (geometric mean nor single-sample maximum) did not meet WQS at Baldwin upstream and downstream, Spy Run upstream and downstream, RC4 and MR7 for the first dry weather sampling event. Baldwin upstream and RCD1 did not meet WQS for *E. coli* (geometric mean nor single-sample maximum) during the second dry weather sampling event. Ammonia did not meet the chronic limit WQS for both dry weather sampling events at RCD1. Ammonia did meet the acute limit WQS. All metals met WQS during dry weather.

In terms of wet weather, parameters meet WQS most of the time on the Maumee River relief channel, Maumee River, Baldwin Ditch and Spy Run Creek. As expected, higher concentrations of *E. coli* were present after wet weather events. *E. coli* exceeded WQS for most sites during each wet weather event. Both upstream and downstream sites on the Baldwin ditch exceeded WQS and had the highest *E. coli* concentration for each wet weather event. The lowest *E. coli* concentration was sampled at MR-7 and LRC-5 along with MR-6 and RC-4. *E. coli* concentrations were found to be similar in both the relief channel and the main channel of the Maumee River. Ammonia met the acute limit WQS. Ammonia did not meet the chronic limit WQS for wet weather sampling events at RCD1 on 5/15/05, 5/2/05 and 5/22/05. This is most likely due to the Baldwin Ditch along with the pooling effect upstream of a rock dam in the relief channel. All metals met WQS during wet weather.

The main channel and the relief channel displayed similar values for each parameter tested during both dry and wet weather events. This data supports that the main channel and the relief channel of the Maumee River share similar water quality characteristics.

This study confirmed that, for LTCP purposes, the primary pollutant of concern is *E. coli*. Ammonia appeared to be a secondary pollutant of concern, although all indications are that the reported ammonia exceedance was an isolated incident rather than a chronic condition.

2001-2003 Recreational Season Weekly Sampling Program (City of Fort Wayne)

The following information includes data collected by the City during the period 2001-2003 on the St. Mary's, St. Joseph and Maumee Rivers. This study was conducted to verify the information established in the 1996 LTCP Sampling Program and the 2005 Sampling Program. Samples were collected once a week on a regular basis; therefore data was not separated for dry and wet weather events. Sampling results from the City study can be found in Attachment 4. Parameters met WQS most of the time. Results from this study are similar to the 1996 and 2005 studies. However, the 2001-2003 Program also revealed that DO exceeded WQS in 2002 and 2003. The DO results are listed below.

Table 2.5.3.7
2002 DO Sampling Results

Sampling Site	Date	DO concentration
St. Mary's at Spy Run	8/12/02	1.9
St. Mary's at Spy Run	8/19/02	4.04
St. Mary's at Spy Run	8/26/02	2.69
Maumee at Landin	8/26/02	4.88
Maumee at Landin	9/9/02	4.76
Maumee at Landin	9/16/02	4.26
St. Mary's at Spy Run	9/23/02	0.77
St. Mary's at Spy Run	9/30/02	3.21

Table 2.5.3.8
2003 DO Sampling Results

Sampling Site	Date	DO concentration
Maumee at Landin	10/27/03	4.9
St. Mary's at Ferguson	6/16/03	3.11
St. Mary's at Spy Run	6/16/03	3.14
St. Joseph at Mayhew	6/16/03	4.07
St. Joseph at Tennessee	6/16/03	4.22
Maumee at Landin	6/16/03	3.64
St. Mary's at Ferguson	7/7/03	2.78
St. Joseph at Mayhew	7/7/03	4.19
Maumee at Landin	7/7/03	2.84
St. Mary's at Ferguson	7/15/03	1.38
St. Mary's at Spy Run	7/15/03	1.43
St. Joseph at Mayhew	7/15/03	4.43
Maumee at Anthony	7/15/03	2.77
Maumee at Landin	7/15/03	2.74
St. Mary's at Ferguson	8/04/03	2.3
St. Joseph at Mayhew	8/04/03	3.32
St. Joseph at Tennessee	8/04/03	3.45
Maumee at Landin	8/04/03	2.66

Data for DO was not available for 2001. The only DO excursion in 2002 was at Spy Run Avenue on the St. Mary's and Landin Road on the Maumee. There were several DO excursions in 2003 at all six sampling sites. There was a significant rain event on July 4, 2003 that started a 100-year flood in the Fort Wayne area, particularly on the St. Mary's River. Due to the flood event, the DO excursions may not be accurate because of abnormal conditions. All other parameters have similar concentrations as those in the 1996 and 2005 studies.

Year-Round Monthly Sampling (City of Fort Wayne and IDEM)

The City and IDEM initiated a joint river sampling program in 2002. The program collects data on Cedar Creek and the St. Mary's, St. Joseph and Maumee Rivers. Samples are collected once a month on a regular schedule; therefore, dry and wet weather samples are not separated in this study. During the recreational season, the City collects samples for the monthly IDEM program as part of the Weekly Sampling Program described above. Sampling results from the joint City/IDEM study can be found in Attachment 5.

Most parameters analyzed as part of the joint program have similar concentrations to those observed in the 1996 LTCP Sampling Program and 2005 River Sampling Program. The only new parameter introduced in the IDEM protocol is lead. Lead has not exceeded the CMC limit, but some samples have exceeded the CCC limit at Spy Run Avenue on the St. Mary's River, Anthony Blvd and SR 101 on the Maumee River. Table 2.5.3.9 shows the metal excursions for lead.

Table 2.5.3.9

Lead Concentrations

Metal	Date	Station	Water Hardness	Limit (CCC)	Limit (CMC)	Sample
Lead	7/21/03	5	159	11.61 ug/L	221.44 ug/L	17.5 ug/L
		6	194	14.94 ug/L	284.94 ug/L	15.0 ug/L
		8	209	16.43 ug/L	313.31 ug/L	25.6 ug/L

Notes:

- **Station 5 is located at Spy Run Bridge on the St. Mary's River**
- **Station 6 is located at Anthony Boulevard on the Maumee River**
- **Station 7 is located at Landin Road Bridge on the Maumee River**

2004 City DO Study

Because there were DO excursions observed in the City 2001-2003 and IDEM 2002-2003 studies, the City conducted a further DO investigation. See Attachment 6 for further detail on this study which concluded that DO is a secondary pollutant of concern.

Designated Use Attainment

The CWA requires that uses be designated for each water body covered by the Act. IDEM has designated all Indiana waters as "fishable/swimmable" for aquatic life and full-body contact recreation. Indiana has also established a use designation for public drinking water supply, industrial and agricultural uses.

Surface waters of the state are designated for full-body contact recreation. The criterion for full-body contact recreation is defined by bacteriological quality during the months of April through October. The *E. coli* bacteria count shall not exceed 125 col/100 ml as a geometric mean based on not less than 5 samples spaced over a 30 day period or 235 col/100 ml in any one sample in a 30 day period. Based on the various river sampling studies on Fort Wayne's receiving streams, the St. Joseph, St. Mary's and Maumee Rivers meet the designated WQS for full-body contact recreation use most of the time during dry weather. Full-body contact recreation during wet weather is attained some of the time. According to the Indiana 303(d) and 305(b) lists, the St. Joseph, St. Mary's and Maumee Rivers and Spy Run Creek list *E. coli* as a parameter of concern. While some recreational activities occur on the St. Joseph, St. Mary's and Maumee Rivers, full-body contact recreation is limited to upstream of the City's CSO outfalls along the St. Joseph River upstream of the St. Joseph Dam. The City conducted a study on recreational

activity on the CSO affected portions of the City's three rivers. This study found that, although Fort Wayne's receiving waters meet WQS for recreational use some of the time, the recreational activities that occur in or around the CSO areas mainly consist of canoe/kayaking, fishing from the riverbank, boats, or bridges, and children playing near the riverbank. These activities do not involve full-body contact or the risk of ingesting river water.

In terms of aquatic life, IDEM requires that all waters should be capable of supporting a well-balanced, warm water aquatic community. The criterion for the designated use of aquatic life states that there shall be no substances that impart unpalatable flavor to food fish or offensive odors in the water. The pH values shall be between 6.0 and 9.0 except daily fluctuations that exceed pH 9.0 as a result of photosynthetic activity. Dissolved Oxygen (DO) shall average 5.0 mg/l per calendar day and shall not be less than 4.0 mg/l at any time. There shall be no abnormal temperature changes that may adversely affect aquatic life unless cause by natural conditions. The St. Joseph, St. Mary's and Maumee Rivers meet the designated use and fully support aquatic life. The Spy Run Creek is listed as an Impaired Biotic Community on the Indiana 303(d) list and does not support aquatic life. A waterbody is considered to be impaired, if it does not meet a designated use(s). Listings of impaired biotic communities are based on the narrative standard for aquatic life. The Indiana State Department of Health has issued a Fish Consumption Advisory (FCA) for these waterbodies. Mercury and PCBs are fish tissue contaminants identified in the FCA as pollutants or stressors.

All surface waters used for public water supply are designated as a public water supply. Fort Wayne's public drinking water supply is extracted from the St. Joseph River just upstream of the St. Joseph Dam near Coliseum Boulevard. This is also upstream of the City's first CSO outfall on the St. Joseph River. Some Ohio communities downstream of Fort Wayne use the Maumee River as their public drinking water supply. The following criteria are established to protect the surface water quality where water is withdrawn for treatment for public supply. The coliform bacteria group shall not exceed 5,000 col/100 ml as a monthly average or 5,000 col/100 ml in more than 20% of the samples collected in one month or 20,000 col/100 ml in more than 5% of the samples collect in one month. Taste and odor producing substances shall not interfere with the production of finished water unless it is naturally occurring. Chloride or sulfate concentrations shall not exceed 250 mg/l unless it is a naturally occurring source. Dissolved solids shall not exceed 750 mg/l unless it is a naturally occurring source. Surface waters are acceptable if radium-226 and strontium-90 are present in amounts not exceeding 3-10 picocuries/liter or the gross beta concentrations do not exceed 1,000 picocuries/liter. The combined concentration of nitrate-N and nitrite-N shall not exceed 10 mg/l and the concentration of nitrite-N shall not exceed 1 mg/l. The St. Joseph, St. Mary's and Maumee Rivers meet the designated WQS for public drinking water supply.

All surface waters used for industrial water supply are designated as an industrial water supply. The criterion to ensure protection of water quality at the point at which water is withdrawn for use (either with or without treatment) for industrial cooling and processing is that the dissolved solids shall not exceed 750 mg/l at any time. According to the City

sampling data from 2001-present, Fort Wayne receiving waters meet WQS for dissolved solids for industrial water supply use most of the time.

All surface waters used for agricultural purposes are designated as agricultural use water. The criteria to ensure water quality conditions necessary for agricultural use are the same as the minimum surface water quality criteria defined in 327 IAC 2-1.5-8 (b). The St. Joseph, St. Mary's and Maumee Rivers meet the designated WQS for agricultural use.

2.5.3.2 Establish Baseline Condition in Receiving Waters

Flow data, pollutant concentration and an understanding of pollutant sources are needed to establish baseline conditions in receiving streams. The 1996 LTCP Sampling Program and the City's 2005 Sampling Program discussed in Table 2.5.3.1 were used to establish baseline water quality conditions in the receiving waters. A combination of USGS flow data and modeling analysis was used to establish baseline hydraulic conditions in the receiving waters.

Average dry-weather flow rates in the rivers are as follows:

St. Mary's River (near Ft. Wayne) – 45 cfs
St. Joseph River (near Ft. Wayne) – 160 cfs
Maumee River (at New Haven) – 205 cfs

Wet-weather flow rates are impacted by local and upstream rainfall and show high variability. Based on the period of record at available USGS gauges, the range of flows in each of the rivers is as follows:

- St. Mary's River (near Ft. Wayne) – peak recorded flow range up to approximately 16,000 cfs.
- St. Joseph River (near Ft. Wayne) – peak recorded flow range up to approximately 13,500 cfs.
- Maumee River (at New Haven) – peak recorded flow range up to approximately 27,000 cfs.

Average parameter concentrations for each sampling site in the 1996 LTCP Sampling Program and the 2005 Sampling Program can be found in Attachment 7.

2.5.3.2.1 Baseline Conditions - Aquatic Life and Sensitive Areas

Aquatic Life Study

A mussel survey was conducted in March and April 2005 to document the status of the federal and Indiana listed mussels within Fort Wayne's receiving waters. The survey was conducted, as agreed with IDEM and EPA, for the following five reaches of Fort Wayne's rivers and stream.

- St. Joseph River from the St. Joseph Dam at Johnny Appleseed Park to the Parnell Ave. Bridge
- St. Joseph River from Stevies Island to the confluence
- Maumee River from the confluence to approximately 1000 meters downstream
- St. Mary's River from Harrison St. Bridge to the confluence
- Spy Run Creek from Grove St. Bridge to the confluence

A mussel survey is based on the relationship that where mussels exist, habitat and water quality are sufficient to support these sensitive organisms. In contrast, in locations where they historically existed but have been eliminated, one or both of these measures (habitat and water quality) have declined.

A total of 43 species and subspecies of mussels were previously collected from the above reaches. This collection record is based on a wide range of sources, including narrative observations dating back to the early 1900s. The U.S. Fish and Wildlife Service lists three of these species as endangered, while Indiana lists two species as endangered and six species as Species of Special Concern. Of the endangered or special concern species, the only mussels found alive in the 2005 survey were Indiana Species of Special Concern from the Parnell Ave. Bridge to the State St. Bridge on the St. Joseph River. No federally listed endangered or threatened species were found.

Specimens found on the St. Mary's River were 3 years old or less. The lower St. Mary's River does not support a permanent mussel community. Only 5 species were collected on the lower St. Joseph River from State St. Bridge to the confluence. The lower St. Joseph River does not support a permanent mussel community. Only 1 specimen was found on the Maumee River near the confluence; this area does not currently support a permanent mussel community. The Maumee River downstream, near the Ohio Line, supports a diverse mussel community. No living mussels were found in the Spy Run Creek even though conditions were ideal for finding mussels.

This study concluded there are no defined sensitive areas concerning aquatic life on the St. Joseph, St. Mary's or Maumee Rivers within City's CSS receiving waters. The St. Joseph River from the St. Joseph Dam at Johnny Appleseed Park to the State St. Bridge supports an abundant and locally significant mussel community. Additional information on this study can be found in the *Report on the federal and Indiana listed mussels (family Unionidae) of the St. Joseph, St. Mary's and Maumee Rivers and Spy Run in Fort Wayne, Indiana 2005.*

Recreational Use Study

City personnel conducted a recreational use study on Fort Wayne's CSO-impacted areas on the St. Joseph, St. Mary's and Maumee Rivers in 2004 and 2005. This study concluded that recreational activities involving full-body contact within the CSO-impacted reaches of Fort Wayne Rivers are virtually non-existent. According to community surveys described in the study, full-body contact recreation activities are not

carried out on a regular basis and, at most, are intermittent or incidental. That is, there are no recreational use sensitive areas in the waterbodies affected by the City's CSO discharges. Detailed information of this study can be found in *Recreational Waterbody Uses in Fort Wayne's Combined Sewer Area 2005.*

2.5.3.3 Evaluate the Impacts of CSOs on Receiving Water Quality

The City's CE-QUAL water quality model was used to evaluate the impacts of CSOs on receiving waters, including a determination of pollutant loads from CSOs, stormwater and other sources. In addition to the data referenced at sections 2.5.3.1 and 2.5.3.2 above, necessary information was gathered to calibrate the model. Elevation, flow, area of flow, pollutant concentrations, cross-sectional bathymetry, dam measurements, current speed and cumulative travel time data are needed to calibrate the model.

Wet weather and dry weather information for the 1996 LTCP Sampling Program was used to calibrate the model. The model was used to estimate the relative contributions from pollutant sources; see section 2.6.2 for model results. The 2005 Sampling Program provided additional instream water quality data to assess the impacts of CSOs. Data summaries from these two sampling programs are described in section 2.5.2.1.

2.5.3.4 Support Model Input

The City developed a system of models to serve as wet-weather analysis tools. The components of the landslide modeling system are discussed in the *Combined Sewer System Analysis Report,* completed in January 1999, while the components of the water quality model are presented in the *Impact Characterization of Combined Sewer Overflows,* completed with Addendum in January, 1999.

The 1996 LTCP Sampling Program collected rain, river flow data and pollutant concentration data from several significant rain events to calibrate the receiving water model.

2.6 *COMBINED SEWER SYSTEM AND RECEIVING WATER MODELING*

2.6.1 Combined Sewer System Modeling

2.6.1.1 CSS Modeling Objectives

As stated at section 2.5.2.2 above, the objectives of CSS modeling was to:

- Predict the wet weather performance of the CSS including portions of the CSS that have not been monitored extensively.
- Predict CSO occurrences and volumes for rain events of interest
- Develop CSO statistics such as annual number of CSOs and percent of combined sewage captured.
- Evaluate and select long-term CSO control alternatives.

- Evaluate and optimize control alternatives.

2.6.1.2 CSS Model Selection

The City needed a hydraulic model that could:

- Adequately estimate runoff flows influent to the sewer system
- Adequately estimate collection system hydraulics including backwater and surcharge conditions
- Predict the behavior of unmonitored overflows
- Perform both short and long term simulations
- Assess the affects of control alternatives

The City selected XP SWMM modeling software, a complex dynamic model, to satisfy the requirements outlined above.

2.6.1.3 CSS Model Application

Development

The City developed a system of models to characterize the CSS. Collectively, the dry weather flow model, the wet-weather infiltration and inflow model, the runoff model, and the hydraulic collection system model are referred to as the CSS model.

The purpose of each component model, the sources of data used to assemble the models, and the level of detail chosen for the models are discussed in Chapters 1, 2, 3, and 4 of the *Combined Sewer System Analysis Report,* completed in January, 1999, by Malcolm Pirnie.

Calibration

The calibration, accuracy, and reliability of the models are discussed in Chapter 5 of the *Combined Sewer System Analysis Report* and in a subsequent document titled *Consolidated Summary of XP-SWMM Model Calibration Information to Support Discussions With USEPA, IDEM, and SAIC,* dated January 26, 2004, prepared by Malcolm Pirnie. These models have been developed to provide a planning level of accuracy and reliability, as is appropriate to support LTCP development.

Model Results

The calibrated CSS model was used to predict CSO occurrences and volumes for rain events of interest, including CSO activity during a typical year. The typical year rainfall record used in the annual simulation was developed to represent an average year, based on an analysis of 40 years of rainfall data. Table 2.6.1.3 presents model results for annual

overflow metrics at each overflow (and regulator) under existing conditions, based on the typical year simulations.

Table 2.6.1.3
Predicted Annual Regulator Response

Overflow Permit ID	Overflow SIP ID	Regulator	Existing Conditions		
			Annual Overflow Volume (cf)	Annual Number of Overflow Events	Annual Number of Overflow Hours
18/19	K11165/ K11178	K11163/K11162	52,519,264	71	503
26/33/27	M10151/ M10313/ M10202	M10150/M10148/M10199	19,534,059	56	409
48	O10252	O10312/010311	10,650,200	39	143
13	K06298	K06285/K06275	8,623,553	44	165
CSO PS (57)	NA	P06014	8,006,963	25	139
55	P06192	P06119	4,604,087	47	198
36	M18032	M18256	4,216,299	34	103
20	K15116	K15009	3,908,404	40	130
11/12	K06234	K06231	3,532,237	30	98
39	N06022	N06007	2,980,121	25	77
5	J11164	J11163	2,972,631	48	157
21	K19044	L19018	2,645,744	41	161
17	K07176	K07171	2,378,948	37	103
24	L06420	L06088	2,104,910	23	55
28	M10238	M10279	1,783,417	26	83
50	O10277	O10273	1,705,907	44	106
61	R14137	S18082	1,678,781	14	42
62	R14138	R18188	1,176,229	14	46
NA(2)	NA(2)	O10256	986,456	37	141
4	J02090	J02089	724,620	14	63
64	S02035	Q07022/Q03011	706,082	16	52
52(1)	O22004	P22001	547,406	12	47
54	O23080	O19009	511,038	27	100
51	O22002	O22045	471,221	9	27
NA(2)	NA(2)	L06098	454,898	20	48
53	O22094	O22095	411,440	13	35
60	R06031	R06030	360,417	11	21
32	M10306	M06706	335,513	5	10
68	N18254	N18241	311,151	8	20
23	L06103	L06102	306,128	13	29

67		K15110	186,580	7	13
29[1]	M10265	M10256	168,893	4	8
29[1]	M10265	M10309	147,433	3	6
NA[2]	NA[2]	P18031	144,006	3	19
NA[2]	NA[2]	P18036	76,503	5	8
58	Q06034	Q06036	67,379	3	7
45	N22103	N22101	28,274	2	4
25	L06421	L06086	13,899	1	1
NA[2]	NA[2]	K07006	6,621	9	4
52[1]	O22004	P22139	1,338	1	1
14	K07106	K07101/K07115	0	0	0
56/07	J03313	J03267	0	0	0
44	N22093	N22092	0	0	0
NA[3]	NA[3]	L06438	NA	NA	NA
NA[2]	NA[2]	K15111	NA	NA	NA
NA[2]	NA[2]	M18015	NA	NA	NA

NOTES:

1 These outfalls receive contributions from two regulators

2 Eliminated or gates permanently shut

3 Upstream of L06087/88

Overflow activity in terms of annual overflow volume, number of annual overflow events, and total number of annual overflow hours provides important decisions metrics in analyzing and evaluating alternatives. Following analysis of existing conditions, the configuration of the model was changed to represent proposed controls and run to predict the effects of those proposed controls on annual metrics. Those results are discussed in Chapter 3 of this LTCP.

The models also provide important information on the predicted wet-weather performance of the CSS during single events. A full discussion of predicted CSS performance is provided in the *Combined Sewer System Analysis Report*; some examples of these results and observations are as follows:

- The St. Mary's Interceptor begins to surcharge during conditions associated with a 1-month design storm (6 hour duration).

- The Wayne Street Interceptor begins to be affected by WPCP capacity during conditions associated with a 1-month design storm. The interceptor is already overflowing to the CSO Ponds at this 1-month storm level.

- Regulator K11 163, regulating flow from Subbasin K11 010 into the St. Mary's Interceptor, is at times impacted by downstream interceptor hydraulics. This impact can take the form of backflow from the St. Mary's Interceptor through the regulatory and out of Overflow K11 165 (permit #18).

- The Clinton Street Interceptor is at times impacted by the hydraulics of the downstream Wayne Street Interceptor. The occurrence of actual backflow in the Clinton Street Interceptor is suggested by the monitoring data and modeling results.

- The North Maumee Interceptor is at times impacted by the downstream hydraulic control imposed by the raw pumps at the WPCP. The impact can be severe enough to cause backflow in the North Maumee Interceptor.

2.6.2 Receiving Water Modeling

2.6.2.1 Receiving Water Modeling Objectives

The objectives of the City's receiving water modeling were to:

- Predict the fate and transport of pollutants of interest during both dry-weather and wet-weather conditions.

- Develop estimates of flows, pollutant concentrations, and pollutant loads by source type.

2.6.2.2 Receiving Water Model Selection

Section 7.1 of the *Impact Characterization of Combined Sewer Overflows, Final Report* completed in 1998, discusses the selection of the City's receiving water model. A CE-QUAL-RIV1 model was used to simulate water quality on the St. Mary's, St. Joseph and Maumee Rivers. This model consists of two components: a hydraulic (RIV1H) component and a water quality (RIV1Q) component.

2.6.2.3 Receiving Water Model Application

Model Development

The study area on the three rivers was divided into 39 nodes and then grouped into four segments during the dry weather analysis. The four segments are described below:

- St. Joe Center Road to the St. Joseph Dam on the St. Joseph River (1.7 miles).

- St. Joseph Dam on the St. Joseph River to the Hosey Dam on the Maumee River (4.1 miles).

- Hosey Dam to the USGS gauge near the Landin Road Bridge on the Maumee River (6.2 miles)

- Tributary (St. Mary's) – Ferguson Road to the confluence (10.8 miles)

Cross-sectional bathymetry, bottom roughness, and reach length information are specified for each node. A detailed discussion on the development of the model can be found in section 7.3 of *Impact Characterization of Combined Sewer Overflows, Final Report* and section 3.3 of *Impact Characterization of Sewer Overflows, Addendum*.

Calibration

Hydraulic and water quality data were used to calibrate the model.

Two days, August 13 and September 4, 1996, were selected to represent the dry weather calibration condition. Measured and modeled flow rates for dry weather calibration are listed below.

Location	August 13, 1996	September 4, 1996	Model Input
Ft. Wayne WPCP	71 cfs	69 cfs	70 cfs
St. Mary's River (near Ft. Wayne)	52 cfs	39 cfs	45 cfs
St. Joseph River (near Ft. Wayne)	160 cfs	161 cfs	160 cfs
Maumee River (near New Haven)	216 cfs	198 cfs	205 cfs

Pollutants were measured at upstream boundaries of the model for the dry weather water quality calibration. The upstream concentrations are presented in the table below.

Boundary	TSS (mg/l)	CBOD5 (mg/l)	DO (mg/l)	NH3-N (mg/l)	TP (mg/l)	*E. coli* (org/100 ml)	Fecal Coliform (org/100 ml)
St. Joseph	25.0	2.0	6.35	0.027	0.203	120	120
St. Mary's	65.0	6.6	11.85	0.051	0.349	240	250

Because there are no discharges from storm or combined sewers during dry weather, the only pollutants other than those entering at the upstream boundaries are from the WPCP. The pollutant concentrations assigned to the WPCP are listed below.

Source	TSS (mg/l)	CBOD5 (mg/l)	DO (mg/l)	NH3-N (mg/l)	TP (mg/l)	*E. coli* (org/100 ml)	Fecal Coliform (org/100 ml)
WPCP	6.7	1.6	8.	0.50	0.57	51	51

While the dry weather calibration procedure is considered a constant, steady-state condition, the wet weather calibration procedure considered conditions that varied from

storm to storm and from hour to hour. The dynamic nature of the wet-weather response is determined by the rainfall/runoff relationship of upstream watersheds and local drainage basins.

Four wet weather events were used for wet weather calibration. The wet weather events occurred September 21, 1996, September 27, 1996, October 17, 1996 and October 29, 1996. Hydraulic calibration results for each wet weather event can be found in Table 2.6.2.1. Concentration of pollutants from various wet weather sources resulting from model calibrations are presented in Table 2.6.2.2.

Table 2.6.2.1
Hydraulic Calibrations Summary

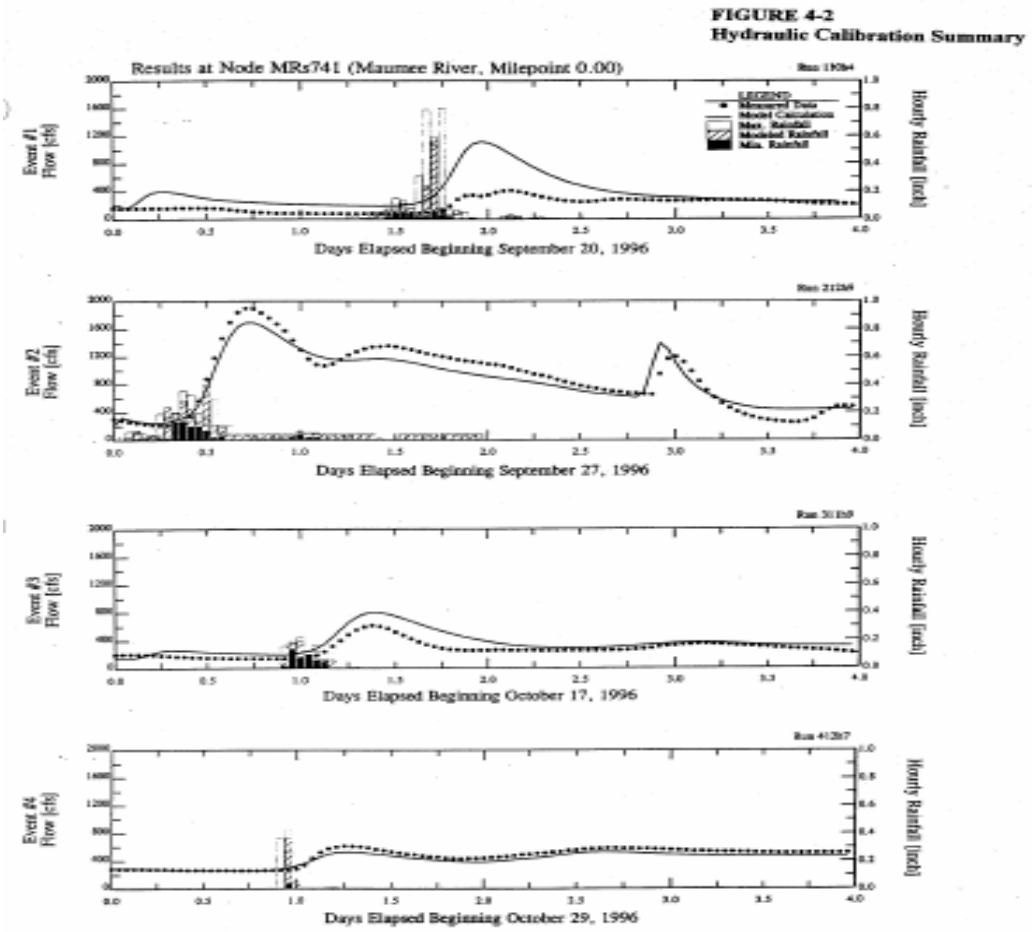


Table 2.6.2.2
Concentrations of Sources Used in the Model

Table 4-2

Concentrations of Sources Used in the Model

Source	TSS mg/L	BOD_5 mg/L	DO mg/L	NH_3N mg/L	TP mg/L	Fecal Coliform[a] org/100mL	ECOLI[a] org/100mL
CSO (Event 1,3,4)							
First Flush	741	151	6.7	5.0	3.3	3.5E+05	1.2E+05
Rest of Storm	75	34	8.2	3.7	0.9	2.0E+05	1.0E+05
CSO (Event 2)							
First Flush	85	22	8.0	3.7	0.8	3.7E+05	2.6E+05
Rest of Storm	61	9	8.7	1.5	0.4	2.1E+05	1.2E+05
Stormwater	61	10	9.0	0.3	0.3	3.0E+04	3.0E+04
Tributary Streams	60	10	9.0	0.3	0.3	3.0E+04	3.0E+04
WPCP Effluent[b]	8	1	9.3	0.2	0.5	9.4E+01	9.4E+01
Pond #2 Effluent[c]	31	21	4.0	12.0	4.1	3.7E+02	3.7E+02

Notes: Constant temperatures were used in model input; 18, 17, 14 and 12 °C were used for event 1, 2, 3 and 4 respectively.

a. CSO bacteria values represent log-mean concentrations at each of 7 sampled locations that were arithmetically averaged to develop event-mean "first-flush" and "rest-of-storm" concentrations. Bacteria values for other sources were assigned based on limited available data.

b. Value shown is average of daily values used in model input during wet-weather calibration periods. Model simulations utilized individual daily values, i.e., concentrations were varied on a daily basis.

c. Value shown is average of values used in model input during wet-weather calibration periods. NH_3N and TP values assume conservatively that Pond #2 is in flow-through mode.

A more detailed description of the wet weather calibration can be found in the *Impact Characterization of Sewer Overflows, Addendum.*

Model Results

The hydraulic calibration indicated that three significant CSO discharge points account for approximately 60-70% of the total overflow volume. These locations are:

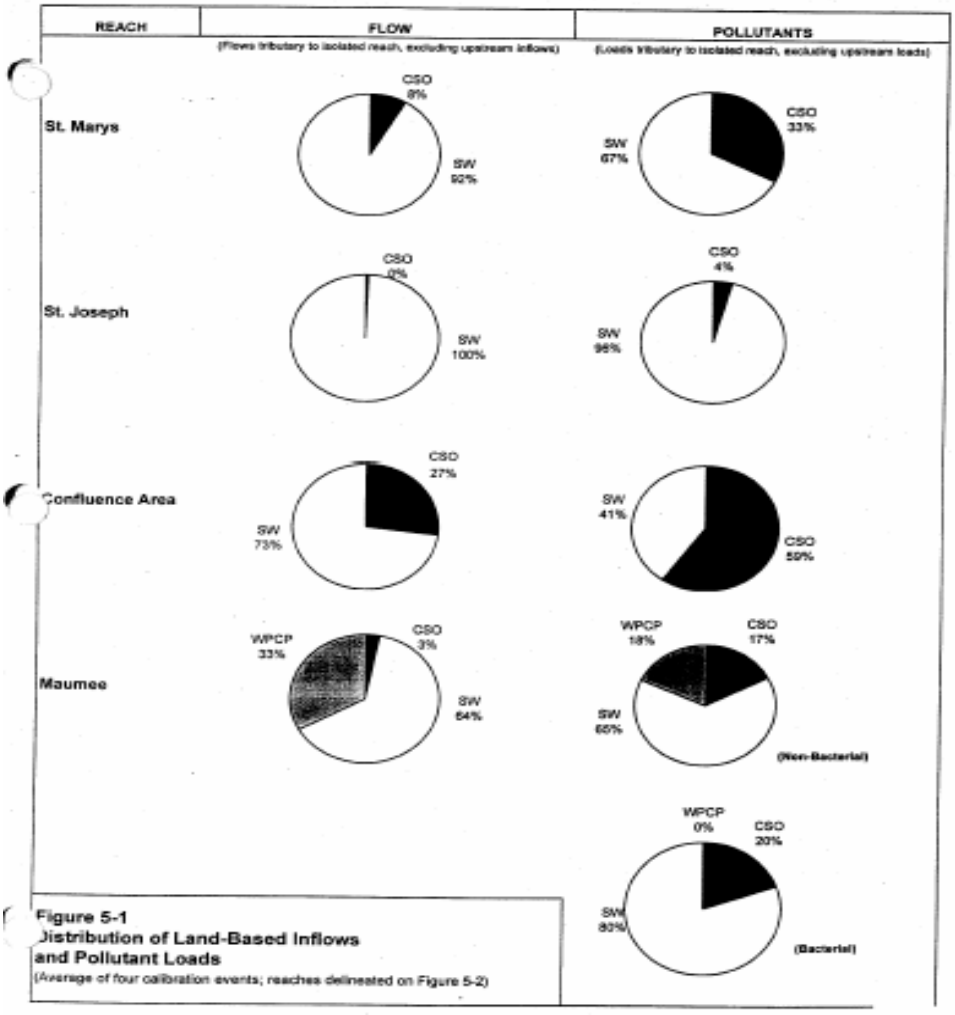
- Outfalls M10151 and M10202 at 3rd Street which relieve subbasin M0120
- Outfalls K11165 and K11164 at Rudisill which relieves subbasin K11010
- Outfalls O10257, O10252 and O10097 at Morton Street Pump Station which relieves subbasin O10101

The water quality model was used to estimate pollutant source and inflow distribution for four reaches:

- Ferguson Road to Harrison Street Bridge on the St. Mary's River (upstream)
- Mayhew Road to Tennessee Avenue on the St. Joseph River (upstream)
- Harrison Street (St. Mary's) and Tennessee (St. Joseph) around the confluence area to Anthony Boulevard on the Maumee River.
- Anthony Boulevard to Landin Road on the Maumee River (downstream)

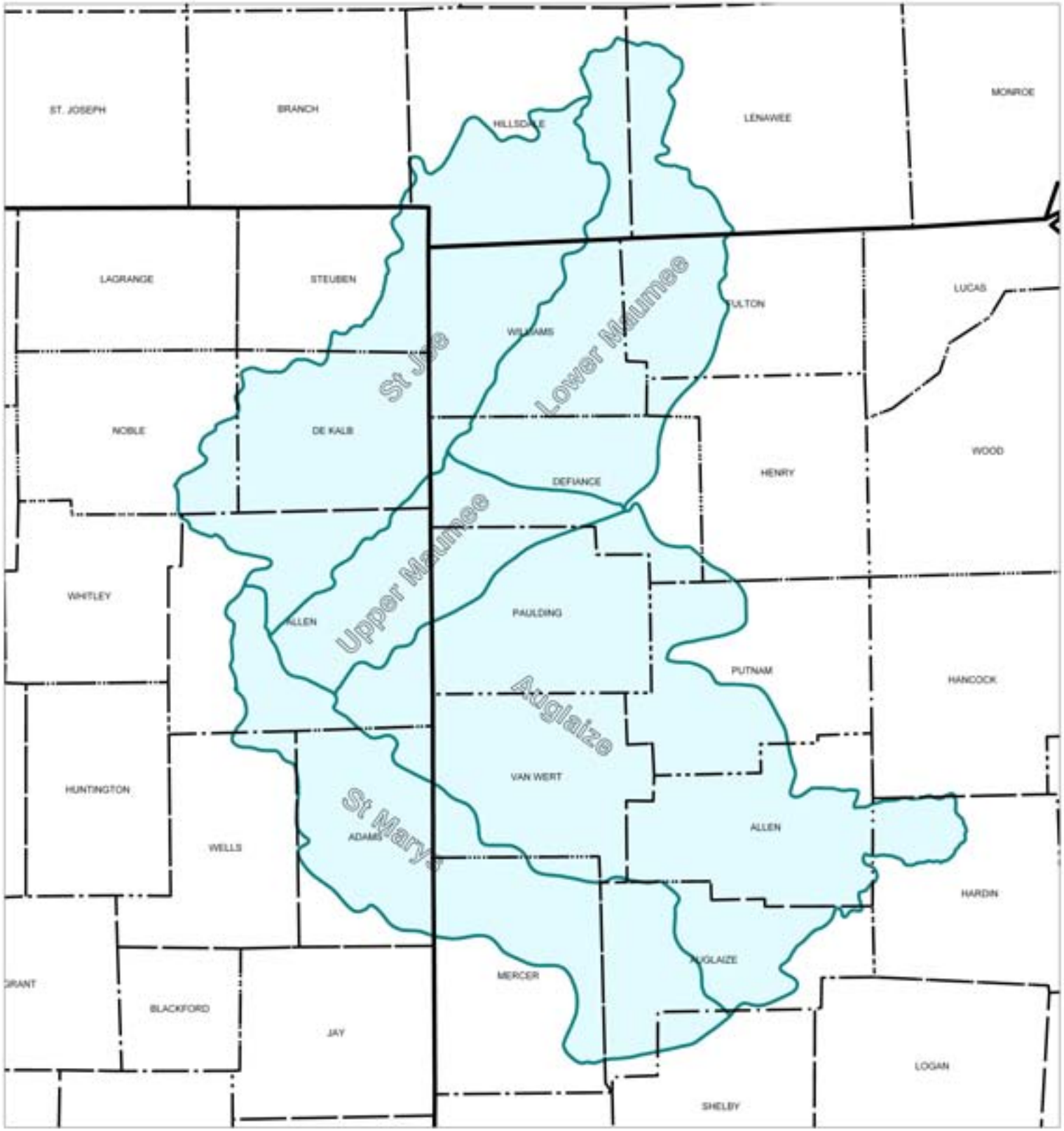
Table 2.6.2.3 summarizes the distribution of land-based inflows and pollutant loads by source for each of these reaches. The inflow consists of CSOs, stormwater or flow from the WPCP. The results in Table 2.6.2.3 represent local inflows to the reach only, i.e., upstream inflows are excluded from the results. As can be seen, separate stormwater sources account for a significant portion of the pollutant load reaching the City's receiving waters.

Table 2.6.2.3
Distribution of Land-Based Inflows and Pollutant Loads



APPENDIX 2

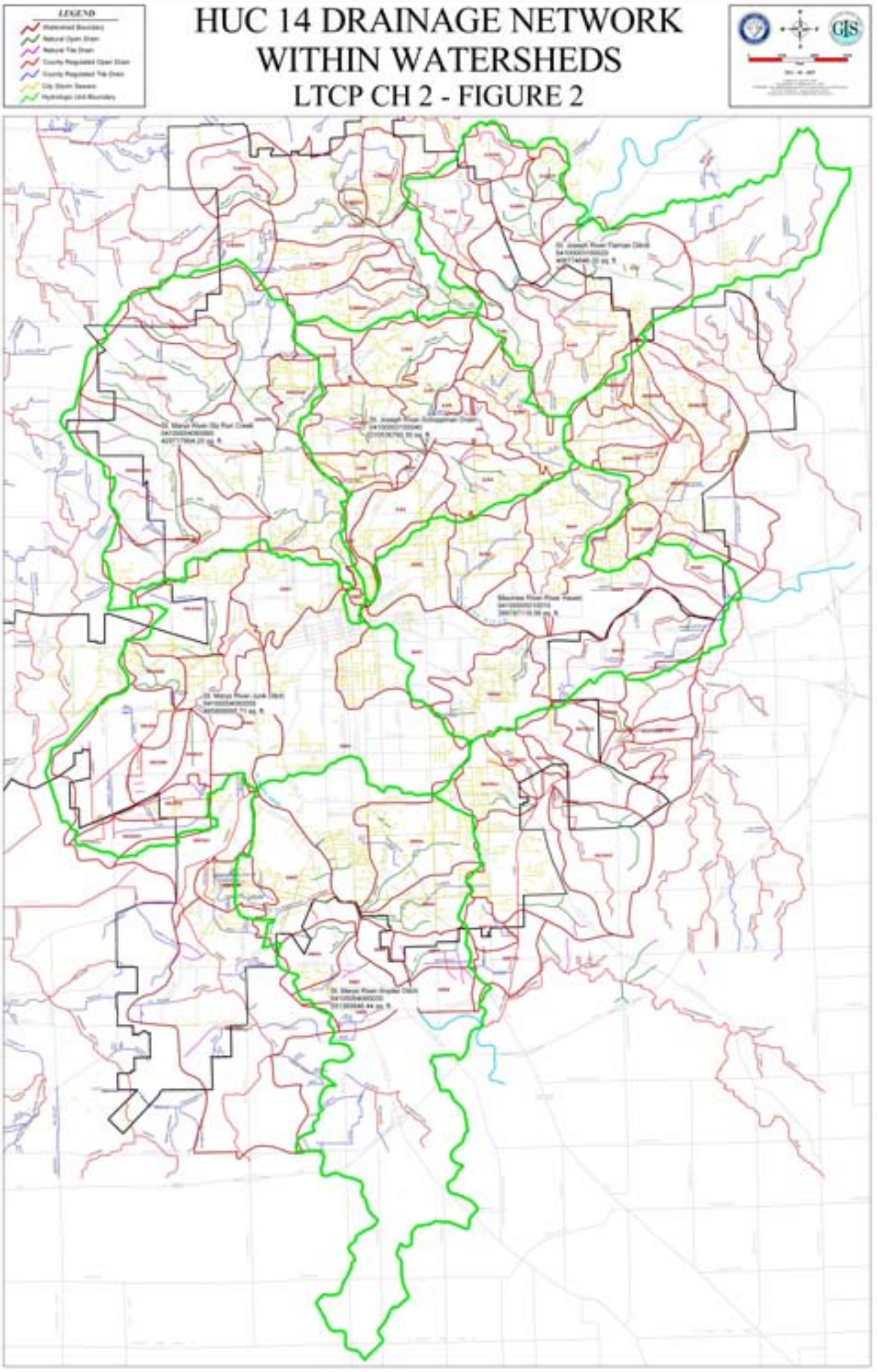
FIGURES

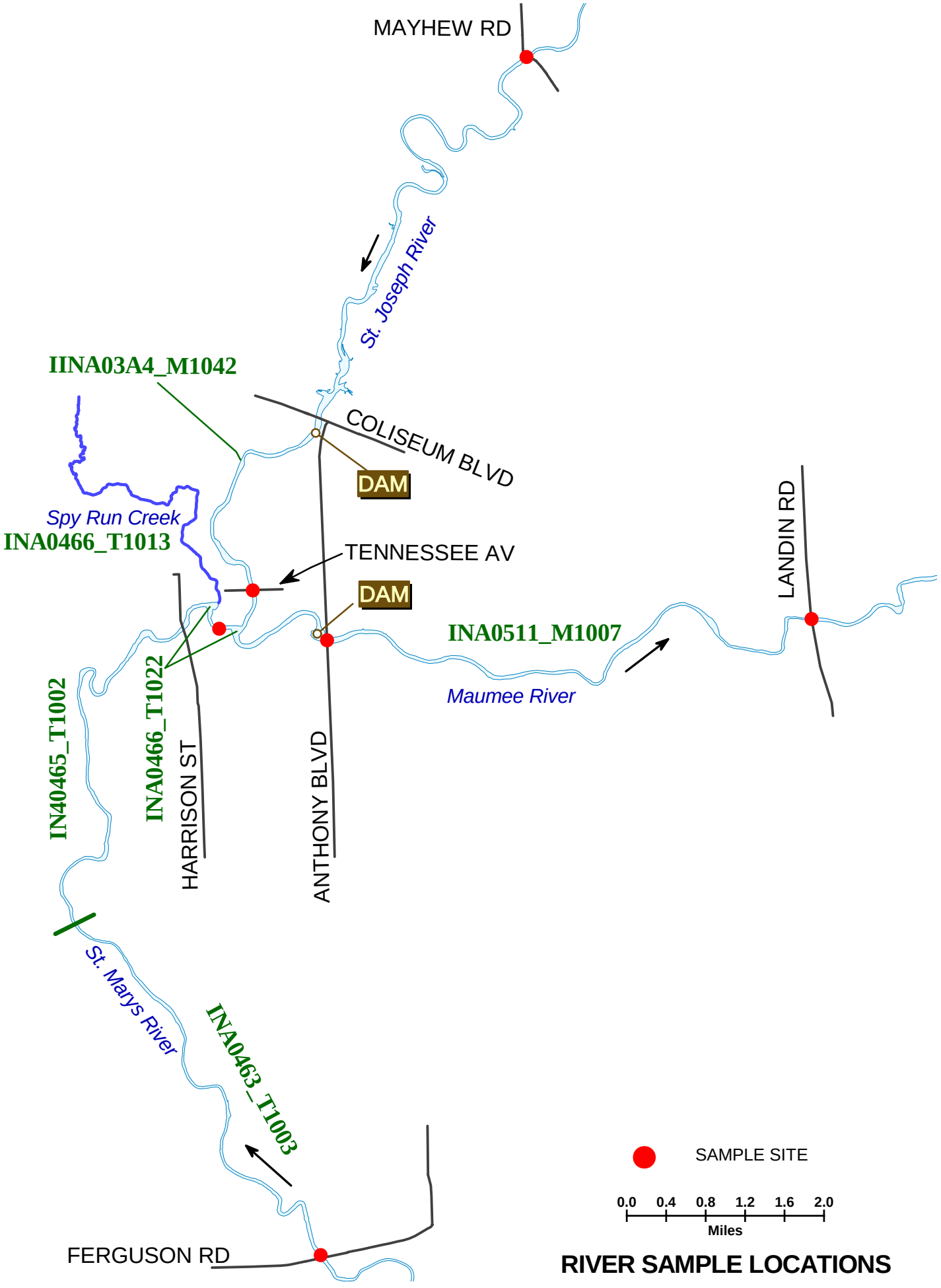


CITY OF FORT WAYNE
RIVER WATERSHEDS
LTCP CH 2 - FIGURE 1

HUC 14 DRAINAGE NETWORK WITHIN WATERSHEDS

LTCP CH 2 - FIGURE 2





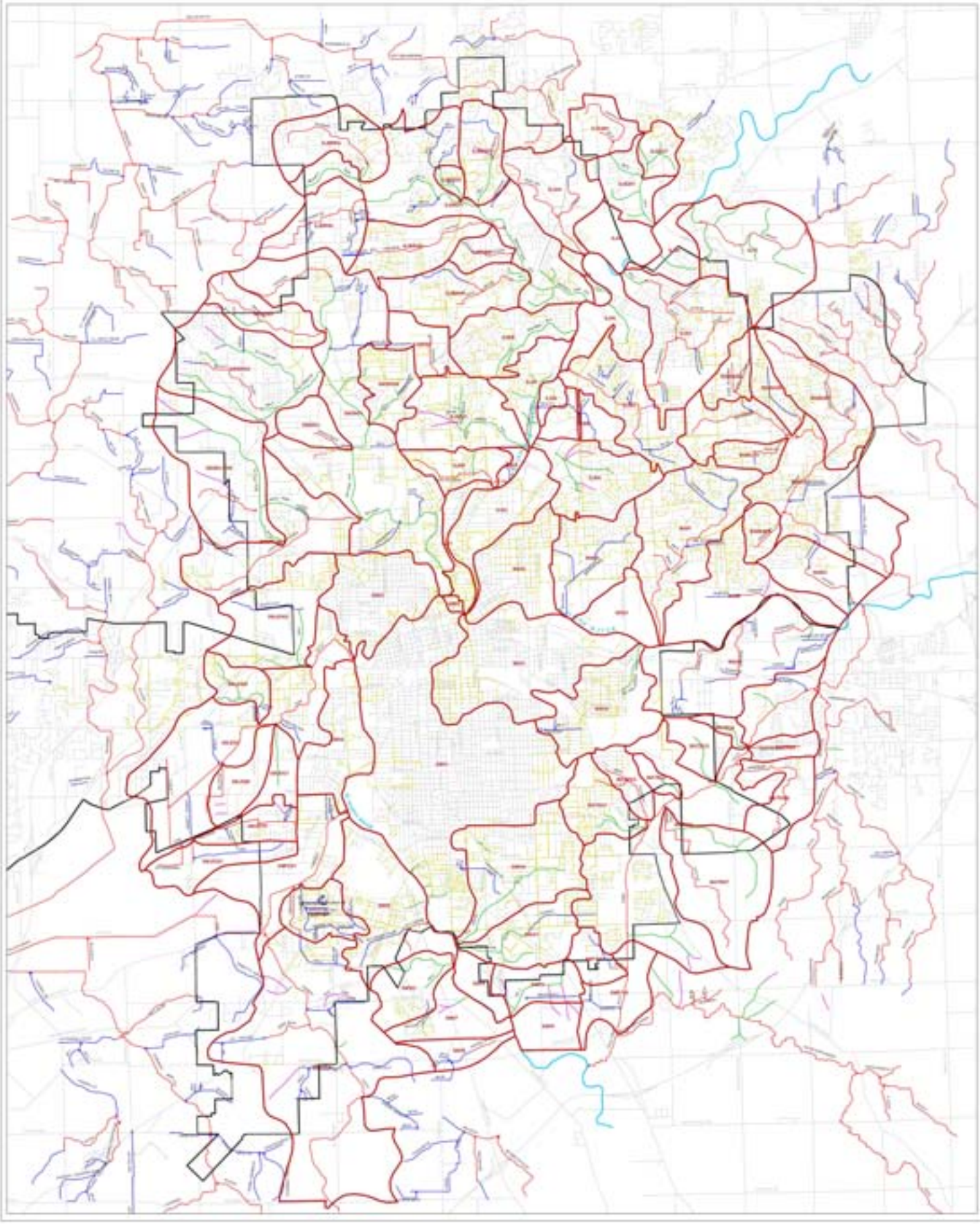
RIVER SAMPLE LOCATIONS

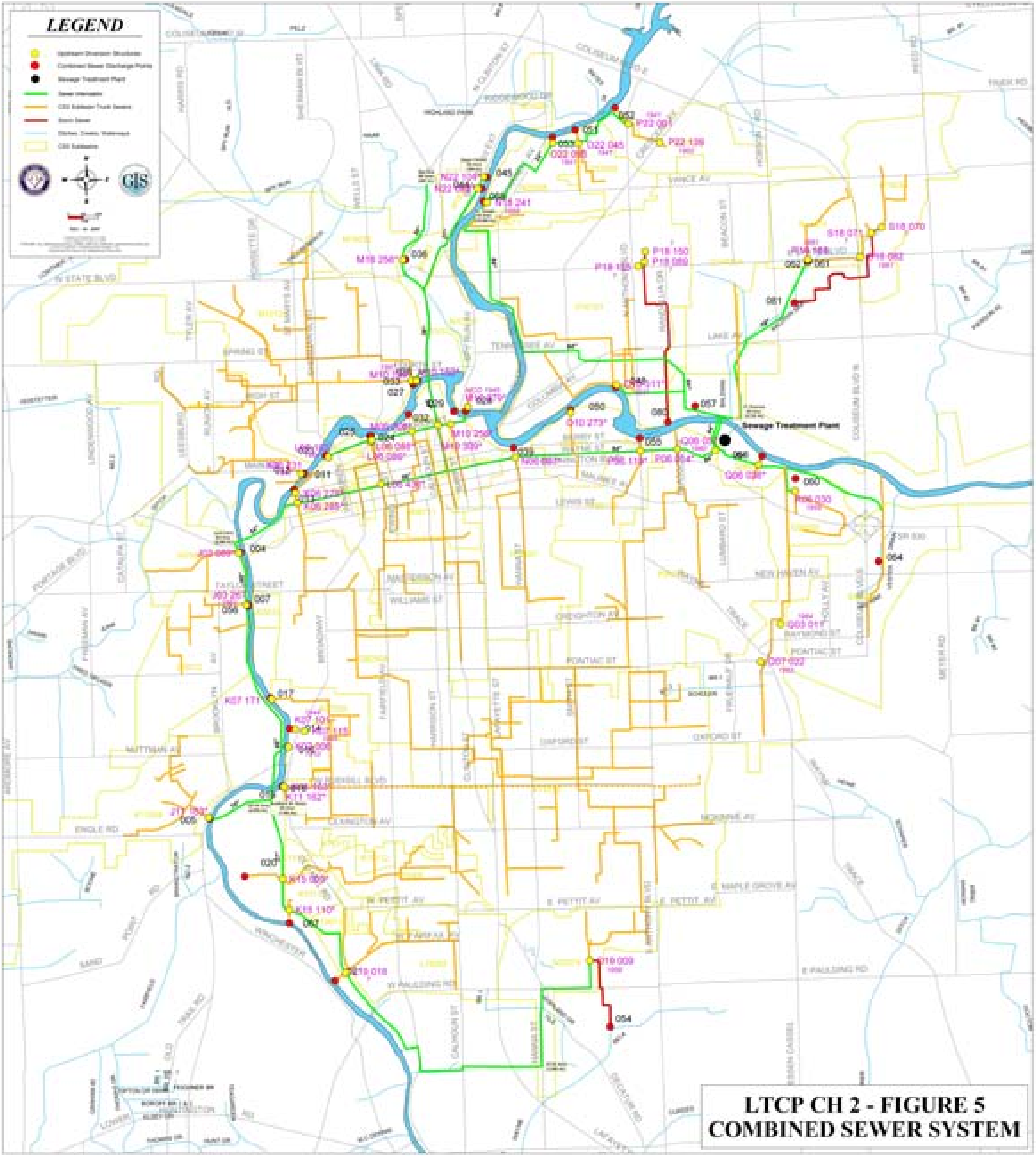
LTCP CH 2 - FIGURE 3

CITY OF FORT WAYNE

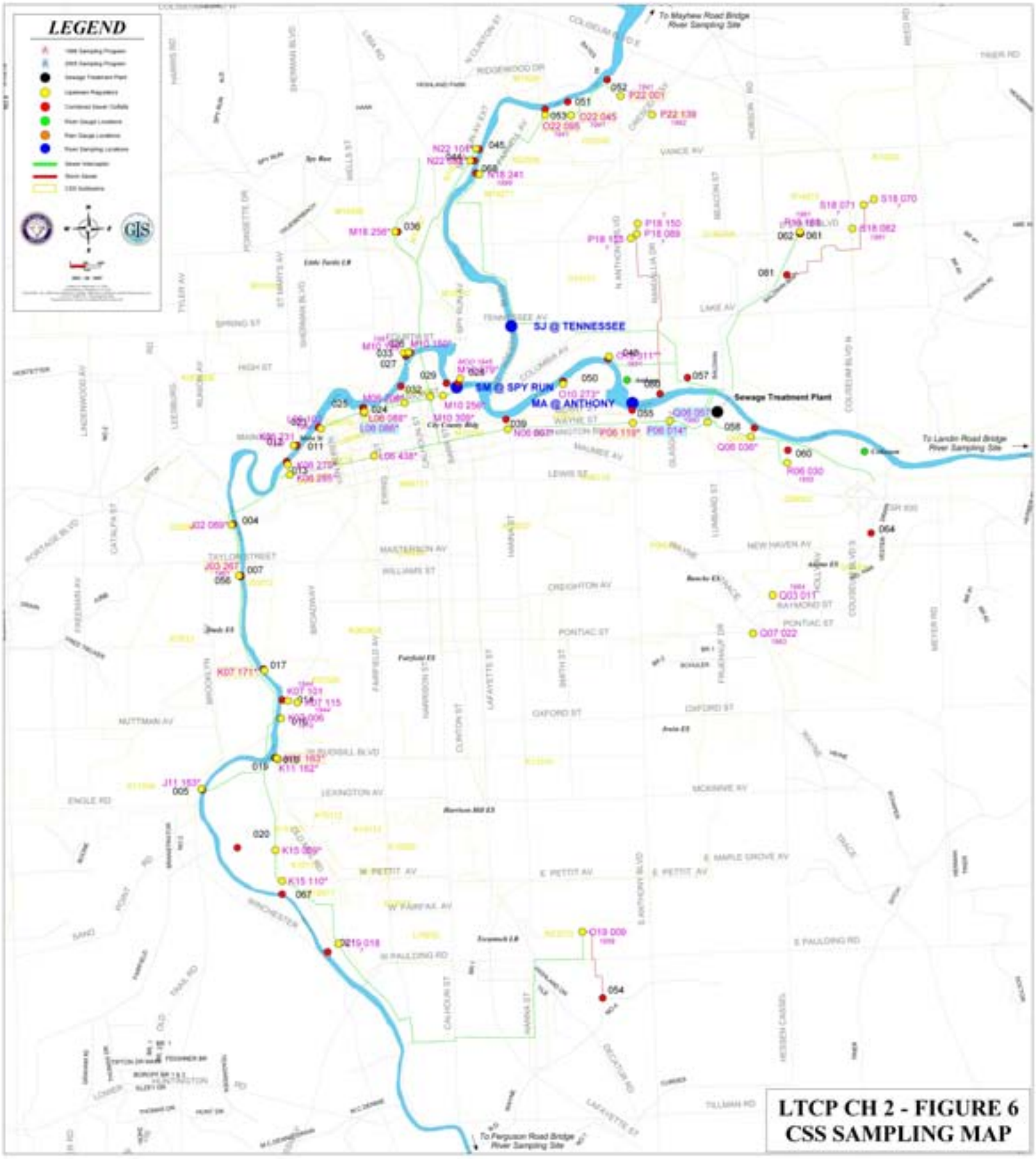
STORM SEWER DRAINAGE

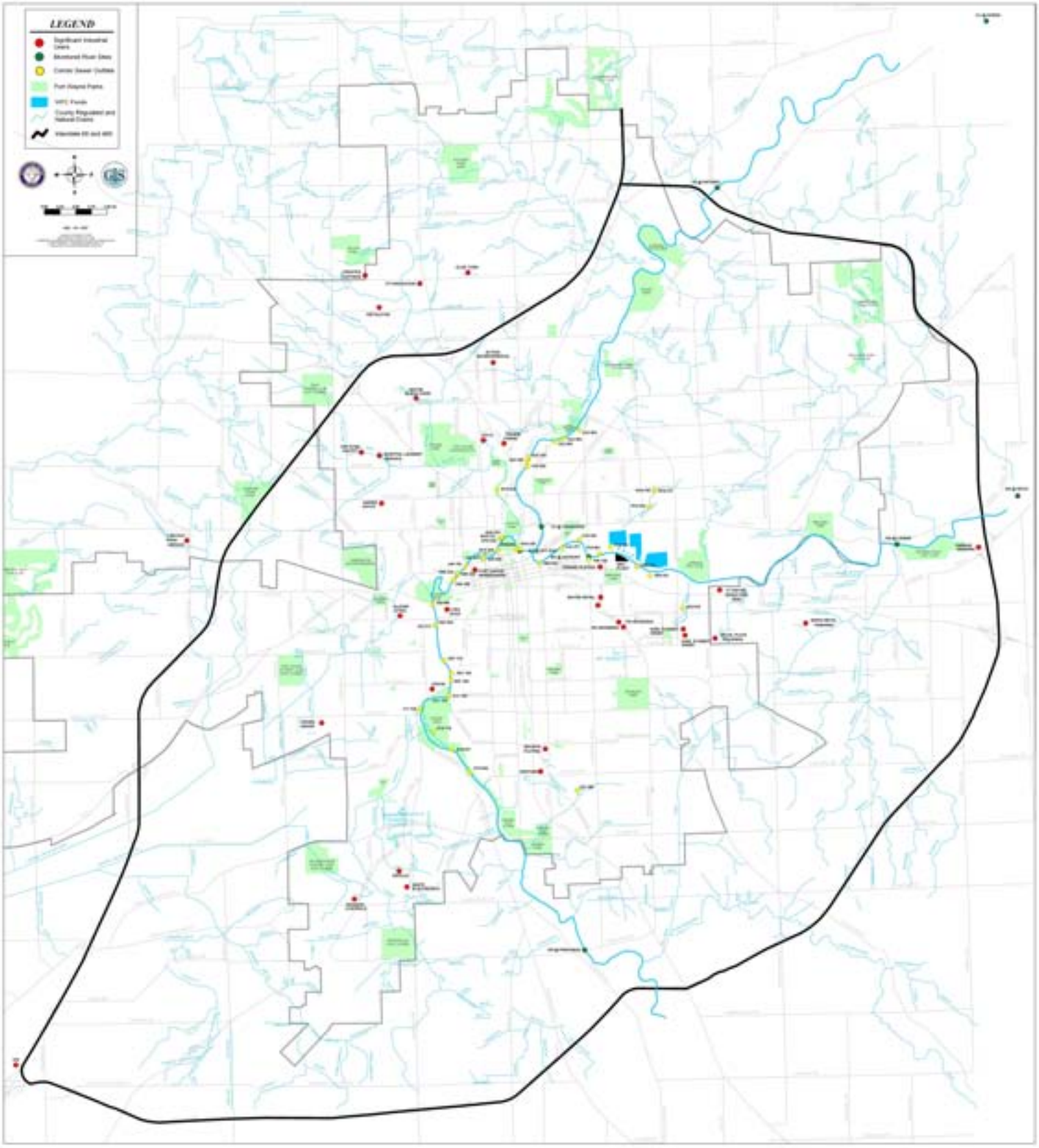
DRAINAGE NETWORK WITHIN WATERSHEDS
LTCP CH 2 - FIGURE 4





LTCP CH 2 - FIGURE 5
COMBINED SEWER SYSTEM


LEGEND
To Mayhew Road Bridge River Sampling Site
SJ @ TENNESSEE
SM @ SPY RUN
MA @ ANTHONY
Sewage Treatment Plant
To Landin Road Bridge River Sampling Site
To Ferguson Road Bridge River Sampling Site
LTCP CH 2 - FIGURE 6
CSS SAMPLING MAP

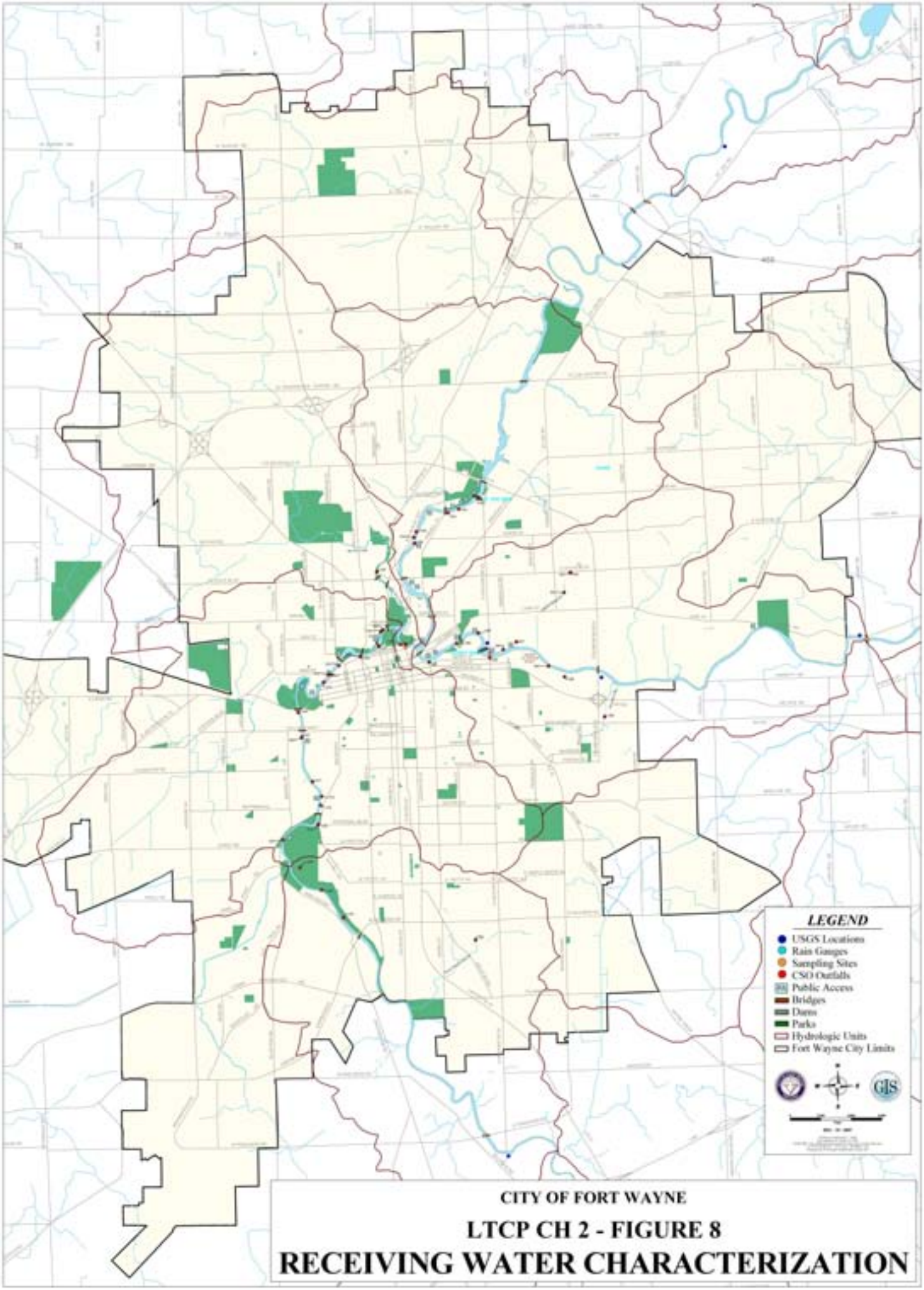


FORT WAYNE CITY UTILITIES

LTCP CH 2 - FIGURE 7

INDUSTRIAL PRETREATMENT SECTION

SIGNIFICANT INDUSTRIAL USERS



CITY OF FORT WAYNE

LTCP CH 2 - FIGURE 8

RECEIVING WATER CHARACTERIZATION

ATTACHMENT 1

Long Term Control Plan – Chapter 2

A short-term wet-weather water quality data collection program was conducted in August through October, 1996. This program collected discrete wet-weather samples at seven CSO outfalls and six receiving water locations during 4 wet-weather events. Fort Wayne has been asked to provide, by November 6, 2003, more information on how these sites were selected and why it feels that these are representative of the City's combined sewer overflows.

Unfortunately, the person who selected these sites left the City several years ago and did not leave any written explanation of his selection process. The City will be doing a complete analysis of all CSO sites to identify representative sites for its long term monitoring plan. The process that will be used will be similar to that illustrated in the case study of Lewiston-Auburn, Maine - CSO and Receiving Water Monitoring that starts on page 2-37 of the **Combined Sewer Overflows - Guidance for Long-Term Control Plan.** This process will take a few months to complete. In the interim the City can provide the criteria parameters for the 7 site monitored.

Fort Wayne has 3 major rivers. Representative sites will be chosen for each river. The Saint Mary's River has 25 points where CSOs enter it. The Saint Joseph River has 6 points where CSOs enter it. The Maumee River has 13 points where CSOs enter it.

Initially sites will be ranked by activity. Activity will be measured by annual overflow volume and frequency of overflows. The 1999 version of the City's SWMM model will be used to estimate annual overflow volume and overflow frequency for each site.

The following final monitoring station selection criteria will be used:

- **Land Use** - The tributary area land uses must be representative of the study area in order to define meaningful rainfall/runoff relationships and pollutant loadings for use in analyzing other tributary areas in the study area.

- **Tributary Area -** An important selection criterion for monitoring CSOs is the ability to define the tributary area boundaries. Tributary areas free of external diversions or transfers will be sought to ensure that the flows and pollutants measured at the monitoring site are actually produced within the subbasin being monitored rather than being imported from adjacent service areas or exported out of the subbasin. The tributary will be identified through detailed study of the sewer systems and topographical maps of the study areas.

- **Hydraulic Compatibility** – The hydraulic control sections at the monitoring stations must be stable and compatible with the proposed monitoring equipment.

- **Accessibility** – The Sites should be readily accessible from public rights-of-way and during adverse weather conditions and should be located away from high traffic areas.

- **Receiving Water** - The ecological, social, scenic, or recreational importance of the receiving water where the discharge occurs will be considered.

Three regulators that discharge to the Saint Mary's River were monitored. They were J03267, K07-171, and Kll-163. The parameters for each are listed below:

Regulator J03-267

Activity:

- Annual Overflow Volume: This is the 38th most active regulator with an estimated annual volume of 63,215 cf per year. (19th on the St. Mary's)
- Annual Number of Overflow Events: This is the 33rd most active regulator with an estimated 10 overflows per year. (21st on the St. Mary's)

Land Use:

Residential -	194
Commercial-	32
Industrial-	69
Institutional/Governmental -	18
Open -	39
Total	352

Tributary Area:

There are no cross connections between this and other subbasins. There are some areas of the subbasin that are served by separate storm sewers.

Hydraulic Compatibility:

There are descent locations to measure inflow and dry weather outflow. Direct measurement of gravity overflows is very difficult. There are also pumped overflows. These can be calculated from pump run times.

Accessibility:

The site is easily reached by vehicle but some of the hatches that need to be opened are very heavy.

Receiving Water:

This discharge is upstream of Sweeny Park and the central city area.

Regulator K07 -171

Activity:

- Annual Overflow Volume: This is the 17th most active regulator with an estimated annual volume of 963,279 cf per year. (11th on the St. Mary's)
- Annual Number of Overflow Events: This is the 23rd most active regulator with an estimated 32 overflows per year. (14th on the St. Mary's)

Land Use:

Residential -	135
Commercial-	12
Industrial-	0
Institutional/Governmental-	3
Open-	1
Total-	151

Tributary Area:

There are 7 cross connections between this and other subbasins. There are 3 other regulators and 2 other discharge points in this subbasin.

Hydraulic Compatibility:

There are descent locations to measure inflow, however it is difficult to measure dry weather outflow and overflows.

Accessibility:

The site is easily reached by vehicle.

Receiving Water:

This regulator discharges upstream of Sweeny Park and the central downtown area.

Regulator KII-163

Activity:

- Annual Overflow Volume: This is the most active regulator with an estimated annual volume of 51,159,119 cf per year. (1st on the St. Mary's)
- Annual Number of Overflow Events: This is the 3rd most active regulator with an estimated 84 overflows per year. (2nd on the St. Mary's)

Land Use:

Residential -	1,586
Commercial-	93
Industrial-	3
Institutional/Governmental-	93
Open-	33
Total-	1,806

Tributary Area:

There are 21 cross connections between this and other subbasins. There is 1 other regulator and 1 other discharge point in this subbasin. The dry weather flows of the 2 regulators are combined just outside the regulators.

Hydraulic Compatibility:

There are descent locations to measure inflow and dry weather outflow. Direct measurement of gravity overflows is difficult.

Accessibility:

The site is easily reached by vehicle but just behind the curb of a heavily traveled street.

Receiving Water:

This regulator discharges at the north end of Foster Park, one of the most historic and used parks in the City.

Three regulators that discharge to the Saint Joseph River were monitored. They were P22-001, 022-045, and 022-095. The parameters for each are listed below:

Regulator P22-00 1

Activity:

- Annual Overflow Volume: This is the 25th most active regulator with an estimated annual volume of 453,625 cf per year. (15t on the St. Joseph)
- Annual Number of Overflow Events: This is the 19th most active regulator with an estimated 45 overflows per year. (15t on the St. Joseph)

Land Use:

Residential -	111
Commercial-	26
Industrial -	0
Institutional/Governmental -	26
Open -	14
Total	177

Tributary Area:

There are no cross connections between this and other subbasins. However, a portion of the subbasin is served by separate sanitary sewers and separate storm sewers. There is 1 other regulator in this subbasin. The wet weather flows of the 2 regulators are combined just outside this regulator and discharge into the river through the same pipe.

Hydraulic Compatibility:

There are descent locations to measure inflow, dry weather outflow, and overflows.

Accessibility:

The site is easily reached by vehicle but just behind the curb of a heavily traveled street.

Receiving Water:

This regulator discharges across the river from Johnny Appleseed Park and just below the City's raw drinking intake.

Regulator 022-095

Activity:

- Annual Overflow Volume: This is the 28th most active regulator with an estimated annual volume of 291,092 cf per year. (3rd on the St. Joseph)
- Annual Number of Overflow Events: This is the 3^{2nd} most active regulator with an estimated 10 overflows per year. (3rd on the St. Joseph)

Land Use:

Residential -	101
Commercial -	17
Industrial -	0
Institutional/Governmental -	6
Open -	5
Total	129

Tributary Area:

The dry weather flow from 2 upstream subbasins flows into this subbasin. There are no other cross connections between this and other subbasins. There is 1 other regulator and 1 other discharge point in this subbasin. The dry weather flows of the other regulator flow into this regulator.

Hydraulic Compatibility:

There is a descent location to meter overflows.

Accessibility:

The site is easily reached by vehicle.

Receiving Water:

This regulator discharges a little downstream of Johnny Appleseed Park.

Regulator 022-045

Activity:

- Annual Overflow Volume: This is the 35th most active regulator with an estimated annual volume of 134,659 cf per year. (4th on the St. Joseph)
- Annual Number of Overflow Events: This is the 34th most active regulator with an estimated 9 overflows per year. (4th on the St. Joseph)

Land Use:

Residential -	101
Commercial -	17
Industrial -	0
Institutional/Governmental -	6
Open -	5
Total	129

Tributary Area:

The dry weather flow from 2 upstream subbasins flows into this subbasin. There are no other cross connections between this and other subbasins. There is 1 other regulator and 1 other discharge point in this subbasin. The dry weather flows of this regulator flow into the other regulator.

Hydraulic Compatibility:

There is a descent location to meter overflows.

Accessibility:

The site is easily reached by vehicle.

Receiving Water:

This regulator discharges a little downstream of Johnny Appleseed Park.

One regulator that discharges to the Maumee River was monitored. It is 010-273. The parameters for it are listed below:

Regulator 010-273

Activity:

- Annual Overflow Volume: This is the 13th most active regulator with an estimated annual volume of 1,621,933 cf per year. (5th on the Maumee)
- Annual Number of Overflow Events: This is the 15th most active regulator with an estimated 52 overflows per year. (5th on the Maumee)

Land Use:

Residential-	57
Commercial -	18
Industrial-	32
Institutional/Governmental -	2
Open -	21
Total	130

Tributary Area:

There are no cross connections between this and other subbasins. There is 1 other regulator and 1 other discharge point in this subbasin. The dry weather flows of this regulator flow into the other regulator.

Hydraulic Compatibility:

There is a descent location to meter overflows.

Accessibility:

The site is easily reached by vehicle.

Receiving Water:

This regulator discharges into the river upstream of the treatment plant.

ATTACHMENT 2

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 4/20/05
Intitial Rain event
Fort Wayne Newspapers Outfall number 025

Parameter	Unit	8:40 PM	10:18 PM	10:59 PM
Total Suspended solids	mg/l	N	N	N
Total Dissolved solids	mg/l	O	O	O
CBOD 5-Day	mg/l			
Total Phosphorus	mg/l	F	F	F
Ammonia (as N)	mg/l	L	L	L
E. Coli (g)	Col/100 ml	O	O	O
Cadmium	ug/l	W	W	W
Chromium	ug/l			
Copper	ug/l			
Lead	ug/l			
Nickel	ug/l			
Silver	ug/l			
Zinc	ug/l			
Dissolved Oxygen (g)	mg/l			
pH (g)				
Temperature (g)	Fahrenheit			

Precipitation for 4/20/05 0.52 in.

	Time	Depth
River Stage	8:30 PM	3.45 ft.
in feet	9:00 PM	3.45 ft.
	9:30 PM	3.45 ft.
	10:00 PM	3.46 ft.
	10:30 PM	3.46 ft.
	11:00 PM	3.47 ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 4/20/05
Intitial Rain event
Glasgow (57A)

Parameter	Unit	8:40 PM	9:15 PM	9:50 PM
Total Suspended solids	mg/l	920	292	128
Total Dissolved solids	mg/l	304	124	274
CBOD 5-Day	mg/l	300	88.8	51.8
Total Phosphorus	mg/l	3.74	1.34	1.07
Ammonia (as N)	mg/l	3.71	2.66	2.67
E. Coli (g)	Col/100 ml	461,100	198,630	155,310
Cadmium	ug/l	2.5	0.9	<0.8
Chromium	ug/l	31.5	21.3	21.7
Copper	ug/l	198.6	108.2	62.2
Lead	ug/l	178.1	75.8	36.7
Nickel	ug/l	72.2	52.5	37.5
Silver	ug/l	<3.7	<3.7	<3.7
Zinc	ug/l	767.5	421.4	231.1
Dissolved Oxygen (g)	mg/l	7.16	8.31	8.75
pH (g)		No Data	No Data	No Data
Temperature (g)	Fahrenheit	63.50	62.60	61.60

Precipitation for 4/20/05 0.52 in.

	Time	Depth
River Stage	8:30 PM	3.45 ft.
in feet	9:00 PM	3.45 ft.
	9:30 PM	3.45 ft.
	10:00 PM	3.46 ft.
	10:30 PM	3.46 ft.
	11:00 PM	3.47 ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 4/20/05
Intitial Rain event
Plant CSO (57b)

Parameter	Unit	9:42 PM	9:59 PM	10:31 PM
Total Suspended solids	mg/l	368	380	316
Total Dissolved solids	mg/l	396	320	132
CBOD 5-Day	mg/l	74.5	87.6	70.9
Total Phosphorus	mg/l	1.21	1.53	1.90
Ammonia (as N)	mg/l	4.49	4.47	5.39
E. Coli (g)	Col/100 ml	198,630	173,290	579,400
Cadmium	ug/l	0.8	<0.8	<0.8
Chromium	ug/l	18.1	22.0	20.8
Copper	ug/l	61.1	71.2	83
Lead	ug/l	41.4	44.2	54.9
Nickel	ug/l	23.9	36.8	27.0
Silver	ug/l	<3.7	<3.7	<3.7
Zinc	ug/l	267.7	278.1	295.6
Dissolved Oxygen (g)	mg/l	5.23	4.42	4.43
pH (g)		No Data	No Data	No Data
Temperature (g)	Fahrenheit	60.20	61.40	62.40

Precipitation for 4/20/05 0.52 in.

	Time	Depth
River Stage	8:30 PM	3.45 ft.
in feet	9:00 PM	3.45 ft.
	9:30 PM	3.45 ft.
	10:00 PM	3.46 ft.
	10:30 PM	3.46 ft.
	11:00 PM	3.47 ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/13/05
Intitial Rain event
Fort Wayne Newspapers Outfall number 025

Parameter	Unit	7:15 PM	10:00 PM	10:35 PM
Total Suspended solids	mg/l	N	200	N
Total Dissolved solids	mg/l	O	68	O
CBOD 5-Day	mg/l		48.0	
Total Phosphorus	mg/l	F	0.206	F
Ammonia (as N)	mg/l	L	0.491	L
E. Coli (g)	Col/100 ml	O	6,130	O
Cadmium	ug/l	W	<0.8	W
Chromium	ug/l		9.9	
Copper	ug/l		34.3	
Lead	ug/l		37.5	
Nickel	ug/l		5.8	
Silver	ug/l		<3.7	
Zinc	ug/l		143.4	
Dissolved Oxygen (g)	mg/l		9.88	
pH (g)			7.28	
Temperature (g)	Fahrenheit		64.49	

Precipitation of 0.70 inches total from 7:00 PM 5/13/05 until midnight.

	Time	Stage
River Stage	7:00 PM	3.57ft.
in feet	7:30 PM	3.62ft.
	8:00 PM	3.64ft.
	8:30 PM	3.67ft.
	9:00 PM	3.70ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/13/05
Intitial Rain event
Glasgow (057A)

Parameter	Unit	7:08 PM	7:50 PM	8:44 PM
Total Suspended solids	mg/l	420	287	584
Total Dissolved solids	mg/l	328	360	232
CBOD 5-Day	mg/l	179	165	102
Total Phosphorus	mg/l	1.304	1.322	0.601
Ammonia (as N)	mg/l	4.47	5.04	3.49
E. Coli (g)	Col/100 ml	313,000	387,300	198,630
Cadmium	ug/l	1.7	1.0	0.9
Chromium	ug/l	36.7	165.9	34.5
Copper	ug/l	129.2	100.4	101.3
Lead	ug/l	62.4	30.9	37.6
Nickel	ug/l	49.4	673.6	76.4
Silver	ug/l	154.5	<3.7	4
Zinc	ug/l	472.1	495.1	288.1
Dissolved Oxygen (g)	mg/l	5.91	6.17	7.33
pH (g)		7.53	7.54	7.57
Temperature (g)	Fahrenheit	64.70	64.50	63.60

Precipitation of 0.70 inches total from 7:00 PM 5/13/05 until midnight.

	Time	Stage
River Stage	7:00 PM	3.57ft.
in feet	7:30 PM	3.62ft.
	8:00 PM	3.64ft.
	8:30 PM	3.67ft.
	9:00 PM	3.70ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/13/05
Intitial Rain event
Plant CSO (057B)

Parameter	Unit	7:18 PM	8:00 PM	9:01 PM
Total Suspended solids	mg/l	688	748	146
Total Dissolved solids	mg/l	287	272	368
CBOD 5-Day	mg/l	223	248	235
Total Phosphorus	mg/l	1.869	2.039	0.601
Ammonia (as N)	mg/l	5.41	5.67	7.22
E. Coli (g)	Col/100 ml	173,290	461,100	920,800
Cadmium	ug/l	1.8	1.1	1.0
Chromium	ug/l	30.6	140.9	45.2
Copper	ug/l	198.7	285.8	159.9
Lead	ug/l	152.2	125.5	64.1
Nickel	ug/l	29.2	211.7	56.9
Silver	ug/l	9.0	5.2	<3.7
Zinc	ug/l	535.4	586.7	374.6
Dissolved Oxygen (g)	mg/l	3.72	2.31	2.09
pH (g)		7.27	7.16	7.14
Temperature (g)	Fahrenheit	65.20	64.30	63.90

Precipitation of 0.70 inches total from 7:00 PM 5/13/05 until midnight.

	Time	Stage
River Stage	7:00 PM	3.57ft.
in feet	7:30 PM	3.62ft.
	8:00 PM	3.64ft.
	8:30 PM	3.67ft.
	9:00 PM	3.70ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/19/05
Intitial Rain event
Fort Wayne Newspapers Outfall number 025

Parameter	Unit	11:05 AM	1:10 PM	1:30 PM
Total Suspended solids	mg/l	N	N	N
Total Dissolved solids	mg/l	O	O	O
CBOD 5-Day	mg/l			
Total Phosphorus	mg/l	F	F	F
Ammonia (as N)	mg/l	L	L	L
E. Coli (g)	Col/100 ml	O	O	O
Cadmium	ug/l	W	W	W
Chromium	ug/l			
Copper	ug/l			
Lead	ug/l			
Nickel	ug/l			
Silver	ug/l			
Zinc	ug/l			
Dissolved Oxygen (g)	mg/l			
pH (g)				
Temperature (g)	Fahrenheit			

Percipitation of .62 inches from 8:00 AM to 12:15 PM 5/19/05

	Time	Stage	Time	Stage
River Stage	10:00 AM	3.66 ft.	12:30 PM	4.05 ft.
in feet	10:30 AM	3.74 ft.	1:00 PM	4.07 ft.
	11:00 AM	3.86 ft.	1:30 PM	4.08 ft.
	11:30 AM	3.95 ft.	2:00 PM	4.09 ft.
	12:00 PM	4.01 ft.	2:30 PM	4.09 ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/19/05
Intitial Rain event
Glasgow (57A)

Parameter	Unit	10:44 AM	11:15 AM	12:16 PM
Total Suspended solids	mg/l	404	88	70
Total Dissolved solids	mg/l	84	204	264
CBOD 5-Day	mg/l	74.8	32.2	49.4
Total Phosphorus	mg/l	1.224	0.540	0.627
Ammonia (as N)	mg/l	1.16	1.29	1.80
E. Coli (g)	Col/100 ml	111,900	46,110	104,620
Cadmium	ug/l	7.6	12.3	16.1
Chromium	ug/l	21.5	14.1	18.9
Copper	ug/l	101.6	40.3	41.0
Lead	ug/l	9.6	16.5	12.4
Nickel	ug/l	62.1	32.4	107.4
Silver	ug/l	<3.7	<3.7	<3.7
Zinc	ug/l	456.1	159.7	176.5
Dissolved Oxygen (g)	mg/l	11.14	11.05	9.35
pH (g)		7.96	7.79	7.66
Temperature (g)	Fahrenheit	57.80	58.04	58.47

Percipitation of .62 inches from 8:00 AM to 12:15 PM 5/19/05.

	Time	Stage	Time	Stage
River Stage	10:00 AM	3.66 ft.	12:30 PM	4.05 ft.
in feet	10:30 AM	3.74 ft.	1:00 PM	4.07 ft.
	11:00 AM	3.86 ft.	1:30 PM	4.08 ft.
	11:30 AM	3.95 ft.	2:00 PM	4.09 ft.
	12:00 PM	4.01 ft.	2:30 PM	4.09 ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/19/05
Intitial Rain event
Plant CSO (57B)

Parameter	Unit	1:06 PM	1:26 PM	1:55 PM
Total Suspended solids	mg/l	156	164	226
Total Dissolved solids	mg/l	200	176	184
CBOD 5-Day	mg/l	96.5	98.5	104.2
Total Phosphorus	mg/l	1.890	1.887	2.244
Ammonia (as N)	mg/l	4.78	4.95	5.03
E. Coli (g)	Col/100 ml	959,000	670,000	717,000
Cadmium	ug/l	1.3	1.8	1.5
Chromium	ug/l	17.0	25.5	26.5
Copper	ug/l	53.7	66.7	66.3
Lead	ug/l	16.4	22.4	23.9
Nickel	ug/l	38.7	58.9	118.9
Silver	ug/l	<3.7	<3.7	<3.7
Zinc	ug/l	146.5	157.4	162.6
Dissolved Oxygen (g)	mg/l	1.96	1.59	1.14
pH (g)		7.60	7.53	7.42
Temperature (g)	Fahrenheit	58.28	58.15	58.20

Percipitation of .62 inches from 8:00 AM to 12:15 PM 5/19/05.

	Time	Stage	Time	Stage
River Stage	10:00 AM	3.66 ft.	12:30 PM	4.05 ft.
in feet	10:30 AM	3.74 ft.	1:00 PM	4.07 ft.
	11:00 AM	3.86 ft.	1:30 PM	4.08 ft.
	11:30 AM	3.95 ft.	2:00 PM	4.09 ft.
	12:00 PM	4.01 ft.	2:30 PM	4.09 ft.

ATTACHMENT 3

City of Fort Wayne Indiana
Water Quality Report
Dry Weather monitoring event 3/29/05

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	9:30 AM	10.79	7.09	44.35	1524	2.8	0.09	1733	0.06	3.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06
Baldwin D	9:19 AM	14.36	6.62	45.89	1264	6.4	0.09	866	0.11	3.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run U	9:05 AM	13.91	7.88	44.86	644	8.8	0.06	248	<0.05	4.51	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	9:15 AM	14.14	7.96	44.97	768	9.6	0.09	238	<0.05	4.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCD-1	11:25 AM	9.04	7.52	47.49	952	8	2.63	49	0.17	2.27	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Pond 3	7:00 AM	10.56	7.44	51.03	716	2.8	0.08	649	0.06	0.92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Relief RC-4	11:16 AM	14.03	8.13	44.21	552	30.4	0.23	291	0.14	2.95	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	11:49 AM	13.65	8.15	44.39	572	5.2	1.22	23	0.08	2.77	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-6	11:35 AM	13.78	8.16	44.15	404	32.4	0.12	185	0.11	2.74	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	11:55 AM	13.64	7.29	47.78	424	38.4	0.05	365	0.12	2.81	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Relief RCDO-1	11:20 AM	13.83															
Relief RCDO-2	11:16 AM	14.03															
Relief RCDO-3	11:12 AM	13.35															
Relief RCDO-4	11:49 AM	13.64															
Relief RCDO-5	11:31 AM	14.09															
Relief RCDO-6	11:35 AM	13.78															
Relief RCDO-7	11:38 AM	14.00															
Relief RCDO-8	11:55 AM	13.65															

River Stage 6.11 ft.

Precipitation 0.00 in.

City of Fort Wayne Indiana
Water Quality Report
Dry Weather monitoring event 4/15/05

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	10:40 AM	15.27	7.94	51.53	1836	9.6	0.115	2420	0.122	2.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Baldwin D	10:55 AM	12.80	7.68	58.53	1292	11.6	0.211	228	0.102	1.41	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Spy Run U	10:20 AM	11.64	7.99	52.03	724	4.4	0.0454	166	0.081	2.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Spy Run D	10:05 AM	10.95	7.75	52.45	712	5.2	0.0298	111	0.09	3.42	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCD-1	1:15 PM	15.45	8.06	58.00	868	10.4	3.52	328	0.106	2.66	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pond 3	7:00 AM	9.53	7.34	61.00	652	4.2	0.102	11	0.51	<0.63	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05
Relief RC-4	12:57 PM	14.06	8.65	55.93	404	38	0.128	29	0.123	5.99	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	1:49 PM	11.23	8.10	59.96	548	6	1.61	20	0.075	1.68	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
River MR-6	1:30 PM	13.60	8.63	55.43	416	38.8	0.107	16	0.126	5.39	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	1:41 PM	14.07	8.67	55.57	452	40	0.354	17	0.118	5.64	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Relief RCDO-1	1:05 PM	16.83															
Relief RCDO-2	12:57 PM	14.06															
Relief RCDO-3	12:50 PM	12.56															
Relief RCDO-4	1:49 PM	11.23															
Relief RCDO-5	1:25 PM	13.12															
Relief RCDO-6	1:30 PM	13.60															
Relief RCDO-7	1:35 PM	13.20															
Relief RCDO-8	1:41 PM	14.07															
River Stage 3.73ft		Precipitation 0.00 in.															

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 4/20/05

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	9:32 PM	9.31	8.00	59.21	484	97.6	1.22	12110	0.468	36.9	<0.01	<0.01	0.01	0.03	0.01	0.01	0.19
Baldwin D	9:42 PM	7.68	7.56	60.20	1136	72	1.37	15000	0.419	37.9	<0.01	<0.01	<0.01	0.03	0.01	<0.01	0.015
Spy Run U	9:02 PM	10.08	6.78	60.71	584	28.5	0.165	921	0.153	5.29	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	8:57 PM	8.80	7.77	66.00	644	16	0.182	1300	0.211	8.95	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Glasgow 1	8:40 PM	7.16	No Data	63.50	304	920	3.71	461100	3.74	300	<0.01	<0.01	0.03	0.2	0.18	0.07	0.77
Glasgow 2	9:15 PM	8.31	No Data	62.60	124	292	2.66	198630	1.34	88.8	<0.01	<0.01	0.02	0.11	0.08	0.05	0.42
Glasgow 3	9:50 PM	8.75	No Data	61.60	274	128	2.67	155310	1.07	51.8	<0.01	<0.01	0.02	0.06	0.04	0.04	0.23
Plant CSO 1	9:42 PM	5.23	No Data	60.20	396	368	4.49	198630	1.21	74.5	<0.01	<0.01	0.02	0.06	0.04	0.02	0.27
Plant CSO 2	9:59 PM	4.42	No Data	61.40	320	380	4.47	173290	1.53	87.6	<0.01	<0.01	0.02	0.07	0.04	0.04	0.28
Plant CSO 3	10:31 PM	4.43	No Data	62.40	132	316	5.39	579400	1.9	70.9	<0.01	<0.01	0.02	0.08	0.05	0.03	0.3
Ft. News 1	8:40 PM	No Flow	No sample														
Ft. News 2	10:18 PM	No Flow	No sample														
Ft. News 3	10:59 PM	No Flow	No sample														
Relief RCD-1	9:58 PM	10.61	8.38	65.00	316	68	1.42	9600	0.213	12.4	<0.01	<0.01	<0.01	0.02	0.01	<0.01	0.07
Pond 3	7:00 AM	8.26	7.36	63.30	656	2.8	0.0639	5	0.61	<0.93	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Relief RC-4	9:50 PM	10.84	8.27	65.00	436	42.5	0.228	2310	0.156	6.32	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Lrelief LRC-5	11:07 PM	12.74	7.92	65.00	576	38	3.65	579	0.151	4.68	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-6	10:17 PM	12.10	8.49	65.00	412	38.5	0.25	1300	0.131	5.92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	10:10 PM	11.08	8.48	65.00	460	48	0.09	921	0.163	5.24	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCDO-1	9:58 PM	10.61															
Relief RCDO-2	9:50 PM	10.84															
Relief RCDO-3	9:44 PM	10.42															
Relief RCDO-4	11:07 PM	12.74															
Relief RCDO-5	10:20 PM	11.40															
Relief RCDO-6	10:17 PM	12.00															
Relief RCDO-7	10:10 PM	11.08															
Relief RCDO-8	11:11 PM	10.72															

River Stage
3.30 feet

First day of Rain event

Precipitation for 4/20/05 0.52 in.

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 4/21/05

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	8:45 AM	6.86	7.19	52.66	1220	21.5	0.246	7120	0.153	9.9	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.11
Baldwin D	8:35 AM	4.38	7.43	52.77	772	36.5	0.885	18420	0.252	20.8	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.11
Spy Run U	8:10 AM	6.52	7.16	58.65	736	4	0.147	866	0.059	4.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	8:20 AM	6.61	7.03	58.38	728	2	0.13	866	0.062	4.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Relief RCD-1	10:15 AM	5.40	7.37	54.38	960	100	2.95	9590	0.504	19.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
Pond 3	7:00 AM	8.23	7.43	62.56	648	10.6	0.0806	22	0.55	1.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.05
Relief RC-4	10:00 AM	10.83	7.74	63.20	456	35	0.176	5940	0.137	6.37	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	10:45 AM	10.69	7.65	53.30	616	10.5	1.49	387	0.781	2.26	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-6	10:30 AM	10.70	7.75	63.38	460	42.5	0.133	3840	0.167	5.68	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	10:50 AM	10.83	7.84	62.78	496	42.5	0.0787	3150	0.16	5.88	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
		DO AM	Time	DO PM													
Relief RCDO-1	10:05 AM	8.03	2:20 PM	11.11													
Relief RCDO-2	10:00 AM	10.83	2:15 PM	12.23													
Relief RCDO-3	9:55 AM	10.72	2:10 PM	11.86													
Relief RCDO-4	10:45 AM	10.69	2:00 PM	11.53													
Relief RCDO-5	10:52 AM	10.52	2:25 PM	12.06													
Relief RCDO-6	10:30 AM	10.70	2:28 PM	12.00													
Relief RCDO-7	10:35 AM	10.70	2:30 PM	12.00													
Relief RCDO-8	10:50 AM	10.83	2:05 PM	12.19													
Baldwin U	8:45 AM	6.86	1:05 PM	6.50													
Baldwin D	8:35 AM	4.38	1:15 PM	6.42													
Spy Run U	8:10 AM	6.52	12:50 PM	9.47													
Spy Run D	8:20 AM	6.61	12:45 PM	9.60													

First day after rain event

River Stage
3.49 feet

Precipitation for 4/21/05 0.00 in.
Did not collect the two following days as required due to another rain event.
Precipitation for 4/22/05 0.39 in.
Precipitation for 4/23/05 0.62 in.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/13/05
Intitial Rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	8:18 PM	9.51	7.71	62.40	212	73	0.925	173,290	0.498	51.3	<0.01	<0.01	0.01	0.02	0.01	<0.01	0.12
Baldwin D	8:56 PM	9.26	7.84	66.70	236	386	1.04	198,630	0.842	57	<0.01	<0.01	0.01	0.03	0.02	<0.01	0.16
Spy Run U	7:44 PM	7.28	7.51	64.70	236	608	0.627	7,170	0.529	43.8	<0.01	<0.01	0.02	0.03	0.03	0.02	0.18
Spy Run D	7:34 PM	6.45	7.33	65.80	292	684	0.652	43,520	0.499	48.8	<0.01	<0.01	0.02	0.11	0.04	0.02	0.27
Relief RCD-1	7:34 PM	4.58	7.53	65.60	120	280	2.02	>241960	0.947	110	<0.01	<0.01	<0.01	0.04	0.01	<0.01	0.13
Pond 3	7:45 PM	10.61	7.66	63.20	604	1.6	0.263	16	0.31	1.7	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	0.04
Relief RC-4	7:19 PM	10.03	7.39	64.57	324	160	0.501	30,760	0.223	28.3	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.04
Lrelief LRC-5	8:20 PM	10.14	8.07	63.43	564	137	0.365	5,200	0.324	20	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.04
River MR-6	8:01 PM	9.48	7.94	63.52	432	47	0.0767	5,940	0.157	21.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
River MR-7	8:27 PM	10.14	8.07	63.43	416	30	0.0491	167	0.144	18.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Relief RCDO-1	7:22 PM	11.34															
Relief RCDO-2	7:19 PM	10.03															
Relief RCDO-3	7:13 PM	10.63															
Relief RCDO-4	8:20 PM	10.14															
Relief RCDO-5	7:56 PM	10.59															
Relief RCDO-6	8:01 PM	9.48															
Relief RCDO-7	8:07 PM	10.14															
Relief RCDO-8	8:27 PM	10.14															

Precipitation of 0.70 inches total from 7:00 PM 5/13/05 until midnight.

	Time	Stage
River Stage	7:00 PM	3.57ft.
in feet	7:30 PM	3.62ft.
	8:00 PM	3.64ft.
	8:30 PM	3.67ft.
	9:00 PM	3.70ft.

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 5/14/05
First day after rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	2:10 PM	9.50	7.88	61.20	308	17	0.204	14,390	0.11	17.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
Baldwin D	2:45 PM	8.93	7.76	62.57	260	18	0.247	7,670	0.091	17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
Spy Run U	1:49 PM	8.30	7.74	61.68	344	63.5	0.157	5,630	0.11	15.9	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.04
Spy Run D	1:55 PM	8.57	7.75	61.67	360	150	0.16	5,630	0.274	17.2	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.05
Relief RCD-1	10:38 AM	4.03	7.64	60.20	472	46.4	1.48	21,420	0.159	14.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Pond 3	7:00 AM	9.92	7.40	64.00	660	6.2	0.142	13	0.43	<1.42	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
Relief RC-4	10:17 AM	9.66	7.70	63.47	372	85.6	0.143	9,090	0.203	16.8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Lrelief LRC-5	11:12 AM	9.75	7.79	61.82	336	16	0.346	6,090	0.053	14.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-6	10:55 AM	8.43	7.82	63.40	380	67.2	0.0505	7,270	0.21	16.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
River MR-7	11:07 AM	8.46	7.81	63.45	376	62.4	0.059	7,800	0.185	17.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
		DO AM	Time	DO PM													
Relief RCDO-1	10:21 AM	4.39	3:12 PM	4.95													
Relief RCDO-2	10:17 AM	9.66	3:25 PM	6.22													
Relief RCDO-3	10:10 AM	4.69	3:28 PM	7.54													
Relief RCDO-4	11:12 AM	9.75	3:37 PM	5.34													
Relief RCDO-5	10:52 AM	5.42	3:18 PM	5.97													
Relief RCDO-6	10:55 AM	8.43	3:23 PM	6.05													
Relief RCDO-7	11:00 AM	7.86	3:21 PM	6.06													
Relief RCDO-8	11:07 AM	8.46	3:33 PM	7.12													
Baldwin U	2:10 PM	9.50	5:02 PM	11.20													
Baldwin D	2:45 PM	8.93	5:06 PM	10.01													
Spy Run U	1:49 PM	8.30	4:52 PM	9.52													
Spy Run D	1:55 PM	8.57	4:49 PM	9.22													

First day after rain event
Precipitation 0.18 inches

	Time	Stage	Time	Stage
River Stage	10:00 AM	4.67 ft	1:00 PM	4.60 ft.
in feet	10:30 AM	4.66 ft	1:30 PM	4.59 ft.
	11:00 AM	4.64 ft.	2:00 PM	4.59 ft.
	11:30 AM	4.63 ft	2:30 PM	4.58 ft.
	12:00 PM	4.61 ft.	3:00 PM	4.59 ft.
	12:30 PM	4.61 ft.	3:30 PM	4.57 ft.

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 5/15/05
Second day after rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	12:26 PM	11.72	7.95	54.66	1372	8	0.0381	4,670	0.146	3.43	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Baldwin D	12:27 PM	12.07	7.74	57.57	869	11.5	0.191	5,290	0.131	3.86	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run U	12:11 PM	10.69	8.03	56.57	452	19	0.176	1,550	0.103	5.71	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	11:59 AM	10.94	7.95	56.72	456	134.5	0.195	1,970	0.37	7.77	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07
Relief RCD-1	9:42 AM	No Data	8.01	53.45	576	11	2.81	17,850	0.232	3.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Pond 3	7:00 AM	9.84	7.21	64.32	560	4.4	0.149	17	0.46	1.55	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
Relief RC-4	10:01 AM	No Data	7.99	60.75	468	37.5	0.145	200	0.462	5.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Lrelief LRC-5	8:33 AM	No Data	8.53	55.00	348	37.5	0.711	1,600	0.159	3.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-6	9:53 AM	No Data	8.10	61.22	436	54.5	0.0644	1,100	0.26	5.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	8:37 AM	No Data	8.38	60.80	428	42	0.0658	1,080	0.243	4.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
		DO AM	Time	DO PM													
Relief RCDO-1		No Data	2:00 PM	7.50													
Relief RCDO-2		No Data	2:02 PM	7.60													
Relief RCDO-3		No Data	2:09 PM	7.35													
Relief RCDO-4		No Data	1:33 PM	11.50													
Relief RCDO-5		No Data	1:57 PM	7.29													
Relief RCDO-6		No Data	1:44 PM	8.76													
Relief RCDO-7		No Data	1:47 PM	8.34													
Relief RCDO-8		No Data	2:17 PM	7.47													
Baldwin U	12:26 PM	11.72	3:29 PM	12.46													
Baldwin D	12:27 PM	12.07	3:25 PM	11.44													
Spy Run U	12:11 PM	10.69	3:14 PM	10.47													
Spy Run D	11:59 AM	10.94	3:12 PM	8.10													

No Data for Relief channel DO due to meter problems.
Precipitation 0.00 inches

	Time	Stage	Time	Stage
River Stage	8:00 AM	4.82 ft.	12:00 PM	4.46 ft.
in feet	8:30 AM	4.81 ft.	12:30 PM	4.41 ft.
	9:00 AM	4.77 ft.	1:00 PM	4.36 ft.
	9:30 AM	4.73 ft.	1:30 PM	4.32 ft.
	10:00 AM	4.68 ft.	2:00 PM	4.28 ft.
	10:30 AM	4.62 ft.	2:30 PM	4.25 ft.
	11:00 AM	4.56 ft.	3:00 PM	4.22 ft.
	11:30 AM	4.51 ft.	3:30 PM	4.20 ft.

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 5/16/05
Third day after rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	8:40 AM	11.21	6.93	53.16	1416	65	0.0363	2,560	0.086	3.74	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Baldwin D	8:50 AM	12.93	7.15	52.15	1184	13.5	0.206	4,350	0.041	3.09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run U	8:20 AM	8.67	7.20	53.91	500	31	0.216	750	0.045	4.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	8:30 AM	8.70	7.10	53.78	496	36.5	0.205	740	0.072	5.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCD-1	10:30 AM	16.77	7.43	53.26	784	14	3.47	1,200	0.121	3.37	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pond 3	7:00 AM	9.40	7.38	62.92	492	3.8	0.142	7	0.28	<1.15	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RC-4	10:10 AM	16.62	7.64	58.67	500	60.5	0.237	520	0.132	5.77	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	9:50 AM	14.91	7.39	52.24	460	18	1.23	750	0.039	3.4	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.02
River MR-6	10:20 AM	16.04	7.70	58.57	484	42.5	0.0587	520	0.12	5.71	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	9:55 AM	16.20	7.56	58.59	504	35	0.0393	200	0.123	5.37	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
		DO AM	Time	DO PM													
Relief RCDO-1	10:15 AM	16.52	3:25 PM	12.15													
Relief RCDO-2	10:10 AM	16.62	2:50 PM	11.62													
Relief RCDO-3	10:05 AM	16.16	3:23 PM	10.07													
Relief RCDO-4	9:50 AM	14.91	3:31 PM	11.57													
Relief RCDO-5	10:35 AM	15.68	3:53 PM	13.72													
Relief RCDO-6	10:20 AM	16.04	3:09 PM	11.16													
Relief RCDO-7	10:00 AM	16.16	3:13 PM	11.56													
Relief RCDO-8	9:55 AM	16.20	3:35 PM	13.51													
Baldwin U	8:40 AM	11.21	2:02 PM	11.42													
Baldwin D	8:50 AM	12.93	1:55 PM	12.29													
Spy Run U	8:20 AM	8.67	2:25 PM	9.99													
Spy Run D	8:30 AM	8.70	1:38 PM	9.64													

Precipitation 0.00 inches

	Time	Stage	Time	Stage
River Stage	8:00 AM	3.78 ft.	12:00 PM	3.69 ft.
in feet	8:30 AM	3.78 ft.	12:30 PM	3.65 ft.
	9:00 AM	3.77 ft.	1:00 PM	3.61 ft.
	9:30 AM	3.76 ft.	1:30 PM	3.56 ft.
	10:00 AM	3.76 ft.	2:00 PM	3.58 ft.
	10:30 AM	3.74 ft.	2:30 PM	3.58 ft.
	11:00 AM	3.74 ft.	3:00 PM	3.56 ft.
	11:30 AM	3.72 ft.	3:30 PM	3.54 ft.

City of Fort Wayne Indiana
Water Quality Report

Wet Weather monitoring event 5/19/05
Intitial Rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	11:55 AM	11.13	8.08	57.44	132	41.5	1.39	241,960	0.452	33	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.05
Baldwin D	12:05 PM	10.61	8.03	57.36	52	51.2	0.611	72,700	0.253	27.7	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.04
Spy Run U	11:30 AM	10.00	7.67	57.68	388	71.2	0.483	20,980	0.161	36	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06
Spy Run D	11:19 AM	10.45	7.60	57.93	384	72	0.467	3,880	0.213	19.4	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06
Relief RCD-1	11:20 AM	9.35	8.09	58.11	56	174	0.86	198,630	0.537	37.8	<0.01	<0.01	0.01	0.03	0.01	<0.01	0.11
Pond 3	12:00 AM	9.63	7.36	64.85	640	2.4	0.137	48	0.28	2.13	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.05
Relief RC-4	11:05 AM	10.04	7.94	60.33	412	48	0.329	548	0.082	12.2	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	0.02
Lrelief LRC-5	10:45 AM	8.70	8.01	55.50	480	49	2.32	4,410	0.07	12.9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
River MR-6	11:30 AM	10.28	8.03	60.70	400	44	0.19	1,553	0.262	12.3	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	0.02
River MR-7	10:55 AM	10.13	7.92	60.48	372	125.6	0.131	1,733	0.169	13	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.06
Relief RCDO-1	11:10 AM	9.60															
Relief RCDO-2	11:05 AM	10.04															
Relief RCDO-3	11:00 AM	10.25															
Relief RCDO-4	10:45 AM	8.70															
Relief RCDO-5	11:25 AM	10.03															
Relief RCDO-6	11:30 AM	10.28															
Relief RCDO-7	11:40 AM	10.65															
Relief RCDO-8	10:55 AM	10.13															

	Time	Stage	Time	Stage
River Stage	10:00 AM	3.66 ft.	12:30 PM	4.05 ft.
in feet	10:30 AM	3.74 ft.	1:00 PM	4.07 ft.
	11:00 AM	3.86 ft.	1:30 PM	4.08 ft.
	11:30 AM	3.95 ft.	2:00 PM	4.09 ft.
	12:00 PM	4.01 ft.	2:30 PM	4.09 ft.

Precipitation 0.62 inches

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 5/20/05
First day after rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	8:52 AM	6.82	7.45	56.97	1360	7.5	0.0558	3,790	0.027	3.94	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Baldwin D	9:04 AM	7.63	7.43	58.08	828	9	0.942	6,570	<0.006	3.17	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run U	8:32 AM	7.70	7.46	57.09	460	26.5	0.277	12,740	0.014	4.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	8:24 AM	7.54	7.36	57.80	440	27.5	0.269	9,590	0.004	5.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCD-1	9:05 AM	7.25	7.71	56.15	668	16.5	2.33	3,500	0.127	3.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Pond 3	7:00 AM	9.83	7.18	61.70	648	2.8	0.198	50	0.0335	1.83	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05
Relief RC-4	8:50 AM	9.49	8.24	60.15	528	46.5	0.0649	7,590	0.12	6.26	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	8:35 AM	9.45	8.62	56.51	420	11.5	0.542	1,986	<0.006	3.66	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.01
River MR-6	9:10 AM	9.40	8.23	60.09	512	32	0.0671	9,590	0.083	6.57	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	8:40 AM	9.59	8.26	60.18	532	32	0.0357	1,986	0.054	6.26	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03
Pond 2	9:15 AM	7.30	7.96	67.48	752	17	1.85	1	1.14	12.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
	Time	DO AM	Time	DO PM													
Relief RCDO-1	8:55 AM	7.00	11:08 AM	9.63													
Relief RCDO-2	8:50 AM	9.49	11:11 AM	8.90													
Relief RCDO-3	8:45 AM	9.88	11:15 AM	9.37													
Relief RCDO-4	8:35 AM	9.45	11:31 AM	11.31													
Relief RCDO-5	9:08 AM	9.55	11:06 AM	9.92													
Relief RCDO-6	9:10 AM	9.40	11:20 AM	10.02													
Relief RCDO-7	9:13 AM	9.53	11:22 AM	10.20													
Relief RCDO-8	8:40 AM	9.59	11:27 AM	10.56													
Baldwin U	8:52 AM	6.82	1:20 PM	8.10													
Baldwin D	9:04 AM	7.63	1:15 PM	9.59													
Spy Run U	8:32 AM	7.70	12:55 PM	7.53													
Spy Run D	8:24 AM	7.54	12:51 PM	7.50													

First day after rain event

	Time	Stage	Time	Stage
River Stage	8:00 AM	4.41 ft.	11:00 AM	4.57
in feet	8:30 AM	4.43	11:30 AM	4.59
	9:00 AM	4.44	12:00 PM	4.60
	9:30 AM	4.47	12:30 PM	4.59
	10:00 AM	4.52	1:00 PM	4.59
	10:30 AM	4.55	1:30 PM	4.58

Precipitation 0.01 inches

Pond 2 discharge began after the water quality samples were in the relief channel and river for the day. This discharge ended at 2:30 pm the same day.

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 5/21/05
Second day after rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	7:37 AM	10.18	8.10	54.48	1508	2.4	<0.02	1,733	0.078	<2.86	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Baldwin D	7:47 AM	9.44	7.78	55.03	988	5.4	0	1,203	0.089	<2.86	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Spy Run U	7:21 AM	8.61	8.00	57.33	464	9.6	0	1,203	0.105	<2.86	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	7:12 AM	8.46	8.45	58.17	472	9.2	0	2,430	0.091	<2.86	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCD-1	9:40 AM	5.65	7.60	55.76	764	12	4	649	0.189	<2.86	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Pond 3	7:00 AM	10.90	7.45	63.77	680	2.6	0	13	0.33	1.61	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.05
Relief RC-4	9:19 AM	12.12	8.33	61.18	540	45	0	517	0.185	4.92	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	9:01 AM	8.75	7.86	55.97	436	5	1	548	0.095	<2.86	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
River MR-6	9:53 AM	11.98	8.33	61.30	460	40	0	365	0.172	4.94	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	9:59 AM	12.06	8.35	61.47	468	45.5	<0.02	461	0.166	4.62	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
	Time	DO AM	Time	DO PM													
Relief RCDO-1	9:22 AM	11.69	11:51 AM	11.51													
Relief RCDO-2	9:19 AM	12.12	11:54 AM	12.80													
Relief RCDO-3	9:12 AM	11.63	11:56 AM	11.69													
Relief RCDO-4	9:01 AM	8.75	12:18 PM	8.25													
Relief RCDO-5	9:46 AM	11.66	11:50 AM	8.40													
Relief RCDO-6	9:53 AM	11.98	12:02 PM	12.53													
Relief RCDO-7	9:55 AM	11.80	11:59 AM	12.52													
Relief RCDO-8	9:59 AM	12.06	12:10 PM	12.90													
Baldwin U	7:37 AM	10.18	11:34 AM	7.25													
Baldwin D	7:47 AM	9.44	12:00 AM	10.03													
Spy Run U	7:21 AM	8.61	11:05 AM	10.49													
Spy Run D	7:12 AM	8.46	10:54 AM	10.68													

Precipitation 0.00 inches

	Time	Stage	Time	Stage
River Stage	7:00 AM	4.23 ft.	10:00 AM	4.22
In Feet	7:30 AM	4.23	10:30 AM	4.19
	8:00 AM	4.23	11:00 AM	4.15
	8:30 AM	4.23	11:30 AM	4.1
	9:00 AM	4.23	12:00 PM	4.06
	9:30 AM	4.24	12:30 PM	4.02

City of Fort Wayne Indiana
Water Quality Report
Wet Weather monitoring event 5/22/05
Third day after rain event

Parameter	Sample	DO	pH	Tep F	TDS	TSS	NH3-N	E.Coli	Phos	CBOD	Ag	Cd	Cr	Cu	Pb	Ni	Zn
	Time	mg/l	mg/l	°F	mg/l	mg/l	mg/l	Col/100ml	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Site																	
Baldwin U	8:49 AM	9.14	7.76	55.89	1628	5	<0.02	10,460	0.157	3.34	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Baldwin D	8:59 AM	8.76	7.78	57.96	1188	8.4	0.0468	921	0.046	3.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Spy Run U	8:27 AM	6.91	7.46	61.41	608	10.2	0.289	228	0.057	3.52	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Spy Run D	8:34 AM	7.61	7.68	59.96	604	10.8	0.279	10,190	0.084	3.8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02
Relief RCD-1	10:43 AM	6.04	7.74	57.63	852	9.2	3.69	579	0.129	2.68	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Pond 3	7:00 AM	8.74	7.17	62.78	664	2.4	0.0562	3	0.33	1.52	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.04
Relief RC-4	10:31 AM	9.24	8.25	62.23	520	36.5	0.289	291	0.174	8.79	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Lrelief LRC-5	10:14 AM	8.39	8.21	57.92	552	6.2	1.48	112	0.076	2.96	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
River MR-6	11:01 AM	9.79	8.31	63.39	524	35	0.0727	192	0.133	8.66	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
River MR-7	10:18 AM	9.15	8.27	63.31	524	40.5	<0.02	285	0.144	8.53	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
		DO AM															
Relief RCDO-1	10:35 AM	9.31															
Relief RCDO-2	10:31 AM	9.24															
Relief RCDO-3	10:21 AM	8.99															
Relief RCDO-4	10:14 AM	8.39															
Relief RCDO-5	10:37 AM	9.53															
Relief RCDO-6	11:01 AM	9.79															
Relief RCDO-7	10:55 AM	9.70															
Relief RCDO-8	10:18 AM	9.15															

	Time	Stage	Time	Stage
River Stage in feet	8:00 AM	4.19 ft.	10:00 AM	4.15
	8:30 AM	4.18	10:30 AM	4.13
	9:00 AM	4.17	11:00 AM	4.12
	9:30 AM	4.16	11:30 AM	4.11

Precipitation for 5/22/05 during sampling was 0.00 in.
Precipitation began later in the day after sampling was completed for a total of 0.09 in.

ATTACHMENT 4

City of Fort Wayne
River Survey 2001
St. Marys River @ Ferguson Road

Wk	Date	ECOLI	Elev(ft)	Depth(ft)	PHOS	NH3-N	TSS
1	4/3/01	440	749.64	1.29	0.14	0.0489	42
2	4/9/01	80	750.17	1.82	0.236	0.159	92
3	4/16/01	1800	755.35	7.00	0.555	0.23	262
4	4/23/01	460	753.09	4.74	0.237	0.108	146
5	4/30/01	30	750.15	1.80	0.181	0.0241	52
6	5/7/01	92	749.83	1.48	0.116	0.0927	52
7	5/14/01	100	749.65	1.30	0.206	0.0316	84
8	5/21/01	512	756.08	7.73	0.444	0.158	124
9	5/29/01	460	753.58	5.23	0.206	0.0992	104
10	6/4/01	920	751.69	3.34	0.253	0.126	112
11	6/11/01	260	750.91	2.56	0.196	0.0336	50
12	6/18/01	110	750.05	1.70	0.158	0.0331	54
13	6/26/01	80	749.85	1.50	0.226	0.047	72
14	7/2/01	76	749.28	0.93	0.267	0.0239	43
15	7/9/01	1200	750.48	2.13	0.43	0.199	160
16	7/16/01	220	749.04	0.69	0.309	0.0205	72
17	7/23/01	1800	751.74	3.39	0.839	0.224	312
18	7/30/01	320	750.32	1.97	0.276	0.0327	80
19	8/6/01	410	749.08	0.73	0.281	0.0107	52
20	8/14/01	150	748.91	0.56	0.284	0.0171	92
21	8/20/01	210	749.53	1.18	0.256	0.0946	45
22	8/27/01	370	750.13	1.78	0.403	0.0432	88
23	9/4/01	400	749.51	1.16	0.306	0.126	172
24	9/10/01	2000	750.13	1.78	0.40	0.0113	104
25	9/17/01	180	749.56	1.21	0.36	0.0435	132
26	9/24/01	610	750.37	2.02	0.39	0.0324	44
27	10/1/01	180	749.48	1.13	0.228	0.0198	28
28	10/9/01	390	752.12	3.77	0.433	0.0454	86
29	10/15/01	2800	755.58	6.53	0.643	0.0879	172
30	10/22/01	420	754.77	6.42	0.541	0.027	136
31	10/29/01	380	754.11	5.76	0.418	0.054	62
	Max	2800	755.58	6.53	0.839	0.23	312
	Min	30	748.91	0.56	0.116	0.0107	28
	Avg		751.14	2.79	0.329	0.074	101

E.coli = colonies per 100 mls, yellow indicates >235
PHOS = Total Phosphorus mg/l, NH3-N = Ammonia-Nitrogen mg/l,
TSS = Total Suspended Solids mg/l

Jim Cornell, Feb. 2002

City of Fort Wayne
River Survey 2001
St. Marys River @ Spy Run Avenue

Wk	Date	ECOLI	Elev(ft)	Depth(ft)	PHOS	NH3-N	TSS
1	4/3/01	1600	739.09	6.09	0.12	0.159	64
2	4/9/01	600	742.45	8.75	0.19	0.165	70
3	4/16/01	1200	743.07	10.07	0.418	0.131	210
4	4/23/01	900	742.70	9.70	0.09	0.124	62
5	4/30/01	70	741.69	8.69	0.091	0.0148	46
6	5/7/01	32	740.07	7.07	0.06	0.0313	52
7	5/14/01	90	739.56	6.56	0.075	0.02	80
8	5/21/01	520	743.37	10.37	0.366	0.204	168
9	5/29/01	600	743.06	10.06	0.155	0.0648	68
10	6/4/01	1450	742.45	9.45	0.214	0.106	104
11	6/11/01	2920	742.76	9.76	0.129	0.0363	34
12	6/18/01	1000	742.07	9.07	0.07	0.0236	16
13	6/26/01	848	742.31	9.31	0.158	0.0596	32
14	7/2/01	450	742.10	9.10	0.402	0.213	36
15	7/9/01	3000	742.35	9.35	0.247	0.0219	56
16	7/16/01	260	741.85	8.85	0.162	0.0196	32
17	7/23/01	3000	742.37	9.37	0.284	0.0839	60
18	7/30/01	1450	742.15	9.15	0.214	0.129	56
19	8/6/01	500	737.81	4.81	0.247	0.20	60
20	8/14/01	360	736.04	3.04	0.34	0.01	176
21	8/20/01	4600	737.43	4.43	0.229	0.115	80
22	8/27/01	4000	738.98	5.98	0.416	0.145	68
23	9/4/01	700	737.22	4.22	0.24	0.0962	172
24	9/10/01	4250	739.63	6.63	0.272	0.192	90
25	9/17/01	1180	737.12	4.12	0.264	0.113	168
26	9/24/01	6000	739.47	6.47	0.319	0.103	72
27	10/1/01	600	737.37	4.37	0.217	0.102	68
28	10/9/01	620	740.40	7.40	0.346	0.0319	58
29	10/15/01	3000	745.14	12.14	0.523	0.0632	100
30	10/22/01	1800	744.79	11.79	0.479	0.148	150
31	10/29/01	380	743.52	10.52	0.472	0.056	72
	Max.	6000	745.14	12.14	0.523	0.213	210
	Min.	32	736.04	3.04	0.06	0.01	16
	Avg.		740.98	7.98	0.252	0.0968	83

E.coli = colonies per 100 mls, yellow indicates >235
PHOS = Total Phosphorus mg/l, NH3-N = Ammonia-Nitrogen mg/l,
TSS = Total Suspended Solids mg/l

Jim Cornell, Feb. 2002

City of Fort Wayne
River Survey 2001
St. Joseph River @ Mayhew Road

Wk	Date	ECOLI	Elev(ft)	Depth(ft)	PHOS	NH3-N	TSS
1	4/3/01	140	753.54	1.24	0.06	0.0104	22
2	4/9/01	280	758.26	5.96	0.344	0.221	134
3	4/16/01	260	754.49	2.19	0.116	0.0897	62
4	4/23/01	80	756.62	4.32	0.096	0.0485	76
5	4/30/01	20	754.97	2.67	0.132	0.0101	42
6	5/7/01	80	754.55	2.25	0.067	0.0523	46
7	5/14/01	70	754.44	2.14	0.063	0.134	28
8	5/21/01	276	756.56	4.26	0.228	0.202	76
9	5/29/01	400	757.41	5.11	0.508	0.111	76
10	6/4/01	540	757.04	4.74	0.168	0.111	68
11	6/11/01	200	756.66	4.36	0.257	0.0439	70
12	6/18/01	150	754.31	2.01	0.063	0.0548	32
13	6/25/01	84	755.07	2.77	0.20	0.122	96
14	7/2/01	104	754.46	2.15	0.168	0.02	51
15	7/9/01	130	754.26	1.96	0.154	0.0613	44
16	7/16/01	130	754.50	2.20	0.239	0.0247	28
17	7/23/01	80	755.56	3.26	0.171	0.0713	30
18	7/30/01	60	755.10	2.66	0.149	0.0651	38
19	8/6/01	30	754.45	2.15	0.152	0.121	32
20	8/14/01	100	754.41	2.11	0.158	0.0137	40
21	8/20/01	98	755.46	3.16	0.075	0.0615	42
22	8/27/01	300	754.75	2.45	0.159	0.03	36
23	9/4/01	100	754.95	2.65	0.173	0.0509	52
24	9/10/01	460	755.34	3.04	0.204	0.0329	68
25	9/17/01	80	755.44	3.14	0.168	0.0238	84
26	9/24/01	470	755.09	2.79	0.173	0.0107	32
27	10/1/01	180	755.11	2.81	0.07	0.0175	24
28	10/9/01	210	755.32	3.02	0.161	0.0327	34
29	10/15/01	2000	751.75	9.45	0.411	0.0371	60
30	10/22/01	170	751.50	9.20	0.317	0.0322	72
31	10/29/01	160	758.08	5.78	0.204	0.022	22
	Max.	2000	761.75	9.45	0.508	0.221	134
	Min.	20	753.54	1.24	0.06	0.0101	22
	Avg.		755.79	3.49	0.183	0.0526	52

E.coli = colonies per 100 mls, yellow indicates >235
PHOS = Total Phosphorus mg/l, NH3-N = Ammonia-Nitrogen mg/l,
TSS = Total Suspended Solids mg/l

Jim Cornell, Feb. 2002

City of Fort Wayne
River Survey 2001
St. Joseph River @ Tennessee Street

Wk	Date	ECOLI	Elev(ft)	Depth(ft)	PHOS	NH3-N	TSS
1	4/3/01	220	739.93	8.43	0.06	0.0042	20
2	4/9/01	280	743.61	12.11	0.365	0.253	152
3	4/16/01	110	743.54	12.04	0.077	0.0504	36
4	4/23/01	140	743.66	12.16	0.06	0.0306	38
5	4/30/01	20	742.33	10.83	0.085	0.0152	34
6	5/7/01	48	740.99	9.49	0.06	0.0414	46
7	5/14/01	32	740.28	8.78	0.06	0.0327	28
8	5/21/01	500	744.06	12.56	0.202	0.259	76
9	5/29/01	540	743.77	12.27	0.594	0.135	80
10	6/4/01	370	742.98	11.48	0.088	0.0316	48
11	6/11/01	100	743.58	12.08	0.136	0.0363	44
12	6/18/01	100	742.72	11.22	0.06	0.0404	36
13	6/26/01	200	743.09	11.59	0.179	0.185	54
14	7/2/01	144	742.85	11.35	0.137	0.02	34
15	7/9/01	100	742.96	11.46	0.127	0.0264	27
16	7/15/01	20	742.72	11.22	0.101	0.0133	36
17	7/23/01	80	742.97	11.47	0.083	0.035	22
18	7/30/01	44	742.74	11.24	0.103	0.0524	14
19	8/5/01	102	738.66	7.16	0.121	0.0324	38
20	8/14/01	102	736.98	5.48	0.136	0.0092	56
21	8/20/01	460	738.20	6.70	0.06	0.0716	36
22	8/27/01	450	739.75	8.25	0.145	0.0535	18
23	9/4/01	210	738.06	6.56	0.159	0.0675	84
24	9/10/01	1120	740.22	8.72	0.144	0.0707	44
25	9/17/01	160	738.02	6.52	0.111	0.041	64
26	9/24/01	330	740.05	8.55	0.151	0.0321	40
27	10/1/01	180	736.22	6.72	0.068	0.0143	20
28	10/9/01	550	741.24	9.74	0.126	0.0087	30
29	10/15/01	3200	745.98	14.48	0.41	0.0241	108
30	10/22/01	270	745.38	13.88	0.302	0.0336	70
31	10/29/01	180	744.21	12.71	0.208	0.023	28
	Max.	3200	745.98	14.48	0.594	0.259	152
	Min.	20	736.98	5.48	0.06	0.0042	14
	Avg.		741.73	10.23	0.152	0.0579	47

E.coli = colonies per 100 mls, yellow indicates >235
PHOS = Total Phosphorus mg/l, NH3-N = Ammonia-Nitrogen mg/l,
TSS = Total Suspended Solids mg/l

Jim Connell, Feb. 2002

City of Fort Wayne
River Survey 2001
Maumee River @ Anthony Boulevard

Wk	Date	ECOLI	Elev(ft)	Depth(ft)	PHOS	NH3-N	TSS
1	4/3/01	560	732.23	2.16	0.06	0.0153	24
2	4/9/01	340	736.35	6.28	0.384	0.296	146
3	4/16/01	1320	737.23	7.16	0.283	0.107	128
4	4/23/01	1000	736.24	6.17	0.06	0.0595	56
5	4/30/01	20	733.20	3.13	0.069	0.0213	42
6	5/7/01	44	732.08	2.01	0.06	0.0392	62
7	5/14/01	26	731.99	1.92	0.077	0.0176	88
8	5/21/01	432	736.48	6.41	0.308	0.241	144
9	5/29/01	590	737.46	7.39	0.172	0.123	120
10	6/4/01	1000	735.28	5.21	0.122	0.0954	96
11	6/11/01	570	734.49	4.42	0.122	0.0434	44
12	6/18/01	230	732.24	2.17	0.069	0.0271	32
13	6/26/01	1600	732.61	2.54	0.18	0.202	48
14	7/2/01	150	731.94	1.87	0.168	0.03	56
15	7/9/01	980	732.24	2.17	0.175	0.062	49
16	7/16/01	60	731.48	1.41	0.105	0.0416	38
17	7/23/01	980	732.09	2.02	0.16	0.0899	60
18	7/30/01	810	731.93	1.86	0.173	0.119	62
19	8/6/01	330	731.50	1.43	0.193	0.116	48
20	8/14/01	110	730.67	0.60	0.194	0.0134	62
21	8/20/01	6000	731.24	1.17	0.107	0.105	56
22	8/27/01	1060	732.07	2.00	0.275	0.101	62
23	9/4/01	250	731.29	1.22	0.166	0.0704	92
24	9/10/01	2400	732.65	2.58	0.194	0.0825	78
25	9/17/01	8000	731.29	1.22	0.156	0.115	104
26	9/24/01	20000	732.11	2.04	0.252	0.155	72
27	10/1/01	460	731.97	1.99	0.109	0.0468	40
28	10/9/01	440	733.37	3.30	0.268	0.0228	54
29	10/15/01	3200	743.34	13.27	0.472	0.0345	120
30	10/22/01	700	741.67	11.60	0.365	0.0648	100
31	10/29/01	220	736.22	8.15	0.331	0.039	54
	Max.	20000	743.34	13.27	0.472	0.296	146
	Min.	20	730.67	0.60	0.06	0.0134	24
	Avg.		733.90	3.83	0.1685	0.0638	72

E.coli = colonies per 100 mls, yellow indicates >235
PHOS = Total Phosphorus mg/l, NH3-N = Ammonia-Nitrogen mg/l,
TSS = Total Suspended Solids mg/l

Jim Cornell, Feb. 2002

City of Fort Wayne
River Survey 2001
Maumee River @ Landin Road

Wk	Date	ECOLI	Elev(ft)	Depth(ft)	PHOS	NH3-N	TSS
1	4/3/01	600	728.16	3.65	0.06	0.0344	22
2	4/9/01	270	732.20	7.69	0.371	0.292	152
3	4/16/01	390	732.36	7.85	0.309	0.122	168
4	4/23/01	480	734.35	9.84	0.074	0.0734	76
5	4/30/01	10	731.02	6.51	0.11	0.0189	36
6	5/7/01	44	730.30	5.79	0.06	0.034	46
7	5/14/01	64	729.83	5.32	0.093	0.0327	76
8	5/21/01	306	736.21	11.70	0.337	0.245	140
9	5/29/01	650	735.55	11.04	0.152	0.117	108
10	6/4/01	600	732.98	8.47	0.133	0.112	44
11	6/11/01	360	732.86	8.35	0.144	0.0632	58
12	6/18/01	170	730.41	5.90	0.114	0.02	24
13	6/26/01	1024	730.87	6.36	0.196	0.194	68
14	7/2/01	200	730.01	5.50	0.06	0.0259	46
15	7/9/01	800	730.65	6.14	0.222	0.0281	56
16	7/16/01	50	728.68	4.17	0.155	0.0376	36
17	7/23/01	830	730.38	5.87	0.187	0.136	62
18	7/30/01	1020	729.98	5.47	0.174	0.121	72
19	8/6/01	440	729.26	4.75	0.171	0.141	24
20	8/14/01	60	728.63	4.12	0.15	0.17	38
21	8/20/01	3200	730.07	5.56	0.108	0.513	96
22	8/27/01	920	730.82	6.31	0.28	0.108	78
23	9/4/01	200	729.58	5.07	0.10	0.0937	76
24	9/10/01	2240	730.70	6.19	0.202	0.116	68
25	9/17/01	1460	729.41	4.90	0.205	0.188	168
26	9/24/01	8000	730.92	6.41	0.281	0.133	44
27	10/1/01	500	729.79	5.28	0.171	0.109	28
28	10/9/01	1020	730.91	6.40	0.301	0.0298	44
29	10/15/01	4600	740.61	16.10	0.459	0.0516	132
30	10/22/01	620	739.55	15.04	0.336	0.0966	72
31	10/29/01	1020	735.74	11.23	0.346	0.071	44
	Max.	8000	740.61	16.10	0.459	0.513	168
	Min.	10	728.16	3.65	0.06	0.0189	22
	Avg.		731.70	7.19	0.1955	0.1138	71

E.coli = colonies per 100 mls, yellow indicates >235
PHOS = Total Phosphorus mg/l, NH3-N = Ammonia-Nitrogen mg/l,
TSS = Total Suspended Solids mg/l

Jim Cornell, Feb. 2002

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
DEPTH	4/1/02	13.55	13.6	7.71	15.79	15.71	18.73
DEPTH	4/8/02	4.86	9.69	6.47	12.43	8.28	11.63
DEPTH	4/15/02	5.39	10.83	7.89	13.04	9.85	13.19
DEPTH	4/22/02	2.61	9.34	5.27	11.58	5.96	9.32
DEPTH	4/29/02	7.24	9.86	2.68	12.02	8.12	10.64
DEPTH	5/6/02	2.84	7.19	1.55	10.51	3.51	7.2
DEPTH	5/13/02	7.72	11.46	9.08	13.79	13.45	17.68
DEPTH	5/20/02	4.15	9.94	5.69	12.37	8.63	11.12
DEPTH	5/29/02	2.6	8.36	4.42	10.47	4.16	6.98
DEPTH	6/3/02	4.1	8.9	2.84	11.43	4.27	7.84
DEPTH	6/10/02	2.03	7.51	2.41	9.52	3.36	6.75
DEPTH	6/17/02	1.61	8.82	2.73	11.3	1.34	6.25
DEPTH	6/24/02	0.66	9.02	2.57	11.22	1.78	5.22
DEPTH	7/1/02	1.28	8.87	2.09	10.87	1.84	5.8
DEPTH	7/8/02	1.36	9.1	11.08	11.7	2.15	5.87
DEPTH	7/15/02	0.1	8.27	1.51	10.72	1.39	5.27
DEPTH	7/22/02	0.51	8.66	2.66	10.71	1	4.46
DEPTH	7/29/02	0.28	9.31	3.57	11.28	1.94	5.3
DEPTH	8/5/02	0.56	8.16	2.04	10.21	2.46	5.73
DEPTH	8/12/02	0.94	3.19	2.07	5.34	0.96	4.73
DEPTH	8/19/02	0.97	5.35	2.94	7.64	1.74	5.77
DEPTH	8/26/02	1.59	5.05	2.21	7.23	1.48	5.64
DEPTH	9/3/02	0.89	8.69	2.76	10.99	1.23	4.88
DEPTH	9/9/02	1.03	8.59	2.83	10.92	1.1	4.59
DEPTH	9/16/02	0.65	8.63	1.86	10.7	0.98	4.33
DEPTH	9/23/02	1.24	8.77	2.74	11.06	1.31	4.72
DEPTH	9/30/02	1.72	8.94	1.7	11.11	2.01	5.69
DEPTH	10/7/02	1.32	8.83	1.71	11.06	1.72	4.73
DEPTH	10/14/02	0.85	8.69	3	11.08	1.21	4.59
DEPTH	10/21/02	0.74	8.89	1.09	11.17	1.06	4.79
DEPTH	10/28/02	0.64	8.74	0.89	10.85	1.06	4.66
DO	4/1/02	11.26	10.85	11.49	11.94	10.99	11.07
DO	4/8/02	10.99	10.89	11.73	12.52	12.17	12.16
DO	4/15/02	8.69	8.65	9.5	9.92	9.84	9.66
DO	4/22/02	9.78	8.13	9.66	9.96	9.93	9.96
DO	4/29/02	9.06	8.84	11.57	11.47	10.36	10.44
DO	5/6/02	9.13	10.86	10.26	12.19	12.09	10.64
DO	5/13/02	9.35	8.78	9.3	10.3	9.71	9.34
DO	5/20/02	10.21	9.45	10.71	11.21	11.03	11.48
DO	5/29/02	9.01	9.01	11.1	11.72	11.28	10.1
DO	6/3/02	7.03	7.28	9.98	9.34	8.72	8.97
DO	6/10/02	10.2	7.98	8.96	9.72	8.91	8.79
DO	6/17/02	10.79	8.49	9.13	9.66	8.97	9.5
DO	6/24/02	13.74	17.83	6.92	7.79	8.51	6.9
DO	7/1/02	8.95	6.53	6.53	7.27	7.5	6.81

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
DO	7/8/02	9.34	10.95	5.24	7.58	6.84	5.51
DO	7/15/02	15.34	10.32	6.79	9.27	8.25	6.92
DO	7/22/02	9.88	9.73	5.9	11.47	5.47	6.88
DO	7/29/02	7.86	10.51	6.34	5.91	7.67	6.06
DO	8/5/02	10.61	8.74	5.2	5.32	5.87	5.28
DO	8/12/02	8.53	1.9	6.04	8.9	6.44	7.68
DO	8/19/02	7.21	4.04	6.47	6.72	5.36	6.75
DO	8/26/02	5.54	2.69	6.52	6.39	5.51	4.88
DO	9/3/02	7.01	15.77	6.27	11.85	6.65	7.11
DO	9/9/02	10.38	16.56	6.88	8.17	7.31	4.76
DO	9/16/02	9.49	7.81	6.88	5.6	6.29	4.26
DO	9/23/02	5.35	0.77	7.58	7.16	6.53	5.25
DO	9/30/02	8.48	3.21	7.3	10.14	8.17	6.2
DO	10/7/02	8.56	5.61	8.01	13.89	6.74	10.71
DO	10/14/02	11.15	9.01	9.13	8.75	8.45	8.18
DO	10/21/02	15.73	10.69	10.46	10.12	10.18	9.76
DO	10/28/02	11.81	9.67	11.38	10.7	10.81	10.37
ECOLI	4/1/02	396	884	548	544	616	768
ECOLI	4/8/02	800	740	1280	320	1040	440
ECOLI	4/15/02	640	660	200	220	460	400
ECOLI	4/22/02	460	680	620	200	360	300
ECOLI	4/29/02	5660	3740	500	360	4440	5000
ECOLI	5/6/02	200	1000	100	100	300	400
ECOLI	5/13/02	7500	5400	3300	5600	4300	5400
ECOLI	5/20/02	100	500	100	100	100	300
ECOLI	5/29/02	1450	2700	350	100	1100	1800
ECOLI	6/3/02	420	560	180	140	540	200
ECOLI	6/10/02	700	1400	380	290	330	470
ECOLI	6/17/02	350	420	120	140	260	250
ECOLI	6/24/02	2880	360	510	240	430	660
ECOLI	7/1/02	170	220	740	240	540	430
ECOLI	7/8/02	760	300	240	210	290	420
ECOLI	7/15/02	60	380	240	220	70	fail
ECOLI	7/22/02	750	170	80	150	470	400
ECOLI	7/29/02	90	270	240	80	60	130
ECOLI	8/5/02	180	740	20	50	270	160
ECOLI	8/12/02	130	55	265	245	600	65
ECOLI	8/19/02	130	130	360	980	400	620
ECOLI	8/26/02	400	fail	100	210	2400	1480
ECOLI	9/3/02	200	1600	90	70	110	420
ECOLI	9/9/02	240	60	90	50	50	560
ECOLI	9/16/02	100	240	70	30	90	370
ECOLI	9/23/02	350	250	200	320	900	640
ECOLI	9/30/02	385	220	195	415	310	680
ECOLI	10/7/02	230	260	270	100	220	220

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
ECOLI	10/14/02	280	600	110	10	70	130
ECOLI	10/21/02	15	190	80	75	115	105
ECOLI	10/28/02	80	160	35	150	800	270
NH3-N	4/1/02	0.1	0.188	0.206	0.172	0.189	0.173
NH3-N	4/8/02	0.1	0.0493	0.0407	0.0371	0.0387	0.0469
NH3-N	4/15/02	0.1	0.1	0.1	0.1	0.1	0.1
NH3-N	4/22/02	0.0401	0.0283	0.0554	0.0425	0.0399	0.0506
NH3-N	4/29/02	0.804	0.779	0.125	0.0183	0.503	0.495
NH3-N	5/6/02	0.0485	0.0149	0.0202	0.0291	0.015	0.0265
NH3-N	5/13/02	0.25	0.155	0.12	0.0796	0.118	0.115
NH3-N	5/20/02	0.1	0.1	0.1	0.1	0.1	0.1
NH3-N	5/29/02	0.0565	0.0825	0.002	0.002	0.022	0.0416
NH3-N	6/3/02	0.0317	0.0357	0.0189	0.0106	0.0249	0.0452
NH3-N	6/10/02	0.002	0.002	0.002	0.002	0.002	0.002
NH3-N	6/17/02	0.1	0.1	0.1	0.1	0.1	0.1
NH3-N	6/24/02	0.37	0.0135	0.0097	0.0093	0.0657	0.155
NH3-N	7/1/02	0.0415	0.0235	0.0058	0.002	0.0063	0.0439
NH3-N	7/8/02	0.002	0.002	0.002	0.002	0.0557	0.112
NH3-N	7/15/02	0.1	0.2	0.1	0.1	0.1	0.1
NH3-N	7/22/02	0.101	0.0275	0.187	0.0517	0.298	0.114
NH3-N	7/29/02	0.002	0.002	0.002	0.002	0.0053	0.0215
NH3-N	8/5/02	0.0225	0.0216	0.0433	0.0439	0.0353	0.157
NH3-N	8/12/02	0.0189	0.782	0.0322	0.0026	0.179	0.0164
NH3-N	8/19/02	0.1	0.6	N/A	0.1	N/A	0.1
NH3-N	8/26/02	0.0565	0.321	0.0051	0.0546	0.244	0.218
NH3-N	9/3/02	0.0146	0.0172	0.024	0.0038	0.171	0.08
NH3-N	9/9/02	0.19	0.16	0.071	0.14	0.262	0.458
NH3-N	9/16/02	0.1	0.5	0.1	0.1	0.2	0.4
NH3-N	9/23/02	0.173	0.361	0.0583	0.0822	0.195	0.325
NH3-N	9/30/02	0.002	0.324	0.0055	0.002	0.0925	0.241
NH3-N	10/7/02	0.002	0.0697	0.147	0.002	0.186	0.124
NH3-N	10/14/02	0.106	0.117	0.0483	0.0217	0.109	0.258
NH3-N	10/21/02	0.1	0.1	0.1	0.1	0.1	0.1
NH3-N	10/28/02	0.137	0.0979	0.0555	0.0298	0.074	0.127
PH	4/1/02	8.17	7.56	7.69	7.71	7.52	7.64
PH	4/8/02	7.91	7.73	7.87	7.86	7.77	7.82
PH	4/15/02	7.76	7.73	7.76	7.72	7.75	7.74
PH	4/22/02	7.93	7.78	7.91	7.98	7.88	7.95
PH	4/29/02	7.48	7.36	7.87	7.89	7.61	7.71
PH	5/6/02	7.8	7.82	8.14	8.14	7.96	7.96
PH	5/13/02	7.52	7.48	7.61	7.63	7.51	7.6
PH	5/20/02	7.79	7.8	7.89	7.91	7.83	7.86
PH	5/29/02	7.85	7.66	8.06	8.03	7.85	7.88
PH	6/3/02	7.7	7.62	8.1	8.01	7.69	7.87
PH	6/10/02	8.01	7.71	8.04	8.09	7.91	7.9

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
PH	6/17/02	8.33	7.91	8.28	8.31	8.1	8.08
PH	6/24/02	8.34	7.76	7.87	8.2	7.87	7.72
PH	7/1/02	8.32	7.42	7.95	7.99	7.79	7.64
PH	7/8/02	8.35	7.77	7.75	7.89	7.76	7.56
PH	7/15/02	8.77	8.04	8.12	8.24	7.87	7.81
PH	7/22/02	8.46	7.95	7.84	8.23	7.52	7.69
PH	7/29/02	8.1	8.28	7.98	7.94	7.98	7.77
PH	8/5/02	8.7	7.61	7.9	7.72	7.48	7.8
PH	8/12/02	8.28	7.22	7.77	7.65	7.41	7.57
PH	8/19/02	7.8	7.14	7.9	7.77	7.2	7.5
PH	8/26/02	7.47	7.15	7.9	7.71	7.29	7.39
PH	9/3/02	7.82	8.03	7.9	8.04	7.42	7.67
PH	9/9/02	8.41	7.77	8.01	7.94	7.35	7.42
PH	9/16/02	8.21	7.75	7.98	7.66	7.45	7.5
PH	9/23/02	7.29	7.02	7.78	7.7	7.42	7.37
PH	9/30/02	7.24	7	7.71	7.97	7.57	7.3
PH	10/7/02	7.83	7.5	7.65	7.91	7.61	7.66
PH	10/14/02	7.81	7.5	7.88	7.85	7.49	7.36
PH	10/21/02	8.51	7.93	7.88	7.93	7.81	7.68
PH	10/28/02	7.75	7.63	7.95	7.82	7.61	7.73
PHOS	4/1/02	0.1	0.489	0.279	0.261	0.39	0.417
PHOS	4/8/02	0.14	0.308	0.177	0.183	0.205	0.216
PHOS	4/15/02	0.34	0.31	0.28	0.27	0.28	0.29
PHOS	4/22/02	0.212	0.128	0.188	0.141	0.151	0.155
PHOS	4/29/02	0.959	0.994	0.139	0.095	0.643	0.671
PHOS	5/6/02	0.237	0.12	0.072	0.061	0.089	0.099
PHOS	5/13/02	0.714	0.631	0.47	0.526	0.585	0.509
PHOS	5/20/02	0.26	0.31	0.15	0.15	0.19	0.21
PHOS	5/29/02	0.346	0.408	0.156	0.146	0.253	0.291
PHOS	6/3/02	0.411	0.373	0.145	0.104	0.254	0.25
PHOS	6/10/02	0.299	0.304	0.165	0.152	0.236	0.407
PHOS	6/17/02	0.29	0.21	0.13	0.11	0.16	0.2
PHOS	6/24/02	0.239	0.188	0.135	0.089	0.104	0.131
PHOS	7/1/02	0.371	0.249	0.188	0.125	0.174	0.204
PHOS	7/8/02	0.281	0.22	0.191	0.16	0.138	0.179
PHOS	7/15/02	0.29	0.24	0.13	0.12	0.16	0.19
PHOS	7/22/02	0.454	0.298	0.179	0.118	0.229	0.215
PHOS	7/29/02	0.394	0.151	0.21	0.128	0.14	0.201
PHOS	8/5/02	0.35	0.14	0.114	0.072	0.165	0.161
PHOS	8/12/02	0.26	0.369	0.108	0.112	0.146	0.167
PHOS	8/19/02	0.28	0.32	N/A	0.12	N/A	0.21
PHOS	8/26/02	0.447	0.271	0.164	0.116	0.21	0.178
PHOS	9/3/02	0.193	0.082	0.088	0.06	0.016	0.009
PHOS	9/9/02	0.346	0.062	0.139	0.063	0.058	0.198
PHOS	9/16/02	0.32	0.37	0.14	0.11	0.13	0.18

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
PHOS	9/23/02	0.312	0.297	0.158	0.121	0.202	0.206
PHOS	9/30/02	0.186	0.26	0.207	0.183	0.213	0.326
PHOS	10/7/02	0.597	0.245	0.243	0.132	0.399	0.533
PHOS	10/14/02	0.266	0.211	0.102	0.101	0.147	0.263
PHOS	10/21/02	0.22	0.14	0.05	0.08	0.07	0.08
PHOS	10/28/02	0.279	0.06	0.015	0.0.18	0.039	0.073
TDS	4/1/02	538	140	104	124	180	72
TDS	4/8/02	483	276	188	216	216	244
TDS	4/15/02	375	390	300	298	333	339
TDS	4/22/02	376	332	236	240	264	284
TDS	4/29/02	336	328	328	312	320	320
TDS	5/6/02	440	524	352	412	456	456
TDS	5/13/02	388	356	276	280	300	308
TDS	5/20/02	365	347	251	253	275	279
TDS	5/29/02	540	464	392	360	392	416
TDS	6/3/02	504	500	360	332	384	352
TDS	6/10/02	460	412	336	304	388	388
TDS	6/17/02	581	485	398	386	433	447
TDS	6/24/02	544	532	452	460	416	448
TDS	7/1/02	568	432	448	472	364	372
TDS	7/8/02	628	488	384	320	388	432
TDS	7/15/02	691	529	407	402	430	500
TDS	7/22/02	772	572	432	432	448	488
TDS	7/29/02	544	408	324	308	336	456
TDS	8/5/02	144	400	296	324	400	368
TDS	8/12/02	916	840	472	464	628	608
TDS	8/19/02	622	484	397	316	550	579
TDS	8/26/02	444	436	444	380	396	472
TDS	9/3/02	720	532	508	376	400	572
TDS	9/9/02	796	416	404	380	388	492
TDS	9/16/02	784	620	434	485	502	549
TDS	9/23/02	496	440	412	456	552	520
TDS	9/30/02	528	368	428	464	428	460
TDS	10/7/02	688	484	408	328	424	476
TDS	10/14/02	852	560	460	472	488	532
TDS	10/21/02	914	598	463	445	457	508
TDS	10/28/02	884	460	440	424	464	508
TEMPF	4/1/02	36.78	41.69	41.97	42.08	41.85	42.23
TEMPF	4/8/02	43.56	44.94	42.59	42.48	43.29	43.76
TEMPF	4/15/02	59.11	57.62	56.8	56.46	56.85	57.66
TEMPF	4/22/02	56.14	57.38	55.48	57.12	57.77	57.7
TEMPF	4/29/02	50.91	50.43	49.72	50.89	50.57	50.68
TEMPF	5/6/02	58.64	59.2	58.55	59.11	59.54	59.68
TEMPF	5/13/02	55.61	54.92	53.69	57.48	53.99	54.04
TEMPF	5/20/02	52.38	52.68	51.84	52.13	52.45	52.94

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
TEMPF	5/29/02	61.98	61.74	62.2	62.21	62.21	62.24
TEMPF	6/3/02	68.7	68.07	67.96	69.8	69.21	69.36
TEMPF	6/10/02	71.43	71.33	71.55	71.93	70.61	71.02
TEMPF	6/17/02	68.68	69.53	68.55	69.96	69.9	70.24
TEMPF	6/24/02	77.49	79.65	75.44	79.99	77.02	76.29
TEMPF	7/1/02	78.61	78.66	76.89	77.78	78.04	77.14
TEMPF	7/8/02	77.36	80.87	77.12	80.31	80	79.53
TEMPF	7/15/02	78.38	79.02	74.84	77.58	77.69	77.84
TEMPF	7/22/02	81.94	83.48	79.24	82.69	79.98	81.71
TEMPF	7/29/02	79.2	79.81	77.93	78.31	78.61	78.6
TEMPF	8/5/02	81.06	82.47	79.6	80.73	80.85	81.27
TEMPF	8/12/02	75.48	75.82	75.38	77.56	76.83	77.7
TEMPF	8/19/02	74.42	73.38	73.66	74.66	76.38	75.61
TEMPF	8/26/02	73.64	75.35	74.15	75.12	76.25	75.11
TEMPF	9/3/02	75.02	77.2	74.64	77.65	76.39	76.14
TEMPF	9/9/02	73.16	77.48	72.23	77.02	75.63	76.18
TEMPF	9/16/02	69.67	73.25	69.54	73.1	73.29	72.43
TEMPF	9/23/02	61.9	67.29	62.52	68.99	69.33	65.54
TEMPF	9/30/02	64.68	65.72	64.98	65.84	65.26	67.03
TEMPF	10/7/02	58.49	65.19	64.55	65.51	65.46	63.8
TEMPF	10/14/02	52.29	58.85	53.66	59.54	59.4	57.26
TEMPF	10/21/02	48.33	51.51	47.11	51.04	52.63	52.6
TEMPF	10/28/02	47.61	47.82	47.19	48.15	48.51	50.74
TSS	4/1/02	10	112	96	100	144	100
TSS	4/8/02	31	26	64	66	76	84
TSS	4/15/02	131	96	105	109	333	106
TSS	4/22/02	42	260	66	56	46	60
TSS	4/29/02	286	44	176	24	224	224
TSS	5/6/02	94	272	40	38	44	50
TSS	5/13/02	336	59	208	220	260	244
TSS	5/20/02	58	110	41	48	54	55
TSS	5/29/02	112	158	76	42	74	108
TSS	6/3/02	138	76	34	14	58	66
TSS	6/10/02	84	46	36	58	76	74
TSS	6/17/02	88	34	45	26	56	61
TSS	6/24/02	104	36	30	24	48	36
TSS	7/1/02	80	34	60	30	70	66
TSS	7/8/02	56	17	44	37	27	27
TSS	7/15/02	94	20	44	23	27	33
TSS	7/22/02	76	20	32	40	150	210
TSS	7/29/02	60	13	120	25	11	28
TSS	8/5/02	70	62	24	21	36	53
TSS	8/12/02	64	55	42	34	37	32
TSS	8/19/02	69	76	44	46	45	39
TSS	8/26/02	104	28	36	27	52	52

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
TSS	9/3/02	54	11	35	11	17	21
TSS	9/9/02	46	46	25	15	10	20
TSS	9/16/02	61	6	38	16	22	27
TSS	9/23/02	46	11	36	15	17	70
TSS	9/30/02	52	19	23	29	10	13
TSS	10/7/02	20	51	15	10	9	13
TSS	10/14/02	32	23	19	20	27	33
TSS	10/21/02	12	20	15	13	20	27
TSS	10/28/02	60	20	70	10	20	20
DEPTH	04/07/03	7.09	11.48	6.52	13.53	11.24	14.59
DEPTH	04/14/03	3.01	9.54	3.41	11.69	3.63	8.02
DEPTH	04/21/03	2.06	9.27	2.88	11.55	2.84	6.39
DEPTH	04/28/03	1.54	9.15	1.91	11.31	1.98	6.04
DEPTH	05/05/03	11.07	12.04	7.58	14.12	11.45	15.57
DEPTH	05/12/03	15.81	16.53	9.58	18.73	18.41	21.48
DEPTH	05/19/03	3.28	10.46	4.19	12.27	6.35	9.48
DEPTH	05/27/03	1.84	9.08	3.06	11.01	1.66	6.07
DEPTH	06/02/03	2.27	9.19	2.73	11.3	1.97	6.17
DEPTH	06/09/03	2.19	9.15	3.01	11.32	2.19	5.93
DEPTH	06/16/03	9.63	11.01	3.34	13.38	8.96	11.97
DEPTH	06/23/03	5.57	9.43	2.69	11.92	4.79	8.6
DEPTH	06/30/03	2.14	9.38	2.37	11.29	2.2	5.87
DEPTH	07/07/03	17	13.25	12.57	15.36	15.44	18.95
DEPTH	07/15/03	11.35	11.82	2.97	13.91	10.82	14.98
DEPTH	07/21/03	6.03	12.27	5.04	14.37	12.56	17.65
DEPTH	07/28/03	5.55	10.44	5.08	12.95	5.61	9.29
DEPTH	08/04/03	11.27	12.1	6.52	14.46	11.88	15.2
DEPTH	08/11/03	4.24	9.97	3.66	12.01	4.44	8.52
DEPTH	08/18/03	2.25	9.83	2.42	11.51	2.62	6.45
DEPTH	08/25/03	2.11	9.09	3.09	11.2	1.75	5.9
DEPTH	09/02/03	9.03	12.63	10.54	15.51	13.85	16.98
DEPTH	09/08/03	5.09	10.13	3.55	12.16	5.07	8.84
DEPTH	09/15/03	1.88	9.61	3.44	12.07	3.12	7.26
DEPTH	09/22/03	2.18	9.62	3.15	11.93	7.39	7.55
DEPTH	09/29/03	11.42	12.19	5.98	14.3	12.21	15.51
DEPTH	10/06/03	3.06	9.58	3.49	11.96	3.05	7.5
DEPTH	10/13/03	2.19	9.34	1.67	11.58	2.15	6.38
DEPTH	10/20/03						
DEPTH	10/27/03	2.64	9.61	2.38	11.69	2.64	6.49
DO	04/07/03	6.01	5.8	6.26	7.12	7.36	4.9
DO	04/14/03	7.25	8.62	9.05	9.64	10.43	8.46
DO	04/21/03	16.51	15.57	9.91	10.7	10.54	12.28
DO	04/28/03	15.37	20.36	11.72	13.74	13.55	12.52
DO	05/05/03	10.02	9.81	10.67	11.3	10.78	10.03
DO	05/12/03	9.36	8.19	11.14	10.75	8.4	9.41

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
DO	05/19/03	7.9	7.14	9.10	9.29	9.03	8.7
DO	05/27/03	10.49	10.92	10.01	10.33	10.37	9.87
DO	06/02/03	11.78	11.8	9.74	10.36	9.89	9.98
DO	06/09/03	8.7	8.35	9.24	9.84	8.98	9.32
DO	06/16/03	3.11	3.14	4.07	4.22	5.96	3.64
DO	06/23/03	6.75	7.05	7.66	10.25	8.48	8.07
DO	06/30/03	7.56	8.22	5.03	5.68	7.01	5.93
DO	07/07/03	2.78	5.8	4.19	7.12	6.35	2.84
DO	07/15/03	1.38	1.43	4.43	6.13	2.77	2.74
DO	07/21/03	6.03	7.69	7	9.11	7.28	7.92
DO	07/28/03	6.78	6.74	7.32	8.07	8.47	7.12
DO	08/04/03	2.3	9.71	3.32	3.45	6.71	2.66
DO	08/11/03	6.62	6.24	8.02	8.15	8.29	7.6
DO	08/18/03	9.76	11.54	8.49	9.72	9.13	10.4
DO	08/25/03	11.64	13.22	6.47	13.63	8.16	7.07
DO	09/02/03	6.24	5.85	7.19	7.18	6.81	6.9
DO	09/08/03	7.37	7.25	8.63	8.74	9.04	8.5
DO	09/15/03	9.78	8.05	8.08	8.89	8.99	7.88
DO	09/22/03	7.71	10.28	6.55	7.33	9.11	6.78
DO	09/29/03	6.67	7.00	9.16	9.37	8.29	7.62
DO	10/06/03	9.8	9.62	11	10.9	11.06	10.41
DO	10/13/03	8.32	9.33	9.9	9.53	9.8	9.48
DO	10/20/03						
DO	10/27/03	8.8	8.82	10.77	10.11	10.62	10.68
ECOLI	04/07/03	6	32	Failed	8	Failed	32
ECOLI	04/14/03	18	8	16	34	80	36
ECOLI	04/21/03	6	20	9	5	9	7
ECOLI	04/28/03	7	8	4	3	13	48
ECOLI	05/05/03	8	8	8	12	28	28
ECOLI	05/12/03	1200	2000	1300	700	1100	1000
ECOLI	05/19/03	76	249	62	78	146	152
ECOLI	05/27/03	52	88	94	76	84	64
ECOLI	06/02/03	28	36	30	38	40	352
ECOLI	06/09/03	224	20	54	80	44	296
ECOLI	06/16/03	720	300	150	130	495	500
ECOLI	06/23/03	540	260	60	40	320	340
ECOLI	06/30/03	240	620	100	190	400	500
ECOLI	07/07/03	370	250	1040	360	250	200
ECOLI	07/15/03	200	500	<100	500	300	1500
ECOLI	07/21/03	320	200	340	440	140	140
ECOLI	07/28/03	30	20	10	60	10	15
ECOLI	08/04/03	416	800	780	640	760	840
ECOLI	08/11/03	290	340	190	120	230	250
ECOLI	08/18/03	288	29	52	54	42	78
ECOLI	08/25/03	65	67	35	20	26	22

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
ECOLI	09/02/03	4	24	2	8	10	8
ECOLI	09/08/03	38	34	48	96	14	20
ECOLI	09/15/03	120	3	168	92	3	1
ECOLI	09/22/03	116	5	132	92	5	7
ECOLI	09/29/03	80	64	176	184	104	24
ECOLI	10/06/03	30	18	76	104	80	78
ECOLI	10/13/03	70	56	106	20	136	84
ECOLI	10/20/03						
ECOLI	10/27/03	15	1	18	23	15	52
NH3-N	04/07/03	0.239	0.294	0.190	0.181	0.261	0.246
NH3-N	04/14/03	0.221	0.050	0.427	0.081	0.030	0.092
NH3-N	04/21/03	0.2	0.300	<0.1	<0.1	<0.1	0.100
NH3-N	04/28/03	0.003	0.003	<0.003	<0.003	<0.003	<0.003
NH3-N	05/05/03	0.507	0.271	0.219	0.062	0.170	0.242
NH3-N	05/12/03	0.26	0.188	0.174	0.313	0.144	0.156
NH3-N	05/19/03	0.1	0.100	<0.1	<0.1	<0.1	<0.1
NH3-N	05/27/03	0.054	0.011	0.098	0.027	0.005	0.043
NH3-N	06/02/03	0.113	0.003	<0.003	<0.003	<0.003	<0.003
NH3-N	06/09/03	0.0487	0.035	0.007	<0.003	0.082	0.048
NH3-N	06/16/03	0.2	0.300	0.200	<0.1	0.200	0.300
NH3-N	06/23/03	0.0405	0.016	0.037	0.018	0.019	0.035
NH3-N	06/30/03	0.0169	0.036	0.099	0.053	0.030	0.060
NH3-N	07/07/03	0.142	0.072	0.119	0.047	0.070	0.063
NH3-N	07/15/03	0.0237	0.014	0.024	0.011	0.012	0.034
NH3-N	07/21/03	0.1	0.200	0.100	<0.1	0.200	0.200
NH3-N	07/28/03	0.148	0.036	0.063	0.023	0.010	0.047
NH3-N	08/04/03	0.0394	0.068	0.060	0.077	0.071	0.060
NH3-N	08/11/03	0.0234	0.143	0.029	0.012	0.053	0.046
NH3-N	08/18/03	0.1	0.100	<0.1	<0.1	<0.1	<0.1
NH3-N	08/25/03	0.0105	0.035	0.027	0.155	0.039	0.101
NH3-N	09/02/03	0.244	0.174	0.119	0.076	0.082	0.078
NH3-N	09/08/03	0.0892	0.016	0.047	0.029	0.011	0.024
NH3-N	09/15/03	0.0166	0.162	0.022	0.024	0.046	0.133
NH3-N	09/22/03	0.1	0.300	<0.1	<0.1	0.200	0.100
NH3-N	09/29/03	0.0226	0.028	0.052	0.043	0.022	0.023
NH3-N	10/06/03	0.0511	0.037	0.051	0.039	0.031	0.049
NH3-N	10/13/03	0.004	0.004	<0.004	0.009	<0.004	<0.004
NH3-N	10/20/03						
NH3-N	10/27/03	0.0929	0.074	0.018	0.034	0.029	0.111
PH	04/07/03	7.03	6.95	7.06	7.07	6.95	7.01
PH	04/14/03	7.26	7.1	7.3	7.28	6.95	7.27
PH	04/21/03	8.43	8.05	8.02	8	7.81	8.11
PH	04/28/03	8.21	8.14	8.09	8.15	8.15	8.04
PH	05/05/03	7.2	7.24	7.45	7.58	7.24	7.59
PH	05/12/03	7.06	6.95	7.01	7.08	6.69	7.08

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
PH	05/19/03	7.7	7.12	7.18	7.27	7.07	7.70
PH	05/27/03	8.21	7.7	8.05	7.87	7.33	8.05
PH	06/02/03	8.6	8.6	8.5	8.6	8.4	8.4
PH	06/09/03	8	7.80	8.40	8.3	7.6	8.1
PH	06/16/03	6.97	7.03	7.39	7.48	6.87	7.13
PH	06/23/03	6.78	6.99	7.21	7.67	7.37	6.99
PH	06/30/03	7.76	7.72	7.46	7.63	7.7	7.62
PH	07/07/03	6.95	6.95	7.48	7.07	6.94	7.16
PH	07/15/03	7.15	7.03	7.4	7.35	6.92	7.22
PH	07/21/03	7.13	7.13	7.45	7.71	6.93	7.32
PH	07/28/03	7.18	7.09	7.25	7.32	7.06	7.12
PH	08/04/03	7.18	7.11	7.21	7.26	6.85	7.22
PH	08/11/03	7.28	7.07	7.44	7.23	7.01	7.39
PH	08/18/03	8.03	8.04	8.15	8.19	7.76	8.13
PH	08/25/03	7.93	7.83	7.53	7.67	7.49	7.49
PH	09/02/03	7.1	7.21	7.09	7.27	7.02	7.16
PH	09/08/03	7.1	7.12	7.23	7.19	6.91	7.23
PH	09/15/03	7.64	7.37	7.67	7.61	7.4	7.51
PH	09/22/03	8.18	8.08	7.85	7.98	7.73	7.98
PH	09/29/03	6.31	6.24	6.35	6.41	6.2	6.39
PH	10/06/03	7.07	6.89	7.1	7.01	6.89	7.16
PH	10/13/03	7.19	7.16	7.37	7.33	7.08	7.36
PH	10/20/03						
PH	10/27/03	6.92	6.88	7.15	7.13	6.93	7.13
PHOS	04/07/03	0.438	0.499	0.320	0.348	0.337	0.438
PHOS	04/14/03						
PHOS	04/21/03	0.15	0.150	0.110	0.130	0.060	0.140
PHOS	04/28/03	0.027	0.087	0.190	0.079	0.106	0.160
PHOS	05/05/03	1.38	0.573	0.411	0.174	0.421	0.444
PHOS	05/12/03	0.694	0.763	0.263	0.358	0.605	0.620
PHOS	05/19/03	0.33	0.370	0.160	0.140	0.230	0.240
PHOS	05/27/03	0.286	0.145	0.241	0.225	0.215	0.241
PHOS	06/02/03	0.173	0.119	0.219	0.057	0.117	0.094
PHOS	06/09/03	0.03	0.121	< 0.02	0.021	0.075	0.081
PHOS	06/16/03	0.5	0.54	0.16	0.1	0.44	0.500
PHOS	06/23/03	0.265	0.262	0.139	0.120	0.288	0.319
PHOS	06/30/03	0.057	0.175	0.187	0.131	0.153	0.176
PHOS	07/07/03	0.358	0.406	0.124	0.136	0.378	0.382
PHOS	07/15/03	1.904	1.248	1.426	0.793	1.131	1.133
PHOS	07/21/03	0.51	0.420	0.400	0.350	0.390	0.320
PHOS	07/28/03	0.322	0.261	0.494	0.192	0.219	0.238
PHOS	08/04/03	0.501	0.583	0.495	0.316	0.458	0.497
PHOS	08/11/03	0.309	0.255	0.225	0.145	0.190	0.208
PHOS	08/18/03	0.19	0.180	0.110	0.100	0.130	0.140
PHOS	08/25/03	0.252	0.176	0.081	0.126	0.141	0.136

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
PHOS	09/02/03	0.661	0.506	0.518	0.541	0.553	0.644
PHOS	09/08/03	0.197	0.168	0.150	0.110	0.188	0.129
PHOS	09/15/03	0.082	0.072	0.085	0.009	0.041	0.183
PHOS	09/22/03	0.22	0.220	0.120	0.110	0.150	0.180
PHOS	09/29/03	0.337	0.515	0.331	0.279	0.420	0.491
PHOS	10/06/03	0.152	0.203	0.181	0.153	0.208	0.211
PHOS	10/13/03	0.201	0.184	0.132	0.107	0.125	0.169
PHOS	10/20/03						
PHOS	10/27/03	0.207	0.159	0.112	0.062	0.137	0.151
TDS	04/07/03	236	208	272	260	244	284
TDS	04/14/03	428	422	390	370	362	400
TDS	04/21/03	522	508	436	483	448	467
TDS	04/28/03	578	548	426	420	458	480
TDS	05/05/03	320	272	366	394	310	348
TDS	05/12/03	220	224	300	308	272	292
TDS	05/19/03	348	348	355	412	359	373
TDS	05/27/03	452	524	352	372	412	404
TDS	06/02/03	576	536	400	440	440	456
TDS	06/09/03	490	484	474	468	462	488
TDS	06/16/03	319	311	402	408	328	317
TDS	06/23/03	212	228	332	336	220	224
TDS	06/30/03	126	118	98	100	109	115
TDS	07/07/03	104	124	296	212	120	100
TDS	07/15/03	140	128	316	288	152	132
TDS	07/21/03	266	168	257	328	207	218
TDS	07/28/03	336	324	296	392	328	308
TDS	08/04/03	156	204	232	256	180	200
TDS	08/11/03	268	276	340	324	296	312
TDS	08/18/03	473	462	380	366	390	417
TDS	08/25/03	496	400	316	264	332	388
TDS	09/02/03	236	144	176	188	232	272
TDS	09/08/03	272	292	304	316	280	300
TDS	09/15/03	452	340	296	300	288	360
TDS	09/22/03	607	402	411	394	437	497
TDS	09/29/03	192	172	224	244	176	168
TDS	10/06/03	352	352	328	304	308	320
TDS	10/13/03	592	536	472	444	496	504
TDS	10/20/03						
TDS	10/27/03	572	492	436	432	476	468
TEMPF	04/07/03	41.1	41.34	39.73	40.11	40.87	41.04
TEMPF	04/14/03	51.2	50.92	50.22	51.05	50.81	51.19
TEMPF	04/21/03	59.1	60.01	58.49	59.16	59.68	59.67
TEMPF	04/28/03	57.3	56.49	56.52	57.02	56.63	56.28
TEMPF	05/05/03	54.1	54.77	56.52	57.56	55.74	55.07
TEMPF	05/12/03	59.3	59.76	57.34	57.86	59.24	59.4

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
TEMPF	05/19/03	61.3	59.83	59.47	59.84	59.72	61.7
TEMPF	05/27/03	61.0	61.16	60.26	61.7	61.52	62.42
TEMPF	06/02/03	61.5	62.78	62.60	62.78	62.78	63.14
TEMPF	06/09/03	63.7	64.4	64.04	65.12	63.68	65.48
TEMPF	06/16/03	68.6	67.61	69.59	68.95	67.92	68.25
TEMPF	06/23/03	68.2	69.14	70.16	73.33	69.70	69.35
TEMPF	06/30/03	70.8	71.35	71.54	73.58	73.17	72.24
TEMPF	07/07/03	72.9	71.98	75.85	75.27	72.3	72.71
TEMPF	07/15/03	73.9	74.24	72.74	74.3	74.43	74.77
TEMPF	07/21/03	70.4	69.73	70.64	72.58	71.03	71.47
TEMPF	07/28/03	72.0	71.73	71.34	73.3	72.17	72.04
TEMPF	08/04/03	70.9	70.83	69.25	70.63	70.73	70.86
TEMPF	08/11/03	71.5	71.85	72.06	72.5	72.43	72.79
TEMPF	08/18/03	74.3	76.4	75.4	77.29	77.68	77.19
TEMPF	08/25/03	73.0	75.86	73.24	77.35	76.14	75.37
TEMPF	09/02/03	65.8	65.58	63.48	64.04	64.76	65.21
TEMPF	09/08/03	67.0	67.1	66.49	66.36	66.93	67.38
TEMPF	09/15/03	68.1	69.69	68.28	69.37	69.96	69.57
TEMPF	09/22/03	63.3	65.79	63.88	66.24	66.96	66.23
TEMPF	09/29/03	57.7	58.1	56.26	56.96	57.86	58
TEMPF	10/06/03	50.8	52.18	50.38	51.01	51.32	51.80
TEMPF	10/13/03	57.5	60.31	57.39	58.76	60.05	58.85
TEMPF	10/20/03						
TEMPF	10/27/03	48.7	50.25	49.47	50.57	50.73	50.92
TSS	04/07/03	146	166	74	90	108	110
TSS	04/14/03	46	33	30	25	29	34
TSS	04/21/03	38	35	40	9	39	37
TSS	04/28/03	30	24	23	26	30	25
TSS	05/05/03	1220	536	372	124	374	308
TSS	05/12/03	340	392	144	176	356	260
TSS	05/19/03	114	118	57	39	82	82
TSS	05/27/03	43	39	39	28	35	43
TSS	06/02/03	41	35	35	27	40	34
TSS	06/09/03	44	22	18	14	30	34
TSS	06/16/03	202	188	45	22	176	196
TSS	06/23/03	88	92	59	35	64	110
TSS	06/30/03	38	41	29	26	29	35
TSS	07/07/03	134	232	116	54	246	222
TSS	07/15/03	32	33	58	42	36	40
TSS	07/21/03	344	340	246	236	292	216
TSS	07/28/03	80	36	196	72	37	49
TSS	08/04/03	98	136	89	87	139	126
TSS	08/11/03	47	25	35	31	32	40
TSS	08/18/03	45	37	35	28	39	47
TSS	08/25/03	31	26	14	13	17	11

Fort Wayne River Sampling Data

Parameter	Date	St. Marys River @ Ferguson	St. Marys River @ Spy Run	St. Joseph River @ Mayhew	St. Joseph River @ Tennessee	Maumee River @ Anthony	Maumee River @ Landin
TSS	09/02/03	232	100	103	200	216	210
TSS	09/08/03	38	33	26	20	27	40
TSS	09/15/03	27	33	44	38	32	46
TSS	09/22/03	40	30	28	25	31	44
TSS	09/29/03	94	102	65	63	100	73
TSS	10/06/03	18	21	31	22	29	26
TSS	10/13/03	7	14.4	19.2	18.4	20	32.8
TSS	10/20/03						
TSS	10/27/03	6.5	16	17.5	22.4	23.2	21

ATTACHMENT 5

SECTION 3 – IDENTIFICATION OF POLLUTANTS OF INTEREST

The first step of this evaluation was to identify any pollutants of interest in the City of Fort Wayne receiving streams. If pollutants of interest were identified in the City's rivers, they could be traced to CSO (SIU) or upstream (unknown) sources. If pollutants of interest were also identified in the WPCP influent, this would contribute to the theory that the sources of pollutants were from within the City, thus validating further evaluation of the SIUs.

RIVER EVALUATION

The IDEM and Fort Wayne river samples were collected at eight and six (of the eight) stations, respectively, in and near the City of Fort Wayne (Figure 3-1). The station locations are described as follows:

STATION # 1 (IDEM Monitoring Site)
- Stream: Cedar Creek
- Description: Hursh Road Bridge 2 miles East of SR 427
- FSITE: CC-4
- LSITE: LEJ090-0026
- Latitude: 41°12'54"
- Longitude: -85°3'05"
- Northing Decimal Degrees: 4564455.163
- Easting Decimal Degrees: 663351.7012

STATION # 2 (IDEM & Fort Wayne Monitoring Site)
- Stream: St. Joseph River
- Description: Mayhew Road Bridge, NE of Fort Wayne
- FSITE: STJ-8
- LSITE: LEJ100-0002
- Latitude: 41°10'05"
- Longitude: -85°04'26"
- Northing Decimal Degrees: 4559201.274
- Easting Decimal Degrees: 661580.866

STATION # 3 (IDEM & Fort Wayne Monitoring Site)
- Stream: St. Joseph River
- Description: Tennessee Bridge, Fort Wayne
- FSITE: STJ-.5
- LSITE: LEJ100-0003
- Latitude: 41°05'21"
- Longitude: -85°07'45"
- Northing Decimal Degrees: 4550341.837
- Easting Decimal Degrees: 657131.5727

STATION # 4 (IDEM & Fort Wayne Monitoring Site)

Stream: St. Mary's River
Description: Ferguson Road Bridge, West of Winchester Road, Fort Wayne
FSITE: STM-11
LSITE: LES060-0005
Latitude: 40°59'28"
Longitude: -85°07'01"
Northing Decimal Degrees: 4539477.954
Easting Decimal Degrees: 658393.1648

STATION # 5 (IDEM & Fort Wayne Monitoring Site)
Stream: St. Mary's River
Description: Spy Run Bridge, Fort Wayne
FSITE: STM-.2
LSITE: LES060-0004
Latitude: 41°05'02"
Longitude: -85°08'09"
Northing Decimal Degrees: 4549743.903
Easting Decimal Degrees: 656584.1442

STATION # 6 (IDEM & Fort Wayne Monitoring Site)
Stream: Maumee River
Description: Anthony Boulevard, Fort Wayne, Upstream of WPCP
FSITE: M-132
LSITE: LEM010-0012
Latitude: 41°04'55"
Longitude: -85°06'53"
Northing Decimal Degrees: 4549566.177
Easting Decimal Degrees: 658362.1687

STATION # 7 (IDEM & Fort Wayne Monitoring Site)
Stream: Maumee River
Description: Upstream of Landin Road Bridge, Downstream of county boat ramp, Fort Wayne WPCP
FSITE: M-129
LSITE: LEM010-0014
Latitude: 41°05'04"
Longitude: -85°01'14"
Northing Decimal Degrees: 4550019.109
Easting Decimal Degrees: 666266.2313

STATION # 8 (IDEM Monitoring Site)
Stream: Maumee River
Description: SR 101 Bridge, 3 Miles North of Woodburn
FSITE: M-114

IDEM Fort Wayne Rivers - Field Data - Years 2002 and 2003

Station	Sample Date	Sample Time	Dissolved Oxygen (mg/L)	Water Temperature (C)	Saturation PerCent (%)	pH (SU)	Specific Conductance (uS/cm)	Turbidity (NTU)	COMMENTS
1	01/14/02	10:30						5.9	
1	02/18/02	11:21	12.18	2.7		8.25	673	6.11	
1	03/18/02	10:53	11.39	538		8	635	12.39	
1	04/15/02	10:31	9.6	13.8		7.8	509	55.19	
1	05/20/02	11:30	10.32	11.5		7.9		20.79	
1	06/17/02	11:30	11.32	17.7		8.14	779	7.96	
1	07/15/02	11:00	8.6	21.7		8.19	800	12.3	
1	08/19/02	12:00	7.6	21.2		7.86	809	18.6	
1	09/16/02	10:31	8.2	18.5		8	691	10.89	
1	10/21/02	11:10	10.77	7.76		7.65	715	6.82	
1	11/18/02	10:42	11.87	0.65		7.82	673	4.63	
1	12/16/02	10:44	12.85	1.6		7.73	940	4.66	
1	01/21/03	10:20							
1	02/18/03	10:31							
1	03/18/03	11:58	9.41	6.94		7.32	672	19.4	
1	04/21/03	12:00	11.7	14.6		7.9		66.7	Time of collection, Specific Conductivity not written down. Weather code incomplete.
1	05/19/03	10:36	8.53	15.3		7.27	651	28.7	
1	06/16/03	10:45	4.26	19.77		7.57	773	15.6	
1	07/21/03	10:09	6.03	20.1		7.52	541	208	
1	08/18/03	11:00	8.99	21.12		7.97	821	11	
1	09/22/03	10:25	6.85	15.63		7.0	794	13.6	
1	10/20/03	9:50	10.02	10.82		7.38	768	5.11	
1	11/17/03	9:40	10.87	7.83		7.56	805	1.6	
1	12/15/03	11:05	12.94	259		7.41	747	9.64	
2	01/14/02	[illegible]						53	
2	02/18/02	10:56	11.8	2.4		8.22	651	13.60	
2	03/18/02	10:33	4.53	6.5		7.96	217	61.7	
2	04/15/02	10:05	9.5	13.69		7.59	395	186	
2	05/20/02	11:27	10.21	11		7.58	369	48.9	
2	06/17/02	11:00	9.13	26.20		8.27	661	38.4	
2	07/15/02	10:30	6.7	23.7		8.1	697	41.2	
2	08/19/02	11:32	6.47	23.12		7.86	674	26.6	
2	09/16/02	9:41	6.8	20.79		7.9	772	32.29	
2	10/21/02	10:42	10.46	8.39		7.88	806	13.8	
2	11/18/02	10:21	11.24	8.8		7.78	790	14.3	
2	12/16/02	10:23	12.98	1.7		7.59	847	6.6	
2	01/21/03	10:00							
2	02/18/03	9:50							
2	03/18/03	11:01	9.85	3.56		7.21	491	42.9	
2	04/21/03	11:35	9.9	14.8		8		34.7	Time of collection, specific conductivity not written down.
2	05/19/03	9:46	9.1	15.2		7.18	577	46.5	
2	06/16/03	10:15	4.07	20.88		7.39	649	43.6	
2	07/21/03	9:46	7	21.4		7.45	419	114	
2	08/18/03	10:25	8.49	24.11		8.15	631	24.7	
2	09/22/03	10:00	6.55	17.71		7.85	697	29.7	
2	10/20/03	9:35	10.4	10.6		7.12	579	30.2	
2	11/17/03	9:20	11.4	8.78		7.89	707	3.9	
2	12/15/03	10:30	13.8	1.40		7.35	607	39.8	
3	01/14/02	9:45						5.09	
3	02/18/02	10:15	12.64	2.59		8.23	577	14.1	

IDEM Fort Wayne Rivers - Field Data - Years 2002 and 2003

Station	Sample Date	Sample Time	Dissolved Oxygen (mg/L)	Water Temperature (C)	Saturation PerCent (%)	pH (SU)	Specific Conductance (uS/cm)	Turbidity (NTU)	COMMENTS
3	03/18/02	9:50	11.79	6.66		7.96	505	6.71	
3	04/15/02	8:45	9.9	13.5		7.69	307	161	
3	05/20/02	9:40	11.21	11.1		7.9	368	68.9	
3	06/17/02	10:32	9.66	21		8.31	660	21.39	
3	07/15/02	10:00	9.2	25.29		8.19	696	24.6	
3	07/17/02	10:50	16.3	27.36		8.5	591	28	
3	08/19/02	10:47	6.72	23.7		7.76	554	24.79	
3	09/16/02	9:15	5.6	22.75		7.59	868	11	
3	10/21/02	9:59	10.12	10.56		7.92	788	11.19	
3	11/18/02	9:53	9.81	5.86		7.51	774	8.43	
3	12/16/02	9:48	13.83	0.06		7.57	651	5.84	
3	01/21/03	9:20							
3	02/18/03	9:40							
3	03/18/03	10:12	12.86	3.13		7.26	481	54.9	
3	04/21/03	9:35	10.7	15		8		26.9	Time of collection, Specific conductivity not written down. Weather code incomplete.
3	05/19/03	9:09	9.29	15.4		7.27	578	44.8	
3	06/16/03	9:40	4.22	20.52		7.48	679	20.9	
3	07/21/03	9:15	9.11	22.5		7.71	431	144	
3	08/18/03	10:01	9.72	25.16		8.19	598	21.4	
3	09/22/03	9:30	7.33	19.02		7.98	677	21.3	
3	10/20/03	9:15	10.11	11.16		7.04	507	31.9	
3	11/17/03	8:50	11.47	6.52		7.87	703	6.97	
3	12/15/03	10:00	13.98	1.64		7.32	608	45	
4	01/14/02	12:30	[illegible]	[illegible]		[illegible]	[illegible]	3.79	
4	02/18/02	13:22	11.20	2.7		8.17	615	10.8	
4	03/18/02	12:28	10.99	6.42		7.9	760	36.7	
4	04/15/02	11:15	8.6	15		7.69	519	304	
4	05/20/02	13:15	10.21	11.3		7.78		71.5	
4	06/17/02	13:50	10.79	20.29		8.32	923	79	
4	07/16/02	13:20	15.3	25.7		8.69	1174	70	
4	08/15/02	13:45	7.21	24.65		7.8	1080	80.2	
4	09/16/02	11:38	9.4	20.89		8.19	138	45.2	
4	10/21/02	12:56	15.72	9.06		8.51	1551	16.79	
4	11/18/02	12:16	9.74	4.13		7.65	1047	16.1	
4	12/16/02	12:30	15.75	0.28		7.00	1345	2.74	
4	01/21/03	12:05							
4	02/18/03	11:50							
4	03/18/03	13:27	7.9	6.12		7.15	375	136	
4	04/21/03	13:30	16.5	15		8.4		22.5	Time of collection, specific conductivity not written down. Weather code incomplete.
4	05/16/03	12:47	7.0	16.3		7.7	509	137	
4	06/16/03	12:40	3.11	23.31		6.97	381	334	
4	07/21/03	11:59	6.03	21.3		7.13	368	231	
4	08/18/03	12:20	9.76	23.61		8.03	772	35.3	
4	09/22/03	12:00	7.71	17.37		8.19	1042	34.6	
4	10/20/03	12:00	7.99	11.3		7.06	882	06.0	
4	11/17/03	11:34	9.9	7.52		7.67	728	2.2	
4	12/15/03	12:50	12.83	1.37		7.34	566	76.6	
5	01/14/02	9:15						4.19	
5	02/18/02	9:53	12.18	2.9		8.11	779	17.29	
5	03/18/02	9:36	10.85	685		7.92	760	2.96	

IDEM Fort Wayne Rivers - Field Data - Years 2002 and 2003

Station	Sample Date	Sample Time	Dissolved Oxygen (mg/L)	Water Temperature (C)	Saturation PerCent (%)	pH (SU)	Specific Conductance (uS/cm)	Turbidity (NTU)	COMMENTS
5	04/15/02	9:25	8.6	14.19		7.69	542	169	
5	05/20/02	9:32	9.45	11.39		7.5	486	91.4	
5	06/17/02	10:22	8.49	20.79		7.8	771	45.79	
5	07/15/02	9:45	10.3	26.1		8	930	19.2	
5	07/17/02	10:40	5.5	26.89		7.8	1030	22	
5	08/19/02	10:23	4.04	22.67		7.13	802	22.79	
5	09/16/02	9:02	7.5	21.58		7.75	106	20	
5	10/21/02	9:38	10.69	10.82		7.92	1062	20.6	
5	11/18/02	9:30	7.47	5.42		7.26	911	26.69	
5	12/16/02	9:25							
5	01/21/03	9:17							
5	02/18/03	9:35							
5	03/18/03	9:47	9.55	6.5		7.12	382	147	
5	04/21/03	9:20	10.6	15.3		7.8		26.6	Time of collection, Specific Conductivity not written down. Weather code incomplete
5	05/19/03	8:40	7.14	15.4		7.12	539	129	
5	06/16/03	9:20	3.14	19.76		7.03	410	286	
5	07/21/03	8:59	7.69	20.9		7.13	196	254	
5	08/18/03	9:45	11.54	24.66		8.04	755	30.2	
5	09/22/03	9:15	10.28	18.77		8.06	749	30.7	
5	10/20/03	9:00	7.5	11.21		6.84	570	34.8	
5	11/17/03	8:30	10.02	6.86		7.7	751	15.5	
5	12/15/03	9:40	12.65	1.26		7.21	587	79.6	
6	01/14/02	10:30	[illegible]	[illegible]		[illegible]	[illegible]	523	
6	02/18/02	9:34	13.26	2.7		8.11	627	15.5	
6	03/18/02	10:50	11.73	6.9		7.96	561	569	
6	04/15/02	9:09	9.8	13.8		7.59	431	173	
6	05/20/02	8:50	11.03	11.3		7.32	393	65.4	
6	06/17/02	9:56	8.97	21		8.1	685	53	
6	07/15/02	9:30	8.2	25.29		7.8	755	29.89	
6	08/19/02	9:59	5.36	24.04		7.17	945	31.6	
6	09/16/02	8:39	6.9	22.86		7.4	896	12.3	
6	10/21/02	9:01	10.16	11.46		7.8	799	16.39	
6	11/18/02	9:07	10.24	5.88		7.4	788	21	
6	12/16/02	9:25	13.3	1.39		7.28	1038	4.3	
6	01/21/03	8:57	10.36	0.16		7.34	1027	8.68	
6	02/18/03	9:12	9.91	0.21		6.5	969	9.71	
6	03/18/03	9:25	10.59	4.52		7.08	411	127	
6	04/21/03	8:45	10.5	15.3		7.8		303	
6	05/19/03	8:07	9.03	15.4		7.07	506	84.2	
6	06/16/03	8:55	5.96	19.96		6.87	460	238	
6	07/21/03	8:33	7.28	21.6		6.93	342	230	
6	08/18/03	9:15	9.13	25.37		7.76	645	30	
6	09/22/03	8:38	9.11	19.42		7.73	736	20.8	
6	10/20/03	8:45	10.70	11.13		6.59	558	35.1	
6	11/17/03	8:10	11.91	6.69		7.83	736	162.2	
6	12/15/03	9:15	14.5	1.52		7.14	600	63.8	
7	01/14/02	12:00						7.3	
7	02/18/02	12:48	11.48	3.29		8.15	649	15.1	
7	03/18/02	12:02	11.4	7.01		7.92	504	58.79	
7	04/15/02	11:40	9.6	14.19		7.60	441	267	

IDEM Fort Wayne Rivers - Field Data - Years 2002 and 2003

Station	Sample Date	Sample Time	Dissolved Oxygen (mg/L)	Water Temperature (C)	Saturation PerCent (%)	pH (SU)	Specific Conductance (uS/cm)	Turbidity (NTU)	COMMENTS
7	05/20/02	12:35	11.48	11.6		7.86	524	77.59	
7	06/17/02	12:40	9.5	21.2		8.07	721	55.5	
7	07/15/02	13:00	6.9	25.39		7.8	873	27.1	
7	08/19/02	13:17	6.75	24.21		7.48	1025	28.5	
7	09/16/02	11:12	4.2	22.39		7.5	980	17.39	
7	10/21/02	10:22	9.76	11.43		7.97	904	9.77	
7	11/18/02	11:47	9.62	6.3		7.57	824	18.29	
7	12/16/02	11:55	12.28	3.06		7.59	1083	4.09	
7	01/21/03	11:23	13.74	0.11		7.1	1085	6.47	
7	02/18/03	11:11	8.85	0.37		7.1	10.39	9.2	
7	03/18/03	13:01	9.4	4.78		7.21	244	133	
7	04/21/03	13:00	12.2	15.3		8.1		28.0	Time of collection, specific conductivity not written down. Weather code incomplete
7	05/19/03	12:17	8.7	16.5		7.7	548	88.6	
7	06/16/03	11:55	3.84	20.12		7.13	480	239	
7	07/21/03	13:16	7.92	21.6		7.32	351	184	
7	08/18/03	13:00	10.4	25.1		8.13	699	30.4	
7	09/22/03	11:25	6.76	19.02		7.98	860	34.8	
7	10/20/03	10:55	10.05	11.53		7.23	579	35.2	
7	11/17/03	11:00	10.98	7.34		7.82	752	8.4	
7	12/15/03	12:15	13.86	1.74		7.37	614	57.5	
8	[illegible]	[illegible]						5.69	
8	02/18/02	12:13	11.76	2.5		8.22	640	13.8	
8	03/18/02	11:38	11.1	7.17		7.94	575	63	
8	04/15/02	11:14	9.2	4.5		7.59	427	211	
8	05/20/02	12:10	9.8	11.36		7.8	405	86.59	
8	06/17/02	12:15	11.27	22.26		8.27	719	46.59	
8	07/15/02	11:30	17	26.6		8.59	786	34.79	
8	08/19/02	12:45	6.97	24.86		7.73	772	22.5	
8	09/16/02	10:44	14	22.1		8.5	910	13.3	
8	10/21/02	11:40	11.63	10		7.94	880	9.85	
8	11/18/02	11:18	10.13	5.32		7.66	840	19.2	
8	12/16/02	11:22	15.16	1.39		7.75	1074	3.31	
8	01/21/03	10:54	14.01	0		7.38	1053	6.28	
8	02/18/03	10:39	9.76	0		7	1014	9.08	
8	03/18/03	12:34	10.3	4.60		7.22	425	124	
8	04/21/03	12:35	14.4	15		8.2		23.1	Time of collection, specific conductivity not written down. Weather code incomplete.
8	05/19/03	11:50	8.5	16		7.7	551	45.4	
8	06/16/03	11:20	3.56	20.05		7.17	418	326	
8	07/21/03	12:49	7.14	21.6		7.15	353	247	
8	08/18/03	11:30	11.7	24.86		8.34	682	26.5	
8	09/22/03	11:00	8.09	19		8.34	757	21.6	
8	10/20/03	10:30	9.59	11.6		7.21	579	32.6	
8	11/17/03	10:35	11.25	7.22		7.85	767	5	
8	12/15/03	11:45	13.82	1.76		7.38	602	62.4	

IDEM Fort Wayne Rivers - Metals - Years 2002 and 2003

Station	Sample Date	Arsenic (Total) (ug/L)	Cadmium (Total) (ug/L)	Chromium (Total) (ug/L)	Copper (Dissolved) (ug/L)	Copper (Total) (ug/L)	Iron (Dissolved) (ug/L)	Iron (Total) (ug/L)	Lead (Dissolved) (ug/L)	Lead (Total) (ug/L)	Manganese (Dissolved) (ug/L)	Manganese (Total) (ug/L)	Mercury (Total) (ug/L)	Nickel (Total) (ug/L)	Zinc (Dissolved) (ug/L)	Zinc (Total) (ug/L)	Hardness (as CaCO3) (mg/L)
1	01/14/02 10:30	1.5	< 1	< 1.2		1.97		407.4056		< 1			< 0.2	2.84		< 6	373
1	02/18/02 11:21	1.7	< 1	< 1.2				414.4965		< 1			< 0.2	2.93		< 6	328
1	03/18/02 10:53	1.35	< 1	< 1.2		2.36		592.1072		< 1			< 0.2	3.11		6.7564 (UJ)	329
1	04/15/02 10:31	2.01	< 1	3.25		4.94		2435.6394		1.84			< 0.2	5.05		13.8803	242
1	05/20/02 11:30	1.93	< 1	1.7		2.84		1230		< 1			< 0.2	3.99		6.41 (UJ)	282
1	06/17/02 11:30	1.84	< 1	< 1.2		1.71		353		< 1			< 0.2	2.74		< 6	359
1	07/15/02 11:00	2.19	< 1	1.61		2.59		427		< 1			< 0.2	3.79		< 6	353
1	08/15/02 12:00	2.88	< 1	1.82		2.77		1300		1.22			< 0.2	3.8		10.1 (UJ)	329
1	09/16/02 10:01	1.9	< 1	1.62		1.66		475		< 1			< 0.2	2.45		< 6	355
1	10/21/02 11:10	1.65	< 1	< 1.2		2.04		381		< 1			< 0.2	2		< 6	300
1	11/18/02 10:42	1.55	< 1	< 1.2		1.63		438		< 1			< 0.2	3.03		< 6	346
1	12/16/02 10:44	1.33	< 1	< 1.2		1.43		499		< 1			< 0.2	3.39		< 6	358
1	03/16/03 11:56	1.46	< 1	1.79				1350		1.48			< 0.2	4.25			294
1	04/21/03 12:00	1.63	< 1	< 1.2		2.33		418		< 1			< 0.2	3.01		< 6	337
1	05/15/03 10:06	2.63	< 1	2.27		4.19		1660		1.54			< 0.2			7.2	316
1	06/16/03 10:40	3.06	< 1	2.14		3.09		794		< 1			< 0.2	3.11		7.42	373
1	07/21/03 10:09	4.79	< 1	8.73		10		9180		0.55			< 0.2	11.8		42.2	340
1	08/18/03 11:00	2.11	< 1	< 1.2		2.67		374		< 1			< 0.2	2.59		7.68	374
2	01/14/02 10:30	1.37	< 1	< 1.2		1.30		324.0784		< 1			< 0.2	2.25		< 6	336
2	02/18/02 10:36	1.6	< 1	< 1.2				679.8750		< 1			< 0.2	2.47		< 6	276
2	03/18/02 10:33	1.96	< 1	3.12		3.97		2620.7947		1.47			< 0.2	4.49		11.3995 (UJ)	242
2	04/15/02 10:06	2.82	< 1	7.48		8.03		6109.0117		3.95			< 0.2	8.51		24.6042	190
2	05/20/02 11:27	2.15	< 1	3.95		4.21		2560		1.94			< 0.2	11.1		12.9	191
2	06/17/02 11:30	2.43	< 1	2.42		3.25		1740		1.23			< 0.2	4.17		11 (UJ)	317
2	07/15/02 10:30	3.09	< 1	2.89		3.04		1490		1.17			< 0.2	4.38		16.6	339
2	08/19/02 11:32	2.35	< 1	2.3		3.12		1640		1.34			< 0.2	4.01		10.8 (UJ)	260
2	09/16/02 9:41	2.25	< 1	1.88		2.34		1230		1.12			< 0.2	3.36		7.39 (UJ)	321
2	10/21/02 10:42	2.05	< 1	< 1.2		1.89		526		< 1			< 0.2	2.84		< 6	357
2	11/18/02 10:21	1.68	< 1	< 1.2		1.62		617		< 1			< 0.2	2.52		< 6	324
2	12/16/02 10:20	1.57	< 1	< 1.2		1.49		342		< 1			< 0.2	2.99		< 6	348
2	03/18/03 11:01	1.62	< 1	2.9				2200		1.9			< 0.2	4.63			208
2	04/21/03 11:35	2.06	< 1	2.12		2.31		1250		1.46			< 0.2	5.03		8.45	306
2	05/19/03 9:46	2.58	< 1	3.02		4.84		2350		1.78			< 0.2			9.5	269
2	06/16/03 10:15	3.47	< 1	3.04		2.93		1980		1.61			< 0.2	8.72		11.5	307
2	07/21/03 9:46	4.83	< 1	9.24		12.7		9910		6.3			< 0.2	12.6		41.9	228
2	08/18/03 10:25	2.93	< 1	1.86		3.75		1570		1.39			< 0.2	4.04		9.14	306
3	01/14/02 9:45	1.32	< 1	< 1.2	1.29	1.68	17.7714	344.7904	< 1	< 1	45.58	46.07	< 0.2	2.35		< 6	343
3	02/18/02 13:15	1.6	< 1	< 1.2			34.6502	832.1932	< 1	< 1	24.21	37.09	< 0.2	2.83		6.0753 (UJ)	270
3	03/18/02 9:50	1.82	< 1	3.03	1.8	4.56	33.5314	2451.8806	< 1	1.52	23.74	64.17	< 0.2	4.46	< 3	11.4023 (UJ)	244
3	04/15/02 8:45	3.1	< 1	7.38	2.56	8.31	71.2868	6110.4522	< 1	4.17	13.55	109.3	< 0.2	8.68	8.22	24.734	184
3	05/20/02 9:40	2.53	< 1	4.03	2.16	5.16	62.1	3150	< 1	4.3	9.64	74.8	< 0.2	5.43	6.22	12.9	188
3	06/17/02 10:33	2.18	< 1	1.58	1.84	2.51	< 8	509	< 1	< 1	1.3	91.4	< 0.2	3.23	4.73	7.3 (UJ)	321
3	07/15/02 10:00	2.46	< 1	1.89	1.87	2.94	< 8	716	< 1	1.04	4.08	103	< 0.2	4.21	3.82	6.64 (UJ)	296
3	08/19/02 10:47	2.74	< 1	2.48	1.75	3.41	9.18	1350	< 1	2.04	9.16	111	< 0.2	3.58	10.6	12.8	225
3	09/16/02 9:15	3.29	< 1	< 1.2	1.2	1.44	< 8	362	< 1	< 1	6.72	133	< 0.2	2.93	< 3	< 6	315
3	10/21/02 8:59	2.31	< 1	< 1.2	1.03	1.65	< 8	417	< 1	< 1	5.7	95	< 0.2	2.64	7.83	< 6	353
3	11/18/02 8:53	1.61	< 1	< 1.2	1.5	1.93	55.4	402	< 1	< 1	41.4	79.1	< 0.2	2.34		< 6	318
3	12/16/02 9:46	1.39	< 1	< 1.2	1.36	1.67	26.6	367	< 1	< 1	10.3	46.7	< 0.2	2.66	10.1 (UJ)	< 6	306
3	03/18/03 10:12	1.95	< 1	2.77			135	2420	< 1	2.03	44.7	84.2	< 0.2	4.78			191
3	04/21/03 9:35	2.36	< 1	2.01	1.6	3.24	19.9	1220	< 1	1.22	3.11	104	< 0.2	4.89	< 3	9.5	328
3	05/19/03 9:02	2.52	< 1	2.63	2.3	4.52	102	2080	< 1	1.76	17.8	81.7	< 0.2		9.85	9.34	279
3	08/18/03 9:40	4.5	< 1	2.23	1.66	3.06	25.8	520	< 1	< 1	2.95	78.3	< 0.2	4.87	8.71	6.7	322

IDEM Fort Wayne Rivers - Metals - Years 2002 and 2003

Station	Sample Date	Arsenic (Total) (ug/L)	Cadmium (Total) (ug/L)	Chromium (Total) (ug/L)	Copper (Dissolved) (ug/L)	Copper (Total) (ug/L)	Iron (Dissolved) (ug/L)	Iron (Total) (ug/L)	Lead (Dissolved) (ug/L)	Lead (Total) (ug/L)	Manganese (Dissolved) (ug/L)	Manganese (Total) (ug/L)	Mercury (Total) (ug/L)	Nickel (Total) (ug/L)	Zinc (Dissolved) (ug/L)	Zinc (Total) (ug/L)	Hardness (as CaCO3) (mg/L)
3	07/21/03 9:15	4.05	< 1	7.09	2.79	10.9	36.6	6930	< 1	6.58	2.36	178	< 0.2	9.9	11.2	41.3	219
3	08/18/03 10:01	2.2	< 1	1.53	2.22	4.64	18.6	840	< 1	1.16	2.58	96.7	< 0.2	3.53	10.6	9.64	287
4	01/14/02 12:30	1.49	< 1	< 1.2		1.65		170.379		< 1			< 0.2	2.99		< 5	412
4	02/18/02 13:25	1.03	< 1	< 1.2				426.7022		< 1			< 0.2	2.82		< 5	352
4	03/18/02 12:28	1.7	< 1	2.06		3.49		1460.7236		< 1			< 0.2	4.31		9.0430 (UJ)	324
4	04/15/02 11:15	3.23	< 1	7.71		9.21		6938.436		4.42			< 0.2	9.15		27.3183	238
4	05/20/02 13:15	2.57	< 1	4.87		8.65		4050		2.6			< 0.2	6.97		18.2	248
4	07/15/02 13:50	3.87	< 1	3.14		4.27		1750		1.78			< 0.2	6.79		10.3 (UJ)	363
4	08/19/02 13:45	4.03	< 1	2.97		4.02		2120		2.17			< 0.2	5.39		13	329
4	09/16/02 11:59	3.98	< 1	1.93		3.07		1050		1.74			< 0.2	6.07		5.5 (UJ)	398
4	10/21/02 12:56	3.2	< 1	1.23		2.42		515		< 1			< 0.2	5.56		< 5	460
4	11/18/02 12:15	2.31	< 1	< 1.2		2.94		460		< 1			< 0.2	3.98		< 5	304
4	12/16/02 12:39	1.96	< 1	< 1.2		3.37		146		< 1			< 0.2	4.72		< 5	419
4	03/18/03 13:27	2.87	< 1	5.7				5000		4.36			< 0.2	7.74			176
4	04/21/03 13:30	1.77	< 1	1.53		2.85		680		< 1			< 0.2	4.41		11.3	363
4	05/13/03 12:47	3.30	< 1	6.32		7.89		5770		3.39			< 0.2	8.9 (JB)		24	253
4	06/16/03 12:40	5.42	< 1	9.72		11.4		11100		6.56			< 0.2	12.4		47.2	163
4	07/21/03 11:59	5.33	< 1	10.8		13.2		11400		7.82			< 0.2	14.5		44.2	201
4	08/18/03 12:20	3.31	< 1	1.77		4.45		1540		1.36			< 0.2	5.92		8.83	332
5	01/14/02 9:15	1.49	< 1	< 1.2	1.58	2.14	10.7493	351.9805	< 1	< 1	36.84	40.2	< 0.2	3.31		< 5	438
5	02/18/02 9:53	2.01	< 1	1.4			18.7022	720.5372	< 1	< 1	19	29.38	< 0.2	3.42		10.7384 (UJ)	346
5	03/18/02 9:38	1.65	< 1	1.76	1.99	3.53	21.3142	1296.6771	< 1	< 1	16.41	34.87	< 0.2	3.72	4.0437	8.1895 (UJ)	336
5	04/15/02 9:25	3.2	< 1	7.38	2.8	9.31	30.9641	7016.4338	< 1	4.6	12.36	92.62	< 0.2	8.96	3.7158	20.5354	244
5	05/20/02 9:32	2.69	< 1	4.62	3.16	6.9	60.1	4170	< 1	2.81	8.31	87.7	< 0.2	6.8	7.4	17.8	223
5	06/17/02 10:22	2.42	< 1	2.7	2.16	3.93	9.8	2220	< 1	1.56	21.9	78.4	< 0.2	4.55	4.23	11.9	329
5	07/15/02 9:45	3.45	< 1	1.56	1.66	2.31	12.2	506	< 1	< 1	27	184	< 0.2	4.42	5.5	7.58 (UJ)	317
5	08/19/02 10:23	3.79	< 1	2.96	1.48	6.56	46.5	1970	< 1	6.28	123	172	< 0.2	5.7	11.7	26.6	274
5	09/16/02 9:02	3.43	< 1	< 1.2	1.12	3	< 8	604	< 1	1.56	1.17	186	< 0.2	4.36	3.1	7.21 (UJ)	298
5	10/21/02 9:33	2.57	< 1	< 1.2	< 1	2.2	19.4	537	< 1	1.39	5.53	71.4	< 0.2	4.44	< 3	6.46 (UJ)	373
5	11/18/02 9:30	2.19	< 1	1.2	2.03	3.46	115	882	< 1	< 1	46.5	64.6	< 0.2	4.07		7.5 (UJ)	320
5	03/18/03 9:47	2.98	< 1	6.73		9.27 (JB)	97.1	6960	< 1	5.1	13.6	81.3	< 0.2	8.77			157
5	04/21/03 9:23	1.69	< 1	1.79	1.62	2.91	19.4	1080	< 1	1.11	3.17	92.8	< 0.2	4.19	13.3	7.99	330
5	05/13/03 8:43	3.19	< 1	6.21	2.63	7.64	49.3	5740	< 1	4.79	11.6	94.5	< 0.2	8.51 (JB)	12.6	23.8	232
5	06/16/03 9:20	4.52	< 1	9.83	3.23	11.8	59.3	10900	< 1	6.85	3.36	114	< 0.2	13	14.8	44.3	206
5	07/21/03 8:59	5.66	< 1	12.8	2.17	18.7	41.3	11700	< 1	17.5	19.2	199	< 0.2	15.7	17.3	74.4	169
5	08/18/03 9:45	2.93	< 1	< 1.2	2.9	3.94	48.5	827	< 1	1.27	2.76	63	< 0.2	4.36	9.67	6.68	309
6	01/14/02 8:43	1.52	< 1	< 1.2		1.63		325.8821		< 1			< 0.2	2.53		< 5	358
6	02/19/02 9:04	1.7	< 1	< 1.2				718.6975		< 1			< 0.2	3.57		< 5	290
6	03/18/02 10:53	1.94	< 1	3.13		3.91		2308.2692		1.48			< 0.2	4.51		10.9454 (UJ)	266
6	04/15/02 9:02	2.96	< 1	7.01		8.24		6061.8494		3.96			< 0.2	8.34		25.1967	292
6	05/20/02 8:50	2.91	< 1	4.64		5.94		3750		2.49			< 0.2	5.26		15.8	193
6	06/17/02 9:55	2.64	< 1	3.19		4.05		2440		1.78			< 0.2	4.82		26.4	304
6	07/15/02 9:30	3.04	< 1	1.87		2.54		600		< 1			< 0.2	3.77		15.6	296
6	08/19/02 9:56	3.78	< 1	1.80		4.09		1370		3.27			< 0.2	4.89		14.4	323
6	09/16/02 8:39	3.33	< 1	< 1.2		1.84		450		< 1			< 0.2	3.42		< 5	304
6	10/21/02 9:01	2.44	< 1	< 1.2		2.17		604		1.44			< 0.2	3.06		6.32 (UJ)	351
6	11/18/02 9:07	2.3	< 1	1.28		3.18		856		< 1			< 0.2	3.75		13	302
6	12/16/02 9:05	1.95	< 1	< 1.2		2.31		391		< 1			< 0.2	4.29		< 5	300
6	02/18/03 9:12	1.85	< 1	< 1.2		3.13		440		< 1			< 0.2	4.47		8.65	373
6	03/18/03 9:25	3.04	< 1	5.17				5360		3.74			< 0.2	7.17			175
6	04/21/03 9:40	2.36	< 1	2.16		3.52		1760		1.28			< 0.2	5.22		10.2	334
6	05/13/03 8:07	2.97	< 1	4.37		9.61		2890		2.92			< 0.2	7.46 (JB)		16.6	276

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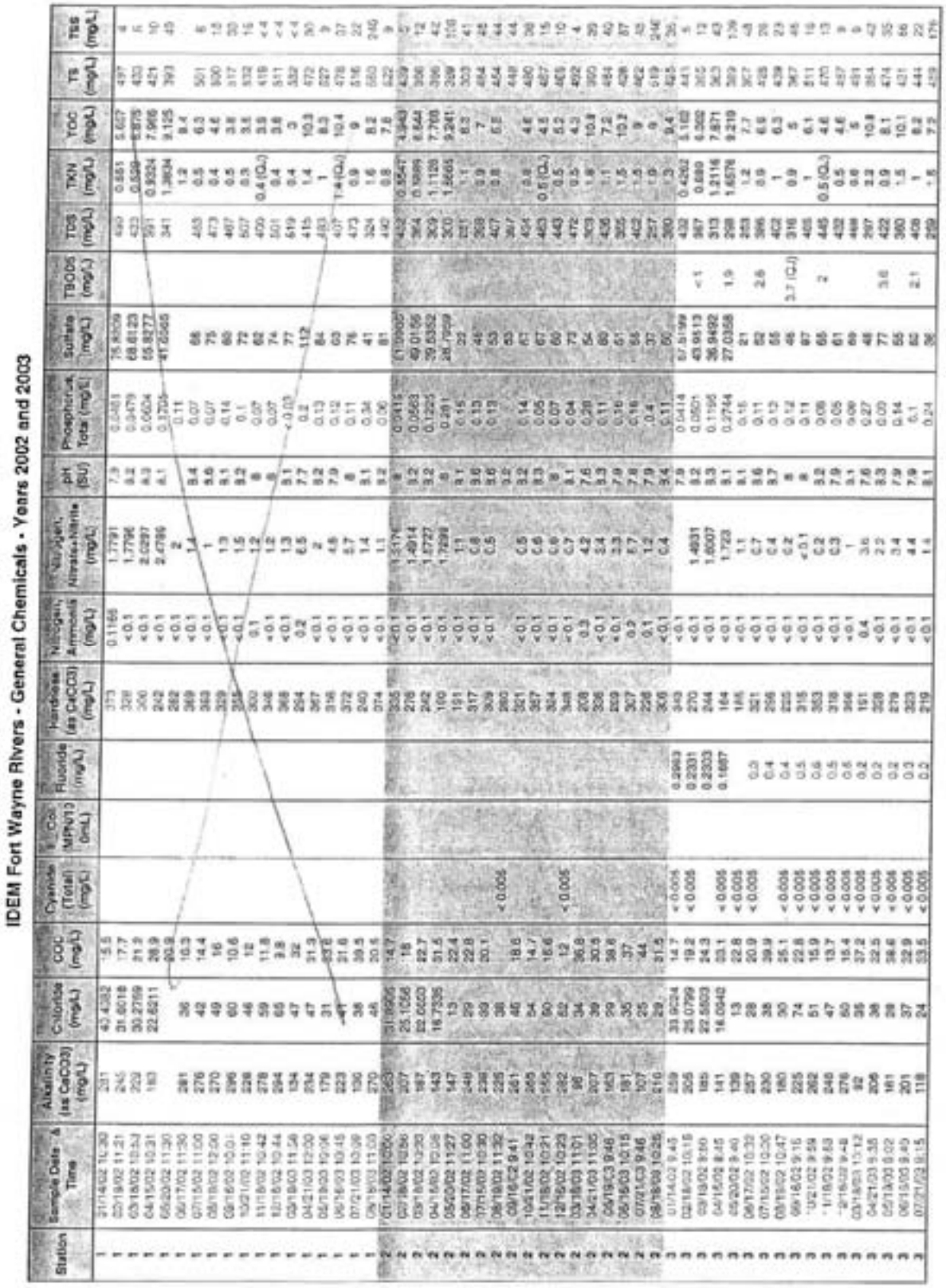
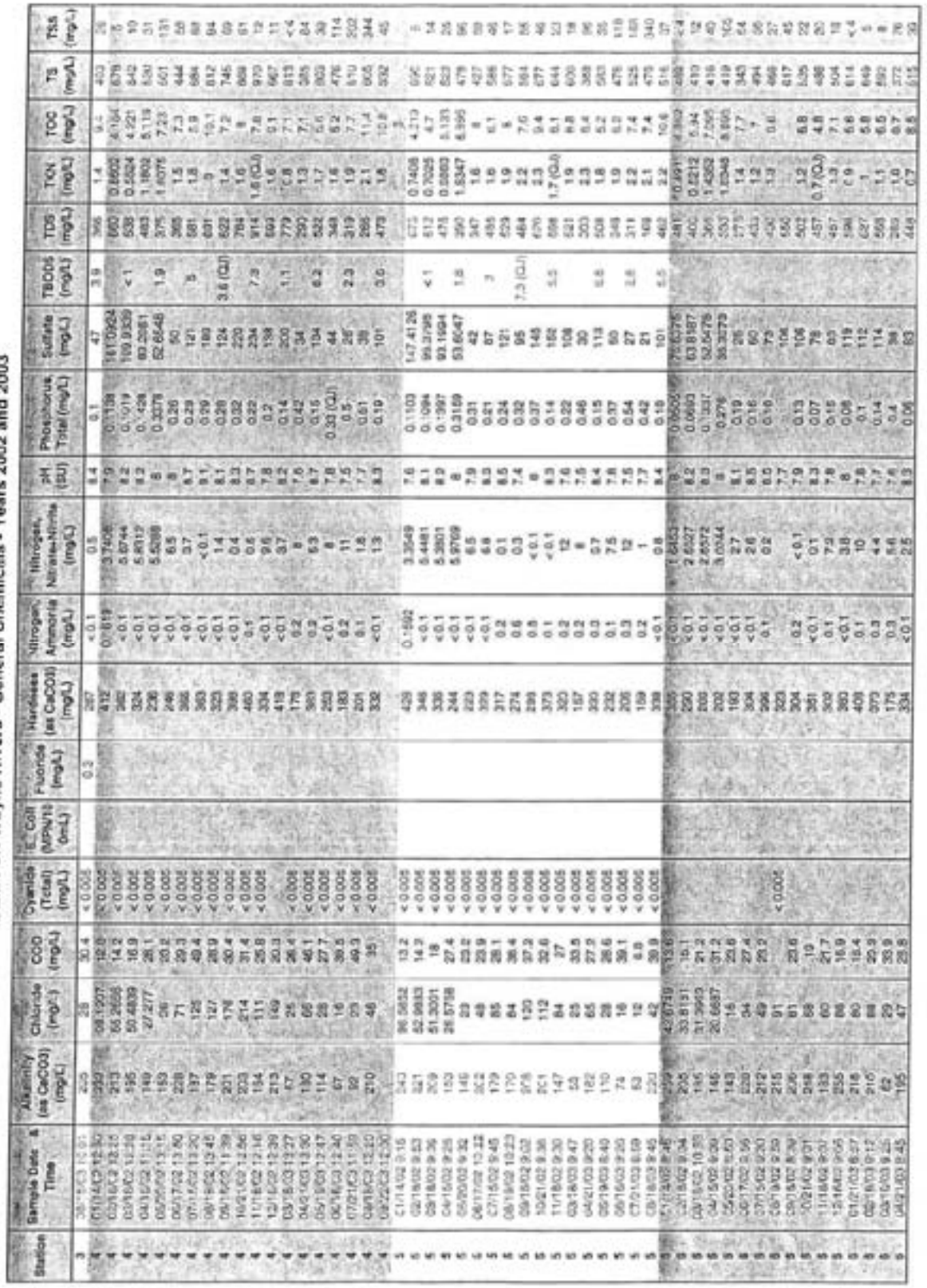
Station	Sample Date	Arsenic (Total) (ug/L)	Cadmium (Total) (ug/L)	Chromium (Total) (ug/L)	Copper (Dissolved) (ug/L)	Copper (Total) (ug/L)	Iron Dissolved (ug/L)	Iron (Total) (ug/L)	Lead (Dissolved) (ug/L)	Lead (Total) (ug/L)	Manganese (Dissolved) (ug/L)	Manganese (Total) (ug/L)	Mercury (Total) (ug/L)	Nickel (Total) (ug/L)	Zinc (Dissolved) (ug/L)	Zinc (Total) (ug/L)	Hardness (as CaCO3) (mg/L)
5	06/16/03 8:56	5.25	< 1	8.74		11.4		9010		6.47			< 0.2	11.9		40.3	217
5	07/21/03 8:29	5.04	< 1	10.4		15.4		11000		15			< 0.2	13		72.2	154
5	08/18/03 9:15	2.96	< 1	1.8		4.43		1100		1.5			< 0.2	4.61		11	305
7	01/14/02 12:30	1.29	< 1	< 1.2	1.21	1.7	15.6972	419.2498	< 1	< 1	44.1	49.31	< 0.2	3.14		< 6	347
7	02/18/02 12:44	1.73	< 1	1.26			27.8411	791.2895	< 1	< 1	27.1	43.19	< 0.2	3.62		6.2601 (UJ)	284
7	03/18/02 12:32	1.81	< 1	2.81	2.4	3.9	203.2131	2100.0681	< 1	1.65	41.39	98.91	< 0.2	4.88	7.6171	11.6509	258
7	04/15/02 11:40	3.02	< 1	7.23	2.49	8.16	55.0708	5540.6872	< 1	4.08	7.72	99.84	< 0.2	8.6	3.0516	27.6613	270
7	05/20/02 12:35	2.85	< 1	4.11	2.42	5.68	61.7	3450	< 1	2.35	14.6	72.7	< 0.2	5.88	16.9	14.8	193
7	06/17/02 12:40	2.39	< 1	3.53	2.18	4.92	6.84	2720	< 1	2.8	4.95	120	< 0.2	8.17	6.46	16.4	309
7	07/15/02 13:00	2.63	< 1	2.25	1.99	3.92	9.97	502	< 1	2.02	31.5	130	< 0.2	7.34	7.93	15.3	302
7	08/19/02 13:17	2.59	< 1	2.2	2.4	5.69	18.1	1250	< 1	3.33	30.1	134	< 0.2	8.7	14.4	21.4	274
7	09/16/02 11:12	2.49	< 1	1.45	1.44	3.55	16.3	762	< 1	2.05	47.2	128	< 0.2	8.42	10.8	17.4	236
7	10/21/02 12:22	1.76	< 1	< 1.2	1.38	2.59	10.8	475	< 1	1.51	41.3	109	< 0.2	11	8.7	15	322
7	11/18/02 11:47	1.89	< 1	< 1.2	1.55	2.99	50.2	735	< 1	1.06	37.9	65.9	< 0.2	6.86		11.7 (UJ)	256
7	12/16/02 11:56	1.49	< 1	< 1.2	1.74	2.29	37.5	324	< 1	< 1	46.3	56.4	< 0.2	8.43	16.3 (UJ)	16.7	365
7	01/21/03 11:33	1.25	< 1	< 1.2	2.2		21	353	< 1	< 1	44.5	46.5	< 0.2			25	390
7	02/18/03 11:11	1.09	< 1	1.22	3.91	2.89	39.4	377	< 1	< 1	57.7	65.2	< 0.2	6.81	35.4	11.8	358
7	03/18/03 13:01	2.88	< 1	6.12	2.41 (JB)		52.8	5850	< 1	5.18	25.2	91.8	< 0.2	8.05			182
7	04/21/03 13:00	2.29	< 1	2.3	1.68	4.01	14.1	1500	< 1	1.95	5.34	97.7	< 0.2	5.79	3.08	12.9	337
7	05/19/03 12:17	3.02	< 1	4.85	2.39	5.5	61.2	4790	< 1	3.37	18.2	97.5	< 0.2	7.75 (JB)	11.8	20.3	276
7	06/16/03 11:55	4.76	< 1	8.24	2.96	10.6	41.6	8810	< 1	6.64	2.85	107	< 0.2	11.4	13.9	41.5	210
7	07/21/03 13:16	4.65	< 1	8.26	2.76	13.8	38.6	8710	< 1	11.7	5.6	175	< 0.2	11.8	19.2	54.1	159
7	08/18/03 13:00	2.3	< 1	1.91	2.73	4.86	27.6	1590	< 1	2.3	2.96	110	< 0.2	5.18	11.2	13	306
8	01/14/02 11:30	1.64	< 1	< 1.2		1.83		3457.3799		< 1			< 0.2	3.53		< 6	302
8	02/18/02 12:13	1.61	< 1	1.2				673.4157		< 1			< 0.2	3.41		< 6	236
8	03/18/02 11:38	1.92	< 1	3.06		4.11		3455.5657		1.69			< 0.2	5		12.646	272
8	04/15/02 11:14	3.13	< 1	7.83		9.11		4708.609		6.51			< 0.2	9.79		38.6009	198
8	05/20/02 12:10	2.84	< 1	4.93		6.66		3090		2.88			< 0.2	6.53		17.7	191
8	06/17/02 12:16	2.49	< 1	2.67		4.04		1720		1.66			< 0.2	7.93		13.6	300
8	07/15/02 11:30	3.25	< 1	2		4.12		620		1.48			< 0.2	7.17		10.9 (UJ)	236
8	08/19/02 12:45	2.87	< 1	1.76		3.78		781		1.83			< 0.2	7.76		15.5	272
8	09/16/02 10:44	1.8	< 1	< 1.2		4.6		363		1.05			< 0.2	7.41		11.4 (UJ)	254
8	10/21/02 11:40	1.93	< 1	< 1.2		2.6		366		1.15			< 0.2	8.33		6.26 (UJ)	331
8	11/18/02 11:18	1.81	< 1	< 1.2		3.04		696		1.07			< 0.2	6.07		11.6 (UJ)	296
8	12/16/02 11:22	1.45	< 1	< 1.2		2.34		214		< 1			< 0.2	6.31		11.3 (UJ)	350
8	01/21/03 10:54	1.24	< 1	< 1.2				371		< 1			< 0.2			11.4	375
8	02/18/03 10:39	1.56	< 1	< 1.2		3.06		385		< 1			< 0.2	6.87		13	372
8	03/18/03 12:34	3	< 1	5.78				5780		4.59			< 0.2	7.93			179
8	04/21/03 12:35	2.03	< 1	1.87		3.56		698		1.43			< 0.2	5.38		13.5	336
8	05/19/03 11:50	2.84	< 1	4.29		6.19		3840		3.09			< 0.2			17.8	279
8	06/16/03 11:20	5.95	< 1	11.8		13.8		12500		6.9			< 0.2	14.4		55.6	207
8	07/21/03 12:49	6.85	< 1	12.8		26.4		10400		25.6			< 0.2	15.1		87.1	209
8	08/18/03 11:30	2.25	< 1	1.67		4.52		1000		1.89			< 0.2	4.85		9.81	304

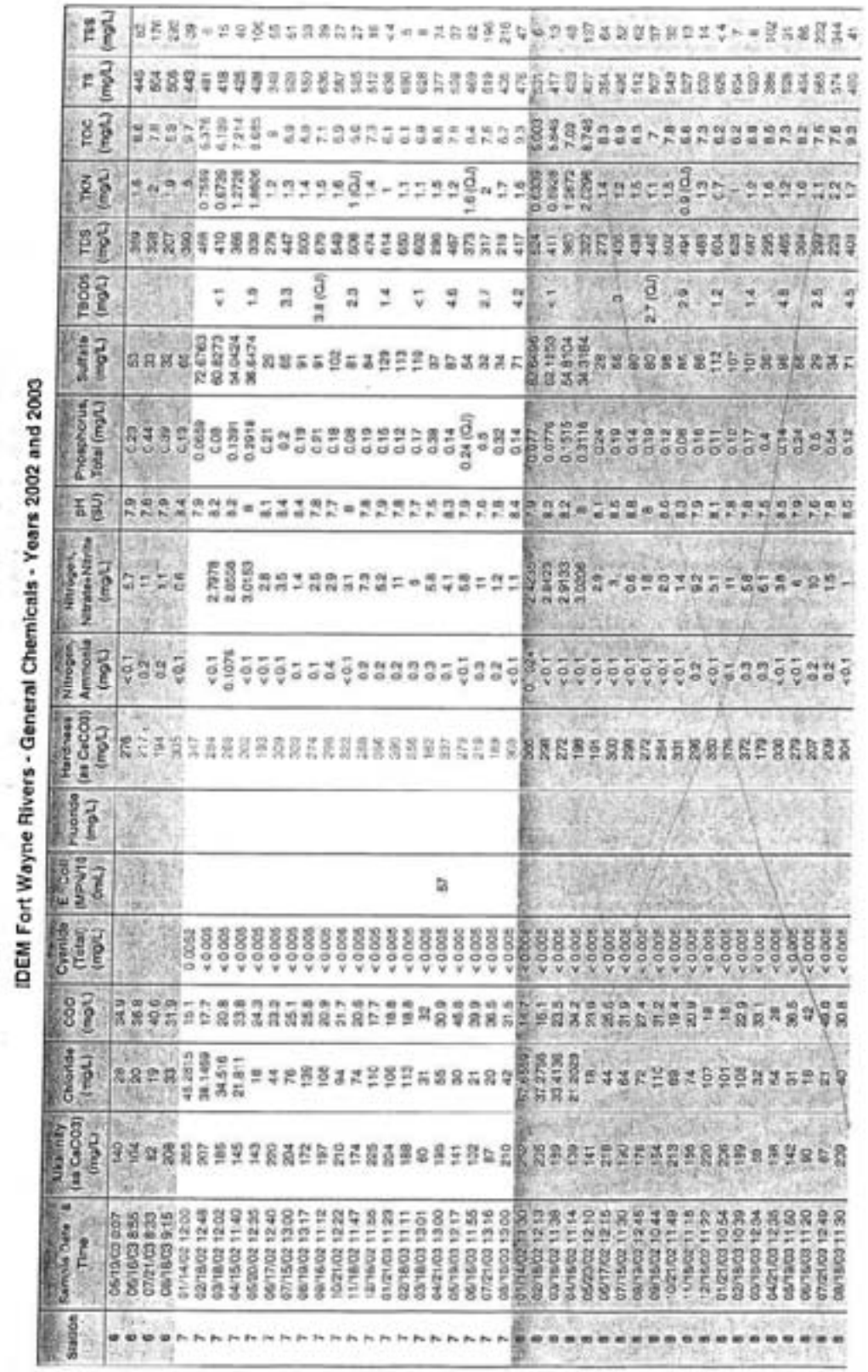


IDEM Fort Wayne Rivers - General Chemicals - Years 2002 and 2003

Station	Sample Date & Time	Alkalinity (as CaCO3) (mg/L)	Chloride (mg/L)	COC (mg/L)	Cyanide (Total) (mg/L)	E.Coli MPN/100 mL	Fluoride (mg/L)	Hardness (as CaCO3) (mg/L)	Nitrogen, Ammonia (mg/L)	Nitrogen, Nitrate-Nitrite (mg/L)	pH (SU)	Phosphorus, Total (mg/L)	Sulfate (mg/L)	TBOD5 (mg/L)	TDS (mg/L)	TKN (mg/L)	TOC (mg/L)	TS (mg/L)	TSS (mg/L)
1	01/14/02 10:30	331	40.4332	15.5				373	0.1166	1.7791	7.9	0.0401	75.8009		490	0.651	5.607	497	4
1	02/19/02 11:21	245	31.6018	17.7				329	<0.1	1.7796	8.2	0.0479	68.8123		423	0.598	5.875	433	6
1	03/15/02 10:54	209	30.2769	21.9				300	<0.1	2.0297	8.3	0.0604	65.8277		391	0.9334	7.966	421	10
1	04/15/02 10:31	183	22.8211	28.9				242	<0.1	2.4786	8.1	0.1705	41.0565		341	1.3834	9.125	393	49
1	05/20/02 11:30			20.8				282	<0.1	2		0.11				1.2	8.4		
1	06/17/02 11:30	281	36	10.3				369	<0.1	1.4	8.4	0.07	66		483	0.5	6.3	501	6
1	07/15/02 11:00	276	42	14.4				363	<0.1	1	8.6	0.07	75		473	0.4	4.6	500	13
1	08/19/02 12:00	270	49	16				329	<0.1	1.3	8.1	0.14	69		467	0.4	3.8	517	33
1	09/16/02 10:01	296	60	10.6				355	<0.1	1.5	8.2	0.1	72		507	0.5	3.5	532	15
1	10/21/02 11:10	228	46	12				300	0.1	1.2	8	0.07	62		400	0.4 (QL)	3.9	419	<4
1	11/18/02 10:42	278	59	11.8				346	<0.1	1.2	8	0.07	74		501	0.4	3.8	511	<4
1	12/18/02 10:44	294	65	9.8				368	<0.1	1.3	8.1	<0.03	77		519	0.4	3	532	<4
1	03/18/03 11:56	134	47	32				254	0.2	0.5	7.7	0.2	112		415	1.4	10.3	672	30
1	04/21/03 12:00	234	47	31.3				367	<0.1	2	8.2	0.13	84		483	1	8.3	527	9
1	05/19/03 10:06	179	31	25.6				316	<0.1	4.6	7.9	0.12	63		407	1.4 (QL)	10.4	478	57
1	06/16/03 10:45	223	41	21.6				372	<0.1	5.7	8	0.11	76		473	0.9	9	516	22
1	07/21/03 10:09	190	38	39.5				240	<0.1	1.4	8.1	0.34	41		324	1.6	8.2	550	240
1	08/18/03 11:03	270	46	20.5				374	<0.1	1.1	8.2	0.06	81		440	0.8	7.6	522	9
2	01/14/02 10:50	253	31.6966	14.7				335	<0.1	1.3176	8	0.0415	(1.0)0667		432	0.5547	4.943	439	57
2	02/19/02 10:50	207	25.1056	18				276	<0.1	1.4014	8.2	0.0563	49.0156		364	0.1999	8.644	396	12
2	03/18/02 10:20	167	22.0403	22.7				242	<0.1	1.4727	8.2	0.1225	39.5352		309	1.1128	7.705	396	42
2	04/15/02 10:06	143	16.7335	51.5				190	<0.1	1.7238	8	0.291	28.7959		300	1.3665	9.241	359	110
2	05/20/02 11:27	147	13	22.4				191	<0.1	1.1	8.1	0.15	33		221	1.1	8.3	303	41
2	06/17/02 11:00	249	29	22.8				317	<0.1	0.8	8.6	0.13	46		358	0.9	7	464	48
2	07/15/02 10:30	236	39	20.1				309	<0.1	0.5	8.6	0.13	53		407	0.8	6.5	454	44
2	08/19/02 11:32	235	38		<0.005			280			8.6		55		397			448	44
2	09/16/02 9:41	261	46	18.6				321	<0.1	0.5	8.2	0.14	61		404	0.8	4.6	480	38
2	10/21/02 10:42	265	54	14.7				357	<0.1	0.6	8.3	0.05	67		463	0.5 (QL)	4.6	457	15
2	11/18/02 10:21	165	60	16.6				364	<0.1	0.6	8	0.07	60		443	0.5	5.2	463	10
2	12/18/02 10:23	282	62	12	<0.005			348	<0.1	0.7	8.1	0.04	73		472	0.5	4.3	492	4
2	03/18/03 11:01	98	34	36.8				208	0.3	4.2	7.6	0.28	54		303	1.6	10.8	390	39
2	04/21/03 11:05	207	39	30.9				336	<0.1	3.4	8.3	0.11	60		436	1.1	7.2	484	40
2	05/19/03 9:46	163	29	39.6				229	<0.1	3.3	7.9	0.16	61		356	1.5	10.2	428	87
2	06/16/03 10:15	181	35	37				307	0.2	5.7	7.8	0.16	56		402	1.5	9	462	52
2	07/21/03 9:46	107	25	44				226	0.1	1.2	7.9	0.4	37		257	1.6	9	319	246
2	08/18/03 10:25	216	29	51.5				306	<0.1	0.4	8.4	0.11	60		380	1.3	9.4	425	36
3	01/14/02 9:45	259	33.6024	14.7	<0.005		0.2663	349	<0.1		7.9	0.0414	57.5199		432	0.4262	5.118	441	5
3	02/18/02 10:15	205	25.0799	19.2	<0.005		0.2331	270	<0.1	1.4831	8.2	0.0501	49.9413	<1	367	0.689	6.302	395	13
3	03/19/02 9:50	185	22.5503	24.3			0.2303	244	<0.1	1.6007	8.3	0.1196	36.9492		313	1.2116	7.871	363	43
3	04/15/02 8:45	141	16.0042	33.1	<0.005		0.1687	164	<0.1	1.723	8.1	0.2744	27.0358	1.9	298	1.6578	9.219	369	139
3	05/20/02 8:40	139	13	22.8	<0.005			185	<0.1	1.1	8.1	0.15	21		253	1.2	7.7	307	19
3	06/17/02 10:32	257	28	20.9	<0.005		0.3	321	<0.1	0.7	8.6	0.11	52	2.6	396	0.9	6.9	428	28
3	07/15/02 10:20	230	38	39.9			0.4	296	<0.1	0.4	8.7	0.13	55		402	1	6.3	439	23
3	08/19/02 10:47	160	30	25.1	<0.005		0.4	225	<0.1	0.2	8	0.12	46	3.7 (QL)	316	0.9	5	367	46
3	09/16/02 9:15	225	74	22.8	<0.005		0.5	315	<0.1	<0.1	8	0.11	67		405	1	6.1	511	18
3	10/21/02 9:59	262	51	15.9	<0.005		0.6	353	<0.1	0.2	8.2	0.08	65	2	445	0.5 (QL)	4.6	470	13
3	11/18/02 9:53	246	47	13.7	<0.005		0.5	318	<0.1	0.3	7.9	0.05	61		432	0.5	4.6	457	9
3	12/18/02 10:20	278	60	15.4	<0.005		0.6	366	<0.1	1	8.1	0.09	69		488	0.6	5	491	9
3	03/18/03 11:12	92	35	37.2	<0.005		0.2	151	0.4	3.6	7.6	0.27	48		297	2.3	10.8	354	42
3	04/21/03 9:35	205	38	22.5	<0.005		0.2	228	<0.1	2.5	8.3	0.09	77	3.6	422	0.9	8.1	474	35
3	05/19/03 9:02	161	28	38.6	<0.005		0.2	279	<0.1	3.4	7.9	0.14	55	2	380	1.5	10.1	431	66
3	06/15/03 9:40	201	37	22.9	<0.005		0.3	323	<0.1	4.4	7.9	0.1	82	2.1	458	1	8.2	444	22
3	07/21/03 9:15	118	24	33.5	<0.005		0.2	219	<0.1	1.1	8.1	0.24	36		259	1.5	7.2	292	175

IDEM Fort Wayne Rivers - General Chemicals - Years 2002 and 2003





IDEM Fort Wayne Rivers - General Chemicals - Years 2002 and 2003

Station	Sample Date & Time	Alkalinity (as CaCO3) (mg/L)	Chloride (mg/L)	COD (mg/L)	Cyanide (Total) (mg/L)	E. coli (MPN/10 0mL)	Fluoride (mg/L)	Hardness (as CaCO3) (mg/L)	Nitrogen, Ammonia (mg/L)	Nitrogen, Nitrate-Nitrite (mg/L)	pH (SU)	Phosphorus, Total (mg/L)	Sulfate (mg/L)	TSOD5 (mg/L)	TDS (mg/L)	TKN (mg/L)	TOC (mg/L)	TS (mg/L)	TSS (mg/L)
6	06/13/02 8:07	140	28	24.9				276	<0.1	5.7	7.9	0.23	53		359	1.6	8.6	445	82
6	06/18/02 8:55	104	20	56.8				217	0.2	11	7.6	0.44	33		328	2	7.8	364	176
6	07/21/02 8:53	92	19	40.6				194	0.2	5.1	7.9	0.39	32		207	1.9	5.9	305	282
6	08/18/02 9:15	208	33	31.9				305	<0.1	0.6	8.4	0.13	66		390	5	9.7	443	39
7	01/14/02 12:00	205	48.2815	15.1	0.0052			347			7.9	0.0659	72.6763		446	0.7559	5.376	481	6
7	02/18/02 12:48	207	39.1469	17.7	<0.005			284	<0.1	2.7978	8.2	0.08	60.8273	<1	410	0.6726	6.139	418	15
7	03/18/02 12:02	185	34.516	20.8	<0.005			268	0.1076	2.8558	8.2	0.1391	54.0424		348	1.2726	7.214	428	40
7	04/15/02 11:40	145	21.811	33.8	<0.005			202	<0.1	3.0153	8	0.2918	36.6474	1.9	338	1.8606	8.685	438	106
7	05/20/02 12:25	143	18	24.3	<0.005			193	<0.1	2.8	8.1	0.21	25		276	1.2	9	348	55
7	06/17/02 12:40	250	44	23.2	<0.005			329	<0.1	3.5	8.4	0.2	68	3.3	447	1.3	6.9	520	51
7	07/15/02 13:00	204	76	25.1	<0.005			309	<0.1	1.4	8.4	0.19	91		500	1.4	6.9	550	33
7	08/19/02 13:17	172	126	25.8	<0.005			274	0.1	2.5	7.8	0.21	91		570	1.5	7.1	636	36
7	09/16/02 11:12	197	106	20.9	<0.005			296	0.4	2.9	7.7	0.18	102	3.8 (DJ)	549	1.6	6.9	567	27
7	10/21/02 12:22	210	84	21.7	<0.005			322	<0.1	3.1	8	0.08	81	2.3	506	1 (DJ)	9.6	585	27
7	11/18/02 11:47	174	74	20.6	<0.005			288	0.9	7.3	7.8	0.19	84		474	1.4	7.3	512	38
7	12/16/02 11:35	225	110	17.7	<0.005			336	0.2	5.2	7.9	0.15	129	1.4	614	1	6.1	636	<4
7	01/21/03 11:29	204	106	19.8	<0.005			290	0.2	11	7.8	0.12	113		650	1.1	6.1	680	5
7	02/18/03 11:11	188	112	18.8	<0.005			256	0.3	9	7.7	0.17	119	<1	602	1.1	6.9	626	8
7	03/18/03 13:01	60	31	32	<0.005	57		162	0.3	5.8	7.5	0.38	57		296	1.5	8.6	377	74
7	04/21/03 13:00	195	85	30.9	<0.005			337	0.1	4.1	8.3	0.14	87	4.6	497	1.2	7.1	558	57
7	05/19/03 12:17	141	30	46.8	<0.005			279	<0.1	5.8	7.9	0.24 (DJ)	54		373	1.6 (DJ)	0.4	469	82
7	06/16/03 11:55	102	21	39.9	<0.005			219	0.3	11	7.6	0.5	32	2.7	317	2	7.6	519	196
7	07/21/03 13:16	87	20	36.5	<0.005			189	0.2	12	7.6	0.32	34		218	1.7	6.7	426	216
7	08/18/03 13:00	210	42	31.5	<0.005			303	<0.1	11	8.4	0.14	71	4.2	417	1.6	9.3	476	47
8	01/14/02 11:30	249	57.4559	14.7	<0.005			366	0.1024	2.4235	7.9	0.077	87.6496		534	0.6309	5.003	531	6
8	02/18/02 12:13	235	37.2756	16.1	<0.005			298	<0.1	2.8423	8.2	0.0776	62.1150	<1	411	0.8908	5.848	477	13
8	03/18/02 11:38	199	33.4136	23.5	<0.005			272	<0.1	2.9133	8.2	0.1515	54.9104		360	1.2672	7.09	433	49
8	04/15/02 11:14	139	21.3023	34.2	<0.005			199	<0.1	3.0056	8	0.3116	34.3184		332	2.0296	8.748	427	107
8	05/20/02 12:10	141	15	23.6	<0.005			191	<0.1	2.9	8.1	0.24	28		273	1.4	8.3	354	64
8	06/17/02 12:15	218	44	26.6	<0.005			300	<0.1	3	8.5	0.19	86	3	405	1.2	6.9	486	82
8	07/15/02 11:50	180	64	31.9	<0.005			298	<0.1	0.6	8.8	0.14	80		438	1.5	8.5	512	62
8	08/19/02 12:45	178	75	27.4	<0.005			272	<0.1	1.8	8	0.19	80	2.7 (DJ)	448	1.1	7	507	37
8	09/16/02 10:44	154	110	31.2	<0.005			264	<0.1	2.0	8.6	0.12	98		502	1.5	7.8	543	32
8	10/21/02 11:49	213	69	19.4	<0.005			331	<0.1	1.4	8.3	0.06	85	2.9	491	0.9 (DJ)	8.6	527	13
8	11/18/02 11:15	196	74	20.9	<0.005			296	0.2	9.2	7.9	0.16	86		469	1.3	7.3	530	14
8	12/16/02 11:22	220	107	18	<0.005			330	<0.1	5.1	8.1	0.11	112	1.2	604	0.7	6.2	606	<4
8	01/21/03 10:54	206	101	18	<0.005			326	0.1	11	7.8	0.10	107		628	1	6.2	654	7
8	02/18/03 10:39	189	108	22.9	<0.005			272	0.3	5.8	7.8	0.17	101	1.4	667	1.2	8.8	620	8
8	03/18/03 12:34	88	32	33.1	<0.005			179	0.3	6.1	7.6	0.4	30		295	1.6	8.6	386	102
8	04/21/03 12:35	136	54	28	<0.005			238	<0.1	3.6	8.5	0.14	96	4.8	465	1.2	7.3	538	31
8	05/19/03 11:50	142	51	36.5	<0.005			279	<0.1	4	7.9	0.34	82		394	1.6	8.2	434	86
8	06/16/03 11:20	90	19	42	<0.005			207	0.2	10	7.6	0.6	29	2.5	299	2.1	7.6	365	202
8	07/21/03 12:49	87	21	49.6	<0.005			209	0.2	15	7.8	0.54	34		223	2.2	7.6	374	344
8	08/18/03 11:30	259	40	30.8	<0.005			304	<0.1	1	8.5	0.12	71	4.5	403	1.7	9.3	480	41

ATTACHMENT 6

DO INVESTIGATION

The analysis of the 2002 and 2003 river data, done as part of Donohue's July 16, 2004 report, identifies some dissolved oxygen (DO) excursions. The 2003 excursions can be linked to flooding, upstream sources, or faulty instrument calibration. The 2002 excursions are most significant at the Spy Run Bridge on the St. Mary's River. See Figure 1.

Donohue and Associates attempted to identify the cause of the low DO measurements while preparing their July 16, 2004 report. They assembled "Table 5-1 Dissolved Oxygen Excursions". This is located in Appendix A. The Spy Run Creek enters the St. Mary's River just upstream of the Spy Run Bridge. See Figure 1. Therefore, Spy Run Creek data was also included in this table.

Table 5-1 tabulates the DO excursion data and corresponding records for temperature, precipitation, river levels, and other parameters for comparison (E. Coli, Ammonia, pH, Phosphorus, TDS, and TSS). Each DO excursion (shown in **bold)** is sectioned in to its own table with details relating to the week prior to and after the excursion date. Daily high and low water levels and rainfall recorded at the Spy Run Creek gauge are indicated in the last two columns of Table 5-1. Rainfall and temperature information as recorded at the airport (approximately seven miles southeast of the Spy Run creek and St. Mary's confluence) are shown in their respective columns. This information was used to track wet vs. dry days and river levels. The flood stage for the Spy Run Creek is eight (8) feet.

No flooding occurred on the Spy Run Creek or the St. Mary's River during the week prior or after any of the 2002 recorded DO excursions. No rain fall was recorded 48 hours prior to any of the 2002 DO excursions. The DO excursions occurred during relative low E Coli readings. These findings indicate that the DO excursions did not occur during CSO events.

In August 2004 the City of Fort Wayne initiated an effort to locate the cause of DO excursions at the Spy Run Bridge on the St. Mary's River. This was accomplished by sampling DO at 4 locations that bracketed the site of previous excursions. See Figure 1 for the location of the sampling sites.

Samples were taken from the Harrison St. Bridge on the St. Mary's River to isolate causes on the St. Mary's River upstream of the Spy Run Creek. Samples were taken from the Lawton Park Footbridge on the Spy Run Creek to isolate causes on the Spy Run Creek. Samples were taken from the Spy Run Bridge on the St. Mary's River to isolate causes downstream of the Harrison St. Bridge and Lawton Park Footbridge. Samples were taken from the Tecumseh St. Bridge on the Maumee River to isolate causes on the St Joseph River and downstream of the Spy Run Bridge.

Between 8/23/04 and 11/18/04 each site was sampled every work day. These results are in appendix B. The only reading below 5.0 was a 4.9 reading at the Lawton Park Footbridge on 11/1/04. Upon seeing the low reading additional samples were immediately taken at several locations on the Spy Run Creed upstream of the original sampling location. The results of these samples were:

Location	Reading
Lawton Park Footbridge	4.8
Elizabeth Street Bridge	6.0
Clinton St. Bridge	7.4
State Street Bridge	7.8
Oakridge Bridge	7.9

In addition to the daily sampling the City installed continuous DO monitoring equipment at the same sites on 10/28/04. The equipment at the Harrison St. Bridge was stolen on 11/9/04. The equipment at the Lawton Park site was stolen 11/18/04. The remaining equipment was removed by the City on 11/18/04.

While operating, this equipment sampled the DO every hour. These results are in appendix C. The only readings below 5.0 were at the Lawton Park Footbridge on the Spy Run Creek between 10/29/05 and 11/1/05. This is consistent with the results of the daily grab samples.

No CSOs were observed by the City's CSO inspectors along the Spy Run Creek during the entire month of October. The Little Turtle rain gauge reported the following rain totals:

Date	Amount
10/24/04	0.00"
10/24/04	0.00"
10/26/04	0.00"
10/27/04	0.01"
10/28/04	0.00"
10/29/04	0.04"
10/30/04	0.34"
10/31/04	0.00"
11/1/04	0.40"

An hourly distribution of the rein is shown in Appendix D.

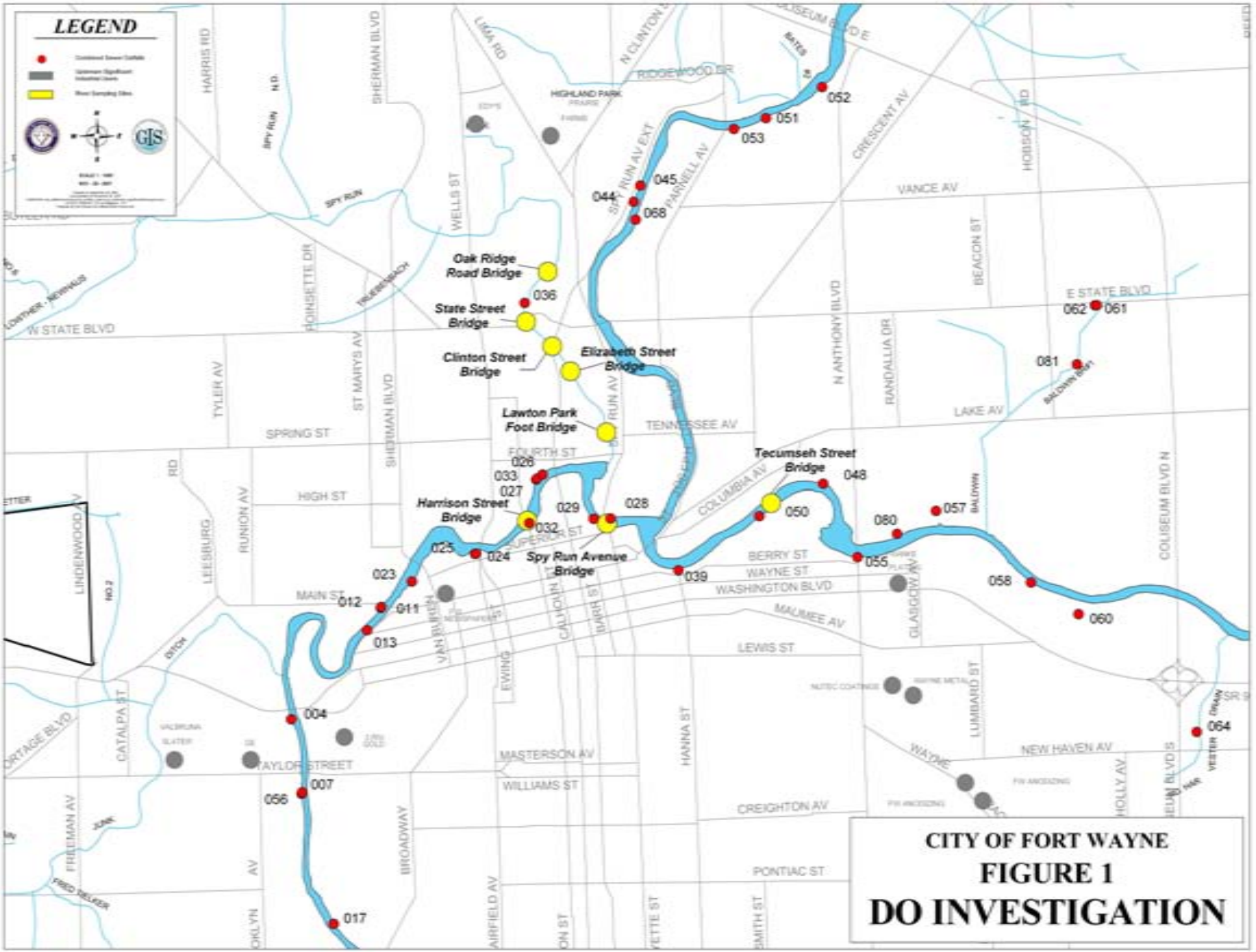

LEGEND
Oak Ridge Road Bridge
State Street Bridge
Clinton Street Bridge
Elizabeth Street Bridge
Lawton Park Foot Bridge
Harrison Street Bridge
Spy Run Avenue Bridge
Tecumseh Street Bridge
SPY RUN
SPRING ST
FOURTH ST
HIGH ST
MAIN ST
SUPERIOR ST
BERRY ST
WAYNE ST
WASHINGTON BLVD
MAUMEE AV
LEWIS ST
MASTERSON AV
WILLIAMS ST
CREIGHTON AV
PONTIAC ST
NEW HAVEN AV
VANCE AV
LAKE AV
E STATE BLVD
W STATE BLVD
TENNESSEE AV
COLUMBIA AV
RIDGEWOOD DR
TAYLOR STREET
CITY OF FORT WAYNE
FIGURE 1
DO INVESTIGATION

Table 5-1: Dissolved Oxygen Excursions

Date	Airport Temperature		Temperature at River (F)	River / Sample Point / Station	Rain Recorded at Airport (in)	River Depth (ft)	DO	Ecoli	NH_3-N	pH	Phosphorus	TDS	TSS	Spy Run High/Low Depth	Spy Run Rain
	High	Low													
Excursion: 08/12/02															
08/05/02	85	72	82.47	St. Mary's / Spy Run / Station 5	0.05	8.16	8.74	740	0.0216	7.61	0.14	400	62	3.53 / 3.53	0.00
08/06/02	75	58		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/07/02	76	54		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/08/02	78	53		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/09/02	83	53		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/10/02	87	55		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/11/02	90	62		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/12/02	**87**	**66**	**75.82**	St. Mary's / Spy Run / Station 5	**0.11**	**3.19**	**1.9**	**55**	**0.782**	**7.22**	**0.369**	**840**	**55**	**3.54 / 3.53**	**0.08**
08/13/02	89	70		St. Mary's / Spy Run / Station 5	0.12									3.84 / 3.53	0.15
08/14/02	75	64		St. Mary's / Spy Run / Station 5	0.34									4.23 / 3.56	0.35
08/15/02	84	65		St. Mary's / Spy Run / Station 5	Trace									3.87 / 3.56	0.00
08/16/02	82	70		St. Mary's / Spy Run / Station 5	Trace									3.82 / 3.54	0.15
08/17/02	85	69		St. Mary's / Spy Run / Station 5	0.00									3.64 / 3.54	0.00
08/18/02	80	65		St. Mary's / Spy Run / Station 5	0.00									3.54 / 3.53	0.00
08/19/02	75	58	73.38	St. Mary's / Spy Run / Station 5	0.92	5.35	4.04	130	0.6	7.14	0.32	464	76	4.77 / 3.53	0.80
Excursion: 08/26/02															
08/19/02	75	58	73.38	St. Mary's / Spy Run / Station 5	0.92	5.35	4.04	130	0.6	7.14	0.32	464	76	4.77 / 3.53	0.80
08/20/02	75	53		St. Mary's / Spy Run / Station 5	0.00									3.84 / 3.59	0.00
08/21/02	84	55		St. Mary's / Spy Run / Station 5	0.00									3.69 / 3.54	0.00
08/22/02	85	72		St. Mary's / Spy Run / Station 5	0.78									7.08 / 3.53	2.16
08/23/02	83	69		St. Mary's / Spy Run / Station 5	0.44									5.44 / 3.97	0.32
08/24/02	81	62		St. Mary's / Spy Run / Station 5	0.00									3.95 / 3.72	0.00
08/25/02	81	60		St. Mary's / Spy Run / Station 5	0.00									3.71 / 3.59	0.00
08/26/02	**82**	**61**	**75.35**	St. Mary's / Spy Run / Station 5	**0.00**	**5.05**	**2.69**	**test fail**	**0.321**	**7.15**	**0.271**	**436**	**28**	**3.59 / 3.56**	**0.00**
08/27/02	81	58		St. Mary's / Spy Run / Station 5	0.00									3.56 / 3.56	0.00
08/28/02	79	61		St. Mary's / Spy Run / Station 5	0.00									3.54 / 3.53	0.00
08/29/02	79	61		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
08/30/02	81	58		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.51	0.00
08/31/02	84	59		St. Mary's / Spy Run / Station 5	0.00									3.49 / 3.48	0.00
09/01/02	85	60		St. Mary's / Spy Run / Station 5	0.00									3.48 / 3.48	0.00
09/02/02	87	64		St. Mary's / Spy Run / Station 5	Trace									3.48 / 3.48	0.00
09/03/02	83	57	77.2	St. Mary's / Spy Run / Station 5	0.00	8.69	15.77	1600	0.0172	8.03	0.082	532	11	3.48 / 3.48	0.00

Table 5-1: Dissolved Oxygen Excursions

Date	Airport Temperature		Temperature at River (F)	River / Sample Point / Station	Rain Recorded at Airport (in)	River Depth (ft)	DO	Ecoli	NH_3-N	pH	Phosphorus	TDS	TSS	Spy Run High/Low Depth	Spy Run Rain
	High	Low													
Excursion: 09/23/02															
09/16/02	75	54	73.25	St. Mary's / Spy Run / Station 5	0.00	8.63	7.8	240	0.5	7.75	0.37	784	6	3.48 / 3.48	0.00
09/17/02	80	49		St. Mary's / Spy Run / Station 5	0.00									3.48 / 3.48	0.00
09/18/02	84	59		St. Mary's / Spy Run / Station 5	0.02									3.48 / 3.48	0.00
09/19/02	89	67		St. Mary's / Spy Run / Station 5	0.12									3.72 / 3.48	0.24
09/20/02	71	53		St. Mary's / Spy Run / Station 5	1.31									4.84 / 3.67	0.84
09/21/02	79	59		St. Mary's / Spy Run / Station 5	0.00									4.2 / 3.61	0.00
09/22/02	63	45		St. Mary's / Spy Run / Station 5	0.01									3.59 / 3.54	0.00
09/23/02	**68**	**40**	**67.29**	St. Mary's / Spy Run / Station 5	**0.00**	**8.77**	**0.77**	**250**	**0.361**	**7.02**	**0.312**	**496**	**11**	**3.54 / 3.51**	**0.00**
09/24/02	67	42		St. Mary's / Spy Run / Station 5	0.00									3.51 / 3.51	0.00
09/25/02	73	43		St. Mary's / Spy Run / Station 5	0.00									3.51 / 3.51	0.00
09/26/02	74	50		St. Mary's / Spy Run / Station 5	0.00									3.51 / 3.51	0.00
09/27/02	76	57		St. Mary's / Spy Run / Station 5	0.73									4.71 / 3.53	0.84
09/28/02	73	54		St. Mary's / Spy Run / Station 5	0.00									3.8 / 3.56	0.00
09/29/02	81	53		St. Mary's / Spy Run / Station 5	0.00									3.56 / 3.53	0.00
09/30/02	83	57	65.72	St. Mary's / Spy Run / Station 5	0.00	8.94	3.21	220	0.324	7	0.186	528	19	3.53 / 3.53	0.00
Excursion: 09/30/02															
09/23/02	68	40	65.72	St. Mary's / Spy Run / Station 5	0.00	8.77	0.77	250	0.361	7.02	0.312	496	11	3.54 / 3.51	0.00
09/24/02	67	42		St. Mary's / Spy Run / Station 5	0.00									3.51 / 3.51	0.00
09/25/02	73	43		St. Mary's / Spy Run / Station 5	0.00									3.51 / 3.51	0.00
09/26/02	74	50		St. Mary's / Spy Run / Station 5	0.00									3.51 / 3.51	0.00
09/27/02	76	57		St. Mary's / Spy Run / Station 5	0.73									4.71 / 3.53	0.84
09/28/02	73	54		St. Mary's / Spy Run / Station 5	0.00									3.8 / 3.56	0.00
09/29/02	81	53		St. Mary's / Spy Run / Station 5	0.00									3.56 / 3.53	0.00
09/30/02	**83**	**57**	**65.72**	St. Mary's / Spy Run / Station 5	**0.00**	**8.94**	**3.21**	**220**	**0.324**	**7**	**0.186**	**528**	**19**	**3.53 / 3.53**	**0.00**
10/01/02	84	64		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
10/02/02	84	65		St. Mary's / Spy Run / Station 5	0.00									3.53 / 3.53	0.00
10/03/02	75	61		St. Mary's / Spy Run / Station 5	Trace									3.53 / 3.53	0.00
10/04/02	76	56		St. Mary's / Spy Run / Station 5	0.47									4.18 / 3.53	0.40
10/05/02	66	47		St. Mary's / Spy Run / Station 5	0.00									3.92 / 3.56	0.00
10/06/02	69	42		St. Mary's / Spy Run / Station 5	0.01									3.54 / 3.51	0.00
10/07/02	58	39	65.19	St. Mary's / Spy Run / Station 5	0.00	8.83	5.61	280	0.0597	7.5	0.397	688	51	3.51 / 3.51	0.00

Harrison Bridge on the St. Marys
Daily Grab Sampling

Wk	Date	D.O.	Temp F	Depth
1	08/23/04	6.74		
	08/24/04	6.68	68	
	08/25/04	7.18	72	7.8
	08/26/04	7.02	73	8.3
	08/27/04	7.38	74	8.1
2	08/30/04	6.33	70	10.0
	08/31/04	6.22	70	10.1
	09/01/04	6.02	70	10.2
	09/02/04	5.80	69	9.7
	09/03/04	6.05	69	10.1
3	09/07/04	5.45	72	8.8
	09/08/04	6.11	70	8.4
	09/09/04	6.17	68	7.7
	09/10/04	6.32	68	7.7
4	09/13/04	9.70	73	7.5
	09/14/04	8.10	73	7.8
	09/15/04	11.25	73	5.3
	09/16/04	8.92	71	3.5
	09/17/04	13.13	70	2.6
5	09/20/04	14.43	65	2.8
	09/21/04	17.30	66	3.1
	09/22/04	14.13	65	2.8
	09/23/04	15.73	66	3.7
	09/24/04	15.28	68	2.8
6	09/27/04	14.32	66	3.1
	09/28/04	10.94	64	3.5
	09/29/04	9.63	61	3.5
	09/30/04	10.33	59	2.8
	10/01/04	13.06	61	3.5
7	10/04/04	13.46	58	3.5
	10/05/04	12.75	56	4.5
	10/06/04	16.44	56	6.5
	10/07/04	19.44	60	8.2
	10/08/04	20.68	58	8.0
8	10/11/04	17.04	58	7.9
	10/12/04	15.30	60	8.0
	10/13/04	14.42	58	8.1
	10/14/04	13.49	59	8.2
	10/15/04	11.63	56	7.9
9	10/18/04	8.25	50	8.2
	10/19/04	7.90	48	8.0
	10/20/04	7.16	49	9.0
	10/21/04	6.22	51	8.6
	10/22/04	8.61	52	7.2
10	10/25/04	6.50	54	5.6
	10/26/04	7.70	55	5.2
	10/27/04	8.60	57	5.0
	10/28/04	7.54	56	4.8

Harrison Bridge on the St. Marys
Daily Grab Sampling

Wk	Date	D.O.	Temp F	Depth
	10/29/04	7.25	58	4.8
11	11/01/04	6.36	55	4.8
	11/02/04	5.50	56	4.9
	11/03/04	6.90	53	5.0
	11/05/04	8.00	50	8.1
12	11/08/04	na	na	na
	11/09/04	9.50	47	6.0
	11/10/04	9.91	46	5.7
	11/12/04	10.48	44	4.6
13	11/15/04	na	na	na
	11/16/04	10.25	43	4.9
	11/18/04	9.47	49	4.3

Lawton Park Footbridge on the Spy Run Creek
Daily Grab Sampling

Wk	Date	D.O.	Temp F	Depth
1	08/23/04	8.38		
	08/24/04	7.12	70	
	08/25/04	7.45	74	2.7
	08/26/04	8.40	73	3.4
	08/27/04	6.72	72	2.9
2	08/30/04	9.36	71	3.4
	08/31/04	10.10	71	2.9
	09/01/04	10.10	72	2.7
	09/02/04	9.04	69	3.0
	09/03/04	7.92	69	3.4
3	09/07/04	7.56	72	4.1
	09/08/04	8.30	68	3.1
	09/09/04	7.88	69	2.7
	09/10/04	8.17	69	2.7
4	09/13/04	9.82	72	2.6
	09/14/04	10.20	73	2.8
	09/15/04	10.89	74	2.6
	09/16/04	6.21	70	3.1
	09/17/04	12.19	68	2.7
5	09/20/04	11.23	6.5	2.7
	09/21/04	11.4	68	2.7
	09/22/04	9.99	67	2.7
	09/23/04	8.45	65	2.6
	09/24/04	9.29	68	2.7
6	09/27/04	10.52	67	2.5
	09/28/04	8.14	62	2.8
	09/29/04	7.22	61	2.6
	09/30/04	8.00	59	2.7
	10/01/04	9.67	62	2.6
7	10/04/04	9.56	58	2.5
	10/05/04	8.45	52	2.8
	10/06/04	8.86	52	2.5
	10/07/04	9.95	56	2.6
	10/08/04	10.15	60	2.6
8	10/11/04	7.75	57	2.4
	10/12/04	10.21	56	2.7
	10/13/04	8.81	55	2.5
	10/14/04	7.75	58	2.7
	10/15/04	7.28	54	2.8
9	10/18/04	6.53	47	3.7
	10/19/04	6.22	48	2.8
	10/20/04	6.54	51	2.8
	10/21/04	6.26	54	2.6
	10/22/04	7.43	53	2.6
10	10/25/04	6.08	57	3.0
	10/26/04	7.38	56	2.9
	10/27/04	8.03	5.9	2.8
	10/28/04	6.57	58	2.7
	10/29/04	5.69	60	2.8

Lawton Park Footbridge on the Spy Run Creek
Daily Grab Sampling

Wk	Date	D.O.	Temp F	Depth
11	11/01/04	4.90	54	2.7
	11/02/04	7.53	55	4.3
	11/03/04	7.46	51	3.1
	11/05/04	9.10	47	3.0
12	11/08/04	8.60	49	2.8
	11/09/04	8.76	46	2.7
	11/10/04	9.52	45	2.7
	11/12/04	9.52	42	2.5
13	11/15/04	9.59	43	2.4
	11/16/04	8.98	42	2.6
	11/18/04	8.08	53	3.1

Spy Run Bridge on the St. Marys River
Daily Grab Sampling

Wk	Date	D.O.	Temp F	Depth
1	08/23/04	6.74		
	08/24/04	6.40	68	
	08/25/04	7.45	74	8.9
	08/26/04	6.87	73	9.4
	08/27/04	6.29	74	9.1
2	08/30/04	6.25	69	10.9
	08/31/04	6.22	70	10.3
	09/01/04	6.02	70	10.6
	09/02/04	5.90	68	10.0
	09/03/04	5.90	69	10.1
3	09/07/04	5.77	71	10.4
	09/08/04	6.06	70	9.5
	09/09/04	6.14	68	8.7
	09/10/04	6.06	69	8.9
4	09/13/04	6.23	68	9.9
	09/14/04	16.12	76	8.9
	09/15/04	9.36	72	6.5
	09/16/04	8.94	71	4.4
	09/17/04	12.62	70	3.9
5	09/20/04	16.50	66	4.0
	09/21/04	13.23	64	3.9
	09/22/04	16.63	67	3.2
	09/23/04	13.75	66	4.1
	09/24/04	16.51	69	3.3
6	09/27/04	10.56	65	3.5
	09/28/04	11.00	64	4.0
	09/29/04	10.46	63	4.2
	09/30/04	10.04	60	3.5
	10/01/04	12.53	61	3.8
7	10/04/04	12.21	57	4.2
	10/05/04	11.89	56	4.0
	10/06/04	13.48	58	7.1
	10/07/04	13.65	60	8.7
	10/08/04	18.13	60	8.6
8	10/11/04	14.70	58	9.0
	10/12/04	14.03	59	8.4
	10/13/04	13.25	58	8.5
	10/14/04	13.66	58	8.6
	10/15/04	10.52	57	8.4
9	10/18/04	8.42	51	9.0
	10/19/04	7.87	48	8.4
	10/20/04	7.16	48	9.4
	10/21/04	6.10	51	9.0
	10/22/04	7.66	52	7.7
10	10/25/04	6.89	54	6.0
	10/26/04	7.40	55	5.7
	10/27/04	8.31	57	5.3

Tecumseh Bridge on the Maumee River
Daily grab Sample Data

Wk	Date	D.O.	Temp F	Depth
1	08/23/04			
	08/24/04			
	08/25/04	9.86	74	12.7
	08/26/04	11.37	73	13.2
	08/27/04	8.49	74	12.1
2	08/30/04	6.70	71	14.2
	08/31/04	6.38	70	14.2
	09/01/04	6.60	71	14.3
	09/02/04	6.02	69	14.2
	09/03/04	7.14	71	13.3
3	09/07/04	6.30	73	13.6
	09/08/04	6.55	71	13.4
	09/09/04	6.66	70	12.9
	09/10/04	6.75	70	12.6
4	09/13/04	15.10	77	12.6
	09/14/04	15.50	75	12.9
	09/15/04	8.50	73	10.3
	09/16/04	8.46	72	8.7
	09/17/04	11.59	72	7.9
5	09/20/04	16.60	72	7.8
	09/21/04	19.21	73	7.1
	09/22/04	18.49	77	7.0
	09/23/04	13.15	68	7.9
	09/24/04	18.75	71	7.0
6	09/27/04	16.91	71	7.5
	09/28/04	9.34	66	7.8
	09/29/04	11.58	65	8.0
	09/30/04	11.79	65	7.1
	10/01/04	10.52	63	7.9
7	10/04/04	14.56	62	8.0
	10/05/04	11.87	60	8.3
	10/06/04	13.52	59	10.9
	10/07/04	15.48	63	12.6
	10/08/04	13.11	60	12.4
8	10/11/04	14.08	60	12.4
	10/12/04	13.12	59	12.5
	10/13/04	12.59	58	12.5
	10/14/04	12.41	59	12.6
	10/15/04	9.84	57	12.7
9	10/18/04	6.59	52	13.0
	10/19/04	7.16	51	12.5
	10/20/04	7.15	49	13.5
	10/21/04	6.27	52	13.1
	10/22/04	8.27	52	11.5
10	10/25/04	6.87	55	10.0
	10/26/04	7.96	55	9.7
	10/27/04	9.37	57	9.5
	10/28/04	8.80	57	9.3
	10/29/04	8.29	58	9.2

Tecumseh Bridge on the Maumee River
Daily grab Sample Data

Wk	Date	D.O.	Temp F	Depth
11	11/01/04	8.70	56	9.4
	11/02/04	7.13	56	9.5
	11/03/04	6.76	54	9.7
	11/05/04	8.00	51	12.5
12	11/08/04	na	na	na
	11/09/04	9.54	47	10.3
	11/10/04	9.86	46	9.9
	11/12/04	10.61	44	9.3
13	11/15/04	na	na	na
	11/16/04	10.72	45	8.9
	11/18/04	10.38	47	8.8

Harrison St. Bridge on the St. Marys
YSI Sonde Data

Date/time	Temp	DO mg/l	pH
10/28/2004 13:00	55.87	8.17	7.79
10/28/2004 14:00	56.24	8.21	7.8
10/28/2004 15:00	56.45	8.27	7.8
10/28/2004 16:00	56.63	8.36	7.81
10/28/2004 17:00	56.74	8.43	7.8
10/28/2004 18:00	56.8	8.45	7.8
10/28/2004 19:00	56.84	8.46	7.8
10/28/2004 20:00	56.86	8.54	7.8
10/28/2004 21:00	56.91	8.48	7.8
10/28/2004 22:00	56.98	8.56	7.81
10/28/2004 23:00	57.01	8.55	7.81
10/29/2004 0:00	57.02	8.55	7.81
10/29/2004 1:00	57	8.55	7.81
10/29/2004 2:00	56.97	8.48	7.8
10/29/2004 3:00	56.95	8.45	7.8
10/29/2004 4:00	56.93	8.38	7.8
10/29/2004 5:00	56.93	8.35	7.8
10/29/2004 6:00	56.94	8.29	7.8
10/29/2004 7:00	56.97	8.27	7.8
10/29/2004 8:00	57.03	8.24	7.8
10/29/2004 9:00	57.09	8.21	7.79
10/29/2004 10:00	57.19	8.01	7.79
10/29/2004 11:00	57.33	8.21	7.79
10/29/2004 12:00	57.48	8.01	7.79
10/29/2004 13:00	57.67	8.00	7.79
10/29/2004 14:00	57.93	8.01	7.79
10/29/2004 15:00	58.13	7.98	7.78
10/29/2004 16:00	58.31	7.94	7.78
10/29/2004 17:00	58.52	7.94	7.78
10/29/2004 18:00	58.65	7.89	7.77
10/29/2004 19:00	58.73	7.76	7.77
10/29/2004 20:00	58.9	7.09	7.73
10/29/2004 21:00	59.11	6.24	7.69
10/29/2004 22:00	59.21	6.12	7.68
10/29/2004 23:00	59.25	6.26	7.69
10/30/2004 0:00	59.31	6.45	7.7
10/30/2004 1:00	59.41	6.64	7.7
10/30/2004 2:00	59.47	6.75	7.71
10/30/2004 3:00	59.53	6.92	7.72
10/30/2004 4:00	59.6	6.95	7.72
10/30/2004 5:00	59.64	7.03	7.72
10/30/2004 6:00	59.7	7.09	7.73
10/30/2004 7:00	59.78	7.07	7.72
10/30/2004 8:00	59.75	7.08	7.73
10/30/2004 9:00	59.79	6.99	7.72
10/30/2004 10:00	59.92	6.95	7.72
10/30/2004 11:00	60.19	6.95	7.72
10/30/2004 12:00	60.58	6.47	7.69

Harrison St. Bridge on the St. Marys
YSI Sonde Data

Date/time	Temp	DO mg/l	pH
10/30/2004 13:00	60.95	6.07	7.67
10/30/2004 14:00	61.22	6.26	7.67
10/30/2004 15:00	61.45	6.01	7.65
10/30/2004 16:00	61.67	5.73	7.64
10/30/2004 17:00	61.68	5.62	7.63
10/30/2004 18:00	61.61	5.58	7.64
10/30/2004 19:00	61.46	5.61	7.65
10/30/2004 20:00	61.35	5.59	7.65
10/30/2004 21:00	61.21	5.58	7.65
10/30/2004 22:00	61.07	5.58	7.66
10/30/2004 23:00	60.93	5.57	7.66
10/31/2004 0:00	60.74	5.74	7.67
10/31/2004 1:00	60.5	5.80	7.68
10/31/2004 2:00	60.19	5.82	7.68
10/31/2004 3:00	58.46	6.98	8.01
10/31/2004 4:00	52.08	11.38	8.42
10/31/2004 5:00	50.71	11.66	8.44
10/31/2004 6:00	49.85	11.92	8.43
10/31/2004 7:00	48.89	11.87	8.43
10/31/2004 8:00	49.69	12.01	8.42
10/31/2004 9:00	51.76	11.70	8.37
10/31/2004 10:00	59.22	10.62	8.29
10/31/2004 11:00	63.73	10.18	8.09
10/31/2004 12:00	57.51	10.93	8.28
10/31/2004 13:00	56.16	11.17	8.25
10/31/2004 14:00	57.7	10.86	8.22
10/31/2004 15:00	60.14	10.54	8.18
10/31/2004 16:00	61.37	10.29	8.16
10/31/2004 17:00	59.79	10.54	8.15
10/31/2004 18:00	56.27	10.97	8.15
10/31/2004 19:00	53.16	11.43	8.14
10/31/2004 20:00	50.81	11.64	8.13
10/31/2004 21:00	49.4	11.90	8.11
10/31/2004 22:00	48.64	11.83	8.09
10/31/2004 23:00	48.87	11.77	8.08
11/1/2004 0:00	49.09	11.70	8.06
11/1/2004 1:00	48.81	11.63	8.05
11/1/2004 2:00	56.92	8.21	7.79
11/1/2004 3:00	56.67	8.08	7.79
11/1/2004 4:00	56.4	8.05	7.79
11/1/2004 5:00	56.15	8.01	7.79
11/1/2004 6:00	55.92	7.98	7.79
11/1/2004 7:00	55.69	7.96	7.79
11/1/2004 8:00	55.49	7.94	7.79
11/1/2004 9:00	55.35	8.14	7.79
11/1/2004 10:00	55.33	9.80	7.8
11/1/2004 11:00	55.32	9.77	7.8
11/1/2004 12:00	55.31	9.85	7.8

Harrison St. Bridge on the St. Marys
YSI Sonde Data

Date/time	Temp	DO mg/l	pH
11/1/2004 13:00	55.33	9.87	7.8
11/1/2004 14:00	55.37	10.18	7.8
11/1/2004 15:00	55.34	10.26	7.8
11/1/2004 16:00	55.32	10.33	7.8
11/1/2004 17:00	55.32	10.34	7.8
11/1/2004 18:00	55.31	10.31	7.8
11/1/2004 19:00	55.29	10.29	7.8
11/1/2004 20:00	55.29	10.27	7.8
11/1/2004 21:00	55.32	10.25	7.8
11/1/2004 22:00	55.33	10.25	7.8
11/1/2004 23:00	55.32	10.39	7.8
11/2/2004 0:00	55.32	10.39	7.8
11/2/2004 1:00	55.32	10.31	7.8
11/2/2004 2:00	55.31	10.31	7.8
11/2/2004 3:00	55.31	10.28	7.8
11/2/2004 4:00	55.32	10.26	7.8
11/2/2004 5:00	55.34	10.20	7.79
11/2/2004 6:00	55.35	10.10	7.79
11/2/2004 7:00	55.39	9.82	7.77
11/2/2004 8:00	55.5	8.92	7.75
11/2/2004 9:00	55.65	8.38	7.72
11/2/2004 10:00	55.72	8.28	7.72
11/2/2004 11:00	55.73	8.19	7.71
11/2/2004 12:00	55.72	8.50	7.73
11/2/2004 13:00	55.72	8.71	7.73
11/2/2004 14:00	55.72	8.78	7.73
11/2/2004 15:00	55.72	8.79	7.73
11/2/2004 16:00	55.76	8.68	7.72
11/2/2004 17:00	55.76	8.58	7.71
11/2/2004 18:00	55.71	8.56	7.71
11/2/2004 19:00	55.62	9.26	7.71
11/2/2004 20:00	55.5	9.28	7.71
11/2/2004 21:00	55.39	9.22	7.72
11/2/2004 22:00	55.3	9.37	7.71
11/2/2004 23:00	55.17	9.32	7.72
11/3/2004 0:00	55.03	9.34	7.72
11/3/2004 1:00	54.86	9.36	7.72
11/3/2004 2:00	54.7	9.37	7.72
11/3/2004 3:00	54.49	9.40	7.73
11/3/2004 4:00	54.24	9.43	7.73
11/3/2004 5:00	54	9.49	7.74
11/3/2004 6:00	53.7	9.50	7.74
11/3/2004 7:00	53.44	9.73	7.75
11/3/2004 8:00	53.19	9.79	7.75
11/3/2004 9:00	53.01	9.90	7.76
11/3/2004 10:00	52.84	10.05	7.78
11/3/2004 11:00	52.67	10.32	7.8
11/3/2004 12:00	52.54	10.68	7.82

Harrison St. Bridge on the St. Marys
YSI Sonde Data

Date/time	Temp	DO mg/l	pH
11/3/2004 13:00	52.44	10.99	7.85
11/3/2004 14:00	46.48	16.35	8.48
11/3/2004 15:00	52.57	11.11	7.88
11/3/2004 16:00	52.77	11.17	7.89
11/3/2004 17:00	52.88	12.86	7.89
11/3/2004 18:00	52.96	10.90	7.89
11/3/2004 19:00	53.09	10.58	7.87
11/3/2004 20:00	53.19	10.39	7.86
11/3/2004 21:00	53.2	10.29	7.84
11/3/2004 22:00	53.22	10.03	7.82
11/3/2004 23:00	53.3	9.59	7.77
11/4/2004 0:00	53.38	9.23	7.73
11/4/2004 1:00	53.44	9.13	7.7
11/4/2004 2:00	53.46	9.21	7.69
11/4/2004 3:00	53.46	9.35	7.69
11/4/2004 4:00	53.43	9.27	7.68
11/4/2004 5:00	53.36	9.32	7.67
11/4/2004 6:00	53.36	9.27	7.66
11/4/2004 7:00	53.31	9.20	7.65
11/4/2004 8:00	47.93	13.70	8.44
11/4/2004 9:00	53.13	8.60	7.62
11/4/2004 10:00	53.13	8.52	7.61
11/4/2004 11:00	53.14	8.56	7.62
11/4/2004 12:00	53.14	8.47	7.62
11/4/2004 13:00	53.09	8.59	7.63
11/4/2004 14:00	53.03	8.50	7.64
11/4/2004 15:00	53	8.55	7.65
11/4/2004 16:00	52.96	8.61	7.65
11/4/2004 17:00	52.91	8.64	7.66
11/4/2004 18:00	52.82	8.66	7.67
11/4/2004 19:00	52.71	8.71	7.67
11/4/2004 20:00	52.59	8.76	7.68
11/4/2004 21:00	52.42	8.80	7.69
11/4/2004 22:00	52.25	8.81	7.69
11/4/2004 23:00	52.06	8.85	7.7
11/5/2004 0:00	51.88	8.87	7.71
11/5/2004 1:00	51.69	9.13	7.71
11/5/2004 2:00	51.48	9.16	7.72
11/5/2004 3:00	51.29	9.21	7.73
11/5/2004 4:00	51.12	9.30	7.74
11/5/2004 5:00	50.94	9.33	7.76
11/5/2004 6:00	50.76	9.43	7.77
11/5/2004 7:00	50.6	9.45	7.78
11/5/2004 8:00	50.43	9.53	7.79
11/5/2004 9:00	50.32	9.57	7.79
11/5/2004 10:00	50.29	9.62	7.8
11/5/2004 11:00	50.34	9.73	7.81
11/5/2004 12:00	50.49	9.89	7.82

Harrison St. Bridge on the St. Marys
YSI Sonde Data

Date/time	Temp	DO mg/l	pH
11/5/2004 13:00	50.71	9.95	7.83
11/5/2004 14:00	50.95	10.04	7.84
11/5/2004 15:00	51.15	10.07	7.84
11/5/2004 16:00	51.34	10.10	7.84
11/5/2004 17:00	51.34	10.10	7.83
11/5/2004 18:00	51.22	10.07	7.82
11/5/2004 19:00	51.04	10.01	7.81
11/5/2004 20:00	50.88	9.97	7.8
11/5/2004 21:00	50.7	9.97	7.78
11/5/2004 22:00	50.54	9.91	7.78
11/5/2004 23:00	50.42	9.87	7.77
11/6/2004 0:00	50.32	9.87	7.77
11/6/2004 1:00	50.2	9.82	7.77
11/6/2004 2:00	50.09	9.82	7.77
11/6/2004 3:00	50	9.79	7.77
11/6/2004 4:00	49.92	10.01	7.78
11/6/2004 5:00	49.83	10.02	7.78
11/6/2004 6:00	49.73	9.99	7.78
11/6/2004 7:00	49.63	9.98	7.79
11/6/2004 8:00	49.51	10.00	7.79
11/6/2004 9:00	49.41	10.03	7.79
11/6/2004 10:00	49.39	9.95	7.8
11/6/2004 11:00	49.46	9.95	7.8
11/6/2004 12:00	49.63	10.02	7.8
11/6/2004 13:00	49.89	10.08	7.8
11/6/2004 14:00	50.17	9.84	7.8
11/6/2004 15:00	50.46	9.91	7.81
11/6/2004 16:00	50.68	9.94	7.81
11/6/2004 17:00	50.73	9.95	7.81
11/6/2004 18:00	50.68	9.92	7.81
11/6/2004 19:00	50.59	9.92	7.82
11/6/2004 20:00	50.48	9.94	7.82
11/6/2004 21:00	50.34	9.97	7.82
11/6/2004 22:00	50.17	9.97	7.82
11/6/2004 23:00	50.02	9.95	7.83
11/7/2004 0:00	49.9	10.17	7.83
11/7/2004 1:00	49.83	10.17	7.83
11/7/2004 2:00	49.76	10.16	7.83
11/7/2004 3:00	49.69	10.14	7.83
11/7/2004 4:00	49.61	10.14	7.83
11/7/2004 5:00	49.53	10.12	7.84
11/7/2004 6:00	49.45	10.12	7.84
11/7/2004 7:00	49.39	10.07	7.84
11/7/2004 8:00	49.33	10.09	7.84
11/7/2004 9:00	49.31	10.12	7.85
11/7/2004 10:00	49.35	10.13	7.85
11/7/2004 11:00	49.48	10.14	7.85
11/7/2004 12:00	49.69	10.17	7.86

Harrison St. Bridge on the St. Marys
YSI Sonde Data

Date/time	Temp	DO mg/l	pH
11/7/2004 13:00	50	9.99	7.86
11/7/2004 14:00	50.36	10.08	7.86
11/7/2004 15:00	50.67	10.17	7.87
11/7/2004 16:00	50.88	10.25	7.88
11/7/2004 17:00	50.91	10.25	7.88
11/7/2004 18:00	50.83	10.24	7.89
11/7/2004 19:00	50.69	10.23	7.89
11/7/2004 20:00	50.53	10.22	7.9
11/7/2004 21:00	50.34	10.21	7.9
11/7/2004 22:00	50.11	10.17	7.9
11/7/2004 23:00	49.85	10.38	7.91
11/8/2004 0:00	49.63	10.36	7.91
11/8/2004 1:00	49.45	10.32	7.91
11/8/2004 2:00	49.3	10.28	7.92
11/8/2004 3:00	49.15	10.24	7.92
11/8/2004 4:00	49.01	10.21	7.92
11/8/2004 5:00	48.83	10.17	7.92
11/8/2004 6:00	48.66	10.15	7.92
11/8/2004 7:00	48.48	10.14	7.92
11/8/2004 8:00	48.31	10.13	7.92
11/8/2004 9:00	48.18	10.38	7.92
11/8/2004 10:00	48.13	10.42	7.92
11/8/2004 11:00	48.1	10.45	7.93
11/8/2004 12:00	48.18	10.53	7.93
11/8/2004 13:00	48.33	10.37	7.93
11/8/2004 14:00	48.56	10.45	7.93
11/8/2004 15:00	48.8	10.52	7.94
11/8/2004 16:00	48.96	10.57	7.94
11/8/2004 17:00	49.01	10.55	7.94
11/8/2004 18:00	48.91	10.52	7.94
11/8/2004 19:00	48.77	10.51	7.94
11/8/2004 20:00	48.64	10.46	7.94
11/8/2004 21:00	48.51	10.45	7.93
11/8/2004 22:00	48.34	10.42	7.93
11/8/2004 23:00	48.14	10.61	7.93
11/9/2004 0:00	47.94	10.58	7.93
11/9/2004 1:00	47.77	10.55	7.93
11/9/2004 2:00	47.64	10.53	7.93
11/9/2004 3:00	47.53	10.50	7.92
11/9/2004 4:00	47.44	10.47	7.92
11/9/2004 5:00	47.33	10.45	7.92
11/9/2004 6:00	47.23	10.43	7.92
11/9/2004 7:00	47.13	10.41	7.92
11/9/2004 8:00	47.02	10.40	7.92
11/9/2004 9:00	46.94	10.36	7.92
11/9/2004 10:00	66.85		8.49

Sonde Stolen

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
10/28/2004 13:00	57.07	6.56	7.66
10/28/2004 14:00	58.27	6.83	7.68
10/28/2004 15:00	58.23	6.95	7.68
10/28/2004 16:00	58.46	7.09	7.68
10/28/2004 17:00	58.25	6.97	7.68
10/28/2004 18:00	58.08	6.75	7.68
10/28/2004 19:00	57.91	6.53	7.67
10/28/2004 20:00	57.7	6.19	7.66
10/28/2004 21:00	57.62	5.92	7.66
10/28/2004 22:00	57.54	5.66	7.65
10/28/2004 23:00	57.45	5.42	7.65
10/29/2004 0:00	57.35	5.18	7.64
10/29/2004 1:00	57.29	5.08	7.64
10/29/2004 2:00	57.2	4.99	7.64
10/29/2004 3:00	57.17	4.97	7.63
10/29/2004 4:00	57.3	4.87	7.63
10/29/2004 5:00	57.28	4.76	7.63
10/29/2004 6:00	57.32	4.68	7.62
10/29/2004 7:00	57.75	4.83	7.63
10/29/2004 8:00	57.75	4.75	7.62
10/29/2004 9:00	57.86	4.63	7.62
10/29/2004 10:00	58.19	4.66	7.63
10/29/2004 11:00	60.52	4.83	7.86
10/29/2004 12:00	58.67	4.91	7.63
10/29/2004 13:00	59.63	5.06	7.65
10/29/2004 14:00	59.56	4.96	7.64
10/29/2004 15:00	59.79	4.91	7.64
10/29/2004 16:00	60.02	4.79	7.63
10/29/2004 17:00	60.19	4.73	7.62
10/29/2004 18:00	60.52	4.56	7.62
10/29/2004 19:00	60.61	4.45	7.61
10/29/2004 20:00	60.89	4.47	7.61
10/29/2004 21:00	60.76	4.10	7.6
10/29/2004 22:00	60.59	4.08	7.6
10/29/2004 23:00	60.79	4.17	7.6
10/30/2004 0:00	60.86	4.05	7.6
10/30/2004 1:00	60.94	3.93	7.61
10/30/2004 2:00	60.65	3.72	7.59
10/30/2004 3:00	61.01	3.83	7.62
10/30/2004 4:00	60.98	3.95	7.62
10/30/2004 5:00	60.98	3.80	7.61
10/30/2004 6:00	60.98	3.87	7.61
10/30/2004 7:00	60.99	4.08	7.61
10/30/2004 8:00	61	4.44	7.61
10/30/2004 9:00	61.24	5.35	7.64
10/30/2004 10:00	61.38	5.09	7.61
10/30/2004 11:00	61.79	4.83	7.59
10/30/2004 12:00	62.04	5.23	7.58
10/30/2004 13:00	62.06	5.41	7.59

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
10/30/2004 14:00	62.05	5.91	7.63
10/30/2004 15:00	61.9	6.05	7.68
10/30/2004 16:00	61.76	6.11	7.68
10/30/2004 17:00	61.62	5.93	7.66
10/30/2004 18:00	61.36	5.66	7.62
10/30/2004 19:00	61.07	5.38	7.58
10/30/2004 20:00	60.74	5.31	7.57
10/30/2004 21:00	60.36	5.27	7.58
10/30/2004 22:00	59.92	5.11	7.57
10/30/2004 23:00	59.5	5.04	7.58
10/31/2004 0:00	59.12	4.92	7.58
10/31/2004 1:00	58.67	4.90	7.58
10/31/2004 2:00	58.27	4.77	7.59
10/31/2004 3:00	57.9	4.75	7.59
10/31/2004 4:00	57.52	4.67	7.59
10/31/2004 5:00	57.12	4.70	7.59
10/31/2004 6:00	56.71	4.70	7.58
10/31/2004 7:00	56.31	4.67	7.58
10/31/2004 8:00	55.91	4.70	7.58
10/31/2004 9:00	55.71	4.71	7.58
10/31/2004 10:00	55.78	4.87	7.58
10/31/2004 11:00	56.38	5.01	7.58
10/31/2004 12:00	57.37	5.11	7.59
10/31/2004 13:00	58.17	5.34	7.6
10/31/2004 14:00	58.52	5.54	7.61
10/31/2004 15:00	58.55	5.67	7.61
10/31/2004 16:00	57.95	5.66	7.62
10/31/2004 17:00	57.58	5.46	7.61
10/31/2004 18:00	57.14	5.44	7.61
10/31/2004 19:00	56.69	5.34	7.61
10/31/2004 20:00	56.24	5.15	7.61
10/31/2004 21:00	55.84	5.05	7.6
10/31/2004 22:00	55.44	4.93	7.59
10/31/2004 23:00	55.23	4.94	7.59
11/1/2004 0:00	55.01	5.10	7.6
11/1/2004 1:00	54.84	5.15	7.61
11/1/2004 2:00	54.61	5.14	7.61
11/1/2004 3:00	54.35	5.02	7.61
11/1/2004 4:00	54.13	4.87	7.6
11/1/2004 5:00	53.88	4.75	7.6
11/1/2004 6:00	53.67	4.58	7.6
11/1/2004 7:00	53.41	4.53	7.59
11/1/2004 8:00	53.1	4.42	7.59
11/1/2004 9:00	53.12	4.37	7.59
11/1/2004 10:00	53.16	4.54	7.6
11/1/2004 11:00	53.2	4.68	7.6
11/1/2004 12:00	53.33	4.86	7.61
11/1/2004 13:00	53.55	5.00	7.61
11/1/2004 14:00	53.68	5.05	7.61

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/1/2004 15:00	53.7	5.22	7.62
11/1/2004 16:00	53.7	5.19	7.61
11/1/2004 17:00	53.68	5.05	7.6
11/1/2004 18:00	53.58	5.15	7.6
11/1/2004 19:00	53.51	5.07	7.6
11/1/2004 20:00	53.42	5.05	7.59
11/1/2004 21:00	53.39	5.08	7.59
11/1/2004 22:00	53.42	5.23	7.6
11/1/2004 23:00	53.45	5.80	7.62
11/2/2004 0:00	53.55	6.18	7.61
11/2/2004 1:00	53.7	6.67	7.64
11/2/2004 2:00	53.82	7.14	7.65
11/2/2004 3:00	53.99	6.75	7.61
11/2/2004 4:00	54.09	6.79	7.57
11/2/2004 5:00	54.25	6.78	7.57
11/2/2004 6:00	54.08	7.15	7.62
11/2/2004 7:00	54.29	7.77	7.63
11/2/2004 8:00	54.63	7.84	7.61
11/2/2004 9:00	54.83	7.58	7.61
11/2/2004 10:00	55.01	7.71	7.64
11/2/2004 11:00	55	8.09	7.66
11/2/2004 12:00	54.99	8.02	7.66
11/2/2004 13:00	54.96	8.07	7.66
11/2/2004 14:00	55	8.09	7.66
11/2/2004 15:00	55.01	8.02	7.66
11/2/2004 16:00	55	7.97	7.66
11/2/2004 17:00	54.94	8.02	7.67
11/2/2004 18:00	54.82	7.94	7.67
11/2/2004 19:00	54.66	7.88	7.66
11/2/2004 20:00	54.49	7.87	7.66
11/2/2004 21:00	54.26	7.75	7.66
11/2/2004 22:00	54.07	7.63	7.65
11/2/2004 23:00	53.85	7.65	7.65
11/3/2004 0:00	53.58	7.84	7.65
11/3/2004 1:00	53.3	7.85	7.65
11/3/2004 2:00	53.05	7.78	7.64
11/3/2004 3:00	52.83	7.79	7.64
11/3/2004 4:00	52.48	7.72	7.64
11/3/2004 5:00	52.09	7.65	7.64
11/3/2004 6:00	51.73	7.78	7.64
11/3/2004 7:00	51.41	7.74	7.64
11/3/2004 8:00	51.18	7.69	7.64
11/3/2004 9:00	51.04	7.73	7.63
11/3/2004 10:00	51.04	7.79	7.63
11/3/2004 11:00	51.11	7.89	7.64
11/3/2004 12:00	51.25	8.06	7.64
11/3/2004 13:00	51.43	8.21	7.64
11/3/2004 14:00	51.67	8.43	7.65
11/3/2004 15:00	51.84	8.39	7.65

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/3/2004 16:00	51.91	8.47	7.65
11/3/2004 17:00	51.72	8.77	7.66
11/3/2004 18:00	51.49	8.76	7.66
11/3/2004 19:00	51.15	8.69	7.66
11/3/2004 20:00	50.86	8.63	7.66
11/3/2004 21:00	50.59	8.52	7.66
11/3/2004 22:00	50.37	8.47	7.66
11/3/2004 23:00	50.25	8.37	7.66
11/4/2004 0:00	50.18	8.30	7.66
11/4/2004 1:00	50.15	8.15	7.66
11/4/2004 2:00	50.08	7.95	7.65
11/4/2004 3:00	50.03	7.79	7.64
11/4/2004 4:00	49.95	7.85	7.64
11/4/2004 5:00	49.8	8.12	7.65
11/4/2004 6:00	49.69	8.25	7.67
11/4/2004 7:00	49.16	8.94	7.72
11/4/2004 8:00	49.11	9.01	7.7
11/4/2004 9:00	48.89	9.10	7.71
11/4/2004 10:00	49.4	8.72	7.66
11/4/2004 11:00	49.36	9.02	7.69
11/4/2004 12:00	48.92	9.50	7.72
11/4/2004 13:00	48.76	9.79	7.76
11/4/2004 14:00	48.84	9.61	7.76
11/4/2004 15:00	48.92	9.51	7.75
11/4/2004 16:00	48.98	9.56	7.74
11/4/2004 17:00	49.06	9.61	7.74
11/4/2004 18:00	49.01	9.65	7.75
11/4/2004 19:00	48.93	9.64	7.75
11/4/2004 20:00	48.8	9.57	7.74
11/4/2004 21:00	48.6	9.51	7.74
11/4/2004 22:00	48.41	9.43	7.73
11/4/2004 23:00	48.22	9.22	7.71
11/5/2004 0:00	48	9.47	7.71
11/5/2004 1:00	47.78	9.51	7.71
11/5/2004 2:00	47.54	9.53	7.71
11/5/2004 3:00	47.28	9.52	7.71
11/5/2004 4:00	47.05	9.50	7.71
11/5/2004 5:00	46.8	9.41	7.7
11/5/2004 6:00	46.54	9.37	7.7
11/5/2004 7:00	46.28	9.66	7.71
11/5/2004 8:00	46.02	9.65	7.71
11/5/2004 9:00	45.86	9.64	7.72
11/5/2004 10:00	46.07	9.72	7.72
11/5/2004 11:00	46.68	9.65	7.71
11/5/2004 12:00	47.49	10.58	7.81
11/5/2004 13:00	48.08	10.82	7.82
11/5/2004 14:00	48.49	10.76	7.83
11/5/2004 15:00	48.68	10.92	7.84
11/5/2004 16:00	48.8	11.03	7.85

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/5/2004 17:00	48.64	11.07	7.86
11/5/2004 18:00	48.29	10.99	7.86
11/5/2004 19:00	47.99	11.12	7.85
11/5/2004 20:00	47.7	11.01	7.85
11/5/2004 21:00	47.38	10.87	7.86
11/5/2004 22:00	47.05	10.74	7.86
11/5/2004 23:00	46.71	10.57	7.86
11/6/2004 0:00	46.43	10.37	7.86
11/6/2004 1:00	46.13	10.43	7.85
11/6/2004 2:00	45.88	10.23	7.84
11/6/2004 3:00	45.63	10.04	7.83
11/6/2004 4:00	45.4	9.88	7.82
11/6/2004 5:00	45.17	9.72	7.81
11/6/2004 6:00	44.98	9.66	7.81
11/6/2004 7:00	44.83	9.61	7.8
11/6/2004 8:00	44.67	9.61	7.8
11/6/2004 9:00	44.62	9.65	7.81
11/6/2004 10:00	45.05	9.74	7.79
11/6/2004 11:00	46.06	9.97	7.84
11/6/2004 12:00	47.31	10.00	7.79
11/6/2004 13:00	48.43	10.16	7.81
11/6/2004 14:00	49.26	10.42	7.82
11/6/2004 15:00	49.62	10.54	7.83
11/6/2004 16:00	49.72	10.54	7.83
11/6/2004 17:00	49.68	10.48	7.83
11/6/2004 18:00	49.46	10.95	7.84
11/6/2004 19:00	49.22	10.81	7.84
11/6/2004 20:00	49.06	10.70	7.83
11/6/2004 21:00	48.92	10.64	7.84
11/6/2004 22:00	48.79	10.54	7.85
11/6/2004 23:00	48.66	10.43	7.85
11/7/2004 0:00	48.52	10.31	7.85
11/7/2004 1:00	48.34	10.05	7.84
11/7/2004 2:00	48.15	10.04	7.83
11/7/2004 3:00	47.95	9.78	7.82
11/7/2004 4:00	47.77	9.53	7.81
11/7/2004 5:00	47.63	9.33	7.8
11/7/2004 6:00	47.49	9.18	7.8
11/7/2004 7:00	47.36	9.06	7.79
11/7/2004 8:00	47.28	8.99	7.79
11/7/2004 9:00	47.37	9.15	7.98
11/7/2004 10:00	47.54	9.15	7.84
11/7/2004 11:00	48.26	9.02	7.82
11/7/2004 12:00	49.54	9.22	7.81
11/7/2004 13:00	50.81	9.30	7.81
11/7/2004 14:00	51.87	9.35	7.82
11/7/2004 15:00	52.01	9.44	7.82
11/7/2004 16:00	51.59	9.57	7.83
11/7/2004 17:00	51.16	9.59	7.84

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/7/2004 18:00	50.76	9.61	7.84
11/7/2004 19:00	50.21	9.51	7.84
11/7/2004 20:00	49.76	9.61	7.84
11/7/2004 21:00	49.39	9.40	7.83
11/7/2004 22:00	49.05	9.29	7.82
11/7/2004 23:00	48.76	9.27	7.83
11/8/2004 0:00	48.43	9.27	7.83
11/8/2004 1:00	48.11	9.48	7.84
11/8/2004 2:00	47.78	9.41	7.84
11/8/2004 3:00	47.36	9.29	7.84
11/8/2004 4:00	46.97	9.10	7.84
11/8/2004 5:00	46.49	8.86	7.83
11/8/2004 6:00	46.05	8.92	7.83
11/8/2004 7:00	45.62	8.73	7.82
11/8/2004 8:00	45.22	8.56	7.81
11/8/2004 9:00	44.88	8.46	7.81
11/8/2004 10:00	44.9	8.51	7.81
11/8/2004 11:00	45.44	8.77	7.81
11/8/2004 12:00	46.26	8.92	7.81
11/8/2004 13:00	47.37	9.03	7.8
11/8/2004 14:00	48.24	9.13	7.81
11/8/2004 15:00	48.59	9.41	7.82
11/8/2004 16:00	48.17	9.67	7.83
11/8/2004 17:00	47.33	9.50	7.84
11/8/2004 18:00	46.82	9.41	7.84
11/8/2004 19:00	46.43	9.33	7.84
11/8/2004 20:00	46.05	9.47	7.83
11/8/2004 21:00	45.78	9.34	7.83
11/8/2004 22:00	45.53	9.27	7.83
11/8/2004 23:00	45.27	9.27	7.83
11/9/2004 0:00	44.98	9.26	7.83
11/9/2004 1:00	44.71	9.40	7.83
11/9/2004 2:00	44.42	9.76	7.84
11/9/2004 3:00	44.15	9.94	7.86
11/9/2004 4:00	43.98	10.00	7.86
11/9/2004 5:00	43.71	10.00	7.87
11/9/2004 6:00	43.45	9.90	7.87
11/9/2004 7:00	43.25	9.77	7.86
11/9/2004 8:00	43.04	9.64	7.86
11/9/2004 9:00	42.88	9.51	7.86
11/9/2004 10:00	42.86	9.50	7.86
11/9/2004 11:00	43.05	9.56	7.85
11/9/2004 12:00	43.74	9.72	7.84
11/9/2004 13:00	44.8	9.64	7.82
11/9/2004 14:00	45.71	9.82	7.81
11/9/2004 15:00	46.52	9.83	7.8
11/9/2004 16:00	46.67	9.91	7.8
11/9/2004 17:00	46.23	10.04	7.8
11/9/2004 18:00	45.67	9.89	7.8

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/9/2004 19:00	45.12	9.78	7.81
11/9/2004 20:00	44.69	9.74	7.82
11/9/2004 21:00	44.33	9.90	7.83
11/9/2004 22:00	44.01	9.80	7.83
11/9/2004 23:00	43.73	9.74	7.82
11/10/2004 0:00	43.44	9.72	7.83
11/10/2004 1:00	43.12	9.71	7.84
11/10/2004 2:00	42.87	9.77	7.85
11/10/2004 3:00	42.56	10.16	7.85
11/10/2004 4:00	42.39	10.39	7.88
11/10/2004 5:00	42.33	10.46	7.88
11/10/2004 6:00	42.24	10.56	7.89
11/10/2004 7:00	42.19	10.68	7.91
11/10/2004 8:00	42.11	10.59	7.9
11/10/2004 9:00	42.17	10.54	7.9
11/10/2004 10:00	42.35	10.57	7.91
11/10/2004 11:00	43.16	10.47	7.9
11/10/2004 12:00	44.56	10.67	7.88
11/10/2004 13:00	45.81	10.59	7.86
11/10/2004 14:00	46.74	10.41	7.85
11/10/2004 15:00	47.11	10.43	7.84
11/10/2004 16:00	47.38	10.47	7.84
11/10/2004 17:00	47.51	10.36	7.84
11/10/2004 18:00	47.34	10.21	7.85
11/10/2004 19:00	47.2	10.03	7.85
11/10/2004 20:00	47.05	9.90	7.85
11/10/2004 21:00	46.9	9.74	7.85
11/10/2004 22:00	46.71	9.66	7.85
11/10/2004 23:00	46.58	9.55	7.85
11/11/2004 0:00	46.47	9.52	7.85
11/11/2004 1:00	46.39	9.45	7.84
11/11/2004 2:00	46.31	9.77	7.84
11/11/2004 3:00	46.25	9.78	7.85
11/11/2004 4:00	46.29	9.92	7.86
11/11/2004 5:00	46.36	9.99	7.86
11/11/2004 6:00	46.38	10.00	7.86
11/11/2004 7:00	46.41	9.70	7.86
11/11/2004 8:00	46.43	9.58	7.87
11/11/2004 9:00	46.35	9.54	7.86
11/11/2004 10:00	46.2	9.53	7.86
11/11/2004 11:00	46.01	9.55	7.87
11/11/2004 12:00	45.85	9.47	7.87
11/11/2004 13:00	45.89	9.57	7.87
11/11/2004 14:00	45.97	9.61	7.86
11/11/2004 15:00	46.06	9.65	7.85
11/11/2004 16:00	46.1	9.57	7.85
11/11/2004 17:00	45.96	9.49	7.84
11/11/2004 18:00	45.82	9.13	7.84
11/11/2004 19:00	45.56	9.14	7.85

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/11/2004 20:00	45.23	8.92	7.85
11/11/2004 21:00	44.98	8.74	7.85
11/11/2004 22:00	44.75	8.52	7.85
11/11/2004 23:00	44.56	8.75	7.85
11/12/2004 0:00	44.38	8.65	7.85
11/12/2004 1:00	44.21	8.73	7.84
11/12/2004 2:00	44.01	8.68	7.83
11/12/2004 3:00	43.71	8.64	7.83
11/12/2004 4:00	43.44	8.55	7.83
11/12/2004 5:00	43.04	8.59	7.84
11/12/2004 6:00	42.6	8.88	7.85
11/12/2004 7:00	42.22	8.88	7.85
11/12/2004 8:00	41.78	8.94	7.86
11/12/2004 9:00	41.36	9.05	7.87
11/12/2004 10:00	41.12	9.27	7.89
11/12/2004 11:00	41.45	9.55	7.9
11/12/2004 12:00	42.22	9.87	7.9
11/12/2004 13:00	43.5	9.86	7.91
11/12/2004 14:00	44.4	10.07	7.9
11/12/2004 15:00	44.58	9.94	7.89
11/12/2004 16:00	45.13	9.85	7.88
11/12/2004 17:00	44.43	10.22	7.89
11/12/2004 18:00	43.85	10.07	7.89
11/12/2004 19:00	43.59	9.79	7.88
11/12/2004 20:00	43.29	9.60	7.87
11/12/2004 21:00	42.93	9.45	7.86
11/12/2004 22:00	42.6	9.51	7.86
11/12/2004 23:00	42.22	9.39	7.86
11/13/2004 0:00	41.8	9.33	7.85
11/13/2004 1:00	41.39	9.37	7.86
11/13/2004 2:00	41.04	9.39	7.86
11/13/2004 3:00	40.8	9.68	7.86
11/13/2004 4:00	40.51	9.69	7.86
11/13/2004 5:00	40.43	9.77	7.86
11/13/2004 6:00	40.15	9.92	7.87
11/13/2004 7:00	39.83	10.08	7.88
11/13/2004 8:00	39.57	10.19	7.89
11/13/2004 9:00	39.36	10.27	7.91
11/13/2004 10:00	39.36	10.50	7.93
11/13/2004 11:00	39.88	10.79	7.95
11/13/2004 12:00	40.94	11.17	7.97
11/13/2004 13:00	41.63	11.03	7.97
11/13/2004 14:00	42.85	10.99	7.97
11/13/2004 15:00	42.7	11.37	7.94
11/13/2004 16:00	43.16	11.01	7.93
11/13/2004 17:00	43.33	11.23	7.94
11/13/2004 18:00	42.79	10.94	7.93
11/13/2004 19:00	42.32	10.88	7.93
11/13/2004 20:00	41.98	10.61	7.92

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/13/2004 21:00	41.7	10.42	7.91
11/13/2004 22:00	41.38	10.16	7.9
11/13/2004 23:00	41.03	9.99	7.89
11/14/2004 0:00	40.68	10.16	7.89
11/14/2004 1:00	40.24	10.25	7.9
11/14/2004 2:00	39.89	10.36	7.9
11/14/2004 3:00	39.67	10.30	7.9
11/14/2004 4:00	39.54	10.29	7.89
11/14/2004 5:00	39.37	10.29	7.89
11/14/2004 6:00	39.19	10.65	7.89
11/14/2004 7:00	38.9	10.75	7.9
11/14/2004 8:00	38.69	10.78	7.91
11/14/2004 9:00	38.51	10.93	7.92
11/14/2004 10:00	38.47	11.17	7.93
11/14/2004 11:00	38.74	11.49	7.95
11/14/2004 12:00	39.57	11.68	7.96
11/14/2004 13:00	40.51	11.93	7.96
11/14/2004 14:00	41.61	11.83	7.96
11/14/2004 15:00	42.64	12.16	7.97
11/14/2004 16:00	43.13	12.03	7.97
11/14/2004 17:00	42.95	17.64	8.06
11/14/2004 18:00	35.69	12.39	7.72
11/14/2004 19:00	42.07	6.27	7.95
11/14/2004 20:00	41.79	5.86	7.91
11/14/2004 21:00	41.56	5.68	7.89
11/14/2004 22:00	41.23	5.40	7.89
11/14/2004 23:00	41.08	5.08	7.88
11/15/2004 0:00	40.79	5.14	7.88
11/15/2004 1:00	40.53	4.88	7.89
11/15/2004 2:00	40.19	4.84	7.89
11/15/2004 3:00	40.04	4.67	7.89
11/15/2004 4:00	39.64	4.60	7.9
11/15/2004 5:00	39.4	4.56	7.9
11/15/2004 6:00	39.01	4.71	7.91
11/15/2004 7:00	38.81	4.72	7.91
11/15/2004 8:00	38.73	4.68	7.92
11/15/2004 9:00	38.59	4.78	7.94
11/15/2004 10:00	38.81	4.79	7.95
11/15/2004 11:00	39.22	4.82	7.97
11/15/2004 12:00	40	4.86	7.97
11/15/2004 13:00	40.96	4.81	7.96
11/15/2004 14:00	41.77	4.80	7.94
11/15/2004 15:00	42.47	4.80	7.94
11/15/2004 16:00	42.94	5.40	5.56
11/15/2004 17:00	43.21	4.82	4.93
11/15/2004 18:00	43.35	4.63	4.34
11/15/2004 19:00	43.33	4.52	4.36
11/15/2004 20:00	43.18	3.46	4.39
11/15/2004 21:00	42.99	3.14	4.21

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/15/2004 22:00	42.81	4.03	4.23
11/15/2004 23:00	42.69	3.97	4.11
11/16/2004 0:00	42.58	3.82	4.08
11/16/2004 1:00	42.46	3.83	4.07
11/16/2004 2:00	42.38	3.77	4.06
11/16/2004 3:00	42.36	3.79	4.05
11/16/2004 4:00	42.29	3.84	4.05
11/16/2004 5:00	42.33	3.83	4.04
11/16/2004 6:00	42.32	3.83	4.04
11/16/2004 7:00	42.36	3.89	4.04
11/16/2004 8:00	42.42	3.95	4.04
11/16/2004 9:00	42.53	4.05	4.04
11/16/2004 10:00	42.78	4.12	4.04
11/16/2004 11:00	43.09	4.11	4.04
11/16/2004 12:00	43.58	4.17	4.04
11/16/2004 13:00	44.14	4.17	4.03
11/16/2004 14:00	44.81	4.07	4.02
11/16/2004 15:00	45.53	3.96	4.01
11/16/2004 16:00	46.13	7.36	4.17
11/16/2004 17:00	46.46	9.67	4.15
11/16/2004 18:00	46.35	7.50	4.11
11/16/2004 19:00	46.2	6.60	4.1
11/16/2004 20:00	46.22	6.09	4.09
11/16/2004 21:00	46.2	5.84	4.09
11/16/2004 22:00	46.12	5.57	4.1
11/16/2004 23:00	45.99	5.41	4.1
11/17/2004 0:00	45.95	5.40	4.1
11/17/2004 1:00	45.86	5.22	4.1
11/17/2004 2:00	45.87	5.12	4.1
11/17/2004 3:00	45.86	5.26	4.1
11/17/2004 4:00	45.94	5.20	4.11
11/17/2004 5:00	46	5.17	4.11
11/17/2004 6:00	46.11	5.23	4.11
11/17/2004 7:00	46.19	5.20	4.11
11/17/2004 8:00	46.33	5.16	4.11
11/17/2004 9:00	46.45	4.91	4.11
11/17/2004 10:00	46.63	5.08	4.11
11/17/2004 11:00	46.88	4.96	4.11
11/17/2004 12:00	47.26	5.07	4.11
11/17/2004 13:00	48.06	4.84	4.1
11/17/2004 14:00	48.6	4.44	4.1
11/17/2004 15:00	48.74	4.25	4.1
11/17/2004 16:00	49.02	4.34	4.09
11/17/2004 17:00	49.34	6.64	4.07
11/17/2004 18:00	49.58	5.98	4
11/17/2004 19:00	49.74	4.70	4
11/17/2004 20:00	50.05	4.26	4.02
11/17/2004 21:00	50.14	4.27	4
11/17/2004 22:00	50.16	4.26	4.01

Lawton Park Footbridge on the Spy Run Creek
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/17/2004 23:00	50.06	4.43	4.03
11/18/2004 0:00	49.99	4.67	4.06
11/18/2004 1:00	50.03	4.60	4.09
11/18/2004 2:00	50.24	4.76	4.09
11/18/2004 3:00	50.52	4.85	4.08
11/18/2004 4:00	50.78	4.91	4.06
11/18/2004 5:00	51	4.97	4.03
11/18/2004 6:00	51.19	5.16	4.01
11/18/2004 7:00	51.34	5.16	3.98
11/18/2004 8:00	51.49	5.15	3.95
11/18/2004 9:00	51.6	4.99	3.94
11/18/2004 10:00	59.2	2.01	4.04
	Sonde Stolen		

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
10/28/2004 13:00	55.7	8.12	7.77
10/28/2004 14:00	55.98	8.30	7.78
10/28/2004 15:00	56.13	8.34	7.79
10/28/2004 16:00	56.3	8.42	7.79
10/28/2004 17:00	56.42	8.44	7.79
10/28/2004 18:00	56.46	8.43	7.79
10/28/2004 19:00	56.52	8.41	7.79
10/28/2004 20:00	56.59	8.40	7.79
10/28/2004 21:00	56.65	8.38	7.78
10/28/2004 22:00	56.7	8.36	7.78
10/28/2004 23:00	56.75	8.34	7.78
10/29/2004 0:00	56.81	8.32	7.78
10/29/2004 1:00	56.87	8.31	7.78
10/29/2004 2:00	56.91	8.28	7.78
10/29/2004 3:00	56.94	8.25	7.78
10/29/2004 4:00	56.96	8.21	7.78
10/29/2004 5:00	56.95	8.15	7.78
10/29/2004 6:00	56.95	8.10	7.78
10/29/2004 7:00	56.97	8.05	7.78
10/29/2004 8:00	57	8.01	7.78
10/29/2004 9:00	57.03	7.96	7.78
10/29/2004 10:00	57.11	7.94	7.78
10/29/2004 11:00	57.21	7.83	7.78
10/29/2004 12:00	57.3	7.76	7.78
10/29/2004 13:00	57.44	7.76	7.77
10/29/2004 14:00	57.62	7.74	7.77
10/29/2004 15:00	57.79	7.62	7.77
10/29/2004 16:00	57.98	7.59	7.77
10/29/2004 17:00	58.18	7.55	7.77
10/29/2004 18:00	58.3	7.42	7.76
10/29/2004 19:00	58.38	7.35	7.76
10/29/2004 20:00	58.49	7.29	7.76
10/29/2004 21:00	58.59	7.23	7.75
10/29/2004 22:00	58.68	7.10	7.74
10/29/2004 23:00	58.83	6.62	7.72
10/30/2004 0:00	59.02	6.01	7.69
10/30/2004 1:00	59.18	5.73	7.67
10/30/2004 2:00	59.25	5.74	7.67
10/30/2004 3:00	59.34	5.91	7.67
10/30/2004 4:00	59.42	6.08	7.68
10/30/2004 5:00	59.49	6.23	7.69
10/30/2004 6:00	59.78	6.37	7.68
10/30/2004 7:00	59.65	6.51	7.7
10/30/2004 8:00	59.67	6.49	7.7
10/30/2004 9:00	59.85	6.50	7.69
10/30/2004 10:00	59.91	6.51	7.7
10/30/2004 11:00	60.07	6.53	7.7
10/30/2004 12:00	60.32	6.57	7.7
10/30/2004 13:00	60.61	6.73	7.71

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
10/30/2004 14:00	60.83	6.75	7.71
10/30/2004 15:00	61.01	6.43	7.69
10/30/2004 16:00	61.17	6.04	7.66
10/30/2004 17:00	61.15	5.89	7.66
10/30/2004 18:00	61.1	5.67	7.64
10/30/2004 19:00	61.1	5.34	7.62
10/30/2004 20:00	61.12	5.10	7.6
10/30/2004 21:00	61.06	5.05	7.6
10/30/2004 22:00	60.93	5.07	7.61
10/30/2004 23:00	60.78	5.14	7.62
10/31/2004 0:00	60.62	5.14	7.62
10/31/2004 1:00	60.46	5.12	7.63
10/31/2004 2:00	60.3	5.17	7.63
10/31/2004 3:00	60.11	5.14	7.63
10/31/2004 4:00	59.9	5.18	7.64
10/31/2004 5:00	59.65	5.26	7.65
10/31/2004 6:00	59.34	5.30	7.66
10/31/2004 7:00	59.02	5.32	7.66
10/31/2004 8:00	58.68	5.38	7.67
10/31/2004 9:00	58.42	5.47	7.68
10/31/2004 10:00	58.22	5.59	7.69
10/31/2004 11:00	58.18	5.75	7.7
10/31/2004 12:00	58.19	5.85	7.7
10/31/2004 13:00	58.16	5.96	7.71
10/31/2004 14:00	58.2	6.04	7.71
10/31/2004 15:00	58.18	6.12	7.72
10/31/2004 16:00	58.11	6.27	7.72
10/31/2004 17:00	58.02	6.22	7.73
10/31/2004 18:00	57.93	6.16	7.73
10/31/2004 19:00	57.88	6.16	7.73
10/31/2004 20:00	57.83	6.12	7.73
10/31/2004 21:00	57.71	6.17	7.73
10/31/2004 22:00	57.58	6.16	7.73
10/31/2004 23:00	57.47	6.13	7.73
11/1/2004 0:00	57.4	6.13	7.73
11/1/2004 1:00	57.31	6.18	7.74
11/1/2004 2:00	57.17	6.26	7.74
11/1/2004 3:00	57	6.26	7.74
11/1/2004 4:00	56.8	6.27	7.75
11/1/2004 5:00	56.56	6.27	7.75
11/1/2004 6:00	56.32	6.27	7.76
11/1/2004 7:00	56.07	6.32	7.76
11/1/2004 8:00	55.82	6.31	7.76
11/1/2004 9:00	55.65	6.31	7.76
11/1/2004 10:00	55.5	6.33	7.76
11/1/2004 11:00	55.35	6.36	7.77
11/1/2004 12:00	55.28	6.36	7.77
11/1/2004 13:00	55.25	6.38	7.77
11/1/2004 14:00	55.23	6.39	7.77

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/1/2004 15:00	55.2	6.44	7.77
11/1/2004 16:00	55.18	6.49	7.77
11/1/2004 17:00	55.15	6.49	7.77
11/1/2004 18:00	55.13	6.50	7.77
11/1/2004 19:00	55.09	6.50	7.77
11/1/2004 20:00	55.08	6.50	7.77
11/1/2004 21:00	55.09	6.48	7.77
11/1/2004 22:00	55.09	6.46	7.77
11/1/2004 23:00	55.1	6.56	7.77
11/2/2004 0:00	55.11	6.50	7.77
11/2/2004 1:00	55.23	6.36	7.75
11/2/2004 2:00	55.21	6.43	7.75
11/2/2004 3:00	55.2	6.44	7.75
11/2/2004 4:00	55.11	6.51	7.74
11/2/2004 5:00	55.09	6.58	7.74
11/2/2004 6:00	55.16	6.55	7.74
11/2/2004 7:00	55.17	6.54	7.74
11/2/2004 8:00	55.16	6.58	7.74
11/2/2004 9:00	55.23	6.56	7.74
11/2/2004 10:00	55.31	6.50	7.74
11/2/2004 11:00	55.39	6.24	7.72
11/2/2004 12:00	55.48	5.95	7.7
11/2/2004 13:00	55.55	5.75	7.69
11/2/2004 14:00	55.56	5.55	7.68
11/2/2004 15:00	55.51	5.53	7.68
11/2/2004 16:00	55.46	5.64	7.69
11/2/2004 17:00	55.41	5.72	7.69
11/2/2004 18:00	55.37	5.71	7.69
11/2/2004 19:00	55.33	5.71	7.69
11/2/2004 20:00	55.31	5.63	7.68
11/2/2004 21:00	55.25	5.58	7.68
11/2/2004 22:00	55.18	5.57	7.68
11/2/2004 23:00	55.09	5.55	7.68
11/3/2004 0:00	54.94	5.53	7.68
11/3/2004 1:00	54.82	5.52	7.68
11/3/2004 2:00	54.72	5.49	7.68
11/3/2004 3:00	54.56	5.48	7.68
11/3/2004 4:00	54.39	5.64	7.68
11/3/2004 5:00	54.21	5.64	7.69
11/3/2004 6:00	53.99	5.64	7.69
11/3/2004 7:00	53.76	5.66	7.69
11/3/2004 8:00	53.56	5.80	7.7
11/3/2004 9:00	53.35	5.86	7.7
11/3/2004 10:00	53.16	5.91	7.71
11/3/2004 11:00	52.97	5.99	7.73
11/3/2004 12:00	52.79	6.14	7.75
11/3/2004 13:00	52.6	6.35	7.77
11/3/2004 14:00	52.47	6.63	7.81
11/3/2004 15:00	52.38	6.81	7.83

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/3/2004 16:00	52.44	6.89	7.85
11/3/2004 17:00	52.56	6.95	7.86
11/3/2004 18:00	52.67	6.96	7.87
11/3/2004 19:00	52.73	7.10	7.87
11/3/2004 20:00	52.84	6.78	7.86
11/3/2004 21:00	52.95	6.68	7.84
11/3/2004 22:00	52.99	6.61	7.83
11/3/2004 23:00	53.03	6.55	7.8
11/4/2004 0:00	53.09	6.33	7.76
11/4/2004 1:00	53.18	6.11	7.72
11/4/2004 2:00	53.24	6.03	7.69
11/4/2004 3:00	53.27	6.10	7.67
11/4/2004 4:00	53.27	6.14	7.67
11/4/2004 5:00	53.22	6.24	7.67
11/4/2004 6:00	53.17	6.25	7.65
11/4/2004 7:00	53.16	6.22	7.64
11/4/2004 8:00	53.12	6.22	7.63
11/4/2004 9:00	52.99	6.19	7.62
11/4/2004 10:00	52.91	5.91	7.6
11/4/2004 11:00	52.91	5.83	7.59
11/4/2004 12:00	52.9	5.99	7.61
11/4/2004 13:00	52.87	5.91	7.6
11/4/2004 14:00	52.83	6.00	7.61
11/4/2004 15:00	52.78	6.08	7.62
11/4/2004 16:00	52.77	6.04	7.62
11/4/2004 17:00	52.71	6.06	7.63
11/4/2004 18:00	52.66	6.07	7.64
11/4/2004 19:00	52.59	6.09	7.64
11/4/2004 20:00	52.48	6.12	7.65
11/4/2004 21:00	52.31	6.11	7.66
11/4/2004 22:00	52.17	6.03	7.66
11/4/2004 23:00	52.01	6.11	7.67
11/5/2004 0:00	51.86	6.13	7.67
11/5/2004 1:00	51.65	6.29	7.68
11/5/2004 2:00	51.44	6.32	7.69
11/5/2004 3:00	51.26	6.37	7.7
11/5/2004 4:00	51.06	6.39	7.71
11/5/2004 5:00	50.89	6.42	7.72
11/5/2004 6:00	50.7	6.46	7.73
11/5/2004 7:00	50.54	6.46	7.74
11/5/2004 8:00	50.37	6.48	7.75
11/5/2004 9:00	50.24	6.51	7.76
11/5/2004 10:00	50.21	6.53	7.77
11/5/2004 11:00	50.25	6.56	7.78
11/5/2004 12:00	50.37	6.66	7.79
11/5/2004 13:00	50.51	6.69	7.8
11/5/2004 14:00	50.69	6.75	7.81
11/5/2004 15:00	50.86	6.79	7.82
11/5/2004 16:00	51.07	6.82	7.82

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/5/2004 17:00	51.16	6.84	7.82
11/5/2004 18:00	51.14	6.80	7.82
11/5/2004 19:00	51.03	6.74	7.8
11/5/2004 20:00	50.87	6.69	7.79
11/5/2004 21:00	50.67	6.69	7.78
11/5/2004 22:00	50.51	6.59	7.77
11/5/2004 23:00	50.34	6.51	7.76
11/6/2004 0:00	50.22	6.46	7.75
11/6/2004 1:00	50.11	6.44	7.75
11/6/2004 2:00	50.01	6.40	7.75
11/6/2004 3:00	49.9	6.54	7.75
11/6/2004 4:00	49.78	6.53	7.75
11/6/2004 5:00	49.7	6.52	7.75
11/6/2004 6:00	49.62	6.50	7.76
11/6/2004 7:00	49.55	6.47	7.76
11/6/2004 8:00	49.44	6.45	7.76
11/6/2004 9:00	49.36	6.46	7.77
11/6/2004 10:00	49.34	6.46	7.77
11/6/2004 11:00	49.41	6.50	7.77
11/6/2004 12:00	49.54	6.42	7.78
11/6/2004 13:00	49.72	6.25	7.78
11/6/2004 14:00	49.96	6.29	7.78
11/6/2004 15:00	50.17	6.27	7.78
11/6/2004 16:00	50.38	6.40	7.78
11/6/2004 17:00	50.53	6.47	7.78
11/6/2004 18:00	50.58	6.51	7.79
11/6/2004 19:00	50.54	6.53	7.79
11/6/2004 20:00	50.46	6.53	7.79
11/6/2004 21:00	50.36	6.54	7.79
11/6/2004 22:00	50.24	6.53	7.8
11/6/2004 23:00	50.09	6.51	7.8
11/7/2004 0:00	49.93	6.66	7.8
11/7/2004 1:00	49.79	6.64	7.8
11/7/2004 2:00	49.7	6.62	7.81
11/7/2004 3:00	49.63	6.61	7.81
11/7/2004 4:00	49.55	6.60	7.81
11/7/2004 5:00	49.48	6.59	7.81
11/7/2004 6:00	49.4	6.58	7.81
11/7/2004 7:00	49.32	6.55	7.81
11/7/2004 8:00	49.27	6.57	7.82
11/7/2004 9:00	49.25	6.57	7.82
11/7/2004 10:00	49.29	6.60	7.82
11/7/2004 11:00	49.41	6.66	7.83
11/7/2004 12:00	49.62	6.65	7.83
11/7/2004 13:00	49.83	6.58	7.83
11/7/2004 14:00	50.1	6.53	7.84
11/7/2004 15:00	50.34	6.67	7.84
11/7/2004 16:00	50.54	6.76	7.85
11/7/2004 17:00	50.66	6.82	7.85

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/7/2004 18:00	50.69	6.86	7.85
11/7/2004 19:00	50.63	6.88	7.86
11/7/2004 20:00	50.52	6.86	7.86
11/7/2004 21:00	50.39	6.84	7.87
11/7/2004 22:00	50.23	6.82	7.87
11/7/2004 23:00	50.01	6.81	7.87
11/8/2004 0:00	49.77	6.91	7.88
11/8/2004 1:00	49.52	6.89	7.88
11/8/2004 2:00	49.3	6.84	7.88
11/8/2004 3:00	49.12	6.81	7.89
11/8/2004 4:00	48.98	6.76	7.89
11/8/2004 5:00	48.83	6.75	7.89
11/8/2004 6:00	48.66	6.70	7.89
11/8/2004 7:00	48.49	6.68	7.89
11/8/2004 8:00	48.32	6.65	7.89
11/8/2004 9:00	48.18	6.64	7.89
11/8/2004 10:00	48.15	6.64	7.9
11/8/2004 11:00	48.14	6.62	7.9
11/8/2004 12:00	48.2	6.57	7.9
11/8/2004 13:00	48.28	6.49	7.9
11/8/2004 14:00	48.4	6.51	7.91
11/8/2004 15:00	48.51	6.59	7.91
11/8/2004 16:00	48.64	6.69	7.91
11/8/2004 17:00	48.72	6.74	7.91
11/8/2004 18:00	48.74	6.76	7.91
11/8/2004 19:00	48.7	6.75	7.91
11/8/2004 20:00	48.61	6.73	7.91
11/8/2004 21:00	48.5	6.69	7.91
11/8/2004 22:00	48.38	6.66	7.91
11/8/2004 23:00	48.23	6.62	7.91
11/9/2004 0:00	48.05	6.58	7.9
11/9/2004 1:00	47.85	6.69	7.9
11/9/2004 2:00	47.65	6.64	7.9
11/9/2004 3:00	47.49	6.59	7.9
11/9/2004 4:00	47.36	6.56	7.9
11/9/2004 5:00	47.26	6.52	7.9
11/9/2004 6:00	47.15	6.49	7.89
11/9/2004 7:00	47.05	6.46	7.89
11/9/2004 8:00	46.94	6.44	7.89
11/9/2004 9:00	46.87	6.43	7.89
Sonde reprogrammed for DO mg/l			
11/10/2004 9:00	66.04	8.3	7.43
11/10/2004 10:00	45.31	9.69	7.92
11/10/2004 11:00	45.41	9.71	7.93
11/10/2004 12:00	45.58	9.74	7.94
11/10/2004 13:00	45.8	9.77	7.94
11/10/2004 14:00	45.96	9.82	7.95
11/10/2004 15:00	46.1	9.86	7.95
11/10/2004 16:00	46.25	9.88	7.95

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/10/2004 17:00	46.37	9.9	7.96
11/10/2004 18:00	46.48	9.89	7.95
11/10/2004 19:00	46.61	9.89	7.95
11/10/2004 20:00	46.74	9.9	7.95
11/10/2004 21:00	46.84	9.88	7.95
11/10/2004 22:00	46.94	9.87	7.95
11/10/2004 23:00	47.02	9.86	7.95
11/11/2004 0:00	47.05	9.84	7.95
11/11/2004 1:00	47.04	9.82	7.95
11/11/2004 2:00	47	9.79	7.95
11/11/2004 3:00	46.94	9.75	7.95
11/11/2004 4:00	46.88	9.7	7.95
11/11/2004 5:00	46.83	9.65	7.95
11/11/2004 6:00	46.76	9.6	7.94
11/11/2004 7:00	46.7	9.57	7.94
11/11/2004 8:00	46.64	9.49	7.94
11/11/2004 9:00	46.54	9.42	7.94
11/11/2004 10:00	46.47	9.43	7.95
11/11/2004 11:00	46.41	9.41	7.94
11/11/2004 12:00	46.35	9.43	7.95
11/11/2004 13:00	46.31	9.42	7.95
11/11/2004 14:00	46.29	9.43	7.96
11/11/2004 15:00	46.26	9.46	7.96
11/11/2004 16:00	46.21	9.47	7.96
11/11/2004 17:00	46.17	9.46	7.96
11/11/2004 18:00	46.12	9.46	7.97
11/11/2004 19:00	46.06	9.43	7.96
11/11/2004 20:00	45.97	9.39	7.96
11/11/2004 21:00	45.91	9.37	7.96
11/11/2004 22:00	45.84	9.35	7.97
11/11/2004 23:00	45.75	9.33	7.97
11/12/2004 0:00	45.65	9.31	7.97
11/12/2004 1:00	45.52	9.3	7.97
11/12/2004 2:00	45.36	9.28	7.98
11/12/2004 3:00	45.22	9.27	7.98
11/12/2004 4:00	45.04	9.24	7.98
11/12/2004 5:00	44.83	9.21	7.98
11/12/2004 6:00	44.64	9.17	7.98
11/12/2004 7:00	44.43	9.12	7.98
11/12/2004 8:00	44.21	9.09	7.98
11/12/2004 9:00	44.02	9.07	7.98
11/12/2004 10:00	43.94	9.05	7.98
11/12/2004 11:00	43.93	9.05	7.99
11/12/2004 12:00	43.97	9.08	7.99
11/12/2004 13:00	44.08	9.12	8
11/12/2004 14:00	44.17	9.16	8
11/12/2004 15:00	44.23	9.23	8.01
11/12/2004 16:00	44.25	9.25	8.01
11/12/2004 17:00	44.19	9.28	8.02

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/12/2004 18:00	44.15	9.3	8.02
11/12/2004 19:00	44.09	9.27	8.02
11/12/2004 20:00	44.07	9.25	8.01
11/12/2004 21:00	44.01	9.24	8.01
11/12/2004 22:00	43.93	9.22	8.01
11/12/2004 23:00	43.81	9.2	8.01
11/13/2004 0:00	43.69	9.15	8.01
11/13/2004 1:00	43.59	9.13	8.02
11/13/2004 2:00	43.49	9.11	8.02
11/13/2004 3:00	43.38	9.09	8.02
11/13/2004 4:00	43.25	9.07	8.02
11/13/2004 5:00	43.07	9.03	8.02
11/13/2004 6:00	42.87	8.99	8.02
11/13/2004 7:00	42.68	8.95	8.02
11/13/2004 8:00	42.45	8.93	8.03
11/13/2004 9:00	42.26	8.91	8.02
11/13/2004 10:00	42.15	8.88	8.03
11/13/2004 11:00	42.14	8.86	8.03
11/13/2004 12:00	42.17	8.85	8.03
11/13/2004 13:00	42.27	8.9	8.03
11/13/2004 14:00	42.39	8.94	8.04
11/13/2004 15:00	42.48	8.98	8.04
11/13/2004 16:00	42.52	8.99	8.04
11/13/2004 17:00	42.51	9	8.04
11/13/2004 18:00	42.5	9.01	8.04
11/13/2004 19:00	42.45	9.01	8.04
11/13/2004 20:00	42.44	8.98	8.04
11/13/2004 21:00	42.45	8.97	8.03
11/13/2004 22:00	42.41	8.96	8.03
11/13/2004 23:00	42.34	8.95	8.03
11/14/2004 0:00	42.28	8.93	8.03
11/14/2004 1:00	42.15	8.9	8.03
11/14/2004 2:00	42.04	8.9	8.04
11/14/2004 3:00	41.94	8.89	8.04
11/14/2004 4:00	41.89	8.87	8.04
11/14/2004 5:00	41.78	8.85	8.04
11/14/2004 6:00	41.69	8.83	8.04
11/14/2004 7:00	41.54	8.8	8.04
11/14/2004 8:00	41.38	8.77	8.04
11/14/2004 9:00	41.23	8.75	8.04
11/14/2004 10:00	41.15	8.76	8.05
11/14/2004 11:00	41.15	8.76	8.05
11/14/2004 12:00	41.2	8.76	8.05
11/14/2004 13:00	41.27	8.77	8.05
11/14/2004 14:00	41.43	8.82	8.05
11/14/2004 15:00	41.56	8.84	8.05
11/14/2004 16:00	41.59	8.85	8.05
11/14/2004 17:00	41.61	8.85	8.05
11/14/2004 18:00	41.55	8.84	8.05

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/14/2004 19:00	41.48	8.83	8.05
11/14/2004 20:00	41.41	8.8	8.05
11/14/2004 21:00	41.4	8.79	8.04
11/14/2004 22:00	41.36	8.77	8.04
11/14/2004 23:00	41.34	8.76	8.04
11/15/2004 0:00	41.32	8.73	8.04
11/15/2004 1:00	41.29	8.71	8.04
11/15/2004 2:00	41.24	8.68	8.04
11/15/2004 3:00	41.16	8.66	8.04
11/15/2004 4:00	41.08	8.64	8.04
11/15/2004 5:00	41.06	8.63	8.04
11/15/2004 6:00	41.03	8.61	8.04
11/15/2004 7:00	40.99	8.59	8.04
11/15/2004 8:00	40.93	8.58	8.05
11/15/2004 9:00	40.88	8.57	8.05
11/15/2004 10:00	40.88	8.57	8.05
11/15/2004 11:00	40.94	8.58	8.05
11/15/2004 12:00	40.99	8.59	8.06
11/15/2004 13:00	41.09	8.6	8.06
11/15/2004 14:00	41.17	8.62	8.06
11/15/2004 15:00	41.22	8.61	8.06
11/15/2004 16:00	41.27	8.62	8.06
11/15/2004 17:00	41.28	8.62	8.06
11/15/2004 18:00	41.29	8.61	8.06
11/15/2004 19:00	41.27	8.59	8.05
11/15/2004 20:00	41.23	8.57	8.05
11/15/2004 21:00	41.2	8.54	8.05
11/15/2004 22:00	41.17	8.52	8.05
11/15/2004 23:00	41.15	8.5	8.04
11/16/2004 0:00	41.12	8.48	8.04
11/16/2004 1:00	41.11	8.46	8.04
11/16/2004 2:00	41.14	8.45	8.04
11/16/2004 3:00	41.18	8.43	8.03
11/16/2004 4:00	41.24	8.42	8.03
11/16/2004 5:00	41.3	8.4	8.03
11/16/2004 6:00	41.39	8.39	8.03
11/16/2004 7:00	41.49	8.39	8.03
11/16/2004 8:00	41.59	8.41	8.03
11/16/2004 9:00	41.71	8.4	8.03
11/16/2004 10:00	41.86	8.4	8.03
11/16/2004 11:00	41.99	8.41	8.04
11/16/2004 12:00	42.16	8.42	8.04
11/16/2004 13:00	42.3	8.43	8.04
11/16/2004 14:00	42.53	8.44	8.04
11/16/2004 15:00	42.73	8.45	8.04
11/16/2004 16:00	42.91	8.45	8.04
11/16/2004 17:00	43.05	8.45	8.04
11/16/2004 18:00	43.13	8.42	8.03
11/16/2004 19:00	43.23	8.39	8.03

Spy Run Bridge on the St. Marys River
YSI Sond Data

Date/time	Temp F	DO mg/l	pH
11/16/2004 20:00	43.3	8.36	8.03
11/16/2004 21:00	43.41	8.34	8.03
11/16/2004 22:00	43.52	8.31	8.02
11/16/2004 23:00	43.6	8.29	8.02
11/17/2004 0:00	43.65	8.25	8.02
11/17/2004 1:00	43.7	8.21	8.01
11/17/2004 2:00	43.75	8.19	8.01
11/17/2004 3:00	43.82	8.16	8.01
11/17/2004 4:00	43.91	8.12	8
11/17/2004 5:00	43.99	8.1	8
11/17/2004 6:00	44.06	8.07	8
11/17/2004 7:00	44.15	8.06	8
11/17/2004 8:00	44.26	8.04	8
11/17/2004 9:00	44.37	8.03	8
11/17/2004 10:00	44.51	8.03	8
11/17/2004 11:00	44.65	8.04	8
11/17/2004 12:00	44.83	8.03	8
11/17/2004 13:00	45.06	8.05	8
11/17/2004 14:00	45.29	8.04	8
11/17/2004 15:00	45.49	8.06	8
11/17/2004 16:00	45.76	8.01	8
11/17/2004 17:00	45.97	7.97	7.99
11/17/2004 18:00	46.06	7.92	7.98
11/17/2004 19:00	46.27	7.88	7.98
11/17/2004 20:00	46.43	7.85	7.97
11/17/2004 21:00	46.47	7.78	7.97
11/17/2004 22:00	46.53	7.74	7.97
11/17/2004 23:00	46.56	7.72	7.97
11/18/2004 0:00	46.72	7.7	7.96
11/18/2004 1:00	46.81	7.67	7.96
11/18/2004 2:00	46.91	7.66	7.96
11/18/2004 3:00	47.03	7.64	7.96
11/18/2004 4:00	47.14	7.5	7.95
11/18/2004 5:00	47.42	7.31	7.93
11/18/2004 6:00	47.63	7.18	7.92
11/18/2004 7:00	47.77	7.16	7.92
11/18/2004 8:00	47.87	7.17	7.92
11/18/2004 9:00	47.92	7.17	7.92
11/18/2004 10:00	48.03	7.2	7.92
11/18/2004 11:00	48.19	7.2	7.92
11/18/2004 12:00	48.34	7.17	7.91
11/18/2004 13:00	48.56	7.15	7.91
11/18/2004 14:00	48.82	7.14	7.91
11/18/2004 15:00	49.04	7.1	7.9

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
10/28/2004 13:00	55.77	9.29	7.84
10/28/2004 14:00	55.82	9.37	7.86
10/28/2004 15:00	55.9	9.33	7.86
10/28/2004 16:00	56.09	9.20	7.87
10/28/2004 17:00	56.25	9.11	7.87
10/28/2004 18:00	56.34	9.13	7.89
10/28/2004 19:00	56.25	9.14	7.89
10/28/2004 20:00	56.27	9.27	7.89
10/28/2004 21:00	56.33	9.26	7.88
10/28/2004 22:00	56.41	9.31	7.88
10/28/2004 23:00	56.51	9.19	7.87
10/29/2004 0:00	56.62	9.17	7.88
10/29/2004 1:00	56.69	9.09	7.88
10/29/2004 2:00	56.77	9.07	7.88
10/29/2004 3:00	56.8	9.12	7.88
10/29/2004 4:00	56.84	9.11	7.88
10/29/2004 5:00	56.89	9.06	7.87
10/29/2004 6:00	56.95	8.96	7.87
10/29/2004 7:00	57.05	8.84	7.87
10/29/2004 8:00	57.1	8.78	7.87
10/29/2004 9:00	57.12	8.78	7.87
10/29/2004 10:00	57.14	8.78	7.86
10/29/2004 11:00	57.17	8.79	7.86
10/29/2004 12:00	57.21	8.67	7.86
10/29/2004 13:00	57.27	8.52	7.86
10/29/2004 14:00	57.36	8.35	7.86
10/29/2004 15:00	57.49	8.30	7.87
10/29/2004 16:00	57.52	8.34	7.86
10/29/2004 17:00	57.57	8.32	7.85
10/29/2004 18:00	57.68	8.29	7.84
10/29/2004 19:00	57.78	8.40	7.84
10/29/2004 20:00	57.87	8.39	7.84
10/29/2004 21:00	57.95	8.38	7.84
10/29/2004 22:00	58.05	8.33	7.83
10/29/2004 23:00	58.18	8.21	7.85
10/30/2004 0:00	58.31	7.93	7.85
10/30/2004 1:00	58.43	7.60	7.85
10/30/2004 2:00	58.56	7.43	7.85
10/30/2004 3:00	58.62	7.38	7.83
10/30/2004 4:00	58.79	7.61	7.82
10/30/2004 5:00	58.98	7.50	7.8
10/30/2004 6:00	59.28	7.54	7.79
10/30/2004 7:00	59.31	8.03	7.79
10/30/2004 8:00	59.29	8.30	7.8
10/30/2004 9:00	59.39	8.46	7.79
10/30/2004 10:00	59.42	8.56	7.79
10/30/2004 11:00	59.53	8.53	7.83
10/30/2004 12:00	59.76	8.59	7.84
10/30/2004 13:00	60	8.57	7.84

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
10/30/2004 14:00	60.21	8.51	7.86
10/30/2004 15:00	60.38	8.37	7.85
10/30/2004 16:00	60.41	8.07	7.86
10/30/2004 17:00	60.38	7.93	7.86
10/30/2004 18:00	60.32	7.78	7.86
10/30/2004 19:00	60.29	7.60	7.85
10/30/2004 20:00	60.31	7.36	7.83
10/30/2004 21:00	60.35	7.28	7.82
10/30/2004 22:00	60.32	7.47	7.81
10/30/2004 23:00	60.28	7.63	7.8
10/31/2004 0:00	60.26	7.65	7.78
10/31/2004 1:00	60.19	7.68	7.78
10/31/2004 2:00	60.04	7.55	7.79
10/31/2004 3:00	59.83	7.43	7.81
10/31/2004 4:00	59.63	7.38	7.82
10/31/2004 5:00	59.42	7.30	7.82
10/31/2004 6:00	59.22	7.24	7.81
10/31/2004 7:00	59.07	7.36	7.81
10/31/2004 8:00	58.79	7.36	7.81
10/31/2004 9:00	58.61	7.38	7.8
10/31/2004 10:00	58.42	7.51	7.8
10/31/2004 11:00	58.27	7.65	7.81
10/31/2004 12:00	58.18	7.73	7.8
10/31/2004 13:00	58.16	7.85	7.8
10/31/2004 14:00	58.23	8.06	7.8
10/31/2004 15:00	58.29	8.11	7.81
10/31/2004 16:00	58.25	8.22	7.81
10/31/2004 17:00	58.14	8.39	7.83
10/31/2004 18:00	57.99	8.29	7.84
10/31/2004 19:00	57.91	8.47	7.84
10/31/2004 20:00	57.8	8.28	7.84
10/31/2004 21:00	57.71	8.17	7.85
10/31/2004 22:00	57.63	8.15	7.84
10/31/2004 23:00	57.55	8.23	7.86
11/1/2004 0:00	57.47	8.16	7.84
11/1/2004 1:00	57.43	8.37	7.83
11/1/2004 2:00	57.35	8.14	7.83
11/1/2004 3:00	57.26	8.33	7.83
11/1/2004 4:00	57.19	8.48	7.82
11/1/2004 5:00	57.13	8.37	7.84
11/1/2004 6:00	57.05	8.43	7.82
11/1/2004 7:00	56.95	8.47	7.83
11/1/2004 8:00	56.81	8.48	7.85
11/1/2004 9:00	56.67	8.46	7.84
11/1/2004 10:00	56.5	8.43	7.85
11/1/2004 11:00	56.27	8.24	7.85
11/1/2004 12:00	56.12	8.39	7.86
11/1/2004 13:00	55.98	8.38	7.86
11/1/2004 14:00	55.82	8.34	7.85

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/1/2004 15:00	55.65	8.33	7.83
11/1/2004 16:00	55.58	8.30	7.85
11/1/2004 17:00	55.5	8.26	7.85
11/1/2004 18:00	55.43	8.25	7.85
11/1/2004 19:00	55.39	8.25	7.85
11/1/2004 20:00	55.37	8.28	7.85
11/1/2004 21:00	55.34	8.27	7.85
11/1/2004 22:00	55.33	8.49	7.84
11/1/2004 23:00	55.33	8.53	7.84
11/2/2004 0:00	55.34	8.53	7.84
11/2/2004 1:00	55.35	8.32	7.84
11/2/2004 2:00	55.4	8.23	7.84
11/2/2004 3:00	55.5	8.43	7.85
11/2/2004 4:00	55.54	8.55	7.85
11/2/2004 5:00	55.57	8.66	7.83
11/2/2004 6:00	55.64	8.55	7.82
11/2/2004 7:00	55.67	8.44	7.83
11/2/2004 8:00	55.71	8.35	7.83
11/2/2004 9:00	55.75	8.30	7.84
11/2/2004 10:00	55.76	8.23	7.83
11/2/2004 11:00	55.78	8.16	7.82
11/2/2004 12:00	55.76	8.07	7.81
11/2/2004 13:00	55.8	7.85	7.81
11/2/2004 14:00	55.84	7.65	7.8
11/2/2004 15:00	55.89	7.60	7.8
11/2/2004 16:00	55.97	7.74	7.8
11/2/2004 17:00	55.98	7.86	7.78
11/2/2004 18:00	55.98	7.90	7.77
11/2/2004 19:00	55.96	7.94	7.77
11/2/2004 20:00	55.93	7.96	7.78
11/2/2004 21:00	55.88	8.02	7.79
11/2/2004 22:00	55.81	8.00	7.78
11/2/2004 23:00	55.75	8.03	7.78
11/3/2004 0:00	55.68	8.20	7.78
11/3/2004 1:00	55.6	8.23	7.79
11/3/2004 2:00	55.44	8.15	7.79
11/3/2004 3:00	55.27	8.16	7.79
11/3/2004 4:00	55.07	8.26	7.79
11/3/2004 5:00	54.94	8.29	7.79
11/3/2004 6:00	54.75	8.33	7.79
11/3/2004 7:00	54.6	8.32	7.79
11/3/2004 8:00	54.38	8.27	7.78
11/3/2004 9:00	54.32	8.18	7.8
11/3/2004 10:00	54.13	8.08	7.8
11/3/2004 11:00	53.96	8.29	7.8
11/3/2004 12:00	53.79	8.61	7.79
11/3/2004 13:00	53.52	8.93	7.76
11/3/2004 14:00	53.24	9.09	7.75
11/3/2004 15:00	52.97	9.07	7.76

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/3/2004 16:00	52.75	9.07	7.78
11/3/2004 17:00	52.55	9.01	7.81
11/3/2004 18:00	52.49	8.90	7.83
11/3/2004 19:00	52.52	8.80	7.84
11/3/2004 20:00	52.6	8.76	7.85
11/3/2004 21:00	52.65	8.63	7.85
11/3/2004 22:00	52.75	8.37	7.84
11/3/2004 23:00	52.88	8.13	7.83
11/4/2004 0:00	52.93	8.13	7.81
11/4/2004 1:00	53	8.27	7.79
11/4/2004 2:00	53.07	8.63	7.76
11/4/2004 3:00	53.14	8.55	7.72
11/4/2004 4:00	53.19	8.57	7.7
11/4/2004 5:00	53.21	8.69	7.69
11/4/2004 6:00	53.03	8.79	7.69
11/4/2004 7:00	53.19	8.85	7.7
11/4/2004 8:00	53.16	8.69	7.7
11/4/2004 9:00	53.14	8.61	7.7
11/4/2004 10:00	53.11	8.75	7.71
11/4/2004 11:00	53.02	8.75	7.7
11/4/2004 12:00	52.95	8.80	7.7
11/4/2004 13:00	52.93	8.87	7.69
11/4/2004 14:00	52.88	8.87	7.71
11/4/2004 15:00	52.83	8.92	7.71
11/4/2004 16:00	52.77	8.93	7.72
11/4/2004 17:00	52.71	8.95	7.73
11/4/2004 18:00	52.64	8.99	7.73
11/4/2004 19:00	52.59	9.01	7.74
11/4/2004 20:00	52.51	9.04	7.74
11/4/2004 21:00	52.38	9.25	7.73
11/4/2004 22:00	52.24	9.26	7.74
11/4/2004 23:00	52.14	9.26	7.74
11/5/2004 0:00	51.99	9.28	7.75
11/5/2004 1:00	51.86	9.28	7.75
11/5/2004 2:00	51.68	9.31	7.75
11/5/2004 3:00	51.5	9.35	7.75
11/5/2004 4:00	51.33	9.40	7.75
11/5/2004 5:00	51.14	9.46	7.75
11/5/2004 6:00	50.96	9.52	7.76
11/5/2004 7:00	50.79	9.60	7.76
11/5/2004 8:00	50.61	10.88	7.77
11/5/2004 9:00	50.47	9.77	7.78
11/5/2004 10:00	50.38	9.84	7.78
11/5/2004 11:00	50.38	9.94	7.79
11/5/2004 12:00	45.89	10.04	8.13
11/5/2004 13:00	50.55	10.08	7.82
11/5/2004 14:00	50.63	10.12	7.82
11/5/2004 15:00	50.73	10.17	7.83
11/5/2004 16:00	50.88	10.15	7.85

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/5/2004 17:00	50.98	10.10	7.85
11/5/2004 18:00	51.04	10.06	7.86
11/5/2004 19:00	51.09	10.04	7.87
11/5/2004 20:00	51.03	10.01	7.86
11/5/2004 21:00	50.91	10.03	7.85
11/5/2004 22:00	50.74	10.03	7.84
11/5/2004 23:00	50.57	10.25	7.83
11/6/2004 0:00	50.4	10.22	7.82
11/6/2004 1:00	50.23	10.22	7.82
11/6/2004 2:00	50.1	10.23	7.82
11/6/2004 3:00	50.01	10.23	7.82
11/6/2004 4:00	49.89	10.20	7.82
11/6/2004 5:00	49.78	10.20	7.82
11/6/2004 6:00	49.7	10.20	7.83
11/6/2004 7:00	49.62	10.22	7.84
11/6/2004 8:00	49.52	10.27	7.84
11/6/2004 9:00	49.42	10.30	7.84
11/6/2004 10:00	49.37	10.37	7.84
11/6/2004 11:00	49.39	10.17	7.85
11/6/2004 12:00	49.47	10.23	7.86
11/6/2004 13:00	49.61	10.26	7.85
11/6/2004 14:00	49.78	10.31	7.86
11/6/2004 15:00	49.93	10.33	7.86
11/6/2004 16:00	50.06	10.33	7.86
11/6/2004 17:00	50.14	10.32	7.87
11/6/2004 18:00	50.25	10.29	7.87
11/6/2004 19:00	50.36	10.30	7.87
11/6/2004 20:00	50.41	10.54	7.88
11/6/2004 21:00	50.37	10.54	7.88
11/6/2004 22:00	50.31	10.55	7.87
11/6/2004 23:00	50.22	10.53	7.88
11/7/2004 0:00	50.14	10.50	7.88
11/7/2004 1:00	50	10.45	7.89
11/7/2004 2:00	49.87	10.43	7.89
11/7/2004 3:00	49.75	10.43	7.89
11/7/2004 4:00	49.68	10.40	7.89
11/7/2004 5:00	49.63	10.37	7.89
11/7/2004 6:00	49.57	10.32	7.89
11/7/2004 7:00	49.48	10.33	7.89
11/7/2004 8:00	49.4	10.33	7.89
11/7/2004 9:00	49.34	10.40	7.9
11/7/2004 10:00	49.3	10.26	7.89
11/7/2004 11:00	49.33	10.34	7.9
11/7/2004 12:00	49.48	10.41	7.9
11/7/2004 13:00	49.65	10.47	7.9
11/7/2004 14:00	49.89	10.49	7.91
11/7/2004 15:00	50.14	10.50	7.92
11/7/2004 16:00	50.24	10.47	7.92
11/7/2004 17:00	50.26	10.49	7.93

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/7/2004 18:00	50.3	10.45	7.93
11/7/2004 19:00	50.3	10.47	7.93
11/7/2004 20:00	50.32	10.68	7.93
11/7/2004 21:00	50.29	10.69	7.94
11/7/2004 22:00	50.26	10.66	7.94
11/7/2004 23:00	50.17	10.60	7.94
11/8/2004 0:00	50.05	10.55	7.94
11/8/2004 1:00	49.88	10.52	7.96
11/8/2004 2:00	49.67	10.46	7.96
11/8/2004 3:00	49.45	10.40	7.96
11/8/2004 4:00	49.26	10.35	7.96
11/8/2004 5:00	49.12	10.29	7.96
11/8/2004 6:00	48.99	10.24	7.96
11/8/2004 7:00	48.82	10.21	7.96
11/8/2004 8:00	48.66	10.22	7.96
11/8/2004 9:00	48.51	10.24	7.96
11/8/2004 10:00	48.37	10.29	7.96
11/8/2004 11:00	48.33	10.35	7.96
11/8/2004 12:00	48.34	10.36	7.96
11/8/2004 13:00	48.39	10.37	7.96
11/8/2004 14:00	48.47	10.37	7.97
11/8/2004 15:00	48.53	10.38	7.97
11/8/2004 16:00	48.56	10.35	7.97
11/8/2004 17:00	48.49	10.33	7.97
11/8/2004 18:00	48.47	10.32	7.97
11/8/2004 19:00	48.47	10.29	7.97
11/8/2004 20:00	48.47	10.28	7.97
11/8/2004 21:00	48.47	10.48	7.97
11/8/2004 22:00	48.42	10.44	7.97
11/8/2004 23:00	48.34	10.38	7.97
11/9/2004 0:00	48.25	10.40	7.97
11/9/2004 1:00	48.15	10.36	7.97
11/9/2004 2:00	48.03	10.32	7.97
11/9/2004 3:00	47.9	10.25	7.97
11/9/2004 4:00	47.76	10.18	7.96
11/9/2004 5:00	47.66	10.06	7.98
11/9/2004 6:00	47.55	0.00	7.98
11/9/2004 7:00	47.43	0.00	7.97
11/9/2004 8:00	47.31	0.00	7.97
11/9/2004 9:00	47.18	0.00	7.96
Sonde reprogrammed for DO mg/l			
11/10/2004 9:00	66.14	7.41	7.42
11/10/2004 10:00	45.89	10.51	7.98
11/10/2004 11:00	45.85	10.48	7.98
11/10/2004 12:00	45.98	10.55	8
11/10/2004 13:00	46.12	10.57	8.01
11/10/2004 14:00	46.25	10.61	8.01
11/10/2004 15:00	46.37	10.65	8.02
11/10/2004 16:00	46.47	10.71	8.03

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/10/2004 17:00	46.56	10.74	8.03
11/10/2004 18:00	46.61	10.75	8.03
11/10/2004 19:00	46.69	10.76	8.03
11/10/2004 20:00	46.74	10.74	8.03
11/10/2004 21:00	46.86	10.8	8.04
11/10/2004 22:00	46.92	10.78	8.04
11/10/2004 23:00	47.01	10.76	8.03
11/11/2004 0:00	47.08	10.74	8.03
11/11/2004 1:00	47.16	10.73	8.04
11/11/2004 2:00	47.2	10.7	8.04
11/11/2004 3:00	47.2	10.64	8.03
11/11/2004 4:00	47.19	10.59	8.03
11/11/2004 5:00	47.15	10.52	8.03
11/11/2004 6:00	47.08	10.47	8.03
11/11/2004 7:00	47.03	10.37	8.02
11/11/2004 8:00	46.96	10.31	8.02
11/11/2004 9:00	46.87	10.24	8.02
11/11/2004 10:00	46.77	10.18	8.01
11/11/2004 11:00	46.67	10.18	8.01
11/11/2004 12:00	46.56	10.18	8.02
11/11/2004 13:00	46.47	10.2	8.03
11/11/2004 14:00	46.41	10.22	8.04
11/11/2004 15:00	46.38	10.21	8.03
11/11/2004 16:00	46.3	10.24	8.04
11/11/2004 17:00	46.26	10.24	8.04
11/11/2004 18:00	46.2	10.25	8.05
11/11/2004 19:00	46.12	10.23	8.05
11/11/2004 20:00	46.06	10.23	8.05
11/11/2004 21:00	45.97	10.23	8.05
11/11/2004 22:00	45.91	10.21	8.05
11/11/2004 23:00	45.84	10.21	8.05
11/12/2004 0:00	45.76	10.24	8.06
11/12/2004 1:00	45.65	10.19	8.05
11/12/2004 2:00	45.54	10.2	8.05
11/12/2004 3:00	45.45	10.19	8.06
11/12/2004 4:00	45.3	10.2	8.06
11/12/2004 5:00	45.15	10.19	8.06
11/12/2004 6:00	45.03	10.15	8.06
11/12/2004 7:00	44.83	10.11	8.06
11/12/2004 8:00	44.67	10.08	8.06
11/12/2004 9:00	44.52	10.04	8.06
11/12/2004 10:00	44.33	10.03	8.07
11/12/2004 11:00	44.2	9.99	8.06
11/12/2004 12:00	44.2	10.03	8.06
11/12/2004 13:00	44.3	10.06	8.07
11/12/2004 14:00	44.44	10.19	8.09
11/12/2004 15:00	44.54	10.21	8.09
11/12/2004 16:00	44.56	10.23	8.1
11/12/2004 17:00	44.51	10.23	8.1

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/12/2004 18:00	44.41	10.18	8.09
11/12/2004 19:00	44.35	10.2	8.09
11/12/2004 20:00	44.31	10.23	8.09
11/12/2004 21:00	44.23	10.23	8.09
11/12/2004 22:00	44.17	10.2	8.09
11/12/2004 23:00	44.11	10.19	8.09
11/13/2004 0:00	44.06	10.18	8.09
11/13/2004 1:00	44.05	10.17	8.08
11/13/2004 2:00	43.99	10.19	8.09
11/13/2004 3:00	43.93	10.23	8.09
11/13/2004 4:00	43.8	10.16	8.09
11/13/2004 5:00	43.65	10.15	8.09
11/13/2004 6:00	43.56	10.14	8.1
11/13/2004 7:00	43.36	10.06	8.09
11/13/2004 8:00	43.23	10.03	8.09
11/13/2004 9:00	43.07	9.97	8.09
11/13/2004 10:00	43	10.01	8.11
11/13/2004 11:00	42.91	9.94	8.1
11/13/2004 12:00	42.9	9.9	8.09
11/13/2004 13:00	43.05	9.95	8.1
11/13/2004 14:00	43.19	9.96	8.1
11/13/2004 15:00	43.32	9.96	8.1
11/13/2004 16:00	43.26	9.9	8.08
11/13/2004 17:00	43.4	10.01	8.11
11/13/2004 18:00	43.33	9.98	8.1
11/13/2004 19:00	43.26	9.96	8.1
11/13/2004 20:00	43.13	9.93	8.09
11/13/2004 21:00	43.08	9.91	8.09
11/13/2004 22:00	43.12	9.94	8.1
11/13/2004 23:00	43.11	9.9	8.09
11/14/2004 0:00	42.99	9.87	8.08
11/14/2004 1:00	43.05	9.88	8.09
11/14/2004 2:00	43.04	9.9	8.09
11/14/2004 3:00	42.97	9.86	8.09
11/14/2004 4:00	42.96	9.88	8.1
11/14/2004 5:00	42.91	9.91	8.1
11/14/2004 6:00	42.71	9.87	8.1
11/14/2004 7:00	42.47	9.83	8.1
11/14/2004 8:00	42.42	9.81	8.1
11/14/2004 9:00	42.27	9.75	8.1
11/14/2004 10:00	42.2	9.72	8.1
11/14/2004 11:00	42.08	9.62	8.09
11/14/2004 12:00	42.14	9.63	8.09
11/14/2004 13:00	42.21	9.6	8.09
11/14/2004 14:00	42.32	9.58	8.08
11/14/2004 15:00	42.49	9.59	8.09
11/14/2004 16:00	42.63	9.6	8.09
11/14/2004 17:00	42.71	9.63	8.1
11/14/2004 18:00	42.52	9.58	8.09

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/14/2004 19:00	42.56	9.59	8.1
11/14/2004 20:00	42.42	9.57	8.1
11/14/2004 21:00	42.38	9.56	8.1
11/14/2004 22:00	42.35	9.54	8.1
11/14/2004 23:00	42.32	9.53	8.09
11/15/2004 0:00	42.35	9.53	8.09
11/15/2004 1:00	42.4	9.53	8.09
11/15/2004 2:00	42.41	9.54	8.09
11/15/2004 3:00	42.4	9.55	8.09
11/15/2004 4:00	42.39	9.56	8.1
11/15/2004 5:00	42.36	9.59	8.1
11/15/2004 6:00	42.24	9.59	8.11
11/15/2004 7:00	42.15	9.58	8.11
11/15/2004 8:00	42.01	9.54	8.11
11/15/2004 9:00	41.81	9.49	8.11
11/15/2004 10:00	41.64	9.46	8.11
11/15/2004 11:00	41.81	9.42	8.11
11/15/2004 12:00	41.82	9.36	8.11
11/15/2004 13:00	41.92	9.33	8.11
11/15/2004 14:00	42	9.31	8.11
11/15/2004 15:00	42.1	9.3	8.11
11/15/2004 16:00	42.12	9.29	8.11
11/15/2004 17:00	42.07	9.26	8.11
11/15/2004 18:00	42.04	9.24	8.11
11/15/2004 19:00	42.02	9.21	8.11
11/15/2004 20:00	42	9.2	8.11
11/15/2004 21:00	41.96	9.17	8.11
11/15/2004 22:00	41.96	9.16	8.11
11/15/2004 23:00	42	9.16	8.11
11/16/2004 0:00	42.08	9.18	8.11
11/16/2004 1:00	42.13	9.17	8.11
11/16/2004 2:00	42.2	9.2	8.12
11/16/2004 3:00	42.28	9.23	8.12
11/16/2004 4:00	42.31	9.26	8.12
11/16/2004 5:00	42.34	9.29	8.13
11/16/2004 6:00	42.33	9.27	8.13
11/16/2004 7:00	42.33	9.24	8.13
11/16/2004 8:00	42.29	9.19	8.13
11/16/2004 9:00	42.29	9.12	8.12
11/16/2004 10:00	42.27	9.04	8.11
11/16/2004 11:00	42.31	8.97	8.11
11/16/2004 12:00	42.4	8.94	8.11
11/16/2004 13:00	42.47	8.89	8.11
11/16/2004 14:00	42.58	8.87	8.11
11/16/2004 15:00	42.77	8.87	8.11
11/16/2004 16:00	42.91	8.87	8.11
11/16/2004 17:00	43.03	8.86	8.11
11/16/2004 18:00	43.09	8.84	8.11
11/16/2004 19:00	43.16	8.82	8.11

Tecumseh Bridge on the Maumee River
YSI Sonde Data

Date/time	Temp F	DO mg/l	pH
11/16/2004 20:00	43.22	8.79	8.1
11/16/2004 21:00	43.28	8.78	8.11
11/16/2004 22:00	43.36	8.77	8.11
11/16/2004 23:00	43.43	8.75	8.1
11/17/2004 0:00	43.51	8.74	8.11
11/17/2004 1:00	43.59	8.73	8.1
11/17/2004 2:00	43.68	8.72	8.1
11/17/2004 3:00	43.76	8.72	8.11
11/17/2004 4:00	43.84	8.73	8.11
11/17/2004 5:00	43.88	8.69	8.1
11/17/2004 6:00	43.92	8.69	8.11
11/17/2004 7:00	43.93	8.64	8.11
11/17/2004 8:00	43.94	8.61	8.11
11/17/2004 9:00	43.95	8.56	8.1
11/17/2004 10:00	43.96	8.5	8.1
11/17/2004 11:00	44.01	8.44	8.09
11/17/2004 12:00	44.09	8.41	8.1
11/17/2004 13:00	44.24	8.37	8.1
11/17/2004 14:00	44.37	8.33	8.09
11/17/2004 15:00	44.52	8.3	8.09
11/17/2004 16:00	44.67	8.23	8.08
11/17/2004 17:00	44.74	8.21	8.08
11/17/2004 18:00	44.82	8.2	8.09
11/17/2004 19:00	44.87	8.18	8.09
11/17/2004 20:00	44.99	8.14	8.08
11/17/2004 21:00	45.11	8.12	8.08
11/17/2004 22:00	45.29	8.06	8.07
11/17/2004 23:00	45.42	8.04	8.07
11/18/2004 0:00	45.58	8.01	8.07
11/18/2004 1:00	45.7	8	8.07
11/18/2004 2:00	45.83	8.98	8.07
11/18/2004 3:00	45.93	8.95	8.07
11/18/2004 4:00	46.04	8.92	8.07
11/18/2004 5:00	46.15	8.88	8.06
11/18/2004 6:00	46.27	8.83	8.06
11/18/2004 7:00	46.34	8.81	8.06
11/18/2004 8:00	46.35	8.74	8.06
11/18/2004 9:00	46.34	8.65	8.05
11/18/2004 10:00	46.43	8.77	8.05
11/18/2004 11:00	46.61	7.42	8.03
11/18/2004 12:00	46.75	7.37	8.03
11/18/2004 13:00	46.86	7.34	8.03
11/18/2004 14:00	46.97	7.37	8.03
11/18/2004 15:00	47.08	7.38	8.04

23-Oct-04 11:26a.m.	0.01
23-Oct-04 11:51a.m.	0.01
	0.03
23-Oct-04 12:06p.m.	0.01
23-Oct-04 12:31p.m.	0.01
23-Oct-04 12:36p.m.	0
23-Oct-04 12:41p.m.	0.01
23-Oct-04 12:46p.m.	0.01
23-Oct-04 12:51p.m.	0.02
	0.06
23-Oct-04 01:16p.m.	0.01
	0.01
23-Oct-04 03:01p.m.	0.04
23-Oct-04 03:06p.m.	0.04
23-Oct-04 03:11p.m.	0.02
23-Oct-04 03:16p.m.	0.02
23-Oct-04 03:21p.m.	0
23-Oct-04 03:26p.m.	0
23-Oct-04 03:31p.m.	0.01
	0.13
23-Oct-04 09:21p.m.	0.01
23-Oct-04 09:26p.m.	0.05
	0.06
	.29
27-Oct-04 03:16a.m.	0.01
	0.01
	.01
29-Oct-04 09:46a.m.	0.01
	0.01
29-Oct-04 10:01a.m.	0.01
29-Oct-04 10:06a.m.	0.01
	0.02
29-Oct-04 11:36a.m.	0.01
	0.01
	.04
30-Oct-04 02:46a.m.	0.06
30-Oct-04 02:51a.m.	0.04
30-Oct-04 02:56a.m.	0.01
	0.11
30-Oct-04 03:01a.m.	0.01
30-Oct-04 03:06a.m.	0.01
	0.02
30-Oct-04 05:41a.m.	0.13
30-Oct-04 05:46a.m.	0.01
30-Oct-04 05:51a.m.	0.02
30-Oct-04 05:56a.m.	0.01
	0.17
30-Oct-04 06:01a.m.	0.01
30-Oct-04 06:16a.m.	0.02
30-Oct-04 06:51a.m.	0.01
	0.04

30-Oct-04 07:36a.m.	0.01
	0.01
30-Oct-04 10:26a.m.	0.01
	0.01
	.36
1-Nov-04 02:16p.m.	0.01
1-Nov-04 02:21p.m.	0.01
1-Nov-04 02:26p.m.	0.01
	0.03
1-Nov-04 03:01p.m.	0.01
1-Nov-04 03:06p.m.	0
1-Nov-04 03:11p.m.	0.01
1-Nov-04 03:21p.m.	0.01
1-Nov-04 03:51p.m.	0.01
1-Nov-04 03:56p.m.	0.01
	0.05
1-Nov-04 04:36p.m.	0.01
	0.01
1-Nov-04 09:16p.m.	0.01
1-Nov-04 09:21p.m.	0
1-Nov-04 09:26p.m.	0.01
1-Nov-04 09:41p.m.	0.01
1-Nov-04 09:51p.m.	0.01
1-Nov-04 09:56p.m.	0.02
	0.06
1-Nov-04 10:01p.m.	0.01
1-Nov-04 10:06p.m.	0.01
1-Nov-04 10:11p.m.	0.02
1-Nov-04 10:16p.m.	0.03
1-Nov-04 10:21p.m.	0.02
1-Nov-04 10:26p.m.	0.02
1-Nov-04 10:31p.m.	0.01
1-Nov-04 10:36p.m.	0.01
1-Nov-04 10:41p.m.	0.01
1-Nov-04 10:46p.m.	0.02
1-Nov-04 10:51p.m.	0.06
1-Nov-04 10:56p.m.	0.01
	0.23
1-Nov-04 11:01p.m.	0.01
1-Nov-04 11:26p.m.	0.01
	0.02
	.40
2-Nov-04 03:51a.m.	0.01
	0.01
2-Nov-04 04:16a.m.	0.01
2-Nov-04 04:31a.m.	0.01
2-Nov-04 04:36a.m.	0.01
2-Nov-04 04:41a.m.	0.01
2-Nov-04 04:46a.m.	0
2-Nov-04 04:51a.m.	0.01
	0.05

ATTACHMENT 7

St. Joseph River at Mayhew Road

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	150.5	61.3
DO	6.4	8.75
NH_3-N	0.01445	0.135
Total Phosphorus	0.13	0.20335
E. Coli	0.2	950
Hg	0.0000425	0.000025
Cu	0.0125	0.03125
Cd	0.0035	0.005625
Cyanide	0.02015 mg	0.006375 mg
Cis-1,2-Dichloroethene	N/A	0.00025
tetrachloroethene	N/A	0.00025
Cr	0.00375	0.01275
Zn	0.0085	0.03875
Pb	0.0065	0.01688
Ni	0.0155	0.01688
Ag	0.00175	0.005625

St. Joseph River at Tennessee Avenue

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	32	61.225
DO	7	9.855
NH_3-N	0.03665	0.25
Total Phosphorus	0.1262	0.0925
E. Coli	130	3,470.25
Hg	0.000015	0.000025
Cu	0.00425	0.039375
Cd	0.0035	0.005625
Cyanide	0.00015 mg	0.0053875 mg
Cis-1,2-Dichloroethene	N/A	0.00025
tetrachloroethene	N/A	0.00025
Cr	0.00325	0.012
Zn	0.0065	0.02
Pb	0.0065	0.01875
Ni	0.00625	0.0125
Ag	0.00175	0.005

St. Mary's at Ferguson Road

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	65	67.175
DO	11.9	8.2275
NH_3-N	0.03875	0.195
Total Phosphorus	0.349	0.325
E. Coli	220	3,088
Hg	0.000015	0.000025
Cu	0.0115	0.03125
Cd	0.0015	0.005
Cyanide	0.00025 mg	0.0038875 mg
Cis-1,2-Dichloroethene	N/A	0.00025
tetrachloroethene	N/A	0.00025
Cr	0.0065	0.0125
Zn	0.0115	0.02625
Pb	0.0065	0.01186
Ni	0.005	0.01438
Ag	0.0035	0.0075

St. Mary's at Harrison Street

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	63.5	31.175
DO	10.6	8.585
NH_3-N	0.02195	0.32
Total Phosphorus	0.2905	0.28
E. Coli	270	14,206.25
Hg	0.000015	0.000025
Cu	0.0065	0.01125
Cd	0.00125	0.005
Cyanide	0.0003 mg	0.006875 mg
Cis-1,2-Dichloroethene	N/A	0.000375
tetrachloroethene	N/A	0.013625
Cr	0.00375	0.015
Zn	0.0145	0.0375
Pb	0.0065	0.03
Ni	0.014	0.0125
Ag	0.00175	0.005

Maumee River at Anthony Boulevard

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	52.5	37.225
DO	8.3	9.425
NH_3-N	0.0373	0.17
Total Phosphorus	0.203	0.2075
E. Coli	210	19,666.75
Hg	0.000015	0.000023125
Cu	0.0055	0.01875
Cd	0.00125	0.005
Cyanide	0.0003 mg	0.0042 mg
Cis-1,2-Dichloroethene	N/A	0.00025
tetrachloroethene	N/A	0.00025
Cr	0.00425	0.01625
Zn	0.014	0.025
Pb	0.008	0.024375
Ni	0.00675	0.041875
Ag	0.00175	0.005

Maumee River at Landin Road

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	49.5	37.625
DO	7.1	8.3825
NH_3-N	0.16345	0.2475
Total Phosphorus	0.286	0.6825
E. Coli	110	8,883.5
Hg	0.000042	0.000025
Cu	0.007	0.01688
Cd	0.00125	0.005
Cyanide	0.00015 mg	0.00375 mg
Cis-1,2-Dichloroethene	N/A	0.00025
tetrachloroethene	N/A	0.00025
Cr	0.006	0.0145
Zn	0.022	0.03375
Pb	0.0065	0.02563
Ni	0.00725	0.02063
Ag	0.04775	0.005

Spy Run Creek Upstream

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	6.6	36.5
DO	12.78	8.82
NH_3-N	0.0527	0.321
Total Phosphorus	0.053	0.1405
E. Coli	207	6,281.5
CBOD	3.33	14.44
Cu	0.005	0.00875
Cd	0.005	0.005
Cr	0.005	0.006875
Zn	0.015	0.0425
Pb	0.005	0.008125
Ni	0.005	0.006875
Ag	0.005	0.005

Spy Run Creek Downstream

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	7.4	63.65
DO	12.55	8.71
NH_3-N	0.0599	0.321
Total Phosphorus	0.058	0.201
E. Coli	175	9744
CBOD	3.75	13.615
Cu	0.005	0.01875
Cd	0.005	0.005
Cr	0.005	0.006875
Zn	0.02	0.06625
Pb	0.005	0.009375
Ni	0.005	0.006875
Ag	0.005	0.005

Baldwin Ditch Upstream

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	6.2	17.25
DO	13.03	9.765
NH_3-N	0.1025	0.199
Total Phosphorus	0.091	0.1945
E. Coli	2077	56,607
CBOD	3.03	14.7
Cu	0.005	0.016875
Cd	0.005	0.005
Cr	0.005	0.006875
Zn	0.045	0.1025
Pb	0.005	0.006875
Ni	0.005	0.00625
Ag	0.005	0.005

Baldwin Ditch Downstream

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	9	19.45
DO	13.58	10.09
NH_3-N	0.1505	0.42
Total Phosphorus	0.106	0.1021
E. Coli	547	37,167
CBOD	2.21	14.56
Cu	0.005	0.018125
Cd	0.005	0.005
Cr	0.005	0.005625
Zn	0.015	0.06125
Pb	0.005	0.009375
Ni	0.005	0.00625
Ag	0.005	0.005

Relief RCD1

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	9.2	38.9
DO	12.25	7.765
NH_3-N	3.075	2.541
Total Phosphorus	.138	0.611
E. Coli	189	60,724
CBOD	2.47	22.83
Cu	0.005	0.013125
Cd	0.005	0.005
Cr	0.005	0.005
Zn	0.0125	0.049375
Pb	0.005	0.006875
Ni	0.005	0.005
Ag	0.005	0.005

Relief RC4

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	34.2	64.95
DO	12.25	7.765
NH_3-N	3.075	2.541
Total Phosphorus	0.132	0.1975
E. Coli	160	6,190
CBOD	4.47	10.465
Cu	0.005	0.013125
Cd	0.005	0.005
Cr	0.005	0.005
Zn	0.01	0.02
Pb	0.005	0.005
Ni	0.005	0.005
Ag	0.005	0.005

River MR6

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	35.6	45.3
DO	N/A	N/A
NH_3-N	0.1135	0.0855
Total Phosphorus	0.118	0.175
E. Coli	101	3,329.5
CBOD	4.17	18.71
Cu	0.005	0.005
Cd	0.005	0.005
Cr	0.005	0.005
Zn	0.01	0.01625
Pb	0.005	0.005
Ni	0.005	0.005
Ag	0.005	0.005

Lower Relief LRC5

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	5.6	19.6
DO	N/A	N/A
NH_3-N	1.415	1.017
Total Phosphorus	0.078	0.1025
E. Coli	22	2,587
CBOD	2.23	8.13
Cu	0.005	0.005625
Cd	0.005	0.005
Cr	0.005	0.005
Zn	0.0075	0.015
Pb	0.005	0.005
Ni	0.005	0.005
Ag	0.005	0.005

River MR7

Parameter	Dry Weather Concentration mg/l	Wet Weather Concentration mg/l
TSS	39.2	51.65
DO	N/A	N/A
NH_3-N	0.202	0.05
Total Phosphorus	0.119	0.1535
E. Coli	191	1,714
CBOD	4.23	10.44
Cu	0.005	0.005
Cd	0.005	0.005
Cr	0.005	0.005
Zn	0.0075	0.01875
Pb	0.005	0.005
Ni	0.005	0.005
Ag	0.005	0.005