Office of Water Quality
Total Maximum Daily Load Program

Total Maximum Daily Load
For *E. coli* Impairment in the St. Marys River Watershed and Maumee River
Adams and Allen Counties

and

Total Maximum Daily Load
For Impaired Biotic Community Impairment in the St. Marys River Watershed
Adams and Allen Counties

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Table of Contents

Tables and Figures

Appendices

Appendix 1: NPDES Permits in the St. Marys River Watershed
Appendix 2: Combined Sewer Overflows in St. Marys River Watershed
Appendix 3: CFO and CAFO in St. Marys River Watershed
Appendix 4: St. Marys River Watershed Reductions
Appendix 5: NPDES Permits in the Maumee River Watershed
Appendix 6: Combined Sewer Overflows in Maumee River Watershed
Appendix 7: CFO and CAFO in Maumee River Watershed
Appendix 8: Reductions for the Maumee River Watershed
Appendix 9: NPDES Permits in the Blue Creek/Habegger Ditch and Yellow Creek Watersheds
Appendix 10: Permitted Combined Sewer Overflows in the Blue Creek/Habegger Ditch and Yellow Creek Watersheds
Appendix 11: CFO and CAFOs in the Blue Creek/Habegger and Yellow Creek Watersheds
Appendix 12: Load Reductions

Attachments

Attachment A: *E. coli* Data for the St. Marys River Watershed
Attachment B: Water Quality Duration Curves for the St. Marys River Watershed
Attachment C: Load Duration Curves for the St. Marys River Watershed
Attachment D: *E. coli* Data for the Maumee River
Attachment E: Water Quality Duration Curves for the Maumee River
Attachment F: Load Duration Curves for the Maumee River
Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds
Attachment H: Water Quality Duration Curves for Blue Creek/Habegger and Yellow Creek Watersheds
Attachment I: Load Duration Curves for Blue Creek/Habegger and Yellow Creek Watersheds

I. Introduction

In accordance with section 303(d) of the Federal Clean Water Act and the United States Environmental Protection Agency's (USEPA's) Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations (CFR), Part 130) it is required that States develop a Total Maximum Daily Loads (TMDLs) for waterbodies that are not meeting Water Quality Standards (WQS). TMDLs provide States a basis for determining the pollutant reductions necessary from both point and nonpoint sources to restore and maintain the quality of their water resources. The purposes of this TMDL are to identify the sources of the impairment and determine the allowable levels of *E. coli* bacteria for the St. Marys River watershed in Adams and Allen Counties and *E. coli* bacteria for the Maumee River in Allen County in Indiana. In addition, this TMDL will address the Impaired Biotic Community (IBC) and nutrient impairments by determining the sources and allowable levels of nutrients and total suspended solids (TSS) for the Blue Creek/Habegger Ditch, Yellow Creek, and the Unnamed Tributary to St. Marys River watersheds, Adams and Allen Counties, Indiana. Based on information gathered as a part of this TMDL, nutrients and TSS have been determined as the primary pollutants contributing to the IBC impairment for the aforementioned watersheds.

The Indiana Department of Environmental Management (IDEM) was awarded a 104(b)(3) grant by USEPA Region 5 to complete TMDLs for the St. Marys River watershed and Maumee River in 2004. America's Clean Water Foundation received a grant to fund Bruce Cleland, of USEPA Region 10, for technical support to assist IDEM in developing these watershed and river TMDLs. After IDEM and Mr. Cleland reviewed the initial data used to determine that this watershed and river were impaired, a more comprehensive study was initiated in the spring of 2004 to gain a thorough understanding of the St. Marys River watershed. IDEM sampled the St. Marys River watershed biweekly from March of 2004 through October of 2004. IDEM partnered with the City of Fort Wayne to sample several sites in Adams and Allen County on the weeks opposite the IDEM sampling, from July of 2004 through October of 2004. This sampling examined basic water quality throughout the St. Marys watershed, which included several key tributaries. IDEM did not collect additional water quality data in the Maumee River during the 2004 sampling event.

These TMDLs are separated into sections by impairment. When appropriate, each section is separated further into the St. Marys River watershed and Maumee River. Each section will contain detailed information regarding the waterbodies that are impaired for that parameter, a description of the impairment, sources of the impairment, the appropriate load allocations, waste load allocations, margin of safety, and implementation suggestions for that impairment. A general description of the St. Marys River watershed and Maumee River are located below.

St. Marys River Watershed

The St. Marys River watershed is located in Adams and Allen Counties in Indiana. The St. Marys River watershed is located in the Great Lakes Basin, hydrologic unit code 41000040. The St. Marys River watershed TMDL includes the St. Marys River, Habegger Ditch, Gates Ditch, Blue Creek, Yellow Creek, Martz Ditch, Borum Run, Holthouse Ditch, Kohne Ditch, Gerke Ditch, and Nickelsen Creek. The St. Marys River starts in Ohio and flows across the Ohio-Indiana State line into the southern part of Adams County. The St. Marys River continues north through Adams and Allen County before joining the St. Joseph River to create the Maumee River in the City of Fort Wayne and flows back into Ohio (Figure 1). Ohio also has the St. Marys River listed on their 303(d) List. Unfortunately, Ohio has their portion of the St. Marys River TMDL scheduled for completion in 2012. However, Ohio's TMDL Program has provided support in the completion of Indiana's St. Marys River watershed TMDL.

The St. Marys River watershed is listed on the 2002 303(d) List for *E. coli*, impaired biotic communities (IBC), ammonia, nutrients, algae, and total dissolved solids. On the 2004 303(d) List, the St. Marys River watershed is listed for *E. coli*, impaired biotic communities (IBC), ammonia, and nutrients. Based on the data collected in 2004 by IDEM and the City of Fort Wayne, a reassessment was completed on the St. Marys River watershed. This reassessment was completed to define the extent of the impairments listed on the 2004 303(d) List and in turn confirmed the listings of the St. Marys River watershed that were on the 2002 303(d) List. The reassessment for the *E. coli* impairment resulted in the addition of the following segments in the St. Marys River watershed to the 2006 303(d) List: INA0443_T1019, INA0443_T1020, INA0442_00, INA0445_00, INA0446_00, INA0446_T1015, INA0448_00, INA0449_00, INA0453_00, INA0454_T1005, INA0454_T1012, INA0463_00, INA0463_T1003, INA0446_T1022, INA0465_00, and INA0465_T1002.

The reassessment also determined that segment INA0446_T1013 will be split. In this segment, the headwaters will be changed to "being evaluated for *E. coli*" and will not appear on the 2006 303(d) List. However, the main stem of this segment up to the first tributary will be assessed as impaired for *E. coli* and will be listed on the 2006 303(d) Lists (Figure 1, Table 1).

Table 1: 2004 303(d) Listings for St. Marys River watershed

Waterbody Name	Segment ID Number	Length (Mi)	Impairment
St. Marys-Willshire	INA0434_00	2.84	*E. coli*
St. Marys River	INA0441_00	0.86	*E. coli*
Blue Creek	INA0442_T1007	11.94	*E. coli*
Blue Creek	INA0445_T1006	12.28	*E. coli*, IBC, ammonia, nutrients
Duer Ditch (Adams) and Other Tribs	INA0445_00	9.33	*E. coli*
Blue Creek Headwaters (Adams)	INA0442_00	8.46	*E. coli*
Habegger Ditch	INA0443_T1008	5.8	*E. coli*, IBC, nutrients
Wittmer Ditch, No. 1	INA0443_T1020	2.98	*E. coli*
Farlow Ditch and Tribs	INA0443-T1019	11.01	*E. coli*
Gates Ditch	INA0443_T1014	1.17	*E. coli*
Little Blue Creek	INA0444_00	22.12	*E. coli*
Borum Run and Tribs	INA0448_00	21.65	*E. coli*
Yellow Creek	INA0447_00	32.79	*E. coli*, IBC, nutrients
Martz Creek-Ruppert Ditch and Unnamed Tributaries	INA0447_T1002	9.82	*E. coli*
Holthouse Ditch-Kohne Ditch	INA0452_00	10.16	IBC, *E. coli*
St. Marys River	INA0461_T1004 INA0463_T1003 INA0465_T1002 INA0448_T1016 INA0449_T1017 INA0453_T1018 INA0454_T1021	37.7	*E. coli*
St. Marys River	INA0446_T1015	4.79	*E. coli*
Unnamed Trib of St. Marys River	INA0454_T1012	2.84	*E. coli*, IBC

Pleasant Mills and Tribs	INA0446_00	15.3	*E. coli*
Decatur Tribs	INA0449_00	7.12	*E. coli*
Gerke/Weber Ditch and Tribs	INA0453_00	17.53	*E. coli*
Snyder Ditch and Other Tribs	INA0463_00	10.61	*E. coli*
Junk Ditch	INA0465_00	6.55	*E. coli*
Spy Run Creek	INA0465_T1011	8.75	*E. coli*
Unnamed Tributaries to Spy Run Creek	INA0466_T1012	5.08	*E. coli*
Lowther Neuhaus Ditch	INA0466_T1013	3.03	*E. coli*
Unnamed Tributary to Lowther Neuhaus Ditch	INA0466_T1014	3.00	*E. coli*
St. Marys River	INA0466_T1022	0.5	*E. coli*

** The total miles of the stream, may be adjusted on the 2006 303(d) List.*

Maumee River

The Maumee River is located in Allen County, Indiana. The Maumee River flows from the confluence of the St. Marys River and St. Joseph River in the City of Fort Wayne. The Maumee River then flows east through Allen County and across the Indiana-Ohio State line into Ohio. The major tributaries in the Maumee River include Trier Ditch, Bullerman Ditch, Gar Creek, Botern Ditch, Black Creek, Ham Interceptor Ditch, and other tributaries (Figure 2).

The Maumee River is listed on the 2002 and 2004 303(d) Lists for *E. coli*. *E. coli* samples collected at sites on the Maumee River and two of its major tributaries by the Allen County Health Department and the City of Fort Wayne confirm the *E. coli* impairment as listed on the 2004 303(d) List. Stream segment INA0516_M1005 of the Maumee River is not listed for *E. coli*. A reassessment was completed on this segment and it will be listed for *E. coli* on the 2006 303(d) List. The tributaries of Bullerman Ditch and Botern Ditch are listed on the 2004 303(d) List for impaired biotic communities (IBC). The tributary of Black Creek is listed on the 2004 303(d) List for nutrients and algae. The tributary of Ham Interceptor Ditch is listed on the 2004 303(d) List for impaired biotic communities and nutrients (Table 2). The Maumee River portion of this TMDL will only address the *E. coli* impairment on the Maumee River. The additional streams that have been impaired in the Maumee River Basin will be addressed in future TMDLs. The Maumee River is listed on the Ohio 2004 303(d) List for aquatic life impairment but not for recreational uses. Similar to the St. Marys TMDL, the Ohio portion of the Maumee River will be completed at a future time.

Table 2: 2004 303(d) Listings for Maumee River

Waterbody Name	Segment ID Num.	Length (Miles)	Impairment
Maumee River	INA0511_M1007 INA0514_M1006 INA051A_M1003	15.58	*E. coli*
Maumee River	INA0516_M1005	4.34	**E. coli*, FCA Hg & PCBs

Maumee River	INA0518_M1004 INA051C_M1002 INA051D_M1003	9.57	*E. coli*, FCA Hg & PCBs
Bullerman Ditch & other Tribs	INA0514_00	7.76	IBC
Botern Ditch & Tribs	INA0519_T1008	9.69	IBC
Black Creek (Allen County)	INA051B_00	34.37	nutrients algae
Ham Interceptor Ditch	INA051E_00	38.36	IBC, nutrients

**will be added in the 2006 303(d) List*

The purpose of the Maumee River TMDL is to identify the sources and determine the allowable levels of *E. coli* bacteria that will result in the attainment of the applicable WQS in the Maumee River in Allen County, Indiana.

II. *E. coli* TMDL for St. Marys River Watershed

The St. Marys River watershed can be divided into multiple sub-watersheds according to the major tributaries. Each of these major tributaries is impaired for *E. coli* separate from the St. Marys River *E. coli* impairment. These sub-watersheds are Blue Creek, Yellow Creek, Borum Run, Holthouse Ditch, and Nickelsen Creek. This section will address the TMDL required for the *E. coli* impairment in the St. Marys River watershed. Each of the sub-watersheds, in addition to the St. Marys River, will have a separate source assessment, while the numeric target, waste load allocation (WLA), load allocation (LA), and implementation activities will be applied to the entire St. Marys River watershed.

Section 1 - Background for St. Marys River watershed

The St. Marys River watershed was listed for an *E. coli* impairment on Indiana's 2002 and 2004 303(d) Lists. On the 2002 303(d) List, Blue Creek, Gates Ditch, and Little Blue Creek were also listed for an *E. coli* impairment. On the 2004 303(d) List, Habegger Ditch was added for an *E. coli* impairment (Figure 1, Table 3).

Due to additional data collection by IDEM's Assessment Branch in 2004, the 303(d) listing was reassessed for the *E. coli* impairment. Based on the reassessment, for the 2006 303(d) List, the St. Marys River, the Unnamed Tributaries of Blue Creek, Fuch Ditch, Schugg Ditch, Swartz Ditch, Wittmer Ditch No.1, Wittmer Ditch No.2, Farlow Ditch, Peel Ditch, Smith Shoemaker Ditch, Borum Run, Brown Ditch, Miller Ditch, Hanhet Ditch, Bluhm Ditch, Hessler Ditch, Blair Ditch, Holthouse Ditch-Kohne Ditch, St. Marys River Tributary, Gerke Ditch and other tributaries, and Weber Ditch will be added (Figure 1).

The state of Ohio has the St. Marys River listed as impaired for *E. coli* on their 303(d) List. The TMDL for the St. Marys River in Ohio is not scheduled to be developed until 2012. However, Ohio EPA has provided information on the St. Marys River in Ohio in support of the IDEM TMDL Program's development of the St. Marys River watershed TMDL.

This TMDL addresses approximately 290.66 miles of the St. Marys River watershed in Adams and Allen Counties, Indiana, where designated uses are impaired by elevated levels of *E. coli* during the recreational season. Adams and Allen Counties are located in northeast Indiana (Figure 1). All of the thirty-four (34) segments of the listed streams for this TMDL are located in the Great Lakes Basin in hydrologic unit codes 05120201 and 05120202. The description of the study area, its topography, and other particulars are as follows:

Table 3: Impaired Segments addressed by the St. Marys River Watershed E. coli TMDL

Waterbody Name	Segment ID Number(s)	Length (mi)	Impairment
Blue Creek	INA0442_T1007, INA0445_T1006	24.22	*E. coli*
Duer Ditch (Adams) and Other Tribs	INA0445_00	9.33	*E. coli*
Blue Creek Headwaters (Adams)	INA0442_00	8.46	*E. coli*
Habegger Ditch	INA0443_T1008	5.8	*E. coli*
Wittmer Ditch, No. 1	INA0443_T1020	2.98	*E. coli*
Farlow Ditch and Tribs	INA0443_T1019	11.01	*E. coli*
Gates Ditch	INA0443_T1014	1.17	*E. coli*
Little Blue Creek	INA0444_00	22.12	*E. coli*
Borum Run and Tribs	INA0448_00	21.65	*E. coli*
Holthouse Ditch-Kohne Ditch	INA0452_00	10.16	*E. coli*
St. Marys River	INA0449_T1017, INA0453_T1018, INA0454_T1005, INA0454_T1021, INA0461_T1004, INA0463_T1003, INA0465_T1002, INA0448_T1016	37.7	*E. coli*
Junk Ditch	INA0465_00	6.55	*E. coli*
St. Marys River	INA0446_T1015	4.79	*E. coli*
Yellow Creek	INA0447_00	32.79	*E. coli*, IBC, nutrients
Martz Creek-Ruppert Ditch and Unnamed Tributaries	INA0447_T1002	9.82	*E. coli*
St. Marys River Trib	INA0454_T1012	2.84	*E. coli*
Gerke/Weber Ditch and Tribs	INA0453_00	17.53	*E. coli*
Snyder Ditch and Other Tribs	INA0463_00	10.61	*E. coli*
Junk Ditch and Other Tribs	INA0465_00	6.55	*E. coli*
Spy Run Creek	INA0466_T1011	8.75	*E. coli*
Pleasant Mills and Tribs	INA0446_00,	15.3	*E. coli*
Decatur Tribs	INA0449_00	7.12	*E. coli*
Unnamed Tributaries to Spy Run Creek	INA0466_T1012	5.08	*E. coli*
Lowther Neuhaus Ditch	INA0466_T1013	3.03	*E. coli*
Unnamed Tributary to Lowther Neuhaus Ditch	INA0466_T1014	3.00	*E. coli*
St. Marys River	INA0466_T1022	0.5	*E. coli*
St. Marys River –Wilshire	INA0434_00	2.84	*E. coli*
St. Marys River	INA0441_00	0.86	*E. coli*

Historical data collected by IDEM's Assessment Branch documented elevated levels of *E. coli* in the St. Marys River watershed from 1991 to 2004. IDEM's Assessment Branch completed a survey of the watershed for the St. Marys River in 2000. In this survey, IDEM's Assessment Branch sampled four sites, five times, with the samples evenly spaced over a 30-day period from June 12, 2000, to July 10, 2000 (Figure 3). Each of the four sites violated the single sample maximum standard and geometric mean standard. This data was the basis for listing the St. Marys River watershed on the 2002 303(d) List.

IDEM's Assessment Branch completed an intensive survey in 2004. IDEM's Assessment Branch sampled fourteen sites, once every other week from March 2004 to October 2004 (Figure 3). The City of Fort Wayne sampled seven of the same sites as IDEM on opposite weeks from July of 2004 through October of 2004. This enables IDEM to calculate a geometric mean value for these seven sites sampled from July 2004 to October 2004. Each of these sites violated the single sample maximum standard nine to twelve times in the survey. The geometric mean was violated 92% of the time (Attachment A).

The City of Fort Wayne sampled the St. Marys River at two sites weekly during the recreational season from 2001 through 2004. These sites had many violations of the single maximum and geometric mean standards over this time (Figure 3, Attachment A).

The Allen County Health Department conducting a study to determine the impact septic systems have on a waterbody. The Health Department chose sampling sites throughout Allen County that had a cluster of homes on septics with an adjacent stream. Three of Allen County Health Department sampling sites were in the St. Marys River watershed. These sites were sampled weekly during the recreational season from 2001 through 2004. All three of these sites violated the single sample maximum and geometric mean standard multiple times over this time. Some of the single sample maximum standard violations were substantially higher than the water quality standards (Figure 3, Attachment A).

As part of a Clean Water Act Section 319 grant, the Adams County Soil and Water Conservation District sampled twelve sites in the St. Marys River watershed approximately monthly from May of 2000 through May of 2001. The sampling locations focused on the St. Marys River, Blue Creek, and Little Blue Creek. The single sample maximum standard was violated 83% of the time (Figure 3, Attachment A).

Section 2 - Numeric Targets

The impaired designated use for the waterbodies in the St. Marys River watershed is for total body contact recreational use during the recreational season, April 1st through October 31st.

Indiana Administrative Code 327 IAC 2-1.5-8(e)(2), establishes the full body contact recreational use *E. coli* WQS[1] for all waters in the Great Lakes system as follows:

> (2) *E. coli* bacteria, using membrane filter (MF) count, shall not exceed one hundred twenty-five (125) per one hundred (100) milliliters as a geometric mean based on not less than five (5) samples equally spaced over a thirty (30) day period nor exceed two hundred thirty-five (235) per one hundred (100) milliliters in any one (1) sample in a thirty (30) day period.

[1] *E. coli* WQS = 125 cfu/100ml or 235 cfu/100ml; 1 cfu (colony forming units)= 1 mpn (most probable number)

The sanitary wastewater *E. coli* effluent limits from point sources in the Great Lakes system during the recreational season, April 1st through October 31st, are also covered under 327 IAC 2-1.5-8(e)(2).

For the St. Marys River watershed during the recreational season (April 1st through October 31st), the target level is set at the *E. coli* WQS of 125 per one hundred milliliters as a 30-day geometric mean based on not less than five samples equally spaced over a thirty day period.

Section 3 - Source Assessment

3.1 - Blue Creek Sub-Watershed

Watershed Characterization

The Blue Creek sub-watershed is located entirely in Adams County. Blue Creek starts in the southwest portion of the county near the Adams-Wells County Line. Blue Creek then flows southeast until it is joined by Habegger Ditch. Blue Creek then turns and starts to flow northeast before discharging into the St. Marys River. Little Blue Creek is the last major tributary to discharge into Blue Creek before it joins the St. Marys River (Figure 4).

A reassessment using the data gathered by IDEM in 2004 was completed on the Blue Creek sub-watershed during the development of the St. Marys River watershed TMDL. In addition to portions of Blue Creek, all of Gates Ditch, and Habegger Ditch being listed as impaired for *E. coli*, the reassessment concluded that the headwaters of Blue Creek, Farlow Ditch and Tributaries, Wittmer No. 1 Ditch and Duer Ditch and other tributaries will be listed on the 2006 303(d) List as impaired for *E. coli*. The 2004 reassessment resulted in the entire Blue Creek sub-watershed scheduled for listing as impaired for *E. coli* on the 2006 303(d) List. The St. Marys River watershed TMDL will address the *E. coli* impairment, as it will appear on the 2006 303(d) List. The data collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 supported the conclusions of the reassessment.

E. coli Data

Twelve of the thirty sampling sites for the St. Marys River watershed are located in the Blue Creek sub-watershed. At one of the twelve sampling sites, Site 3, *E. coli* data was not collected leaving eleven sampling sites in the Blue Creek sub-watershed sampled for *E. coli*. The Adams County Soil and Water Conservation District, from May of 2000 to October of 2000, sampled monthly five of the eleven sampling sites, for *E .coli* (Figure 4). IDEM's Assessment Branch, from March of 2004 to October of 2004, sampled biweekly four of the eleven sampling sites for *E. coli* (Figure 4). The Adams County Soil and Water Conservation District and IDEM both sampled one of the sampling sites, Site 7. The Adams County Soil and Water Conservation District sampled this site from May of 2000 through October of 2000 and April of 2001 through May of 2001 monthly. IDEM's Assessment Branch sampled this site biweekly from March of 2004 through October of 2004. The remaining sampling site, Site 11, (Figure 4) was sampled by the City of Fort Wayne and IDEM's Assessment Branch from March of 2004 to October of 2004. IDEM's Assessment Branch sampled this site biweekly from March of 2004 to October of 2004. The City of Fort Wayne sampled this site on the opposite weeks IDEM's Assessment Branch sampled this site from July of 2004 to October of 2004. This allowed IDEM's TMDL Program to obtain a geometric mean value from the data collected from July of 2004 to October of 2004 (Attachment A).

The data collected by the Adams County Soil and Water Conservation District in 2000 had an *E. coli* single sample maximum standard average violation 89% of the time. The data collected by IDEM and the

City of Fort Wayne in 2004 had an average *E. coli* single sample maximum standard violation 86% of the time and a geometric mean standard violation 100% of the time. The highest single sample maximum standard *E. coli* value was >48,000 cfu/100mL at Site 11 in 2004. Combining all data, the *E. coli* values ranged from just over the single sample maximum standard to >48,000 cfu/100mL. The highest geometric mean value was >22,719 cfu/100mL at Site 11 in 2004.

Seven of the eleven sampling sites represent *E. coli* values for Blue Creek. The remaining five sample sites represent the major tributaries to Blue Creek. All eleven sampling locations were sampled at the mouth of the major tributaries, and had elevated levels of *E. coli*. The sampling sites on Blue Creek also had an elevated level of *E. coli*. The major tributaries in the Blue Creek sub-watershed are listed separately as being impaired for *E. coli*, but it can be concluded that these tributaries are contributing to the *E. coli* impairment in Blue Creek.

Landuse

IDEM assessed landuse using the 1992 Gap Analysis Program (GAP). In 1992, approximately 94% of the landuse in the Blue Creek sub-watershed was agriculture. The remaining landuse for the Blue Creek sub-watershed consisted of approximately 5% forested, 0.4% wetlands, 0.7% urban (Figure 5). A comparison of 1992 landuse with aerial photos taken in 2003 shows no substantial changes to the Blue Creek sub-watershed have occurred.

Wildlife

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of *E. coli*. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Blue Creek sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of *E. coli* impairment in waterbodies. In 2001, the Adams County Health Department completed a study to identify homes that have only septic tanks and no additional treatment systems throughout the county. Many of these systems then discharge directly to a stream or to a field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, approximately 10,000 residents, in rural Adams County have only a septic tank and no additional treatment for their wastewater. This study also identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to connecting to a municipal system. Six of the seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, the Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. However, many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001. (Smith, T., 2005)

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There are three NPDES permitted facilities located in the Blue Creek sub-watershed (Figure 4, Appendix 1). Pleasant Mill #2/Meshberger Bros. Stone Plant #2 (ING490084) discharges to Blue Creek and does not contain a sanitary component. Bing-Lear Manufacturing Group, Berne (IN0058980) discharges to Habegger Ditch and does not contain a sanitary component. Berne STP (IN0021369) discharges to the Wabash River, which is not located in the St. Marys River watershed. However, the Berne STP effluent outfall did, until several years ago, discharge to Habegger Ditch. Pleasant Mill #2, Meshberger Bros. Stone Plant #2 and the Bing-Lear Manufacturing Group, Berne STP are not sources of *E. coli* to the Blue Creek sub-watershed since there is no sanitary component in their discharge. Even though the Berne STP effluent outfall has a sanitary component to its discharge, its outfall is no longer located on Habegger Ditch, so the Berne STP effluent outfall is also not a source of *E. coli* to the Blue Creek sub-watershed.

Combined Sewer Overflows (CSO)

The City of Berne is the only CSO community in the Blue Creek sub-watershed (Figure 6, Appendix 2). The City of Berne has three CSO discharge points. These three CSO discharge points discharge to Sprunger Ditch, which is a tributary of Habegger Ditch. The City of Berne submitted their CSO Long Term Control Plan (LTCP) in August of 2002. The City of Berne and IDEM's office of Enforcement are currently working on an agreed order to address CSO discharge points in the collection system. CSO discharge points are a source of *E. coli* to the Blue Creek sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are twenty CFOs in the Blue Creek sub-watershed (Figure 4). Three of the CFOs are designated as CAFOs (Figure 4, Appendix 3). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." The active animal operations in Blue Creek sub-watershed have no open enforcement actions at this time. However, these operations are still a potential source of *E. coli* for the Blue Creek sub-watershed TMDL.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and the *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the Blue Creek sub-watershed. However, it is believed that these small livestock operations may be a source of *E. coli* impairment.

3.2 - Yellow Creek Sub-Watershed

Watershed Characterization

The Yellow Creek sub-watershed is located entirely in Adams County. Smith Ditch and Johnson Ditch combine to form Yellow Creek. Straight Branch and Hendricks Ditch flow into Yellow Creek downstream of the Smith Ditch and Johnson Ditch confluence. Yellow Creek flows northeast until it is joined by Martz Ditch. Ruppert Ditch is the major tributary of Martz Ditch. After Martz Ditch joins Yellow Creek, Yellow Creek then flows northwest to the St. Marys River (Figure 7).

A reassessment using the data gathered by IDEM in 2004 was completed on the Yellow Creek sub-watershed during the development of the St. Marys River watershed TMDL. It was determined that the headwater streams are not impaired for *E. coli* and will be delisted on the 2006 303(d) List. This includes the tributaries of Straight Branch, Smith Ditch, Johnson Ditch, and Hendricks Ditch. Yellow Creek, Martz Ditch, and Ruppert Ditch will remain on the 2006 303(d) List as impaired for *E. coli*. The St. Marys River watershed TMDL will address the *E. coli* impairment, as it will appear on the 2006 303(d) List. The data that was collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 supported the conclusions of the reassessment.

E. coli Data

Two of the thirty sampling sites for the St. Marys River watershed are located in the Yellow Creek sub-watershed. One of the two sampling sites is located on Martz Ditch before its confluence with Yellow Creek. IDEM's Assessment Branch from March 2004 to October 2004 sampled this site biweekly. The remaining sampling site was located on Yellow Creek after the confluence of Martz Ditch. This site was sampled by the City of Fort Wayne and IDEM's Assessment Branch from March of 2004 to October of 2004. IDEM's Assessment Branch sampled this site biweekly from March of 2004 to October of 2004. The City of Fort Wayne sampled this site on the opposite weeks IDEM's Assessment Branch sampled this site, from July of 2004 to October of 2004. This allowed IDEM's TMDL Program to obtain a geometric mean value from the data collected from July of 2004 to October of 2004 (Figure 7, Attachment A).

The *E. coli* data collected on Martz Ditch in 2004 have an average *E. coli* single sample maximum standard violation rate 68% of the time. The *E. coli* data collected on Yellow Creek by IDEM and the City of Fort Wayne in 2004 had an average *E. coli* single sample maximum standard violation 84% of the time and a geometric mean standard average violation 100% of the time. The highest single sample maximum standard *E. coli* value was >48,392 cfu/100mL on Yellow Creek in 2004. Combining all data collected in the Yellow Creek sub-watershed, the *E. coli* values ranged from above 300 cfu/100mL to >48,000 cfu/100mL with an average single sample maximum standard violation 76% of the time. The highest geometric mean value was 39,720 cfu/100mL at Site 16 on Yellow Creek in 2004 (Figure 7).

The sampling site on Martz Ditch is at the mouth. The sample taken at the Yellow Creek sampling location downstream of the confluence with Martz Ditch had elevated levels of *E. coli*. Martz Ditch and its tributary are listed separately as being impaired for *E. coli*, but it can be concluded that these tributaries are contributing to the *E. coli* impairment in Yellow Creek.

Landuse

IDEM assessed landuse using the 1992 Gap Analysis Program (GAP). In 1992, approximately 95% of the landuse in the Yellow Creek sub-watershed was agriculture. The remaining landuse for the Yellow Creek sub-watershed consisted of approximately 4% forested, 0.4% wetlands, 1% urban (Figure 8). A comparison of 1992 landuse with aerial photos taken in 2003 shows no substantial changes to the Yellow Creek sub-watershed have occurred.

Wildlife

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of

E. coli. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Yellow Creek sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of *E. coli* impairment in waterbodies. In 2001, the Adams County Health Department completed a study to identify homes that have only septic tanks and no additional treatment systems throughout the county. Many of these systems then discharge directly to a stream or to a field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, approximately 10,000 residents, in rural Adams County have only a septic tank and no additional treatment for their wastewater. This study also identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to connecting to a municipal system. Six of the seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. The Arcadia Subdivision is located in the Yellow Creek sub-watershed. In 1986, the Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001. (Smith, T., 2005)

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There is one NPDES permitted facility located in the Yellow Creek sub-watershed (Figure 7, Appendix 1). Monroe Water Department (IN0048151) discharges to Yellow Creek and does not contain a sanitary component. Since Monroe Water Department does not have a sanitary component, it is not a source of *E. coli* to the Yellow Creek sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are five CFOs in the Yellow Creek sub-watershed, none of which are considered CAFOs (Figure 7, Appendix 3). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." The active animal operations in Yellow Creek sub-watershed have no open enforcement actions at this time. However, these operations are still a potential source of *E. coli* for the Yellow Creek sub-watershed.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and the *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the Yellow Creek sub-watershed. However, it is believed that these small livestock operations may be a source of the *E. coli* impairment.

3.3 - Borum Run Sub-Watershed

Watershed Characterization

The Borum Run sub-watershed is located entirely in Adams County. The headwater streams of Blair Ditch, Bluhm Ditch, Hahnert Ditch, and Hessler Ditch combine to form Borum Run. Borum Run flows northeast and discharges into the St. Marys River. Miller Ditch is the only major tributary to Borum Run (Figure 9).

A reassessment using the data gathered by IDEM in 2004 was completed on the Borum Run sub-watershed during the development of the St. Marys River watershed TMDL. The Borum Run sub-watershed was not listed as being impaired on any 303(d) List. Based on the data gathered by IDEM's Assessment Branch in 2004, the reassessment concluded that the entire Borum Run sub-watershed is impaired for *E. coli* and Borum Run will be listed as impaired for *E. coli* on the 2006 303(d) List. The 2006 303(d) listing will include the following waterbodies: Borum Run, Miller Ditch, Hessler Ditch, Hahnert Ditch, Bluhm Ditch, and Blair Ditch. The St. Marys River watershed TMDL will address the *E. coli* impairment as it will appear on the 2006 303(d) List.

E. coli Data

One of the thirty sampling sites for the St. Marys River watershed is located in the Borum Run sub-watershed. This sampling site is located near the mouth of Borum Run. This site was sampled biweekly by IDEM's Assessment Branch from March 2004 to October 2004 (Figure 9, Attachment A).

The *E. coli* data collected on Borum Run in 2004 had an average *E. coli* single sample maximum standard violation 59% of the time. The highest single sample maximum standard *E. coli* value was 11,199 cfu/100mL on Borum Run in 2004.

The location of the sampling site on Borum Run is representative of the Borum Run sub-watershed. Since the landuses in the Borum Run sub-watershed are homogenous, it can be concluded that the tributaries are contributing to the *E. coli* impairment in Borum Run.

Landuse

IDEM assessed landuse using the 1992 Gap Analysis Program (GAP). In 1992, approximately 93% of the landuse in the Borum Run sub-watershed was agriculture. The remaining landuse for the Borum Run sub-watershed consisted of approximately 6% forested, 0.07% wetlands, 0.7% urban (Figure 10). A comparison of 1992 landuse with the aerial photos taken in 2003 shows no substantial changes to the Borum Run sub-watershed have occurred.

Wildlife

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of *E. coli*. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Borum Run sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of *E. coli* impairment in waterbodies. In 2001, the Adams County Health Department completed a study to identify homes that have only septic tanks and no additional treatment systems throughout the county. Many of these systems then discharge directly to a stream or to a field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, approximately 10,000 residents, in rural Adams County have only a septic tank and no additional treatment for their wastewater. This study also identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to connecting to a municipal system. Six of the seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, the Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001 (Smith, T., 2005).

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There is one NPDES permitted facility located in the Borum Run sub-watershed (Figure 9, Appendix 1). The White Horse Mobile Home Park (IN0044199) has a total residual chlorine limit, which is an indication of a sanitary component to its discharge. The facility did have significant water quality violations, including total residual chlorine, in 2001. These violations did result in an enforcement action and an agreed order. Since the completion of these enforcement activities, which resulted in changes at the treatment facility, the White Horse Mobile Home Park has been in compliance with the water quality standards.

Previously, facilities with design flows less than 1 MGD (typically minor municipals and semipublics) were not required to have *E. coli* effluent limits or conduct monitoring for *E. coli* bacteria, provided they maintained specific total residual chlorine levels in the chlorine contact tank. The assumption was that as long as chlorine levels were adequate in the chlorine contact tank, the *E. coli* bacteria would be deactivated and compliance with the *E. coli* WQS would be met by default. The original basis for allowing chlorine contact tank requirements to replace bacteria limits was based on fecal coliform, not *E. coli*. No direct correlation between the total residual chlorine levels and *E. coli* bacteria can be conclusively drawn. Further, it has been shown that exceedances of *E. coli* bacteria limits may still occur when the chlorine contact tank requirements are met. Due to the complications of comparing total residual chlorine to *E. coli*, it is difficult to determine to what extent, if any, this discharger could be contributing to the *E. coli* impairment in the Borum Run sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are no CFOs or CAFOs in the Borum Run sub-watershed

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and the *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the Borum Run sub-watershed. However, it is believed that these small livestock operations may be a source of the *E. coli* impairment.

3.4 - Holthouse Ditch Sub-Watershed

Watershed Characterization

The Holthouse Ditch sub-watershed is located entirely in Adams County. Bracht Ditch and Berry Ditch combine to form Holthouse Ditch. Holthouse Ditch flows northeast to its confluence with the St. Marys River (Figure 11).

A reassessment using the data gathered by IDEM in 2004 was completed on the Holthouse Ditch sub-watershed during the development of the St. Marys River watershed TMDL. It was determined that the headwater streams are not impaired for *E. coli* and will be delisted on the 2006 303(d) List. This includes the tributaries of Bracht Ditch and Berry Ditch. Holthouse Ditch and Kohne Ditch will remain on the 2006 303(d) List as impaired for *E. coli*. The St. Marys River watershed TMDL will address the *E. coli* impairment as it will appear on the 2006 303(d) List. The data that was collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 supported the conclusions of the reassessment.

E. coli Data

One of the thirty sampling sites for the St. Marys River watershed is located in the Holthouse Ditch sub-watershed. This sampling site is located on Holthouse Ditch downstream of Kohne Ditch. The City of Fort Wayne and IDEM's Assessment Branch from March of 2004 to October of 2004 sampled the site. IDEM's Assessment Branch sampled this site biweekly from March of 2004 to October of 2004. The City of Fort Wayne sampled this site from July of 2004 to October of 2004 on the opposite weeks that IDEM's Assessment Branch sampled the site. This allowed IDEM's TMDL Program to obtain a geometric mean value from the data collected from July of 2004 to October of 2004 (Figure 11, Attachment A).

The *E. coli* data collected on Holthouse Ditch by IDEM and the City of Fort Wayne in 2004 had an average *E. coli* single sample maximum standard violation of 62% of the time and a geometric mean standard violation of 72% of the time. The highest single sample maximum standard *E. coli* value was 39,720 cfu/100mL on Holthouse Ditch. The highest geometric mean value was 32,081 cfu/100mL at this site.

The sampling site on Holthouse Ditch was taken downstream of Kohne Ditch and had an elevated level of *E. coli*. Kohne Ditch is listed along with Holthouse Ditch on the 303(d) List. It can be concluded that based on the location of the sampling site during the sampling event completed in 2004 that Kohne Ditch is contributing to the *E. coli* impairment in Holthouse Ditch.

Landuse

IDEM assessed landuse using the 1992 Gap Analysis Program (GAP). In 1992, approximately 93% of the landuse in the Holthouse Ditch sub-watershed was agriculture. The remaining landuse for the

Holthouse Ditch sub-watershed consisted of approximately 3% forested, 1% wetlands, 2% urban, and 1% water (Figure 12). A comparison of 1992 landuse with the aerial photos taken in 2003 shows no substantial changes to the Holthouse Ditch sub-watershed have occurred.

Wildlife

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of *E. coli*. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Holthouse Ditch sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of *E. coli* impairment in waterbodies. In 2001, the Adams County Health Department completed a study to identify homes that have only septic tanks and no additional treatment systems throughout the county. Many of these systems then discharge directly to a stream or to a field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, approximately 10,000 residents, in rural Adams County have only a septic tank and no additional treatment for their wastewater. This study also identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to connecting to a municipal system. Six of the seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, the Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001 (Smith, T., 2005).

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There is one NPDES permitted facility located in the Holthouse Ditch sub-watershed (Figure 11, Appendix 1). The Country Acres Association (IN0055417) has a total residual chlorine limit, which is an indication of a sanitary component to its discharge. This facility has had significant violations of their total residual chlorine limits, among other violations, over the past four years. IDEM’s TMDL Program has brought this to the attention of IDEM’s Inspector, IDEM’s Compliance Section, IDEM’s Enforcement Section, and IDEM’s Data Management Section. These sections are reviewing the violations more closely to understand the nature of the violations.

Previously, facilities with design flows less than 1 MGD (typically minor municipals and semipublics) were not required to have *E. coli* effluent limits or conduct monitoring for *E. coli* bacteria, provided they maintained specific total residual chlorine levels in the chlorine contact tank. The assumption was that as long as chlorine levels were adequate in the chlorine contact tank, the *E. coli* bacteria would be deactivated and compliance with the *E. coli* WQS would be met by default. The original basis for allowing chlorine contact tank requirements to replace bacteria limits was based on fecal coliform, not *E. coli*. No direct correlation between the total residual chlorine levels and *E. coli* bacteria can be conclusively drawn. Further, it has been shown that exceedances of *E. coli* bacteria limits may still occur when the chlorine contact tank requirements are met. Due to the complications of comparing total residual chlorine to *E. coli*, it is difficult to determine to what extent, if any, this discharger could be a source of *E. coli* in the Holthouse Ditch sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are eleven CFOs in the Holthouse Ditch sub-watershed, none of which are considered CAFOs (Figure 11, Appendix 3). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." The active animal operations in Holthouse Ditch sub-watershed have no open enforcement actions at this time. However, these operations are still a potential source of *E. coli* for the Holthouse Ditch sub-watershed.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and the *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the Holthouse Ditch sub-watershed; however, it is believed that these small livestock operations may be a source of the *E. coli* impairment.

3.5 - Nickelsen Creek Sub-Watershed

Watershed Characterization

The Nickelsen Creek sub-watershed is located in Adams and Allen Counties. Nickelsen Creek starts in the northwest corner of Adams County and flows north into Allen County where it discharges to the St. Marys River. Lambert Ditch is the major tributary to Nickelsen Creek and discharges to Nickelsen Creek at the Adams-Allen County Line (Figure 13).

A reassessment using the data gathered by IDEM in 2004 was completed on the Nickelsen Creek sub-watershed during the development of the St. Marys River watershed TMDL. Nickelsen Creek was not listed on the 2004 303(d) List but will be listed on the 2006 303(d) List for *E. coli*. It was determined that Lambert Ditch should not be listed as impaired for *E. coli*. This conclusion was based on the sampling location on Nickelsen Creek in comparison to the location of the confluence of Lambert Ditch to Nickelsen Creek. The St. Marys River watershed TMDL will address the *E. coli* impairment as it will appear on the 2006 303(d) List. The data that was collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 supported the conclusions of the reassessment.

E. coli Data

One of the thirty sampling sites for the St. Marys River watershed is located in the Nickelsen Creek sub-watershed (Figure 13, Attachment A). This sampling site is located on Nickelsen Creek upstream of the confluence of Lambert Ditch. This site was sampled by the City of Fort Wayne and IDEM's Assessment Branch from March of 2004 to October of 2004. IDEM's Assessment Branch sampled this site biweekly from March of 2004 to October of 2004. The City of Fort Wayne sampled this site from July of 2004 to October of 2004 on the opposite weeks IDEM's Assessment Branch sampled this site. This allowed

IDEM's TMDL Program to obtain a geometric mean value from the data collected from July of 2004 to October of 2004.

The *E. coli* data collected on Nickelsen Creek by IDEM's Assessment Branch and the City of Fort Wayne in 2004 had an average *E. coli* single sample maximum standard violation 72% of the time and a geometric mean standard violation 91% of the time. The highest single sample maximum standard *E. coli* value was >48,400 cfu/100mL. The highest geometric mean value was 16,082 cfu/100mL.

Landuse

IDEM assessed landuse using the 1992 Gap Analysis Program (GAP). In 1992, approximately 93% of the landuse in the Yellow Creek sub-watershed was agriculture. The remaining landuse for the Yellow Creek sub-watershed consisted of approximately 5% forested, 1% wetlands, 0.3% urban (Figure 14). A comparison of 1992 landuse with the aerial photos taken in 2003 shows no substantial changes to the Yellow Creek sub-watershed have occurred.

Wildlife

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of *E. coli*. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Nickelsen Creek sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of *E. coli* impairment in waterbodies. In 2001, the Adams County Health Department completed a study to identify homes that have only septic tanks and no additional treatment systems throughout the county. Many of these systems then discharge directly to a stream or to a field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, approximately 10,000 residents, in rural Adams County have only a septic tank and no additional treatment for their wastewater. This study also identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to connecting to a municipal system. Six of the seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, the Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001(Smith, T., 2005).

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There are no NPDES permitted facilities located in the Nickelsen Creek sub-watershed.

Storm Water General Permit Rule 13

There is one municipal separate storm sewer system (MS4) community, Allen County, in the Nickelsen Creek sub-watershed. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11). It can be determined that the MS4 community of Allen County is a potential source of *E. coli* to the Nickelsen Creek sub-watershed. However, it is difficult to determine, prior to the completion of the permit requirements, if this MS4 community is a significant source of *E. coli* in the Nickelsen Creek sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are two CFOs in the Nickelsen Creek sub-watershed, none of which are considered CAFOs (Figure 13, Appendix 3). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." The active animal operations in Nickelsen Creek sub-watershed have no open enforcement actions at this time. However, these operations are still a potential source of *E. coli* for the Nickelsen Creek sub-watershed.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and the *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the Nickelsen Creek sub-watershed. However, it is believed that these small livestock operations may be a source of the *E. coli* impairment.

3.6 - St. Marys River

Watershed Characterization

The St. Marys River in Adams County is located in a predominantly agricultural watershed. The St. Marys River flows from Ohio into the middle of Adams County. Upon entering Indiana, the St. Marys River flows northwest through the City of Decatur in Adams County into Allen County. The St. Marys River flows through the City of Fort Wayne in Allen County before it joins the St. Joseph River to create the Maumee River. Four of the sub-watersheds mentioned in Section 3 are located entirely in the Adams County portion of the St. Marys River. These sub-watersheds are Blue Creek, Yellow Creek, Borum Run, and Holthouse Ditch. The Nickelsen Creek sub-watershed starts in Adams County, but flows into Allen County before joining the St. Marys River. In addition to these five sub-watersheds, numerous tributaries that are impaired for *E. coli* enter the St. Marys River. These tributaries include Pleasant Mills and Tributaries, Decatur Tributaries, Gerke/Weber Ditch and Tributaries, St. Marys River Tributary, Snyder Ditch and other tributaries, and Junk Ditch and other tributaries (Figure 15).

A reassessment using the data gathered by IDEM's Assessment Branch in 2004 was completed on the St. Marys River during the development of the St. Marys River watershed TMDL. On the 2004 303(d) List, segment INA0454_T1012 of the St. Marys River was not listed as being impaired for *E. coli*. The reassessment concluded that on the 2006 303(d) List that segment INA0454_T1012 of the St. Marys River will be listed as impaired for *E. coli*. In addition, the reassessment concluded that a number of the tributaries were contributing to the *E. coli* impairment on the St. Marys River and should be listed as impaired on the 2006 303(d) List. These tributaries include Pleasant Mills and tributaries, Decatur Tributaries, Gerke/Weber Ditch and tributaries, Snyder Ditch and other tributaries, and Junk Ditch and other tributaries. The St. Marys River watershed TMDL will address the *E. coli* impairment as it will appear on the 2006 303(d) List.

E. coli Data

Ten of the thirty sampling sites for the St. Marys River watershed are located on the St. Marys River (Attachment A). Four of the ten sampling sites (Figure 16) were sampled by the Adams County Soil and Water Conservation District from May of 2000 through October of 2000 and April of 2001 through May of 2001, monthly. Combining the *E. coli* data at these four sampling sites, these four sites violated the single sample maximum standard approximately 85% of the time. The highest single sample maximum standard was 24,000 cfu/100mL at Site 19.

Two of the ten sampling sites (Figure 16) on the St. Marys River were sampled by the City of Fort Wayne in 2001 through 2004 weekly from April to October. Combining the data at these two sites per year, in 2001 the single sample maximum daily standard was violated approximately 80% of the time and violated the geometric mean 100% of the time. The highest single sample maximum *E. coli* value in 2001 was 6,000 cfu/100mL. In 2002, the single sample maximum daily standard violated approximately 65% of the time and the geometric mean standard violated approximately 98% of the time. The highest single sample maximum *E. coli* value in 2002 was 5,400 cfu/100mL. In 2003, the single sample maximum daily standard violated 30% of the time and the geometric mean standard violated 38% of the time. The highest single sample maximum *E. coli* value in 2003 was 5400 cfu/100mL. In 2004, the single sample maximum daily standard violated approximately 74% of the time. The highest single sample maximum *E. coli* value in 2004 was >48,400 cfu/100mL.

Two of the ten sampling sites were sampled by IDEM's Assessment Branch biweekly from March of 2004 to October of 2004. The City of Fort Wayne sampled this site from July of 2004 to October of 2004 on the opposite weeks IDEM's Assessment Branch sampled this site. This allowed IDEM's TMDL Program to obtain a geometric mean value from the data collected from July of 2004 to October of 2004. The single sample maximum standard was violated approximately 71% of the time and the geometric mean standard violated 100% of the time. The highest *E. coli* value was >48,400 cfu/100mL.

IDEM's Assessment Branch, the City of Fort Wayne, and the Adams County Soil and Water Conservation District all sampled one of the ten sampling sites. IDEM's Assessment Branch sampled the site biweekly from March 2004 through October 2004. The City of Fort Wayne sampled this site from July 2004 through October 2004 on opposite weeks IDEM's Assessment Branch sampled this site. The Adams County Soil and Water Conservation District sampled this site from May of 2000 through October of 2000 and April of 2001 through May of 2001, monthly. The data collected in 2004 had a single sample maximum standard violation 60% of the time and a geometric mean violation 100% of the time. The highest *E. coli* value in 2004 was 12,260 cfu/100mL. The data collected in 2000 and 2001 had a single sample maximum standard violation 75% of the time. The highest *E. coli* value in 2002 to 2001 was 3,200 cfu/100mL.

Adams County Soil and Water Conservation District and IDEM's Assessment Branch (Figure 16) both sampled the last site, Site 14. The Adams County Soil and Water Conservation District sampled this site from May of 2000 through October of 2000 and April of 2001 through May of 2001, monthly. IDEM's Assessment Branch sampled this site from March 2004 through October of 2004, biweekly. The single sample maximum standard in 2000 to 2001 was violated 75% of the time. The highest *E. coli* value was

13,600 cfu/100mL. In 2004, the single sample maximum standard was violated 75% of the time. The highest *E. coli* value was >24,200 cfu/100mL.

Tributaries

Each of the sub-watersheds described in Section 3.0 has a sampling point located close to the mouth of the major waterbody in the sub-watershed. This site was chosen to represent the amount of *E. coli* coming into the St. Marys River from that particular sub-watershed. Each of these sub-watersheds is impaired for *E. coli*. Along with these sub-watersheds, many tributaries along the St. Marys River in Adams County are also impaired for *E. coli*. Based on the *E. coli* data collected on the St. Marys River and its major tributaries, it can be concluded that these tributaries are contributing to the *E. coli* impairment in St. Marys River (Figure 16).

St. Marys River in Ohio

The St. Marys River is impaired in Ohio for *E. coli*. Site 12 was taken on the St. Marys River in the town of Wilshire, Ohio. This site was sampled to represent the load of *E. coli* coming into Indiana from Ohio. This site confirmed that the St. Marys River, before it enters Indiana, is impaired for *E. coli* and is contributing to the *E. coli* impairment on the St. Marys River in Indiana.

Landuse

IDEM assessed landuse using the 1992 Gap Analysis Program (GAP). In 1992, approximately 78% of the landuse along the St. Marys River was agriculture. The remaining landuse the area along the St. Marys River consisted of approximately 12% urban, 1% wetlands, 8% urban (Figure 17). A comparison of landuse information from 1992 with aerial photos taken in 2003 shows there is no substantial change to the area along the St. Marys River.

Wildlife

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of *E. coli*. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the St. Marys watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of *E. coli* impairment in waterbodies. In 2001, the Adams County Health Department completed a study to identify homes that have only septic tanks and no additional treatment systems throughout the county. Many of these systems then discharge directly to a stream or to a field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, approximately 10,000 residents, in rural Adams County have only a septic tank and no additional treatment for their wastewater. This study also identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to connecting to a municipal system. Six of the seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, the Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001 (Smith, T., 2005).

As was mentioned earlier, the Allen County Health Department conducted a study to see the potential effect a community of homes with septic systems has on a stream. Communities of homes were chosen throughout Allen County. Three of these communities are located along the St. Marys River. Site 26 is representative of a community in Poe (Figure 16). This community is connected to a pipe that runs over the bank into the St. Marys River. The Allen County Health Department took the sample from the pipe as the discharge came down the bank of the St. Marys River. This site represents approximately seventy homes, several businesses, and several churches. Most of these homes do not have a permit for a septic system by the Allen County Health Department and have around a 90% failure rate (Chapple, G. 2005). The sampling data collected by the Allen County Health Department, weekly during the recreational season from 2001 through 2004 show *E. coli* values no lower than 250 cfu/100mL and as high as >2,000,000 cfu/100mL.

Site 27 is the second Allen County Health Department sampling site located along the St. Marys River. Site 27 represents a natural drain located on the Westside of US 27, south of Monroeville Road (Figure 16). This sampling site represents two communities. The community on the east side has approximately fifty homes and a church with a school. The community on the west side is a mobile home park with approximately forty trailers. These two communities were connected to municipal sewers in February of 2003. The Allen County Health Department data collected weekly during the recreational season from 2001 to 2004 does show a reduction in the *E. coli* level between the 2003 and 2004 sampling events. This site went from violating 100% of the time in 2003 to violating 79% in 2004. The *E. coli* values in 2003 ranged from 1200 cfu/100mL to 340,000 cfu/100mL to values in 2004 ranging from 300 cfu/100mL to 56,000 cfu/100mL.

Site 28 is the third Allen County Health Department sampling site located along the St. Marys River. Site 28 represents an older subdivision located at the intersection of Bluffton Road and Hamilton Road. This older subdivision drains to Thiele Drain/Harber Ditch. This community was sampled at Bluffton Road, north of I-469, which is north of the community. This older subdivision has approximately twenty homes. On aerial photos, the sampling site is surrounded by an elementary school on the east side and a warehouse on the west side. Both of these buildings are connected to municipal sewer systems. Some of the homes in this community are newer and have absorption fields. The Allen County Health Department *E. coli* data was also collected weekly during the recreational season from 2001 to 2004. This site has an average single sample violation of 77%, which is lower than the two previous sites. This lower average can be attributed to the sampling location. The high *E. coli* values range in the 100,000's cfu/100mL.

Overall, the data collected at these three sites show significant septic systems failure in Allen County. Septic systems are a significant source of *E. coli* to the St. Marys River in Allen, as well as, in Adams County.

<u>National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers</u>

Ten permitted NPDES facilities discharge into the St. Marys River or its tributaries that are not represented in the five sub-watersheds (Figure 18, Appendix 1). Three of the ten permitted facilities have *E. coli* limits. These are Decatur STP (IN0039314), Hessen Utilities/Country Court Estates MHP (IN0045292), and Hoagland STP- Allen County Regional Sewer District (IN0048119).

The Decatur STP discharges to the St. Marys River. This facility has violations of their *E. coli* limits in 2003. However, according to IDEM's inspector, this was due to the heavy rain events and flooding of the St. Marys River. Since, the Decatur STP is not violating, except during extreme weather conditions, this facility is not a significant source of *E. coli* to the St. Marys River.

Hessen Utilities/Country Court Estates MHP discharges to Marion Ditch, which is a tributary to the St. Marys River. This facility has had *E. coli* limits since July of 2004. Prior to the initiation of *E. coli* limits, Hessen Utilities/Country Court Estates MHP had total residual chlorine limits. IDEM's TMDL Program has found a significant record of violations of their total residual chlorine limit since 2002. Out of the four *E. coli* values from the facility in 2004, three of them violated the *E. coli* water quality standard. Currently, there is no open enforcement case for this facility. Due to the significant violations at Hessen Utilities/Country Court Estates MHP, this facility is a significant source of *E. coli* to the St. Marys River.

The Hoagland WWTP/Allen County Regional Sewer District discharges to Houk Ditch, which is a tributary to the St. Marys River. This facility has not reported violations of their *E. coli* water quality standard. Therefore, the Hoagland WWTP/Allen County Regional Sewer District is not a significant source of *E. coli* to the St. Marys River.

Two of ten NPDES facilities have total residual chlorine limits. These facilities are Oak Ridge Estates MHP (IN0036901) and Mill Road Estates (IN0109835). Previously, facilities with design flows less than 1 MGD (typically minor municipals and semipublics) were not required to have *E. coli* effluent limits or conduct monitoring for *E. coli* bacteria, provided they maintained specific total residual chlorine levels in the chlorine contact tank. The assumption was that as long as chlorine levels were adequate in the chlorine contact tank, the *E. coli* bacteria would be deactivated and compliance with the *E. coli* WQS would be met by default. The original basis for allowing chlorine contact tank requirements to replace bacteria limits was based on fecal coliform, not *E. coli*. No direct correlation between the total residual chlorine levels and *E. coli* bacteria can be conclusively drawn. Further, it has been shown that exceedances of *E. coli* bacteria limits may still occur when the chlorine contact tank requirements are met.

Oak Ridge Estates MHP has had significant violations of its total residual chlorine limit from 2000 to 2004 that could have affected the sampling completed in 2001 and 2004. IDEM's inspector sent the facility an Inspection Summary/Violation letter in April of 2004. In response to this letter, the facility hired a contractor to address the Summary/Violation letter. The data that the facility has submitted to IDEM in 2005 has not shown total residual chlorine limit violations. Due to the complications of comparing total residual chlorine to *E. coli*, it is difficult to determine to what extent this discharger is a source of *E. coli* to the St. Marys River.

Mill Road Estates has had significant violations of its total residual chlorine limit that could have affected the sampling completed in 2001 and 2004. The violations have resulted in an enforcement action and an agreed order. To date, according to IDEM's Enforcement Section the requirements in the agreed order have not been met by the facility. Due to the complications of comparing total residual chlorine to *E. coli*, it is difficult to determine to what extent this discharger is a source of *E. coli* to the St. Marys River.

The remaining five NPDES permitted facilities that discharge to the St. Marys River do not have a sanitary component to their discharge or are a pretreatment permit. These facilities include Ruan Transport Corporation (INP00194), Bunge North American LLC/Central Soya (IN0000591), BandB Custom Plating (IN0052302), Stone-Street Quarry (IN0000612), and Cintas Mechanical Laundry Division (ING250055). Since these five facilities do not contain a sanitary component to their discharge, or do not discharge to a stream, they are not a source of *E. coli* to the St. Marys River.

Combined Sewer Overflows (CSO) & Sanitary Sewer Overflows (SSO)

There are two CSO communities along the St. Marys River (Figure 19, Appendix 2). The City of Decatur has four CSO discharge points. All of the City of Decatur's CSO discharge points discharge to the St. Marys River. The City of Decatur submitted their CSO Long Term Control Plan to IDEM in July of 2002. The City of Fort Wayne has twenty-six CSO discharge points and one SSO discharge point. Of the twenty-six CSO discharge points, twenty-four of them discharge directly to the St. Marys River. The remaining two CSO discharge points and the one SSO discharge to tributaries that then go to the St. Marys River. The City of Fort Wayne submitted their CSO Long Term Control Plan to IDEM in December of 2004. SSOs are not a permitted activity and are an illegal discharge. CSO discharge points and SSO outfalls are a significant source of *E. coli* to the St. Marys River.

Storm Water General Permit Rule 13

There are three municipal separate storm sewer system (MS4) communities; the City of Decatur, the City of Fort Wayne, and Allen County in the St. Marys River. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11). It can be determined that the MS4 communities of Allen County and the City of Fort Wayne and the City of Decatur are a potential source of *E. coli* to the St. Marys River. However, prior to the completion of the permit requirements, it is difficult to determine the magnitude of *E. coli* impact these MS4 communities have on St. Marys River.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are nine CFOs near the St. Marys River, none of which are considered CAFOs (Figure 20, Appendix 3). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." The active animal operations near the St. Marys River have no open enforcement actions at this time. However, these operations are still a potential source of *E. coli* for the St. Marys River.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and the *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the St. Marys River. However, it is believed that these small livestock operations may be a source of the *E. coli* impairment.

Section 4 - Linkage Analysis

The linkage between the *E. coli* concentrations in the St. Marys River watershed and the potential sources of *E. coli* provides the basis for the development of this TMDL. Analysis of this relationship allows for estimating the total assimilative capacity of the stream and any needed load reductions. Water quality duration curves were created for the sites in the St. Marys River watershed that were sampled by IDEM and the City of Fort Wayne in 2004. A flow duration interval is described as a percentage. Zero (0) percent corresponds to the highest stream discharge (flood condition) and 100 percent corresponds to the lowest discharge (drought condition). These sampling sites are representative of the hydrodynamics of the St. Marys River watershed (Attachment B). This section will discuss the water quality duration curves and the linkage of Section 3.0 for each sub-section of the St. Marys River watershed and the St. Marys River.

4.1 - Blue Creek Sub-Watershed

4.1.1 Water Quality Duration Curves

Water quality duration curves were created for six of the ten sampling sites in the Blue Creek sub-watershed (Attachment C). Site LES040-0099 is located at the mouth of Habegger Ditch. This site had an average geometric mean of 1007 cfu/100mL. Site LES040-0023 is located at Gates Ditch, which also represents sources coming from Farlow Ditch. This site had an average geometric mean of 1748 cfu/100mL. According to the water quality duration curves, *E. coli* violations occurred more consistently at Site LES040-0023, than at Site LES040-0099. This indicates a more constant source of *E. coli* at Site LES040-0023, than at site LES040-0099.

Site LES040-0011 is located on Blue Creek below the confluence of Gates Ditch to Blue Creek. The geometric mean value for Site LES040-0011 is 1074 cfu/100mL. According to the water quality duration curves, the *E. coli* values are similar to Sites LES040-0099 and LES040-0023. This indicates there are additional constant sources of *E. coli*.

Site LES040-0010 is located at the mouth of Little Blue Creek. The average geometric mean value at this site is 815 cfu/100mL. This is the lowest average geometric mean value of the six sites in the Blue Creek sub-watershed. The *E. coli* violations are highest during mid-range to moist flow conditions, which is different than seen at the previous three sites. Sources of *E. coli* that spike during mid-range to moist flow conditions are caused by precipitation events and runoff.

Site LES040-0066 is located on Blue Creek below the confluence of Little Blue Creek into Blue Creek. The average geometric mean at this site is 856 cfu/100mL. This is a decrease from the *E. coli* values at the upstream site, Site LES040-0011, and a increase in *E. coli* values at LES040-0010 located at the mouth of Little Blue Creek. This decrease in *E. coli* values indicates that Little Blue Creek is diluting Blue Creek. According to the water quality duration curves, from Site LES040-0011 to Site LES040-0066, there is a leveling of the *E. coli* values over the flow conditions. This indicates that while runoff does play an important part in the water quality impairment, there are still many constant sources of *E. coli* in the watershed.

Site LES040-0009 is located near the mouth of Blue Creek after the confluence of the Unnamed Tributary (Duer Ditch). The average geometric mean at this site is 1243 cfu/100mL. In comparison to the upstream sites in the Blue Creek sub-watershed, the water quality duration curve for this site indicates the *E. coli* levels are increasing in conjunction with the stream flow levels.

4.1.2 Source Linkage

The landuse in this sub-watershed is predominately agricultural. Row crops comprise 88% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of *E. coli*, but they can carry *E. coli* from land applied manure, runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* value during mid-range to high flow conditions indicates the presence of *E. coli* transportation by field tiles.

Pasture is 11% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals located in these smaller animal operations are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this watershed during dry conditions, this would indicate that animals have direct access to the stream.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes in *E. coli* levels during extreme high flow conditions due to runoff or flooding which carries large quantities of *E. coli* at one time.

This area has Amish communities. Amish communities are not required to follow state guidelines for waste removal. Therefore, the specific extent of the Amish community impact on the *E. coli* impairment for these streams is unknown; however, Amish communities are considered a source of E. coli in this watershed.

There is a lack of *E. coli* sampling for Farlow Ditch, and Duer Ditch and other tributaries. The location of the sampling sites in this sub-watershed indicates that these tributaries are contributing to the *E. coli* impairment. It is unclear as to the magnitude that these tributaries contribute to the *E. coli* impairment.

None of the NPDES permitted facilities in this sub-watershed contain a sanitary component in their discharge; therefore, these facilities are not sources of *E. coli*.

Permitted CFOs and CAFOs are clustered in the headwaters of Blue Creek. CFOs and CAFOs could be sources of *E. coli* during high flow conditions on the water quality duration curve. These facilities have the potential to cause a violation of the *E. coli* water quality standard through land application or a malfunction at the facility. However, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of *E. coli* for this sub-watershed based on information provided to IDEM by the Adams County Health Department (Adams County Health Department personal communication). The septic systems described by this information would provide a constant source of *E. coli* particularly during low to mid-range flow conditions. According to the water quality duration curve, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also fail during higher flow conditions by leaching to a field tile or other type of pipe that discharges to the stream. Violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently.

There are three CSO discharge points from the town of Berne in this sub-watershed. Site LES040-0099 and Site LES040-0023 are located downstream of these CSO discharge points. CSO discharge points are shown on water quality duration curves during high flow events. Sites LES040-0099 and LES040-0023 show higher *E. coli* values during high flows, than any of the other six sampling sites in this sub-watershed. It can be concluded that CSO discharge points are a source of *E. coli* in this sub-watershed.

4.1.3 Conclusions

The *E. coli* data has an average single sample maximum violation 85% of the time and a geometric mean violation 100% of the time. There are no known NPDES permits, CFO, or CAFO violations. CSO discharge points from the town of Berne are a significant source of *E. coli*. Based on the water quality duration curves, it can be concluded that the majority of sources of *E. coli* in this watershed are nonpoint sources, which include small animal operations, Amish communities, wildlife, and leaking and failing septic systems.

4.2 - Yellow Creek Sub-Watershed

4.2.1 Water Quality Duration Curves

Water quality duration curves were created for the two sampling sites in the Yellow Creek sub-watershed (Attachment C). In 2004, IDEM sampled both sites and the City of Fort Wayne sampled one of the sites. Site LES040-0040 is located at the mouth of Martz Ditch. The geometric mean value at this site was 531 cfu/100mL. According to the water quality duration curves, there are no violations during dry flow conditions. Most of the violations for *E. coli* occur during the mid-range to moist conditions. This could be due to the small drainage area, 9.8 square miles, of Martz Ditch at this site. Due to the small drainage area, precipitation quickly affects this stream. During dry conditions, base flow in the stream is minimal, so there are fewer continuous sources of *E. coli*. During higher flow conditions, sources of *E. coli* enter the stream during the "first flush" and then the water moves quickly through the stream. High flow conditions occur after the "first flush" has moved through the stream, causing the peaks of *E. coli* to be less in smaller drainage area streams. The water quality duration curves illustrate this point.

Site LES040-0038 is located on Yellow Creek after the confluence of Martz Ditch to Yellow Creek. The average geometric mean value at this site is 1150 cfu/100mL. Unlike Site LES040-0040, this site has continuous sources of *E. coli* as indicated by the *E. coli* values during dry conditions on the water quality duration curves. In addition, the high flow *E. coli* values are higher than at Site LES040-0038, which is consistent with larger drainage area streams that have a less flashy response to precipitation.

4.2.2 Source Linkage

The landuse in this watershed is predominately agricultural. Row crops comprise 87% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles themselves are not sources of *E. coli*, but they can carry *E. coli* from land-applied manure, runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* values during mid-range to high flow conditions indicate the presence of *E. coli* transportation by field tiles.

Pasture comprises 8% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this watershed during dry conditions, this would indicate that animals have direct access to the stream.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes during extreme high flow conditions due to runoff or flooding.

Amish communities will more likely be found in the headwaters of this sub-watershed. Amish communities are not required to follow state guidelines for waste removal. Therefore, the significance of the Amish community impact on the *E. coli* impairment for these streams is unknown.

Due to a lack of sampling in the headwater streams in this sub-watershed, the headwater streams are not listed as impaired. Since there are known sources of *E. coli* in the headwater streams, the assumption can be made that these headwater streams are contributing to the *E. coli* impairment in the downstream sections of this sub-watershed. However, it is unclear as to the magnitude that these tributaries play a part in the impairment.

None of the NPDES permitted facilities in this sub-watershed contain a sanitary component in their discharge and are not sources of *E. coli*.

Permitted CFOs are found in the impaired and non-impaired sections of Yellow Creek sub-watershed. CFOs and CAFOs could be shown on the water quality duration during high flow conditions. Though these facilities have the potential to cause a violation of the *E. coli* water quality standard through land application or a malfunction at the facility, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of *E. coli* for this sub-watershed based on information provided to IDEM by the Adams County Health Department. The septic systems as described in this information would provide a consistent source of *E. coli* particularly during low to mid-range flows. One of the six communities, Arcadia Village Subdivision, is located in this sub-watershed. According to the water quality duration curve for Site 16, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also be failing during higher flow conditions by leaching to a field tile or other type of pipe to the stream. For Site LES040-0040, in particular, violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently.

4.2.3 Conclusions

The *E. coli* data has an average single sample maximum violation 76% of the time and a geometric mean violation 100% of the time. There are no known NPDES permits, CFO, and CAFO violations. Based on the water quality durations curves, it can be concluded that the majority of sources of *E. coli* in this watershed are nonpoint sources which include small animal operations, Amish communities, wildlife, and leaking and failing septic systems.

4.3 - Borum Run Sub-Watershed

4.3.1 Water Quality Duration Curves

A water quality duration curve was created for the sampling site in the Borum Run sub-watershed (Attachment C). Site LES040-0097 is located at the mouth of Borum Run. The geometric mean value at this site is 259 cfu/100mL. According to the water quality duration curves, there are no violations during dry flow conditions. Most of the violations for *E. coli* occur during the mid-range to moist conditions. This could be due to the small drainage area, 14.4 square miles, of Borum Run at this site. Due to the small drainage area, precipitation more quickly affects this stream. During dry conditions, base flow is minimal in the stream, so there are fewer continuous sources of *E. coli*. During higher flow conditions, sources of *E. coli* to enter the stream during the “first flush” and then the water moves quickly through the stream. High flow conditions occur after the “first flush” has moved through the stream, causing the peaks of *E. coli* to be less in smaller drainage area streams.

4.2.2 Source Linkage

The landuse in this watershed is predominately agricultural. Row crops comprise 90% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields.

These field tiles then drain to the nearest stream. Field tiles themselves are not sources of *E. coli*, but they can carry *E. coli* from land-applied manure and runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* values during mid-range to high flow conditions indicate the presence of *E. coli* transportation by field tiles.

Pasture comprises 3% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this watershed during dry conditions, this would indicate that animals have direct access to the stream.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes during extreme high flow conditions due to runoff or flooding.

There is a lack of *E. coli* sampling throughout this sub-watershed. The sampling site located at the mouth of Borum Run violates the *E. coli* water quality standard, indicating that the entire sub-watershed is impaired for *E. coli*. It is unclear the magnitude the headwater streams play a part in the impairment.

The one NPDES permitted facility with a sanitary component in this sub-watershed, White Horse Mobile Home Park, is now considered to be in compliance. This facility had violations of the WQS during the 2001 sampling of the St. Marys River Watershed. Since the completion of the enforcement activities and the resulting changes in treatment of the facility, the White Horse MHP is in compliance with WQS. The water quality duration curves do not indicate that this facility is a significant source of *E. coli* to the sub-watershed. White Horse MHP is not a significant source adding to the *E. coli* impairment.

Septic systems are a known source of *E. coli* for this sub-watershed based on information provided to IDEM by the Adams County Health Department. The septic systems as described in this information would provide a consistent source of *E. coli* particularly during low to mid-range flows. According to the water quality duration curve, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also fail during higher flow conditions by leaching to a field tile or other type of pipe to the stream. Violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently.

4.2.3 Conclusions

The *E. coli* data has an average single sample maximum violation 59% of the time. There are no known current NPDES permit violations. The downstream portion of this sub-watershed is located on the edge of the City of Decatur. This is the first sub-watershed to be in an urban area. Based on the water quality durations curves, it can be concluded that the majority of sources of *E. coli* in this watershed are nonpoint sources which include small animal operations, Amish communities, wildlife, leaking and failing septic systems.

<u>4.4 - Holthouse Ditch Sub-Watershed</u>

4.4.1 Water Quality Duration Curves

A water quality duration curve was created for the sampling site in the Holthouse Ditch sub-watershed (Attachment C). Site LES050-0008 is located on Holthouse Ditch after the confluence of

Kohne Ditch to Holthouse Ditch. This geometric mean value at this site is 706 cfu/100mL. The water quality duration curve for this site shows higher *E. coli* values during moist to high flows conditions.

4.4.2 Source Linkage

The landuse in this watershed is predominately agricultural. Row crops comprise 90% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of *E. coli*, but they can carry *E. coli* from land applied manure and runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* value during mid-range to high flow conditions indicates the presence of *E. coli* transportation by field tiles.

Pasture comprises 4% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this sub-watershed during dry conditions, this would indicate that animals have direct access to the stream.

Urban comprises 2% of the landuse. The downstream portion of this sub-watershed flows through the Southern edge of the City of Decatur. Urban areas create more impervious surfaces that cause an increase of runoff from precipitation to the nearby streams. With an increase in runoff, there are higher levels of *E. coli* in the higher flow conditions. The urbanized area also creates an environment where constant sources, agriculture, septic systems, and smaller WWTP, are less commonly a source of *E. coli*.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes during extreme high flow conditions due to runoff or flooding.

The headwater streams are not listed as impaired. This is due to a lack of *E. coli* sampling in the headwater streams in this sub-watershed. Since there are known sources of *E. coli* in the headwater streams, the assumption can be made that these headwater streams are contributing to the *E. coli* impairment in the downstream sections of this sub-watershed. However, it is unclear as to the magnitude that these tributaries play a part in the impairment.

The one NPDES permitted facility with a sanitary component in this sub-watershed, Country Acres Estates, is possibly contributing to the *E. coli* impairment. This facility has had multiple years of noncompliance, which would have influenced the sampling for this sub-watershed. Currently this facility has been referred to IDEM's Enforcement Section for noncompliance.

Permitted CFOs and CAFOs are clustered in the headwaters of Holthouse Ditch. CFOs and CAFOs would be shown on the water quality duration during high flow conditions. Though these facilities have the potential to cause a violation of the *E. coli* water quality standard through land application or a malfunction at the facility, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of *E. coli* for this sub-watershed based on information provided to IDEM by the Adams County Health Department. The septic systems as described in this information would provide a consistent source of *E. coli* particularly during low to mid-range flows. One of the six communities, Peterson Community, is located in this sub-watershed. According to the water quality duration curve, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also fail during higher flow conditions by leaching to a field tile or other type of pipe to the stream. Violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently.

4.4.3 Conclusions

The *E. coli* data has an average single sample maximum violation of 62% and a geometric mean violation 72% of the time. One NPDES permit is potentially a significant source of *E. coli* to this sub-watershed. The CFOs and CAFOs have no known violations and are considered to be in compliance. Based on the water quality durations curves, it can be concluded that the majority of sources of *E. coli* in this watershed are nonpoint sources which include small animal operations, wildlife, runoff from urban areas, clustering of smaller communities outside of the City of Decatur, and leaking and failing septic systems.

4.5 - Nickelsen Creek Sub-Watershed

4.5.1 Water Quality Duration Curves

A water quality duration curve was created for the sampling site in the Nickelsen Creek sub-watershed (Attachment C). Site LES050-0015 is located on Nickelsen Creek before the confluence of Lambert West Ditch to Nickelsen Creek. This geometric mean value at this site is 630 cfu/100mL. The water quality duration curve for this site shows higher *E. coli* values during moist to high flows conditions.

4.5.2 Source Linkage

The landuse in this watershed is predominately agricultural. Row crops comprise 88% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of *E. coli*, but they can carry *E. coli* from land applied manure, runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* value during mid-range to high flow conditions indicates the presence of *E. coli* transportation by field tiles.

Pasture comprises 5% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this watershed during dry conditions, this would indicate that animals have direct access to the stream.

Forests comprise 5% of the landuse. The forested areas are located along the stream bank, which creates a buffer strip. Buffer strips assist in slowing the time of transport of the contaminant, in this case *E. coli*, to the stream. Due to the choice of sampling location, this is only slightly reflected in the results. This is especially evident in the dry to moist conditions with an increase in compliance of the *E. coli* water quality standards.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes during extreme high flow conditions due to runoff or flooding.

Due to the sampling location on Nickelsen Creek being before the confluence of Lambert West Ditch, this stream is not impaired. However, based on the landuse of this sub-watershed, it can be determined that Lambert West Ditch is a source of *E. coli* to Nickelsen Creek. It is unclear as to the magnitude that this tributary plays a part in the impairment.

Allen County is considered an MS4 community. Only a small portion of the downstream segment is included in Allen County. This downstream segment contains a small number of homes; therefore, this is not a significant source of *E. coli* to this sub-watershed.

There are two permitted CFOs in this sub-watershed. CFOs would be shown on the water quality duration curve during high flow conditions. Though these facilities have the potential to cause a violation of the *E. coli* water quality standard through land application or a malfunction at the facility, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of *E. coli* for this sub-watershed based on information provided to IDEM by the Adams County Health Department. The septic systems as described in this information would provide a consistent source of *E. coli* particularly during low to mid-range flows. According to the water quality duration curve, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also fail during higher flow conditions by leaching to a field tile or other type of pipe to the stream. Violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently.

4.5.3 Conclusions

The *E. coli* data have an average single sample maximum violation 72% of the time and an average geometric mean violation 91% of the time. There are no known NPDES permits in this watershed. There are no CFO violations and the CFOs are considered to be in compliance. The Allen County MS4 community is considered a source of *E. coli*, but not a significant source. Based on the water quality durations curves, it can be concluded that the majority of sources of *E. coli* in this watershed are nonpoint sources which include small animal operations, wildlife, leaking and failing septic systems.

4.6 - St. Marys River

4.6.1 Water Quality Duration Curves

Water quality duration curves were created for five of the nine sampling sites along the St. Marys River (Attachment C). Site UNK000-0007 is located on the St. Marys River in Willshire, Ohio. This represents the sources of *E. coli* in the St. Marys River from Ohio. The geometric mean value at this site is 380 cfu/100mL. The water quality duration curve for this site shows higher *E. coli* values during dry flow conditions, which would indicate more of a continuous source of *E. coli*.

Site LES040-0007 is located on the St. Marys River at SR 101, north of Pleasant Mills. This is the first site on the St. Marys River after it enters from Ohio just after the confluence of the Blue Creek sub-watershed. The geometric mean for this site is 436 cfu/100mL. The water quality duration curve for this site using the 2004 IDEM sampling data shows higher *E. coli* values during moist conditions. Using IDEM’s data from 1988 to 2004, this site still has higher *E. coli* values in moist conditions, but shows constant *E. coli* violations during dry conditions. The constant violations during dry conditions indicate continuous sources of *E. coli*. One of the major constant sources of *E. coli* is the Blue Creek sub-watershed.

Site LES060-0006 is located on the St. Marys River, near the Town of Poe. The geometric mean for this site is 493 cfu/100mL. The Allen County Health Department recognizes that the Town of Poe is a known area for septic failure. This is confirmed by the water quality duration curves showing higher *E. coli* levels during moist conditions and a few high *E. coli* values during dry conditions. This sampling site was taken downstream of the discharge from the Town of Poe. In addition, the Allen County Health Department has taken samples at the Town of Poe's discharge before it enters the St. Marys River. These *E. coli* values are extremely high during all flow conditions.

Site 29 is located on the St. Marys River at Ferguson Road. This sampling site is on the south edge of the City of Fort Wayne. The geometric mean for this site was 189 cfu/100mL. According to the water quality duration curves, there is less of a continuous source of *E. coli* and more of a storm driven source of *E. coli*. These results would be expected in more urbanized areas.

Site 30 is located at Spy Run Bridge on the St. Marys River. This sampling site is located in the middle of the City of Fort Wayne before the St. Marys River joins with the St. Joseph River to form the Maumee River. The geometric mean for this site is 318 cfu/100mL. According to the water quality duration curves, there is a consistent *E. coli* violation during all flow conditions. This means that there are many different sources of *E. coli* at this sampling site.

4.6.2 Source Linkage

The landuse in this watershed is predominately agricultural. Row crops comprise 71% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of *E. coli*, but they can carry *E. coli* from land applied manure and runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* values in the downstream sites during mid-range to high flow conditions indicate the presence of *E. coli* transportation by field tiles.

Pasture comprises 7% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this watershed during dry conditions in the downstream sites, this would indicate that animals have direct access to the stream.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes during extreme high flow conditions due to runoff or flooding.

Four NPDES permitted facilities discharge into the St. Marys River. Two of these facilities, Decatur STP and Oak Ridge Estates, have a sanitary component to their discharge. Neither of these facilities had significant violations of their permit limits and are both considered to be in compliance. The remaining NPDES permitted facilities discharge into the sub-watersheds of the St. Marys River. These facilities have been discussed earlier in this section as the facility is relevant to the appropriate sub-watershed.

There are three MS4 communities, the City of Decatur, the City of Fort Wayne, and Allen County, in the St. Marys River watershed. Permits have been issued for these MS4 communities. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11).

Many tributaries to the St. Marys River do not fall within a sub-watershed. Based on the landuse and sampling locations on the mainstem of the impaired sections of the St. Marys River, these tributaries are considered to be impaired and a source of *E. coli* to the mainstem of the St. Marys River.

Permitted CFOs and CAFOs are located in the sub-watersheds of the St. Marys River. These CFOs and CAFOs are addressed in the above sections for each sub-watershed. CFOs and CAFOs would be shown on the water quality duration during high flow conditions. Though these facilities have the potential to cause a violation of the *E. coli* water quality standard through land application or a malfunction at the facility, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of *E. coli* for this sub-watershed based on information provided to IDEM by the Adams County Health Department and the Allen County Health Department. The Adams County Health Department's septic information is prevalent mainly in the sub-watersheds. The Allen County Health Department sampled three communities, Sites 26, 27, and 28, in the St. Marys River watershed. Site 27 and 28 are communities located along two unimpaired tributaries to the St. Marys River. Site 26 is the sampling site from the discharge of the Town of Poe before the discharges flows into the St. Marys River (Attachment A). *E. coli* levels at all these sites show extremely elevated levels of *E. coli*. The septic systems as described in this information would provide a consistent source of *E. coli* particularly during low to mid-range flows. According to the water quality duration curve, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also be failing during higher flow conditions by leaching to a field tile or other type of pipe to the stream. Violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently.

There are twenty-four CSO discharge points from the City of Fort Wayne that flow into the St. Marys River. In addition, two CSO discharge points and one SSO discharge into to a natural drain that flows to Highland Drain. These CSO discharge points and SSOs are located between Sites 29 and 30. There are four CSO discharge points from the City of Decatur that discharge into the St. Marys River. These are located north of Site 18 and Site 19. None of the water quality duration curves captured the influence of the Decatur CSO discharge points on the St. Marys River. CSO discharge points and SSOs are shown on water quality duration curves during high flow events. Site 4 and Site 5 show higher *E. coli* values during high flows, than any of the other six sampling sites. It can be concluded that CSO discharge points and SSO are a source of *E. coli* in this sub-watershed. CSO discharge points are a known source of *E. coli*. It is difficult to determine to what extent these discharges have on the *E. coli* impairment in the St. Marys River watershed. The Long Term Control Plans (LTCP) that are under review at IDEM will provide the necessary guidelines to insure that the CSO discharge points do not cause or contribute to the impairment of the St. Marys River watershed.

The City of Fort Wayne has one SSO identified in their NPDES permits. SSOs are prohibited from discharging at any time and any discharge may be addressed through an enforcement action.

4.6.3 Conclusions

The *E. coli* data has an average single sample maximum violation 70% of the time and an average geometric mean violation 86% of the time. The known NPDES permits that have a sanitary component are in compliance. There are no CFO violations and CFO facilities are considered to be in compliance. The Allen County, Decatur, and Fort Wayne MS4 communities are considered sources of *E. coli*, but not significant sources. CSO discharge points from the City of Decatur and CSO discharge points and SSO from the City of Fort Wayne are sources of *E. coli* to the St. Marys River. The sub-watershed and other tributaries are major sources of *E. coli* to the mainstem of the St. Marys River. The load of *E. coli* in the St. Marys River in Ohio is above Indiana's *E. coli* water quality standards. The St. Marys River is impaired for *E. coli* in Ohio and their sources of *E. coli* will be addressed at a later date through an Ohio-based TMDL. Based on the water quality duration curves, it can be concluded that the majority of sources of *E. coli* in this watershed are nonpoint sources which include small animal operations, wildlife, leaking and failing septic systems. In addition, the CSO discharge points and SSO are a major source of *E. coli* for the mainstem of the St. Marys River.

Section 5 - TMDL Development

The TMDL represents the maximum loading that can be assimilated by the waterbody while still achieving the Waters Quality Standard (WQS). As indicated in the Numeric Targets section of this document, the target for this *E. coli* TMDL is 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty-day period from April 1 through October 31. Concurrent with the selection of a numeric concentration endpoint, TMDL development also defines the critical conditions that will be used when defining allowable levels. Many TMDLs are designed as the set of environmental conditions that, when addressed by appropriate controls, will ensure attainment of WQS for the pollutant. For example, the critical conditions for the control of point sources in Indiana are given in 327 IAC 5-2-11.1(b). In general, the 7-day average low flow in 10 years (Q7, 10) for a stream is used as the design condition for point source dischargers. However, *E. coli* sources to St. Marys River watershed arise from a mixture of dry and wet weather-driven conditions, and there is no single critical condition that would achieve the *E. coli* WQS. For the St. Marys River watershed and the contributing sources, there are a number of different allowable loads that will ensure compliance, as long as they are distributed properly throughout the watershed.

For most pollutants, TMDLs are expressed on a mass loading basis (e.g. pounds per day). For *E. coli* indicators, however, mass is not an appropriate measure because *E. coli* is expressed in terms of organism counts (or resulting concentration) (USEPA, 2001). Meeting the Water Quality Standards (WQS) of 125 colony forming unit (cfu) per 100 mL as a geometric mean and 235 cfu/100 mL is the overall goal of the TMDL. The geometric mean *E. coli* WQS allows for the best characterization of the watershed. The geometric mean provides a more reliable measure of E. coli concentration because it is less subject to random variation (USEPA, 2004). However, by setting the target to meet the 125 cfu/100 mL geometric mean standard, this TMDL also will meet the 235 cfu/100 mL single day standard. Therefore, this *E. coli* TMDL is concentration-based consistent with 327 IAC 5-2-11.1(b) and 40 CFR, Section 130.2 (i) and the TMDL is equal to the geometric mean *E. coli* WQS for each month of the recreational season (April 1 through October 31). The Wasteload Allocation and Load Allocations in the TMDL are set at 125 cfu/mL, which, as stated above, also will meet the 235 cfu/100 mL single day standard.

Section 6 - Allocations

TMDLs are comprised of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include a Margin of Safety (MOS), either implicitly or explicitly, that accounts for uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. Conceptually, this definition is denoted by the equation:

$$\text{TMDL} = \sum \text{WLAs} + \sum \text{LAs} + \text{MOS}$$

The term TMDL represents the maximum loading that can be assimilated by the receiving water while still achieving WQS. The overall loading capacity, of 125 cfu per 100mL, is subsequently allocated into the TMDL components of WLAs for point sources, LAs for nonpoint sources, and the MOS. This *E. coli* TMDL is concentration-based consistent with USEPA regulations at 40 CFR, Section 130.2(i).

To investigate further the potential sources mentioned above, an *E. coli* load duration curve analysis, as outlined in an unpublished paper by Cleland (2002), was developed for each sampling site in the watershed. The load duration curve analysis is a relatively new method utilized in TMDL development. The method considers how stream flow conditions relate to a variety of pollutant loadings and their sources (point and nonpoint).

In order to develop a load duration curve, continuous flow data is required. The USGS gage for the Harber Ditch, which was retired in 1991, was used for the tributary watersheds. The Little River gage was then used to determine the flow on the sampling day for the load duration curve analysis. A regression analysis between the Little River (03324000) and the Harber Ditch gage data (Figure 21) was done to confirm the use of the Little River data to supplement the information at the retired Harber Ditch gage. The Little River is located in an adjacent watershed of the St. Marys River watershed. This comparison uses a coefficient of determination value, R^2, to indicate the "fit" of the data. The comparison found the coefficient of determination, R^2, to be 0.74. Values near 1.0 for R^2 indicate a good fit of the data, whereas values near 0.0 indicate a poor fit of the data. Therefore, flow data from USGS gage (03354000) in Little River was used to supplement the Harber Ditch data. Although Harber Ditch is not a listed segment, it is a tributary that flows into the St. Marys from the west. Watershed characteristics are quite similar to the listed tributaries (e.g. dominated by row crop agriculture). Thus, the duration curve derived from flow information collected at Harber Ditch is used for the other tributaries. St. Marys River gage (04182590) was used for the development of the *E. coli* load duration curve analysis for the St. Marys River watershed TMDL.

The flow data is used to create flow duration curves, which display the cumulative frequency of distribution of the daily flow for the period of record. The flow duration curve relates flow values measured at the monitoring station to the percent of time that those values are met or exceeded. Flows are ranked from extremely low flows, which are exceeded nearly 100% of the time, to extremely high flows, which are rarely exceeded. Flow duration curves are then transformed into load duration curves by multiplying the flow values along the curve by applicable water quality criteria values for *E. coli* and appropriate conversion factors. The load duration curves are conceptually similar to the flow duration curves in that the x-axis represents the flow recurrence interval and the y-axis represents the allowable load of the water quality parameter. The curve representing the allowable load of *E. coli* was calculated using the single sample maximum and geometric mean standards of 235 *E. coli* per 100 ml and 125 *E. coli* per 100 ml, respectively. The final step in the development of a load duration curve is to add the water quality pollutant data to the curves. Pollutant loads are estimated from the data as the product of the pollutant concentrations, instantaneous flows measured at the time of sample collection, and appropriate conversion factors. In order to identify the plotting position of each calculated load, the recurrence interval of each instantaneous flow measurement was defined. Water quality pollutant monitoring data are plotted on the same graph as the load duration curve that provides a graphical display of the water quality conditions in the waterbody. The pollutant monitoring data points that are above the target line exceed the water quality standards (WQS); those that fall below the target line meet the WQS (Mississippi DEQ, 2002).

6.1 - Wasteload Allocations

There are sixteen permitted dischargers in the St. Marys River watershed. Seven of the sixteen permitted dischargers have a sanitary component to their discharge. Four of these sixteen permitted dischargers already have *E. coli* limits in their permits. Three of these sixteen permitted dischargers have total residual chlorine limits in their permits. Eight of these sixteen do not have a sanitary component in their discharge or are a pretreatment permit that is connected to another WWTP for additional treatment. One of these permitted dischargers' effluent does not discharge to the St. Marys River watershed but has CSO discharge points that discharge to this watershed.

There are three MS4 communities the City of Decatur, the City of Fort Wayne, and Allen County, in the Maumee River. To date, these permits have not been issued for any of these MS4 communities. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11).

The WLA for permitted activities is set at the WQS of 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty-day period from April 1st through October 31st.

The WLA for CSO discharge points and MS4 permit activities will be set in the LTCP and MS4 permits to be issued to these facilities. These permits do not allow these activities to cause or contribute to a violation of WQS, which is set in Indiana Administrative Code 327 IAC 2-1.5-8(e)(2).

The WLA for prohibited discharges from SSOs and septic systems with straight pipe discharges directly to streams are set at zero (0.0).

6.2 - Load Allocations

The LA for nonpoint sources is equal to the WQS of 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty-day period from April 1st through October 31st. The LA will use the geometric mean of each sampling location to determine the reduction necessary to comply with WQS at each site (Appendix 4). The reductions have additionally been broken down into a flow regime that will help identify critical flows and areas for the implementation of this TMDL (Appendix 4).

Load allocations may be affected by subsequent work in the watershed. There are currently no watershed projects or plans in the St. Marys watershed. However, there have been several watershed projects completed in the surrounding areas. IDEM plans to work with the watershed coordinators in the surrounding areas along with local government agencies to encourage interest in watershed projects. It is anticipated that watershed projects will be useful in continuing to define and address the nonpoint sources of the *E. coli* in the St. Marys River watershed.

6.3 - Margin of Safety

A Margin of Safety (MOS) was incorporated into this TMDL analysis. The MOS accounts for any uncertainty or lack of knowledge concerning the relationship between pollutant loading and water quality. The MOS can be either implicit (i.e., incorporated into TMDL analysis thorough conservative assumptions) or explicit (i.e., expressed in the TMDL as a portion of the loadings). This TMDL uses an implicit MOS by applying a couple of conservative assumptions. First, no rate of decay for *E. coli* was applied. *E. coli* bacteria have a limited capability of surviving outside of their hosts. Therefore, a rate of decay is normally applied. However, applying a rate of decay could result in a discharge limit that would be greater than the *E. coli* WQS, thus no rate of decay was applied. IDEM determined that applying the *E. coli* WQS of 125 per one hundred milliliters to all flow conditions and with no rate of decay for *E. coli* is a more conservative approach that provides for greater protection of the water quality. Therefore, the *E. coli* WQS was applied to all flow conditions thus creating a more conservative MOS for this TMDL.

Section 7 - Seasonality

Seasonality in the TMDL is addressed by expressing the TMDL in terms of the *E. coli* WQS for total body contact during the recreational season (April 1st through October 31st) as defined by 327 IAC 2-1-6(d). There is no applicable total body contact *E. coli* WQS during the remainder of the year in Indiana. Because this is a concentration-based TMDL, *E. coli* WQS will be met regardless of flow conditions in the applicable season.

Section 8 - Monitoring

Future *E. coli* monitoring of the St. Marys River watershed will take place during IDEM's five-year rotating basin schedule and/or once TMDL implementation methods are in place. In addition, IDEM will also work with the City of Fort Wayne, the Allen County Health Department, and the Adams County SWCD to collect additional data from any sampling they may have completed. Monitoring will be adjusted as needed to assist in continued source identification and elimination. When these results indicate that the waterbody is meeting the *E. coli* WQS, IDEM will monitor at an appropriate frequency to determine if Indiana's 30-day geometric mean value of 125 *E. coli* per one hundred milliliters is being met.

Section 9 - Reasonable Assurance Activities

Reasonable assurance activities are programs that are in place or will be in place to assist in meeting the St. Marys River watershed TMDL allocations and the *E. coli* Water Quality Standard (WQS). Following is a list of reasonable assurance activities that pertain to the St. Marys River watershed.

<u>National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers</u>

For the permitted dischargers that have only total residual chlorine limits in their current permits, IDEM's TMDL program proposes that *E. coli* limits and monitoring be added when the next permit renewals are issued.

Three CSO communities discharge to the St. Marys River watershed. These facilities are currently in the NPDES Long Term Control Plan permitting process. This process will address any concern about CSO discharges causing or contributing to the violation of the *E. coli* WQS.

One SSO community discharges to the St. Marys River watershed. This activity is prohibited. Continual monitoring and work with these facilities is needed to eliminate these types of discharges. This will assure that they no longer cause or contribute to violations of the *E. coli* WQS.

Storm Water General Permit Rule 13

MS4 permits are being issued in the state of Indiana. The three MS4 communities in the St. Marys River watershed are the City of Decatur, City of Fort Wayne, and Allen County. Once these permits have been issued and implemented, they will improve the water quality in the St. Marys River watershed. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11). These permits will be used to address storm water impacts in the St. Marys River watershed.

Confined Feeding Operations and Confined Animal Feeding Operations

CFOs and CAFOs are required to manage manure, litter, and process wastewater pollutants in a manner that does not cause or contribute to the impairment of *E. coli* WQS.

Watershed Projects

Two 319 grants were awarded to the Adams County Soil and Water Conservation District in 1999 and 2000. These grants were to address nutrient management. The information gathered for these grants will be useful to build upon for work in this watershed.

IDEM has recently hired a Watershed Specialist for this area of the state. The Watershed Specialist will be available to assist stakeholders with starting a watershed group, facilitating planning activities, and serving as a liaison between watershed planning and TMDL activities in the St. Marys River watershed.

Potential Future Activities

Nonpoint source pollution, which is the primary cause of *E. coli* impairment in this watershed, can be reduced by the implementation of "best management practices" (BMPs). BMPs are practices used in agriculture, forestry, urban land development, and industry to reduce the potential for damage to natural resources from human activities. A BMP may be structural, that is, something that is built or involves changes in landforms or equipment, or it may be managerial, that is, a specific way of using or handling infrastructure or resources. BMPs should be selected based on the goals of a watershed management plan. Livestock owners, farmers, and urban planners, can implement BMPs outside of a watershed management plan, but the success of BMPs would be enhanced if coordinated as part of a watershed management plan. Following are examples of BMPs that may be used to reduce *E. coli* runoff:

1. **Watershed Groups -** Adams and Allen County along with the City of Fort Wayne have shown and interested in forming a group to address the impairments in the St. Marys River watershed.

2. **Riparian Area Management -** Management of riparian areas protects stream banks and riverbanks with a buffer zone of vegetation, either grasses, legumes, or trees.

3. **Manure Collection and Storage -** Collecting, storing, and handling manure in such a way that nutrients or bacteria do not run-off into surface waters or leach down into groundwater.

4. **Contour Row Crops -** Farming with row patterns and field operations aligned at or nearly perpendicular to the slope of the land.

5. **Manure Nutrient Testing -** If manure application is desired, sampling and chemical analysis of manure should be performed to determine nutrient content for establishing the proper manure application rate in order to avoid over application and runoff.

6. **Drift Fences -** Drift fences (short fences or barriers) can be installed to direct livestock movement. A drift fence parallel to a stream keeps animals out and prevents direct input of *E. coli* to the stream.
7. **Pet Clean-up / Education -** Education programs for pet owners can improve water quality of runoff from urban areas.

8. **Septic Management/Public Education -** Programs for management of septic systems can provide a systematic approach to reducing septic system pollution. Education on proper maintenance of septic systems as well as the need to remove illicit discharges could alleviate some anthropogenic sources of *E. coli*.

Section 10 - Conclusion

The sources of *E. coli* to the St. Marys River include both point and nonpoint sources. In order for the St. Marys River watershed to achieve Indiana's *E. coli* WQS, the wasteload and load allocations for the St. Marys River watershed in Indiana have been set to the *E. coli* WQS of 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty day period from April 1st through October 31st. Achieving the wasteload and load allocations for the St. Marys River watershed depends on:

1) *E. coli* limits being added to dischargers who monitor for total residual chlorine.
2) Continued monitoring of facilities that do not use disinfection to assure compliance with the *E. coli* WQS.
3) Assure compliance with CFO and CAFO permits so that they do not cause or contribute to violations of the *E. coli* WQS.
4) Nonpoint sources of *E. coli* being controlled by implementing best management practices in the watershed.
5) The issuance of the MS4 permits for the City of Decatur, City of Fort Wayne, and Allen County.
6) The issuance of a LTCP for the City of Decatur and the City of Fort Wayne.

The next phase of this TMDL is to identify and support the implementation of activities that will bring the St. Marys River watershed in compliance with the *E. coli* WQS. IDEM will continue to work with its existing programs on implementation. In the event that designated uses and associated water quality criteria applicable to the St. Marys River watershed are revised in accordance with applicable requirements of state and federal law, the TMDL implementation activities may be revised to be consistent with such revisions. Additionally, IDEM will work with local stakeholder groups to pursue best management practices that will result in improvement of the water quality in the St. Marys River watershed.

Section 11 - References

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III. *E. coli* TMDL for Maumee River

Section 1 - Background for Maumee River

The Maumee River was listed for an *E. coli* impairment on Indiana's 2002 and 2004 303(d) Lists (Table 2). On the 2002 303(d) List, Bullerman Ditch, Bottern Ditch, and Black Creek (Allen) were listed for impaired biotic communities and nutrients (Figure 22).

Upon further investigation into the Maumee River listing on the 2004 303(d) List, it was discovered that a segment in the middle of the river was not listed. A reassessment was completed on the Maumee River and segment INA0516_M1005 will be listed as impaired for *E. coli* on the 2006 303(d) List.

This TMDL addresses approximately 29.49 miles of the Maumee River in Allen County, Indiana, where recreational uses are impaired by elevated levels of *E. coli* during the recreational season. Allen County is located in northeast Indiana (Figure 22). All of the seven (7) segments for the listed streams of this TMDL are located in the Great Lakes Basin in hydrologic unit code 014100005010. The description of the study area, its topography, and other particulars are as follows:

Table 4: Impaired Segments addressed by the Maumee River E. coli TMDL

Waterbody Name	303(d) List ID	Segment ID Number	Length (Miles)	Impairment
Maumee River	45	INA0511_M1007 INA0514_M1006 INA051A_M1003	15.58	*E. coli*
Maumee River	45	INA0516_M1005	4.34	**E. coli*, FCA Hg & PCBs
Maumee River	45	INA0518_M1004 INA051C_M1002 INA051D_M1003	9.57	*E. coli*, FCA Hg & PCBs

**The total miles of the stream, may be adjusted on the 2006 303(d) List.*

Historical data collected by IDEM documented elevated levels of *E. coli* in the Maumee River at two fixed station sampling locations from 1991 to 2000. IDEM completed sampling at two sites on the Maumee River in 2000. For this sampling event, IDEM sampled two sites, five times, with the samples evenly spaced over a 30-day period from June 12, 2000, to July 11, 2000 (Figure 22). These two sites violated the single sample maximum standard and the geometric mean standard. This data was the basis for the listing of the Maumee River on the 2002 303(d) List.

The City of Fort Wayne sampled the Maumee River at two sites weekly during the recreational season from 2001 through 2003 (Figure 22, Attachment D).

The Allen County Health Department conducted a study to see the impact septic systems have on a waterbody. The Health Department chose sampling sites throughout Allen County that had a cluster of homes on septics with an adjacent stream. Six of the Allen County Health Department sampling sites were in the Maumee River. These sites were sampled weekly during the recreational season from 2001 through 2004. All six of these sites violated the single sample maximum and the geometric mean standard multiple times over this time period. Some of the single maximum standard violations were substantially higher than the water quality standards (Figure 22, Attachment D).

Section 2 - Numeric Targets

The impaired designated use for the waterbodies in the Maumee River is for total body contact recreational use during the recreational season, April 1st through October 31st.

The Indiana Administrative Code, 327 IAC 2-1.5-8(e)(2), establishes the full body contact recreational use *E. coli* WQS[2] for all waters in the Great Lakes system as follows:

> (2) *E. coli* bacteria, using membrane filter (MF) count, shall not exceed one hundred twenty-five (125) per one hundred (100) milliliters as a geometric mean based on not less than five (5) samples equally spaced over a thirty (30) day period nor exceed two hundred thirty-five (235) per one hundred (100) milliliters in any one (1) sample in a thirty (30) day period.

The sanitary wastewater *E. coli* effluent limits from point sources in the Great Lakes system during the recreational season, April 1st through October 31st, are also covered under 327 IAC 2-1.5-8(e)(2).

For the Maumee River during the recreational season (April 1st through October 31st), the target level is set at the *E. coli* WQS of 125 per one hundred milliliters as a 30-day geometric mean based on not less than five samples equally spaced over a thirty day period.

Section 3 - Source Assessment

Watershed Characterization

The confluence of the St. Joseph River and St. Marys River in Allen County form the Maumee River. The Maumee River then flows east into Ohio. Many tributaries enter the Maumee River. None of the major tributaries are listed on the 303(d) List as being impaired. These tributaries include Bullerman Ditch, Trier Ditch, Gar Creek, Botern Ditch, Black Creek, Ham Interceptor Ditch, and other tributaries (Figure 22).

E. coli Data

E. coli data has been collected on four sites in the Maumee River (Figure 22, Attachment D). IDEM's Assessment Branch sampled two sites (Site 1 and Site 9) on the Maumee River five times weekly from June of 2000 to July of 2000. This enabled IDEM's TMDL Program to calculate a geometric mean value. These sites violated the single sample maximum standard and geometric mean standard 100% of the time.

IDEM's Assessment Branch and the City of Fort Wayne have *E. coli* data for the same site, Site 6, on the Maumee River (Figure 22, Attachment D). IDEM sampled this site monthly during the recreational season from 1991 to 1997. Additionally, IDEM's Assessment Branch sampled this site once monthly in April of 2000 and August of 2000 and then again in April of 2003. For IDEM's Assessment Branch sampling, this site violated the single sample maximum standard 54% of the time. The sample collected in April of 2003 did not violate the single sample maximum standard. The City of Fort Wayne sampled this site weekly during the recreational season from 2001 to 2003. For the City of Fort Wayne data, this site violated the single sample maximum standard an average of 61% of the time. The highest single sample was 8000 cfu/100mL. The geometric mean standard was violated an average of 73% of the time.

[2] *E. coli* WQS = 125 cfu/100ml or 235 cfu/100ml; 1 cfu (colony forming units)= 1 mpn (most probable number)

The City of Fort Wayne sampled one site, Site 2, on the Maumee River weekly during the recreational season from 2001 to 2003 (Figure 22, Attachment D). This site violated the single sample maximum standard an average of 57% of the time. The highest *E. coli* value was 20,000 cfu/100mL. This site violated the geometric mean value an average of 73% of the time.

<u>Tributaries</u>

The major tributaries of Bullerman Ditch, Botern Ditch, Black Creek, Gar Creek, Trier Ditch, and Ham Interceptor Ditch are not impaired for *E. coli* on the 303(d) List (Figure 22). There has not been enough data collected on these tributaries to determine if they are impaired or to what extent they are contributing to the *E. coli* impairment in the Maumee River.

<u>Landuse</u>

Landuse information was also assembled in 1992 using the Gap Analysis Program (GAP). In 1992, approximately 82% of the landuse in the Maumee River was agriculture. The remaining landuse for the Maumee River consisted of approximately 9% developed, 2% wetlands, 7% forested (Figure 23).

<u>Wildlife</u>

Wildlife is a known source of *E. coli* impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of *E. coli*. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

<u>Septic Systems</u>

Homes within the Maumee River are almost entirely on septics. Failing septic tanks are known sources of *E. coli* impairment in waterbodies. As was mentioned earlier, the Allen County Health Department conducted a study to see the potential effect a community of homes with septic systems has on a stream. Communities of homes were chosen throughout Allen County. Six of these communities are located along the Maumee River.

Site 3 is located on Trier Ditch south of Meyer Road, south of Hovel/Mckinnie (Figure 22). The Allen County Health Department believes this site is representative of an Industrial Area and possibly a community of homes south of the sampling site (G. Chapple, 2005). Aerial photos confirm a community of homes located south of the sampling location. The *E. coli* data was collected weekly during the recreational season from 2001 to 2004. This sampling site had an average single sample violation 67% of the time and an average geometric mean standard violation 86% of the time. The highest *E. coli* value was 18,000 cfu/100mL (Attachment D).

Site 4 is the second Allen County Health Department sampling site located in the Maumee River. Site 4 was sampled on Bender #2 at Paulding Road, east of Hartzell (Figure 22). This sampling site represents a community of approximately twenty homes south of the sampling location. These twenty homes were being considered for connection to nearby the Regional Sewer District, but this community was too great a distance from the existing Regional Sewer District (G. Chapple, 2005). The *E. coli* data was collected weekly during the recreational season from 2001 to 2004. This sampling site had an average single sample violation 85% of the time and an average geometric mean standard violation 96% of the time. The highest *E. coli* value was 133,000 cfu/100mL (Figure 22, Attachment D).

Site 5 is the third Allen County Health Department sampling site located in the Maumee River. Site 5 represents a community located near Trier Drain, south of the sampling location at Rose and Broadway by the railroad tracks. The Allen County Health Department *E. coli* data was also collected weekly during the recreational season from 2001 to 2004. This sampling site had an average single sample violation 83% of the time and an average geometric mean standard violation 83% of the time. The highest *E. coli* value was 18,000 cfu/100mL (Figure 22, Attachment D).

Site 7 is the fourth Allen County Health Department sampling site located in the Maumee River. Site 7 represents a strip development of homes located near Rushart Drain, south of the sampling location at Berthaud Road, south of Slusher. This strip development of homes contains approximately twenty homes with some newer homes that have absorption fields. The Allen County Health Department *E. coli* data was also collected weekly during the recreational season from 2001 to 2004. This sampling site had an average single sample violation 92% of the time and a geometric mean standard violation 100% of the time. The highest *E. coli* value was >200,000 cfu/100mL (Figure 22, Attachment D).

Site 8 is the fifth Allen County Health Department sampling site located in the Maumee River. Site 8 represents a community located near Wilbur Drain, south of the sampling location at Ehle Road. This community contains approximately fifteen homes. The Allen County Health Department *E. coli* data was also collected weekly during the recreational season from 2001 to 2004. This sampling site had an average single sample violation 87% of the time and a geometric mean standard violation 100% of the time. The highest *E. coli* value was 120,000 cfu/100mL (Figure 22, Attachment D).

Site 10 is the sixth Allen County Health Department sampling site located in the Maumee River. Site 10 represents a community located near Litzenberg Drain, south of the sampling location at State Line Road, north of Dawkins Road. The Allen County Health Department *E. coli* data was also collected weekly during the recreational season from 2001 to 2004. This sampling site had an average single sample violation 64% of the time and a geometric mean standard violation 89% of the time. The highest *E. coli* value was 400,000 cfu/100mL (Figure 22, Attachment D)

Overall, the data collected at these six sites show that septic systems are failing in Allen County. Septic systems are a significant source of *E. coli* to the Maumee River.

<u>National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers</u>

There are six NPDES permitted facilities in the Maumee River (Figure 22, Appendix 5). One of the six permitted discharges, Fort Wayne Municipal STP (IN0032191), only has *E. coli* limits and total residual chlorine (TRC) in their permit. Fort Wayne Municipal STP has not had violations of either their *E. coli* or TRC limits in the past 4 years. Therefore, this permitted discharger is considered to be in compliance and is not a significant source of the *E. coli* impairment in the Maumee River.

One of the six NPDES permitted facilities, Woodburn Municipal STP (IN0021407), does not have *E. coli* or TRC limits, but does contain a sanitary component. Woodburn Municipal STP is a lagoon system, so its permit does not include *E. coli* limits. It was believed that an extended retention time of sanitary wastewater was sufficient to provide a natural attrition of *E. coli* that would be in compliance with Indiana's *E. coli* Water Quality Standards. However, recent studies completed by Ron Turco from Purdue University have indicated that *E. coli* may live longer in this environment than originally believed. Therefore, it is unclear at this time to determine how significant a source of *E. coli* the Woodburn Municipal STP is to the Maumee River. In order to determine if the Woodburn Municipal STP is contributing to the *E. coli* impairment on the Maumee River, IDEM's TMDL Program will recommend *E. coli* reporting requirements be added to this permit during its next permit renewal.

The remaining four of the six dischargers do not have *E. coli* or total residual chlorine limits in their permits. None of these four dischargers has a sanitary component to their discharge. Therefore, *E. coli* limits do not apply to their permits. These permitted dischargers are not contributing to the sources of *E. coli* in the Maumee River.

<u>Storm Water General Permit Rule 13</u>

There are two municipal separate storm sewer systems (MS4) communities, the City of Fort Wayne, the City of New Haven in the Maumee River. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11). It is difficult to determine to what extent, if any, these MS4 communities could be a source of *E. coli* in the Maumee River.

<u>Combined Sewer Overflows (CSO)</u>

There are two CSO communities in the Maumee River. The City of Fort Wayne has eleven CSO discharge points, eight of which discharge directly to the Maumee River and three of which discharge to tributaries of the Maumee. The City of New Haven has four CSO discharge points that discharge in the Maumee River (Figure 22, Appendix 6). The City of Fort Wayne's CSO Long Term Control Plan (LTCP) has recently submitted their CSO LTCP to IDEM. The City of New Haven submitted their CSO LTCP in July of 2002. CSO discharge points are a source of *E. coli* to the Maumee River.

<u>Confined Feeding Operations and Concentrated Animal Feeding Operations</u>

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for confined feeding operations (CFOs) and concentrated animal feeding operations (CAFOs). There are nineteen CFOs in the Maumee River (Figure 22). Two of the CFOs are considered CAFOs (Appendix 7). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." There are currently no open enforcement actions on any of the operational CFOs and CAFOs in Maumee River. Therefore, these operations are not considered a significant source of *E. coli* for the Maumee River TMDL.

<u>Small Animal Operations</u>

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. These operations may still have an impact on the water quality and *E. coli* impairment. No specific information on these small livestock operations is currently available for the remaining portion of the Maumee River. However, it is believed that these small livestock operations may be a source of *E. coli*.

Section 4 - Linkage Analysis

The linkage between the *E. coli* concentrations in the Maumee River and the potential sources of *E. coli* provides the basis for the development of this TMDL. Analysis of this relationship allows for estimating the total assimilative capacity of the stream and any needed load reductions. Water quality duration curves were created for three samplings sites in the Maumee River watershed that were sampled by IDEM and the City of Fort Wayne from 1991 to 2003. A flow duration interval is described as a percentage. Zero (0) percent corresponds to the highest stream discharge (flood condition) and 100 percent corresponds to the lowest discharge (drought condition). These sampling sites are representative of the hydrodynamics of the Maumee River (Attachment E). This section will discuss the water quality duration curves and the linkage of the Maumee River.

Water Quality Duration Curves

Water quality duration curves were created for three sampling sites along the Maumee River (Attachment F). Site MAU-ANT is located on the Maumee in Fort Wayne, Indiana within the mixing zone of the St. Marys and St. Joseph Rivers. This represents the sources of *E. coli* in the Maumee River from both of these river systems. This geometric mean value at this site is 244 cfu/100mL. The water quality duration curve for this site shows higher *E. coli* values throughout the curve with clusters during mid-range and high flow conditions. This indicates continuous source of *E. coli* with inputs during larger rain events.

Site MAU-LAN is located on the Maumee River at Landin Road. This is the first site on the Maumee River after the St. Marys and St. Joseph River mixing zone. The geometric mean for this site is 255 cfu/100mL. The water quality duration for this site is a similar curve to the MAU-ANT. This indicates load added between the two sampling sites.

Site M-114 is located on the Maumee River, near the town of Woodburn. The geometric mean for this site is 430 cfu/100mL. The water quality duration for this site shows consistent violations of WQS with little change during different flow conditions. This indicates constant sources of *E. coli*.

Source Linkage

Landuse information was assessed using the 1992 the Gap Analysis Program (GAP). In 1992, approximately 82% of the landuse in the Maumee River watershed was agriculture. The remaining landuse for the Maumee River watershed consisted of approximately 9% developed, 2% wetlands, 7% forested (Figure 23). Comparison of the landuse noted in 1992 with aerial photos taken in 2003 photos shows no significant changes.

Row crops comprise 71% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of *E. coli*, but they can carry *E. coli* from land applied manure and runoff from the fields and pastures, and other sources of *E. coli* not adjacent to the streams. The high *E. coli* values in the downstream sites during mid-range to high flow conditions indicate the presence of *E. coli* transportation by field tiles.

Pasture comprises 7% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals are not as likely to enter a stream during high flow conditions. Since there is a continuous source of *E. coli* present in this watershed during dry conditions in the downstream sites, this would indicate that animals have direct access to the stream.

Wildlife is a known source of *E. coli*. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes during extreme high flow conditions due to runoff or flooding.

Six NPDES permitted facilities discharge into the Maumee River. Two of these facilities, Fort Wayne STP and Woodburn Municipal STP, have a sanitary component to their discharge. Neither of these facilities has significant violations of their permit limits and are considered to be in compliance. The remaining four NPDES permitted facilities do not have a sanitary component to their discharge.

There are two MS4 communities, the City of Ft Wayne and the City of New Haven, on the Maumee River. To date, permits have not been issued for any of these MS4 communities. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11).

The major tributaries to the Maumee River are Bullerman Ditch, Botern Ditch, Black Creek, Gar Creek, Trier Ditch, and Ham Interceptor Ditch. These tributaries are not impaired for *E. coli* (Figure 22). Data has not been collected on these tributaries. Due to the continuous impairment of the Maumee River, it is assumed that the tributaries contribute to the *E. coli* impairment. However, the lack of data makes it impossible to determine to what extent these tributaries are contributing to the *E. coli* impairment in the Maumee River.

Permitted CFOs and CAFOs are located in the Maumee River. CFOs and CAFOs would be shown on the water quality duration during high flow conditions. Though these facilities have the potential to cause a violation of the *E. coli* water quality standard through land application or a malfunction at the facility, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of *E. coli* the Maumee River based on information provided to IDEM by the Allen County Health Department. The Allen County Health Department sampled several communities, sites 3, 4, 5, 7, 8, and 10, in the Maumee River. *E. coli* levels at all these sites show extremely elevated levels of *E. coli*. The septic systems as described in this information would provide a consistent source of *E. coli* particularly during low to mid-range flows. According to the water quality duration curve, there are consistent violations of the *E. coli* water quality standard during these flow conditions. Septic systems can also fail during higher flow conditions by leaching to a field tile or other type of pipe to the stream. Violations of the *E. coli* water quality standard are shown on the water quality duration curves during high flow, but not consistently (G. Chapple, 2005).

There are two CSO communities in the Maumee River watershed. The City of Fort Wayne has eleven CSO discharge points to the Maumee River watershed. The City of New Haven has four CSO discharge points that discharge in the Maumee River watershed (Figure 22, Appendix 6). The City of Fort Wayne CSO Long Tern Control Plan (LTCP) has recently submitted their CSO LTCP to IDEM. The City of New Haven submitted their CSO LTCP in July of 2002. CSO discharge points are a source of *E. coli* to the Maumee River.

There are eight CSO discharge points from the City of Fort Wayne that flow into the Maumee River. These CSO discharge points are located between Sites 1 and 3. The remaining three CSO discharge points discharge to tributaries of the Maumee. There are four CSO discharge points from the City of New Haven that discharge into tributaries of the Maumee River. These are located south of Site 3. CSO discharge points are shown on water quality duration curves during high flow events. All of these sites show higher *E. coli* values during high flows. It can be concluded that CSO discharge points are a source of *E. coli* the Maumee River. CSO discharge points are a known source of *E. coli*. It is difficult to determine to what extent these discharges have on the *E. coli* impairment in the Maumee River watershed. The Long Term Control Plan (LTCP) that is under review at IDEM will provide the necessary guidelines to insure that the CSO discharge points do not cause or contribute to the impairment of the Maumee River.

<u>Conclusions</u>

The *E. coli* data has an average single sample maximum violation 70% of the time and an average geometric mean violation 86% of the time. The known NPDES permits that have a sanitary component are in compliance. There are no CFO violations and the CFOs are considered to be in compliance. The

New Haven and Fort Wayne MS4 communities are considered sources of *E. coli*, but not significant sources. CSO discharge points from the City of Fort Wayne and the City of New Haven are sources of *E. coli* to the Maumee River. Tributaries are sources of *E. coli*, at an unknown magnitude, to the Maumee River. Based on the water quality durations curves, it can be concluded that the majority of sources of *E. coli* in this waterbody are nonpoint sources which include small animal operations, wildlife, and leaking and failing septic systems. In addition, the CSO discharge points are a major source of *E. coli* for the Maumee River.

Section 5 - TMDL Development

The TMDL represents the maximum loading that can be assimilated by the waterbody while still achieving the Water Quality Standard (WQS). As indicated in the Numeric Targets section of this document, the target for this *E. coli* TMDL is 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty-day period from April 1 through October 31. Concurrent with the selection of a numeric concentration endpoint, TMDL development also defines the critical conditions that will be used when defining allowable levels. Many TMDLs are designed as the set of environmental conditions that, when addressed by appropriate controls, will ensure attainment of WQS for the pollutant. For example, the critical conditions for the control of point sources in Indiana are given in 327 IAC 5-2-11.1(b). In general, the 7-day average low flow in 10 years (Q7, 10) for a stream is used as the design condition for point source dischargers. However, *E. coli* sources to Maumee River arise from a mixture of dry and wet weather-driven conditions, and there is no single critical condition that would achieve the *E. coli* WQS. For the Maumee River and the contributing sources, there are a number of different allowable loads that will ensure compliance, as long as they are distributed properly throughout the watershed.

For most pollutants, TMDLs are expressed on a mass loading basis (e.g. pounds per day). For *E. coli* indicators, however, mass is not an appropriate measure because *E. coli* is expressed in terms of organism counts (or resulting concentration) (USEPA, 2001). Meeting the Water Quality Standards (WQS) of 125 colony forming unit (cfu) per 100 mL as a geometric mean and 235 cfu/100 mL is the overall goal of the TMDL. The geometric mean *E. coli* WQS allows for the best characterization of the watershed. The geometric mean provides a more reliable measure of E. coli concentration because it is less subject to random variation (USEPA, 2004). However, by setting the target to meet the 125 cfu/100 mL geometric mean standard, this TMDL also will meet the 235 cfu/100 mL single day standard. Therefore, this *E. coli* TMDL is concentration-based consistent with 327 IAC 5-2-11.1(b) and 40 CFR, Section 130.2 (i) and the TMDL is equal to the geometric mean *E. coli* WQS for each month of the recreational season (April 1 through October 31). The Wasteload Allocation and Load Allocations in the TMDL are set at 125 cfu/mL, which, as stated above, also will meet the 235 cfu/100 mL single day standard.

Section 6 - Allocations

TMDLs are comprised of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include a Margin of Safety (MOS), either implicitly or explicitly, that accounts for uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. Conceptually, this definition is denoted by the equation:

$$TMDL = \sum WLAs + \sum LAs + MOS$$

The term TMDL represents the maximum loading that can be assimilated by the receiving water while still achieving WQS. The overall loading capacity, of 125 cfu/100mL, is subsequently allocated into the TMDL components of WLAs for point sources, LAs for nonpoint sources, and the MOS. This *E. coli* TMDL is concentration-based consistent with USEPA regulations at 40 CFR, Section 130.2(i).

To investigate further the potential sources mentioned above, an *E. coli* load duration curve analysis, as outlined in an unpublished paper by Cleland (2002), was developed for each sampling site in the watershed. The load duration curve analysis is a relatively new method utilized in TMDL development. The method considers how stream flow conditions relate to a variety of pollutant loadings and their sources (point and nonpoint).

In order to develop a load duration curve, continuous flow data is required. The USGS gage for the Maumee River (04183000) located near New Haven, Indiana was used for development of the *E. coli* load duration curve analysis for the Maumee River TMDL. USGS gage (04183000) is located on the Maumee River in Allen County

The flow data is used to create flow duration curves, which display the cumulative frequency of distribution of the daily flow for the period of record. The flow duration curve relates flow values measured at the monitoring station to the percent of time that those values are met or exceeded. Flows are ranked from extremely low flows, which are exceeded nearly 100% of the time, to extremely high flows, which are rarely exceeded. Flow duration curves are then transformed into load duration curves by multiplying the flow values along the curve by applicable water quality criteria values for *E. coli* and appropriate conversion factors. The load duration curves are conceptually similar to the flow duration curves in that the x-axis represents the flow recurrence interval and the y-axis represents the allowable load of the water quality parameter. The curve representing the allowable load of *E. coli* was calculated using the daily and geometric mean standards of 235 *E. coli* per 100 ml and 125 *E. coli* per 100 ml, respectively. The final step in the development of a load duration curve is to add the water quality pollutant data to the curves. Pollutant loads are estimated from the data as the product of the pollutant concentrations, instantaneous flows measured at the time of sample collection, and appropriate conversion factors. In order to identify the plotting position of each calculated load, the recurrence interval of each instantaneous flow measurement was defined. Water quality pollutant monitoring data are plotted on the same graph as the load duration curve that provides a graphical display of the water quality conditions in the waterbody. The pollutant monitoring data points that are above the target line exceed the water quality standards (WQS); those that fall below the target line meet the WQS (Mississippi DEQ, 2002).

6.1 - Wasteload Allocations

As previously mentioned, there are six permitted dischargers in the Maumee River. Two of the six permitted dischargers have a sanitary component to their discharge. One of these six permitted dischargers already has *E. coli* limits in their permits. One of these six does not have a disinfection requirement and the TMDL group is recommending monitoring to insure compliance with the WQS. The remaining four of these six permitted dischargers do not have a sanitary component to their discharge.

There are two MS4 communities, the City of Fort Wayne, and the City of New Haven, in the Maumee River. To date, these permits have not been issued for any of these MS4 communities. Guidelines for MS4 permits and timelines are outlined in Indiana’s Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11).

The WLA is set at the WQS of 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty-day period from April 1st through October 31st.

The WLA for CSO discharge points and MS4 permit activities will be set in the LTCP and MS4 permits to be issued to these facilities. These permits do not allow these activities to cause or contribute to a violation of WQS, which is set in Indiana Administrative Code 327 IAC 2-1.5-8(e)(2).

The WLA for prohibited discharges such as septic systems with straight pipe discharges directly to streams is set at zero (0).

6.2 - Load Allocations

The LA for nonpoint sources is equal to the WQS of 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty-day period from April 1st through October 31st. The LA will use the geometric mean of each sampling location to determine the reduction necessary to comply with WQS at each site (Appendix 8). The reductions have additionally been broken down into a flow regime, which will help identify critical flows and areas for the implementation of this TMDL (Table 4).

Load allocations may be affected by subsequent work in the watershed. There are currently no watershed projects or plans on the Maumee River. However, there have been watershed projects completed in the surrounding areas. IDEM plans to work with the watershed coordinators in the surrounding areas along with local government agencies to encourage interest in watershed projects. It is anticipated that watershed projects will be useful in continuing to define and address the nonpoint sources of the *E. coli* in the Maumee River.

6.3 - Margin of Safety

A Margin of Safety (MOS) was incorporated into this TMDL analysis. The MOS accounts for any uncertainty or lack of knowledge concerning the relationship between pollutant loading and water quality. The MOS can be either implicit (i.e., incorporated into TMDL analysis thorough conservative assumptions) or explicit (i.e., expressed in the TMDL as a portion of the loadings). This TMDL uses an implicit MOS by applying a couple of conservative assumptions. First, no rate of decay for *E. coli* was applied. *E. coli* bacteria have a limited capability of surviving outside of their hosts; therefore, a rate of decay normally would be applied. However, applying a rate of decay could result in a discharge limit that would be greater than the *E. coli* WQS, thus no rate of decay was applied. Second, the *E. coli* WQS was applied to all flow conditions. This adds to the MOS for this TMDL. IDEM determined that applying the *E. coli* WQS of 125 per one hundred milliliters to all flow conditions and with no rate of decay for *E. coli* is a more conservative approach that provides for greater protection of the water quality.

Section 7 - Seasonality

Seasonality in the TMDL is addressed by expressing the TMDL in terms of the *E. coli* WQS for total body contact during the recreational season (April 1st through October 31st) as defined by 327 IAC 2-1.5-8(e)(2). There is no applicable total body contact *E. coli* WQS during the remainder of the year in Indiana. Because this is a concentration-based TMDL, *E. coli* WQS will be met regardless of flow conditions in the applicable season.

Section 8 - Monitoring

Future *E. coli* monitoring of the Maumee River will take place during IDEM's five-year rotating basin schedule and/or once TMDL implementation methods are in place. In addition, IDEM will also work with the City of Fort Wayne and the Allen County Health Department to collect additional sampling they might have completed. Monitoring will be adjusted as needed to assist in continued source identification and elimination. When these results indicate that the waterbody is meeting the *E. coli* WQS, IDEM will monitor at an appropriate frequency to determine if Indiana's 30-day geometric mean value of 125 *E. coli* per one hundred milliliters is being met.

Section 9 - Reasonable Assurance Activities

Reasonable assurance activities are programs that are in place or will be in place to assist in meeting the Maumee River TMDL allocations and the *E. coli* Water Quality Standard (WQS). Following is a list of reasonable assurance activities that pertain to the St. Marys River watershed.

<u>National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers</u>

For the permitted discharger that has a sanitary component and does not have a disinfection requirement, IDEM's TMDL program proposes that *E. coli* monitoring be added when the next permit renewals are issued.

<u>Storm Water General Permit Rule 13</u>

MS4 permits are being issued in the state of Indiana. The two MS4 communities in the Maumee River are the City of Fort Wayne and the City of New Haven. Once these permits have been issued and implemented, they will improve the water quality in the Maumee River. Guidelines for MS4 permits and timelines are outlined in Indiana's Municipal Separate Storm Sewer System (MS4) Rule 13 (327 IAC 15-13-10 and 327 IAC 15-13-11). These permits will be used to address storm water impacts in the Maumee River.

<u>Confined Feeding Operations and Confined Animal Feeding Operations</u>

CFO and CAFO are required to manage manure, litter, and process wastewater pollutants in a manner that does not cause or contribute to the impairment of *E. coli* WQS.

<u>Watershed Projects</u>

The Maumee River Basin Commission is an active group whose mission is to provide regional leadership and promote flood control, soil and water conservation, and related resource management through a coordinated and comprehensive planning and implementing approach.

IDEM has recently hired a Watershed Specialist for this area of the state. The Watershed Specialist will be available to assist stakeholders with starting a watershed group, facilitating planning activities, and serving as a liaison between watershed planning and TMDL activities in the Maumee River. The interest from the City of Fort Wayne and both Adams and Allen county health departments should provide the catalyst needed to promote implementation in the Maumee River.

Potential Future Activities

Nonpoint source pollution, which is the primary cause of *E. coli* impairment in this watershed, can be reduced by the implementation of “best management practices" (BMPs). BMPs are practices used in agriculture, forestry, urban land development, and industry to reduce the potential for damage to natural resources from human activities. A BMP may be structural, that is, something that is built or involves changes in landforms or equipment, or it may be managerial, that is, a specific way of using or handling infrastructure or resources. BMPs should be selected based on the goals of a watershed management plan. Livestock owners, farmers, and urban planners, can implement BMPs outside of a watershed management plan, but the success of BMPs would be enhanced if coordinated as part of a watershed management plan. Following are examples of BMPs that may be used to reduce *E. coli* runoff:

1. Riparian Area Management - Management of riparian areas protects stream banks and riverbanks with a buffer zone of vegetation, either grasses, legumes, or trees.

2. Manure Collection and Storage - Collecting, storing, and handling manure in such a way that nutrients or bacteria do not run-off into surface waters or leach down into ground water.

3. Contour Row Crops - Farming with row patterns and field operations aligned at or nearly perpendicular to the slope of the land.

4. Manure Nutrient Testing - If manure application is desired, sampling and chemical analysis of manure should be performed to determine nutrient content for establishing the proper manure application rate in order to avoid over-application and runoff.

5. Drift Fences - Drift fences (short fences or barriers) can be installed to direct livestock movement. A drift fence parallel to a stream keep animals out and prevents direct input of *E. coli* to the stream.

6. Pet Clean-up / Education - Education programs for pet owners can improve water quality of runoff from urban areas.

7. Septic Management/Public Education - Programs for management of septic systems can provide a systematic approach to reducing septic system pollution. Education on proper maintenance of septic systems as well as the need to remove illicit discharges could alleviate some anthropogenic sources of *E. coli*.

Section 10 - Conclusion

The sources of *E. coli* to the Maumee River include both point and nonpoint sources. In order for the Maumee River to achieve Indiana’s *E. coli* WQS, the wasteload and load allocations for the Maumee River in Indiana have been set to the *E. coli* WQS of 125 per one hundred milliliters as a geometric mean based on not less than five samples equally spaced over a thirty day from April 1st through October 31st. Achieving the wasteload and load allocations for the Maumee River depends on:

1) *E. coli* monitoring being added to insure lagoon dischargers meet WQS.
2) CFOs and CAFOs not violating their permits.
3) Nonpoint sources of *E. coli* being controlled by implementing best management practices on the waterbody.

4) The issuance of the MS4 permits for the City of Fort Wayne and the City of New Haven.
5) The issuance of the LTCP for the City of Fort Wayne and the City of New Haven.
6) Inadequate and failing septic systems need to be replaced.

The next phase of this TMDL is to identify and support the implementation of activities that will bring the Maumee River in compliance with the *E. coli* WQS. IDEM will continue to work with its existing programs on implementation. In the event that designated uses and associated water quality criteria applicable to the Maumee River are revised in accordance with applicable requirements of state and federal law, the TMDL implementation activities may be revised to be consistent with such revisions. Additionally, IDEM will work with local stakeholder groups to pursue best management practices that will result in improvement of the water quality in the Maumee River.

Section 11 - References

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IV. IMPAIRED BIOTIC COMMUNITIES TMDL FOR BLUE CREEK/HABEGGER DITCH, YELLOW CREEK, AND THE UNNAMED TRIBUTARY TO ST. MARYS RIVER WATERSHEDS

TMDL Overview

The Blue Creek/Habegger Ditch and Yellow Creek Watersheds are impaired for IBC and nutrients. The Unnamed Tributary to the St. Marys River is impaired for Impaired Biotic Communities (IBCs). The purpose of the TMDL for the Blue Creek/Habegger Ditch, Yellow Creek, and Unnamed Tributary to St. Marys River watersheds is to identify the sources and determine the allowable levels for nutrients. For the waterbodies listed as having an Impaired Biotic Community (IBC), the goal of the TMDL will be to identify the pollutants causing the impairment and then set the appropriate allocations or watershed practices based on the pollutants that have been identified. These activities will result in the attainment of the applicable WQS in the Blue Creek/Habegger Ditch, Yellow Creek, and Unnamed Tributary to the St. Marys River watersheds in Adams and Allen Counties in Indiana. This section will address the TMDL requirements for the IBC and nutrient impairments in these watersheds. Each of these watersheds will have separate source assessments, while the numeric target, waste load allocation (WLA), load allocation (LA), and implementation activities will be combined.

Section 1 - Background for Blue Creek/Habegger Ditch, Yellow Creek and the Unnamed Tributary to the St. Marys River Watersheds

Blue Creek/Habegger Ditch watershed was listed for *E. coli*, IBC, and nutrients (nitrogen and phosphorus) impairments on Indiana's 2002 and 2004 303(d) Lists. Yellow Creek watershed was listed for IBC and nutrient (nitrogen and phosphorus) impairments on Indiana's 2002 and 2004 303(d) Lists. The Unnamed Tributary of the St. Marys River was listed for *E. coli* and IBC impairments on Indiana's 2004 303(d) List (Figure 24).

This TMDL address approximately 18.08 river miles of the Blue Creek/Habegger Ditch watershed in Adams County, Indiana, where designated uses are impaired by elevated levels of nutrients and low IBC scores. This TMDL also addresses approximately 32.79 river miles of the Yellow Creek watershed in Adams County. Finally this TMDL addresses approximately 2.84 river miles of the Unnamed Tributary to the St. Marys River watershed in Allen County. These watersheds are located in northeast Indiana (Figure 24). All four (4) segments of the listed streams for this TMDL are located in the Great Lakes Basin in hydrologic unit codes (HUCs) 05120201 and 05120202 (Table 5).

Table 5: Impaired Segments addressed by the Blue Creek/Habegger Ditch and Yellow Creek Watersheds Impaired Biotic Communities TMDL

Waterbody Name	Segment ID Number	Length (Miles)	Impairment
Blue Creek	INA0445_T1006	12.28	*E. coli*, IBC, nutrients
Habegger Ditch	INA0443_T1008	5.8	*E. coli*, IBC, nutrients
Yellow Creek-Martz Ditch	INA0447_00	32.79	IBC, nutrients, *E. coli*
Unnamed Trib of St. Marys River	INA0454_T1012	2.84	*E. coli*, IBC

Historical data collected by IDEM's Assessment Branch documented elevated levels of nutrients in the Blue Creek/Habegger Ditch and Yellow Creek watersheds in Adams County, Indiana.
the from 1996 to 2004. IDEM's Assessment Branch completed a source ID survey of the watershed Blue Creek/Habegger Ditch and Yellow Creek watershed 2001. In 2002 the Unnamed Tributary to the St. Marys River was added to the 303(d) List for and IBC impairment.

IDEM's Assessment Branch completed an intensive survey for all impaired parameters in 2004. IDEM's Assessment Branch sampled fourteen sites, once every other week from March 2004 to October 2004 (Figure 25). The City of Fort Wayne sampled seven of the same sites as IDEM on opposite weeks from July of 2004 through October of 2004 (Attachment G).

As part of a 319 grant, the Adams County Soil and Water Conservation District sampled twelve sites for nutrients in the St. Marys River watershed approximately monthly from May of 2000 through May of 2001. This study focused on the St. Marys River, Blue Creek, and Little Blue Creek. (Figure 25, Attachment G).

Section 2 - Numeric Targets

Nutrient conditions were evaluated on a site-by-site basis using the benchmarks described below. In most cases, it requires two or more of these conditions to be met in order to classify a waterbody as impaired:

Total Phosphorus
- One or more values >0.3 mg/L

Nitrogen (measured as NO_3 + NO_2)
- One or more values >10.0 mg/L

Dissolved Oxygen (DO)
- Values below the water quality standard of 4.0 mg/L or values consistently at or close to the standard, in the range of 4.0 - 5.0 mg/L
- Values $\geq$12.0 mg/L

pH measurements
- Values above the water quality standard of 9.0 or values consistently at or close to the standard, in the range of 8.7 to 9

Algal Condition
- Algae are described as "excessive" based on field observations by trained staff

Total Suspended Solids
- Values >30 mg/L

Blue Creek/Habegger Ditch, Yellow Creek and Unnamed Tributary to the St. Marys River watersheds have been identified as impaired by a low IBI score, in additional to having elevated nutrient levels. Nutrients rarely approach concentrations in the ambient environment that are toxic to aquatic life, however, nutrients are essential in minute amounts for the proper functioning of healthy aquatic ecosystems. Nevertheless, nutrient concentrations in excess of these minute needs can exert negative effects on the aquatic ecosystem by increasing algal and aquatic plant life production (Sharpely et al., 1994). Increased plant production increases turbidity, decreases average dissolved oxygen concentrations, and increases fluctuations in diurnal dissolved oxygen and pH levels. Such changes shift species composition away from functional assemblages comprised of intolerant species, benthic insectivores, and top carnivores that are typical of high quality streams towards less desirable assemblages of tolerant species, generalists, omnivores, and detrivores that are typical of degraded streams (Ohio EPA, 1999). Such a shift in community structure lowers the diversity of the system; the IBI scores can reflect this shift.

Total suspended solids (TSS) are particles in the water that can be trapped by a filter. High concentrations of TSS can reduce the amount of sunlight available to aquatic organisms and decrease water clarity. This leads to a number of effects including reduction of aquatic plants available for consumption by higher-level organisms, lower dissolved oxygen, and the impaired ability of fish to see and catch food. TSS particles can also hold heat resulting in increased stream temperature. Further, TSS can clog fish gills, retard growth rates, decrease resistance to disease, and prevent egg and larval development. When TSS settles on the bottom of a waterbody, eggs of fish and invertebrates are smothered, larvae can suffocate, and habitat quality is degraded (Ohio EPA 2006). Based on this information, the nutrient targets coupled with Total Suspended Solids (TSS) target will be used to set reductions necessary for achieving the reductions necessary for the IBC impairment.

Section 3 - Source Assessment

3.1 - Unnamed Tributary to St. Marys

Watershed Characterization

The Unnamed Tributary to the St. Marys sub-watershed is located entirely in Allen County. The Unnamed Tributary to the St. Marys River is less than 3 miles in length and is in the northern portion of Allen County near the Allen-Adams County Line. The Unnamed Tributary to the St. Marys River flows southeast until it is joined by the St. Marys River (Figure 26).

A reassessment using the data gathered by IDEM in 2004 was completed on the Unnamed Tributary to the St. Marys River sub-watershed during the development of the St. Marys River watershed TMDL. The reassessment concluded that Unnamed Tributary to the St. Marys River will be listed on the 2006 303(d) List as impaired for IBC and *E.coli*. The St. Marys River watershed TMDL will address the IBC impairment using the nutrient and TSS criteria. The data that was collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 supported the conclusions of the reassessment.

Nitrogen, Phosphorus, and TSS Data

One site in the Unnamed Tributary to the St. Marys River sub-watershed was sampled for nitrogen, phosphorus, and TSS. IDEM's Assessment Branch collected samples biweekly from March 2004 to October 2004 (Attachment G).

Phosphorus data collected by IDEM exceeded the numeric target 14% of the time. The highest phosphorus concentration was 0.83 mg/L at site LES050-0020. TSS collected by IDEM exceeded the numeric target 23% of the time. The highest TSS concentration was 584 mg/L at site LES050-0020.

Landuse

Landuse information was assessed using data from the 1992 Gap Analysis Program (GAP). Approximately 90% of the landuse in the Unnamed tributary to the St. Marys River sub-watershed was agriculture. The remaining landuse for the Unnamed Tributary to the St. Marys River sub-watershed consisted of approximately 8% forested, and 1.5% wetland (Figure 27). A comparison of 1992 landuse with the aerial photos taken in 2003 shows no substantial changes to the Unnamed Tributary sub-watershed have occurred.

Wildlife

Wildlife is a known source of nutrient and TSS impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of nutrients and TSS. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Homes within the Unnamed Tributary to the St. Marys River sub-watershed are almost entirely on septics. Failing septic tanks are known sources of nutrients and TSS in waterbodies. The Allen County Health Department has conducted studies to see the potential effect a community of homes with septic systems has on a stream. Communities of homes were chosen throughout Allen County. None of these communities are located along the Unnamed Tributary to the St. Marys River sub-watershed, but this information will be useful for implementation of this TMDL. Failing septic tanks are known sources of nutrients and TSS impairment in waterbodies (Allen County Health Department communication 2004).

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There are no NPDES permitted facilities located in the Unnamed Tributary to the St. Marys River sub-watershed

Combined Sewer Overflows (CSO) & Sanitary Sewer Overflows (SSO)

There are no NPDES permitted facilities located in the Unnamed Tributary to the St. Marys River sub-watershed

Confined Feeding Operations and Concentrated Animal Feeding Operations

There are no CFOs/CAFOs located in the Unnamed Tributary to the St. Marys River sub-watershed

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. The possibility still exists that these operations may still have an adverse impact on the water quality within the watershed. No specific information on these small livestock operations is currently available for the remaining portion of the Unnamed Tributary to the St. Marys River sub-watershed. It is believed that these small livestock operations may be a potential source of the nutrient and TSS impairments.

3.2 - Blue Creek Sub-Watershed

Watershed Characterization

The Blue Creek sub-watershed is located entirely in Adams County. Blue Creek starts in the southwest portion of the county near the Adams-Wells County Line. Blue Creek then flows southeast until it is joined by Habegger Ditch. Blue Creek then turns northeast before discharging into the St. Marys River. Little Blue Creek is the last major tributary to discharge into Blue Creek before it joins the St. Marys River (Figure 28).

A reassessment using the data gathered by IDEM in 2004 was completed on the Blue Creek sub-watershed during the development of the St. Marys River watershed TMDL. The reassessment concluded that Blue Creek and Habegger Ditch will be listed on the 2006 303(d) List as impaired for nutrients (nitrogen and phosphorus) and TSS. The reassessment resulted in the entire Blue Creek sub-watershed being scheduled to be listed as impaired for nutrients and TSS on the 2006 303(d) List. The St. Marys River watershed TMDL will address the nutrient and TSS impairments, as they will appear on the 2006 303(d) List. The data that was collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 supported the conclusions of the reassessment.

Nitrogen, Phosphorus, and TSS Data

Three sites in the Blue Creek sub-watershed were sampled for nitrogen, phosphorus, and TSS. IDEM's Assessment Branch collected samples biweekly from March 2004 to October 2004 (Attachment G).

Nitrogen data collected by IDEM exceeded the numeric target 14% of the time. The highest nitrogen concentration was 36.4 mg/L at site LES040-0066. Phosphorus data collected by IDEM exceeded the numeric target 44% of the time. The highest phosphorus concentration was 1.03 mg/L at site FES040-0011. TSS collected by IDEM exceeded the numeric target 28% of the time. The highest TSS concentration was 692 mg/L at site LES040-0009.

Landuse

Landuse information was assessed using data from the 1992 Gap Analysis Program (GAP). Approximately 94% of the landuse in the Blue Creek sub-watershed was agriculture. The remaining landuse for the Blue Creek sub-watershed consisted of approximately 5% forested, 0.4% wetlands, and 0.7% urban (Figure 29). A comparison of 1992 landuse with the aerial photos taken in 2003 shows no substantial changes to the Blue Creek sub-watershed have occurred.

Wildlife

Wildlife is a known source of nutrient and TSS impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of nutrients and TSS. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Blue Creek sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of nutrient and TSS impairments in waterbodies. In 2001, the Adams County Health Department completed a study throughout the county identifying homes that rely solely on septic tank systems. Many of these systems discharge directly to a stream or field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, or approximately 10,000 residents, in rural Adams County rely solely on septic tanks. This study further identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to a municipal system. Six of these seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001 (Smith, T., 2005).

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There are three NPDES permitted facilities located in the Blue Creek sub-watershed (Figure 28, Appendix 9). Pleasant Mill #2/Meshberger Bros. Stone Plant #2 (ING490084) discharges to Blue Creek and does not contain a sanitary component. Bing-Lear Manufacturing Group, Berne (IN0058980) discharges to Habegger Ditch and does not contain a sanitary component. Berne STP (IN0021369) discharges to the Wabash River, which is not located in the St. Marys River watershed. However, until several years ago the Berne STP effluent outfall did discharge to Habegger Ditch. Pleasant Mill #2, Meshberger Bros. Stone Plant #2 and the Bing-Lear Manufacturing Group, Berne STP are not sources of nutrients or TSS to the Blue Creek sub-watershed since there is no sanitary component in their discharge. Even though the Berne STP effluent outfall has a sanitary component to its discharge, its outfall is no longer located on Habegger Ditch. The Berne STP effluent outfall is also not considered a source of nutrients or TSS to the Blue Creek sub-watershed.

Combined Sewer Overflows (CSO) & Sanitary Sewer Overflows (SSO)

The City of Berne is the only CSO community in the Blue Creek sub-watershed (Figure 30, Appendix 10). The City of Berne has three CSO outfalls. These three CSO outfalls discharge to Sprunger Ditch, which is a tributary of Habegger Ditch. The City of Berne submitted their CSO Long Term Control Plan (LTCP) in August of 2002. The City of Berne and the IDEM Office of Enforcement is currently working on an agreed order to address CSOs and SSOs in the collection system. SSOs are not a permitted activity and are not a legal discharge. CSO and SSO outfalls are a source of nutrients and TSS to the Blue Creek sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for Confined Feeding Operations (CFOs) and Concentrated Animal Feeding Operations (CAFOs). There are twenty CFOs in the Blue Creek sub-watershed (Figure 28) and three of them, are CAFOs (Figure 28, Appendix 11). The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations “not cause or contribute to an impairment of surface waters of the state.” The active animal operations in Blue Creek sub-watershed have no open enforcement actions at this time. However, these operations are still considered a potential source of nutrients and TSS for the Blue Creek sub-watershed TMDL.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. The possibility still exists that these operations may still have an adverse impact on the water quality within the watershed. No specific information on these small livestock operations is currently available for the remaining portion of the Blue Creek sub-watershed. It is believed that these small livestock operations may be a potential source of the nutrient and TSS impairments.

3.3 - Yellow Creek Sub-Watershed

Watershed Characterization

The Yellow Creek sub-watershed is located entirely in Adams County. Smith Ditch and Johnson Ditch combine to form Yellow Creek. Straight Branch and Hendricks Ditch flow into Yellow Creek downstream of the Smith Ditch and Johnson Ditch confluence. Yellow Creek flows northeast until it is joined by Martz Ditch. Ruppert Ditch is the major tributary of Martz Ditch. After Martz Ditch joins Yellow Creek, Yellow Creek then flows northwest to the St. Marys River (Figure 31).

A reassessment using the data gathered by IDEM in 2004 was completed on the Yellow Creek sub-watershed during the development of the St. Marys River watershed TMDL. The St. Marys River watershed TMDL will address the nutrient (nitrogen and phosphorus) and TSS impairments as they will appear on the 2006 303(d) List. The data that were collected by the City of Fort Wayne in conjunction with IDEM data collected in 2004 support the conclusions of the reassessment.

Nitrogen, Phosphorus, and TSS Data

Two sites were sampled for nitrogen, phosphorus, and TSS in the Yellow Creek sub-watershed. Nitrogen, phosphorus, and TSS samples were collected from sites LES040-0099 and LES040-0038. Samples were collected biweekly by IDEM’s Assessment Branch and biweekly by the City of Fort Wayne on opposing weeks from March 2004 to October 2004 (Attachment G).

Nitrogen collected by IDEM exceeded the numeric target 5% of the time. The highest nitrogen concentration was 17.8 mg/L at site LES040-0099. Phosphorus collected by IDEM and the City of Fort Wayne exceeded the numeric target 39% of the time. The highest phosphorus concentration was 1.17 mg/L at site LES040-0099. TSS collected by IDEM and the City of Fort Wayne exceeded the numeric target 21% of the time. The highest TSS concentration was 206 mg/L at site LES040-0038.

Landuse

Landuse information was assessed using data from the 1992 Gap Analysis Program (GAP). Approximately 95% of the landuse in the Yellow Creek sub-watershed was agriculture. The remaining landuse for the Yellow Creek sub-watershed consisted of approximately 4% forested, 0.4% wetlands, and 1% urban (Figure 32). A comparison of 1992 landuse with the aerial photos taken in 2003 show no substantial changes to the Yellow Creek sub-watershed have occurred.

Wildlife

Wildlife is a known source of nutrient and TSS impairments in waterbodies. Many animals spend time in or around waterbodies. Deer, geese, ducks, raccoons, turkeys, and other animals all create potential sources of nutrients and TSS. Wildlife contributes to the potential impact of contaminated runoff from animal habitats, such as urban park areas, forest, and cropland.

Septic Systems

Many homes within the Yellow Creek sub-watershed treat wastewater with on-site septic systems. Failing septic systems are known sources of nutrient and TSS impairments in waterbodies. In 2001, the Adams County Health Department completed a study throughout the county identifying homes that rely solely on septic tank systems. Many of these systems discharge directly to a stream or field tile that will carry the wastewater to streams. This study found an estimated 35% of the homes, or approximately 10,000 residents, in rural Adams County rely solely on septic tanks. This study further identified seven unsewered communities. These seven unsewered communities represent 10% of the approximate 10,000 residents who are neither connected to a municipal treatment plant or using a complete on-site septic system. The remaining 90% live in rural communities that are not as accessible to a municipal system. Six of these seven unsewered communities are located in the St. Marys River watershed. These six communities are Pleasant Mills, Arcadia Village Subdivision and surrounding area, Monmouth, Preble-Magley, Peterson, and Sunnybrook (or Andrews) Subdivision. In 1986, Adams County Health Department began requiring new homes in the rural, unsewered areas to install on-site septic systems according to the Indiana State Department of Health rules and regulations. Many of the homes in these communities were built prior to 1986 and are not covered under this new regulation. As of February 2005, approximately 750 to 800 on-site septic systems exist in Adams County, which is an increase from approximately 600 onsite systems in 2001 (Smith, T., 2005).

National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers

There is one NPDES permitted facility located in the Yellow Creek sub-watershed (Appendix 9, Figure 31). Monroe Water Department (IN0048151) discharges to Yellow Creek and does not contain a sanitary component. Since Monroe Water Department does not have any component of its discharge that could be considered a source of nutrients or TSS to the Yellow Creek sub-watershed.

Confined Feeding Operations and Concentrated Animal Feeding Operations

The removal and disposal of the manure, litter, or processed wastewater that is generated as the result of confined feeding operations falls under the regulations for Confined Feeding Operations (CFOs) and Concentrated Animal Feeding Operations (CAFOs). There are five CFOs in the Yellow Creek sub-watershed (Figure 31, Appendix 11), none of which are CAFOs. The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations "not cause or contribute to an impairment of surface waters of the state." The active animal operations in Yellow Creek sub-watershed have no open enforcement actions at this time. However, these operations are still considered a potential source of nutrients and TSS for the Yellow Creek sub-watershed.

Small Animal Operations

There are many smaller livestock operations in the watershed. These operations, due to their small size, are not regulated under the CFO or CAFO regulations. The possibility still exists that these operations may still have an adverse impact on the water quality within the watershed. No specific information on these small livestock operations is currently available for the remaining portion of the Yellow Creek sub-watershed. It is believed that these small livestock operations may be a potential source of the nutrient and TSS impairments.

Section 4 - Linkage Analysis

The linkage between the nutrient and TSS concentrations in the Blue Creek/Habegger Ditch and Yellow Creek watersheds and the potential sources of nutrients provides the basis for the development of this TMDL. Analysis of this relationship allows for estimating the total assimilative capacity of the stream and any needed load reductions. Water quality duration curves were created for the sampling sites in the Blue Creek/Habegger Ditch and Yellow Creek watersheds that were sampled by IDEM and the City of Fort Wayne in 2004. A flow duration interval is described as a percentage. Zero (0) percent corresponds to the highest stream discharge (flood condition) and 100 percent corresponds to the lowest discharge (drought condition). These sampling sites are representative of the hydrodynamics of Blue Creek, Habegger Ditch, and Yellow Creek watersheds (Attachment H). This section will discuss the water quality durations and the linkage of Section 3.0 for each sub-section of the Blue Creek/Habegger Ditch and Yellow Creek watersheds.

The linkage between nutrients and TSS concentrations in the Unnamed Tributary to the St. Marys River watershed and potential sources of nutrients provides part of the basis for the development for this TMDL. Unlike the two previous watersheds, the flow measurements taken do not align with the load duration curves created for this watershed. The load duration curves will therefore not be used for this watershed. IDEM has completed additional testing on this tributary, which is less than 3 miles in length, and the flow information collected support that naturally occurring conditions inhibit the formation of the ideal biotic community characteristic of higher ordered streams. This tributary is a 1-order stream that naturally dries up in the summer. According to Stehr and Branson (1938), "the reduction of the stream to a series of pools during the summer period of small rainfall and high evaporation prevents many species from returning to the stream during this season and effectively limits the variety and size of the fauna at this time." Stehr and Branson (1938) continue, "...very few of these [fish] ever reach the middle and upper sections of the stream for the water on many of the riffles is too shallow for their passage." Further research on headwater streams (Schlosser, 1982; Harrel, et. al., 1967; Lotrich, 1973; Whiteside and McNatt, 1972; and Matthews, 1981) indicates that headwater streams, including zero-order and first-order streams do not possess the same diversity as higher order streams, and thus may never be able to obtain a fully diverse warm-water aquatic habitat. The flow data collected from March 9, 2004, through October 4, 2004, shows 53% of the samples taken were during no flow conditions (Figure 33). This lack of flow for extended periods, as stated above, will adversely effect the fish populations.

<u>4.1- Unnamed Tributary to St. Marys sub-watershed</u>

4.1.1 Water Quality and Stream Flow

Site LES050-0020 is located near the center of the stream length. This site had violations of the phosphorus (0.44 mg/L) and TSS (53 mg/L) numeric targets. After review of these water quality duration curves it has been determined that flow from the surrogate flow gage does not represent the flow in the Unnamed tributary to St. Marys River (Figure 33). Therefore, these water quality duration curves will not be used for the Unnamed Tributary to St. Marys River.

4.1.2 Source Linkage

The landuse in this sub-watershed is predominately agricultural. Row crops comprise 82% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of nutrients and TSS, but they can carry nutrients and TSS from land applied manure, runoff from the fields and pastures, failing septics, and other sources of nutrients not adjacent to the streams. The high phosphorus and TSS values during mid-range to high flow conditions indicates the presence of phosphorus and TSS transported by field tiles.

Pasture accounts for approximately 9% of the total landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals present in these smaller animal operations are not as likely to enter a stream during high flow conditions. The high nutrient and TSS values during mid-range to high flow conditions indicates run-off during or shortly after precipitation events.

Wildlife is a known source of nutrients and TSS. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes in phosphorus and TSS levels during extreme high flow conditions due to runoff or flooding which carries large quantities of phosphorus and TSS at one time.

There are no National Pollutant Discharge Elimination System (NPDES) permitted facilities in this sub-watershed. Therefore, these facilities are not a contributing source to the nutrient and TSS impairments.

There are no CFOs and CAFOs in this sub-watershed. Therefore, these facilities are not a contributing source to the nutrient and TSS impairments.

Septic systems are a known source of nutrients and TSS for this sub-watershed based on information provided to IDEM by the Allen (Allen County Health Department personal communication). The septic systems described by this information would provide a constant source of nutrients and TSS, particularly during low flow conditions. According to the water quality duration curve, there are no consistent violations of the nutrient or TSS targets during these flow conditions. However, septic systems will contribute to the violations founds during higher flow conditions. During higher flow conditions, septic systems can fail by leaching into a field tile or other type of pipe that discharges to the stream.

There are no CSOs or SSO in this sub-watershed. Therefore, these types of discharges are not a contributing source to the nutrient and TSS impairments.

4.1.3 Conclusion

There are no known NPDES permits, CFOs, CAFOs, CSOs, or SSOs in this sub-watershed. Based on the lack of point sources, it can be concluded that the sources of phosphorus and TSS in this watershed are nonpoint sources, which include small animal operations, Amish communities, wildlife, and leaking and failing septic systems. Additionally the lack of flow during will inhibit a healthy biotic community.

4.2 - Blue Creek/Habegger sub-watershed

4.2.1 Water Quality Duration Curves

Water quality duration curves were created for four sites in the Blue Creek/Habegger Ditch sub-watershed (Attachment H). Site LES040-0099 is located at the mouth of Habegger Ditch. This site had violations of the nitrogen (20.1 mg/L), phosphorus (0.44 mg/L), and TSS (53 mg/L) numeric targets. According to the water quality duration curves, nutrient violations occurred during or shortly after precipitation events. This indicates sources due to run-off events.

Site LES040-0011 is located on Blue Creek after the confluence of Gates Ditch. This site had violations of the nitrogen (14.7 mg/L), phosphorus (0.39 mg/L), and TSS (41.8 mg/L) numeric targets. According to the water quality duration curves, nutrient violations occurred during or shortly after precipitation events. This indicates sources due to run-off events.

Site LES040-0066 is located on Blue Creek after the confluence of Little Blue Creek. This site had violations of the nitrogen (11.5 mg/L), phosphorus (0.42 mg/L), and TSS (58 mg/L) numeric targets. According to the water quality duration curves, nutrient violations occurred during or shortly after precipitation events. This indicates sources due to run-off events.

Site LES040-0009 is located near the mouth Blue Creek after the confluence of the Unnamed Tributary (Duer Ditch). This site had violations of the nitrogen (13.8 mg/L), phosphorus (0.4 mg/L), and TSS (49.53 mg/L) numeric targets. According to the water quality duration curves, nutrient violations occurred during or shortly after precipitation events. This indicates sources due to run-off events.

4.2.2 Source Linkage

The landuse in this sub-watershed is predominately agricultural. Row crops comprise 88% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles are not themselves sources of nutrients and TSS, but they can carry nutrients and TSS from land applied manure, runoff from the fields and pastures, failed septics, and other sources of nutrients not adjacent to the streams. The high nutrients and TSS values during mid-range to high flow conditions indicates the presence of nutrients and TSS transported by field tiles.

Pastures accounts for approximately 11% of the total landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals present in these smaller animal operations are not as likely to enter a stream during high flow conditions. The high nutrient and TSS values during mid-range to high flow conditions indicates run-off during or shortly after precipitation events.

Wildlife is a known source of nutrients and TSS. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes in nutrient and TSS levels during extreme high flow conditions due to runoff or flooding which carries large quantities of nutrients and TSS at one time.

This area has Amish communities. Amish communities are not required to follow state guidelines for waste removal; therefore, the significance of the Amish community impact on the nutrient and TSS levels for these streams is unknown.

There is a lack of nutrient and TSS sampling for Farlow Ditch, and Duer Ditch and other tributaries. The location of the sampling sites in this sub-watershed indicates that these tributaries are contributing to the nutrient and TSS impairments. It is unclear the magnitude these tributaries contribute to the nutrient and TSS impairments.

None of the National Pollutant Discharge Elimination System (NPDES) permitted facilities in this sub-watershed are violating their NPDES permits; therefore, these facilities are not considered as a contributing source to the nutrient and TSS impairments.

Permitted CFOs and CAFOs are clustered in the headwaters of Blue Creek. CFOs and CAFOs could be sources of nutrients and TSS during high flow conditions. These facilities have the potential to cause or contribute to the exceedance of the nutrient and TSS targets through land application or a malfunction at the facility. However, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of nutrients and TSS for this sub-watershed based on information provided to IDEM by the Adams County Health Department (Adams County Health Department personal communication). The septic systems described by this information would provide a constant source of nutrients and TSS, particularly during low flow conditions. According to the water quality duration curve, there are no consistent violations of the nutrient or TSS targets during these flow conditions. However, failing septic systems will contribute to the violations founds during higher flow conditions. During higher flow conditions, septic systems can fail by leaching into a field tile or other type of pipe that discharges to the stream.

There are two CSOs and one SSO from the Town of Berne in this sub-watershed. Site LES040-0099 is located downstream of these CSOs and SSO. CSOs and SSOs typically show on water quality duration curves during high flow events. Site LES040-0099 showed high nutrient values during higher flows.

4.2.3 Conclusions

There are no known NPDES permit, CFO, or CAFO violations. CSOs and SSOs from the Town of Berne are a source of nutrients and TSS. Based on the water quality duration curves, it can be concluded that the majority of sources of nutrients and TSS in this watershed are nonpoint sources, which include small animal operations, Amish communities, wildlife, and leaking and failing septic systems.

4.3 - Yellow Creek sub-watershed

4.3.1 Water Quality Duration Curves

Water quality duration curves were created for the two sampling sites in the Yellow Creek sub-watershed (Attachment H). Both of these sites were sampled by IDEM and one site was also sampled by the City of Fort Wayne in 2004. Site LES040-0040 is located at the mouth of Martz Ditch. This site had violations at the 10th percentile for nitrogen (11.4 mg/L), phosphorus (0.35 mg/L) and TSS (54 mg/L) numeric targets. According to the water quality duration curves, nutrient violations occurred during or shortly after precipitation events. This indicates sources due to run-off events.

Site LES040-0038 is located on Yellow Creek below the confluence of Martz Ditch to Yellow Creek. This site had violations at the 10th percentile for nitrogen (14.1 mg/L), phosphorus (0.4 mg/L) and TSS (36.3 mg/L) numeric targets. According to the water quality duration curves, nutrient violations occurred during or shortly after precipitation events. This indicates sources due to run-off events.

4.3.2 Source Linkage

The landuse in this watershed is predominately agricultural. Row crops comprise 87% of the landuse. The soils in this sub-watershed necessitate the use of field tiles to drain excess water from the fields. These field tiles then drain to the nearest stream. Field tiles themselves are not sources of nutrients and TSS, but they can carry nutrients and TSS from land-applied manure, runoff from the fields and pastures, failed septics, and other sources of nutrients and TSS not adjacent to the streams. The high nutrient and TSS values during mid-range to high flow conditions indicates the presence of nutrients and TSS transported by field tiles.

Pasture comprises 8% of the landuse. This indicates the presence of non-regulated smaller animal operations in this sub-watershed. Animals located in these smaller animal operations are not as likely to enter a stream during high flow conditions. The high nutrient and TSS values during mid-range to high flow conditions indicates run-off during or shortly after precipitation events.

Wildlife is a known source of nutrients and TSS. The predominant agricultural and forested landuse in this sub-watershed creates ideal habitat for wildlife. Wildlife would contribute during all flow conditions with possible spikes in nutrient and TSS levels during extreme high flow conditions due to runoff or flooding which carries large quantities of nutrients and TSS at one time.

This area has Amish communities. Amish communities are not required to follow state guidelines for waste removal; therefore, the significance of the Amish community impact on the nutrient and TSS levels for these streams is unknown.

Due to a lack of sampling in the headwater streams in this sub-watershed, the headwater streams are not listed as impaired. Since there are known sources of nutrients and TSS in the headwater streams, the assumption can be made that these headwater streams are contributing to the nutrient and TSS impairments in the downstream sections of this sub-watershed. However, it is unclear as to the magnitude that these tributaries play a part in the impairment.

None of the National Pollutant Discharge Elimination System (NPDES) permitted facilities in this sub-watershed are violating their NPDES permits, and are not considered a contributing source to the impairments of nutrients and TSS.

Permitted CFOs and CAFOs are clustered in the headwaters of Yellow Creek. CFOs and CAFOs could be sources of nutrients and TSS during high flow conditions on the water quality duration curve. These facilities have the potential to cause or contribute to the exceedance of the nutrient and TSS targets through land application or a malfunction at the facility. However, all of these facilities are operating in compliance with their permit.

Septic systems are a known source of nutrients and TSS for this sub-watershed based on information provided to IDEM by the Adams County Health Department (Adams County Health Department personal communication). The septic systems described by this information would provide a constant source of nutrients and TSS, particularly during low flow conditions. According to the water quality duration curve, there are no consistent violations of the nutrient or TSS targets during these flow conditions. However, septic systems will contribute to the violations founds during higher flow conditions. During higher flow conditions, septic systems can fail by leaching into a field tile or other type of pipe that discharges to the stream.

4.3.3 Conclusions

There are no known NPDES permit, CFO, or CAFO violations. Based on the water quality durations curves, it can be concluded that the majority of sources of nutrients and TSS in this watershed are nonpoint sources which include small animal operations, Amish communities, wildlife, and leaking and failing septic systems.

Section 5 - TMDL Development

The TMDL represents the maximum loading that can be assimilated by the waterbody while still achieving the targets for nutrient and TSS levels, as indicated in the Numeric Targets section of this document. Concurrent with the selection of a numeric concentration endpoint, TMDL development also defines the critical conditions that will be used when defining allowable levels. These numeric targets meet the requirements of a daily load because they are instantaneous standards that must be met at all times within the waterbody. Many TMDLs are designed as the set of environmental conditions that, when addressed by appropriate controls, will ensure attainment of target levels for the pollutant. For example, the critical conditions for the control of point sources in Indiana are given in 327 IAC 5-2-11.1(b). In general, the 7-day average low flow in 10 years (Q7, 10) for a stream is used as the design condition for point source dischargers. However, nutrient and TSS sources to Blue Creek/Habegger Ditch and Yellow Creek watersheds arise from wet weather-driven conditions. For the Blue Creek/Habegger Ditch and Yellow Creek River watersheds and the contributing sources, the allowable loads during wet weather conditions are outlined in the WLA and LA sections that will ensure compliance, as long as they are distributed properly throughout the watersheds. The Unnamed Tributary to the St. Marys River has violations of the phosphorus and TSS targets only. These violations are not dependent on wet weather events. In the Unnamed Tributary to St. Marys River the violations are predominantly during dry weather conditions. This is due to the concentration of these parameters during the no flow period in stream. The act of collecting the sample during these low flow periods makes re-suspension of the sediment likely. For the Unnamed Tributary to the St. Marys River watershed and the contributing sources, the allowable loads during dry weather conditions are outlined in the WLA and LA sections that will ensure compliance with WQS.

<u>Unnamed Tributary to St. Marys River</u>

The Unnamed Tributary to St. Marys River has been listed due to IBC impairment. IDEM has completed additional testing on this tributary, which is less than 3 miles in length, and the flow information collected support that naturally occurring conditions inhibit the formation of the ideal biotic community characteristic of higher ordered streams. This tributary is a first order stream that naturally dries up in the summer. According to Stehr and Branson (1938), "the reduction of the stream to a series of pools during the summer period of small rainfall and high evaporation prevents many species from returning to the stream during this season and effectively limits the variety and size of the fauna at this time." Stehr and Branson (1938) continue, "...very few of these [fish] ever reach the middle and upper sections of the stream for the water on many of the riffles are too shallow for their passage." Further research on headwater streams (Schlosser, 1982; Harrel, et. al., 1967; Lotrich, 1973; Whiteside and. McNatt, 1972; and Matthews, 1981) indicates that headwater streams, including zero-order and first-order streams do not possess the same diversity as higher order streams, and thus may never be able to obtain a fully diverse warm-water aquatic habitat. The flow data collected from March 9, 2004-October 4, 2004 shows 53% of the samples taken are during no flow conditions (Figure 33). This lack of flow for extended periods as stated above will adversely effect the fish populations. Along with this lack of flow elevated levels of phosphorus and TSS have been documented, which will require reductions (Appendix 12).

Section 6 - Allocations

TMDLs are comprised of the sum of individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background levels. In addition, the TMDL must include a Margin of Safety (MOS), either implicitly or explicitly, that accounts for uncertainty in the relationship between pollutant loads and the quality of the receiving waterbody. Conceptually, this definition is denoted by the equation:

$$\text{TMDL} = \sum \text{WLAs} + \sum \text{LAs} + \text{MOS}$$

The term TMDL represents the maximum loading that can be assimilated by the receiving water while still achieving WQS. The overall loading capacity is subsequently allocated into the TMDL components of WLAs for point sources, LAs for nonpoint sources, and the MOS. This nutrient and TSS TMDL is concentration-based consistent with USEPA regulations at 40 CFR, Section 130.2(i).

To investigate further the potential sources mentioned above, nutrient and TSS load duration curve analyses, as outlined in an unpublished paper by Cleland (2002), was developed for each sampling site in the watershed (Attachment I). The load duration curve analysis is a relatively new method utilized in TMDL development. The method considers how stream flow conditions relate to a variety of pollutant loadings and their sources (point and nonpoint).

In order to develop a load duration curve, continuous flow data is required. The USGS gage for the Harber Ditch, which was retired in 1991, was used for the tributary watersheds. The Little River gage was then used to determine the flow on the sampling day for the load duration curve analysis. A regression analysis between the Little River (03324000) and Harber Ditch (Figure 34) was created to confirm the use of the Little River data to supplement the information at the retired Harber Ditch gage. The Little River is located in a watershed adjacent to the St. Marys River watershed. This comparison uses a coefficient of determination value, R^2, to indicate the "fit" of the data. The comparison found the coefficient of determination, R^2, to be 0.74 values near one (1) for R^2 indicate a good fit of the data, whereas values near zero (0) indicate a poor fit of the data. Therefore, flow data from USGS gage (03354000) in Little River was used to supplement the Harber Ditch data. Harber Ditch, which is not a listed segment, is a tributary to the St. Marys that flows into the river from the west. Watershed characteristics of Harber Ditch are quite similar to the listed tributaries (e.g. dominated by row crop agriculture and forest). Thus, the duration curve derived from flow information collected at Harber Ditch is used for the other tributaries. The St. Marys River gage (04182590) was used for the development of the nitrogen, phosphorus, and TSS load duration curve analyses for the Blue Creek/Habegger Ditch and Yellow Creek watershed TMDLs.

The flow data is used to create flow duration curves, which display the cumulative frequency of distribution of the daily flow for the period of record. The flow duration curve relates flow values measured at the monitoring station to the percent of time that those values are met or exceeded. Flows are ranked from extremely low flows, which are exceeded nearly 100% of the time, to extremely high flows, which are rarely exceeded. Flow duration curves are then transformed into load duration curves by multiplying the flow values along the curve by applicable water quality values for nitrogen, phosphorus and TSS and appropriate conversion factors. The load duration curves are conceptually similar to the flow duration curves in that the x-axis represents the flow recurrence interval and the y-axis represents the allowable load of the water quality parameter. The curve representing the targeted loads of nitrogen, phosphorus and TSS were calculated using the nutrient listing targets. The final step in the development of a load duration curve is to add the water quality pollutant data to the curves. Pollutant loads are estimated from the data as the product of the pollutant concentrations, instantaneous flows measured at the time of sample collection, and appropriate conversion factors. In order to identify the plotting position of each calculated load, the recurrence interval of each instantaneous flow measurement was defined. Water quality pollutant monitoring data are plotted on the same graph as the load duration curve that provides a graphical display of the water quality conditions in the waterbody. The pollutant monitoring data points that are above the target line exceed the nutrient or TSS target level; those that fall below the target line meet the nutrient or TSS target level (Mississippi DEQ, 2002).

6.1 - Wasteload Allocations

There are three permitted dischargers in Blue Creek/Habegger Ditch and Yellow Creek watersheds. None of the NPDES permitted facilities in this sub-watershed are violating their NPDES permits and are not considered a contributing source to the impairments of nutrient and TSS. One of these permitted discharger's effluent does not discharge to the Blue Creek/Habegger Ditch watershed but has CSOs and SSOs that discharge to this watershed.

The WLA for permitted activities is set at the nutrient and TSS target levels of total phosphorus less than 0.3 mg/L, nitrogen less than 10.0 mg/L, and total suspended solids (TSS) less than 30 mg/L

The WLA for waste stabilization lagoon systems, which must discharge at a 10:1 dilution ratio, is 75 mg/L for TSS.

The WLA for prohibited discharges from SSOs and septic systems with straight pipe discharges directly to streams is set at 0.0 mg/L.

There are no permitted dischargers (CSO, SSO, CAFO, or CFO's) in the Unnamed Tributary to the St. Marys River, therefore, no WLA is necessary for this watershed.

6.2 - Load Allocations

The LA for nonpoint source activities is set at the nutrient and TSS target levels of total phosphorus less than 0.3 mg/L, nitrogen less than 10.0 mg/L, and total suspended solids (TSS) less than 30 mg/L. The reductions have additionally been broken down into flow regime, which will help identify critical flow and areas for the implementation of this TMDL (Appendix 12).

Load allocations may be affected by subsequent work in the watershed. There are currently no watershed projects or plans in the Blue Creek/Habegger Ditch, Yellow Creek, or the Unnamed Tributary to the St. Marys River watersheds. However, there have been several watershed projects completed in the surrounding areas. IDEM plans to work with the watershed coordinators in the surrounding areas along with local government agencies to encourage interest in watershed projects. It is anticipated that watershed projects will be useful in continuing to define and address the nonpoint sources of the nutrients and TSS in the Blue Creek/Habegger Ditch, Yellow Creek and Unnamed Tributary to the St. Marys River watersheds.

6.3 - Margin of Safety

The numbers calculated for the reductions necessary to achieve the target standards are considered conservative because only the samples violating the target standards were used when calculating the needed reductions. In addition to using violations only to calculate the needed reductions, an additional 5% reduction will be added to the target reduction to insure compliance with the target standards.

Section 7 - Seasonality

Seasonality in the TMDL is addressed by expressing the TMDL in terms of the *E. coli* WQS for total body contact during the recreational season (April 1 through October 31) as defined by 327 IAC 2-1-6(d). There is no applicable total body contact *E. coli* WQS during the remainder of the year in Indiana. Because this is a concentration-based TMDL, *E. coli* WQS will be met regardless of flow conditions in the applicable season.

Section 8 - Monitoring

Future monitoring of the Blue Creek/Habegger Ditch, Yellow Creek, and Unnamed Tributary to the St. Marys River watersheds will take place during IDEM's five-year rotating basin schedule and/or once TMDL implementation methods are in place. During the five-year rotating basin schedule, IDEM will monitor the Blue Creek/Habegger Ditch, Yellow Creek, and the Unnamed Tributary to the St. Marys River watersheds for nutrients and TSS. In addition, IDEM will also work with the City of Fort Wayne, the Allen County Health Department, and the Adams County SWCD to collect additional sampling data that may be required. Monitoring will be adjusted as needed to assist in continued source identification and elimination. When these results indicate that the waterbody is meeting the nutrient and TSS targets, additional sampling may no longer be required and IDEM's five year rotating basin schedule will be sufficient future monitoring.

Section 9 - Reasonable Assurance Activities

Reasonable assurance activities are programs that are in place or will be in place to assist in meeting the Blue Creek/Habegger Ditch and Yellow watersheds TMDL allocations and the targets.

<u>National Pollutant Discharge Elimination System (NPDES) Permitted Dischargers</u>

For the permitted dischargers, no changes are requested; although, future monitoring for phosphorus may be requested if additional monitoring shows impacts on the watersheds.

There is one CSO community that discharges to the Habegger Ditch. This facility is currently in the NPDES Long Term Control Plan permitting process. This process will address any concern regarding CSO discharges causing or contributing to the violation of the nutrient or TSS targets.

There is one SSO community that discharges to the Habegger Ditch. This activity is prohibited. Continued monitoring and work with these facilities is needed to eliminate these types of discharges. This will assure that SSOs no longer cause or contribute to violations of nutrient and TSS targets.

<u>Storm Water General Permit Rule 13</u>

MS4 permits are being issued in the state of Indiana. There are no MS4 communities in the Blue Creek/Habegger Ditch and Yellow Creek watersheds.

Confined Feeding Operations and Confined Animal Feeding Operations

CFOs and CAFOs are required to manage manure, litter, and process wastewater pollutants in a manner that does not cause or contribute to the impairment of nutrient and TSS targets. The CFO and CAFO regulations (327 IAC 16, 327 IAC 15) require operations “not cause or contribute to an impairment of surface waters of the state.”

Watershed Projects

Two 319 grants were awarded to the Adams County Soil and Water Conservation District in 1999 and 2000. These grants were to address nutrient management. The information gathered for these grants will be useful to build upon for work in this watershed.

IDEM has recently hired a Watershed Specialist for this area of the state. The Watershed Specialist will be available to assist stakeholders with starting a watershed group, facilitating planning activities, and serving as a liaison between watershed planning and TMDL activities in the Blue Creek/Habegger Ditch and Yellow Creek watersheds. Adams and Allen County along with the City of Fort Wayne have shown an interest in forming a group to address the impairments in the St. Marys River, possibly including Blue and Yellow Creek watersheds.

Potential Future Activities

Nonpoint source pollution, which is the primary cause of the nutrient and TSS impairments in this watershed, can be reduced by the implementation of “best management practices" (BMPs). BMPs are practices used in agriculture, forestry, urban land development, and industry to reduce the potential for damage to natural resources from human activities. A BMP may be structural, that is, something that is built or involves changes in landforms or equipment, or it may be managerial, that is, a specific way of using or handling infrastructure or resources. BMPs should be selected based on the goals of a watershed management plan. Livestock owners, farmers, and urban planners, can implement BMPs outside of a watershed management plan, but the success of BMPs would be enhanced if coordinated as part of a watershed management plan. Following are examples of BMPs that may be used to reduce nutrient and TSS runoff:

1. **Riparian Area Management -** Management of riparian areas protects stream banks and riverbanks with a buffer zone of vegetation, either grasses, legumes, or trees.

2. **Manure Collection and Storage -** Collecting, storing, and handling manure in such a way that nutrients or bacteria do not run-off into surface waters or leach down into ground water.

3. **Contour Row Crops -** Farming with row patterns and field operations aligned at or nearly perpendicular to the slope of the land.

4. **Manure Nutrient Testing -** If manure application is desired, sampling and chemical analysis of manure should be performed to determine nutrient content for establishing the proper manure application rate in order to avoid over-application and runoff.

5. **Drift Fences -** Drift fences (short fences or barriers) can be installed to direct livestock movement. A drift fence parallel to a stream keeps animals out and prevents direct input of nutrients and TSS to the stream.

6. Pet Clean-up / Education - Education programs for pet owners can improve water quality of runoff from urban areas.

7. Septic Management/Public Education - Programs for management of septic systems can provide a systematic approach to reducing septic system pollution. Education on proper maintenance of septic systems as well as the need to remove illicit discharges could alleviate some sources of nutrients and TSS.

Section 10 - Conclusion

The sources of nutrients and TSS to the Blue Creek/Habegger Ditch and Yellow Creek watersheds include both point and nonpoint sources. In order for the Blue Creek/Habegger Ditch and Yellow Creek watersheds to achieve Indiana's nutrient and TSS targets, the wasteload and load allocations for the Blue Creek/Habegger Ditch and Yellow Creek watersheds in Indiana have been set to nitrogen 10 mg/L, phosphorus 0.30 mg/L and TSS 30 mg/L. Achieving the wasteload and load allocations for the Blue Creek/Habegger Ditch and Yellow Creek watersheds depends on:

1) Assure compliance with CFO and CAFO permits so that they do not cause or contribute to violations of the nutrient and TSS targets.
2) Nonpoint sources of nutrients and TSS being controlled by implementing best management practices in the watershed.
3) The issuance of the MS4 permits for the City of Decatur, City of Fort Wayne, and Allen County.
4) The issuance of LTCPs for the City of Decatur and the City of Fort Wayne.

The next phase of this TMDL is to identify and support the implementation of activities that will bring the Blue Creek/Habegger Ditch, Yellow Creek and Unnamed Tributary to the St. Marys River watersheds in compliance with the nutrient and TSS targets. IDEM will continue to work with its existing programs on implementation. In the event that designated uses and associated water quality criteria applicable to Blue Creek/Habegger Ditch, Yellow Creek and Unnamed Tributary to the St. Marys River watersheds are revised in accordance with applicable requirements of state and federal law, the TMDL implementation activities may be revised to be consistent with such revisions. Additionally, IDEM will work with local stakeholder groups to pursue best management practices that will result in improvement of the water quality in the Blue Creek/Habegger Ditch, Yellow Creek and Unnamed Tributary to the St. Marys River watersheds.

Section 11 - References

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Appendix 1: NPDES Permits in the St. Marys River Watershed

Facilities with *E. coli* Limits

Permit No.	Facility Name	Receiving Waters	St. Marys River Watershed
IN0039314	Decatur Municipal STP	St. Marys River	
IN0044199	White Horse Mobile Home Park	Borum Run via Miller	
IN0045292	Hessen Utilities	Marion Ditch	
IN0048119	Hoagland WWTP/ Allen Co Regional Sewer District	Houk Ditch	
IN0021369	Berne STP	Wabash River	Blue Creek

Facilities with Total Residual Chlorine Limits

Permit No.	Facility Name	Receiving Waters	St. Marys River Watershed
IN0036901	Oak Ridge Estates	St. Marys River via Bulham Ditch	
IN0055417	Country Acres Association WWTP	Kohne Ditch	
IN0109835	Mill Road Estates	St. Marys River	

Facilities with no Total Residual Chlorine or *E. coli* Limits

Permit No.	Facility Name	Receiving Waters	St. Marys River Watershed
IN0048151	Monroe Water Department	Yellow Creek	
IN0052302	BandB Custom Plating	St. Marys River via Tributary	
IN0058980	Bing-Lear Manufacturing Group, Berne	Habegger Ditch	Blue Creek
ING250026	Fort Wayne Metals	Bradbury Ditch	
ING490084	Meshberger Bros Stone Plt #2	Blue Creek	Blue Creek
INP000069	Bing-Lear Manufacturing Group, Berne	Berne STP	Blue Creek
INP000194	Ruan Transport Corporation	Decatur STP	
INP000197	Driggs Farms of Indiana, Inc	Decatur STP	

Appendix 2: Combined Sewer Overflows in St. Marys River Watershed

City of Fort Wayne

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
004	J02-90, 210’ South of bridge at W. Jefferson and St. Marys River	St. Marys River
005	J11-164, 210’ Southeast of Manito Blvd and Indiana Village Blvd	St. Marys River
007	K03-92, 250’ Southeast of Electic Ave. and Brown Street	St. Marys River
011	K06-233, 230’ Southeast of Main St. and Camp Allen Dr.	St. Marys River
012	K06-234, 230’ Southeast of Main St. and Camp Allen Dr.	St. Marys River
013	K06-298, 80’ North of Thieme Dr. and Berry St.	St. Marys River
014	K07-106, 60’ West of Dinnen Ave. and Packard Ave.	St. Marys River
016	K07-109, 280’ Southwest of Broadway and Kinsmoor Ave.	St. Marys River
017	K07-176, 130’ Southwest of St. Marys Pkwy	St. Marys River
018	K11-165, 150’ West of Broadway and Rudisill Blvd	St. Marys River
019	K11-178, 150’ West of Broadway and Rudisill Blvd	St. Marys River
020	K15-116, 1300’ West of Hartman Rd and Westover Rd	St. Marys River
021	K19-044, 850’ West of Old Mill Rd. and Fairfax Ave.	St. Marys River
023	L06-103, 90’ Northwest of JacksonSt. and Superior St	St. Marys River
024	L06-420, 220’ North of Superior St. and Fairfield Ave.	St. Marys River
025	L06-421, 220’ North of SuperiorSt. and Fairfield Ave.	St. Marys River
026	M10-151, 310’ East of Third St. and Calhoun St.	St. Marys River
027	M10-202, 200’ Southeast of Third St. and Calhoun St.	St. Marys River
028	M10-238, 150’ East of St. Marys River Bridge and Spy Run Ave.	St. Marys River
029	M10-265, 230’ East of Duck St. and Barr St.	St. Marys River
032	M10-306, 120’ North of Clair St. and Harrison St.	St. Marys River
033	M10-313, 200’ Southeast of Third St. and Calhoun St.	St. Marys River
054	O23-080, 240’ East of Mercer Ave. and Hollis Ln.	Natural Drain #4
056	J03-313, Brown Street Pump Station	St. Marys River
067	K19-077, 310’ Southeast of Hartman Rd and Foster Park Dr.	St. Marys River

SSO

Outfall #	Location	Receiving Waters
070	N23-121, 230’ east of the intersection at John and Warfield	Highland Drain
071	N23-122, 290’ east of the intersection at John and Warfield	Highland Drain

City of Decatur

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
005	Swirl Concentrator	St. Marys River
008	Marshall Street	St. Marys River
009	Monroe Street	St. Marys River
011	Jefferson Street	St. Marys River

City of Berne

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
003	Welty Street and Compromise	Sprunger Ditch to Habegger Ditch
004	Main and Ruesser	Sprunger Ditch to Habegger Ditch

SSO

Outfall #	Location	Receiving Waters
006	North End of East Water Street	Sprunger Ditch to Habegger Ditch

Appendix 3: CFO & CAFO in St. Marys River Watershed

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Layers	Pullets	Broilers	Turkeys	Ducks	Sheep
8	Gary Steffen	Holthouse Ditch						60							
65	Grace Farms	Blue Creek								60,000					
91	Carl Lotter	Yellow Creek		4,200											
123	Jim Fiechter	Blue Creek			920										
469	Jerry Lee Graber	Blue Creek		320	920							6,000			
590	Ted Liechty	Blue Creek	ING800590							119,000					
635	Charles W Hill	Blue Creek			1,400										
638	Troyer Swine	Blue Creek			1,000										
684	Lynn Myers	St. Marys River			1,920										
902	David Hill	Blue Creek			625										
933	SDD Hogs, Inc	Blue Creek	ING800933		3,600										
944	ISCF Brothers Pork	Blue Creek			2,000										
948	Philip R Moser	Holthouse Ditch		1,185	500										
971	Emanuel Schmidt	Blue Creek		500	300										
1065	Pigs in a Blanket	Nickelsen Creek		2,880											
1197	Earl Gerber Farms, Inc	Holthouse Ditch									96,000				
1306	Triple G Ranch	Blue Creek		500	800	166									
1607	Triple T Farms, Inc	Holthouse Ditch		900	450		350					63,000			

1882	Gerald and Charles Miller	St. Marys River		250	1,945	110									
Log #	**Name**	**St. Marys River Watershed**	**NPDES #**	**Nursery Pigs**	**Growers/ Finishers**	**Sows/ Boars**	**Beef**	**Dairy**	**Dairy Calves**	**Layers**	**Pullets**	**Broilers**	**Turkeys**	**Ducks**	**Sheep**
1886	Alvin Schwartz	Yellow Creek			1,950										
2206	Cottonwood Corporation	Holthouse Ditch		2,400	2,400										
2369	Allen Buuck	Nickelsen Creek			410										
2435	ADM Alliance Nutrition, Inc	St. Marys River		1,000	702	351	376	82	56	2,800		1,452	1,440		
2548	Daniels J Michaels	Yellow Creek		510	255					8,200					
3005	Joel Houk	Holthouse Ditch		200	500	96									
3281	Gene Witte	St. Marys River		360	200	80									
3292	South 40 Farm			600		415									
3615	KMV Family Farms	St. Marys River						375							
3668	David H LaFontaine	Yellow Creek								81,000					
3737	Stan Von Gunten	Blue Creek									33,600				
3944	Moser Bros-Pine Hill Acres	Holthouse Ditch		160		576									
3985	Double G Farms	Blue Creek		200	580	99									
4037	Kirkland Farms	Holthouse Ditch			1,500										
4038	County Line Swine	Blue Creek		900	600	415									

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Layers	Pullets	Broilers	Turkeys	Ducks	Sheep
4067	Fuelling Farms	St. Marys River													600
4181	Victor Steiner	Yellow Creek		240	506	172									
4307	Stoller Poultry, Inc	Blue Creek			1,920					100,410					
4421	Kaehr Ag Inc	Blue Creek		460	600	204									
4637	Rigger Pork, Inc (Masterpork)	Blue Creek		800	120	619									
4964	Paul Rumple	Holthouse Ditch			6,000										
4997	Bruce Dick	Borum Run		240	540	146									
5007	Progress Pork	Blue Creek			2,000										
6000	Irish Acres Dairy	Blue Creek	ING806000					1,552	360						
6020	SandG Poultry	Blue Creek	ING806020							132,000					
6049	Tri Oak Farms, Inc	Blue Creek		320	500	134									
6159	Stan Biberstein	Holthouse Ditch								63,000					
6175	Jerry Lambright	Blue Creek												3,000	
6201	Ron Aschliman	Holthouse Ditch			3,040										
6239	James and Ron Collins	Holthouse Ditch			700										
6330	Steve Henry	Blue Creek									50,000				
4039	Thomas Wyss	St. Marys River			154										

4683	Duane E Franz	St. Marys River		400	530	100									
4942	Robert J Schuhler	St. Marys River		500	364	324									

Appendix 4: St. Marys River Watershed Reductions

Blue Watershed

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
2940.1	1428.1	892.9	366.2		1082.4	88.4	51.8	Blue Creek -- Salem Rd.
3205.2	1797.2	622.8	158.4		868.2	85.6	71	Blue Creek -- CR 300 S
7549.8	3316.3	474.8	346.9		1425.1	91.2	79.6	Blue Creek -- SR 124
5298.9	1571.5	779.8	218.1		1091	88.5	8.4	Habegger Ditch -- CR 150 E
6208	3951.6	909.7	1311.8		2326.1	94.6	20.1	Gates Ditch -- CR400 S
1162.5	1105.9	824.1	295.5		748	83.3	16.3	Little Blue Creek -- CR 400 S

Yellow Watershed

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
1492.5	775.3	1052.9	65.3		531.1	76.5	9.8	Martz Creek -- CR 200 N
5508.4	980.2	673.3	480.8		1149.8	89.1	24.5	Yellow Creek -- CR 250 N

Holthouse / Borum / Nickelson / Unnamed

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
698.1	465.4	286	48.9		259.7	51.9	14.4	Borum Run -- Mercer Rd
6059.2	687.7	306.2	194.8		706.1	82.3	27.3	Holthouse Ditch -- CR 200 W
3849.9	766.9	327.8	163		630.2	80.1	12.2	Nickelsen Creek -- CR 1100 N
5711.1	2133	346.9	372.4		1120.1	88.8	2.3	Unnamed Tributary -- Barkley Rd

St. Mary's River

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
150	960.3	248.3	586.1		380.5	67.1	354	St. Marys - Ohio SR 81
261.3	1019.5	499.2	271.3		435.8	71.3	467.8	St. Marys - SR 101 Bridge
505.1	774.4	476.9	628.1	243.6	491	74.5	467.8	St. Marys - Pleasant Mills
1119.9	1411.2	139.3	269.1		493.4	74.6	643.2	St. Marys - Hoagland Rd
1967.7	905.8	414.8	284	374.2	601.3	79.2	672	St. Marys - Ferguson Road
304.3	357.2	159.3	202.3	69.5	189.3	33.9	672	St. Marys - Ferguson Road
1933.6	1009.4	736.8	537	243.7	716	82.5	820	St. Marys - Spy Run
391.9	431.6	226.2	323	263.2	318	60.7	820	St. Marys - Spy Run Bridge

Appendix 5: NPDES Permits in the Maumee River Watershed

Facilities with *E. coli* Limits and Total Residual Chorine

Permit No.	Facility Name	Receiving Waters
IN0032191	Fort Wayne Municipal STP	Maumee River

Facilities with no Total Residual Chlorine or *E. coli* Limits with Sanitary Component

Permit No.	Facility Name	Receiving Waters
IN0021407	Woodburn Municipal STP	Maumee River

Facilities with no Total Residual Chlorine or *E. coli* Limits with No Sanitary Component

Permit No.	Facility Name	Receiving Waters
IN0000485	Norfolk and Western Railway Co	Trier Ditch
IN0000507	BF Goodrich Tire Manufacturing	Maumee River
ING490049	Hanson Aggregates, Midwest W.	Carson Drain
INM020346	New Haven CSS	N/A

Appendix 6: Combined Sewer Overflows in Maumee River Watershed

City of Fort Wayne

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
039	N06-022, 120' North of Hanna St. and Berry St.	Maumee River
048	O10-252, 350' West of Edgewater and Garfield	Maumee River
050	O10-277, 100' North of Coombs St. and Herbert St.	Maumee River
055	P06-192, 430' North of N. Anthony Blvd. and Wayne St.	Maumee River
057	P10-121, Stormwater Liftstation Wet Well	Maumee River
058	O06-34, 390' Northwest of Edsall Ave. and Dwenger Ave.	Maumee River
060	R06-31, 670' Northeast of Greenwalt Ave. and Maumee River	Unnamed Ditch to Maumee River
061	R14-137, 200' West of Lavern Ave. and State Blvd.	Baldwin Ditch
062	R14-138, 200' West of Lavern Ave. and State Blvd	Baldwin Ditch
064	S02-35. 610' Southeast of Coliseum Blvd. S.	Unnamed Ditch to Maumee River

City of New Haven

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
001	Near the Town's Abandoned Wastewater Treatment Facility	Martin Drain
002	East side of Bench Mark 761 and the NandW Railroad Crossing	Martin Drain
003	N.E. of the intersection of West Street and South Street	Trier Ditch
004	Just North of the Crossing of Brookwood Drive and Trier Ditch	Trier Ditch

Appendix 7: Confined Feeding Operations and Concentrated Animal Feeding Operations in the Maumee River Watershed

Log #	Name	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Ducks
23	Bruce Brenneke						370	60	
470	Harmony Farms			385					
571	Ned S. Byer		500	740	156				
573	Richard and David Hartmann			200					
575	Schlatter Stock Farms			500		400			
708	Mark S. Rekeweg			1,600					
952	Steve R. Schneider		620	300	152				
1200	Victor Eicher			500					
1222	Lake Farms			270					
2219	Flat Rock LLC		1,200	160	477				
2485	Richard and David Hartmann		1,000	1,490					
2991	Richard Rodenbeck		300	300	30				
3967	Michael J. May		200	225	86				
4001	Schlatter Stock Farm		125	1,550					
4820	Brinkman and Son Farm		100	500	82				
4840	Jim Kline		140	600	120				
6098	Jurgielewicz Duck Farm	ING806098							5,000
6195	Schlatter Stock Farms-Ward Rd			4,000					
6287	Mark and Brenda Rekeweg	ING806287	1,100	4,600					

Appendix 8: *E. coli* Reductions for the Maumee River Watershed

Maumee River									
	High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	
MAU-ANT	364.3	277.8	133.4	350.7	182.8	244	48.8	1,900	Maumee River -- Anthony Boulevard
MAU-LAN	297.5	263.4	166.6	393.2	211.1	255.3	51	1,967	Maumee River -- Landin Road
M-129	2600	993	159.4	387.5	252.3	525.9	76.2	1,967	Maumee River -- Fixed Station @ Landin Road
M-114	1567.4	911.6	369.9	253	110.4	430.3	70.9	2,050	Maumee River -- Fixed Station near Woodburn

Appendix 9: NPDES Permits in the St. Marys River Watershed

Facilities with *E. coli* Limits

Permit No.	Facility Name	Receiving Waters	Sub-Watershed
IN0021369	Berne STP	Wabash River	Blue Creek
IN0048151	Monroe Water Department	Yellow Creek	Yellow Creek
IN0058980	Bing-Lear Manufacturing Group, Berne	Habegger Ditch	Blue Creek
ING490084	Meshberger Bros Stone Plt #2	Blue Creek	Blue Creek
INP000069	Bing-Lear Manufacturing Group, Berne	Berne STP	Blue Creek

Appendix 10: Combined Sewer Overflows in St. Marys River Watershed

City of Berne

CSO Outfall #	Location	Receiving Waters
003	Welty Street and Compromise	Sprunger Ditch to Habegger Ditch
004	Main and Ruesser	Sprunger Ditch to Habegger Ditch

SSO Outfall #	Location	Receiving Waters
006	North End of East Water Street	Sprunger Ditch to Habegger Ditch

Appendix 11: Confined Feeding Operations and Concentrated Animal Feeding Operations in the Blue Creek/Habegger Ditch and Yellow Creek Watersheds

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Layers	Pullets	Broilers
65	Grace Farms	Blue Creek					60,000		
91	Carl Lotter	Yellow Creek		4,200					
123	Jim Fiechter	Blue Creek			920				
469	Jerry Lee Graber	Blue Creek		320	920				6,000
590	Ted Liechty	Blue Creek	ING800590				119,000		
635	Charles W Hill	Blue Creek			1,400				
638	Troyer Swine	Blue Creek			1,000				
902	David Hill	Blue Creek			625				
933	SDD Hogs, Inc	Blue Creek	ING800933		3,600				
944	ISCF Brothers Pork	Blue Creek			2,000				
971	Emanuel Schmidt	Blue Creek		500	300				
1306	Triple G Ranch	Blue Creek		500	800	166			
1886	Alvin Schwartz	Yellow Creek			1,950				
2548	Daniels J Michaels	Yellow Creek		510	255		8,200		
3668	David H LaFontaine	Yellow Creek					81,000		
3737	Stan Von Gunten	Blue Creek						33,600	
3985	Double G Farms	Blue Creek		200	580	99			
4038	County Line Swine	Blue Creek		900	600	415			

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Dairy	Dairy Calves	Layers	Ducks
4181	Victor Steiner	Yellow Creek		240	506	172				
4307	Stoller Poultry, Inc	Blue Creek			1,920				100,410	
4421	Kaehr Ag Inc	Blue Creek		460	600	204				
4637	Rigger Pork Inc Masterpork	Blue Creek		800	120	619				
5007	Progress Pork	Blue Creek			2,000					
6000	Irish Acres Dairy	Blue Creek	ING806000				1,552	360		
6020	SandG Poultry	Blue Creek	ING806020						132,000	
6049	Tri Oak Farms, Inc	Blue Creek		320	500	134				
6175	Jerry Lambright	Blue Creek								3,000

Appendix 12: Load Reductions for the Blue Creek/Habegger Ditch and Yellow Creek Watersheds

Stream Name	Drainage Area	Site #	NO2+NO3 mg/L	% Reduction Needed	Phosphorus mg/L	% Reduction Needed	TSS mg/L	% Reduction Needed
Habegger Ditch	8.4 sq mi	LES040-0099	20.10	55.25%	0.436	36.19%	53.01	48.41%
Martz Creek	9.8 sq mi	LES040-0040	10.92	13.42%	0.320	11.25%	35.00	19.29%
Yellow Creek	24.5 sq mi	LES040-0038	10.92	13.42%	0.320	11.25%	35.00	19.29%
All Blue Creek Values	79.6 sq mi	-0009,-0011,-0066	11.70	19.53%	0.391	28.27%	44.48	37.55%
Unnamed Trib	2.8 sq mi	LES050-0020	no exceedances		0.441	36.97%	55.74	51.18%
St. Marys Watershed	1900 sq mi		10.92	13.42%	0.320	11.25%	35.00	19.29%

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Figure 1: St. Marys River Watershed

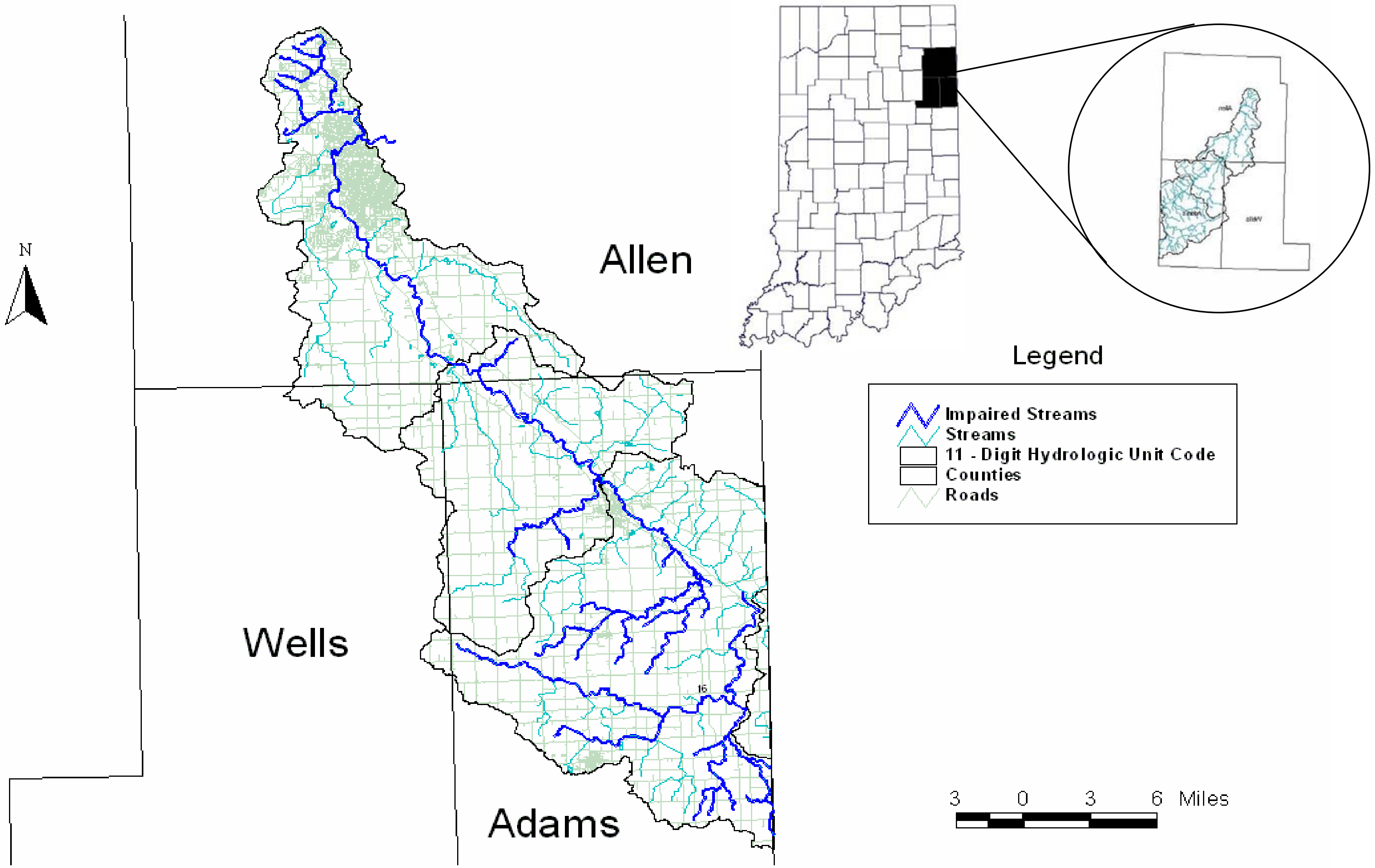


Figure 2: Maumee River Watershed

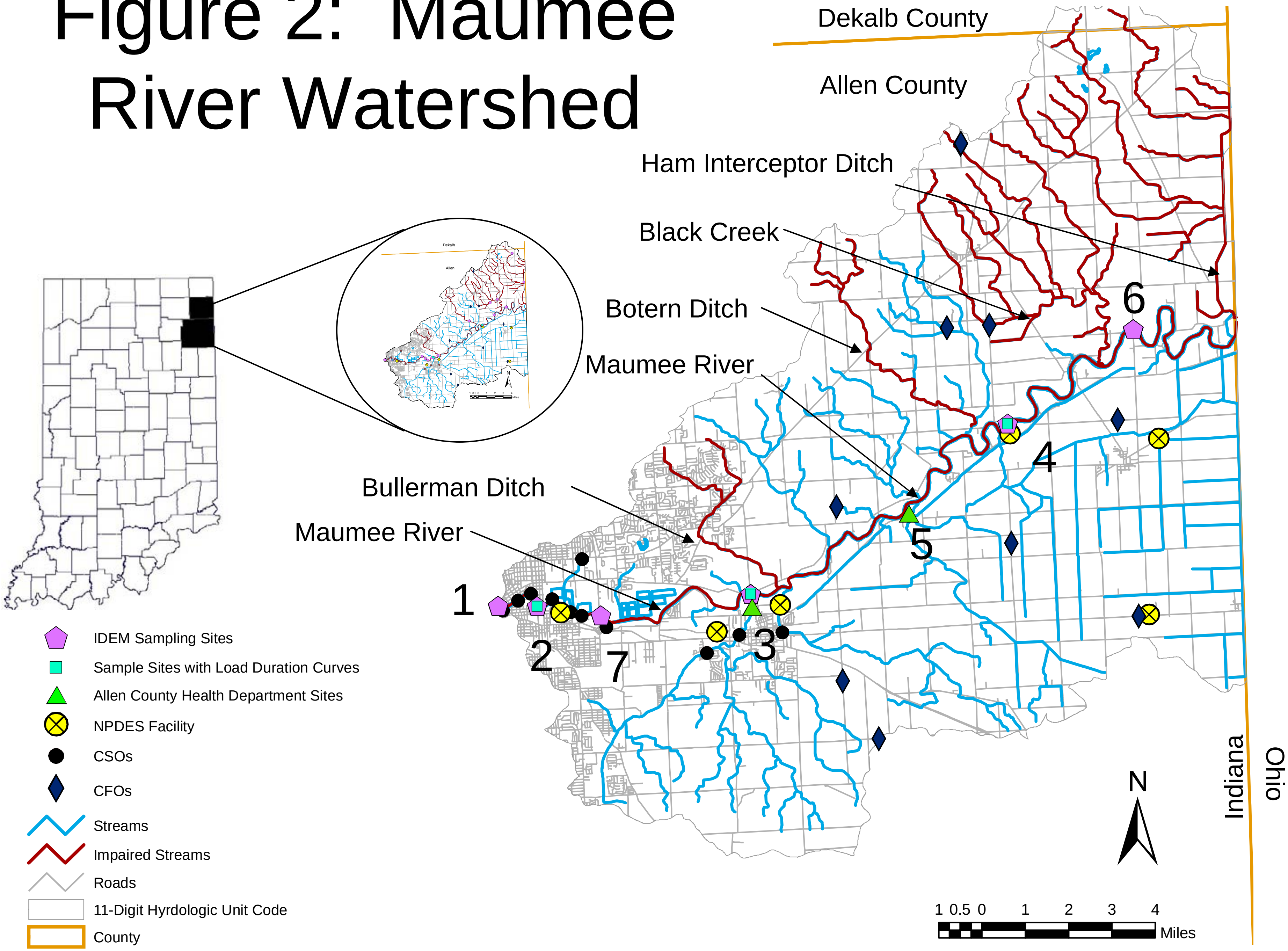


Figure 3: Sample Sites in the St. Marys River Watershed

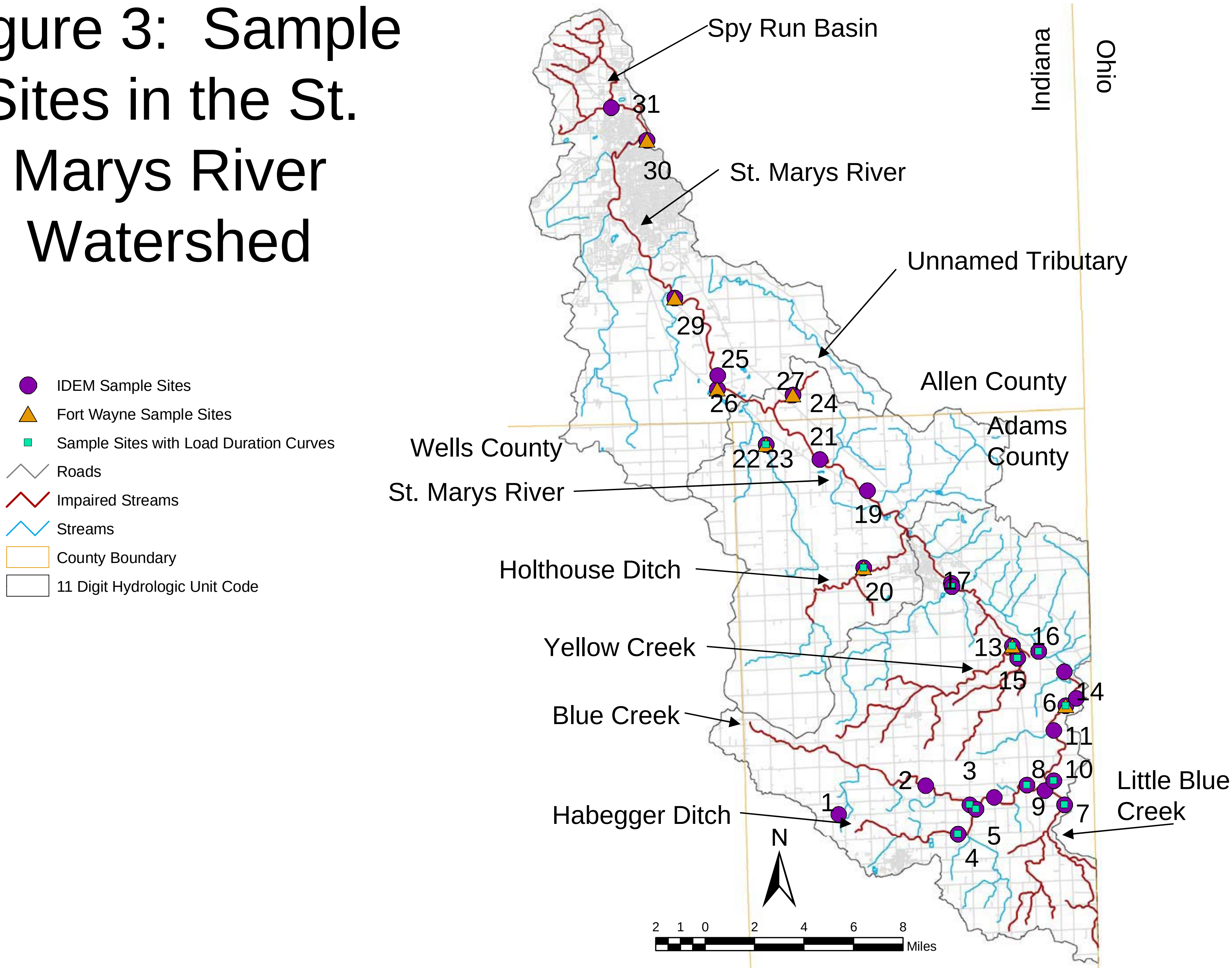


Figure 4: Blue Creek Watershed

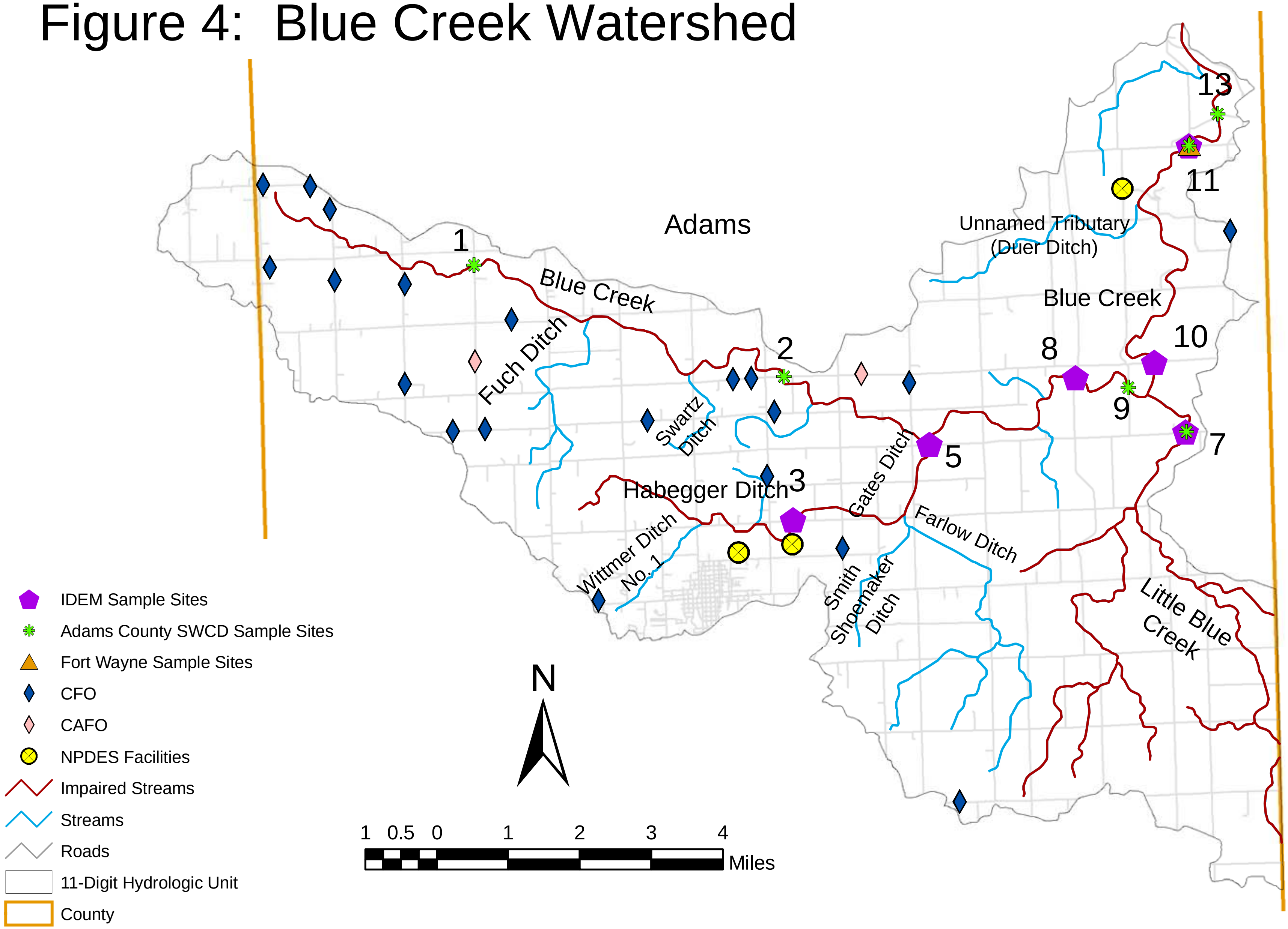


Figure 5: Blue Creek Landuse

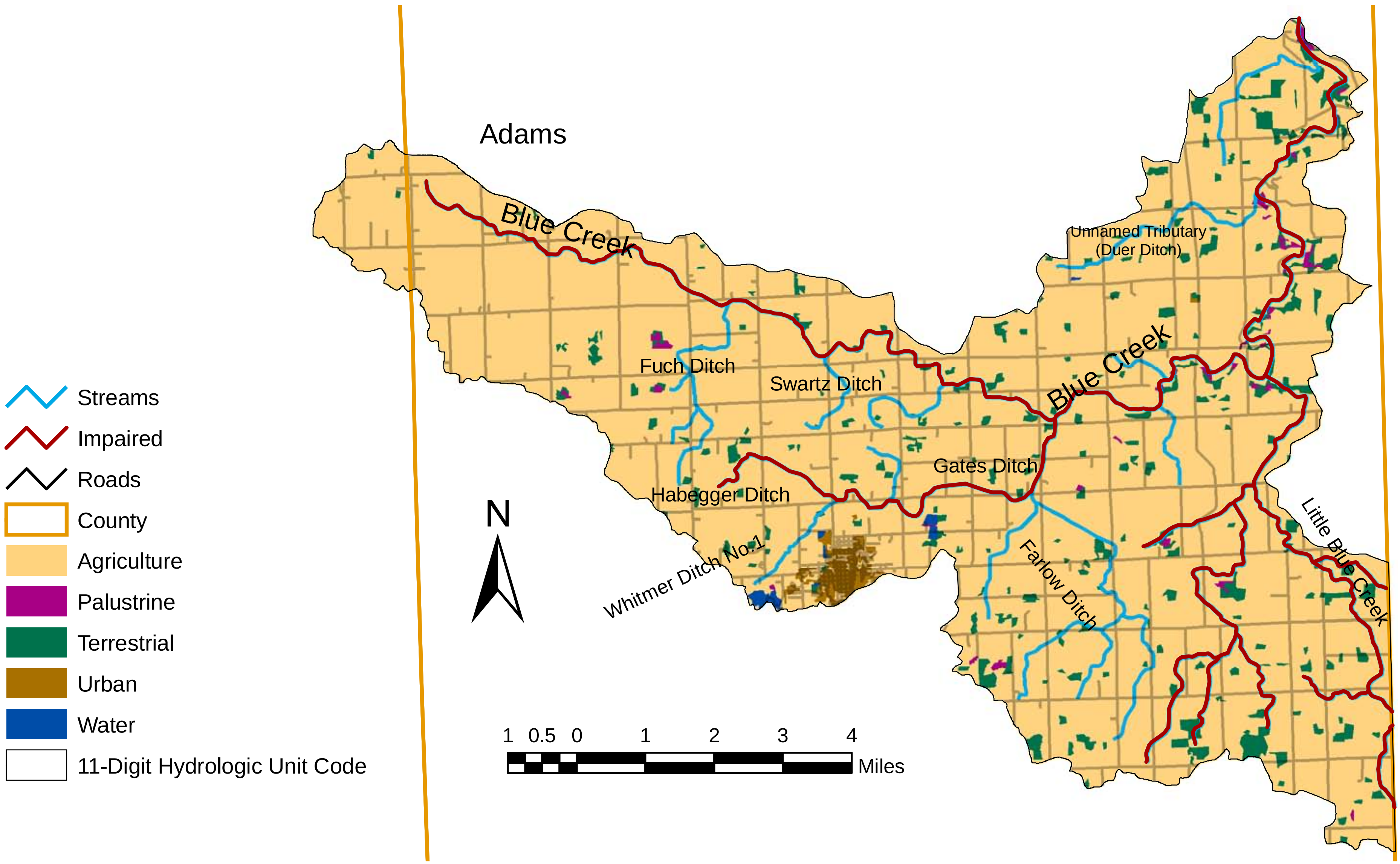


Figure 6: Blue Creek CSOs

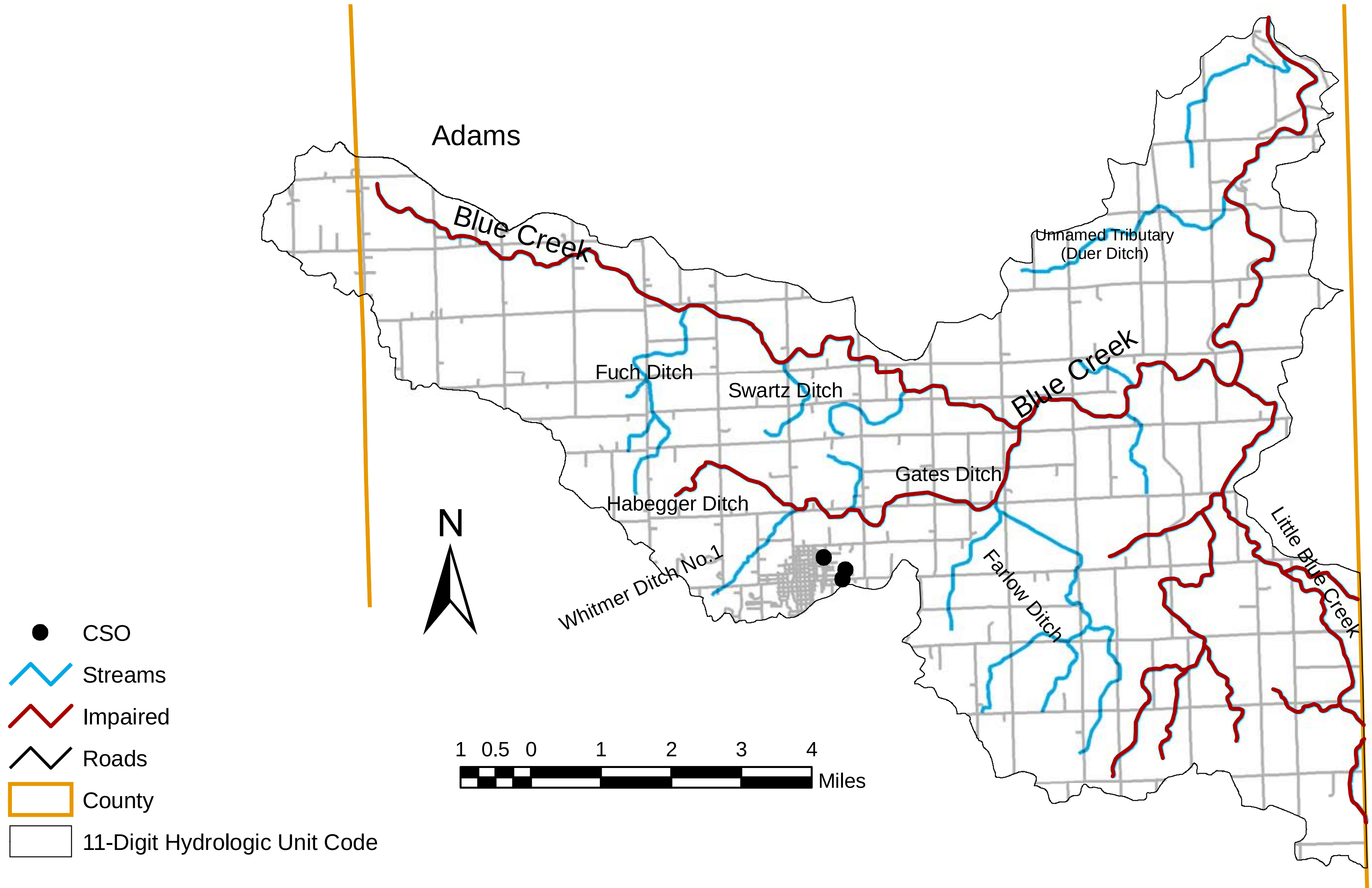


Figure 7: Yellow Creek Watershed

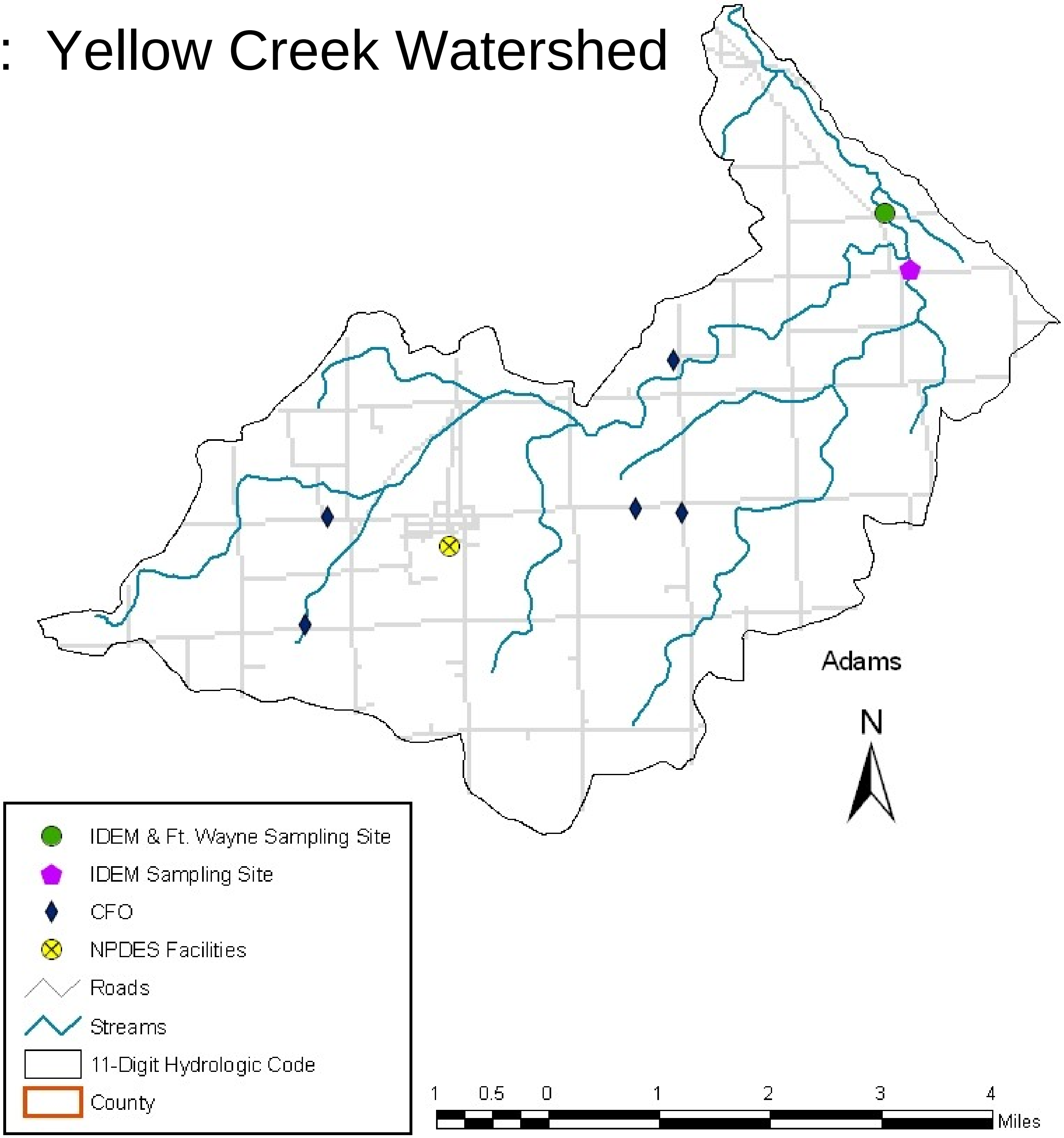


Figure 8: Yellow Creek Watershed Landuse

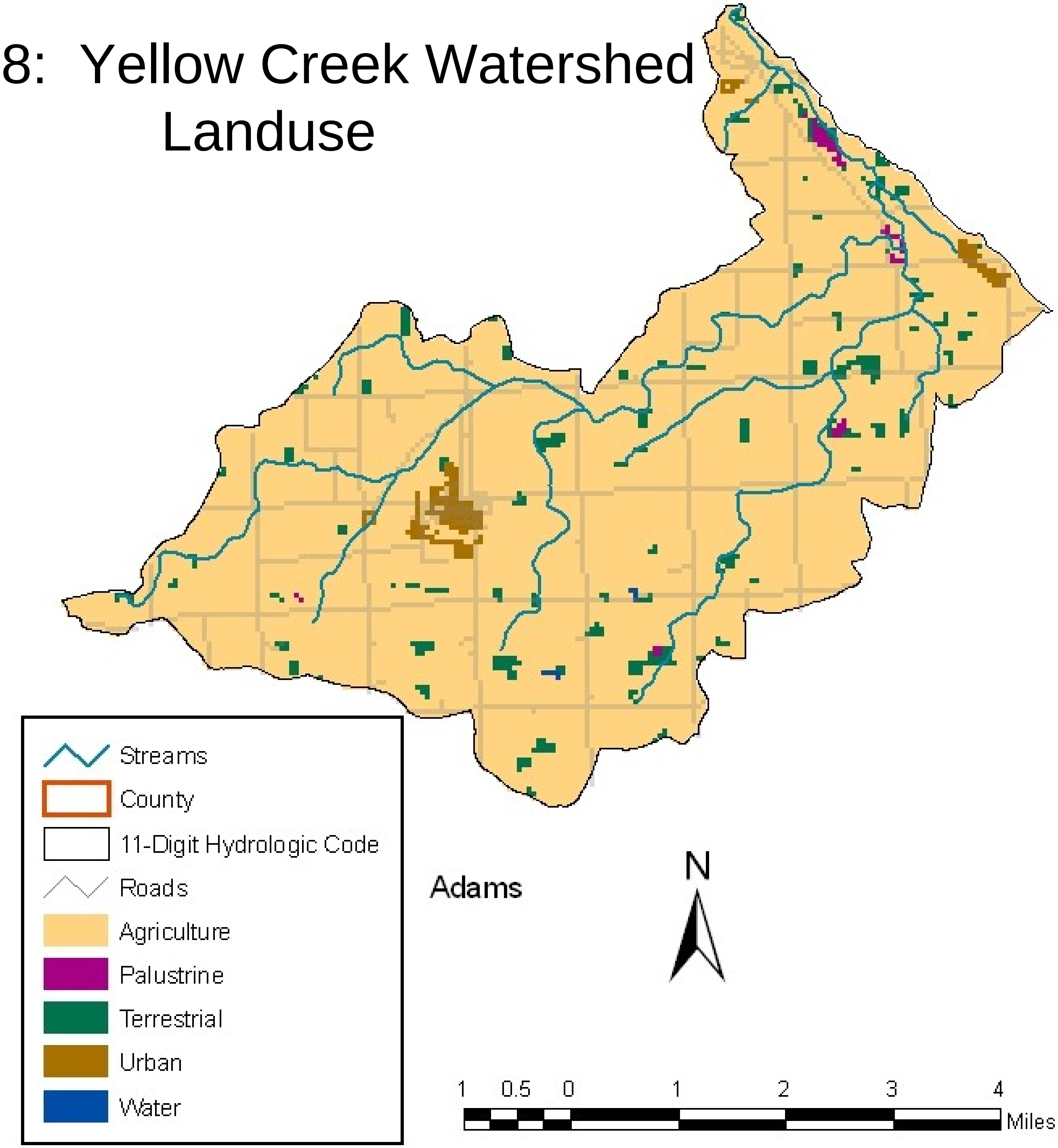


Figure 9: Borum Run Watershed

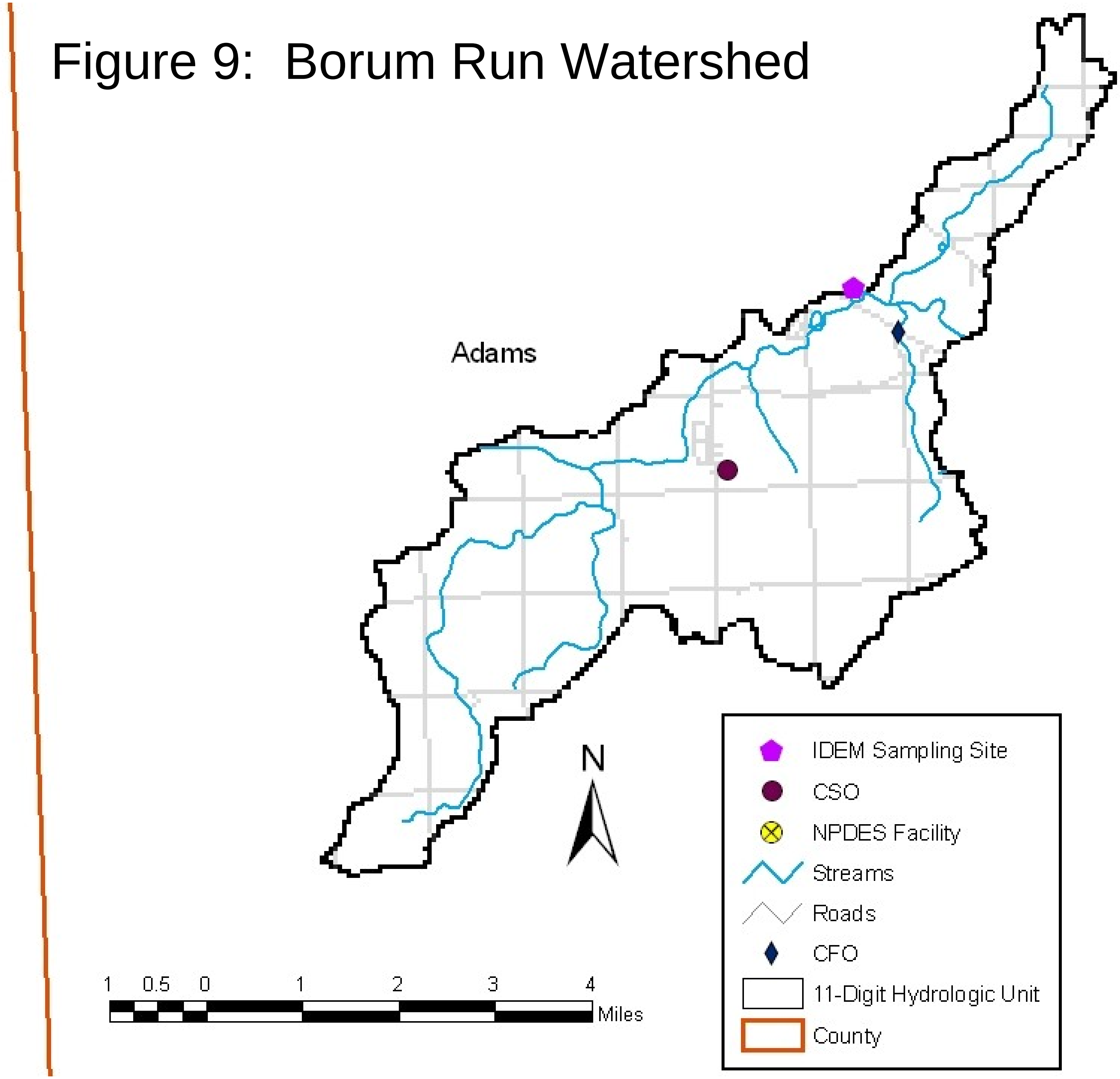


Figure 10: Borum Run Landuse

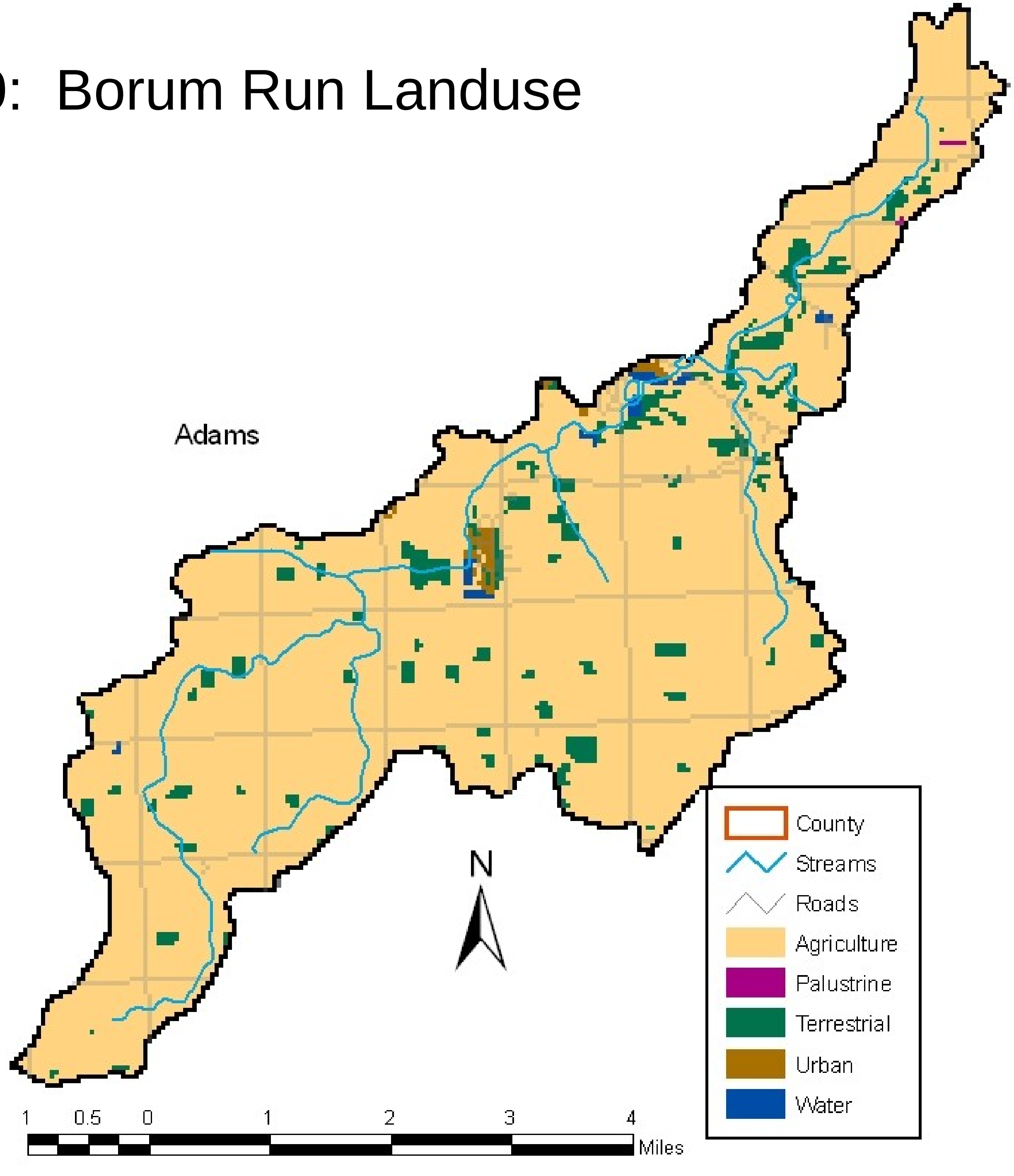


Figure 11: Hotlhouse Ditch Watershed

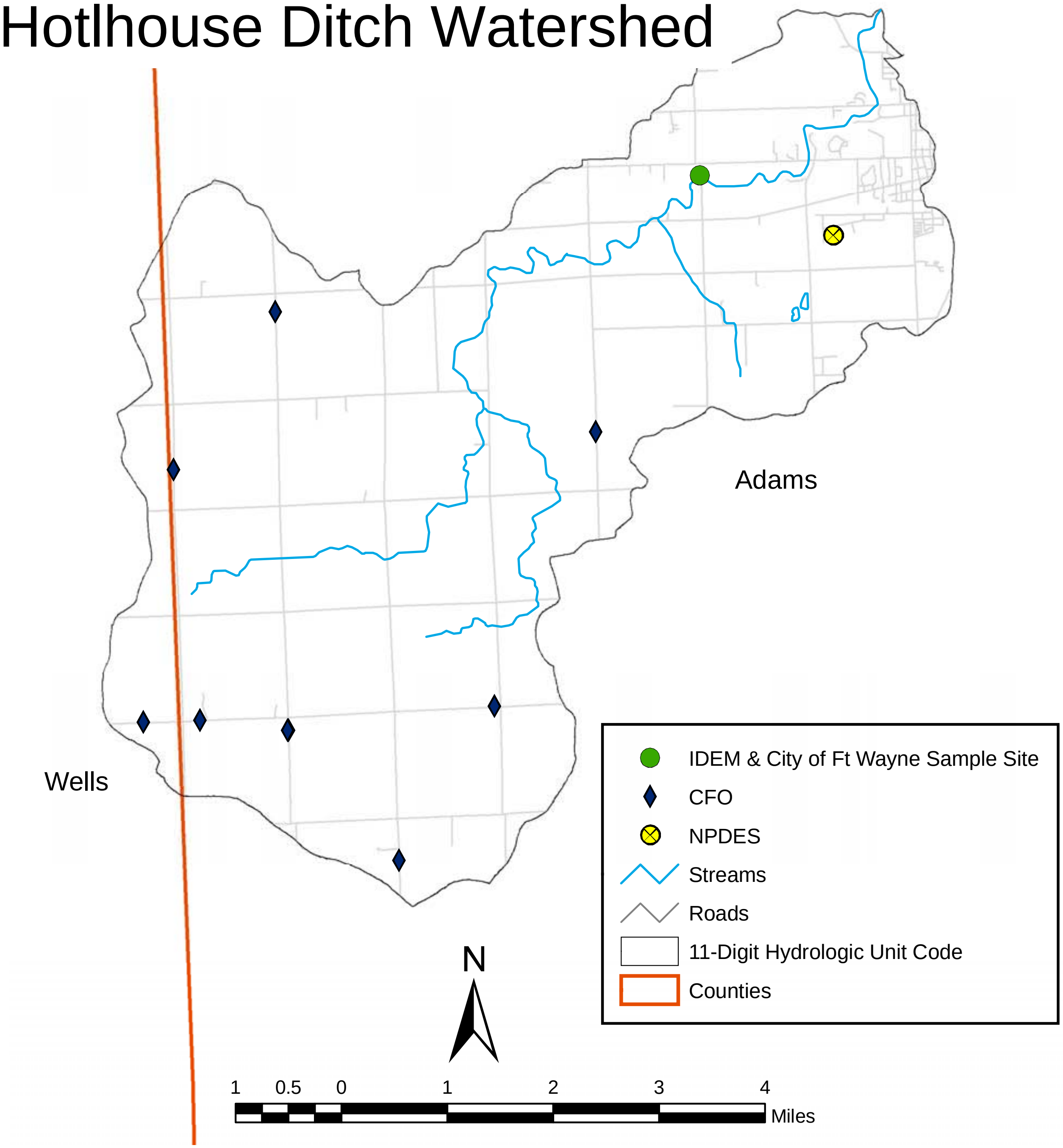


Figure 12: Holthouse Ditch Landuse

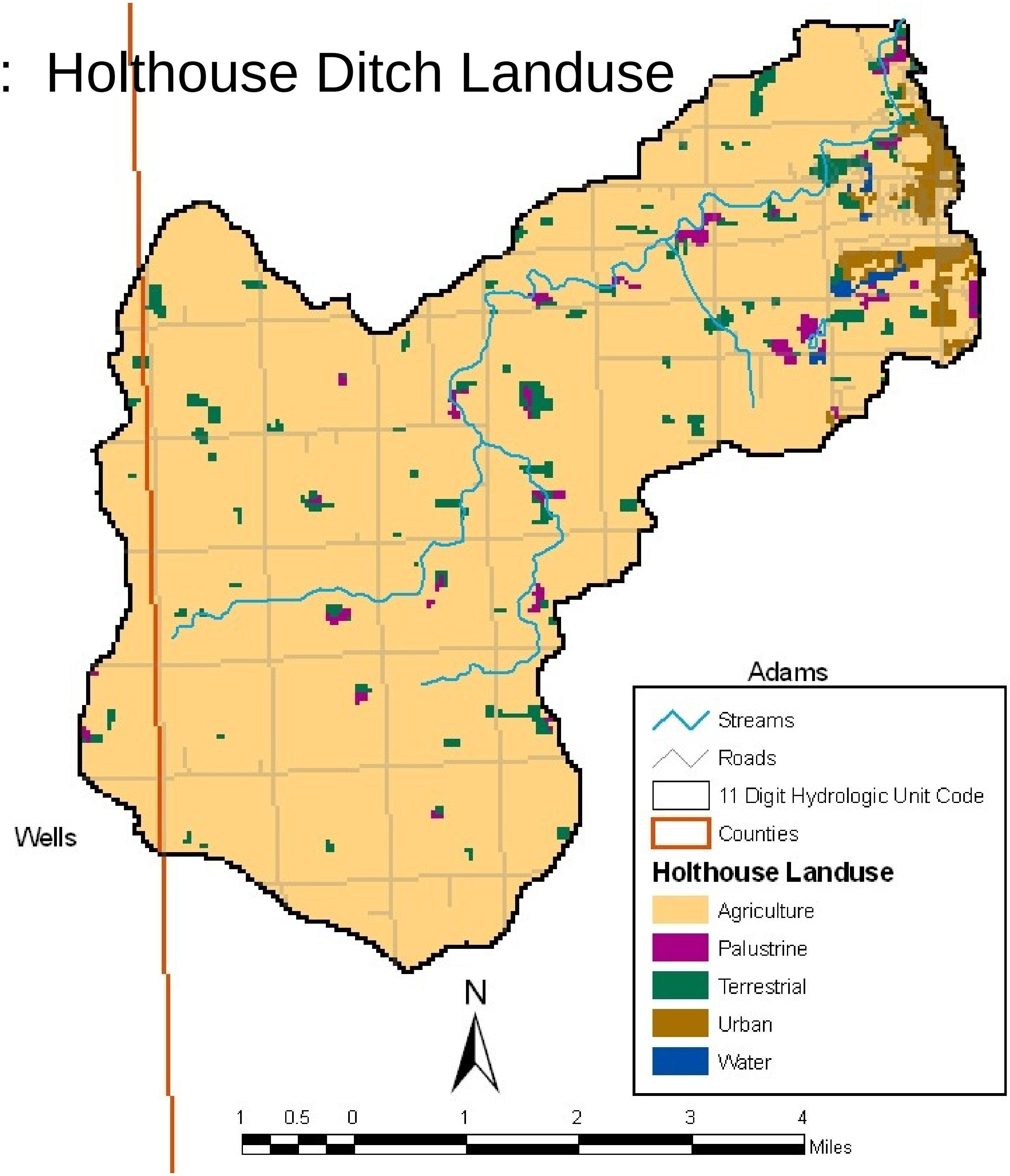


Figure 13: Nickelsen Creek Watershed

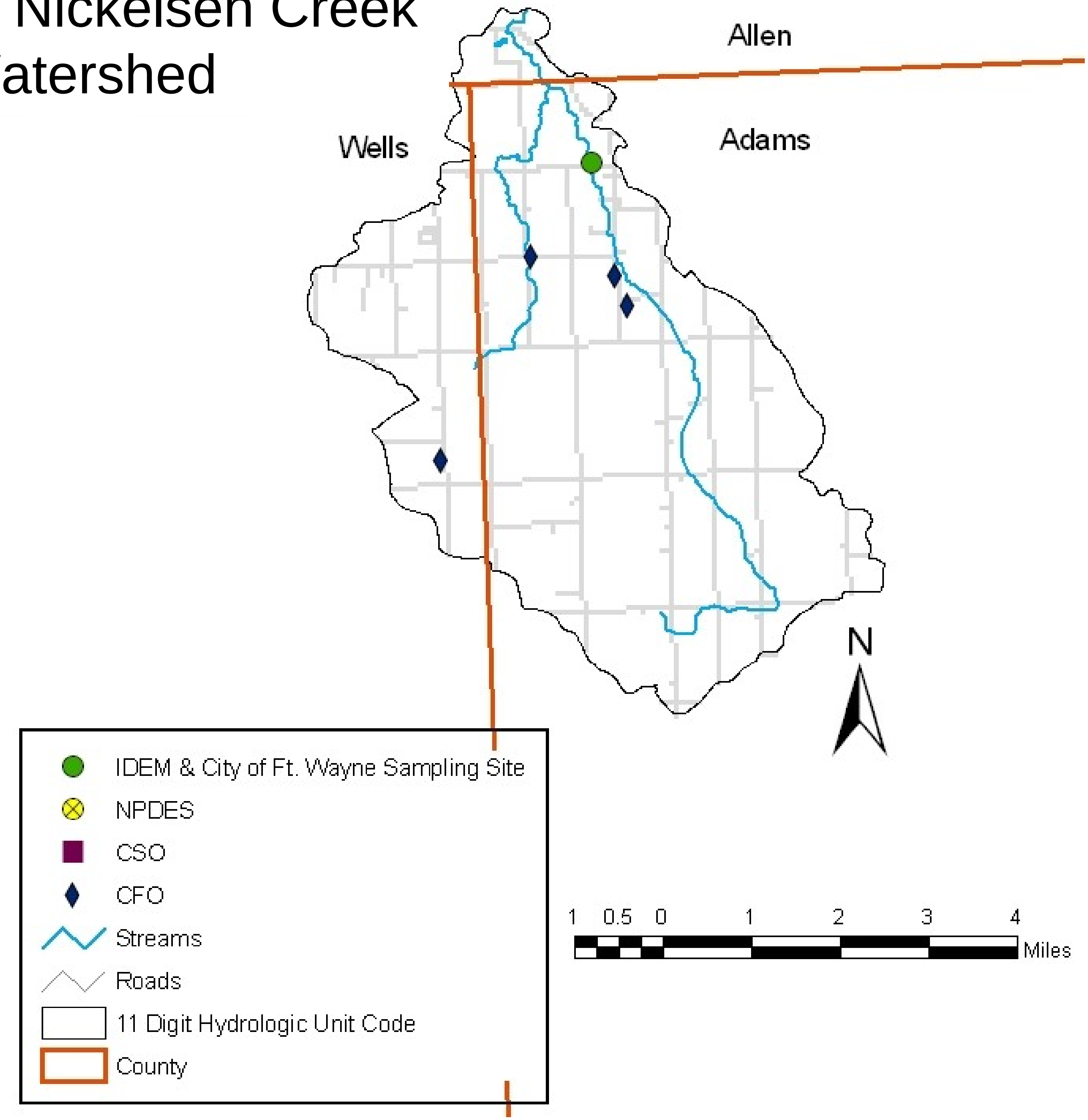


Figure 14: Nickelsen Creek Landuse

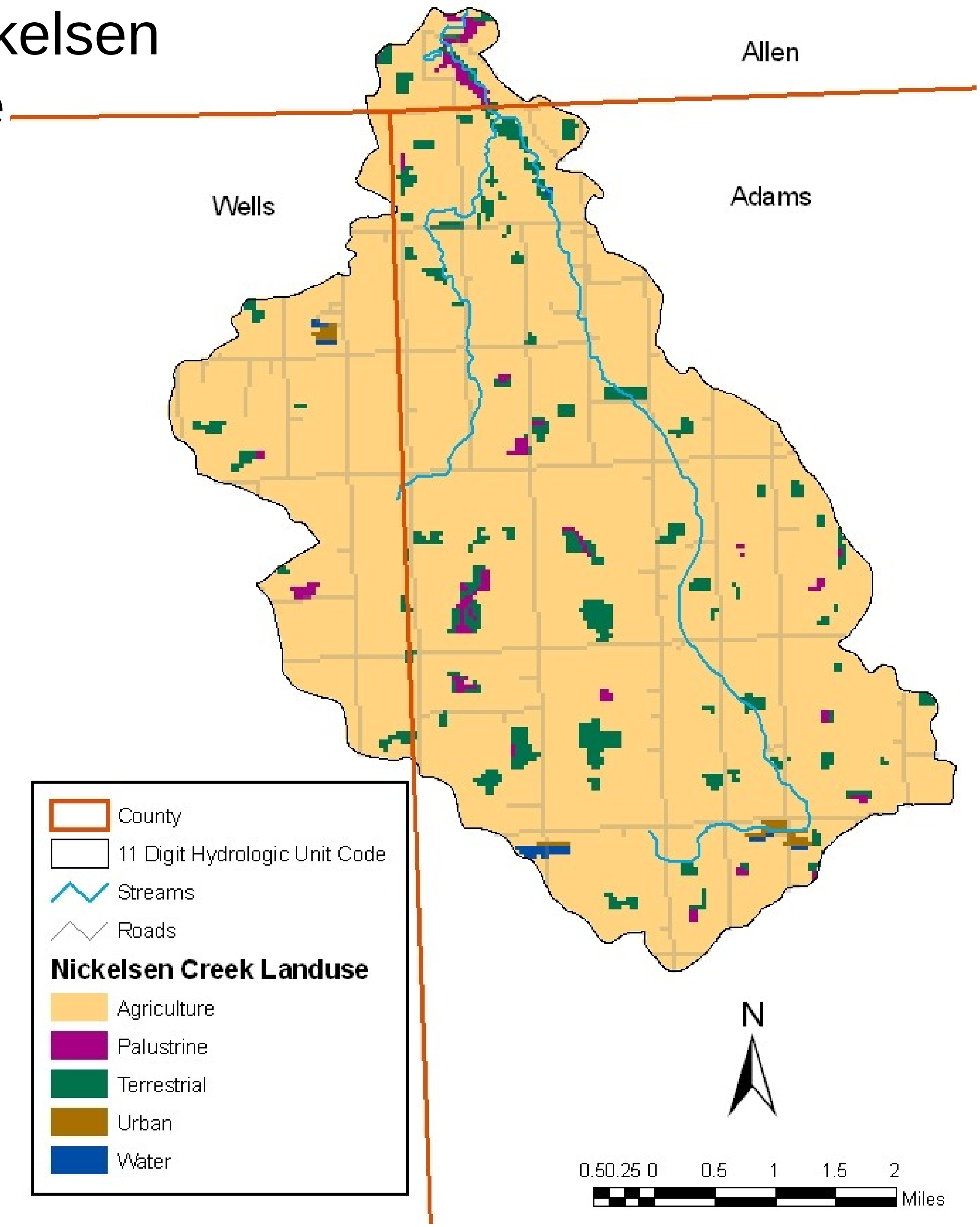


Figure 15: St. Marys River Watershed

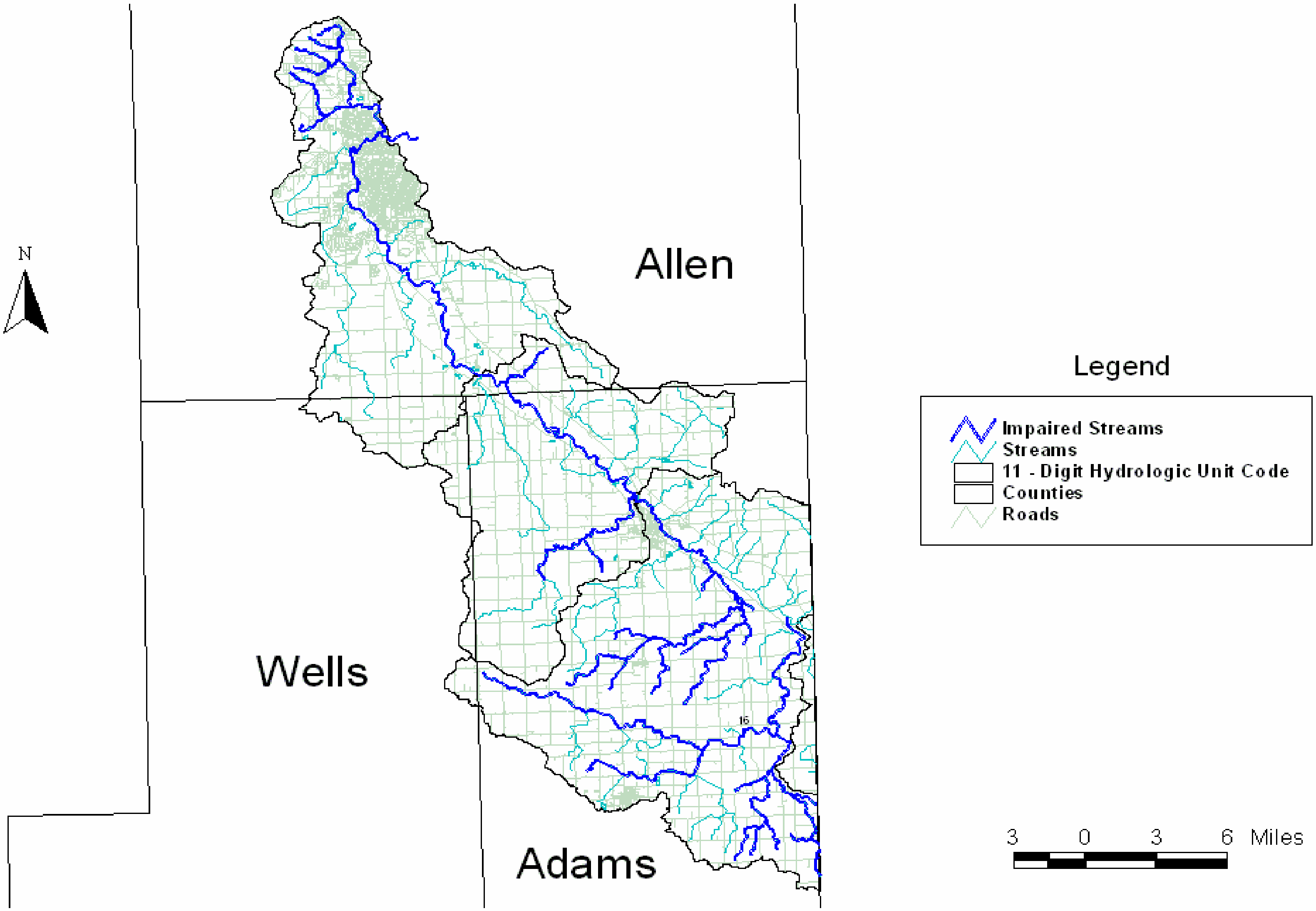


Figure 16: Sample Sites in the St. Marys River Watershed

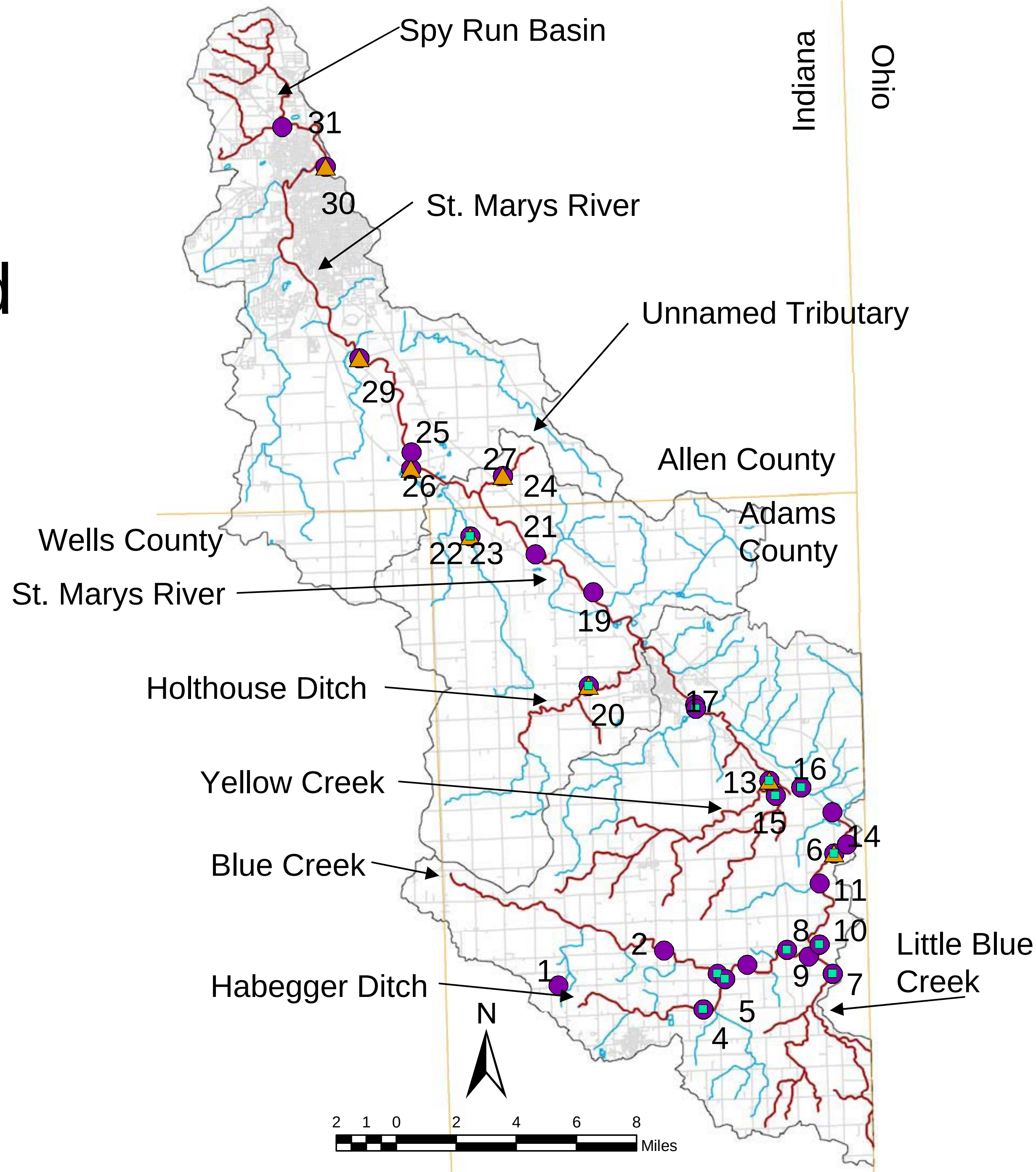


Figure 17: St. Marys River Watershed Landuse

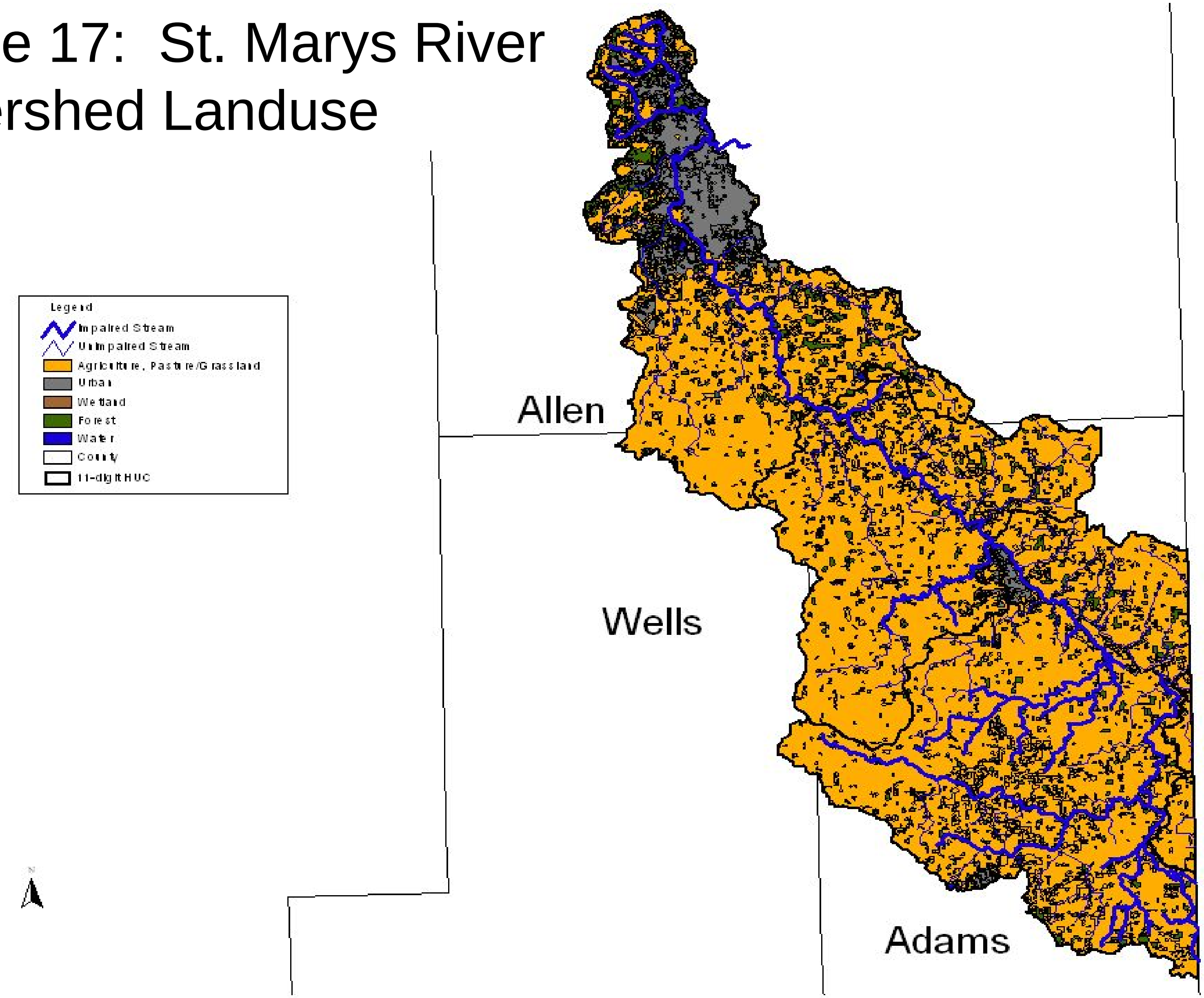


Figure 18: NPDES Facilities in the St. Marys River Watershed

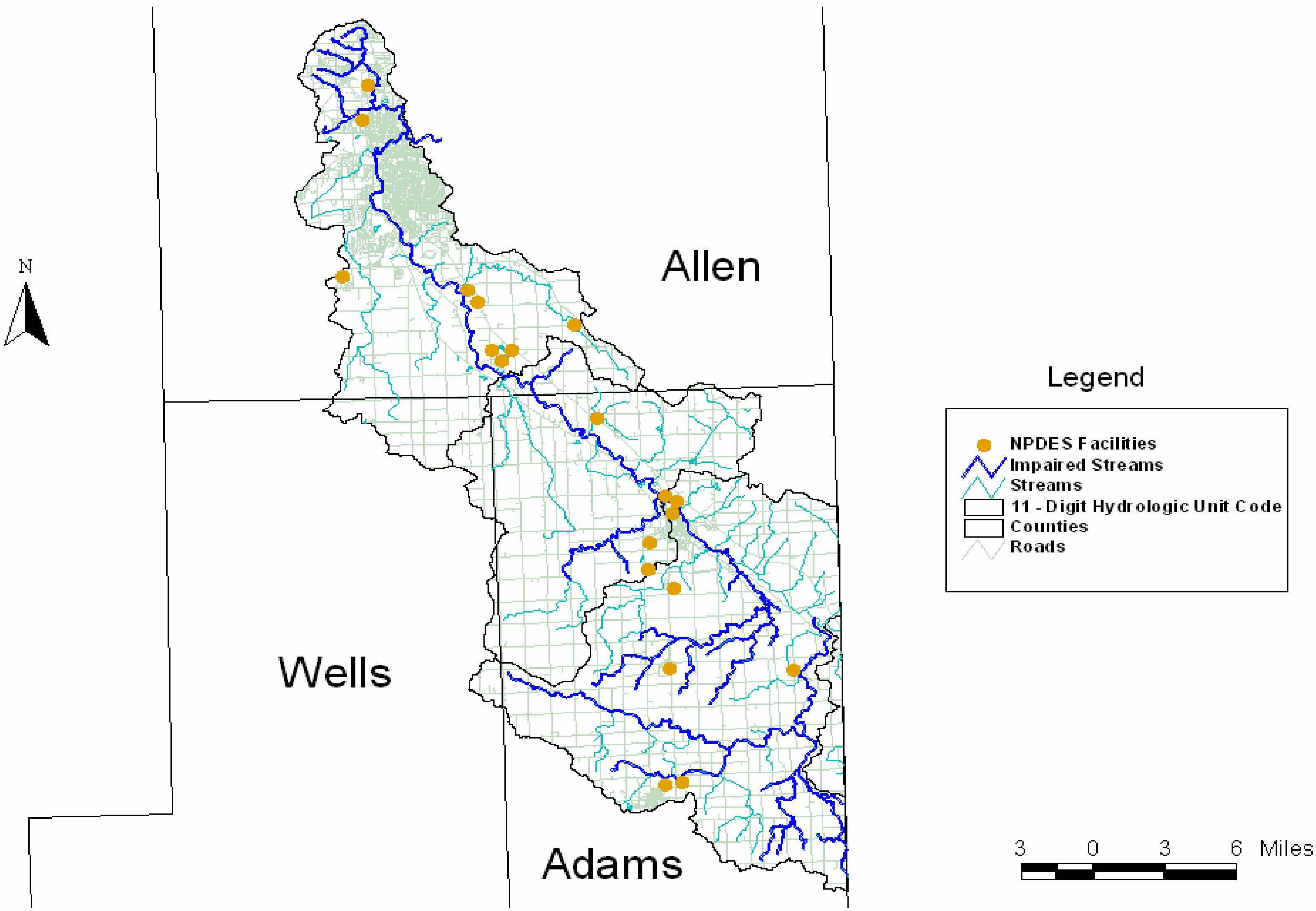


Figure 19: St. Marys CSOs Discharge Points

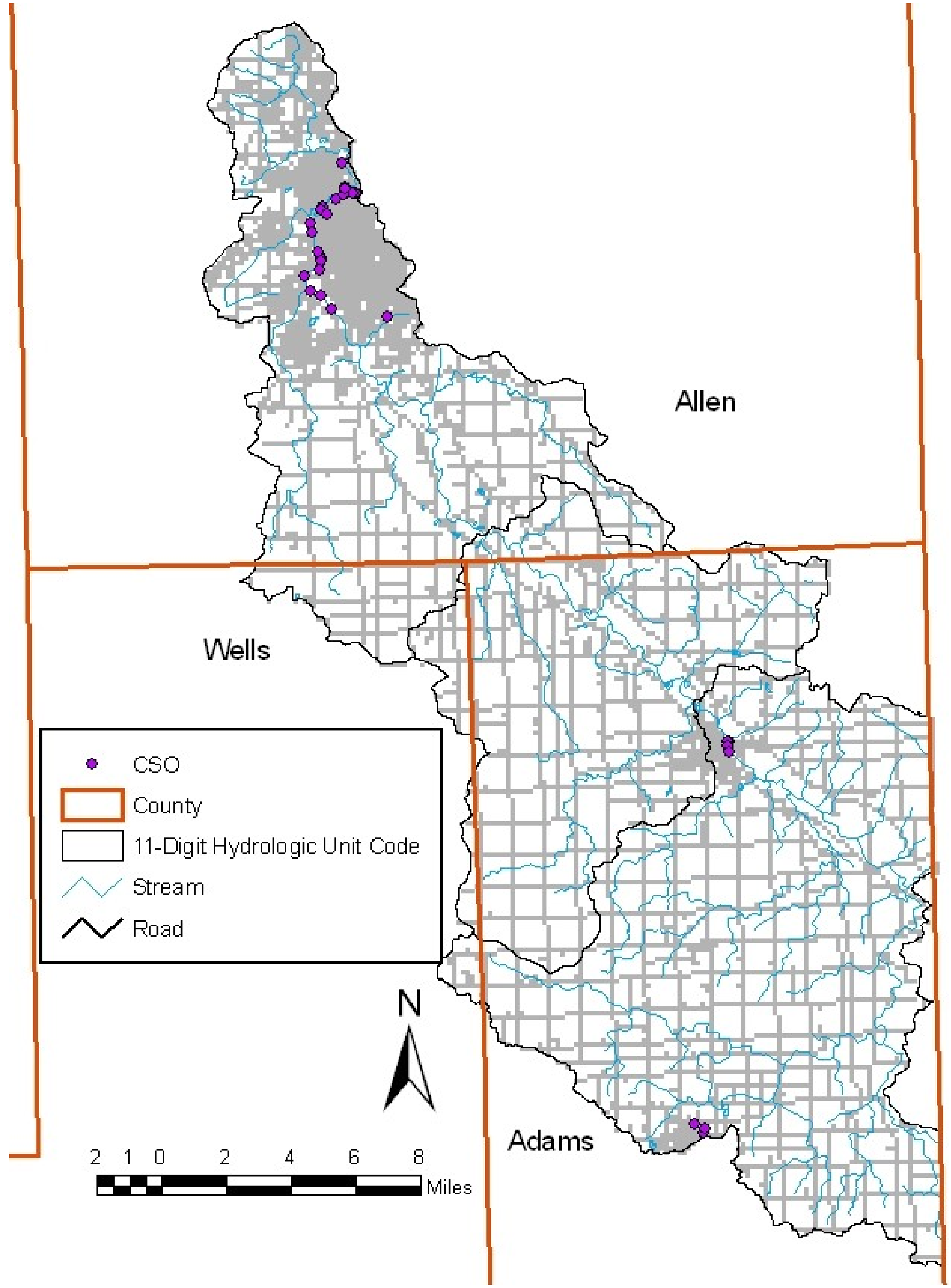


Figure 20: Confined Feeding Operations in the St. Marys River Watershed

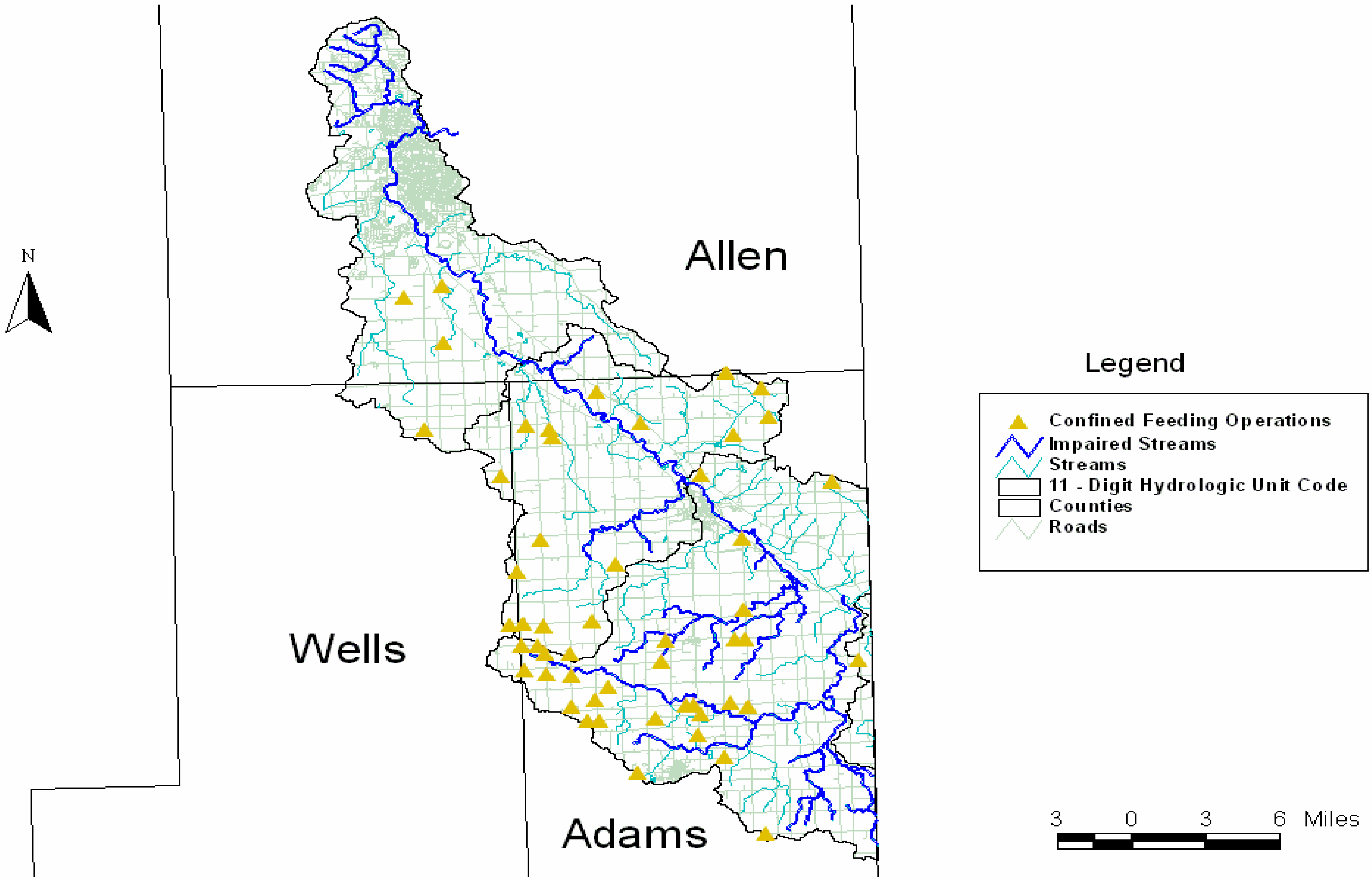


Figure 21: Regression Analysis

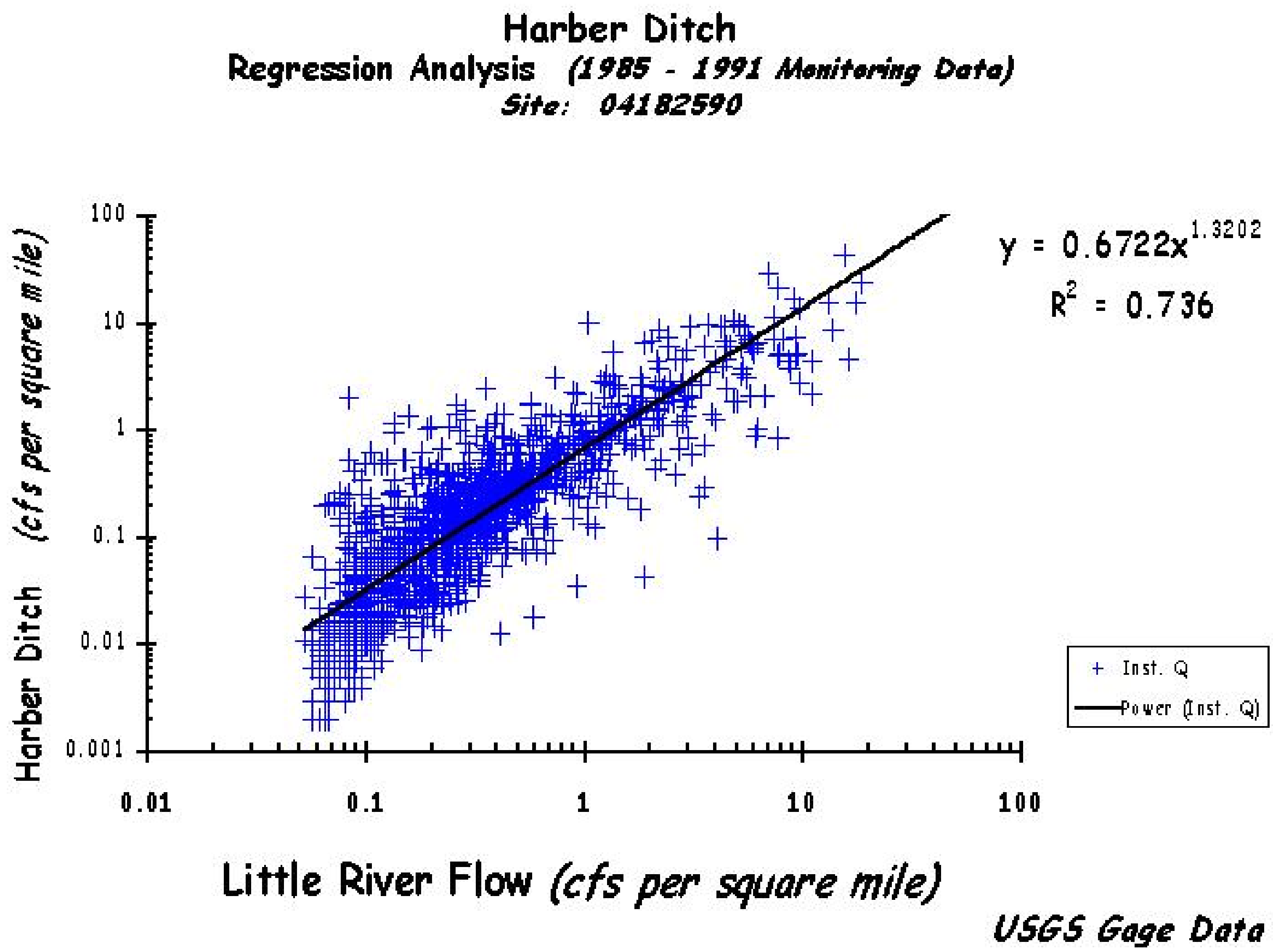


Figure 22: Maumee River Watershed

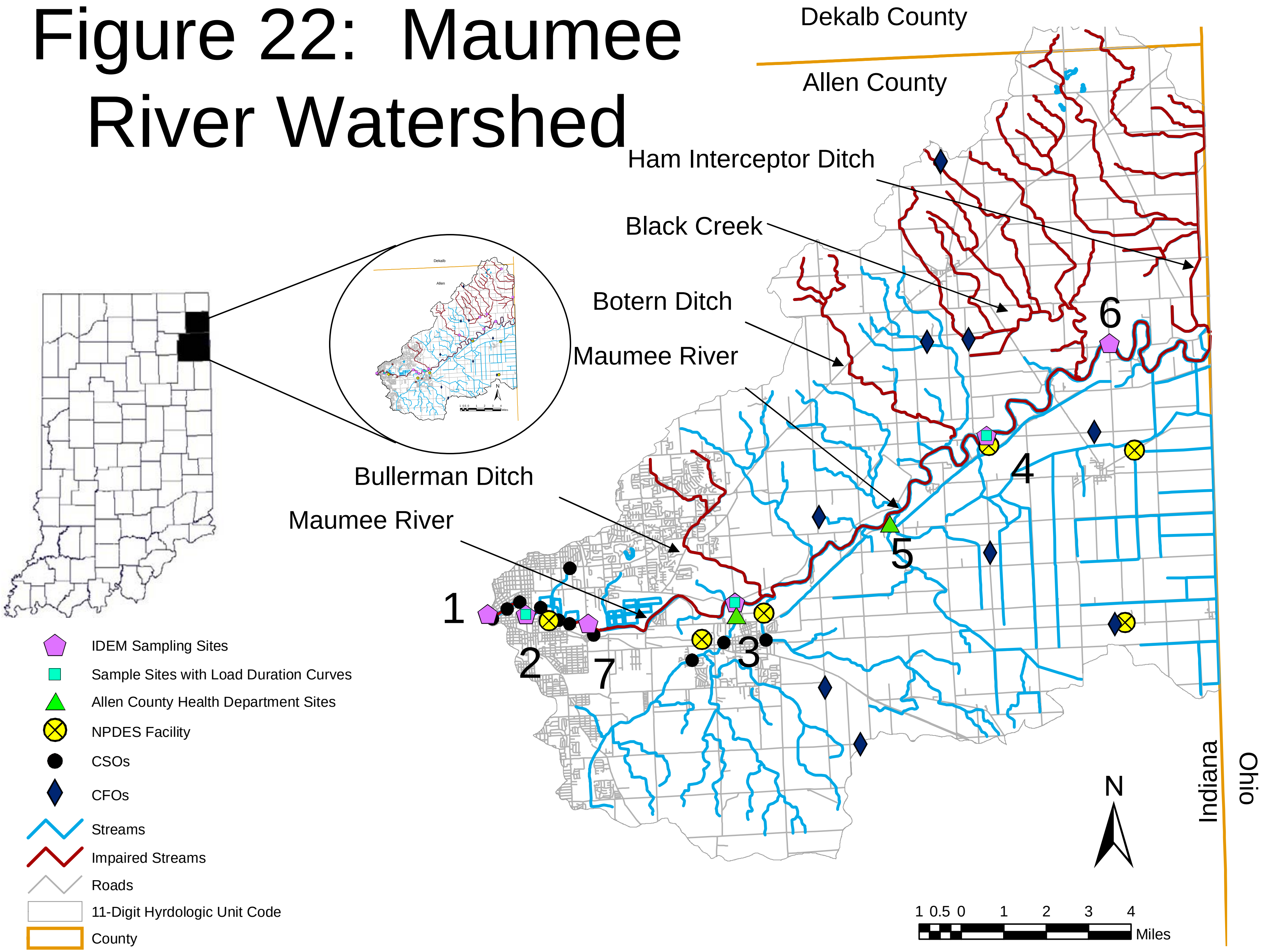


Figure 23: Maumee River Landuse

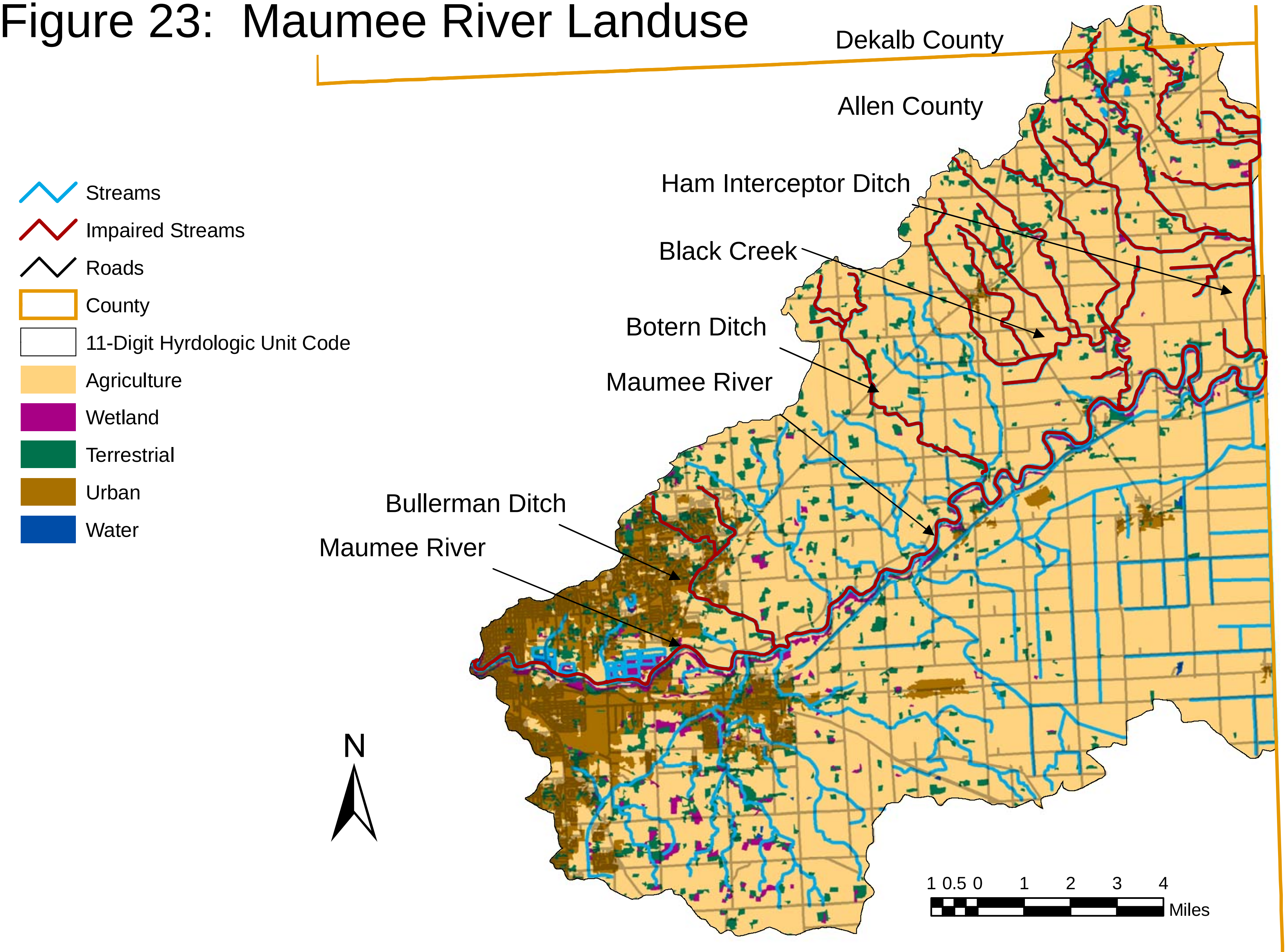


Figure 24: St. Marys River Watershed

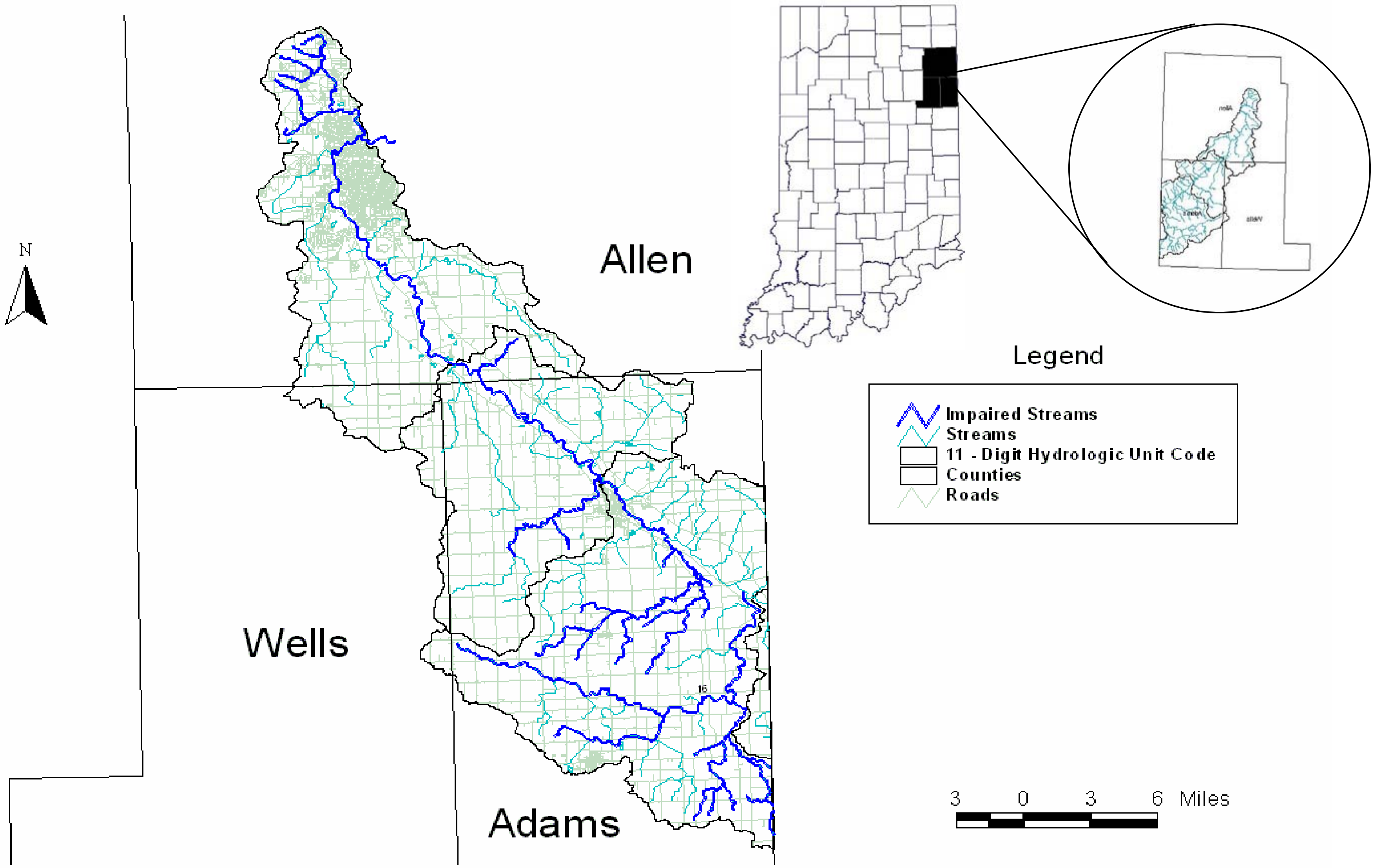


Figure 25: Sample Sites in the St. Marys River Watershed

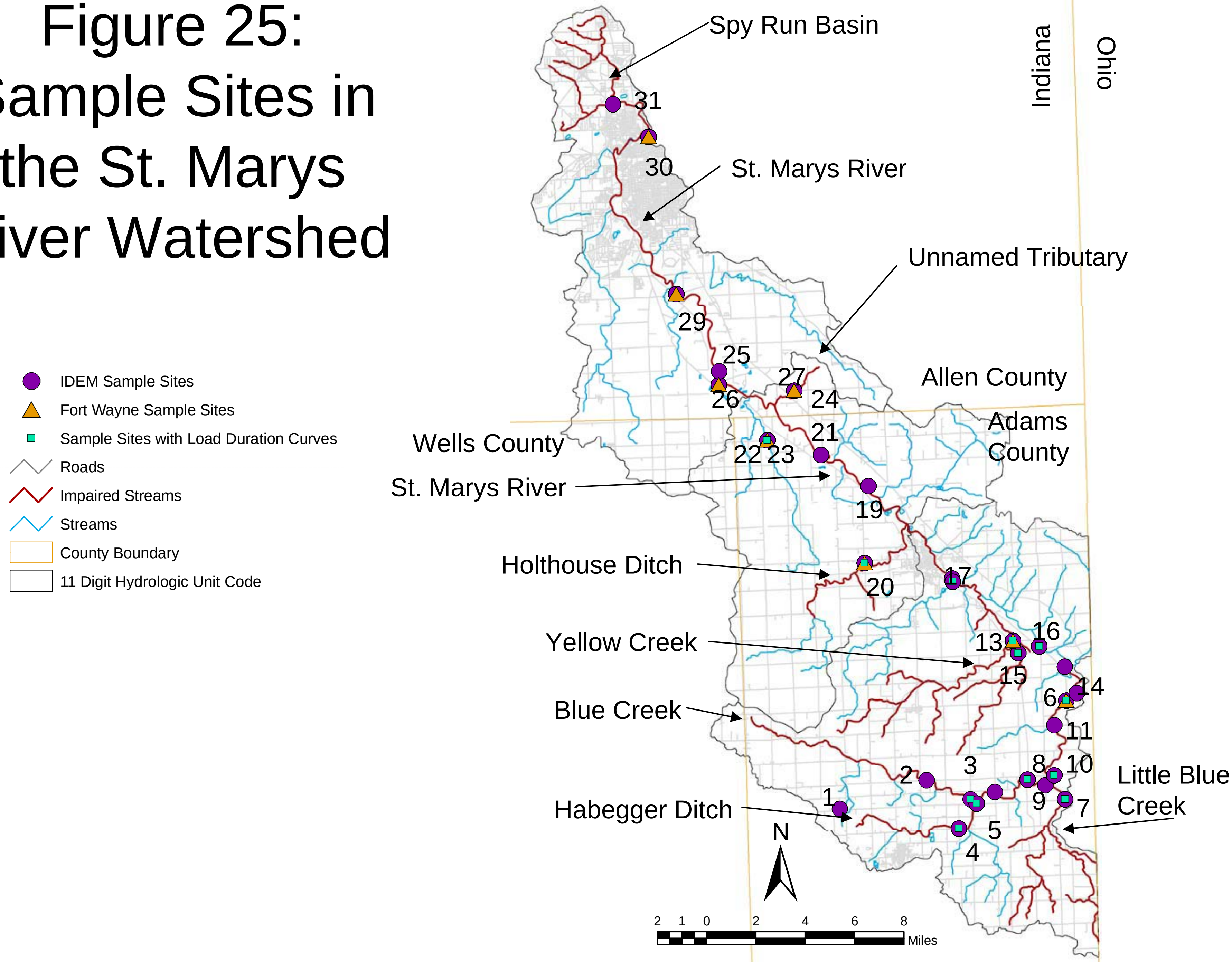


Figure 26: Unnamed Tributary

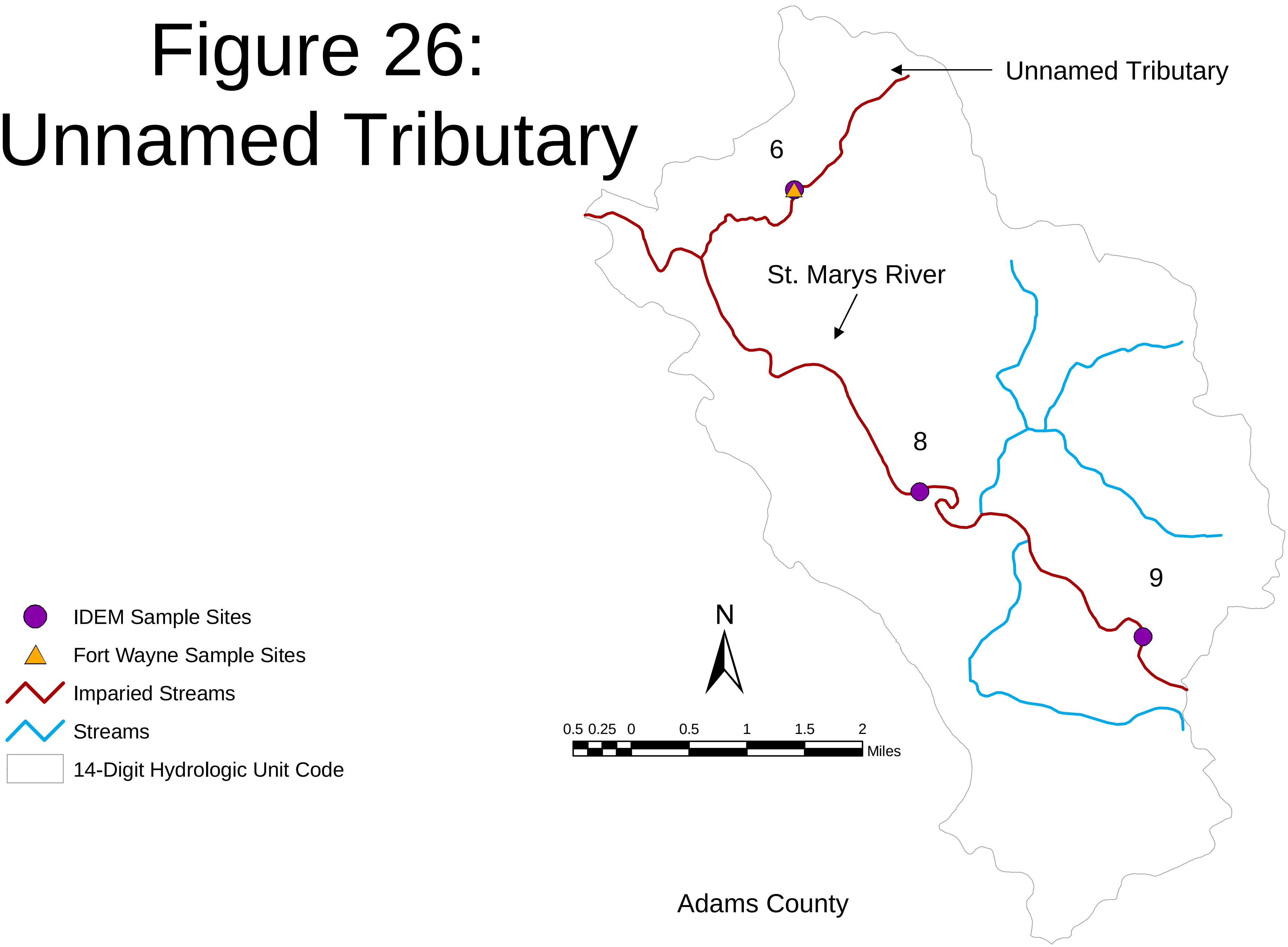


Figure 27: Unnamed Tributary Landuse

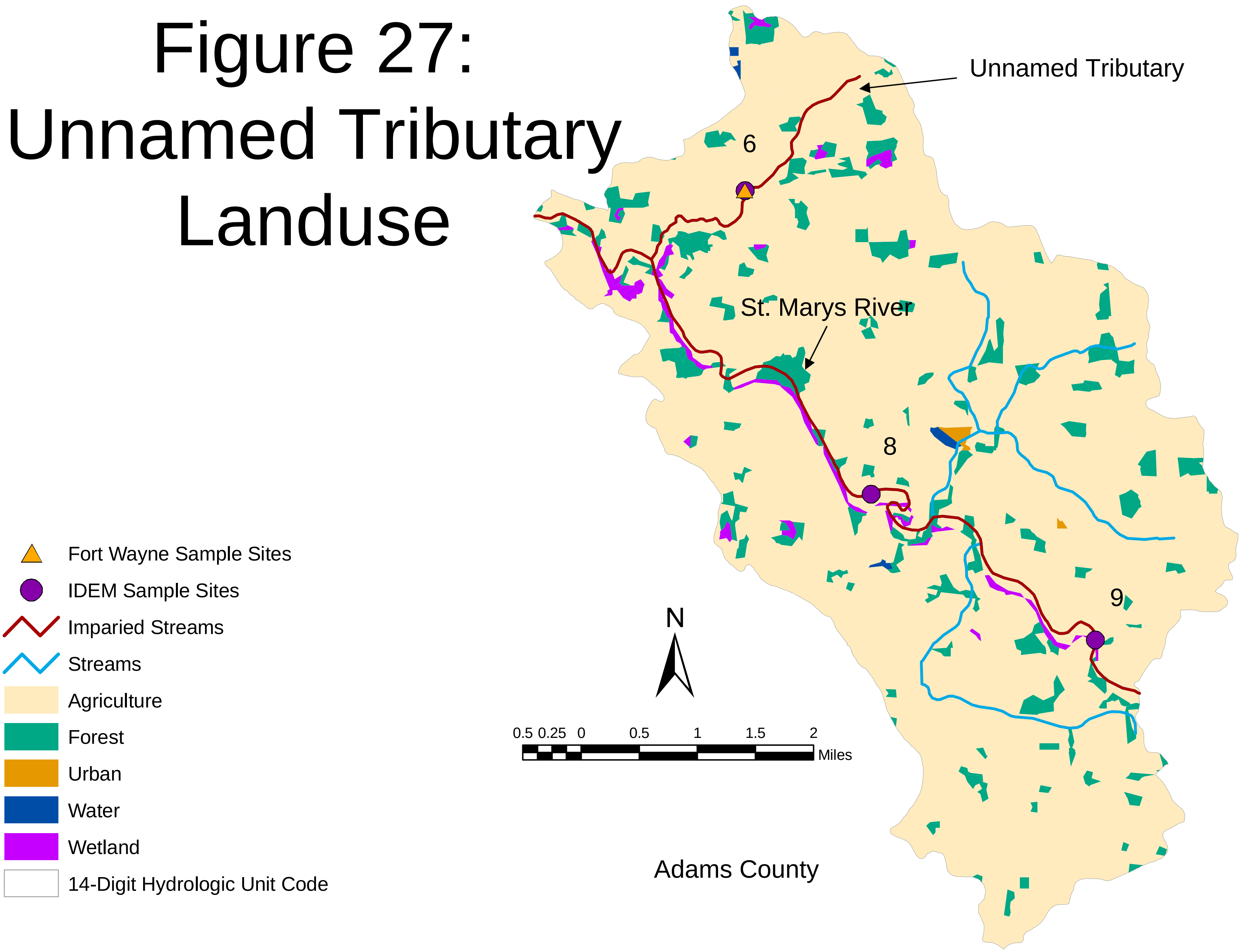


Figure 28: Blue Creek Watershed

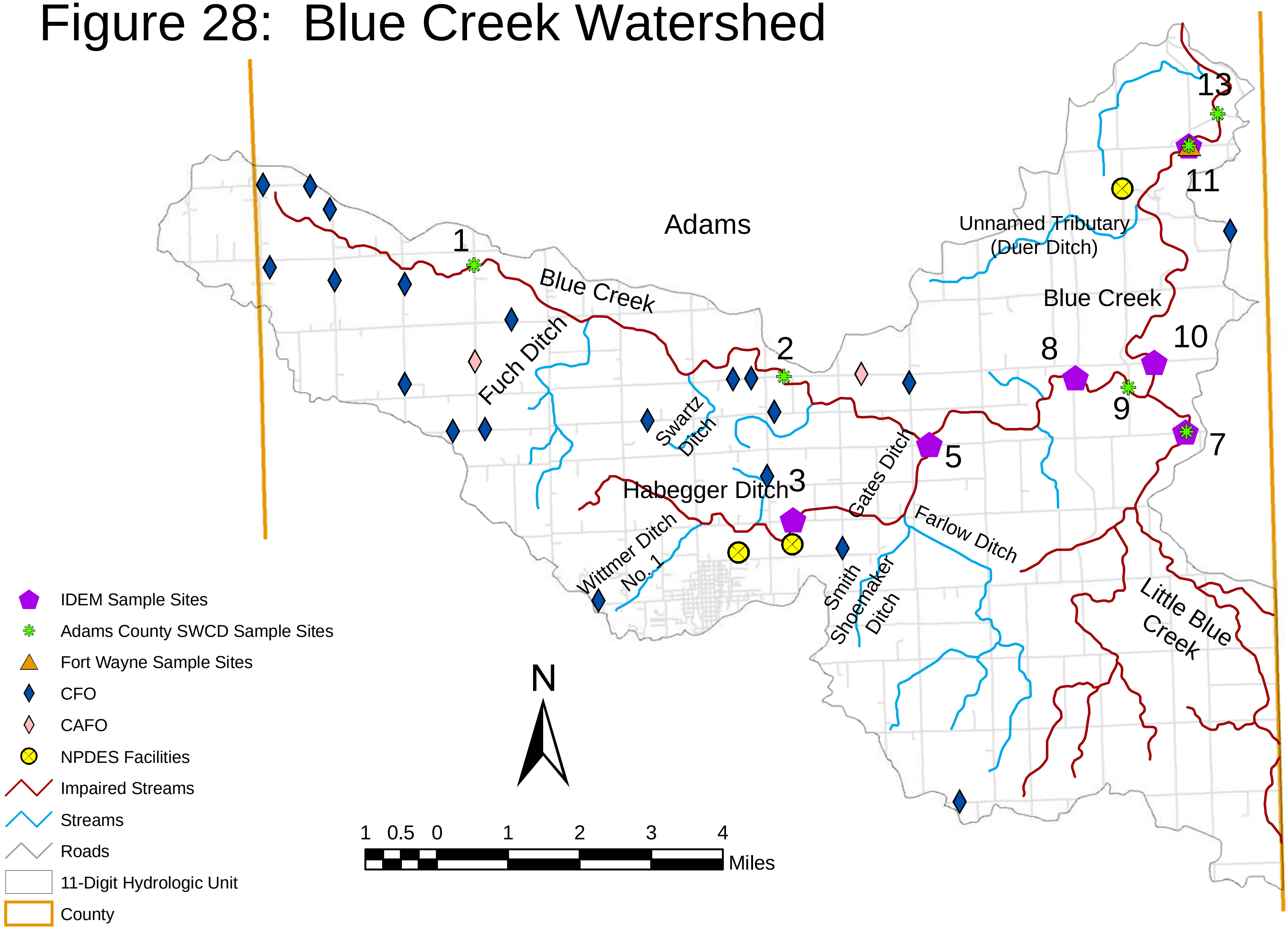


Figure 29: Blue Creek Landuse

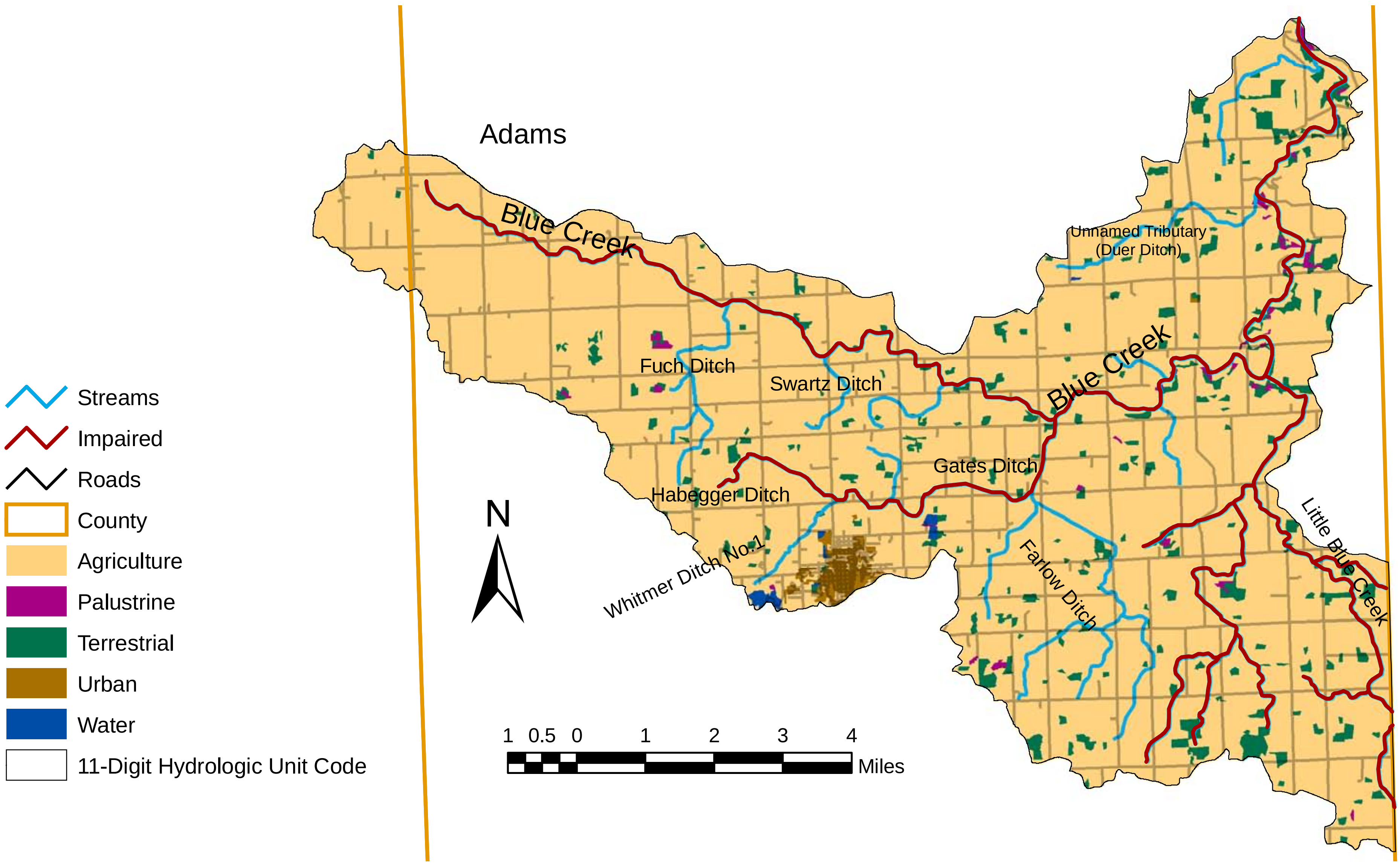


Figure 30: Blue Creek CSOs

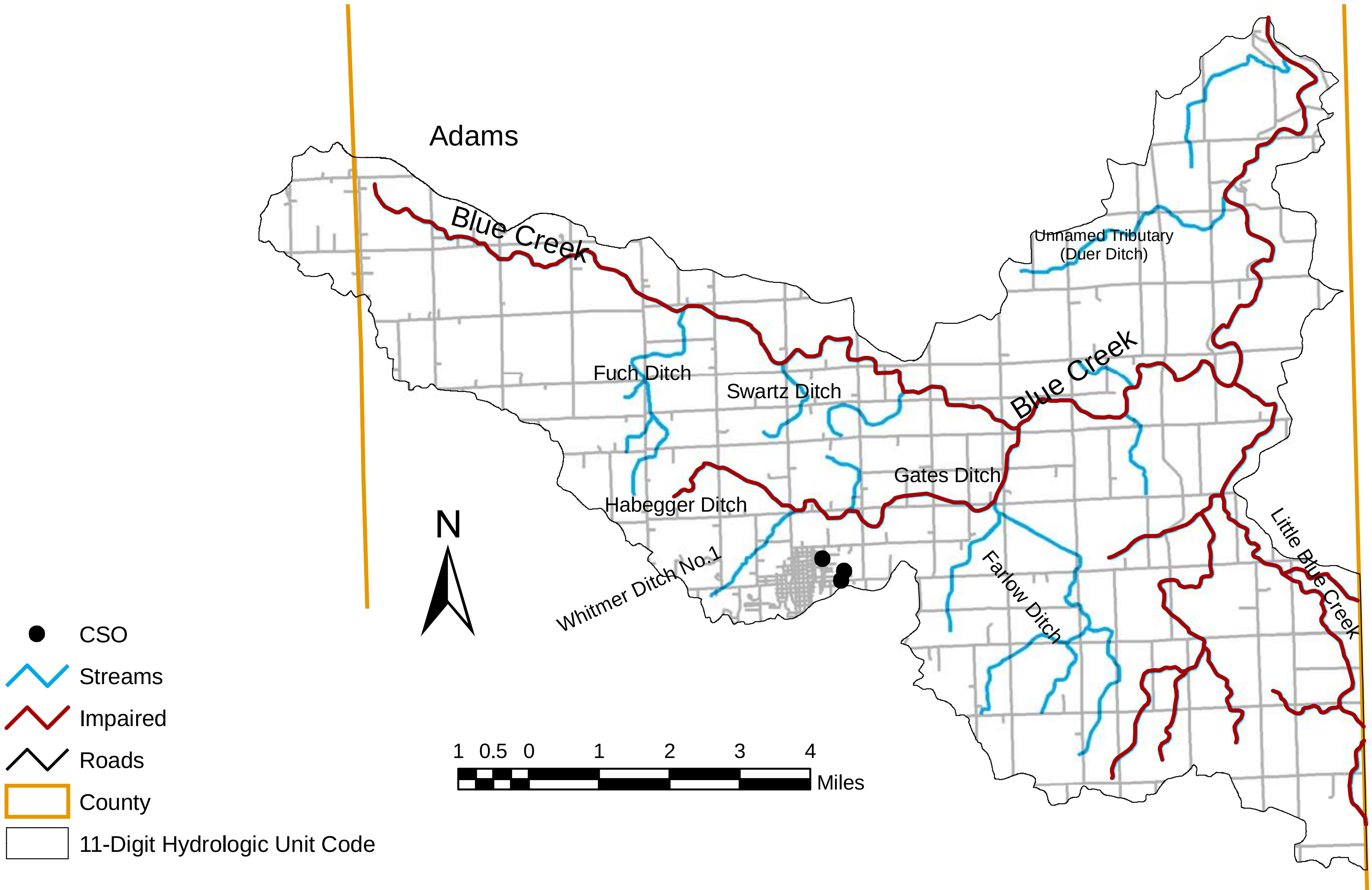


Figure 31: Yellow Creek Watershed

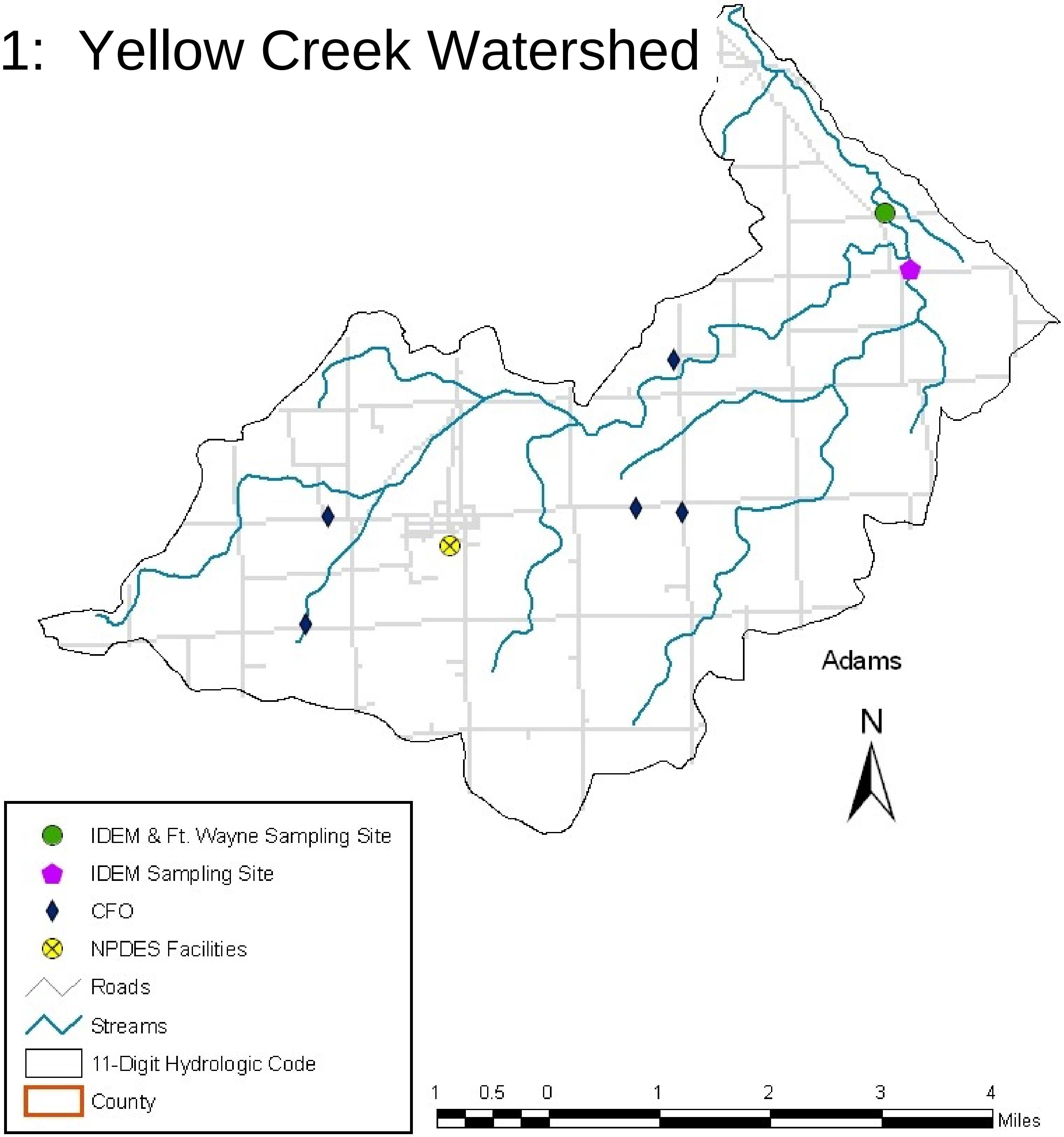


Figure 32: Yellow Creek Watershed Landuse

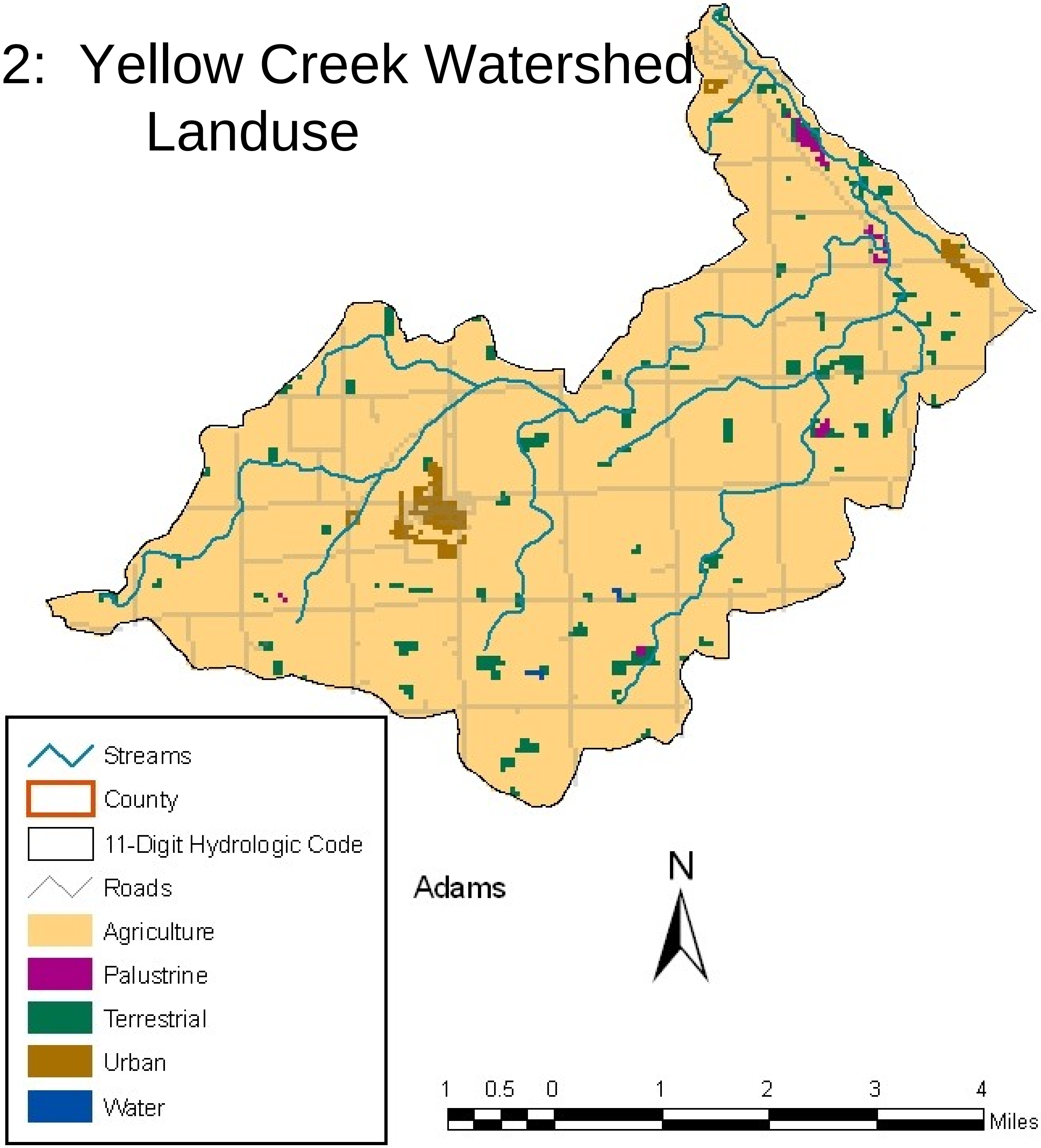
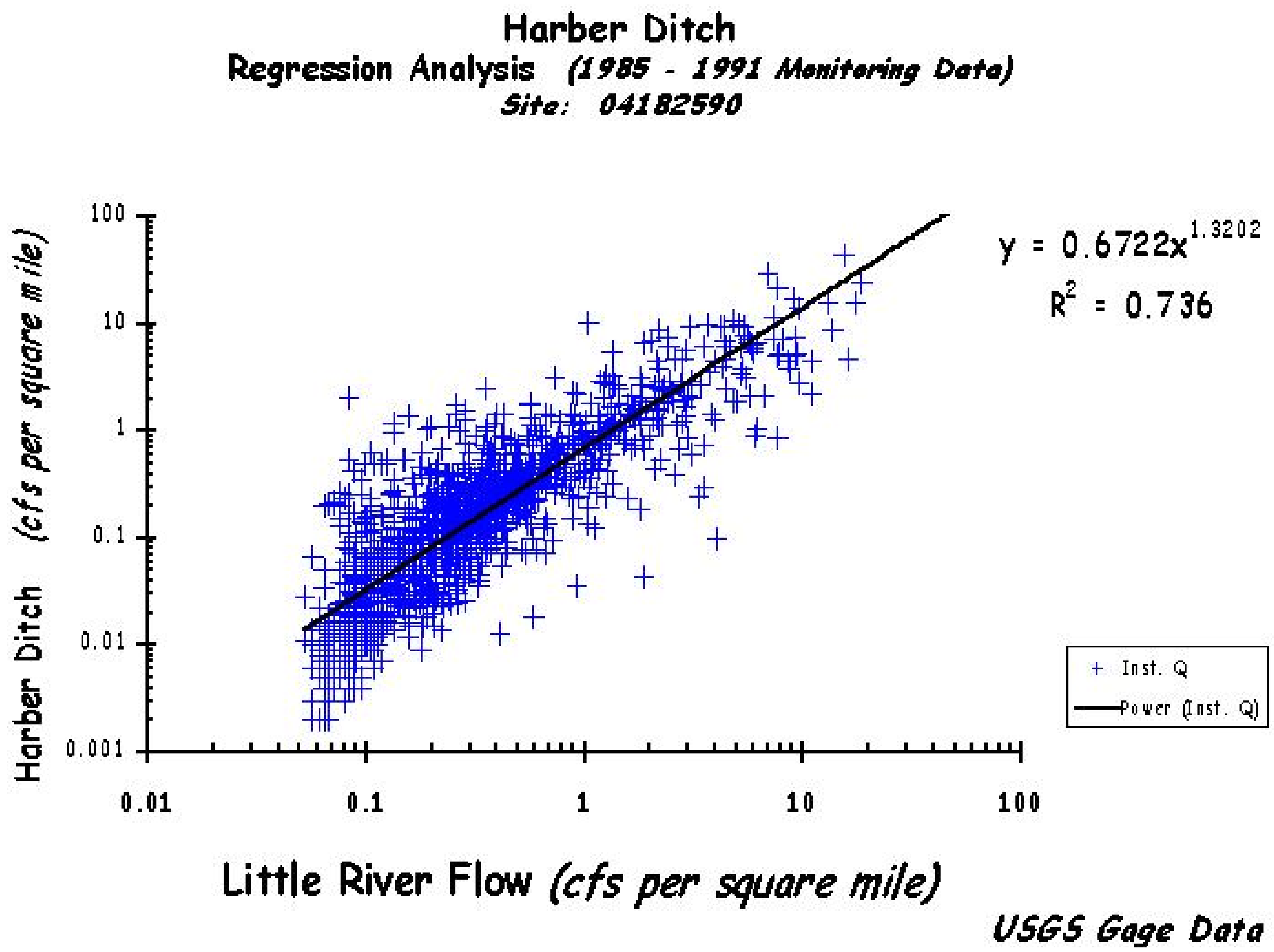


Figure 33: Sampling Flow Chart for Unnamed Tributary to St. Marys

Unnamed Tributary to St. Marys Site Number 24 (LES050-0020)		
Date	**Flow**	**Notes**
3/9/2004	Yes	
3/22/2004	Yes	
4/5/2004	Yes	
4/19/2004	No	No Flow - Stagnant
5/5/2004	No	Pool - No flow
5/18/2004	No	No Flow - Stagnant
6/1/2004	Yes	
6/15/2004	Yes	
6/28/2004	No	No Flow - Stagnant
7/12/2004	No	No Flow - Stagnant
7/26/2004	No	No Flow - Stagnant
8/9/2004	No	No Flow - Stagnant
8/24/2004	No	No Flow - Stagnant
9/7/2004	Yes	
10/4/2004	No	No Flow - Stagnant

Figure 34: Regression Analysis



Appendix 1: NPDES Permits in the St. Marys River Watershed

Facilities with *E. coli* Limits

Permit No.	Facility Name	Receiving Waters	St. Marys River Watershed
IN0039314	Decatur Municipal STP	St. Marys River	
IN0044199	White Horse Mobile Home Park	Borum Run via Miller	
IN0045292	Hessen Utilities	Marion Ditch	
IN0048119	Hoagland WWTP/ Allen Co Regional Sewer District	Houk Ditch	
IN0021369	Berne STP	Wabash River	Blue Creek

Facilities with Total Residual Chlorine Limits

Permit No.	Facility Name	Receiving Waters	St. Marys River Watershed
IN0036901	Oak Ridge Estates	St. Marys River via Bulham Ditch	
IN0055417	Country Acres Association WWTP	Kohne Ditch	
IN0109835	Mill Road Estates	St. Marys River	

Facilities with no Total Residual Chlorine or *E. coli* Limits

Permit No.	Facility Name	Receiving Waters	St. Marys River Watershed
IN0048151	Monroe Water Department	Yellow Creek	
IN0052302	BandB Custom Plating	St. Marys River via Tributary	
IN0058980	Bing-Lear Manufacturing Group, Berne	Habegger Ditch	Blue Creek
ING250026	Fort Wayne Metals	Bradbury Ditch	
ING490084	Meshberger Bros Stone Plt #2	Blue Creek	Blue Creek
INP000069	Bing-Lear Manufacturing Group, Berne	Berne STP	Blue Creek
INP000194	Ruan Transport Corporation	Decatur STP	
INP000197	Driggs Farms of Indiana, Inc	Decatur STP	

Appendix 2: Combined Sewer Overflows in St. Marys River Watershed

City of Fort Wayne

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
004	J02-90, 210' South of bridge at W. Jefferson and St. Marys River	St. Marys River
005	J11-164, 210' Southeast of Manito Blvd and Indiana Village Blvd	St. Marys River
007	K03-92, 250' Southeast of Electic Ave. and Brown Street	St. Marys River
011	K06-233, 230' Southeast of Main St. and Camp Allen Dr.	St. Marys River
012	K06-234, 230' Southeast of Main St. and Camp Allen Dr.	St. Marys River
013	K06-298, 80' North of Thieme Dr. and Berry St.	St. Marys River
014	K07-106, 60' West of Dinnen Ave. and Packard Ave.	St. Marys River
016	K07-109, 280' Southwest of Broadway and Kinsmoor Ave.	St. Marys River
017	K07-176, 130' Southwest of St. Marys Pkwy	St. Marys River
018	K11-165, 150' West of Broadway and Rudisill Blvd	St. Marys River
019	K11-178, 150' West of Broadway and Rudisill Blvd	St. Marys River
020	K15-116, 1300' West of Hartman Rd and Westover Rd	St. Marys River
021	K19-044, 850' West of Old Mill Rd. and Fairfax Ave.	St. Marys River
023	L06-103, 90' Northwest of Jackson St and Superior St	St. Marys River
024	L06-420, 220' North of Superior St. and Fairfield Ave.	St. Marys River
025	L06-421, 220' North of Superior St and Fairfield Ave.	St. Marys River
026	M10-151, 310' East of Third St. and Calhoun St.	St. Marys River
027	M10-202, 200' Southeast of Third St. and Calhoun St.	St. Marys River
028	M10-238, 150' East of St. Marys River Bridge and Spy Run Ave.	St. Marys River
029	M10-265, 230' East of Duck St. and Barr St.	St. Marys River
032	M10-306, 120' North of Clair St. and Harrison St.	St. Marys River
033	M10-313, 200' Southeast of Third St. and Calhoun St.	St. Marys River
054	O23-080, 240' East of Mercer Ave. and Hollis Ln.	Natural Drain #4
056	J03-313, Brown Street Pump Station	St. Marys River
067	K19-077, 310' Southeast of Hartman Rd and Foster Park Dr.	St. Marys River

SSO

Outfall #	Location	Receiving Waters
070	N23-121, 230' east of the intersection at John and Warfield	Highland Drain
071	N23-122, 290' east of the intersection at John and Warfield	Highland Drain

City of Decatur

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
005	Swirl Concentrator	St. Marys River
008	Marshall Street	St. Marys River
009	Monroe Street	St. Marys River
011	Jefferson Street	St. Marys River

City of Berne

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
003	Welty Street and Compromise	Sprunger Ditch to Habegger Ditch
004	Main and Ruesser	Sprunger Ditch to Habegger Ditch

SSO

Outfall #	Location	Receiving Waters
006	North End of East Water Street	Sprunger Ditch to Habegger Ditch

Appendix 3: CFO & CAFO in St. Marys River Watershed

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Layers	Pullets	Broilers	Turkeys	Ducks	Sheep
8	Gary Steffen	Holthouse Ditch						60							
65	Grace Farms	Blue Creek								60,000					
91	Carl Lotter	Yellow Creek		4,200											
123	Jim Fiechter	Blue Creek			920										
469	Jerry Lee Graber	Blue Creek		320	920							6,000			
590	Ted Liechty	Blue Creek	ING800590							119,000					
635	Charles W Hill	Blue Creek			1,400										
638	Troyer Swine	Blue Creek			1,000										
684	Lynn Myers	St. Marys River			1,920										
902	David Hill	Blue Creek			625										
933	SDD Hogs, Inc	Blue Creek	ING800933		3,600										
944	ISCF Brothers Pork	Blue Creek			2,000										
948	Philip R Moser	Holthouse Ditch		1,185	500										
971	Emanuel Schmidt	Blue Creek		500	300										
1065	Pigs in a Blanket	Nickelsen Creek		2,880											
1197	Earl Gerber Farms, Inc	Holthouse Ditch									96,000				
1306	Triple G Ranch	Blue Creek		500	800	166									
1607	Triple T Farms, Inc	Holthouse Ditch		900	450		350					63,000			
1882	Gerald and Charles Miller	St. Marys River		250	1,945	110									

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Layers	Pullets	Broilers	Turkeys	Ducks	Sheep
1886	Alvin Schwartz	Yellow Creek			1,950										
2206	Cottonwood Corporation	Holthouse Ditch		2,400	2,400										
2369	Allen Buuck	Nickelsen Creek			410										
2435	ADM Alliance Nutrition, Inc	St. Marys River		1,000	702	351	376	82	56	2,800		1,452	1,440		
2548	Daniels J Michaels	Yellow Creek		510	255					8,200					
3005	Joel Houk	Holthouse Ditch		200	500	96									
3281	Gene Witte	St. Marys River		360	200	80									
3292	South 40 Farm			600		415									
3615	KMV Family Farms	St. Marys River						375							
3668	David H LaFontaine	Yellow Creek								81,000					
3737	Stan Von Gunten	Blue Creek									33,600				
3944	Moser Bros-Pine Hill Acres	Holthouse Ditch		160		576									
3985	Double G Farms	Blue Creek		200	580	99									
4037	Kirkland Farms	Holthouse Ditch			1,500										
4038	County Line Swine	Blue Creek		900	600	415									
4067	Fuelling Farms	St. Marys River													600

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Layers	Pullets	Broilers	Turkeys	Ducks	Sheep
4181	Victor Steiner	Yellow Creek		240	506	172									
4307	Stoller Poultry, Inc	Blue Creek			1,920					100,410					
4421	Kaehr Ag Inc	Blue Creek		460	600	204									
4637	Rigger Pork, Inc (Masterpork)	Blue Creek		800	120	619									
4964	Paul Rumple	Holthouse Ditch			6,000										
4997	Bruce Dick	Borum Run		240	540	146									
5007	Progress Pork	Blue Creek			2,000										
6000	Irish Acres Dairy	Blue Creek	ING806000					1,552	360						
6020	SandG Poultry	Blue Creek	ING806020							132,000					
6049	Tri Oak Farms, Inc	Blue Creek		320	500	134									
6159	Stan Biberstein	Holthouse Ditch								63,000					
6175	Jerry Lambright	Blue Creek												3,000	
6201	Ron Aschliman	Holthouse Ditch			3,040										
6239	James and Ron Collins	Holthouse Ditch			700										
6330	Steve Henry	Blue Creek									50,000				
4039	Thomas Wyss	St. Marys River			154										
4683	Duane E Franz	St. Marys River		400	530	100									
4942	Robert J Schuhler	St. Marys River		500	364	324									

Appendix 4: St. Marys River Watershed Reductions

Blue Watershed

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
2940.1	1428.1	892.9	366.2		1082.4	88.4	51.8	Blue Creek -- Salem Rd.
3205.2	1797.2	622.8	158.4		868.2	85.6	71	Blue Creek -- CR 300 S
7549.8	3316.3	474.8	346.9		1425.1	91.2	79.6	Blue Creek -- SR 124
5298.9	1571.5	779.8	218.1		1091	88.5	8.4	Habegger Ditch -- CR 150 E
6208	3951.6	909.7	1311.8		2326.1	94.6	20.1	Gates Ditch -- CR400 S
1162.5	1105.9	824.1	295.5		748	83.3	16.3	Little Blue Creek -- CR 400 S

Yellow Watershed

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
1492.5	775.3	1052.9	65.3		531.1	76.5	9.8	Martz Creek -- CR 200 N
5508.4	980.2	673.3	480.8		1149.8	89.1	24.5	Yellow Creek -- CR 250 N

Holthouse / Borum / Nickelson / Unnamed

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
698.1	465.4	286	48.9		259.7	51.9	14.4	Borum Run -- Mercer Rd
6059.2	687.7	306.2	194.8		706.1	82.3	27.3	Holthouse Ditch -- CR 200 W
3849.9	766.9	327.8	163		630.2	80.1	12.2	Nickelsen Creek -- CR 1100 N
5711.1	2133	346.9	372.4		1120.1	88.8	2.3	Unnamed Tributary -- Barkley Rd

St. Mary's River

High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	Site Name
150	960.3	248.3	586.1		380.5	67.1	354	St. Marys - Ohio SR 81
261.3	1019.5	499.2	271.3		435.8	71.3	467.8	St. Marys - SR 101 Bridge
505.1	774.4	476.9	628.1	243.6	491	74.5	467.8	St. Marys - Pleasant Mills
1119.9	1411.2	139.3	269.1		493.4	74.6	643.2	St. Marys - Hoagland Rd
1967.7	905.8	414.8	284	374.2	601.3	79.2	672	St. Marys - Ferguson Road
304.3	357.2	159.3	202.3	69.5	189.3	33.9	672	St. Marys - Ferguson Road
1933.6	1009.4	736.8	537	243.7	716	82.5	820	St. Marys - Spy Run
391.9	431.6	226.2	323	263.2	318	60.7	820	St. Marys - Spy Run Bridge

Appendix 5: NPDES Permits in the Maumee River Watershed

Facilities with *E. coli* Limits and Total Residual Chorine

Permit No.	Facility Name	Receiving Waters
IN0032191	Fort Wayne Municipal STP	Maumee River

Facilities with no Total Residual Chlorine or *E. coli* Limits with Sanitary Component

Permit No.	Facility Name	Receiving Waters
IN0021407	Woodburn Municipal STP	Maumee River

Facilities with no Total Residual Chlorine or *E. coli* Limits with No Sanitary Component

Permit No.	Facility Name	Receiving Waters
IN0000485	Norfolk and Western Railway Co	Trier Ditch
IN0000507	BF Goodrich Tire Manufacturing	Maumee River
ING490049	Hanson Aggregates, Midwest W.	Carson Drain
INM020346	New Haven CSS	N/A

Appendix 6: Combined Sewer Overflows in Maumee River Watershed

City of Fort Wayne

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
039	N06-022, 120’ North of Hanna St. and Berry St.	Maumee River
048	O10-252, 350’ West of Edgewater and Garfield	Maumee River
050	O10-277, 100’ North of Coombs St. and Herbert St.	Maumee River
055	P06-192, 430’ North of N. Anthony Blvd. and Wayne St.	Maumee River
057	P10-121, Stormwater Liftstation Wet Well	Maumee River
058	O06-34, 390’ Northwest of Edsall Ave. and Dwenger Ave.	Maumee River
060	R06-31, 670’ Northeast of Greenwalt Ave. and Maumee River	Unnamed Ditch to Maumee River
061	R14-137, 200’ West of Lavern Ave. and State Blvd.	Baldwin Ditch
062	R14-138, 200’ West of Lavern Ave. and State Blvd	Baldwin Ditch
064	S02-35. 610’ Southeast of Coliseum Blvd. S.	Unnamed Ditch to Maumee River

City of New Haven

CSO DISCHARGE POINT

Outfall #	Location	Receiving Waters
001	Near the Town’s Abandoned Wastewater Treatment Facility	Martin Drain
002	East side of Bench Mark 761 and the NandW Railroad Crossing	Martin Drain
003	N.E. of the intersection of West Street and South Street	Trier Ditch
004	Just North of the Crossing of Brookwood Drive and Trier Ditch	Trier Ditch

Appendix 7: Confined Feeding Operations and Concentrated Animal Feeding Operations in the Maumee River Watershed

Log #	Name	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Beef	Dairy	Dairy Calves	Ducks
23	Bruce Brenneke						370	60	
470	Harmony Farms			385					
571	Ned S. Byer		500	740	156				
573	Richard and David Hartmann			200					
575	Schlatter Stock Farms			500		400			
708	Mark S. Rekeweg			1,600					
952	Steve R. Schneider		620	300	152				
1200	Victor Eicher			500					
1222	Lake Farms			270					
2219	Flat Rock LLC		1,200	160	477				
2485	Richard and David Hartmann		1,000	1,490					
2991	Richard Rodenbeck		300	300	30				
3967	Michael J. May		200	225	86				
4001	Schlatter Stock Farm		125	1,550					
4820	Brinkman and Son Farm		100	500	82				
4840	Jim Kline		140	600	120				
6098	Jurgielewicz Duck Farm	ING806098							5,000
6195	Schlatter Stock Farms-Ward Rd			4,000					
6287	Mark and Brenda Rekeweg	ING806287	1,100	4,600					

Appendix 8: *E. coli* Reductions for the Maumee River Watershed

Maumee River									
	High	Moist	Mid-Range	Dry	Low	Site Geometric Mean	Overall Site Reductions	Area	
MAU-ANT	364.3	277.8	133.4	350.7	182.8	244	48.8	1,900	Maumee River -- Anthony Boulevard
MAU-LAN	297.5	263.4	166.6	393.2	211.1	255.3	51	1,967	Maumee River -- Landin Road
M-129	2600	993	159.4	387.5	252.3	525.9	76.2	1,967	Maumee River -- Fixed Station @ Landin Road
M-114	1567.4	911.6	369.9	253	110.4	430.3	70.9	2,050	Maumee River -- Fixed Station near Woodburn

Appendix 9: NPDES Permits in the St. Marys River Watershed

Facilities with *E. coli* Limits

Permit No.	Facility Name	Receiving Waters	Sub-Watershed
IN0021369	Berne STP	Wabash River	Blue Creek
IN0048151	Monroe Water Department	Yellow Creek	Yellow Creek
IN0058980	Bing-Lear Manufacturing Group, Berne	Habegger Ditch	Blue Creek
ING490084	Meshberger Bros Stone Plt #2	Blue Creek	Blue Creek
INP000069	Bing-Lear Manufacturing Group, Berne	Berne STP	Blue Creek

Appendix 10: Combined Sewer Overflows in St. Marys River Watershed

City of Berne

CSO Outfall #	Location	Receiving Waters
003	Welty Street and Compromise	Sprunger Ditch to Habegger Ditch
004	Main and Ruesser	Sprunger Ditch to Habegger Ditch

SSO Outfall #	Location	Receiving Waters
006	North End of East Water Street	Sprunger Ditch to Habegger Ditch

Appendix 11: Confined Feeding Operations and Concentrated Animal Feeding Operations in the Blue Creek/Habegger Ditch and Yellow Creek Watersheds

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Layers	Pullets	Broilers
65	Grace Farms	Blue Creek					60,000		
91	Carl Lotter	Yellow Creek		4,200					
123	Jim Fiechter	Blue Creek			920				
469	Jerry Lee Graber	Blue Creek		320	920				6,000
590	Ted Liechty	Blue Creek	ING800590				119,000		
635	Charles W Hill	Blue Creek			1,400				
638	Troyer Swine	Blue Creek			1,000				
902	David Hill	Blue Creek			625				
933	SDD Hogs, Inc	Blue Creek	ING800933		3,600				
944	ISCF Brothers Pork	Blue Creek			2,000				
971	Emanuel Schmidt	Blue Creek		500	300				
1306	Triple G Ranch	Blue Creek		500	800	166			
1886	Alvin Schwartz	Yellow Creek			1,950				
2548	Daniels J Michaels	Yellow Creek		510	255		8,200		
3668	David H LaFontaine	Yellow Creek					81,000		
3737	Stan Von Gunten	Blue Creek						33,600	
3985	Double G Farms	Blue Creek		200	580	99			
4038	County Line Swine	Blue Creek		900	600	415			

Log #	Name	St. Marys River Watershed	NPDES #	Nursery Pigs	Growers/ Finishers	Sows/ Boars	Dairy	Dairy Calves	Layers	Ducks
4181	Victor Steiner	Yellow Creek		240	506	172				
4307	Stoller Poultry, Inc	Blue Creek			1,920				100,410	
4421	Kaehr Ag Inc	Blue Creek		460	600	204				
4637	Rigger Pork Inc Masterpork	Blue Creek		800	120	619				
5007	Progress Pork	Blue Creek			2,000					
6000	Irish Acres Dairy	Blue Creek	ING806000				1,552	360		
6020	SandG Poultry	Blue Creek	ING806020						132,000	
6049	Tri Oak Farms, Inc	Blue Creek		320	500	134				
6175	Jerry Lambright	Blue Creek								3,000

Appendix 12: Load Reductions for the Blue Creek/Habegger Ditch and Yellow Creek Watersheds

Stream Name	Drainage Area	Site #	NO2+NO3 mg/L	% Reduction Needed	Phosphorus mg/L	% Reduction Needed	TSS mg/L	% Reduction Needed
Habegger Ditch	8.4 sq mi	LES040-0099	20.10	55.25%	0.436	36.19%	53.01	48.41%
Martz Creek	9.8 sq mi	LES040-0040	10.92	13.42%	0.320	11.25%	35.00	19.29%
Yellow Creek	24.5 sq mi	LES040-0038	10.92	13.42%	0.320	11.25%	35.00	19.29%
All Blue Creek Values	79.6 sq mi	-0009,-0011,-0066	11.70	19.53%	0.391	28.27%	44.48	37.55%
Unnamed Trib	2.8 sq mi	LES050-0020	no exceedances		0.441	36.97%	55.74	51.18%
St. Marys Watershed	1900 sq mi		10.92	13.42%	0.320	11.25%	35.00	19.29%

Attachment A

E. coli Data for St. Marys River Watershed TMDL

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Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	5/31/2000		E.coli	100		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	6/19/2000		E.coli	800		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	7/20/2000		E.coli	11200		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	8/18/2000		E.coli	9600		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	9/21/2000		E.coli	1400		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	10/31/2000		E.coli	100		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	4/19/2001		E.coli	500		Adams		
1	Adams County SWCD	319 grant	Blue Creek		on 400W just south of 100 S	#1	5/17/2001		E.coli	1000		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	5/31/2000		E.coli	900		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	6/19/2000		E.coli	1000		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	7/20/2000		E.coli	800		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	8/18/2000		E.coli	27200		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	9/21/2000		E.coli	5750		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	10/31/2000		E.coli	250		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	4/19/2001		E.coli	500		Adams		
2	Adams County SWCD	319 grant	Blue Creek		on 300 S, just E. 000	#2	5/17/2001		E.coli	500		Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22010	3/9/2004	Duplicate	E. Coli	105	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22026	3/23/2004	Normal	E. Coli	410.6	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22043	4/20/2004	Normal	E. Coli	1732.9	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22061	5/6/2004	Normal	E. Coli	126.7	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22077	5/19/2004	Normal	E. Coli	17329	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22094	6/2/2004	Normal	E. Coli	14136	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22112	6/16/2004	Normal	E. Coli	1986.3	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22128	6/29/2004	Normal	E. Coli	84.7	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22145	7/13/2004	Normal	E. Coli	>2420	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22163	7/27/2004	Normal	E. Coli	>2420	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21890	4/6/2004	Normal	E. Coli	261.3	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22179	8/10/2004	Normal	E. Coli	>2420	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22197	8/25/2004	Normal	E. Coli	1986.3	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22214	9/8/2004	Normal	E. Coli	8164	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22230	9/21/2004	Normal	E. Coli	248.1	MPN/100mL	Adams		
4	IDEM	2004 St Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA22248	10/5/2004	Normal	E. Coli	191.8	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22008	3/9/2004	Normal	E. Coli	980.4 (Q)	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22024	3/23/2004	Normal	E. Coli	727	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21887	4/6/2004	Normal	E. Coli	579.4	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22041	4/20/2004	Normal	E. Coli	727	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22059	5/6/2004	Normal	E. Coli	686.7 (Q)	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22075	5/19/2004	Normal	E. Coli	> 24200		Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22092	6/2/2004	Normal	E. Coli	17329	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22110	6/16/2004	Normal	E. Coli	2224	MPN/100mL	Adams		

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22126	6/29/2004	Normal	E. Coli	547.5	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22143	7/13/2004	Normal	E. Coli	> 2420		Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22161	7/27/2004	Normal	E. Coli	> 2420		Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22177	8/10/2004	Normal	E. Coli	1553.1 (fB)	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22181	8/10/2004	Duplicate	E. Coli	1046.2 (fBJ)	MPN/100mL	Adams	Estimated	
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22195	8/25/2004	Normal	E. Coli	325.5	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22212	9/8/2004	Normal	E. Coli	14136	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22228	9/21/2004	Normal	E. Coli	204.6	MPN/100mL	Adams		
5	IDEM	2004 St Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA22246	10/5/2004	Normal	E. Coli	1986.3	MPN/100mL	Adams		
6	Adams County SWCD	319 grant	Little Blue Creek		State Line (700E) N of 900S	#3	5/31/2000		E.coli	400		Adams		
6	Adams County SWCD	319 grant	Little Blue Creek		State Line (700E) N of 900S	#3	6/19/2000		E.coli	600		Adams		
6	Adams County SWCD	319 grant	Little Blue Creek		State Line (700E) N of 900S	#3	8/18/2000		E.coli	12200		Adams		
6	Adams County SWCD	319 grant	Little Blue Creek		State Line (700E) N of 900S	#3	10/31/2000		E.coli	1000		Adams		
6	Adams County SWCD	319 grant	Little Blue Creek		State Line (700E) N of 900S	#3	4/19/2001		E.coli	0		Adams		
6	Adams County SWCD	319 grant	Little Blue Creek		State Line (700E) N of 900S	#3	5/17/2001		E.coli	500		Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22007	3/9/2004	Normal	E. Coli	686.7 (Q)	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22023	3/23/2004	Normal	E. Coli	116.9	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA21886	4/6/2004	Normal	E. Coli	70.3	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22040	4/20/2004	Normal	E. Coli	146.7	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22058	5/6/2004	Normal	E. Coli	307.6 (Q)	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22074	5/19/2004	Normal	E. Coli	24192	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22091	6/2/2004	Normal	E. Coli	5172	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22109	6/16/2004	Normal	E. Coli	261.3	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22125	6/29/2004	Normal	E. Coli	613.1	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22142	7/13/2004	Normal	E. Coli	> 2420		Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	Straight Pipe CR 400 S	AA23339	7/13/2004	Normal	E. Coli	17329	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22160	7/27/2004	Normal	E. Coli	24192	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22176	8/10/2004	Normal	E. Coli	1553.1 (fB)	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22194	8/25/2004	Normal	E. Coli	1203.3	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22211	9/8/2004	Normal	E. Coli	770.1	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22227	9/21/2004	Normal	E. Coli	866.4	MPN/100mL	Adams		
7	IDEM	2004 St Marys Watershed	Little Blue Cr	LES040-0010	CR 400 S (17 S Rd), West of CR 600 E	AA22245	10/5/2004	Normal	E. Coli	100.8	MPN/100mL	Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	5/31/2000		E.coli	1300		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	6/19/2000		E.coli	1000		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	7/20/2000		E.coli	2800		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	8/18/2000		E.coli	11000		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	9/21/2000		E.coli	3950		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	10/31/2000		E.coli	400		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	4/19/2001		E.coli	500		Adams		
7	Adams County SWCD	319 grant	Little Blue Creek	LES040-0010	on 400 S just west of 600 E	#4	5/17/2001		E.coli	1000		Adams		

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22004	3/9/2004	Normal	E. Coli	920.8	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22022	3/23/2004	Normal	E. Coli	238.2	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22039	4/20/2004	Normal	E. Coli	178.5	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22057	5/5/2004	Normal	E. Coli	648.8	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22073	5/19/2004	Normal	E. Coli	>24200	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22079	5/19/2004	Duplicate	E. Coli	>24200	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22090	6/2/2004	Normal	E. Coli	3654	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22096	6/2/2004	Duplicate	E. Coli	4352	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22108	6/16/2004	Normal	E. Coli	1986.3	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22124	6/29/2004	Normal	E. Coli	648.8	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22141	7/13/2004	Normal	E. Coli	1553.1	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22159	7/27/2004	Normal	E. Coli	>2420	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA21885	4/6/2004	Normal	E. Coli	410.6	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22175	8/10/2004	Normal	E. Coli	>2420	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22193	8/25/2004	Normal	E. Coli	1046.2	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22210	9/8/2004	Normal	E. Coli	1725	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22226	9/21/2004	Normal	E. Coli	613.1	MPN/100mL	Adams		
8	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0011	Salem Rd, S of CR 300 S	AA22244	10/5/2004	Normal	E. Coli	218.7	MPN/100mL	Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	5/31/2000		E.coli	1200		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	6/19/2000		E.coli	800		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	7/20/2000		E.coli	1200		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	8/18/2000		E.coli	58400		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	9/21/2000		E.coli	23200		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	10/31/2000		E.coli	150		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	4/19/2001		E.coli	0		Adams		
9	Adams County SWCD	319 grant	Blue Creek		on 500E just S. of 300S	#5	5/17/2001		E.coli	9000		Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22009	3/9/2004	Normal	E. Coli	325.5 (Q)	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22025	3/23/2004	Normal	E. Coli	547.5	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA21888	4/6/2004	Normal	E. Coli	1553.1	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22042	4/20/2004	Normal	E. Coli	325.5	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22060	5/6/2004	Normal	E. Coli	461.1 (Q)	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22076	5/19/2004	Normal	E. Coli	> 24200		Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22093	6/2/2004	Normal	E. Coli	1986.3	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22111	6/16/2004	Normal	E. Coli	5172	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22127	6/29/2004	Normal	E. Coli	547.5	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22144	7/13/2004	Normal	E. Coli	70.8	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22162	7/27/2004	Normal	E. Coli	> 2420		Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22178	8/10/2004	Normal	E. Coli	1732.9 (fB)	MPN/100mL	Adams		
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22196	8/25/2004	Normal	E. Coli	1299.7	MPN/100mL	Adams		

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22213	9/8/2004	Normal	E. Coli	2419.2	MPN/100mL	Adams			
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22229	9/21/2004	Normal	E. Coli	727	MPN/100mL	Adams			
10	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0066	CR 300 S, E of CR 000	AA22247	10/5/2004	Normal	E. Coli	34.5	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22005	3/9/2004	Normal	E. Coli	435.2 (Q)	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22021	3/23/2004	Normal	E. Coli	547.5	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA21884	4/6/2004	Normal	E. Coli	75.9	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22038	4/20/2004	Normal	E. Coli	166.4	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22055	5/6/2004	Normal	E. Coli	410.6 (Q)	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22072	5/19/2004	Normal	E. Coli	> 24200		Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22089	6/2/2004	Normal	E. Coli	2602	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22107	6/16/2004	Normal	E. Coli	2419.2	MPN/100mL	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22123	6/29/2004	Normal	E. Coli	613.1	MPN/100mL	Adams			
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		7/8/2004	Normal	E. Coli	630	Colonies/100ml	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22140	7/13/2004	Normal	E. Coli	1203.3	MPN/100mL	Adams			
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		7/22/2004	Normal	E. Coli	39776	Colonies/100ml	Adams			
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22158	7/27/2004	Normal	E. Coli	> 2420		Adams		2486	June 29-July 27
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		8/5/2004	Normal	E. Coli	12976	Colonies/100ml	Adams		6877	July 8-August 5
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22174	8/10/2004	Normal	E. Coli	1119.9 (fBJ)	MPN/100mL	Adams	Estimated	22719	July 13- August 10
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		8/19/2004	Normal	E. Coli	>48400	Colonies/100ml	Adams		22719	July 22- August 19
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22192	8/25/2004	Normal	E. Coli	866.4	MPN/100mL	Adams		12976	July 27- August 25
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		9/2/2004	Normal	E. Coli	14545	Colonies/100ml	Adams		13738	August 5 - Sept. 2
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22208	9/8/2004	Normal	E. Coli	1354	MPN/100mL	Adams		14545	Aug 10 - Sept 8
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		9/16/2004	Normal	E. Coli	322	Colonies/100ml	Adams		2164	Aug 19 - Sept 16
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22225	9/21/2004	Duplicate	E. Coli	290.9	MPN/100mL	Adams		1109	Aug 25 - Sept 21
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		9/30/2004	Normal	E. Coli	320	Colonies/100ml	Adams		813	Sept 2 - Sept 30
11	IDEM	2004 St Marys Watershed	Blue Cr	LES040-0009	SR 124, East of SR 101	AA22243	10/5/2004	Duplicate	E. Coli	178.5	MPN/100mL	Adams		270	Sept 8 - October 5
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		10/14/2004	Normal	E. Coli	264	Colonies/100ml	Adams		269	Sept 16 - Oct 14
11	Ft. Wayne		Blue Cr	LES040-0009	SR 124, East of SR 101		10/28/2004	Normal	E. Coli	1146	Colonies/100ml	Adams			
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22003	3/9/2004	Normal	E. Coli	75.4 (Q)	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22020	3/23/2004	Normal	E. Coli	260.2	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA21883	4/6/2004	Normal	E. Coli	47.9	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22037	4/20/2004	Normal	E. Coli	55.4	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22054	5/6/2004	Normal	E. Coli	461.1 (Q)	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22071	5/19/2004	Normal	E. Coli	5794	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22088	6/2/2004	Normal	E. Coli	980.4	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22106	6/16/2004	Normal	E. Coli	150	MPN/100mL				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22122	6/29/2004	Normal	E. Coli	231	MPN/100mL				
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		7/8/2004	Normal	E. Coli	1100	Colonies/100ml				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22139	7/13/2004	Normal	E. Coli	344.8	MPN/100mL				
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		7/22/2004	Normal	E. Coli	5226	Colonies/100ml				

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22156	7/27/2004	Normal	E. Coli	1119.9	MPN/100mL			1099	June 29 - July 27
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		8/5/2004	Normal	E. Coli	6152	Colonies/100ml			3282	July 8 - Aug 5
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22173	8/9/2004	Normal	E. Coli	365.4 (Q)	MPN/100mL				
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		8/19/2004	Normal	E. Coli	12260	Colonies/100ml				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22191	8/24/2004	Normal	E. Coli	648.8	MPN/100mL				
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		9/2/2004	Normal	E. Coli	595	Colonies/100ml				
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22207	9/7/2004	Normal	E. Coli	1046.2	MPN/100mL			2701	Aug 8 - Sept 7
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		9/16/2004	Normal	E. Coli	144	Colonies/100ml			1017	Aug 19 - Sept 16
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22224	9/21/2004	Normal	E. Coli	148.3	MPN/100mL			233	Aug 24 - Aug 21
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		9/30/2004	Normal	E. Coli	3978	Colonies/100ml			474	Sept 2 - Sept 30
12	IDEM	2004 St Marys Watershed	St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH	AA22241	10/5/2004	Normal	E. Coli	98.8	MPN/100mL			303	Sept 7 - Oct 5
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		10/14/2004	Normal	E. Coli	394	Colonies/100ml			319	Sept 16 - Oct 14
12	Ft. Wayne		St. Mary's River (in Ohio)	UNK000-0007	Ohio SR 81, Willshire, OH		10/28/2004	Normal	E. Coli	196	Colonies/100ml				
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	5/31/2000		E.coli	400		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	6/19/2000		E.coli	400		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	7/20/2000		E.coli	3200		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	8/18/2000		E.coli	199		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	9/21/2000		E.coli	650		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	10/31/2000		E.coli	100		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	4/19/2001		E.coli	500		Adams			
12	Adams County SWCD	319 grant	St. Marys River	UNK000-0007	Hwy 81, Willshire OH	#7	5/17/2001		E.coli	2500		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	5/31/2000		E.coli	1000		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	6/19/2000		E.coli	1800		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	7/20/2000		E.coli	2400		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	8/18/2000		E.coli	28000		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	9/21/2000		E.coli	1700		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	10/31/2000		E.coli	150		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	4/19/2001		E.coli	1000		Adams			
13	Adams County SWCD	319 grant	Blue Creek		on 50N just E. of 600 E	#6	5/17/2001		E.coli	1500		Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22002	3/9/2004	Normal	E. Coli	151.5 (Q)	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22019	3/23/2004	Normal	E. Coli	148.3	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA21882	4/6/2004	Normal	E. Coli	298.7	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22036	4/20/2004	Normal	E. Coli	153.9	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22053	5/6/2004	Normal	E. Coli	727 (Q)	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22070	5/19/2004	Normal	E. Coli	> 24200	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22087	6/2/2004	Normal	E. Coli	1299.7	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22105	6/16/2004	Normal	E. Coli	261.3	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22121	6/29/2004	Normal	E. Coli	547.5	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22138	7/13/2004	Normal	E. Coli	579.4	MPN/100mL	Adams			
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22155	7/27/2004	Normal	E. Coli	1299.7	MPN/100mL	Adams			

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22172	8/9/2004	Normal	E. Coli	816.4 (Q)	MPN/100mL	Adams		
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22190	8/24/2004	Normal	E. Coli	920.8	MPN/100mL	Adams		
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22206	9/7/2004	Normal	E. Coli	2419.2	MPN/100mL	Adams		
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22223	9/21/2004	Normal	E. Coli	201.4	MPN/100mL	Adams		
14	IDEM	2004 St Marys Watershed	St. Mary's River	LES040-0007	SR 101 Bridge, North of Pleasant Mills	AA22240	10/5/2004	Normal	E. Coli	365.4	MPN/100mL	Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	5/31/2000		E.coli	100		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	6/19/2000		E.coli	1400		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	7/20/2000		E.coli	1200		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	8/18/2000		E.coli	13600		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	9/21/2000		E.coli	1500		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	10/31/2000		E.coli	50		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	4/19/2001		E.coli	500		Adams		
14	Adams County SWCD	319 grant	St. Marys River	LES040-0007	Pleasant Mills St/Hwy 101	#8	5/17/2001		E.coli	4500		Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22011	3/9/2004	Duplicate	E. Coli	>2419.2	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22028	3/22/2004	Normal	E. Coli	37.9	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA21891	4/5/2004	Normal	E. Coli	142.1	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22044	4/19/2004	Normal	E. Coli	547.5	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22062	5/5/2004	Normal	E. Coli	193.5	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22078	5/18/2004	Normal	E. Coli	24192	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22095	6/1/2004	Normal	E. Coli	2419.2	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22113	6/15/2004	Normal	E. Coli	920.8	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22129	6/28/2004	Normal	E. Coli	1732.9	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22146	7/12/2004	Normal	E. Coli	648.8	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22164	7/26/2004	Normal	E. Coli	6131	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22180	8/9/2004	Normal	E. Coli	461.1	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22198	8/24/2004	Normal	E. Coli	325.5	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22215	9/7/2004	Normal	E. Coli	6131	MPN/100mL	Adams		
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22231	9/20/2004	Normal	E. Coli	98.1 (QJ)	MPN/100mL	Adams	Estimated	
15	IDEM	2004 St Marys Watershed	Martz Creek	LES040-0040	CR 200 N, W of US 33	AA22249	10/4/2004	Normal	E. Coli	43.5	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22001	3/9/2004	Normal	E. Coli	866.4 (Q)	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22018	3/22/2004	Normal	E. Coli	19.9	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA21881	4/5/2004	Normal	E. Coli	49.6	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22035	4/19/2004	Normal	E. Coli	648.8	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22052	5/5/2004	Normal	E. Coli	116 (Q)	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22069	5/18/2004	Normal	E. Coli	5172	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22086	6/1/2004	Normal	E. Coli	866.4	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22104	6/15/2004	Normal	E. Coli	980.4	MPN/100mL	Adams		
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22120	6/28/2004	Normal	E. Coli	866.4	MPN/100mL	Adams		
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		7/8/2004	Normal	E. Coli	1100	Colonies/100ml	Adams		

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22137	7/12/2004	Normal	E. Coli	648.8	MPN/100mL	Adams			
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		7/22/2004	Normal	E. Coli	22398	Colonies/100ml	Adams			
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22154	7/26/2004	Normal	E. Coli	1413.6	MPN/100mL	Adams		2774	June 28-July 26
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		8/5/2004	Normal	E. Coli	>48392	Colonies/100ml	Adams		4964	July 8-August 5
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22171	8/9/2004	Normal	E. Coli	920.8 (Q)	MPN/100mL	Adams		22398	July 12- Aug 9
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		8/19/2004	Normal	E. Coli	39720	Colonies/100ml	Adams		29827	July 22- August 19
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22189	8/24/2004	Normal	E. Coli	980.4	MPN/100mL	Adams		39720	July 26 - Aug 24
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		9/2/2004	Normal	E. Coli	398	Colonies/100ml	Adams		3976	Aug 5 - Sept 2
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22205	9/7/2004	Normal	E. Coli	17329	MPN/100mL	Adams		3976	Aug 9 - Sept 7
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		9/16/2004	Normal	E. Coli	728	Colonies/100ml	Adams		2258	Aug 19 - Sept 16
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22222	9/20/2004	Normal	E. Coli	36.7 (QJ)	MPN/100mL	Adams	Estimated	538	Aug 24 - Sept 20
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		9/30/2004	Normal	E. Coli	322	Colonies/100ml	Adams		454	Sept 2 - Sept 30
16	IDEM	2004 St Marys Watershed	Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd	AA22239	10/4/2004	Normal	E. Coli	1203.3	MPN/100mL	Adams		656	Sept 7 - Oct 4
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		10/14/2004	Normal	E. Coli	3570	Colonies/100ml	Adams		1002	Sept 16 - Oct 14
16	Ft. Wayne		Yellow Cr.	LES040-0038	CR 250 N, East of Salem Rd		10/28/2004	Normal	E. Coli	506	Colonies/100ml	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22000	3/9/2004	Normal	E. Coli	435.2 (Q)	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22017	3/22/2004	Normal	E. Coli	36.4	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA21880	4/5/2004	Normal	E. Coli	11	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22034	4/19/2004	Normal	E. Coli	93.3	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22045	4/19/2004	Duplicate	E. Coli	118.7	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22051	5/5/2004	Normal	E. Coli	214.3 (Q)	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22068	5/18/2004	Normal	E. Coli	> 2420		Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22085	6/1/2004	Normal	E. Coli	1119.9	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22103	6/15/2004	Normal	E. Coli	435.2	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22119	6/28/2004	Normal	E. Coli	1553.1	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22136	7/12/2004	Normal	E. Coli	461.1	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22153	7/26/2004	Normal	E. Coli	579.4	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22170	8/9/2004	Normal	E. Coli	307.6 (Q)	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22188	8/24/2004	Normal	E. Coli	461.1	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22204	9/7/2004	Normal	E. Coli	11199	MPN/100mL	Adams			
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22221	9/20/2004	Normal	E. Coli	120.3 (QJ)	MPN/100mL	Adams	Estimated		
17	IDEM	2004 St Marys Watershed	Borum Run	LES040-0097	Mercer Rd in Decatur,then Salem Rd, At lift station	AA22238	10/4/2004	Normal	E. Coli	19.9	MPN/100mL	Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	5/31/2000		E.coli	600		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	6/19/2000		E.coli	1800		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	7/20/2000		E.coli	800		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	8/18/2000		E.coli	1000		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	9/21/2000		E.coli	1450		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	10/31/2000		E.coli	100		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	4/19/2001		E.coli	1500		Adams			
18	Adams County SWCD	319 grant	St. Marys River		Decatur, US HWY 224E	#9	5/17/2001		E.coli	4000		Adams			

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	5/31/2000		E.coli	200		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	6/19/2000		E.coli	4400		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	7/20/2000		E.coli	2000		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	8/18/2000		E.coli	2800		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	9/21/2000		E.coli	4000		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	10/31/2000		E.coli	1650		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	4/19/2001		E.coli	1000		Adams			
19	Adams County SWCD	319 grant	St. Marys River		Decatur, US Hwy 33-27	#10	5/17/2001		E.coli	24000		Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA21999	3/9/2004	Normal	E. Coli	166.9 (Q)	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22016	3/22/2004	Normal	E. Coli	23.3	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA21879	4/5/2004	Normal	E. Coli	58.3	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22033	4/19/2004	Normal	E. Coli	127.4	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22050	5/5/2004	Normal	E. Coli	222.4 (Q)	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22067	5/18/2004	Normal	E. Coli	> 2420		Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22084	6/1/2004	Normal	E. Coli	1986.3	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22102	6/15/2004	Normal	E. Coli	816.4	MPN/100mL	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22118	6/28/2004	Normal	E. Coli	980.4	MPN/100mL	Adams			
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		7/8/2004	Normal	E. Coli	630	Colonies/100ml	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22135	7/12/2004	Normal	E. Coli	365.4	MPN/100mL	Adams			
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		7/22/2004	Normal	E. Coli	39726	Colonies/100ml	Adams			
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22152	7/26/2004	Normal	E. Coli	1732.9	MPN/100mL	Adams		2906	June 28-July 26
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		8/5/2004	Normal	E. Coli	20924	Colonies/100ml	Adams		8060	July 8-August 5
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22169	8/9/2004	Normal	E. Coli	980.4 (Q)	MPN/100mL	Adams		28831	July 12- Aug 9
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		8/19/2004	Normal	E. Coli	39720	Colonies/100ml	Adams		32081	July 22- August 19
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22186	8/24/2004	Normal	E. Coli	686.7	MPN/100mL	Adams		28829	July 26 - Aug 24
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		9/2/2004	Normal	E. Coli	244	Colonies/100ml	Adams		5875	Aug 5 - Sept 2
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22203	9/7/2004	Normal	E. Coli	6488	MPN/100mL	Adams		3113	Aug 9 - Sept 7
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		9/16/2004	Normal	E. Coli	40	Colonies/100ml	Adams		729	Aug 19 - Sept 16
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22220	9/20/2004	Normal	E. Coli	155.1 (QJ)	MPN/100mL	Adams	Estimated	99	Aug 24 - Sept 20
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		9/30/2004	Normal	E. Coli	126	Colonies/100ml	Adams		107	Sept 2 - Sept 30
20	IDEM	2004 St Marys Watershed	Holthouse Ditch	LES050-0008	CR 200 W, South of US 224	AA22237	10/4/2004	Normal	E. Coli	24.3	MPN/100mL	Adams		50	Sept 7 - Oct 4
20	Ft. Wayne		Holthouse Ditch	LES050-0008	CR 200 W, South of US 224		10/28/2004	Normal	E. Coli	378	Colonies/100ml	Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	5/31/2000		E.coli	500		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	6/19/2000		E.coli	3000		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	7/20/2000		E.coli	1600		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	8/18/2000		E.coli	4800		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	9/21/2000		E.coli	15400		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	10/31/2000		E.coli	150		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	4/19/2001		E.coli	500		Adams			
21	Adams County SWCD	319 grant	St. Marys River		CR 900N, West of 27 & 33	#11	5/17/2001		E.coli	3500		Adams			

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA21998	3/9/2004	Normal	E. Coli	435.2 (Q)	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22015	3/22/2004	Normal	E. Coli	34.1	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA21878	4/5/2004	Normal	E. Coli	29.4	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22032	4/19/2004	Normal	E. Coli	133.4	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22049	5/6/2004	Normal	E. Coli	816.4 (Q)	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22066	5/18/2004	Normal	E. Coli	235.9	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22083	6/1/2004	Normal	E. Coli	866.4	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22100	6/15/2004	Normal	E. Coli	1203.3	MPN/100mL	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22117	6/28/2004	Duplicate	E. Coli	2419.2	MPN/100mL	Adams			
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		7/8/2004	Normal	E. Coli	1610	Colonies/100ml	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22134	7/12/2004	Normal	E. Coli	1119.9	MPN/100mL	Adams			
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		7/22/2004	Normal	E. Coli	39726	Colonies/100ml	Adams			
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22151	7/26/2004	Normal	E. Coli	866.4	MPN/100mL	Adams		5369	June 28-July 26
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		8/5/2004	Normal	E. Coli	6510	Colonies/100ml	Adams		7467	July 8-August 5
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22168	8/9/2004	Normal	E. Coli	172.3 (Q)	MPN/100mL	Adams		16082	July 12- Aug 9
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		8/19/2004	Normal	E. Coli	>48400	Colonies/100ml	Adams		16082	July 22- August 19
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22185	8/24/2004	Normal	E. Coli	290.9	MPN/100mL	Adams		6510	July 26 - Aug 24
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		9/2/2004	Normal	E. Coli	100	Colonies/100ml	Adams		807	Aug 5 - Sept 2
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22202	9/7/2004	Normal	E. Coli	4106	MPN/100mL	Adams		100	Aug 9 - Sept 7
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		9/16/2004	Normal	E. Coli	378	Colonies/100ml	Adams		194	Aug 19 - Sept 16
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22219	9/20/2004	Normal	E. Coli	18.7 (QJ)	MPN/100mL	Adams	Estimated	194	Aug 24 - Sept 20
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		9/30/2004	Normal	E. Coli	244	Colonies/100ml	Adams		210	Sept 2 - Sept 30
22	IDEM	2004 St Marys Watershed	Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W	AA22236	10/4/2004	Normal	E. Coli	152.9	MPN/100mL	Adams		242	Sept 7 - Oct 4
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		10/14/2004	Normal	E. Coli	406	Colonies/100ml	Adams		275	Sept 16 - Oct 14
22	Ft. Wayne		Nickelsen Cr	LES050-0015	CR 1100 N, West of CR 550 W		10/28/2004	Normal	E. Coli	406	Colonies/100ml	Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	5/31/2000		E.coli	100		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	6/19/2000		E.coli	2600		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	7/20/2000		E.coli	600		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	8/18/2000		E.coli	200		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	9/21/2000		E.coli	1350		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	10/31/2000		E.coli	750		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	4/19/2001		E.coli	1500		Adams			
23	Adams County SWCD	319 grant	St. Marys River		CR 1200 N, Adams/Allen Co Line	#12	5/17/2001		E.coli	5000		Adams			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA21997	3/9/2004	Normal	E. Coli	2419.2 (Q)	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22014	3/22/2004	Normal	E. Coli	33.2	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA21877	4/5/2004	Normal	E. Coli	9.6	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22031	4/19/2004	Normal	E. Coli	35	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22048	5/5/2004	Normal	E. Coli	648.8 (Q)	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22065	5/18/2004	Normal	E. Coli	> 2420		Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22082	6/1/2004	Normal	E. Coli	3448	MPN/100mL	Allen			

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22099	6/15/2004	Normal	E. Coli	3448	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22116	6/28/2004	Normal	E. Coli	1553.1	MPN/100mL	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22133	7/12/2004	Normal	E. Coli	360.9	MPN/100mL	Allen			
24	Ft. Wayne		Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33		7/22/2004	Normal	E. Coli	12976	Colonies/100ml	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22150	7/26/2004	Normal	E. Coli	> 2420		Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22184	8/2/2004	Normal	E. Coli	1553.1	MPN/100mL	Allen			
24	Ft. Wayne		Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33		8/5/2004	Normal	E. Coli	6896	Colonies/100ml	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22167	8/9/2004	Normal	E. Coli	275.5 (Q)	MPN/100mL	Allen			
24	Ft. Wayne		Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33		8/19/2004	Normal	E. Coli	>48400	Colonies/100ml	Allen			
24	Ft. Wayne		Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33		9/2/2004	Normal	E. Coli	1360	Colonies/100ml	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22201	9/7/2004	Normal	E. Coli	> 24200	MPN/100mL	Allen			
24	Ft. Wayne		Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33		9/16/2004	Normal	E. Coli	1076	Colonies/100ml	Allen			
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22218	9/20/2004	Normal	E. Coli	648.8 (QJ)	MPN/100mL	Allen	Estimated		
24	Ft. Wayne		Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33		9/30/2004	Normal	E. Coli	446	Colonies/100ml	Allen		867	Sept 2 - Sept 30
24	IDEM	2004 St Marys Watershed	Unnamed tributary St Marys R	LES050-0020	Barkley Rd, E of US 27/33	AA22235	10/4/2004	Normal	E. Coli	178.5	MPN/100mL	Allen		441	Sept 7 - Oct 4
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA21995	3/9/2004	Normal	E. Coli	343.6 (Q)	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22012	3/22/2004	Normal	E. Coli	1046.2	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA21875	4/5/2004	Normal	E. Coli	62.4	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22029	4/19/2004	Normal	E. Coli	30.5	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22046	5/5/2004	Normal	E. Coli	344.8 (Q)	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22063	5/18/2004	Normal	E. Coli	1119.9	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22080	6/1/2004	Normal	E. Coli	14136	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22097	6/15/2004	Normal	E. Coli	1119.9	MPN/100mL	Allen			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22114	6/28/2004	Normal	E. Coli	238.2	MPN/100mL	Allen			
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		7/8/2004	Normal	E. Coli	100	Colonies/100ml	Adams			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22131	7/12/2004	Normal	E. Coli	98.5	MPN/100mL	Allen			
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		7/22/2004	Normal	E. Coli	>48392	Colonies/100ml	Adams			
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22148	7/26/2004	Normal	E. Coli	1299.7	MPN/100mL	Allen		154	June 28-July 26
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		8/5/2004	Normal	E. Coli	11588	Colonies/100ml	Adams		1076	July 8-August 5
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22165	8/9/2004	Normal	E. Coli	980.4 (Q)	MPN/100mL	Allen		11588	July 12- Aug 9
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		8/19/2004	Normal	E. Coli	>48400	Colonies/100ml	Adams		11588	July 22- August 19
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22182	8/24/2004	Normal	E. Coli	866.4	MPN/100mL	Allen		11588	July 26 - Aug 24
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		9/2/2004	Normal	E. Coli	485	Colonies/100ml	Adams		2371	Aug 5 - Sept 2
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22199	9/7/2004	Normal	E. Coli	1664	MPN/100mL	Allen		485	Aug 9 - Sept 7
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		9/16/2004	Normal	E. Coli	220	Colonies/100ml	Adams		327	Aug 19 - Sept 16
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22216	9/20/2004	Normal	E. Coli	59.2 (QJ)	MPN/100mL	Allen	Estimated	327	Aug 24 - Sept 20
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		9/30/2004	Normal	E. Coli	216	Colonies/100ml	Adams		285	Sept 2 - Sept 30
25	IDEM	2004 St Marys Watershed	St. Mary's River	LES060-0006	Hoagland Rd. near Poe	AA22233	10/4/2004	Normal	E. Coli	139.6	MPN/100mL	Allen		188	Sept 7 - Oct 4
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		10/14/2004	Normal	E. Coli	<20	Colonies/100ml	Adams		188	Sept 16 - Oct 14

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
25	Ft. Wayne		St. Mary's River	LES060-0006	Hoagland Rd. near Poe		10/28/2004	Normal	E. Coli	104	Colonies/100ml	Adams			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/2/2001		E. coli	50		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/9/2001		E. coli	7400		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/16/2001		E. coli	550		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/23/2001		E. coli	90		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/30/2001		E. coli	18000		Allen		801	April 2 to April 30
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/7/2001		E. coli	250		Allen		1105	April 9 to May 7
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/14/2001		E. coli	51000		Allen		1626	April 16 to May 14
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/21/2001		E. coli	1200		Allen		1900	April 23 to May 21
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/28/2001		E. coli	700		Allen		2864	April 30 to May 28
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/4/2001		E. coli	3800		Allen		2099	May 7 to June 4
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/11/2001		E. coli	40000		Allen		5791	May 14 to June 11
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/18/2001		E. coli	3000		Allen		3286	May 21 to June 18
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/25/2001		E. coli	310		Allen		2507	May 28 to June 25
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/2/2001		E. coli	250000		Allen		8122	June 4 to July 2
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/9/2001		E. coli	800		Allen		5947	June 11 to July 9
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/16/2001		E. coli	90000		Allen		6994	June 18 to July 16
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/23/2001		E. coli	200000		Allen		16201	June 25 to July 23
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/30/2001		E. coli	300000		Allen		64074	July 2 to July 30
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/6/2001		E. coli	90000		Allen		52233	July 9 to Aug 6
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/13/2001		E. coli	110000		Allen		139832	July 16 to Aug 13
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/20/2001		E. coli	140000		Allen		152751	July 23 to Aug 20
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/27/2001		E. coli	100000		Allen		132977	July 30 to Aug 27
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/3/2001		E. coli	17000		Allen		74893	Aug 6 to Sept 3
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/10/2001		E. coli	34000		Allen		61644	Aug 13 to Sept 10
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/17/2001		E. coli	4900		Allen		33086	Aug 20 to Sept 17
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/24/2001		E. coli	86000		Allen		30014	Aug 27 to Sept 24
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/1/2001		E. coli	490000		Allen		41244	Sept 3 to Oct 1
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/8/2001		E. coli	76000		Allen		55646	Sept 10 to Oct 8
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/15/2001		E. coli	42000		Allen		58048	Sept 17 to Oct 15
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/22/2001		E. coli	200000		Allen		121887	Sept 24 to Oct 22
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/3/2002		E. coli	700		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/10/2002		E. coli	13,000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/17/2002		E. coli	8000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/24/2002		E. coli	113000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/1/2002		E. coli	20000		Allen		11047	April 3 to May 1
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/8/2002		E. coli	280000		Allen		36615	April 10 to May 8
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/15/2002		E. coli	7000		Allen		32351	April 17 to May 15
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/22/2002		E. coli	800000		Allen		81263	April 24 to May 22
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/29/2002		E. coli	36000		Allen		64645	May 1 to May 29

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/5/2002		E. coli	4400		Allen		47755	May 8 to June 5
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/12/2002		E. coli	23000		Allen		28969	May 15 to June 12
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/19/2002		E. coli	160000		Allen		54167	May 22 to June 19
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/26/2002		E. coli	14000		Allen		24118	May 29 to June 26
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/1/2002		E. coli	120000		Allen		30685	June 5 to July 1
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/10/2002		E. coli	560000		Allen		80885	June 12 to July 10
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/17/2002		E. coli	150000		Allen		117691	June 19 to July 17
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/24/2002		E. coli	79000		Allen		102198	June 26 to July 24
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/31/2002		E. coli	42000		Allen		127311	July 1 to July 31
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/7/2002		E. coli	380000		Allen		160320	July 10 to Aug 7
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/14/2002		E. coli	660000		Allen		165676	July 17 to Aug 14
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/21/2002		E. coli	480000		Allen		209069	July 24 to Aug 21
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/28/2002		E. coli	210000		Allen		254219	July 31 to Aug 28
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/4/2002		E. coli	410000		Allen		400972	Aug 7 to Sept 4
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/2/2003		E. coli	17000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/8/2003		E. coli	6000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/15/2003		E. coli	>200000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/24/2003		E. coli	720000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/1/2003		E. coli	29000		Allen		38202	April 2 to May 1
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/6/2003		E. coli	2900		Allen		24551	April 8 to May 6
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/13/2003		E. coli	1300		Allen		16750	April 15 to May 13
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/20/2003		E. coli	7000		Allen		14068	April 24 to May 20
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/27/2003		E. coli	380000		Allen		12380	May 1 to May 27
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/3/2003		E. coli	13000		Allen		10545	May 6 to June 3
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/10/2003		E. coli	620000		Allen		30834	May 13 to June 10
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/17/2003		E. coli	460000		Allen		99723	May 20 to June 17
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/26/2003		E. coli	4200000		Allen		358447	May 27 to June 26
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/30/2003		E. coli	4000		Allen		144172	June 3 to June 30
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/7/2003		E. coli	1400		Allen		92325	June 10 to July 7
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/14/2003		E. coli	10000		Allen		40443	June 17 to July 14
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/21/2003		E. coli	11000		Allen		19168	June 26 to July 21
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/28/2003		E. coli	20000		Allen		6578	June 30 to July 28
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/4/2003		E. coli	4400		Allen		6705	July 7 to Aug 4
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/11/2003		E. coli	750000		Allen		23561	July 14 to Aug 11
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/18/2003		E. coli	>2000000		Allen		29190	July 21 to Aug 18
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/25/2003		E. coli	>200000		Allen		40412	July 28 to Aug 25
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/2/2003		E. coli	39000		Allen		50489	Aug 4 to Sept 2
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/8/2003		E. coli	440000		Allen		234347	Aug 11 to Sept 8
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/15/2003		E. coli	840000		Allen		243369	Aug 18 to Sept 14
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/29/2003		E. coli	4000		Allen		87139	Aug 25 to Sept 29

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/7/2003		E. coli	>200000		Allen		87139	Sept 8 to Oct 7
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/14/2003		E. coli	380000		Allen		153955	Sept 15 to Oct 14
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/20/2003		E. coli	500000		Allen		158955	Sept 29 to Oct 20
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/27/2003		E. coli	90000		Allen		90942	Oct 7 to Oct 27
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/5/2004		E. coli	194000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/12/2004		E. coli	670000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/19/2004		E. coli	780000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	4/26/2004		E. coli	720000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/4/2004		E. coli	570000		Allen		529463	April 5 to May 4
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/10/2004		E. coli	830000		Allen		708094	April 12 to May 10
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/17/2004		E. coli	350000		Allen		621856	April 19 to May 17
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	5/24/2004		E. coli	150000		Allen		447187	April 26 to May 24
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/1/2004		E. coli	26000		Allen		230153	May 4 to June 1
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/7/2004		E. coli	270000		Allen		198205	May 10 to June 7
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/14/2004		E. coli	5000		Allen		71301	May 17 to June 14
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/21/2004		E. coli	10300		Allen		35225	May 24 to June 21
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	6/28/2004		E. coli	4400		Allen		17391	June 1 to June 28
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/6/2004		E. coli	3000		Allen		11291	June 7 to July 6
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/12/2004		E. coli	41000		Allen		7745	June 14 to July 12
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/19/2004		E. coli	16000		Allen		9774	June 21 to July 19
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	7/26/2004		E. coli	80		Allen		3699	June 28 to July 26
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/2/2004		E. coli	1400		Allen		2942	July 6 to Aug 2
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/9/2004		E. coli	<100		Allen		2928	July 12 to Aug 9
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/16/2004		E. coli	<100		Allen		1215	July 19 to Aug 16
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/23/2004		E. coli	1500		Allen		552	July 26 to Aug 23
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	8/30/2004		E. coli	130000		Allen		6487	Aug 2 to Aug 30
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/7/2004		E. coli	170000		Allen		32124	Aug 9 to Sept 7
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	9/13/2004		E. coli	>2000000		Allen		32124	Aug 16 to Sept 13
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/4/2004		E. coli	>2000000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/11/2004		E. coli	>2000000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/18/2004		E. coli	140000		Allen			
26	Allen County Health Dept		Tile Drain on bank of river (St. Marys Basin)		South of Hoagland Rd. one of the community tiles from Poe	29-13-29-81Y	10/25/2004		E. coli	>2000000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	4/2/2001		E. coli	970		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	4/9/2001		E. coli	31000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	4/16/2001		E. coli	3000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	4/23/2001		E. coli	200		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	4/30/2001		E. coli	2100		Allen		2069	April 2 - April 30
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	5/7/2001		E. coli	2000		Allen		2391	April 9 - May 7
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		West side of US 27 south of Monroeville Rd. T	29-13-17-61Y	5/14/2001		E. coli	3800		Allen		1571	April 16 - May 14

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/21/2001		E. coli	79000		Allen		3022	April 23 - May 21
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/28/2001		E. coli	15000		Allen		7167	April 30 - May 28
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/4/2001		E. coli	3000		Allen		7697	May 7 - June 4
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/11/2001		E. coli	30000		Allen		13230	May 14 - June 11
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/18/2001		E. coli	15000		Allen		17410	May 21 - June 18
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/25/2001		E. coli	200000		Allen		20965	May 28 - June 25
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/2/2001		E. coli	45000		Allen		26117	June 4 - July 2
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/9/2001		E. coli	200000		Allen		60492	June 11 - July 9
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/16/2001		E. coli	200000		Allen		88405	June 18 - July 16
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/23/2001		E. coli	5000		Allen		70967	June 25 - July 23
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/30/2001		E. coli	4700		Allen		33517	July 2 - July 30
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/6/2001		E. coli	1000		Allen		15654	July 9 - Aug 6
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/13/2001		E. coli	54000		Allen		12048	July 16 - Aug 13
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/20/2001		E. coli	520000		Allen		14585	July 23 - Aug 20
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/27/2001		E. coli	60000		Allen		23973	July 30 - Aug 27
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/3/2001		E. coli	31000		Allen		34961	Aug 6 - Sept 3
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/10/2001		E. coli	590000		Allen		125243	Aug 13 - Sept 10
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/17/2001		E. coli	35000		Allen		114838	Aug 20 - Sept 17
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/24/2001		E. coli	71000		Allen		77115	Aug 27 - Sept 24
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/1/2001		E. coli	174000		Allen		95415	Sept 3 - Oct 1
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/8/2001		E. coli	66000		Allen		110982	Setp 10 - Oct 8
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/15/2001		E. coli	19000		Allen		55826	Sept 17 - Oct 15
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/22/2001		E. coli	34000		Allen		55503	Sept 24 - Oct 22
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/4/2002		E. coli	20,000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/11/2002		E. coli	150,000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/17/2002		E. coli	90,000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/25/2002		E. coli	70,000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/2/2002		E. coli	14000		Allen		48364	April 4 - May 2
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/9/2002		E. coli	36000		Allen		54397	April 11 - May 9
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/23/2002		E. coli	32000		Allen		39938	April 17 to May 23
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/30/2002		E. coli	600		Allen		14661	April 25 to May 30
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/5/2002		E. coli	7000		Allen		9251	May 2 to June 5
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/13/2002		E. coli	80000		Allen		13109	May 9 to June 13
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/20/2002		E. coli	36000		Allen		13109	May 23 - June 20
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/2/2002		E. coli	64000		Allen		15058	May 30 - July 2
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/9/2002		E. coli	34000		Allen		33762	June 5 - July 9
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/11/2002		E. coli	25000		Allen		43551	June 13 - July 11
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/18/2002		E. coli	150000		Allen		49385	June 20 - July 18
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/25/2002		E. coli	26000		Allen		46274	July 2 - July 25
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/1/2002		E. coli	42000		Allen		42535	July 9 - Aug 1

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/8/2002		E. coli	280000		Allen		64846	July 11 - Aug 8
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/15/2002		E. coli	44000		Allen		72608	July 18 - Aug 15
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/22/2002		E. coli	67000		Allen		61799	July 25 - Aug 22
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/29/2002		E. coli	50000		Allen		70434	Aug 1 - Aug 29
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/5/2002		E. coli	260000		Allen		101421	Aug 8 - Sept 5
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/5/2002		E. coli	240000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/12/2002		E. coli	19000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/19/2002		E. coli	190000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/1/2002		E. coli	180000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/8/2002		E. coli	42000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/15/2002		E. coli	100000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/22/2002		E. coli	110000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/24/2002		E. coli	20000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/31/2002		E. coli	120000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/3/2003		E. coli	11000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/8/2003		E. coli	6000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/17/2003		E. coli	18000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/24/2003		E. coli	340000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/1/2003		E. coli	100000		Allen		33209	April 3 to May 1
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/6/2003		E. coli	5000		Allen		28364	April 8 to May 6
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/13/2003		E. coli	19000		Allen		35719	April 17 to May 13
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/20/2003		E. coli	54000		Allen		44496	April 24 to May 20
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/27/2003		E. coli	220000		Allen		40786	May 1 to May 27
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/3/2003		E. coli	13000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/26/2003		E. coli	21000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/30/2003		E. coli	80000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/7/2003		E. coli	4500		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/14/2003		E. coli	4000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/21/2003		E. coli	31000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/28/2003		E. coli	6000		Allen		12178	June 30 to July 28
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/4/2003		E. coli	11000		Allen		8189	July 7 to Aug 4
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/11/2003		E. coli	1200		Allen		6287	July 14 to Aug 11
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/18/2003		E. coli	21000		Allen		8759	July 21 to Aug 18
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/25/2003		E. coli	60000		Allen		9996	July 28 to Aug 25
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/2/2003		E. coli	7000		Allen		10309	Aug 4 to Sept 2
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/8/2003		E. coli	19000		Allen		11500	Aug 11 to Sept 8
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/15/2003		E. coli	18000		Allen		19765	Aug 18 to Sept 15
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/29/2003		E. coli	10000		Allen		17039	Aug 25 to Sept 29
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/7/2003		E. coli	38000		Allen		15552	Sept 2 to Oct 7
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/14/2003		E. coli	15000		Allen		18113	Sept 8 to Oct 14

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/20/2003		E. coli	19000		Allen		18113	Sept 15 to Oct 20
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/27/2003		E. coli	5300		Allen		14183	Sept 29 to Oct 27
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/5/2004		E. coli	700		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/12/2004		E. coli	2300		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/19/2004		E. coli	17000		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	4/26/2004		E. coli	100		Allen			
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/4/2004		E. coli	22000		Allen		2270	April 5 to May 4
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/10/2004		E. coli	19000		Allen		4392	April 12 to May 10
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/17/2004		E. coli	37000		Allen		7655	April 19 to May 17
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	5/24/2004		E. coli	13000		Allen		7255	April 26 to May 24
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/1/2004		E. coli	39000		Allen		23926	May 4 to June 1
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/14/2004		E. coli	31000		Allen		25625	May 10 to June 14
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/21/2004		E. coli	1300		Allen		14987	May 17 to June 21
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	6/28/2004		E. coli	3900		Allen		9556	May 24 to June 28
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/6/2004		E. coli	18000		Allen		10199	June 1 to July 6
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/12/2004		E. coli	7000		Allen		7233	June 14 to July 12
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/19/2004		E. coli	8000		Allen		5517	June 21 to July 19
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	7/26/2004		E. coli	1500		Allen		5677	June 28 to July 26
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/2/2004		E. coli	10		Allen		1722	July 6 to Aug 2
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/9/2004		E. coli	10		Allen		384	July 12 to Aug 9
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/16/2004		E. coli	10		Allen		104	July 19 to Aug 16
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/23/2004		E. coli	23000		Allen		128	July 26 to Aug 23
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	8/30/2004		E. coli	1300		Allen		124	Aug 2 to Aug 30
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/7/2004		E. coli	3000		Allen		390	Aug 9 to Sept 7
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/13/2004		E. coli	300		Allen		769	Aug 16 to Sept 13
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/20/2004		E. coli	10		Allen		769	Aug 23 to Sept 20
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	9/27/2004		E. coli	70		Allen		241	Aug 30 to Sept 27
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/4/2004		E. coli	4500		Allen		309	Sept 7 to Oct 4
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/11/2004		E. coli	3400		Allen		317	Sept 13 to Oct 11
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/18/2004		E. coli	56000		Allen		903	Sept 20 to Oct 18
27	Allen County Health Dept		Natural Drain (St. Marys Basin)		west side of US 27 south of Monroeville Rd T	29-13-17-61Y	10/25/2004		E. coli	9000		Allen		3519	Sept 27 to Oct 25
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/2/2001		E. coli	20		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/9/2001		E. coli	260		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/16/2001		E. coli	100		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/23/2001		E. coli	40		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/30/2001		E. coli	50		Allen		64	April 2 - April 30
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/7/2001		E. coli	80		Allen		84	April 9 - May 7
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/14/2001		E. coli	180		Allen		78	April 16 - May 14
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/21/2001		E. coli	160		Allen		86	April 23 - May 21
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/28/2001		E. coli	200		Allen		118	April 30 - May 28

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/4/2001		E. coli	1800		Allen		242	May 7 - June 4
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/11/2001		E. coli	2400		Allen		478	May 14 - June 11
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/18/2001		E. coli	100		Allen		425	May 21 - June 18
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/25/2001		E. coli	230		Allen		457	May 28 - June 25
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/2/2001		E. coli	1200		Allen		654	June 4 - July 2
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/9/2001		E. coli	2300		Allen		686	June 11 - July 9
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/16/2001		E. coli	200000		Allen		1662	June 18 - July 16
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/23/2001		E. coli	5000		Allen		3635	June 25 - July 23
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/30/2001		E. coli	2100		Allen		5658	July 2 - July 30
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/6/2001		E. coli	1900		Allen		6202	July 9 - Aug 6
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/13/2001		E. coli	320		Allen		4180	July 16 - Aug 13
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/20/2001		E. coli	89000		Allen		3555	July 23 - Aug 20
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/27/2001		E. coli	1400		Allen		2756	July 30 - Aug 27
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/3/2001		E. coli	240		Allen		1786	Aug 6 - Sept 3
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/10/2001		E. coli	800		Allen		1502	Aug 13 - Sept 10
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/17/2001		E. coli	10000		Allen		2991	Aug 20 - Sept 17
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/24/2001		E. coli	1200		Allen		1264	Aug 27 - Sept 24
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/1/2001		E. coli	230		Allen		881	Sept 3 - Oct 1
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/8/2001		E. coli	860		Allen		1137	Sept 10 - Oct 8
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/15/2001		E. coli	4400		Allen		1599	Sept 17 - Oct 15
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/22/2001		E. coli	500		Allen		878	Sept 24 - Oct 22
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/3/2002		E. coli	800		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/10/2002		E. coli	400		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/17/2002		E. coli	1000		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/24/2002		E. coli	310		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/1/2002		E. coli	360		Allen		514	April 3 - May 1
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/8/2002		E. coli	5300		Allen		750	April 10 - May 8
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/15/2002		E. coli	620		Allen		818	April 17 - May 15
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/22/2002		E. coli	370		Allen		671	April 24 - May 22
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/29/2002		E. coli	29000		Allen		1662	May 1 - May 29
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/5/2002		E. coli	2300		Allen		2409	May 8 - June 5
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/12/2002		E. coli	900		Allen		1690	May 15 - June 12
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/19/2002		E. coli	470		Allen		1599	May 22 - June 19
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/26/2002		E. coli	800		Allen		1865	May 29 - June 26
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/1/2002		E. coli	1000		Allen		951	June 5 - July 1
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/10/2002		E. coli	15000		Allen		1384	June 12 - July 10
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/17/2002		E. coli	230		Allen		1053	June 19 - July 17
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/24/2002		E. coli	270		Allen		943	June 26 - July 24
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/31/2002		E. coli	18000		Allen		1757	July 1 - July 21
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/7/2002		E. coli	690		Allen		1632	July 10 - Aug 7

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/14/2002		E. coli	500		Allen		826	July 17 - Aug 14
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/21/2002		E. coli	11000		Allen		1791	July 24 - Aug 21
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/28/2002		E. coli	1000		Allen		2328	July 31 - Aug 28
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/4/2002		E. coli	800		Allen		1249	Aug 7 - Sept 4
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/11/2002		E. coli	360		Allen		1096	Aug 14 - Sept 11
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/18/2002		E. coli	2300		Allen		1488	Aug 21 - Sept 18
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/25/2002		E. coli	1200		Allen		955	Aug 28 - Sept 25
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/2/2002		E. coli	7000		Allen		1410	Sept 4 - Oct 2
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/9/2002		E. coli	74000		Allen		3486	Sept 11 - Oct 9
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/16/2002		E. coli	1100		Allen		4358	Sept 18 - Oct 16
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/23/2002		E. coli	22000		Allen		6846	Sept 25 - Oct 23
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/30/2002		E. coli	1900		Allen		7506	Oct 2 - Oct 30
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	3/31/2003		E. coli	1200		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/7/2003		E. coli	2200		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/14/2003		E. coli	90		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/21/2003		E. coli	670		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/29/2003		E. coli	6900		Allen		1019	Mar 31 - April 29
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/7/2003		E. coli	2000		Allen		1129	April 7 - May 7
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/14/2003		E. coli	400		Allen		803	April 14 - May 14
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/21/2003		E. coli	600		Allen		1173	April 21 - May 21
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/28/2003		E. coli	710		Allen		1187	April 29 - May 28
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/5/2003		E. coli	1200		Allen		836	May 7 - June 5
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/11/2003		E. coli	3700		Allen		946	May 14 - June 11
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/18/2003		E. coli	2500		Allen		1364	May 21 - June 18
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/26/2003		E. coli	25000		Allen		2877	May 28 - June 26
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/30/2003		E. coli	8600		Allen		4738	June 5 - June 30
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/7/2003		E. coli	3200		Allen		5764	June 11 - July 7
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/14/2003		E. coli	1000		Allen		4437	June 18 - July 14
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/21/2003		E. coli	2300		Allen		4364	June 26 - July 21
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/28/2003		E. coli	1900		Allen		2606	June 30 - July 28
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/4/2003		E. coli	2800		Allen		2082	July 7 - Aug 4
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/11/2003		E. coli	50000		Allen		3608	July 14 - Aug 11
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/18/2003		E. coli	500		Allen		3141	July 21 - Aug 18
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/25/2003		E. coli	2100		Allen		3085	July 28 - Aug 25
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/2/2003		E. coli	200000		Allen		7828	Aug 4 - Sept 2
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/8/2003		E. coli	2400		Allen		7591	Aug 11 - Sept 8
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/15/2003		E. coli	3000		Allen		4324	Aug 18 - Sept 15
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/29/2003		E. coli	500		Allen		4324	Aug 25 - Sept 29
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/7/2003		E. coli	520		Allen		3271	Sept 2 - Oct 7
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/14/2003		E. coli	10000		Allen		1797	Sept 8 - Oct 14

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/20/2003		E. coli	380		Allen		1243	Sept 15 - Oct 20
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/27/2003		E. coli	430		Allen		843	Sept 29 - Oct 27
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/5/2004		E. coli	10		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/12/2004		E. coli	140		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/19/2004		E. coli	250		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	4/26/2004		E. coli	50		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/4/2004		E. coli	460		Allen		96	April 5 - May 4
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/10/2004		E. coli	230		Allen		179	April 12 - May 10
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/17/2004		E. coli	280		Allen		206	April 19 - May 17
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	5/24/2004		E. coli	27000		Allen		525	April 26 - May 24
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/1/2004		E. coli	88000		Allen		2342	May 4 - June 1
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/7/2004		E. coli	1200		Allen		2836	May 10 - June 7
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/14/2004		E. coli	67000		Allen		8824	May 17 - June 14
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/21/2004		E. coli	930		Allen		11218	May 24 - June 21
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	6/28/2004		E. coli	5700		Allen		8219	June 1 - June 28
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/6/2004		E. coli	5000		Allen		4631	June 7 - July 6
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/12/2004		E. coli	3500		Allen		5737	June 14 - July 12
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/19/2004		E. coli	200		Allen		1793	June 21- July 19
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	7/26/2004		E. coli	2100		Allen		2111	June 28 - July 26
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/2/2004		E. coli	2900		Allen		1844	July 6 - Aug 2
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/9/2004		E. coli	LA		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/16/2004		E. coli	10		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/23/2004		E. coli	1500		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	8/30/2004		E. coli	1500		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/7/2004		E. coli	100000		Allen			
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/13/2004		E. coli	610		Allen		1065	Aug 16 to Sept 13
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/20/2004		E. coli	500		Allen		2330	Aug 23 to Sept 20
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	9/27/2004		E. coli	240		Allen		1615	Aug 30 to Sept 27
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/4/2004		E. coli	550		Allen		1321	Sept 7 to Oct 4
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/11/2004		E. coli	210		Allen		385	Sept 13 to Oct 11
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/18/2004		E. coli	58000		Allen		957	Sept 20 to Oct 18
28	Allen County Health Dept		Thiele Drain/Harber Ditch (St. Marys basin)		Bluffton Rd north of 469	29-12-16-71Y	10/25/2004		E. coli	490		Allen		953	Sept 27 to Oct 25
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/3/2001	Normal	E. coli	440	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/9/2001	Normal	E. coli	80	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/16/2001	Normal	E. coli	1800	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/23/2001	Normal	E. coli	460	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/30/2001	Normal	E. coli	30	Colonies/100ml	Allen		245	April 3 - April 30
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/7/2001	Normal	E. coli	92	Colonies/100ml	Allen		179	April 9 - May 7
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/14/2001	Normal	E. coli	100	Colonies/100ml	Allen		187	April 16 - May 14
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/21/2001	Normal	E. coli	512	Colonies/100ml	Allen		145	April 23 - May 21

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/29/2001	Normal	E. coli	460	Colonies/100ml	Allen		145	April 30 - May 29
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/4/2001	Normal	E. coli	920	Colonies/100ml	Allen		288	May 7 - June 4
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/11/2001	Normal	E. coli	260	Colonies/100ml	Allen		355	May 14 - June 11
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/18/2001	Normal	E. coli	110	Colonies/100ml	Allen		362	May 21 - June 18
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/26/2001	Normal	E. coli	80	Colonies/100ml	Allen		250	May 29 - June 26
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/2/2001	Normal	E. coli	76	Colonies/100ml	Allen		174	June 4 - July 2
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/9/2001	Normal	E. coli	1200	Colonies/100ml	Allen		184	June 11 - July 9
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/16/2001	Normal	E. coli	220	Colonies/100ml	Allen		178	June 18 - July 16
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/23/2001	Normal	E. coli	1800	Colonies/100ml	Allen		311	June 26 - July 23
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/30/2001	Normal	E. coli	320	Colonies/100ml	Allen		410	July 2 - July 30
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/6/2001	Normal	E. coli	410	Colonies/100ml	Allen		574	July 9 - Aug 6
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/14/2001	Normal	E. coli	150	Colonies/100ml	Allen		379	July 16 - Aug 14
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/20/2001	Normal	E. coli	210	Colonies/100ml	Allen		375	July 23 - Aug 20
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/27/2001	Normal	E. coli	370	Colonies/100ml	Allen		273	July 30 - Aug 27
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/4/2001	Normal	E. coli	400	Colonies/100ml	Allen		286	Aug 6 - Sept 4
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/10/2001	Normal	E. coli	2000	Colonies/100ml	Allen		393	Aug 14 - Sept 10
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/17/2001	Normal	E. coli	180	Colonies/100ml	Allen		407	Aug 20 - Sept 17
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/24/2001	Normal	E. coli	610	Colonies/100ml	Allen		504	Aug 27 -Sept 24
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/1/2001	Normal	E. coli	180	Colonies/100ml	Allen		436	Sept 4 - Oct 1
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/9/2001	Normal	E. coli	390	Colonies/100ml	Allen		434	Sept 10 - Oct 9
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/15/2001	Normal	E. coli	2800	Colonies/100ml	Allen		464	Sept 17 - Oct 15
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/22/2001	Normal	E. coli	420	Colonies/100ml	Allen		550	Sept 24 - Oct 22
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/29/2001	Normal	E. coli	360	Colonies/100ml	Allen		495	Oct 1 - Oct 29
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/1/2002	Normal	E. coli	396	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/8/2002	Normal	E. coli	800	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/15/2002	Normal	E. coli	640	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/22/2002	Normal	E. coli	460	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/29/2002	Normal	E. coli	5660	Colonies/100ml	Allen		880	April 1 - April 29
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/6/2002	Normal	E. coli	200	Colonies/100ml	Allen		768	April 8 - May 6
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/13/2002	Normal	E. coli	7500	Colonies/100ml	Allen		1201	April 15 - May 13
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/20/2002	Normal	E. coli	100	Colonies/100ml	Allen		829	April 22 - May 20
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/29/2002	Normal	E. coli	1450	Colonies/100ml	Allen		1042	April 29 - May 29
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/3/2002	Normal	E. coli	420	Colonies/100ml	Allen		620	May 6 - June 3
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/10/2002	Normal	E. coli	700	Colonies/100ml	Allen		796	May 13 - June 10
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/17/2002	Normal	E. coli	350	Colonies/100ml	Allen		431	May 20 - June 17
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/24/2002	Normal	E. coli	2880	Colonies/100ml	Allen		845	May 29 - June 24
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/1/2002	Normal	E. coli	170	Colonies/100ml	Allen		550	June 3 - July 1
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/8/2002	Normal	E. coli	760	Colonies/100ml	Allen		619	June 10 - July 8
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/15/2002	Normal	E. coli	60	Colonies/100ml	Allen		379	June 17 - July 15
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/22/2002	Normal	E. coli	750	Colonies/100ml	Allen		441	June 24 - July 22

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/29/2002	Normal	E. coli	90	Colonies/100ml	Allen		221	July 1 - July 29
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/5/2002	Normal	E. coli	180	Colonies/100ml	Allen		223	July 8 - Aug 5
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/12/2002	Normal	E. coli	130	Colonies/100ml	Allen		157	July 15 - Aug 12
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/19/2002	Normal	E. coli	130	Colonies/100ml	Allen		183	July 22 - Aug 19
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/26/2002	Normal	E. coli	400	Colonies/100ml	Allen		161	July 29 - Aug 26
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/3/2002	Normal	E. coli	200	Colonies/100ml	Allen		189	Aug 5 - Sept 3
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/9/2002	Normal	E. coli	240	Colonies/100ml	Allen		201	Aug 12 - Sept 9
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/16/2002	Normal	E. coli	100	Colonies/100ml	Allen		190	Aug 19 - Sept 16
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/24/2002	Normal	E. coli	385	Colonies/100ml	Allen		236	Aug 26 - Sept 24
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/30/2002	Normal	E. coli	350	Colonies/100ml	Allen		230	Sept 3 - Sept 30
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/7/2002	Normal	E. coli	230	Colonies/100ml	Allen		237	Sept 9 - Oct 7
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/14/2002	Normal	E. coli	280	Colonies/100ml	Allen		244	Sept 16 - Oct 14
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/21/2002	Normal	E. coli	15	Colonies/100ml	Allen		167	Sept 24 - Ot 21
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/28/2002	Normal	E. coli	80	Colonies/100ml	Allen		122	Sept 30 - Oct 28
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/7/2003	Normal	E. coli	6	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/14/2003	Normal	E. coli	18	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/21/2003	Normal	E. coli	6	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		4/28/2003	Normal	E. coli	7	Colonies/100ml	Allen			
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/5/2003	Normal	E. coli	8	Colonies/100ml	Allen		8	April 7 - May 5
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/12/2003	Normal	E. coli	1200	Colonies/100ml	Allen		24	April 14 - May 12
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/19/2003	Normal	E. coli	76	Colonies/100ml	Allen		31	April 21 - May 19
29	Ft. Wayne		St. Marys River		Ferguson Rd		5/27/2003	Normal	E. coli	52	Colonies/100ml	Allen		48	April 28 - May 27
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/2/2003	Normal	E. coli	28	Colonies/100ml	Allen		64	May 5 - June 2
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/9/2003	Normal	E. coli	224	Colonies/100ml	Allen		124	May 12 - June 9
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/16/2003	Normal	E. coli	720	Colonies/100ml	Allen		112	May 19 - June 16
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/23/2003	Normal	E. coli	540	Colonies/100ml	Allen		166	May 27- June 23
29	Ft. Wayne		St. Marys River		Ferguson Rd		6/30/2003	Normal	E. coli	240	Colonies/100ml	Allen		226	June 2 - June 30
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/7/2003	Normal	E. coli	370	Colonies/100ml	Allen		378	June 9 - July 7
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/15/2003	Normal	E. coli	200	Colonies/100ml	Allen		370	June 16 - July 15
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/21/2003	Normal	E. coli	320	Colonies/100ml	Allen		314	June 23 - July 21
29	Ft. Wayne		St. Marys River		Ferguson Rd		7/28/2003	Normal	E. coli	30	Colonies/100ml	Allen		176	June 30 - July 28
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/4/2003	Normal	E. coli	416	Colonies/100ml	Allen		197	July 7 - Aug 4
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/11/2003	Normal	E. coli	290	Colonies/100ml	Allen		187	July 15 -Aug 11
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/18/2003	Normal	E. coli	288	Colonies/100ml	Allen		202	July 21 - Aug 18
29	Ft. Wayne		St. Marys River		Ferguson Rd		8/25/2003	Normal	E. coli	65	Colonies/100ml	Allen		147	July 28-Aug 25
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/2/2003	Normal	E. coli	4	Colonies/100ml	Allen		98	Aug 4-Sept 2
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/8/2003	Normal	E. coli	38	Colonies/100ml	Allen		61	Aug 11 - Sept 8
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/15/2003	Normal	E. coli	120	Colonies/100ml	Allen		51	Aug 18 - Sept 15
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/22/2003	Normal	E. coli	116	Colonies/100ml	Allen		42	Aug 25 - Sept 22
29	Ft. Wayne		St. Marys River		Ferguson Rd		9/29/2003	Normal	E. coli	80	Colonies/100ml	Allen		44	Sept 2 - Sept 29

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/6/2003	Normal	E. coli	30	Colonies/100ml	Allen		66	Sept 8 - Oct 6
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/13/2003	Normal	E. coli	70	Colonies/100ml	Allen		75	Sept 15 - Oct 13
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/20/2003	Normal	E. coli		Colonies/100ml	Allen		66	Sept 22 - Oct 20
29	Ft. Wayne		St. Marys River		Ferguson Rd		10/27/2003	Normal	E. coli	15	Colonies/100ml	Allen		40	Sept 29 - Oct 27
29	Ft. Wayne		St. Mary's River		Ferguson Rd		7/8/2004	Normal	E. Coli	300	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		7/22/2004	Normal	E. Coli	>48400	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		8/5/2004	Normal	E. Coli	12076	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		8/19/2004	Normal	E. Coli	>48400	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		9/2/2004	Normal	E. Coli	1065	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		9/16/2004	Normal	E. Coli	270	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		9/30/2004	Normal	E. Coli	244	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		10/14/2004	Normal	E. Coli	<10	Colonies/100ml	Allen			
29	Ft. Wayne		St. Mary's River		Ferguson Rd		10/28/2004	Normal	E. Coli	60	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/3/2001	Normal	E. coli	1600	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/9/2001	Normal	E. coli	600	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/16/2001	Normal	E. coli	1200	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/23/2001	Normal	E. coli	900	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/30/2001	Normal	E. coli	70	Colonies/100ml	Allen		592	April 3 - April 30
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/7/2001	Normal	E. coli	32	Colonies/100ml	Allen		271	April 9 - May 7
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/14/2001	Normal	E. coli	90	Colonies/100ml	Allen		185	April 16 - May 14
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/21/2001	Normal	E. coli	520	Colonies/100ml	Allen		157	April 23 - May 21
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/29/2001	Normal	E. coli	600	Colonies/100ml	Allen		144	April 30 - May 29
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/4/2001	Normal	E. coli	1480	Colonies/100ml	Allen		266	May 7 - June 4
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/11/2001	Normal	E. coli	2920	Colonies/100ml	Allen		656	May 14 - June 11
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/18/2001	Normal	E. coli	1000	Colonies/100ml	Allen		1062	May 21 - June 18
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/26/2001	Normal	E. coli	848	Colonies/100ml	Allen		1171	May 29 - June 26
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/2/2001	Normal	E. coli	450	Colonies/100ml	Allen		1105	June 4 - July 2
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/9/2001	Normal	E. coli	3000	Colonies/100ml	Allen		1273	June 11 - July 9
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/16/2001	Normal	E. coli	260	Colonies/100ml	Allen		785	June 18 - July 16
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/23/2001	Normal	E. coli	3000	Colonies/100ml	Allen		978	June 26 - July 23
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/30/2001	Normal	E. coli	1450	Colonies/100ml	Allen		1088	July 2 - July 30
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/6/2001	Normal	E. coli	500	Colonies/100ml	Allen		1112	July 9 - Aug 6
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/14/2001	Normal	E. coli	360	Colonies/100ml	Allen		727	July 16 - Aug 14
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/20/2001	Normal	E. coli	4600	Colonies/100ml	Allen		1292	July 23 - Aug 20
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/27/2001	Normal	E. coli	4000	Colonies/100ml	Allen		1369	July 30 - Aug 27
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/4/2001	Normal	E. coli	700	Colonies/100ml	Allen		1183	Aug 6 - Sept 4
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/10/2001	Normal	E. coli	4250	Colonies/100ml	Allen		1815	Aug 14 - Sept 10
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/17/2001	Normal	E. coli	1160	Colonies/100ml	Allen		2294	Aug 20 - Sept 17
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/24/2001	Normal	E. coli	6000	Colonies/100ml	Allen		2419	Aug 27 - Sept 24
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/1/2001	Normal	E. coli	600	Colonies/100ml	Allen		1655	Sept 4 - Oct 1

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/9/2001	Normal	E. coli	620	Colonies/100ml	Allen		1616	Sept 10 - Oct 10
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/15/2001	Normal	E. coli	3000	Colonies/100ml	Allen		1507	Sept 17 - Oct 15
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/22/2001	Normal	E. coli	1800	Colonies/100ml	Allen		1645	Sept 24 - Oct 22
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/29/2001	Normal	E. coli	380	Colonies/100ml	Allen		947	Oct 1 - Oct 29
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/1/2002	Normal	E. coli	884	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/8/2002	Normal	E. coli	740	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/15/2002	Normal	E. coli	660	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/22/2002	Normal	E. coli	680	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/29/2002	Normal	E. coli	3740	Colonies/100ml	Allen		1019	April 1 to April 49
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/6/2002	Normal	E. coli	1000	Colonies/100ml	Allen		1044	April 8 to May 6
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/13/2002	Normal	E. coli	5400	Colonies/100ml	Allen		1554	April 15 to May 13
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/20/2002	Normal	E. coli	500	Colonies/100ml	Allen		1470	April 22 to May 20
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/29/2002	Normal	E. coli	2700	Colonies/100ml	Allen		1937	April 29 to May 29
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/3/2002	Normal	E. coli	560	Colonies/100ml	Allen		1325	May 6 to June 3
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/10/2002	Normal	E. coli	1400	Colonies/100ml	Allen		1417	May 13 to June 10
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/17/2002	Normal	E. coli	420	Colonies/100ml	Allen		850	May 20 to June 17
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/24/2002	Normal	E. coli	360	Colonies/100ml	Allen		796	May 29 to June 24
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/1/2002	Normal	E. coli	220	Colonies/100ml	Allen		482	June 3 to July 1
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/8/2002	Normal	E. coli	300	Colonies/100ml	Allen		426	June 10 to July 8
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/15/2002	Normal	E. coli	380	Colonies/100ml	Allen		328	June 17 to July 15
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/22/2002	Normal	E. coli	170	Colonies/100ml	Allen		274	June 24 to July 22
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/29/2002	Normal	E. coli	270	Colonies/100ml	Allen		258	July 1 to July 29
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/5/2002	Normal	E. coli	740	Colonies/100ml	Allen		329	July 8 to Aug 5
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/12/2002	Normal	E. coli	55	Colonies/100ml	Allen		235	July 15 to Aug 12
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/19/2002	Normal	E. coli	130	Colonies/100ml	Allen		189	July 22 to Aug 19
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/26/2002	Normal	E. coli	Test Failed	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/3/2002	Normal	E. coli	1600	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/9/2002	Normal	E. coli	60	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/16/2002	Normal	E. coli	240	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/24/2002	Normal	E. coli	220	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/30/2002	Normal	E. coli	250	Colonies/100ml	Allen		263	Sept 3 to Sept 30
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/7/2002	Normal	E. coli	260	Colonies/100ml	Allen		183	Sept 9 to Oct 7
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/14/2002	Normal	E. coli	600	Colonies/100ml	Allen		290	Sept 16 to Oct 14
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/21/2002	Normal	E. coli	190	Colonies/100ml	Allen		277	Sept 24 to Oct 21
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/28/2002	Normal	E. coli	160	Colonies/100ml	Allen		260	Sept 30 to Oct 28
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/7/2003	Normal	E. coli	32	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/14/2003	Normal	E. coli	8	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/21/2003	Normal	E. coli	20	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		4/28/2003	Normal	E. coli	8	Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/5/2003	Normal	E. coli	8	Colonies/100ml	Allen		13	April 7 - May 5

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/12/2003	Normal	E. coli	2000	Colonies/100ml	Allen		29	April 14 - May 12
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/19/2003	Normal	E. coli	249	Colonies/100ml	Allen		58	April 21 - May 19
30	Ft. Wayne		St. Marys River		Spy Run Bridge		5/27/2003	Normal	E. coli	88	Colonies/100ml	Allen		78	April 28 - May 27
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/2/2003	Normal	E. coli	36	Colonies/100ml	Allen		105	May 5 - June 2
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/9/2003	Normal	E. coli	20	Colonies/100ml	Allen		126	May 12 - June 9
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/16/2003	Normal	E. coli	300	Colonies/100ml	Allen		86	May 19 - June 16
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/23/2003	Normal	E. coli	260	Colonies/100ml	Allen		87	May 27 - June 23
30	Ft. Wayne		St. Marys River		Spy Run Bridge		6/30/2003	Normal	E. coli	620	Colonies/100ml	Allen		128	June 2 - June 30
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/7/2003	Normal	E. coli	250	Colonies/100ml	Allen		189	June 9 - July 7
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/15/2003	Normal	E. coli	500	Colonies/100ml	Allen		360	June 16 - July 15
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/21/2003	Normal	E. coli	200	Colonies/100ml	Allen		332	June 23 - July 21
30	Ft. Wayne		St. Marys River		Spy Run Bridge		7/28/2003	Normal	E. coli	20	Colonies/100ml	Allen		199	June 30 - July 28
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/4/2003	Normal	E. coli	800	Colonies/100ml	Allen		209	July 7 - Aug 4
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/11/2003	Normal	E. coli	340	Colonies/100ml	Allen		222	July 15 - Aug 11
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/18/2003	Normal	E. coli	29	Colonies/100ml	Allen		126	July 21 - Aug 18
30	Ft. Wayne		St. Marys River		Spy Run Bridge		8/25/2003	Normal	E. coli	67	Colonies/100ml	Allen		101	July 28 - Aug 25
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/2/2003	Normal	E. coli	24	Colonies/100ml	Allen		105	Aug 4 - Sept 2
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/8/2003	Normal	E. coli	34	Colonies/100ml	Allen		56	Aug 11 - Sept 8
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/15/2003	Normal	E. coli	3	Colonies/100ml	Allen		22	Aug 18 - Sept 15
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/22/2003	Normal	E. coli	5	Colonies/100ml	Allen		15	Aug 25 - Sept 22
30	Ft. Wayne		St. Marys River		Spy Run Bridge		9/29/2003	Normal	E. coli	64	Colonies/100ml	Allen		15	Sept 2 - Sept 29
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/6/2003	Normal	E. coli	18	Colonies/100ml	Allen		14	Sept 8 - Oct 6
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/13/2003	Normal	E. coli	56	Colonies/100ml	Allen		16	Sept 15 - Oct 13
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/20/2003	Normal	E. coli		Colonies/100ml	Allen			
30	Ft. Wayne		St. Marys River		Spy Run Bridge		10/27/2003	Normal	E. coli	1	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		7/8/2004	Normal	E. Coli	1100	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		7/22/2004	Normal	E. Coli	20924	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		8/5/2004	Normal	E. Coli	3300	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		8/19/2004	Normal	E. Coli	>48400	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		9/2/2004	Normal	E. Coli	1085	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		9/16/2004	Normal	E. Coli	346	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		9/30/2004	Normal	E. Coli	9768	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		10/14/2004	Normal	E. Coli	>20	Colonies/100ml	Allen			
30	Ft. Wayne		St. Mary's River		Spy Run Bridge		10/28/2004	Normal	E. Coli	126	Colonies/100ml	Allen			
31	IDEM	2005 Corvallis E. coli	Lowther Neuhaus Ditch	LES060-0020	Goshen Road		9/12/2005		E. Coli	435.2	MPN/100 mL	Allen			
31	IDEM	2005 Corvallis E. coli	Lowther Neuhaus Ditch	LES060-0020	Goshen Road		9/19/2005		E. Coli	1553	MPN/100 mL	Allen			
31	IDEM	2005 Corvallis E. coli	Lowther Neuhaus Ditch	LES060-0020	Goshen Road		9/26/2005		E. Coli	4352	MPN/100 mL	Allen			
31	IDEM	2005 Corvallis E. coli	Lowther Neuhaus Ditch	LES060-0020	Goshen Road		10/3/2005		E. Coli	257.5	MPN/100 mL	Allen			
31	IDEM	2005 Corvallis E. coli	Lowther Neuhaus Ditch	LES060-0020	Goshen Road		10/11/2005		E. Coli	125.9	MPN/100 mL	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/3/2001	Normal	E. coli	140	Colonies/100ml	Allen			

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Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
	Ft. Wayne		St. Joseph River		Mayhew Road		4/9/2001	Normal	E. coli	280	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/16/2001	Normal	E. coli	260	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/23/2001	Normal	E. coli	80	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/30/2001	Normal	E. coli	20	Colonies/100ml	Allen		110	April 3 - April 30
	Ft. Wayne		St. Joseph River		Mayhew Road		5/7/2001	Normal	E. coli	80	Colonies/100ml	Allen		99	April 9 - May 7
	Ft. Wayne		St. Joseph River		Mayhew Road		5/14/2001	Normal	E. coli	70	Colonies/100ml	Allen		75	April 16 - May 14
	Ft. Wayne		St. Joseph River		Mayhew Road		5/21/2001	Normal	E. coli	276	Colonies/100ml	Allen		76	April 23 - May 21
	Ft. Wayne		St. Joseph River		Mayhew Road		5/29/2001	Normal	E. coli	400	Colonies/100ml	Allen		104	April 30 -May 29
	Ft. Wayne		St. Joseph River		Mayhew Road		6/4/2001	Normal	E. coli	540	Colonies/100ml	Allen		202	May 7 - June 4
	Ft. Wayne		St. Joseph River		Mayhew Road		6/11/2001	Normal	E. coli	200	Colonies/100ml	Allen		242	May 14 - June 11
	Ft. Wayne		St. Joseph River		Mayhew Road		6/18/2001	Normal	E. coli	150	Colonies/100ml	Allen		282	May 21 - June 18
	Ft. Wayne		St. Joseph River		Mayhew Road		6/26/2001	Normal	E. coli	84	Colonies/100ml	Allen		222	May 29 - June 26
	Ft. Wayne		St. Joseph River		Mayhew Road		7/2/2001	Normal	E. coli	104	Colonies/100ml	Allen		170	June 4 - June 2
	Ft. Wayne		St. Joseph River		Mayhew Road		7/9/2001	Normal	E. coli	130	Colonies/100ml	Allen		128	June 11 - July 9
	Ft. Wayne		St. Joseph River		Mayhew Road		7/16/2001	Normal	E. coli	130	Colonies/100ml	Allen		117	June 18 - July 16
	Ft. Wayne		St. Joseph River		Mayhew Road		7/23/2001	Normal	E. coli	80	Colonies/100ml	Allen		103	June 26 - July 23
	Ft. Wayne		St. Joseph River		Mayhew Road		7/30/2001	Normal	E. coli	60	Colonies/100ml	Allen		97	July 2 - July 30
	Ft. Wayne		St. Joseph River		Mayhew Road		8/6/2001	Normal	E. coli	30	Colonies/100ml	Allen		75	July 9 - Aug 6
	Ft. Wayne		St. Joseph River		Mayhew Road		8/14/2001	Normal	E. coli	100	Colonies/100ml	Allen		72	July 16 - Aug 14
	Ft. Wayne		St. Joseph River		Mayhew Road		8/20/2001	Normal	E. coli	98	Colonies/100ml	Allen		68	July 23 - Aug 20
	Ft. Wayne		St. Joseph River		Mayhew Road		8/27/2001	Normal	E. coli	300	Colonies/100ml	Allen		88	July 30 - Aug 27
	Ft. Wayne		St. Joseph River		Mayhew Road		9/4/2001	Normal	E. coli	100	Colonies/100ml	Allen		98	Aug 6 - Sept 4
	Ft. Wayne		St. Joseph River		Mayhew Road		9/10/2001	Normal	E. coli	480	Colonies/100ml	Allen		170	Aug 14 - Sept 10
	Ft. Wayne		St. Joseph River		Mayhew Road		9/17/2001	Normal	E. coli	80	Colonies/100ml	Allen		162	Aug 20 - Sept 17
	Ft. Wayne		St. Joseph River		Mayhew Road		9/24/2001	Normal	E. coli	470	Colonies/100ml	Allen		222	Aug 27 - Sept 24
	Ft. Wayne		St. Joseph River		Mayhew Road		10/1/2001	Normal	E. coli	180	Colonies/100ml	Allen		201	Sept 4 - Oct 1
	Ft. Wayne		St. Joseph River		Mayhew Road		10/9/2001	Normal	E. coli	210	Colonies/100ml	Allen		233	Sept 10 - Oct 9
	Ft. Wayne		St. Joseph River		Mayhew Road		10/15/2001	Normal	E. coli	2000	Colonies/100ml	Allen		310	Sept 17 - Oct 15
	Ft. Wayne		St. Joseph River		Mayhew Road		10/22/2001	Normal	E. coli	170	Colonies/100ml	Allen		360	Sept 24 - Oct 22
	Ft. Wayne		St. Joseph River		Mayhew Road		10/29/2001	Normal	E. coli	160	Colonies/100ml	Allen		290	Oct 1 - Oct 29
	Ft. Wayne		St. Joseph River		Mayhew Road		4/1/2002	Normal	E. coli	548	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/8/2002	Normal	E. coli	1280	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/15/2002	Normal	E. coli	200	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/22/2002	Normal	E. coli	620	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/29/2002	Normal	E. coli	500	Colonies/100ml	Allen		534	April 1-April 29
	Ft. Wayne		St. Joseph River		Mayhew Road		5/6/2002	Normal	E. coli	100	Colonies/100ml	Allen		380	April 8 - May 6
	Ft. Wayne		St. Joseph River		Mayhew Road		5/13/2002	Normal	E. coli	3300	Colonies/100ml	Allen		459	April 15 - May 13
	Ft. Wayne		St. Joseph River		Mayhew Road		5/20/2002	Normal	E. coli	100	Colonies/100ml	Allen		400	April 22 - May 20
	Ft. Wayne		St. Joseph River		Mayhew Road		5/29/2002	Normal	E. coli	350	Colonies/100ml	Allen		357	April 29 - May 29
	Ft. Wayne		St. Joseph River		Mayhew Road		6/3/2002	Normal	E. coli	180	Colonies/100ml	Allen		291	May 6 - June 6

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
	Ft. Wayne		St. Joseph River		Mayhew Road		6/10/2002	Normal	E. coli	380	Colonies/100ml	Allen		380	May 13 - June 10
	Ft. Wayne		St. Joseph River		Mayhew Road		6/17/2002	Normal	E. coli	120	Colonies/100ml	Allen		196	May 20 - June 17
	Ft. Wayne		St. Joseph River		Mayhew Road		6/24/2002	Normal	E. coli	510	Colonies/100ml	Allen		271	May 29 - June 24
	Ft. Wayne		St. Joseph River		Mayhew Road		7/1/2002	Normal	E. coli	740	Colonies/100ml	Allen		315	June 3 - July 1
	Ft. Wayne		St. Joseph River		Mayhew Road		7/8/2002	Normal	E. coli	240	Colonies/100ml	Allen		334	June 10 - July 8
	Ft. Wayne		St. Joseph River		Mayhew Road		7/15/2002	Normal	E. coli	240	Colonies/100ml	Allen		304	June 17 - July 15
	Ft. Wayne		St. Joseph River		Mayhew Road		7/22/2002	Normal	E. coli	80	Colonies/100ml	Allen		281	June 24 - July 22
	Ft. Wayne		St. Joseph River		Mayhew Road		7/29/2002	Normal	E. coli	240	Colonies/100ml	Allen		241	July 1 - July 22
	Ft. Wayne		St. Joseph River		Mayhew Road		8/5/2002	Normal	E. coli	20	Colonies/100ml	Allen		117	July 8 - Aug 5
	Ft. Wayne		St. Joseph River		Mayhew Road		8/12/2002	Normal	E. coli	265	Colonies/100ml	Allen		120	July 15 - Aug 12
	Ft. Wayne		St. Joseph River		Mayhew Road		8/19/2002	Normal	E. coli	360	Colonies/100ml	Allen		130	July 22 - Aug 19
	Ft. Wayne		St. Joseph River		Mayhew Road		8/26/2002	Normal	E. coli	100	Colonies/100ml	Allen		136	July 19 - Aug 26
	Ft. Wayne		St. Joseph River		Mayhew Road		9/3/2002	Normal	E. coli	90	Colonies/100ml	Allen		111	Aug 5 - Aug 26
	Ft. Wayne		St. Joseph River		Mayhew Road		9/9/2002	Normal	E. coli	90	Colonies/100ml	Allen		151	Aug 12 - Sept 9
	Ft. Wayne		St. Joseph River		Mayhew Road		9/16/2002	Normal	E. coli	70	Colonies/100ml	Allen		115	Aug 19 - Sept 16
	Ft. Wayne		St. Joseph River		Mayhew Road		9/24/2002	Normal	E. coli	195	Colonies/100ml	Allen		102	Aug 26 - Sept 24
	Ft. Wayne		St. Joseph River		Mayhew Road		9/30/2002	Normal	E. coli	200	Colonies/100ml	Allen		117	Sept 3 - Sept 30
	Ft. Wayne		St. Joseph River		Mayhew Road		10/7/2002	Normal	E. coli	270	Colonies/100ml	Allen		146	Sept 9 - Oct 7
	Ft. Wayne		St. Joseph River		Mayhew Road		10/14/2002	Normal	E. coli	110	Colonies/100ml	Allen		152	Sept 16 - Oct 14
	Ft. Wayne		St. Joseph River		Mayhew Road		10/21/2002	Normal	E. coli	80	Colonies/100ml	Allen		156	Sept 24 - Oct 21
	Ft. Wayne		St. Joseph River		Mayhew Road		10/28/2002	Normal	E. coli	35	Colonies/100ml	Allen		111	Sept 30 - Oct 28
	Ft. Wayne		St. Joseph River		Mayhew Road		4/7/2003	Normal	E. coli	Test Failed	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/14/2003	Normal	E. coli	16	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/21/2003	Normal	E. coli	9	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		4/28/2003	Normal	E. coli	4	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		5/5/2003	Normal	E. coli	8	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Mayhew Road		5/12/2003	Normal	E. coli	1300	Colonies/100ml	Allen		23	April 14 - May 12
	Ft. Wayne		St. Joseph River		Mayhew Road		5/19/2003	Normal	E. coli	62	Colonies/100ml	Allen		30	April 21 - May 19
	Ft. Wayne		St. Joseph River		Mayhew Road		5/27/2003	Normal	E. coli	94	Colonies/100ml	Allen		48	April 28 - May 27
	Ft. Wayne		St. Joseph River		Mayhew Road		6/2/2003	Normal	E. coli	30	Colonies/100ml	Allen		71	May 5 - June 2
	Ft. Wayne		St. Joseph River		Mayhew Road		6/9/2003	Normal	E. coli	54	Colonies/100ml	Allen		104	May 12 - June 9
	Ft. Wayne		St. Joseph River		Mayhew Road		6/16/2003	Normal	E. coli	150	Colonies/100ml	Allen		68	May 19 - June 16
	Ft. Wayne		St. Joseph River		Mayhew Road		6/23/2003	Normal	E. coli	60	Colonies/100ml	Allen		67	May 27 - June 23
	Ft. Wayne		St. Joseph River		Mayhew Road		6/30/2003	Normal	E. coli	100	Colonies/100ml	Allen		68	June 2 - June 30
	Ft. Wayne		St. Joseph River		Mayhew Road		7/7/2003	Normal	E. coli	1040	Colonies/100ml	Allen		138	June 9 - July 7
	Ft. Wayne		St. Joseph River		Mayhew Road		7/15/2003	Normal	E. coli	100	Colonies/100ml	Allen		156	June 16 - July 15
	Ft. Wayne		St. Joseph River		Mayhew Road		7/21/2003	Normal	E. coli	340	Colonies/100ml	Allen		184	June 23 - July 21
	Ft. Wayne		St. Joseph River		Mayhew Road		7/28/2003	Normal	E. coli	10	Colonies/100ml	Allen		129	June 30 - July 28
	Ft. Wayne		St. Joseph River		Mayhew Road		8/4/2003	Normal	E. coli	780	Colonies/100ml	Allen		194	July 7 - Aug 4
	Ft. Wayne		St. Joseph River		Mayhew Road		8/11/2003	Normal	E. coli	190	Colonies/100ml	Allen		138	July 15 - Aug 11

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
	Ft. Wayne		St. Joseph River		Mayhew Road		8/18/2003	Normal	E. coli	52	Colonies/100ml	Allen		121	July 21 - Aug 18
	Ft. Wayne		St. Joseph River		Mayhew Road		8/25/2003	Normal	E. coli	35	Colonies/100ml	Allen		77	July 28 - Aug 25
	Ft. Wayne		St. Joseph River		Mayhew Road		9/2/2003	Normal	E. coli	2	Colonies/100ml	Allen		56	Aug 4 - Sept 2
	Ft. Wayne		St. Joseph River		Mayhew Road		9/8/2003	Normal	E. coli	48	Colonies/100ml	Allen		32	Aug 11 - Sept 8
	Ft. Wayne		St. Joseph River		Mayhew Road		9/15/2003	Normal	E. coli	168	Colonies/100ml	Allen		31	Aug 18 - Sept 15
	Ft. Wayne		St. Joseph River		Mayhew Road		9/22/2003	Normal	E. coli	132	Colonies/100ml	Allen		38	Aug 25 - Sept 22
	Ft. Wayne		St. Joseph River		Mayhew Road		9/29/2003	Normal	E. coli	176	Colonies/100ml	Allen		52	Sept 2 - Sept 29
	Ft. Wayne		St. Joseph River		Mayhew Road		10/6/2003	Normal	E. coli	76	Colonies/100ml	Allen		107	Sept 8 - Oct 6
	Ft. Wayne		St. Joseph River		Mayhew Road		10/13/2003	Normal	E. coli	106	Colonies/100ml	Allen		126	Sept 15 - Oct 13
	Ft. Wayne		St. Joseph River		Mayhew Road		10/20/2003	Normal	E. coli		Colonies/100ml	Allen		117	Sept 22 - Oct 20
	Ft. Wayne		St. Joseph River		Mayhew Road		10/27/2003	Normal	E. coli	18	Colonies/100ml	Allen		71	Sept 29 - Oct 27
	Ft. Wayne		St. Joseph River		Tennessee St		4/3/2001	Normal	E. coli	220	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/9/2001	Normal	E. coli	260	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/16/2001	Normal	E. coli	110	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/23/2001	Normal	E. coli	140	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/30/2001	Normal	E. coli	20	Colonies/100ml	Allen		112	April 3 - April 20
	Ft. Wayne		St. Joseph River		Tennessee St		5/7/2001	Normal	E. coli	48	Colonies/100ml	Allen		83	April 9 - May 7
	Ft. Wayne		St. Joseph River		Tennessee St		5/14/2001	Normal	E. coli	32	Colonies/100ml	Allen		54	April 16 - May 14
	Ft. Wayne		St. Joseph River		Tennessee St		5/21/2001	Normal	E. coli	500	Colonies/100ml	Allen		74	April 23 - May 21
	Ft. Wayne		St. Joseph River		Tennessee St		5/29/2001	Normal	E. coli	540	Colonies/100ml	Allen		96	April 30 - May 29
	Ft. Wayne		St. Joseph River		Tennessee St		6/4/2001	Normal	E. coli	370	Colonies/100ml	Allen		173	May 7 - June 4
	Ft. Wayne		St. Joseph River		Tennessee St		6/11/2001	Normal	E. coli	100	Colonies/100ml	Allen		200	May 14 - June 11
	Ft. Wayne		St. Joseph River		Tennessee St		6/18/2001	Normal	E. coli	100	Colonies/100ml	Allen		251	May 21 - June 18
	Ft. Wayne		St. Joseph River		Tennessee St		6/26/2001	Normal	E. coli	200	Colonies/100ml	Allen		209	May 29 - June 26
	Ft. Wayne		St. Joseph River		Tennessee St		7/2/2001	Normal	E. coli	144	Colonies/100ml	Allen		161	June 4 - July 2
	Ft. Wayne		St. Joseph River		Tennessee St		7/9/2001	Normal	E. coli	100	Colonies/100ml	Allen		124	June 11 - July 9
	Ft. Wayne		St. Joseph River		Tennessee St		7/16/2001	Normal	E. coli	20	Colonies/100ml	Allen		90	June 18 - July 16
	Ft. Wayne		St. Joseph River		Tennessee St		7/23/2001	Normal	E. coli	80	Colonies/100ml	Allen		86	June 26 - July 23
	Ft. Wayne		St. Joseph River		Tennessee St		7/30/2001	Normal	E. coli	44	Colonies/100ml	Allen		63	July 2 - July 30
	Ft. Wayne		St. Joseph River		Tennessee St		8/6/2001	Normal	E. coli	102	Colonies/100ml	Allen		59	July 9 - Aug 6
	Ft. Wayne		St. Joseph River		Tennessee St		8/14/2001	Normal	E. coli	102	Colonies/100ml	Allen		59	July 16 - Aug 14
	Ft. Wayne		St. Joseph River		Tennessee St		8/20/2001	Normal	E. coli	480	Colonies/100ml	Allen		112	July 23 - Aug 20
	Ft. Wayne		St. Joseph River		Tennessee St		8/27/2001	Normal	E. coli	450	Colonies/100ml	Allen		158	July 30 - Aug 27
	Ft. Wayne		St. Joseph River		Tennessee St		9/4/2001	Normal	E. coli	210	Colonies/100ml	Allen		216	Aug 6 - Sept 4
	Ft. Wayne		St. Joseph River		Tennessee St		9/10/2001	Normal	E. coli	1120	Colonies/100ml	Allen		349	Aug 14 - Sept 10
	Ft. Wayne		St. Joseph River		Tennessee St		9/17/2001	Normal	E. coli	160	Colonies/100ml	Allen		382	Aug 20 - Sept 17
	Ft. Wayne		St. Joseph River		Tennessee St		9/24/2001	Normal	E. coli	360	Colonies/100ml	Allen		361	Aug 27 - Sept 24
	Ft. Wayne		St. Joseph River		Tennessee St		10/1/2001	Normal	E. coli	180	Colonies/100ml	Allen		300	Sept 4 - Oct 1
	Ft. Wayne		St. Joseph River		Tennessee St		10/9/2001	Normal	E. coli	550	Colonies/100ml	Allen		364	Sept 10 - Oct 9
	Ft. Wayne		St. Joseph River		Tennessee St		10/15/2001	Normal	E. coli	3200	Colonies/100ml	Allen		449	Sept 17 - Oct 15

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
	Ft. Wayne		St. Joseph River		Tennessee St		10/22/2001	Normal	E. coli	270	Colonies/100ml	Allen		499	Sept 24 - Oct 22
	Ft. Wayne		St. Joseph River		Tennessee St		10/29/2001	Normal	E. coli	180	Colonies/100ml	Allen		434	Oct 1 - Oct 29
	Ft. Wayne		St. Joseph River		Tennessee St		4/1/2002	Normal	E. coli	544	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/8/2002	Normal	E. coli	320	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/15/2002	Normal	E. coli	220	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/22/2002	Normal	E. coli	200	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/29/2002	Normal	E. coli	360	Colonies/100ml	Allen		268	April 1 - April 29
	Ft. Wayne		St. Joseph River		Tennessee St		5/6/2002	Normal	E. coli	100	Colonies/100ml	Allen		308	April 8 - May 6
	Ft. Wayne		St. Joseph River		Tennessee St		5/13/2002	Normal	E. coli	5600	Colonies/100ml	Allen		219	April 15 - May 13
	Ft. Wayne		St. Joseph River		Tennessee St		5/20/2002	Normal	E. coli	100	Colonies/100ml	Allen		389	April 22 - May 20
	Ft. Wayne		St. Joseph River		Tennessee St		5/29/2002	Normal	E. coli	100	Colonies/100ml	Allen		332	April 29 - May 29
	Ft. Wayne		St. Joseph River		Tennessee St		6/3/2002	Normal	E. coli	140	Colonies/100ml	Allen		289	May 6 - June 3
	Ft. Wayne		St. Joseph River		Tennessee St		6/10/2002	Normal	E. coli	290	Colonies/100ml	Allen		239	May 13 - June 10
	Ft. Wayne		St. Joseph River		Tennessee St		6/17/2002	Normal	E. coli	140	Colonies/100ml	Allen		296	May 20 - June 17
	Ft. Wayne		St. Joseph River		Tennessee St		6/24/2002	Normal	E. coli	240	Colonies/100ml	Allen		142	May 29 - June 24
	Ft. Wayne		St. Joseph River		Tennessee St		7/1/2002	Normal	E. coli	240	Colonies/100ml	Allen		169	June 3 - July 1
	Ft. Wayne		St. Joseph River		Tennessee St		7/8/2002	Normal	E. coli	210	Colonies/100ml	Allen		201	June 10 - July 8
	Ft. Wayne		St. Joseph River		Tennessee St		7/15/2002	Normal	E. coli	220	Colonies/100ml	Allen		218	June 17 - July 15
	Ft. Wayne		St. Joseph River		Tennessee St		7/22/2002	Normal	E. coli	150	Colonies/100ml	Allen		206	June 24 - July 22
	Ft. Wayne		St. Joseph River		Tennessee St		7/29/2002	Normal	E. coli	80	Colonies/100ml	Allen		209	July 1 - July 29
	Ft. Wayne		St. Joseph River		Tennessee St		8/5/2002	Normal	E. coli	50	Colonies/100ml	Allen		168	July 8 - Aug 5
	Ft. Wayne		St. Joseph River		Tennessee St		8/12/2002	Normal	E. coli	245	Colonies/100ml	Allen		123	July 15 - Aug 12
	Ft. Wayne		St. Joseph River		Tennessee St		8/19/2002	Normal	E. coli	980	Colonies/100ml	Allen		126	July 22 - Aug 19
	Ft. Wayne		St. Joseph River		Tennessee St		8/26/2002	Normal	E. coli	210	Colonies/100ml	Allen		170	July 29 - Aug 26
	Ft. Wayne		St. Joseph River		Tennessee St		9/3/2002	Normal	E. coli	70	Colonies/100ml	Allen		182	Aug 5 - Sept 3
	Ft. Wayne		St. Joseph River		Tennessee St		9/9/2002	Normal	E. coli	50	Colonies/100ml	Allen		178	Aug 12 - Sept 9
	Ft. Wayne		St. Joseph River		Tennessee St		9/16/2002	Normal	E. coli	30	Colonies/100ml	Allen		178	Aug 19 - Aug 16
	Ft. Wayne		St. Joseph River		Tennessee St		9/24/2002	Normal	E. coli	415	Colonies/100ml	Allen		117	Aug 26 - Sept 24
	Ft. Wayne		St. Joseph River		Tennessee St		9/30/2002	Normal	E. coli	320	Colonies/100ml	Allen		98	Sept 3 - Sept 30
	Ft. Wayne		St. Joseph River		Tennessee St		10/7/2002	Normal	E. coli	100	Colonies/100ml	Allen		107	Sept 9 - Oct 7
	Ft. Wayne		St. Joseph River		Tennessee St		10/14/2002	Normal	E. coli	10	Colonies/100ml	Allen		115	Sept 16 - Oct 14
	Ft. Wayne		St. Joseph River		Tennessee St		10/21/2002	Normal	E. coli	75	Colonies/100ml	Allen		83	Sept 24 - Oct 21
	Ft. Wayne		St. Joseph River		Tennessee St		10/28/2002	Normal	E. coli	150	Colonies/100ml	Allen			Sept 30 - Oct 28
	Ft. Wayne		St. Joseph River		Tennessee St		4/7/2003	Normal	E. coli	8	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/14/2003	Normal	E. coli	34	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/21/2003	Normal	E. coli	5	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		4/28/2003	Normal	E. coli	3	Colonies/100ml	Allen			
	Ft. Wayne		St. Joseph River		Tennessee St		5/5/2003	Normal	E. coli	12	Colonies/100ml	Allen		9	April 7 - May 5
	Ft. Wayne		St. Joseph River		Tennessee St		5/12/2003	Normal	E. coli	700	Colonies/100ml	Allen		21	April 14 - May 12
	Ft. Wayne		St. Joseph River		Tennessee St		5/19/2003	Normal	E. coli	78	Colonies/100ml	Allen		25	April 21 - May 19

Attachment A: E. coli Data for the St Marys River Watershed

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	Geo Mean	
	Ft. Wayne		St. Joseph River		Tennessee St		5/27/2003	Normal	E. coli	76	Colonies/100ml	Allen		43	April 28 - May 27
	Ft. Wayne		St. Joseph River		Tennessee St		6/2/2003	Normal	E. coli	38	Colonies/100ml	Allen		72	May 5 - June 2
	Ft. Wayne		St. Joseph River		Tennessee St		6/9/2003	Normal	E. coli	80	Colonies/100ml	Allen		105	May 12 - June 9
	Ft. Wayne		St. Joseph River		Tennessee St		6/16/2003	Normal	E. coli	130	Colonies/100ml	Allen		75	May 19 - June 16
	Ft. Wayne		St. Joseph River		Tennessee St		6/23/2003	Normal	E. coli	40	Colonies/100ml	Allen		65	May 27 - June 23
	Ft. Wayne		St. Joseph River		Tennessee St		6/30/2003	Normal	E. coli	190	Colonies/100ml	Allen		79	June 2 - June 30
	Ft. Wayne		St. Joseph River		Tennessee St		7/7/2003	Normal	E. coli	360	Colonies/100ml	Allen		123	June 9 - July 7
	Ft. Wayne		St. Joseph River		Tennessee St		7/15/2003	Normal	E. coli	500	Colonies/100ml	Allen		178	June 16 - July 15
	Ft. Wayne		St. Joseph River		Tennessee St		7/21/2003	Normal	E. coli	440	Colonies/100ml	Allen		227	June 23 - July 21
	Ft. Wayne		St. Joseph River		Tennessee St		7/28/2003	Normal	E. coli	60	Colonies/100ml	Allen		246	June 30 - July 28
	Ft. Wayne		St. Joseph River		Tennessee St		8/4/2003	Normal	E. coli	640	Colonies/100ml	Allen		314	July 7 - Aug 4
	Ft. Wayne		St. Joseph River		Tennessee St		8/11/2003	Normal	E. coli	120	Colonies/100ml	Allen		252	July 15 - Aug 11
	Ft. Wayne		St. Joseph River		Tennessee St		8/18/2003	Normal	E. coli	54	Colonies/100ml	Allen		161	July 21 - Aug 18
	Ft. Wayne		St. Joseph River		Tennessee St		8/25/2003	Normal	E. coli	20	Colonies/100ml	Allen		87	July 28 - Aug 25
	Ft. Wayne		St. Joseph River		Tennessee St		9/2/2003	Normal	E. coli	8	Colonies/100ml	Allen		58	Aug 4 - Sept 2
	Ft. Wayne		St. Joseph River		Tennessee St		9/8/2003	Normal	E. coli	96	Colonies/100ml	Allen		40	Aug 11 - Sept 8
	Ft. Wayne		St. Joseph River		Tennessee St		9/15/2003	Normal	E. coli	92	Colonies/100ml	Allen		38	Aug 18 - Sept 15
	Ft. Wayne		St. Joseph River		Tennessee St		9/22/2003	Normal	E. coli	92	Colonies/100ml	Allen		42	Aug 25 - Sept 22
	Ft. Wayne		St. Joseph River		Tennessee St		9/29/2003	Normal	E. coli	184	Colonies/100ml	Allen		65	Sept 2 - Sept 29
	Ft. Wayne		St. Joseph River		Tennessee St		10/6/2003	Normal	E. coli	104	Colonies/100ml	Allen		109	Sept 15 - Oct 6
	Ft. Wayne		St. Joseph River		Tennessee St		10/13/2003	Normal	E. coli	20	Colonies/100ml	Allen		80	Sept 22 - Oct 13
	Ft. Wayne		St. Joseph River		Tennessee St		10/20/2003	Normal	E. coli		Colonies/100ml	Allen		77	Sept 29 - Oct 20
	Ft. Wayne		St. Joseph River		Tennessee St		10/27/2003	Normal	E. coli	23	Colonies/100ml	Allen		54	Oct 6 - Oct 27

Attachment B

Water Quality Duration Curves for St. Marys River Watershed TMDL

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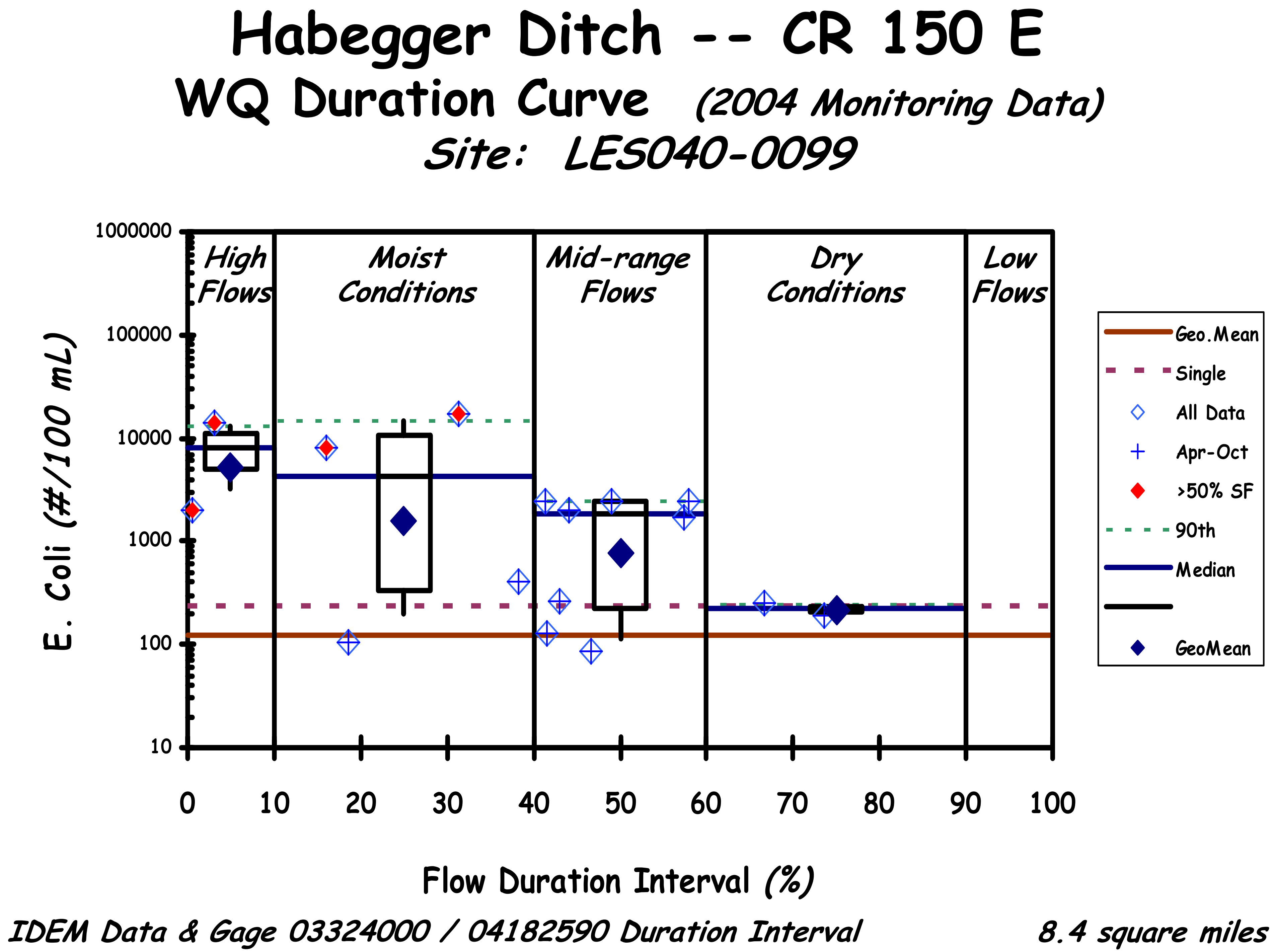
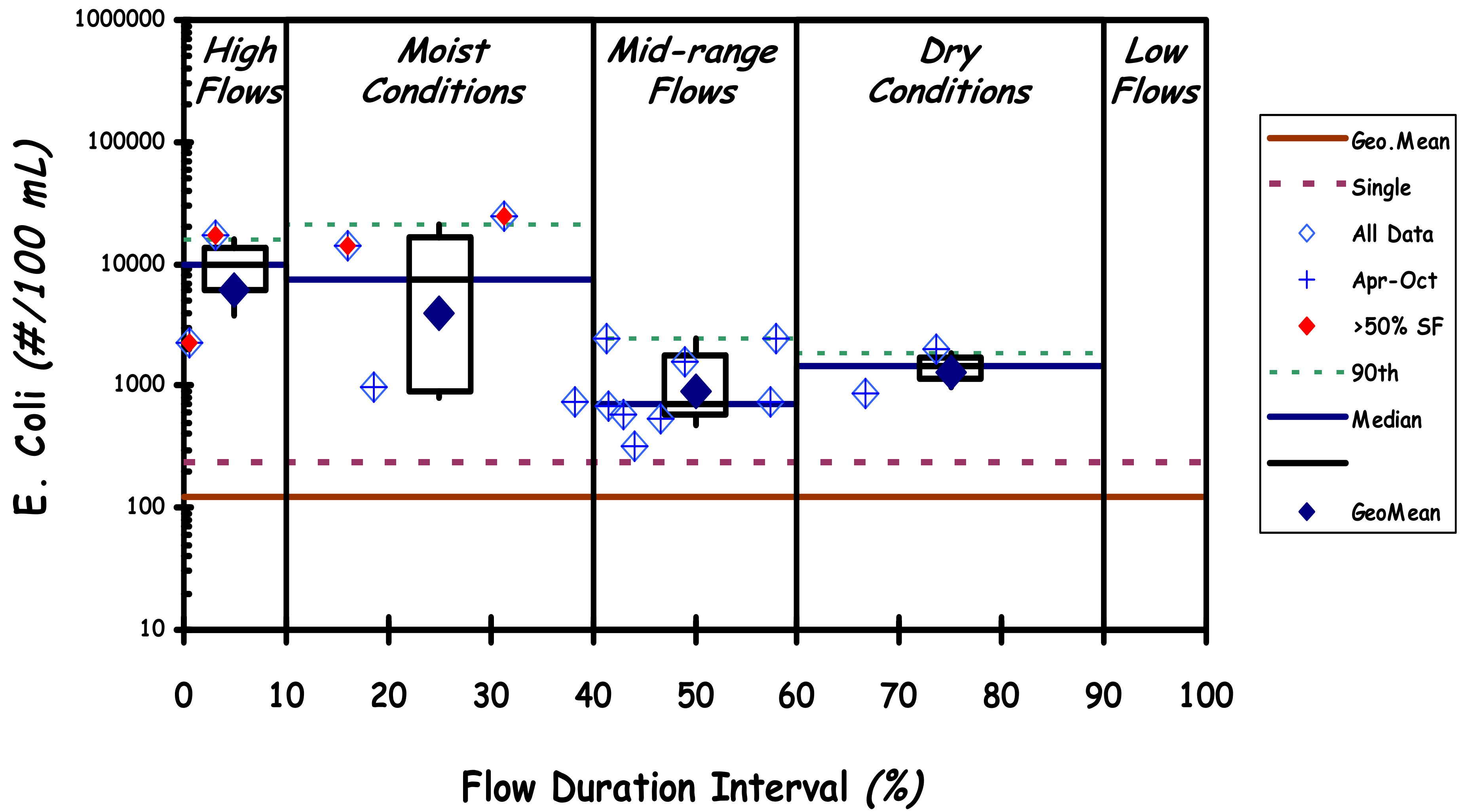


Habegger Ditch -- CR 150 E
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0099
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM Data & Gage 03324000 / 04182590 Duration Interval
8.4 square miles

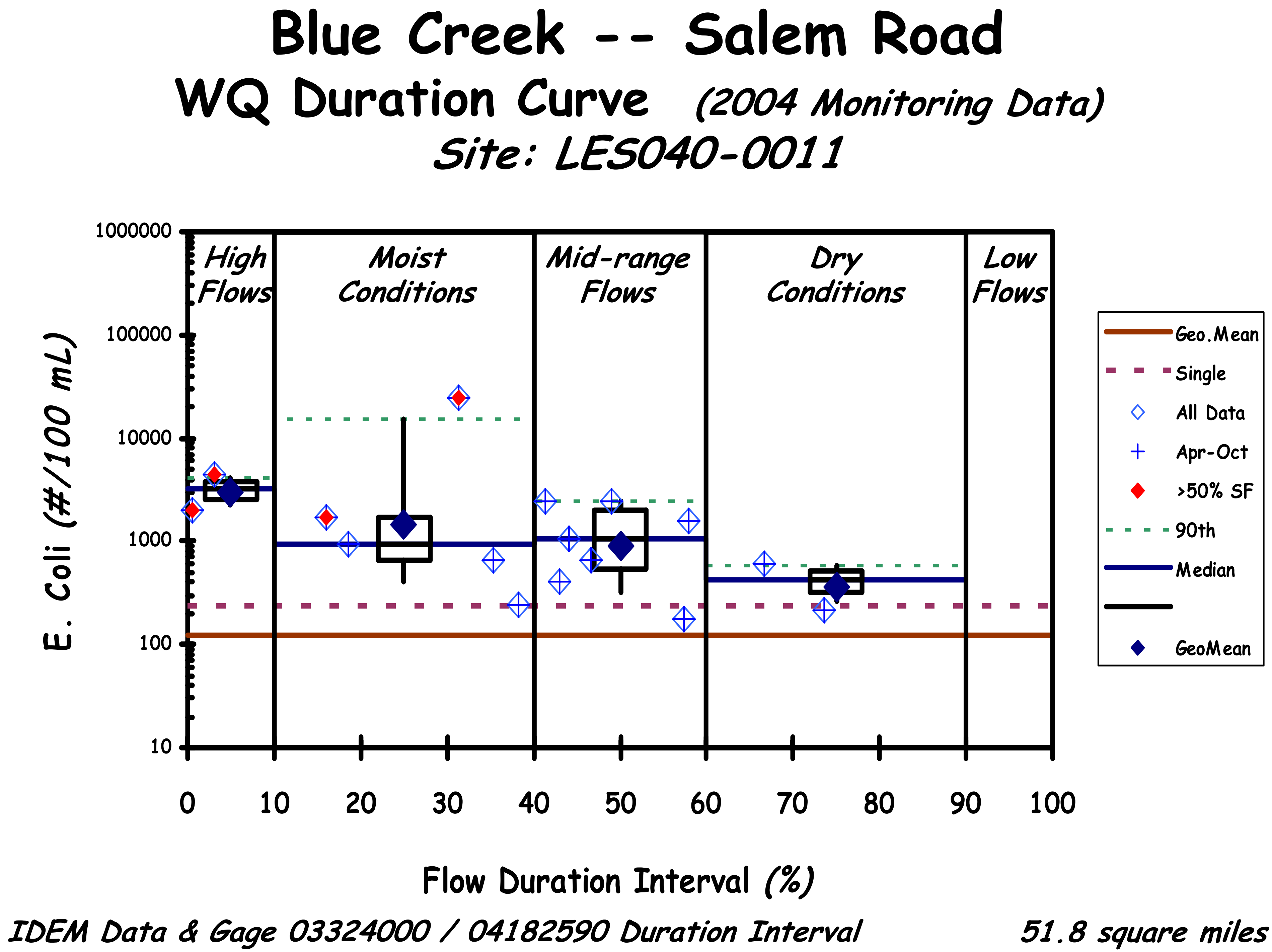
Gates Ditch -- CR 400 S

WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0023



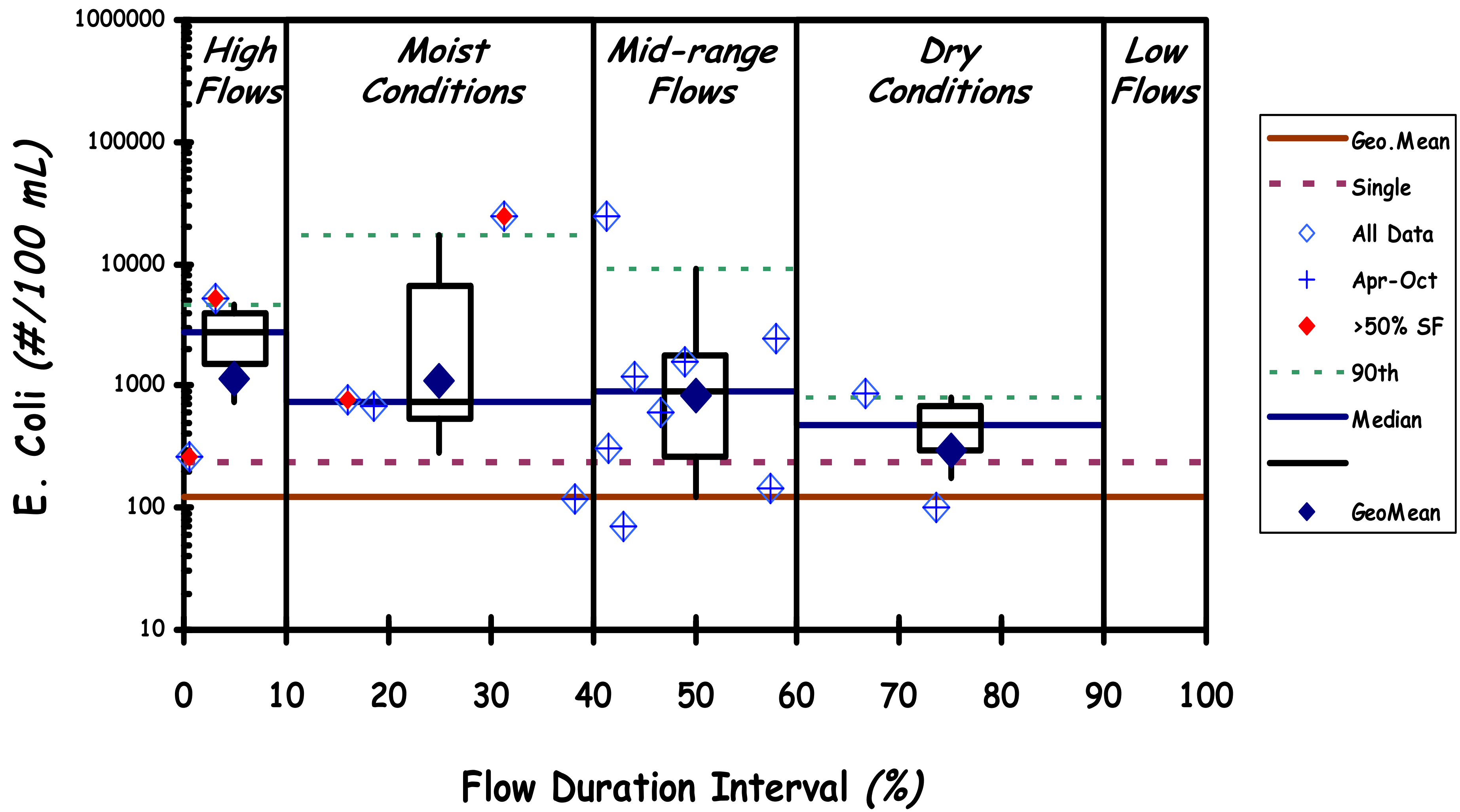
IDEM Data & Gage 03324000 / 04182590 Duration Interval *20.1 square miles*


Blue Creek -- Salem Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0011
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM Data & Gage 03324000 / 04182590 Duration Interval
51.8 square miles

Little Blue Creek -- CR 400 S

WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0010

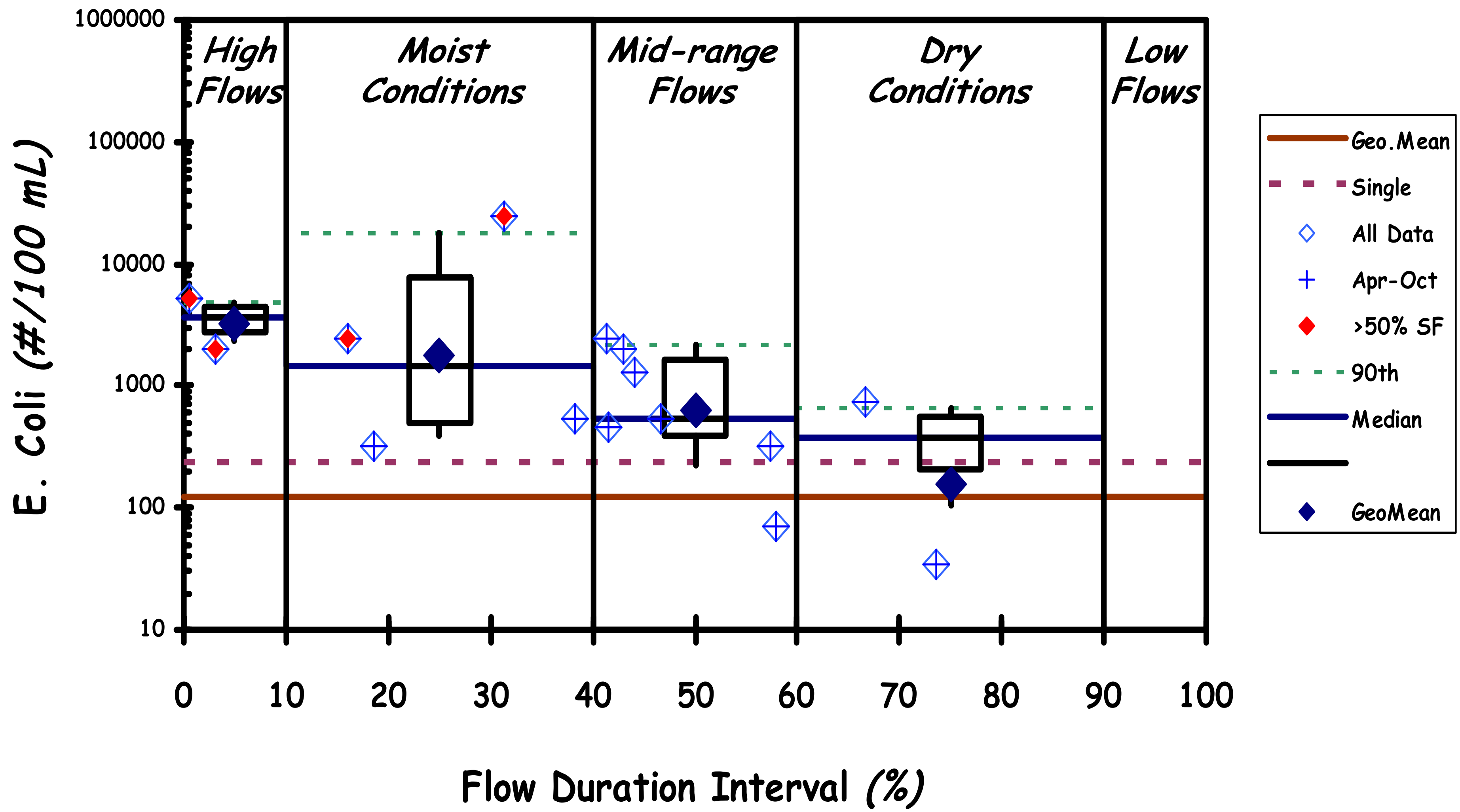


IDEM Data & Gage 03324000 / 04182590 Duration Interval *16.3 square miles*

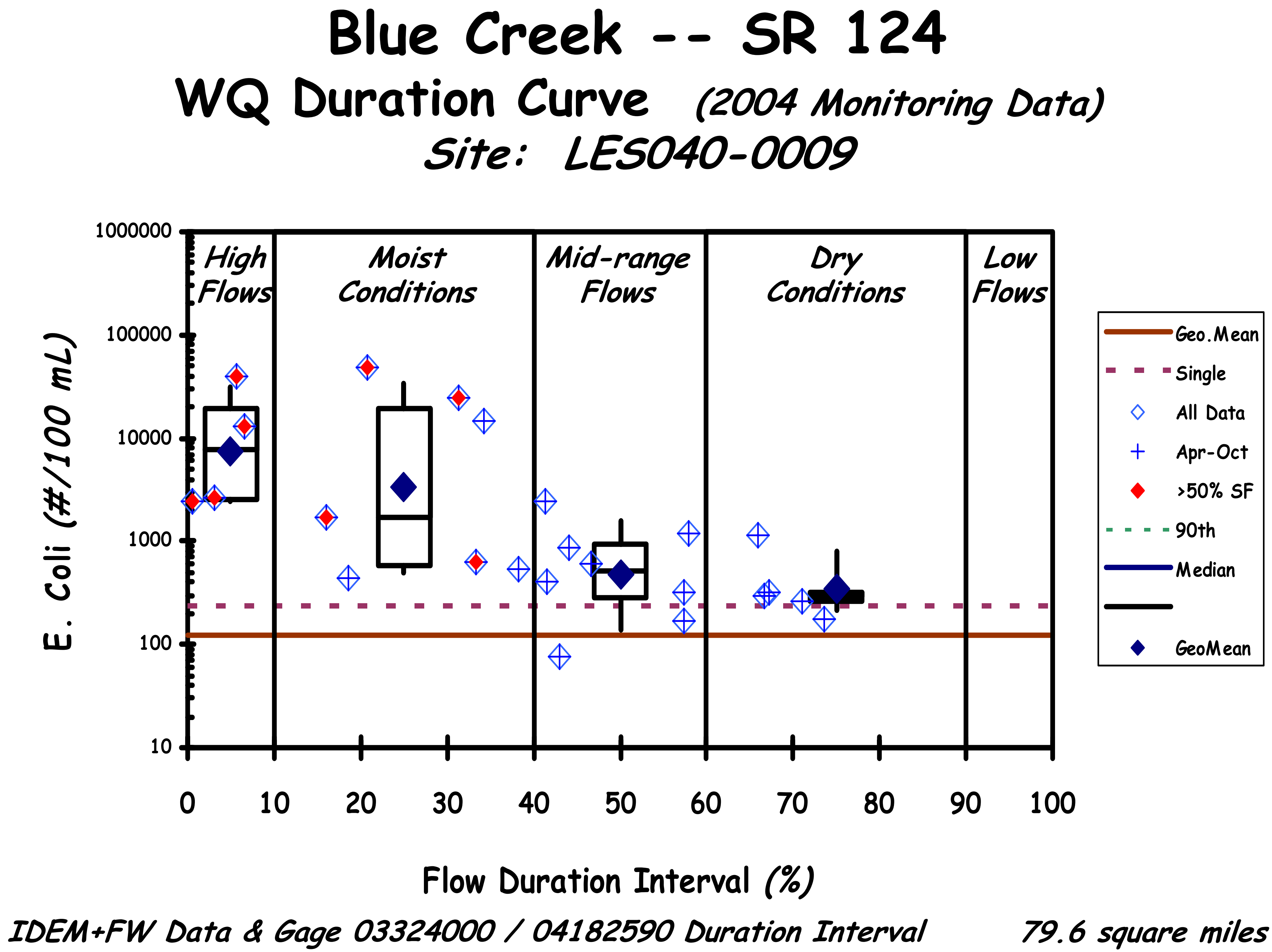
Blue Creek -- CR 300 S

WQ Duration Curve *(2004 Monitoring Data)*

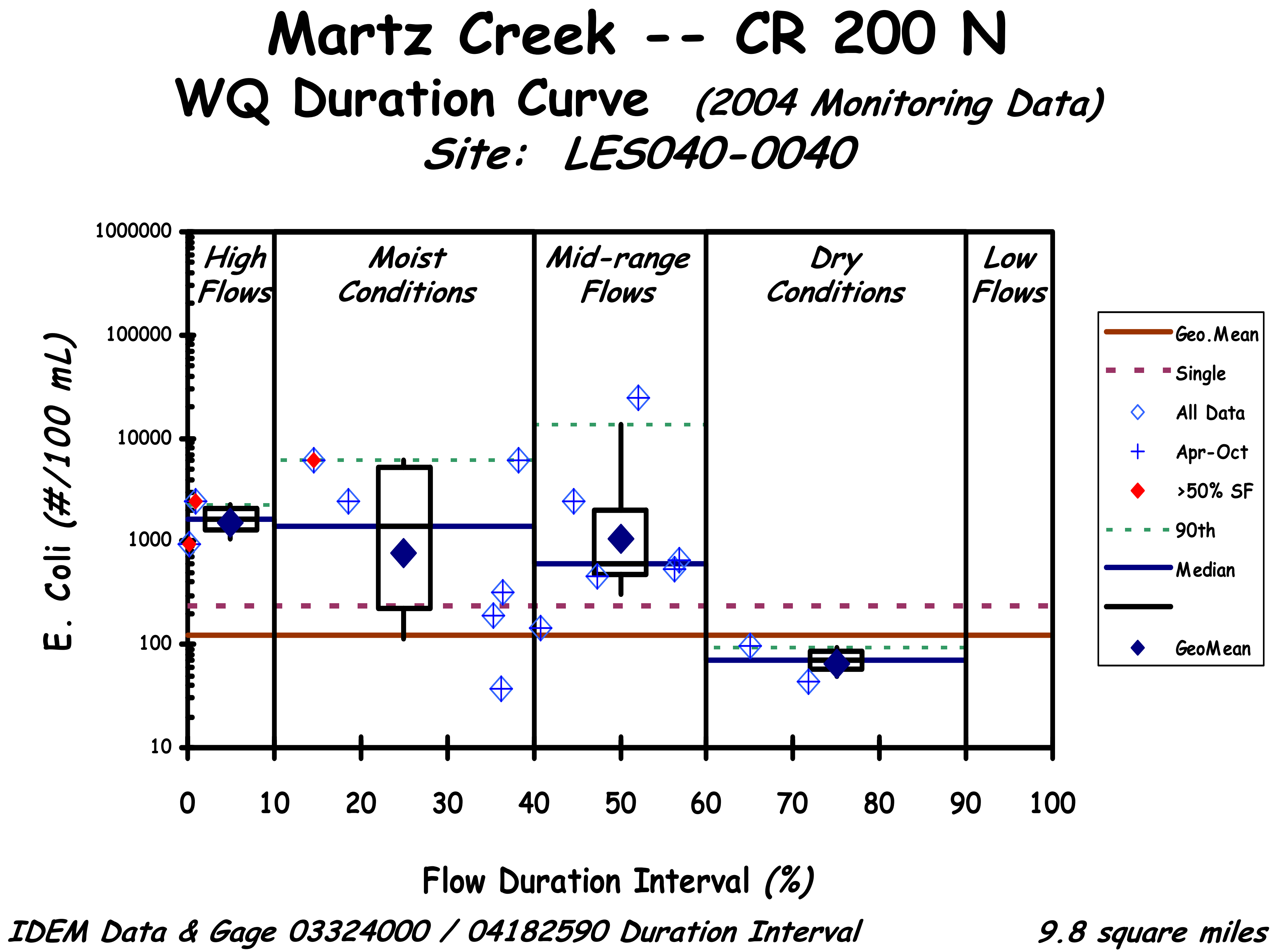
Site: LES040-0066

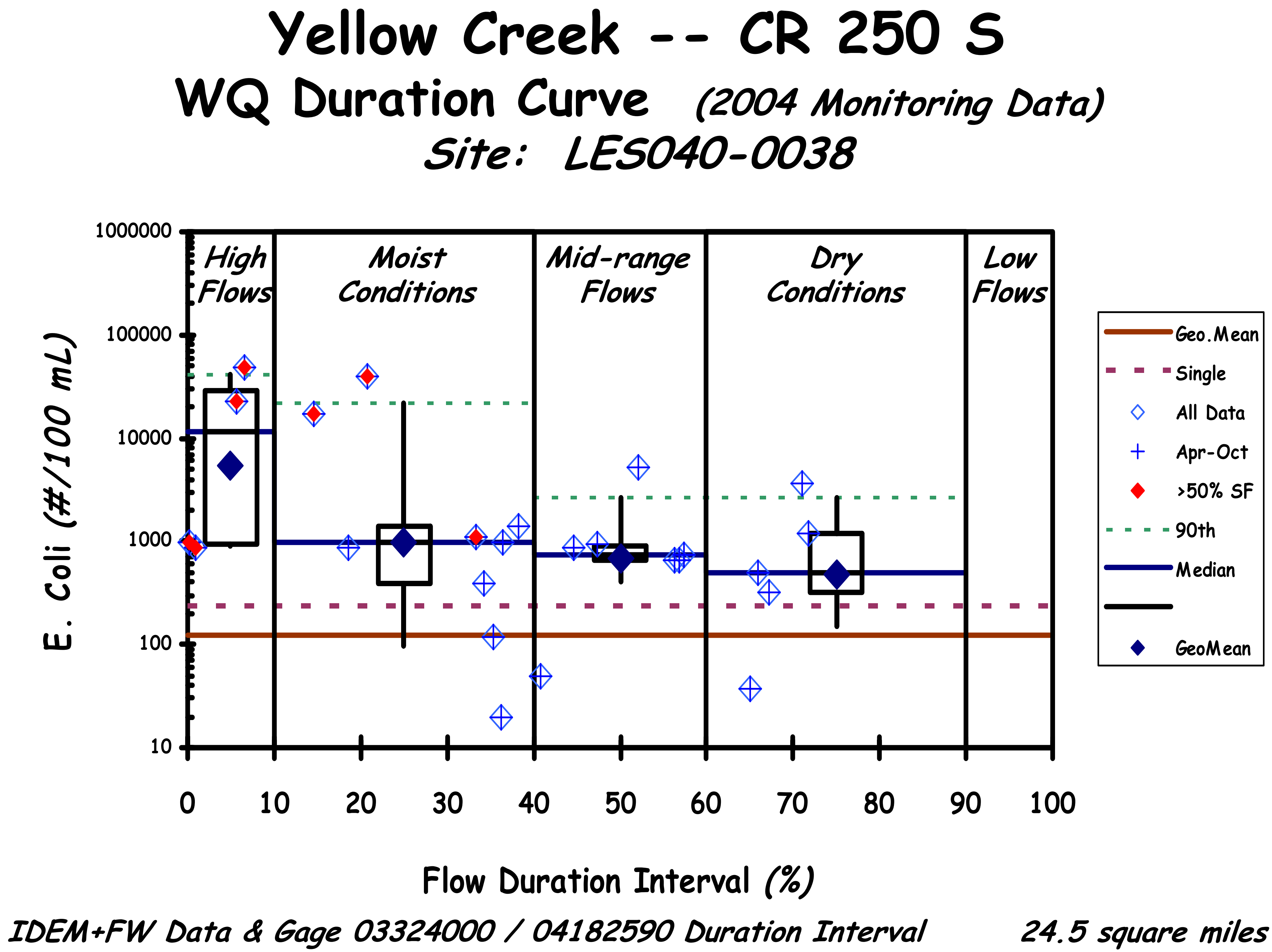


IDEM Data & Gage 03324000 / 04182590 Duration Interval *71.0 square miles*

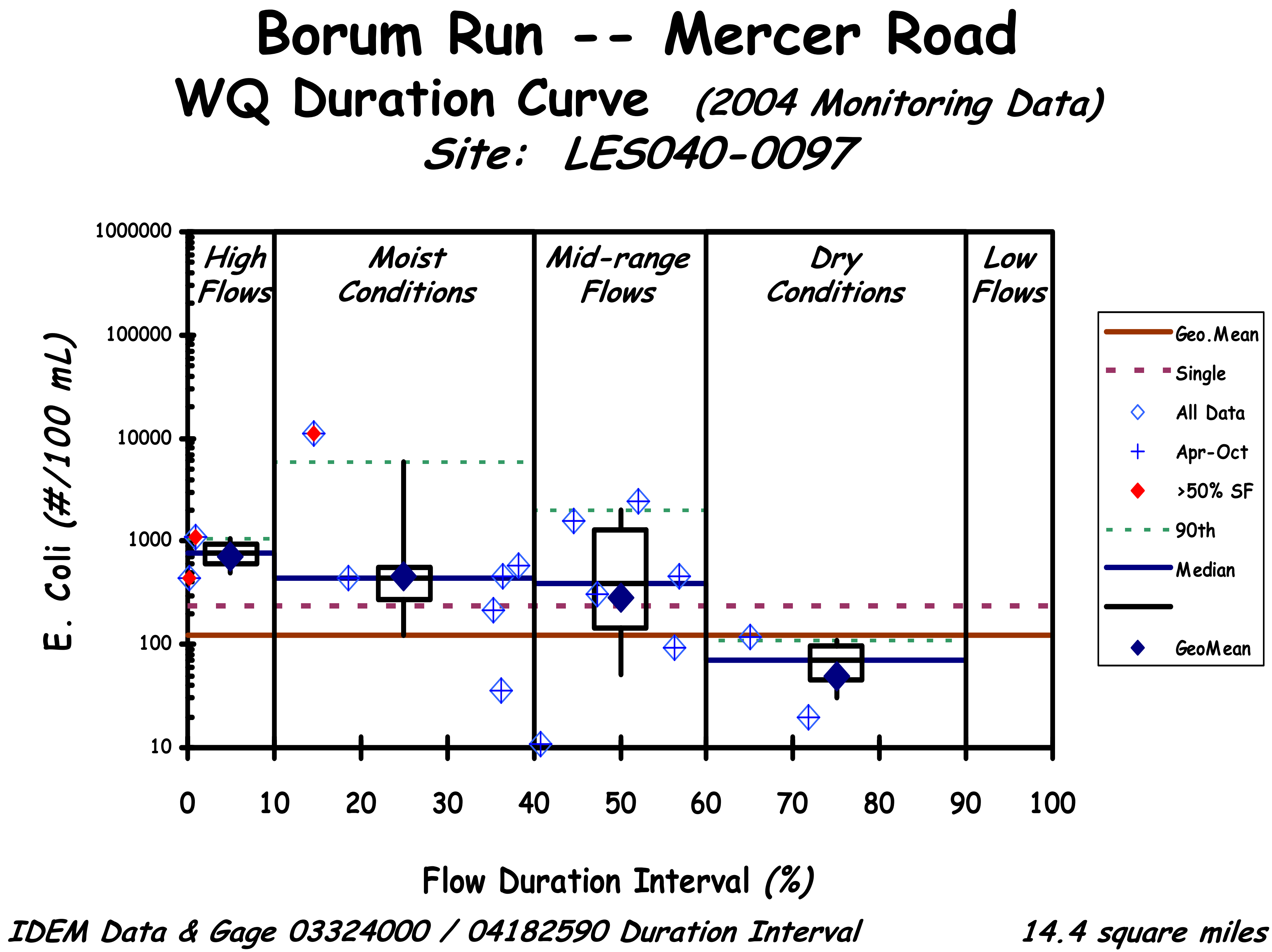


Blue Creek -- SR 124
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
79.6 square miles

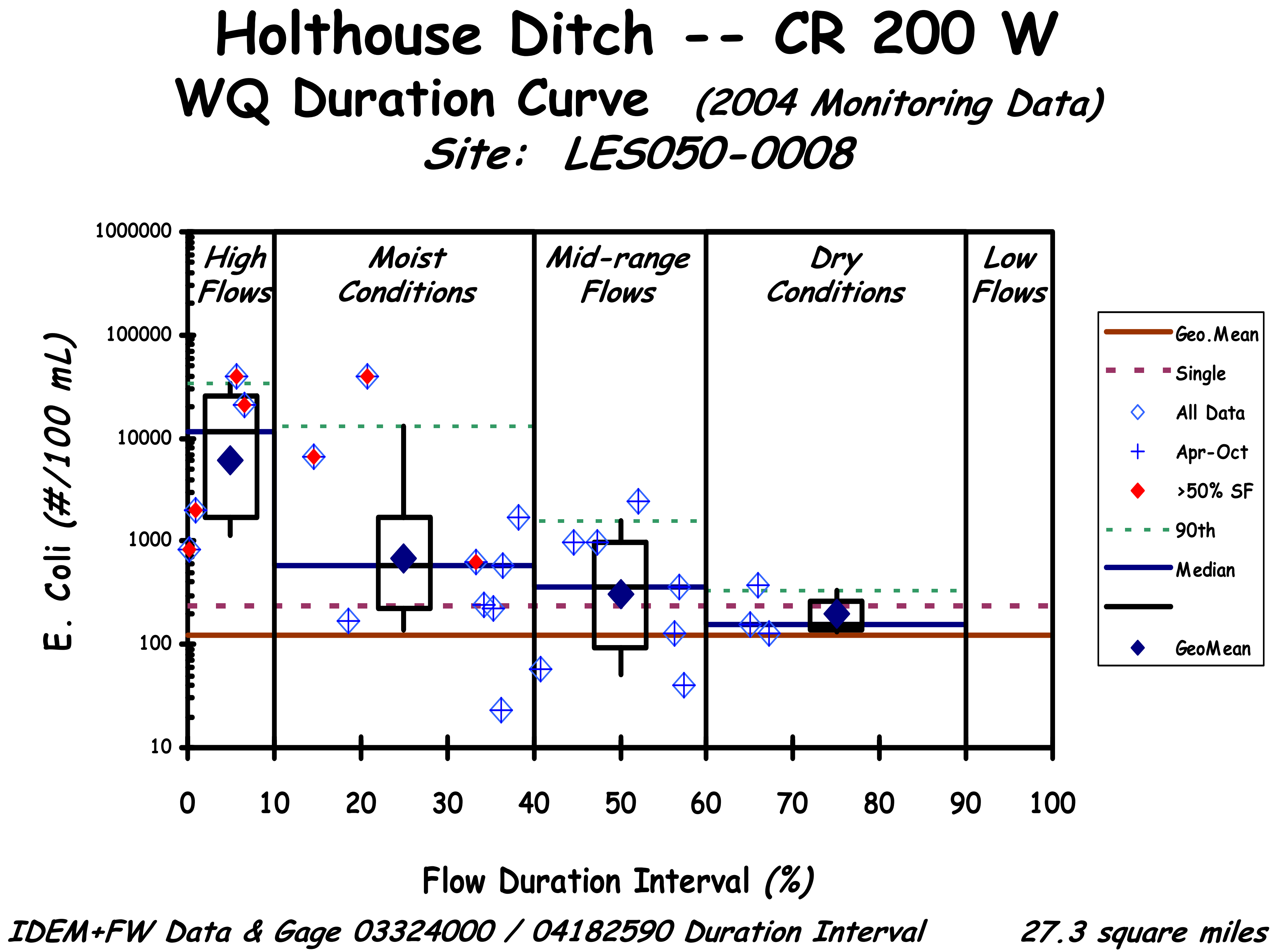

Martz Creek -- CR 200 N
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0040
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM Data & Gage 03324000 / 04182590 Duration Interval
9.8 square miles



Yellow Creek -- CR 250 S
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0038
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
1000000
100000
10000
1000
100
10
E. Coli (#/100 mL)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
24.5 square miles

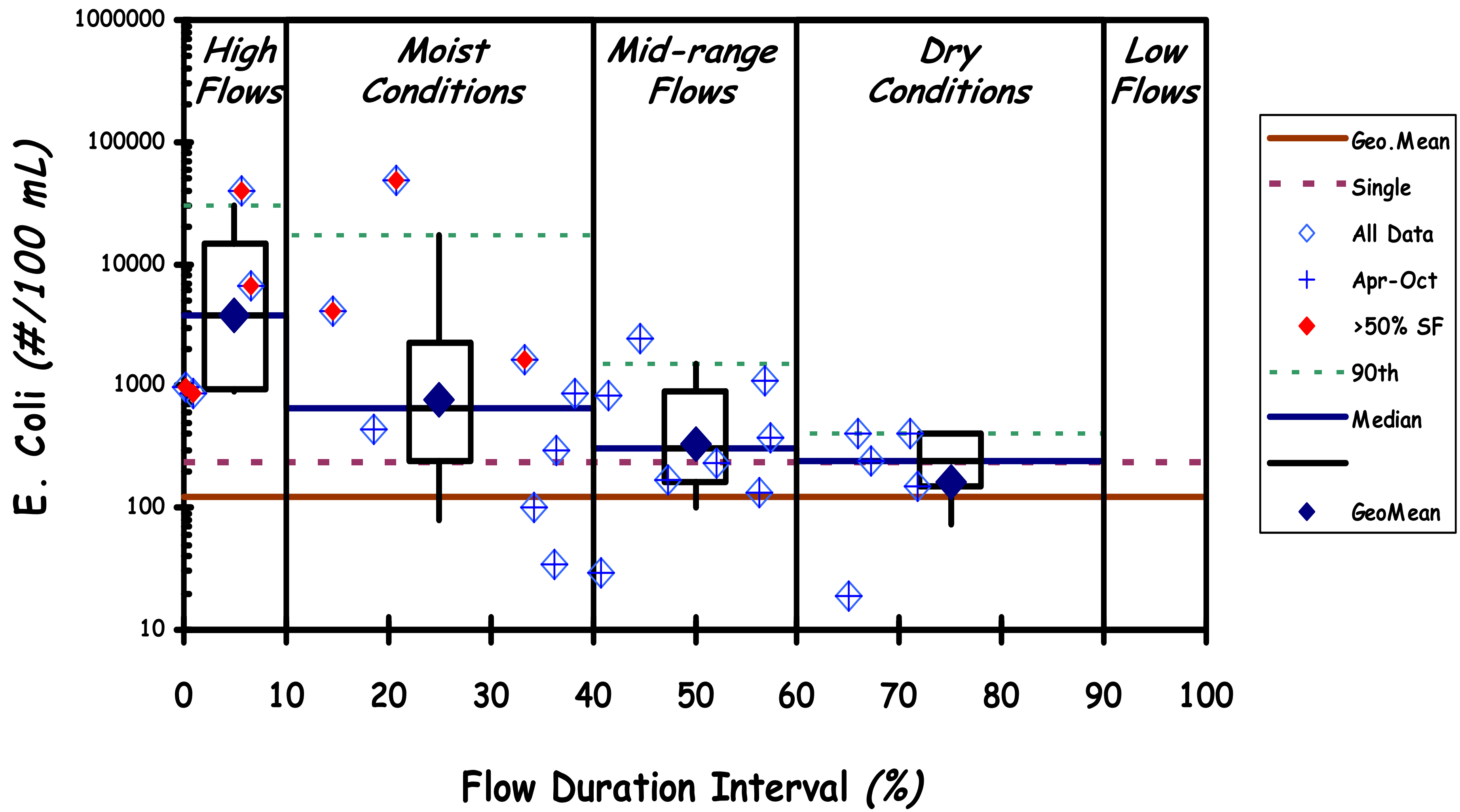


Borum Run -- Mercer Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0097
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
1000000
100000
10000
1000
100
10
E. Coli (#/100 mL)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM Data & Gage 03324000 / 04182590 Duration Interval
14.4 square miles

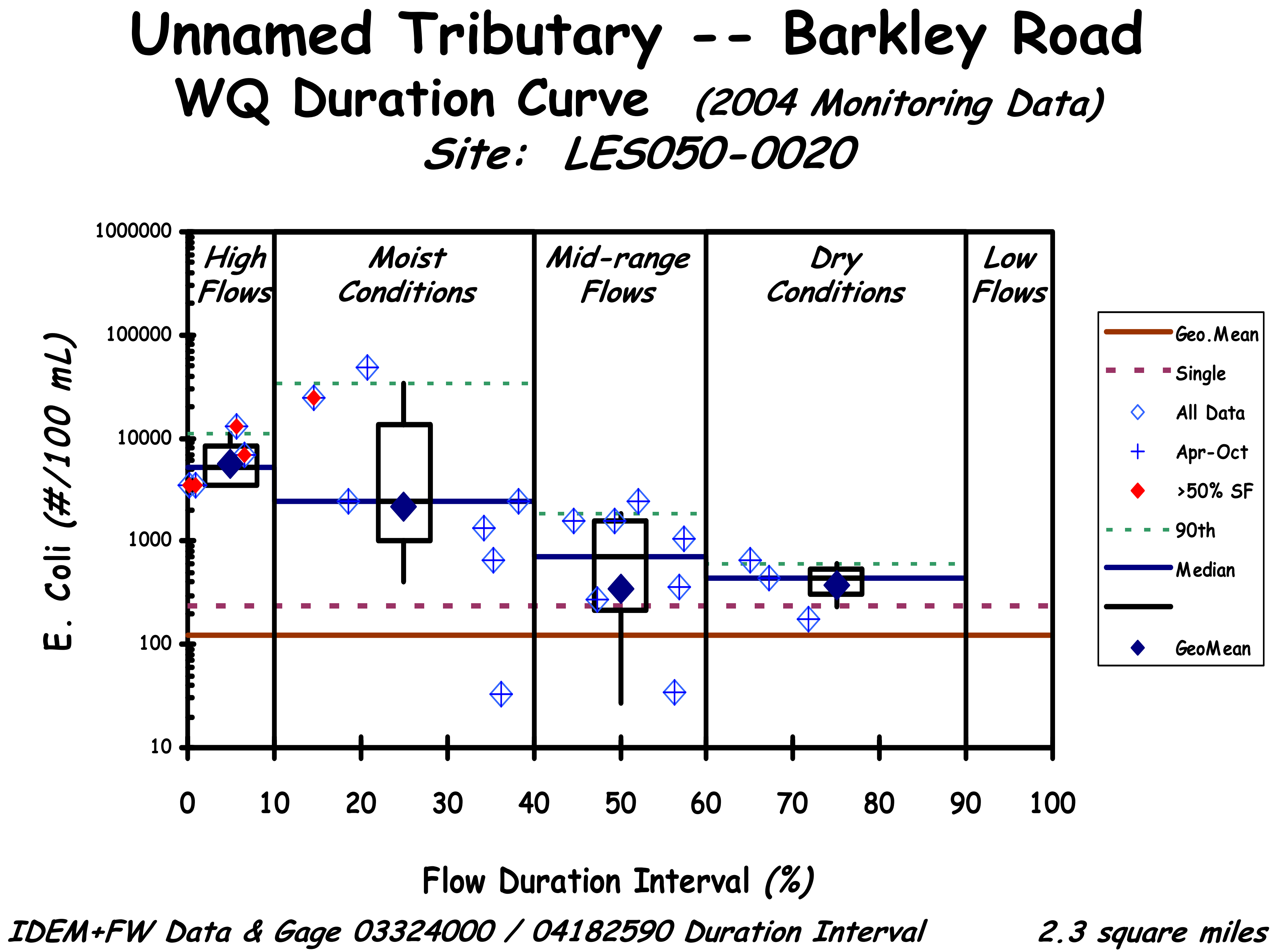


Holthouse Ditch -- CR 200 W
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0008
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
27.3 square miles

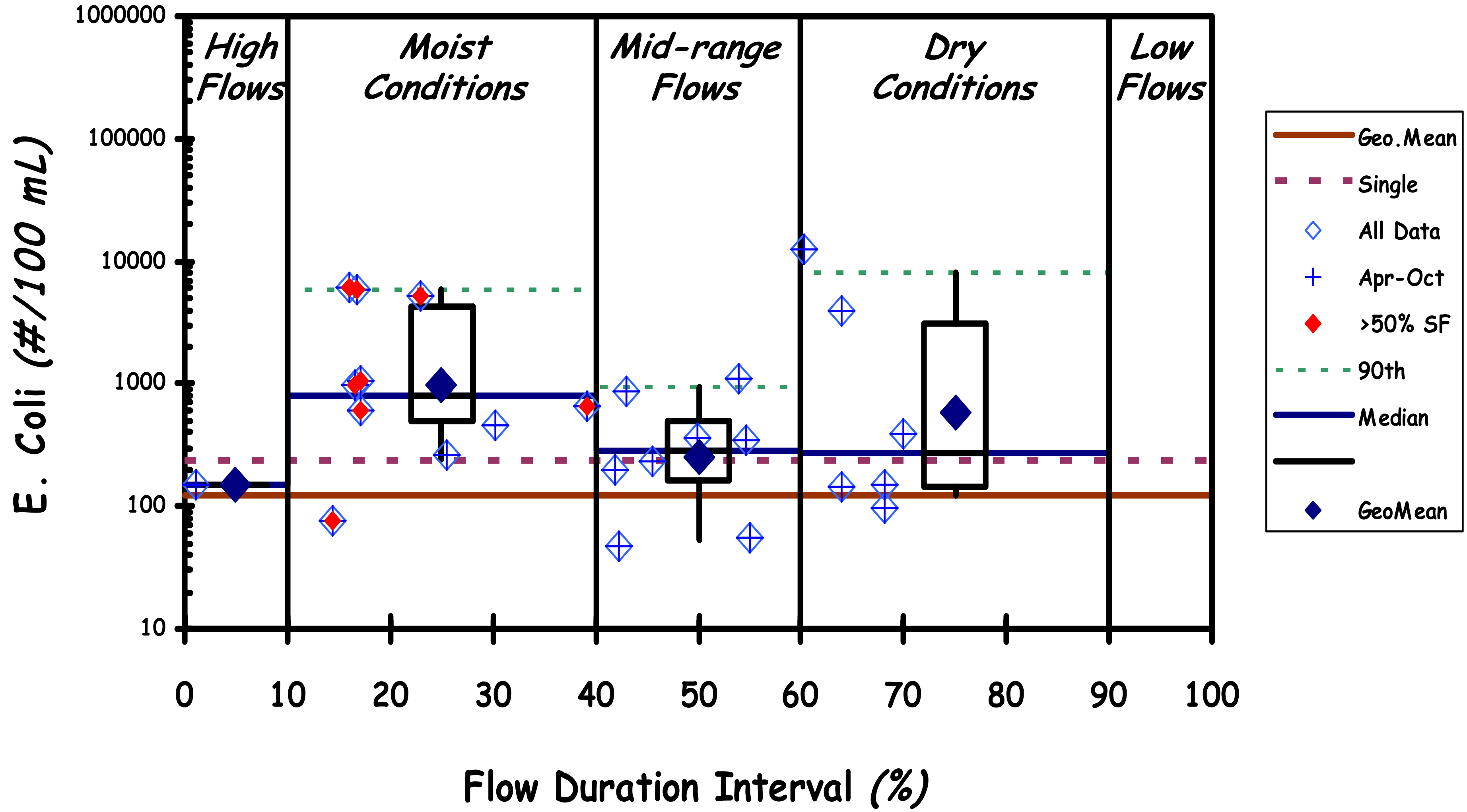
Nickelsen Creek - CR 1100 N
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES050-0015



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *12.2 square miles*


Unnamed Tributary -- Barkley Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0020
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
2.3 square miles

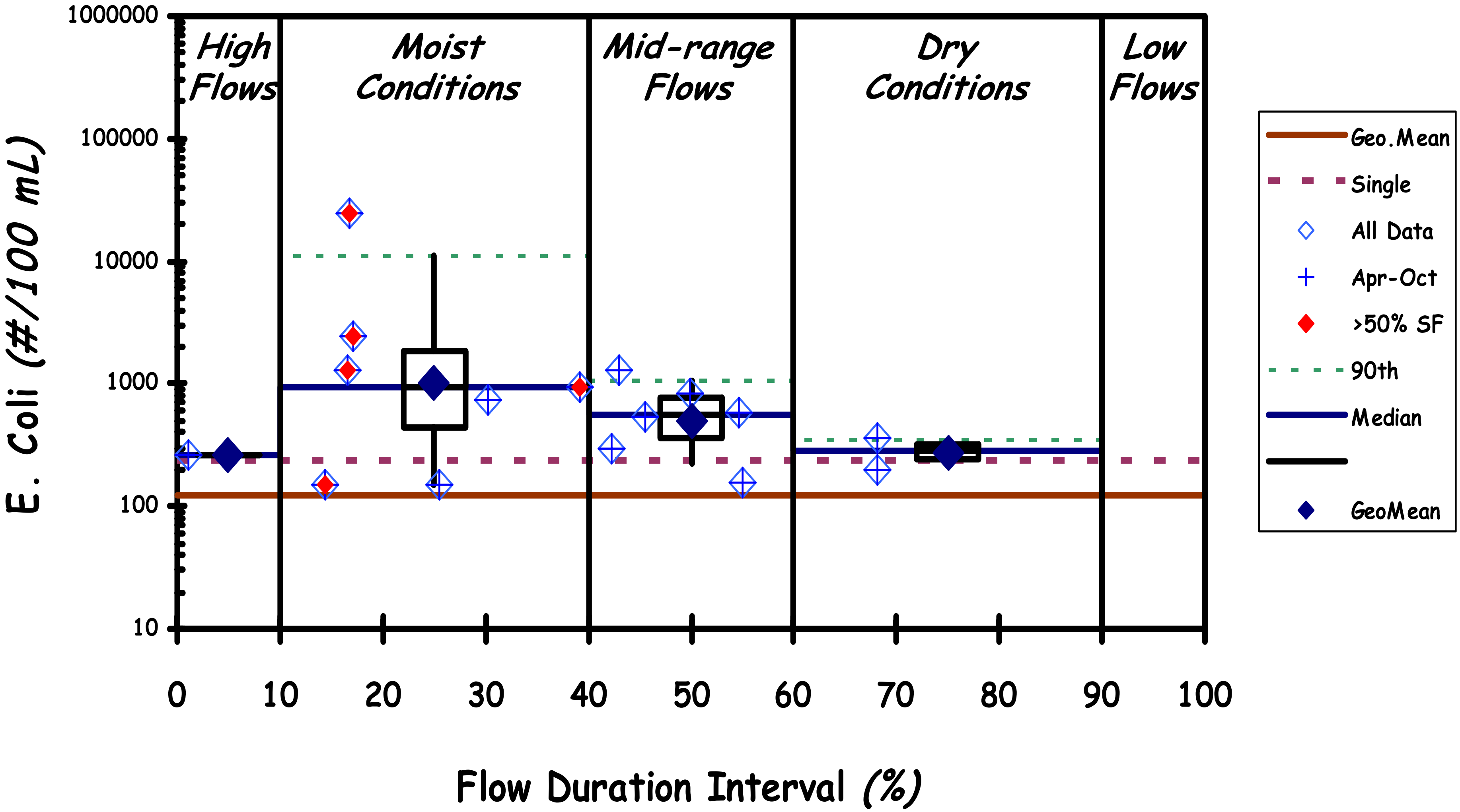
St. Mary's River at Wilshire, OH
WQ Duration Curve *(2004 Monitoring Data)*
Site: UNK000-0007



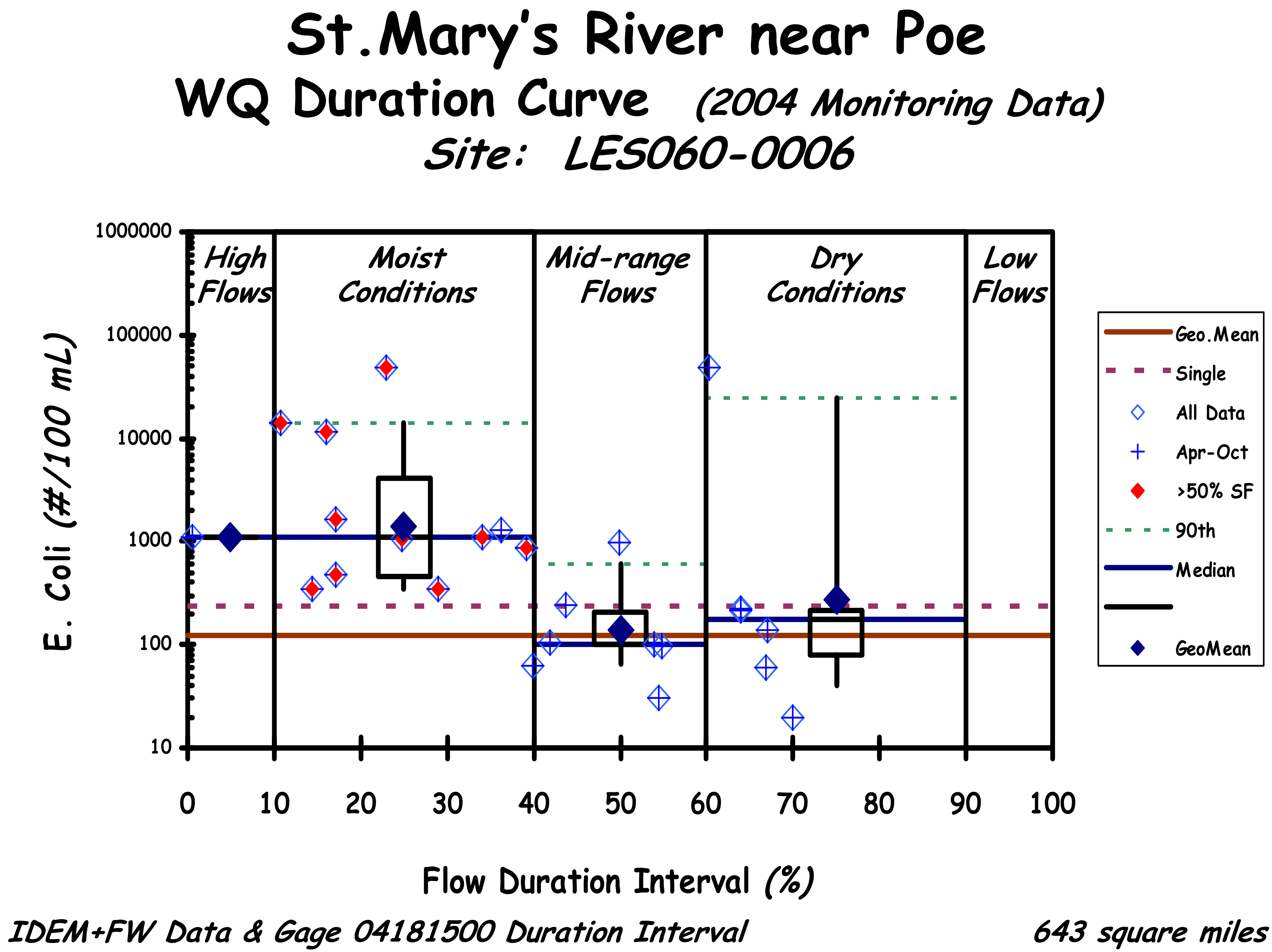
IDEM+FW Data & Gage 04181500 Duration Interval

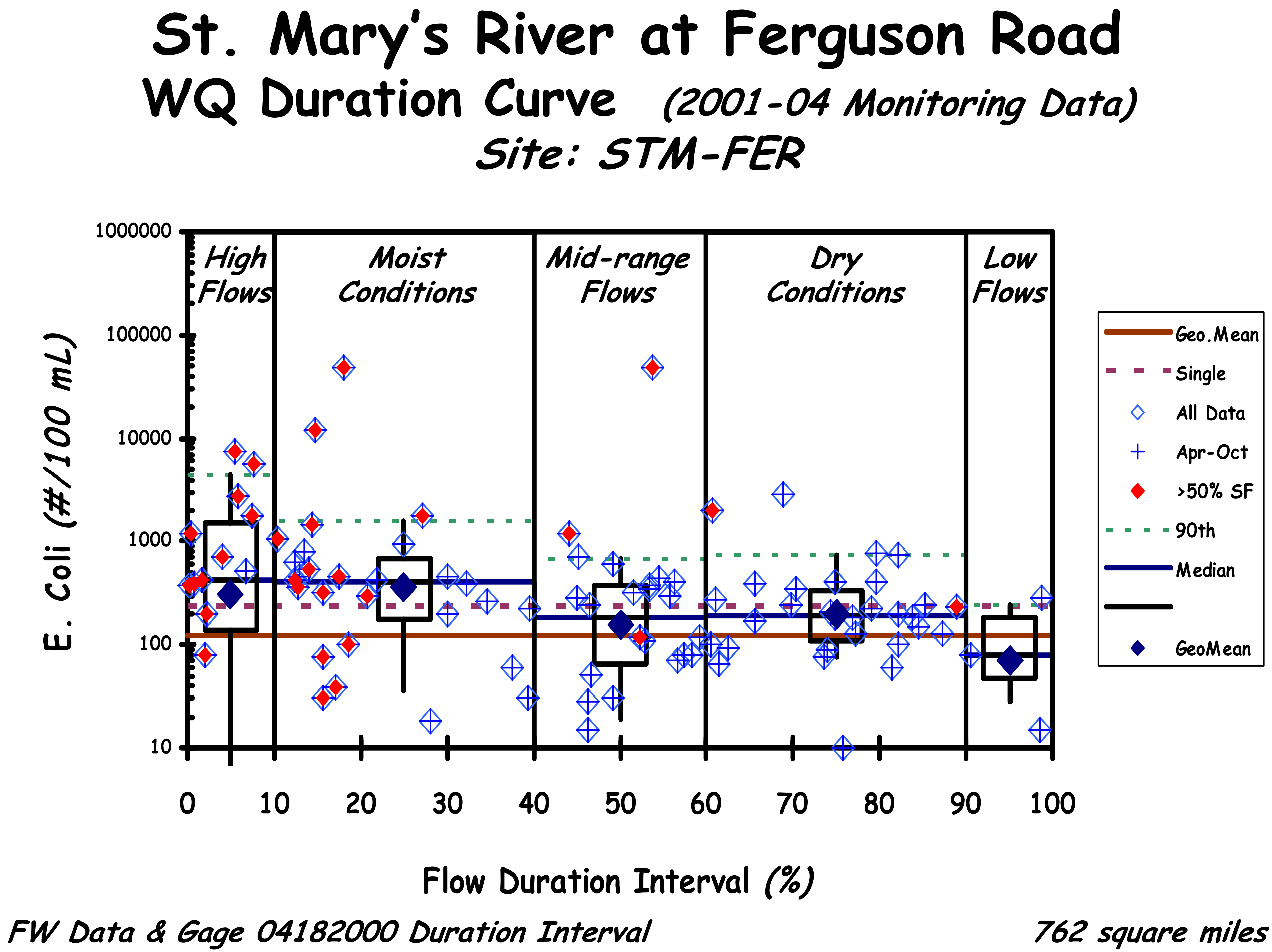
354 square miles

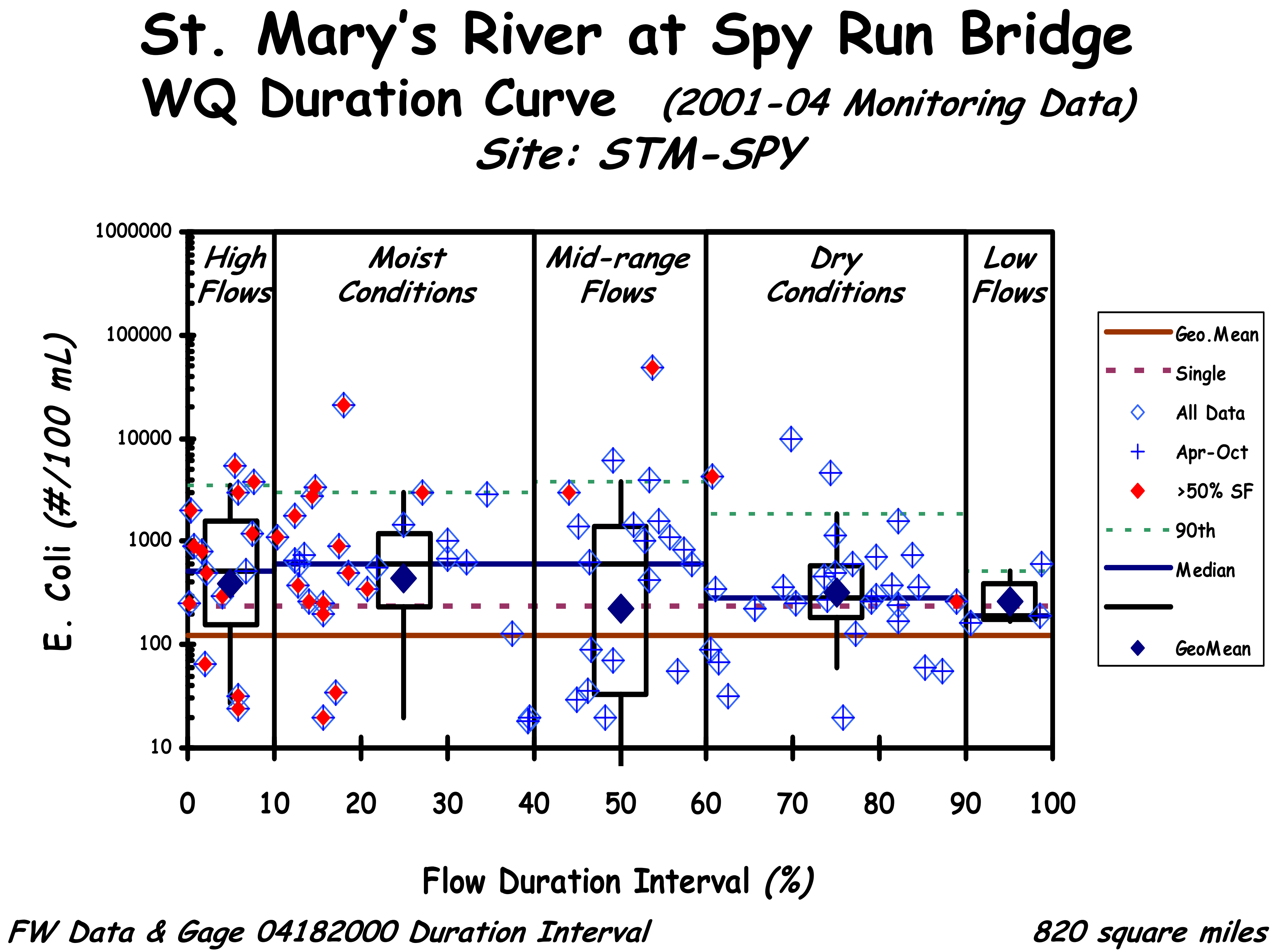
St. Mary's River at Pleasant Mills
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES040-0007



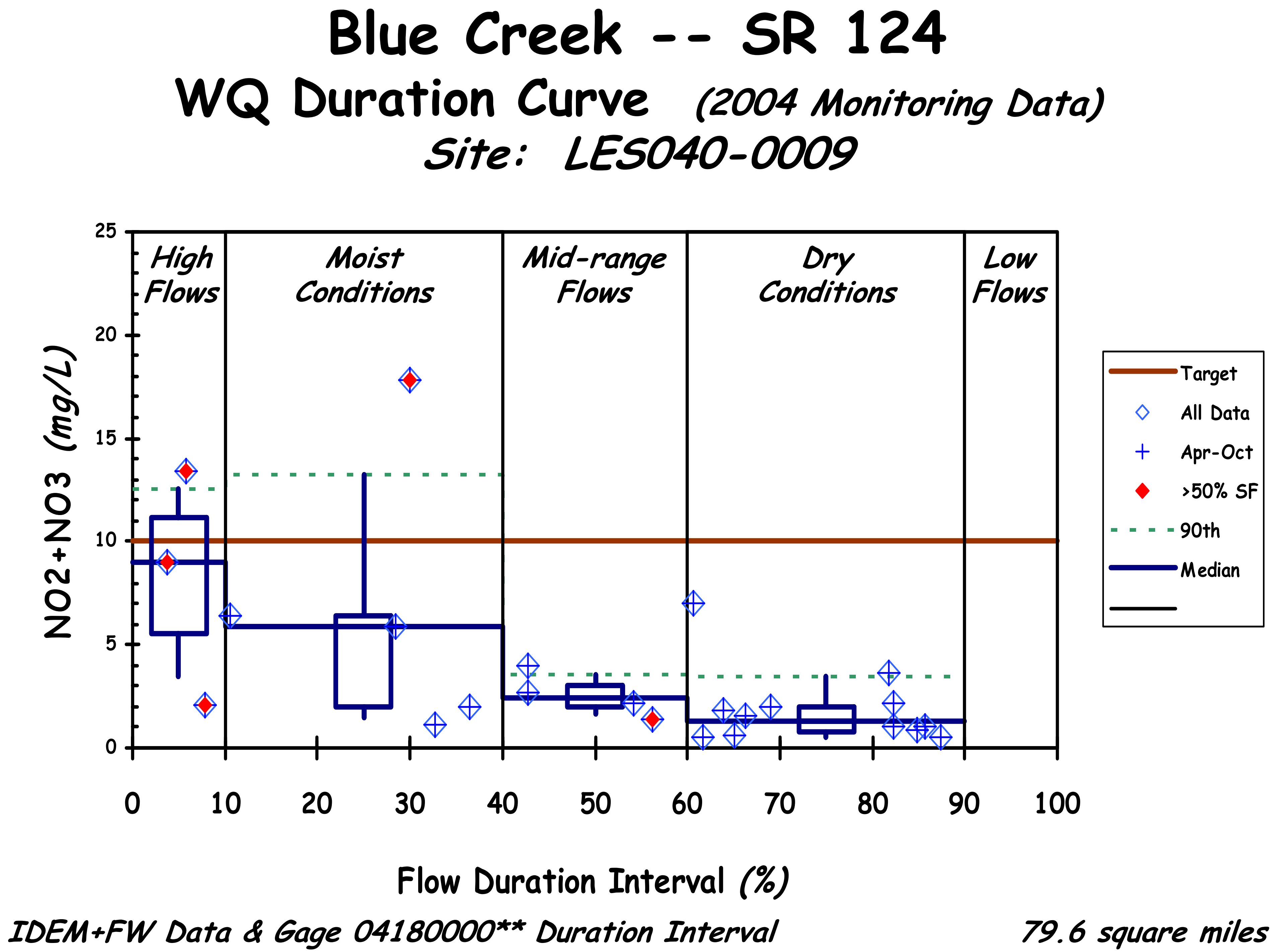
IDEM Data & Gage 04181500 Duration Interval *468 square miles*


St.Mary's River near Poe
WQ Duration Curve (2004 Monitoring Data)
Site: LES060-0006
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM+FW Data & Gage 04181500 Duration Interval
643 square miles


St. Mary's River at Ferguson Road
WQ Duration Curve (2001-04 Monitoring Data)
Site: STM-FER
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
1000000
100000
10000
1000
100
10
E. Coli (#/100 mL)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
FW Data & Gage 04182000 Duration Interval
762 square miles



St. Mary's River at Spy Run Bridge
WQ Duration Curve (2001-04 Monitoring Data)
Site: STM-SPY
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
FW Data & Gage 04182000 Duration Interval
820 square miles

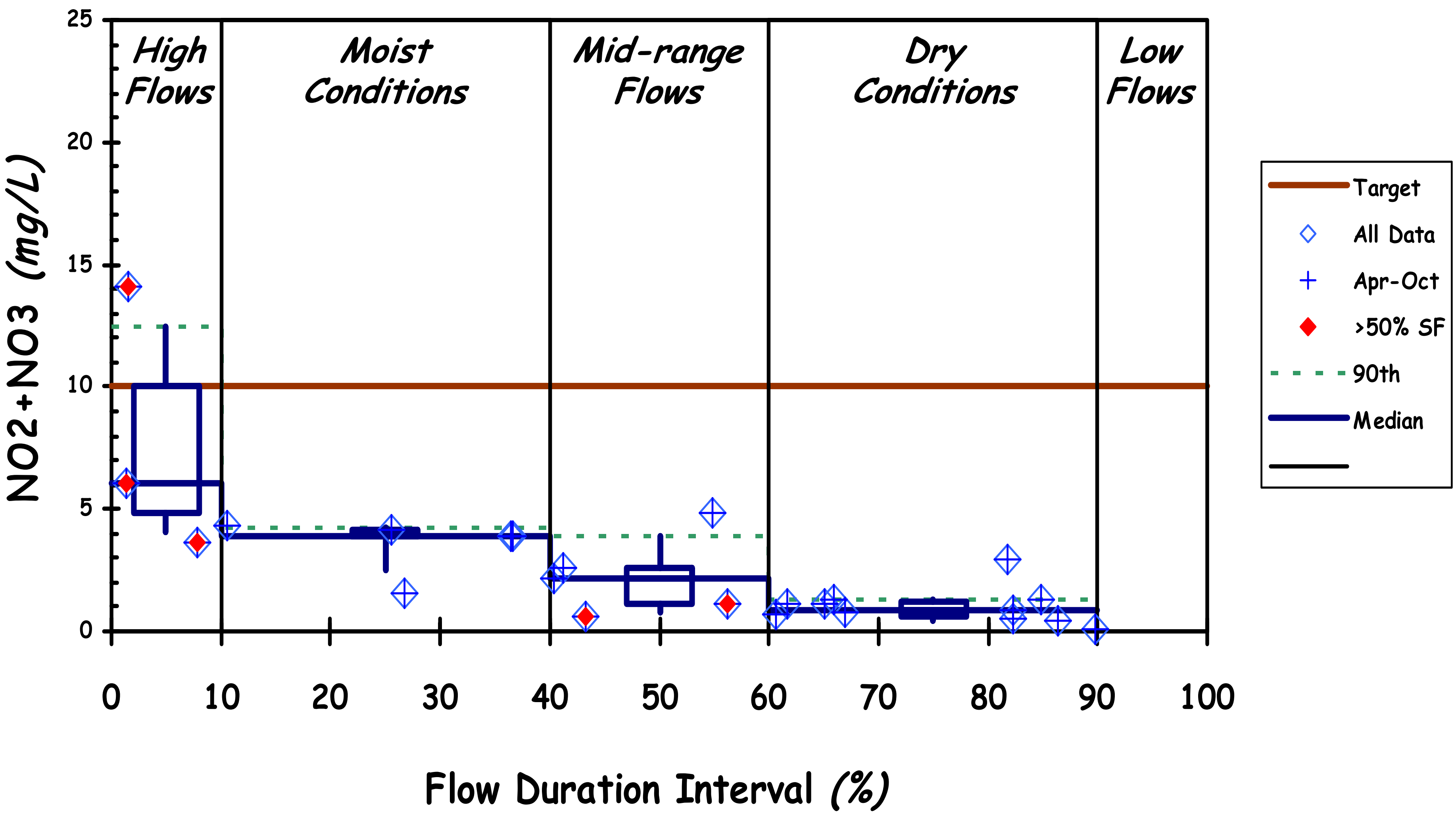


Blue Creek -- SR 124
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (mg/L)
0
5
10
15
20
25
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04180000** Duration Interval
79.6 square miles

Yellow Creek -- CR 250 S

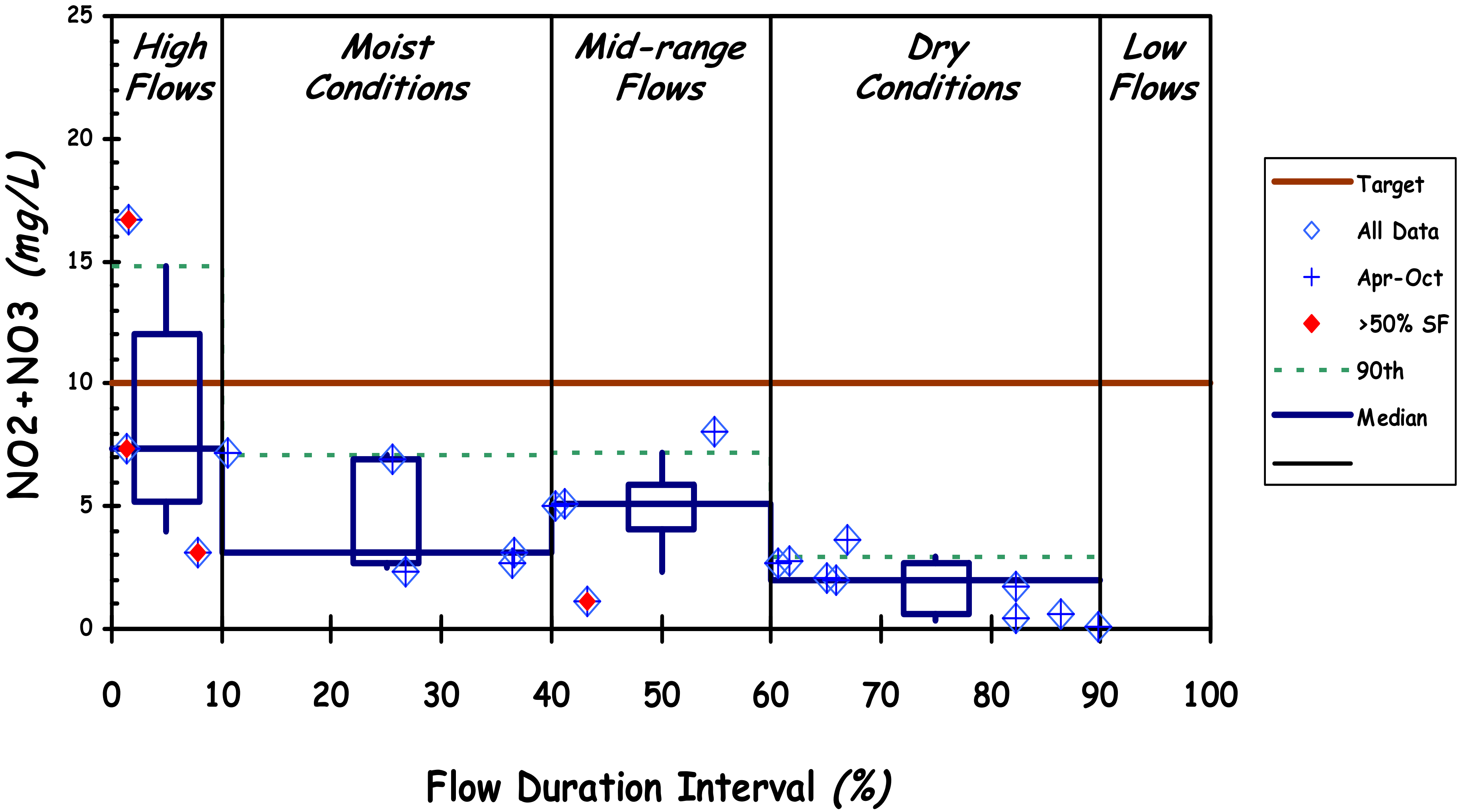
WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0038

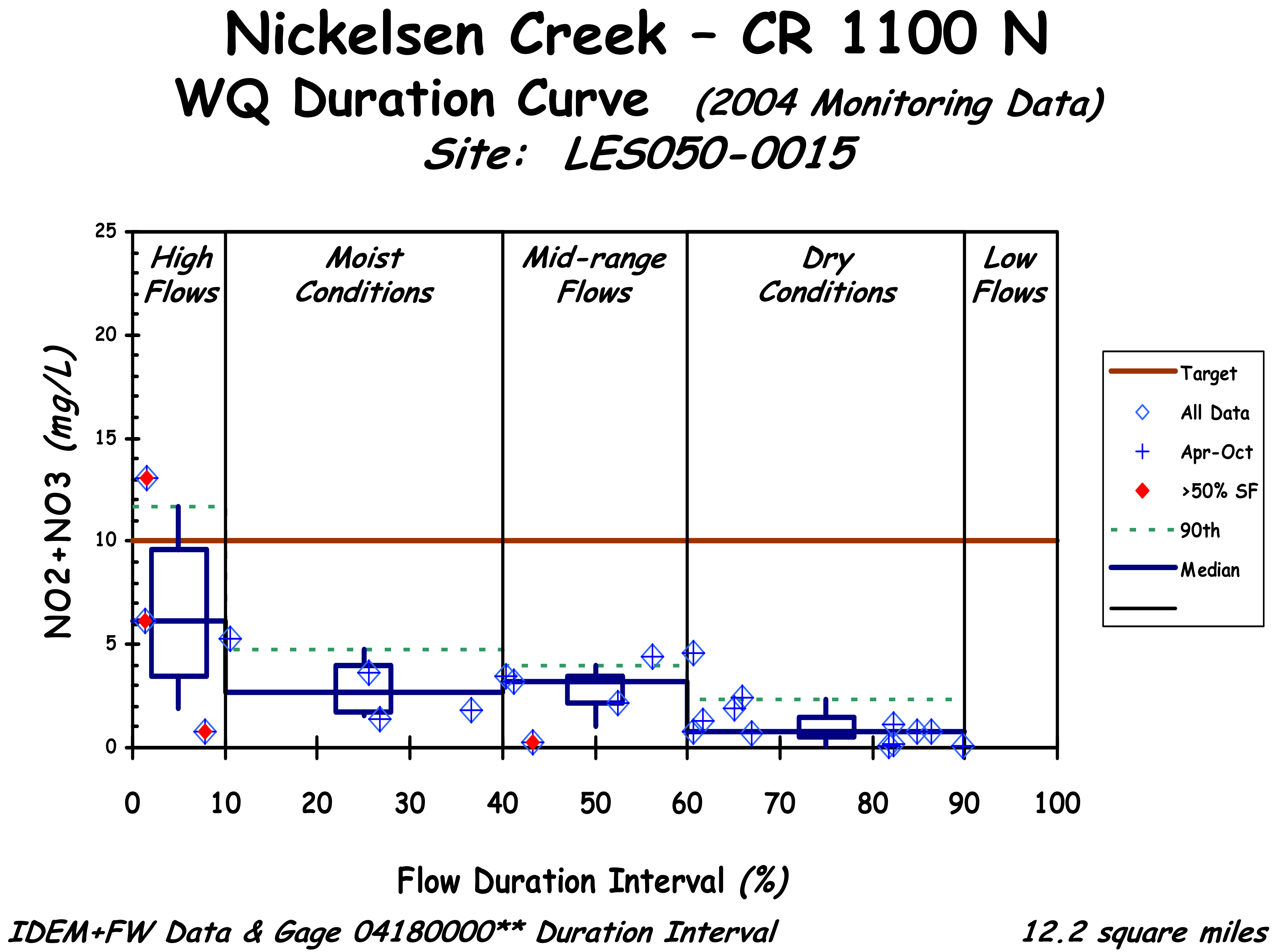


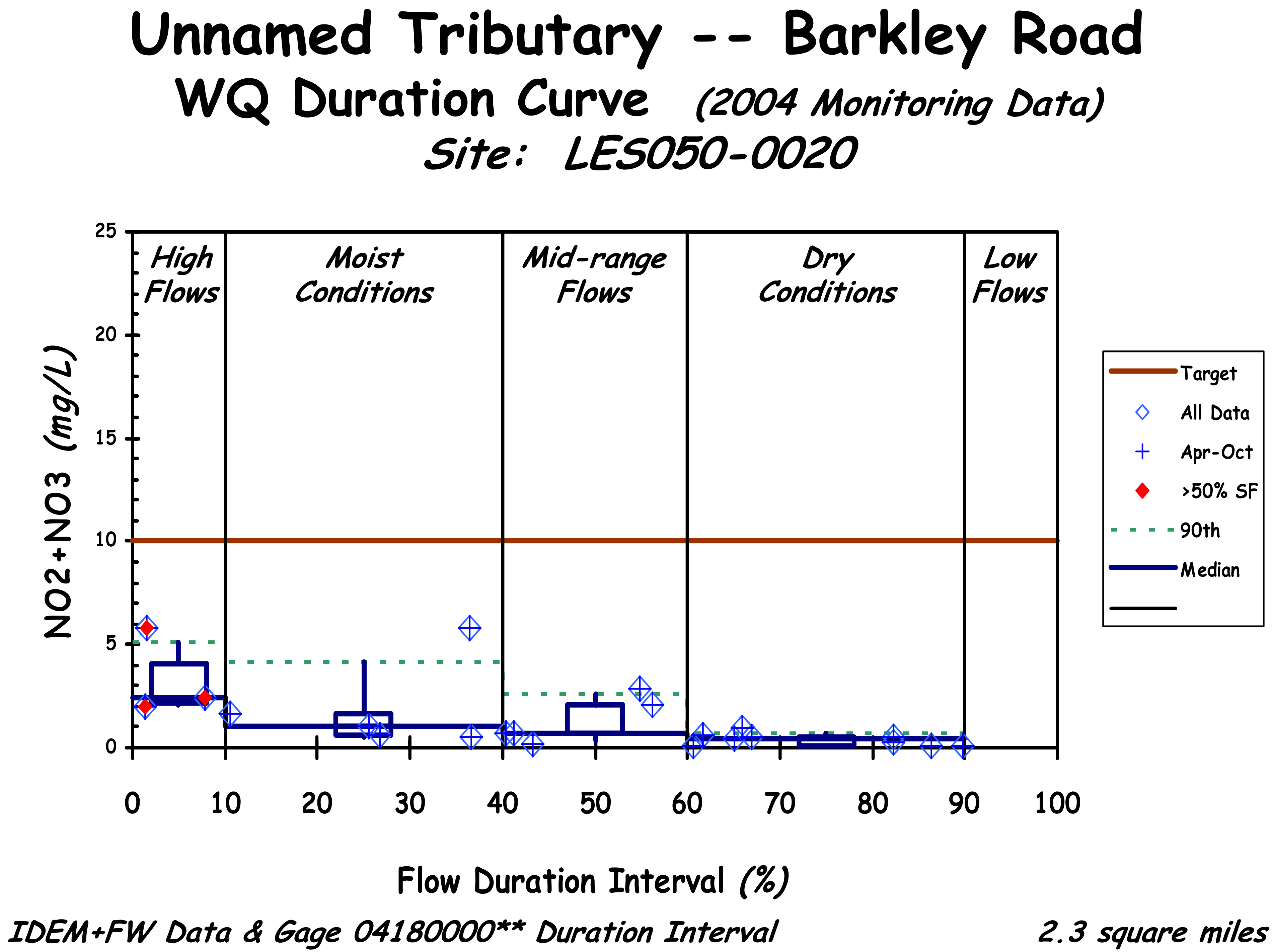
*IDEM+FW Data & Gage 04180000** Duration Interval* *24.5 square miles*

Holthouse Ditch -- CR 200 W
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES050-0008



*IDEM+FW Data & Gage 04180000** Duration Interval* *27.3 square miles*

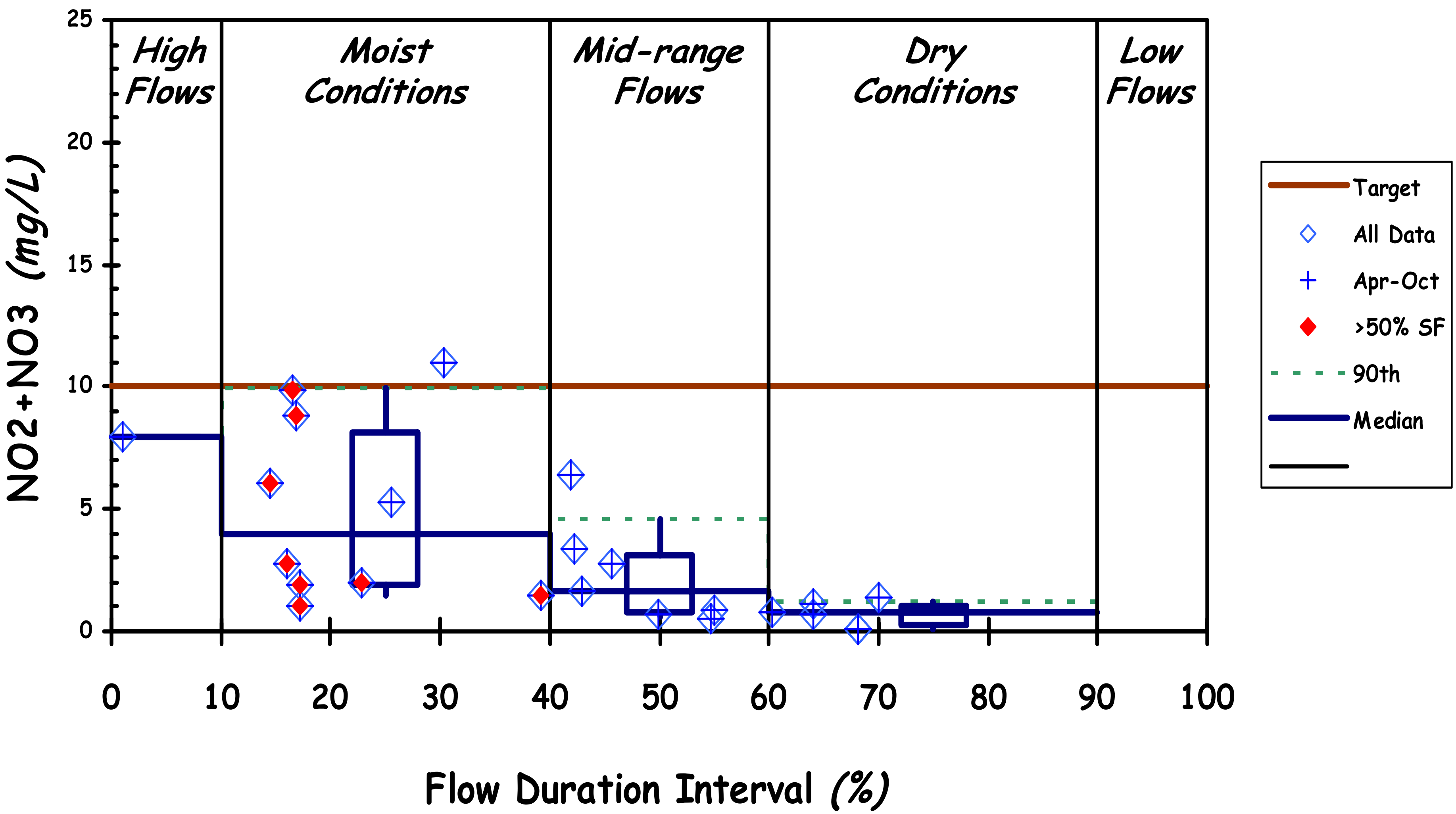

Nickelsen Creek – CR 1100 N
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0015
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (mg/L)
0
5
10
15
20
25
0
10
20
30
40
50
60
70
80
90
100
Target
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 04180000** Duration Interval
12.2 square miles


Unnamed Tributary -- Barkley Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0020
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (mg/L)
0
5
10
15
20
25
0
10
20
30
40
50
60
70
80
90
100
Target
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 04180000** Duration Interval
2.3 square miles

St. Mary's River at Wilshire, OH

WQ Duration Curve *(2004 Monitoring Data)*

Site: UNK000-0007

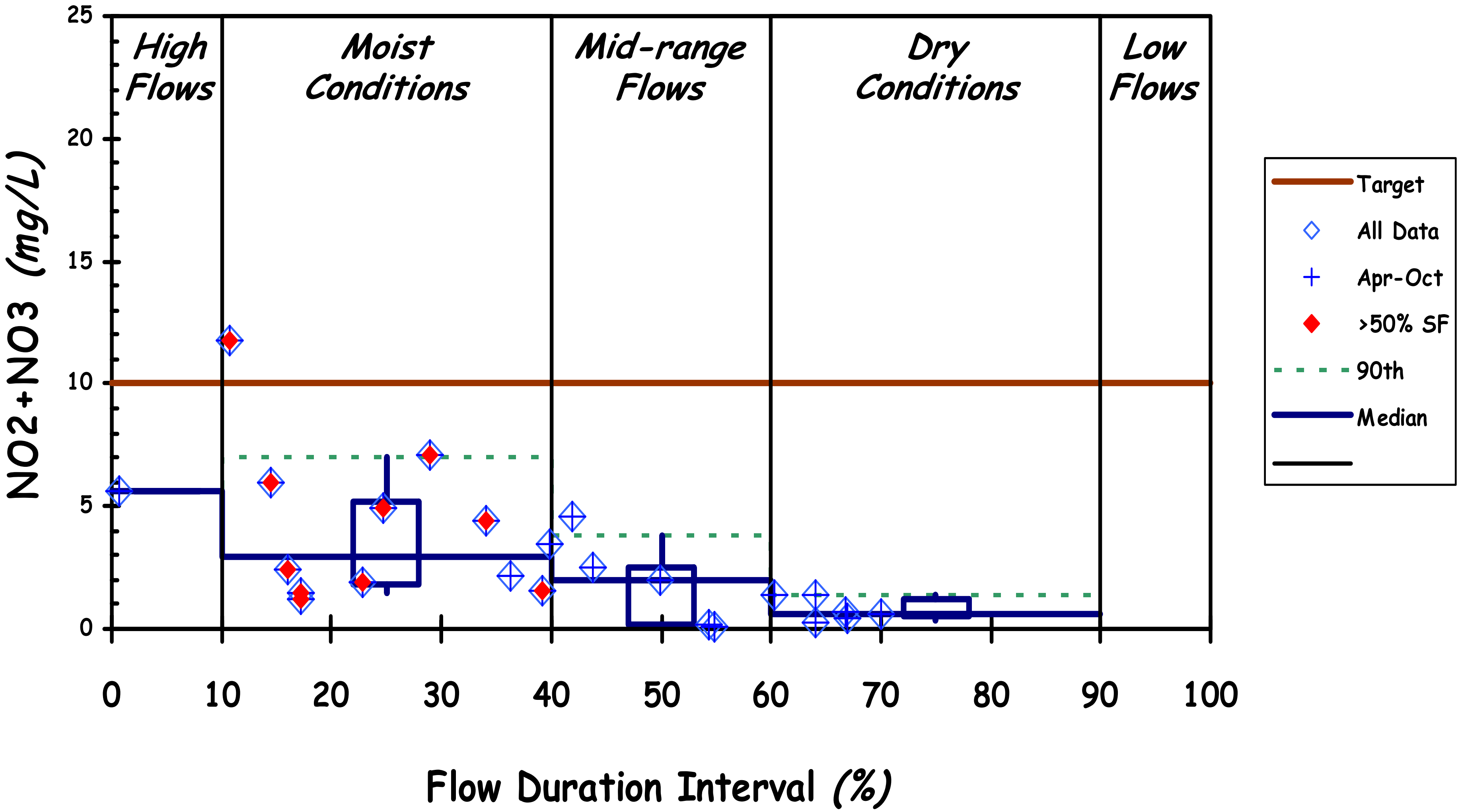


IDEM+FW Data & Gage 04181500 Duration Interval *354 square miles*

St. Mary's River near Poe

WQ Duration Curve *(2004 Monitoring Data)*

Site: LES060-0006

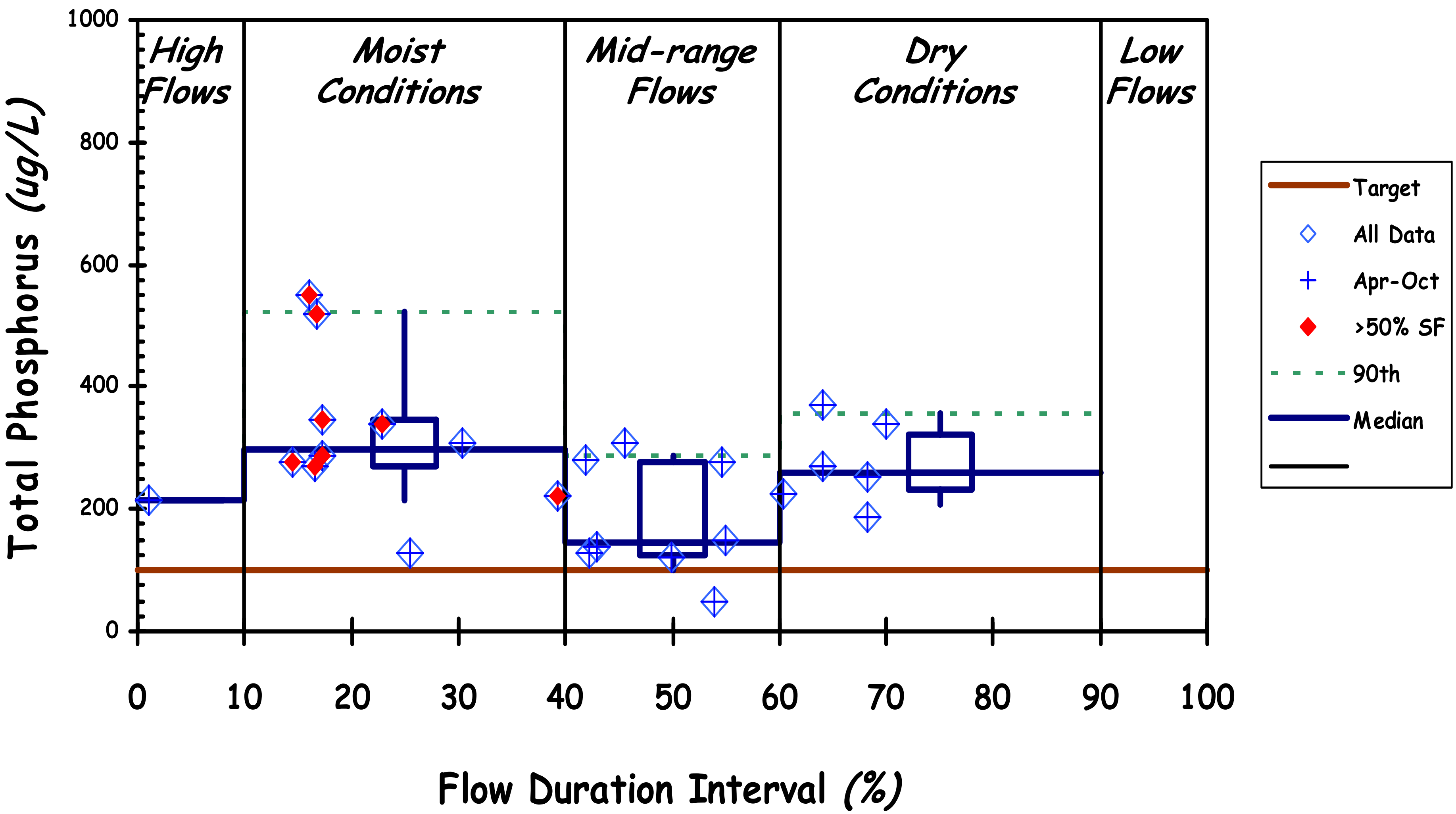


IDEM+FW Data & Gage 04181500 Duration Interval *643 square miles*

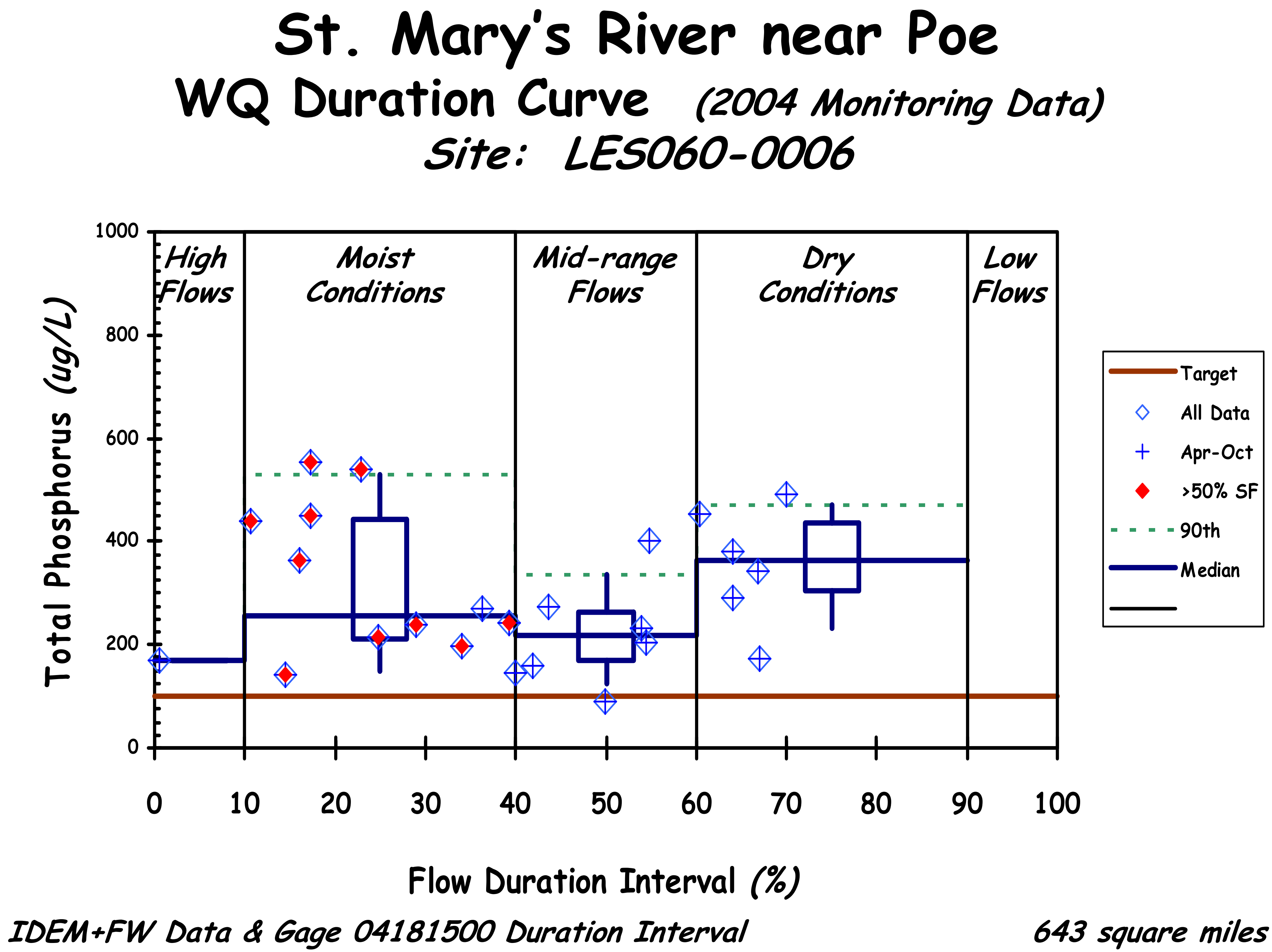
St. Mary's River at Wilshire, OH

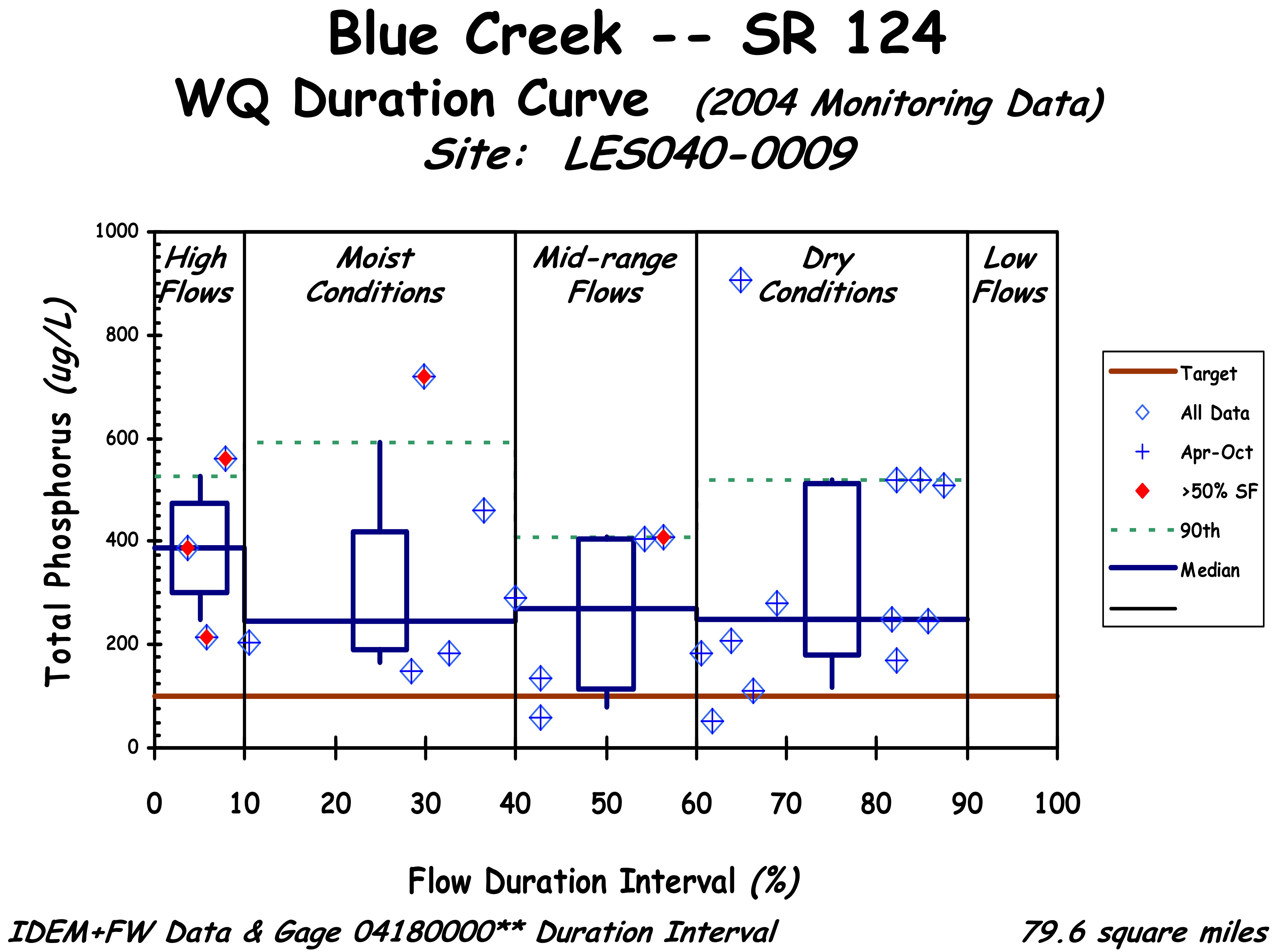
WQ Duration Curve *(2004 Monitoring Data)*

Site: UNK000-0007

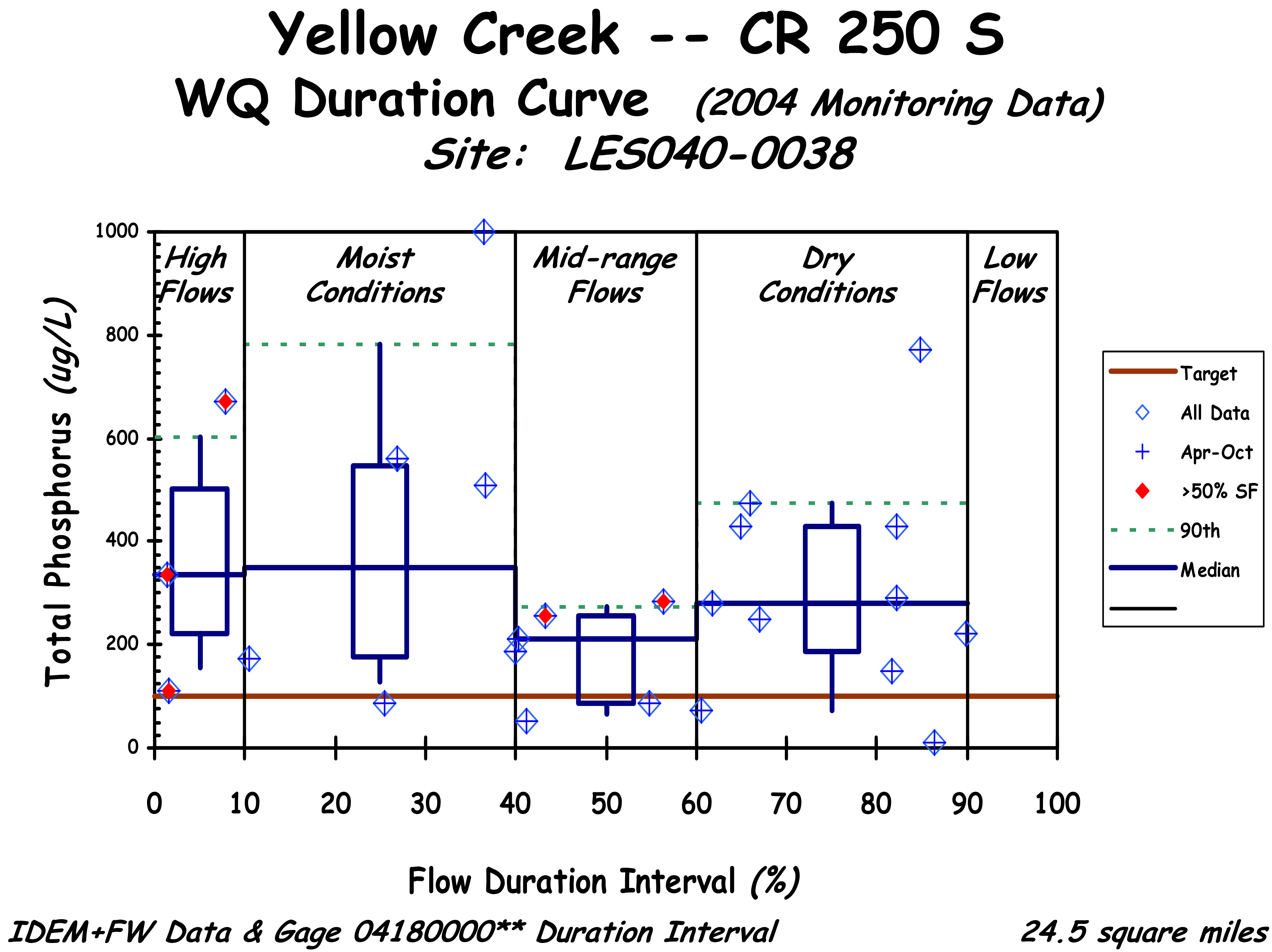


IDEM+FW Data & Gage 04181500 Duration Interval *354 square miles*

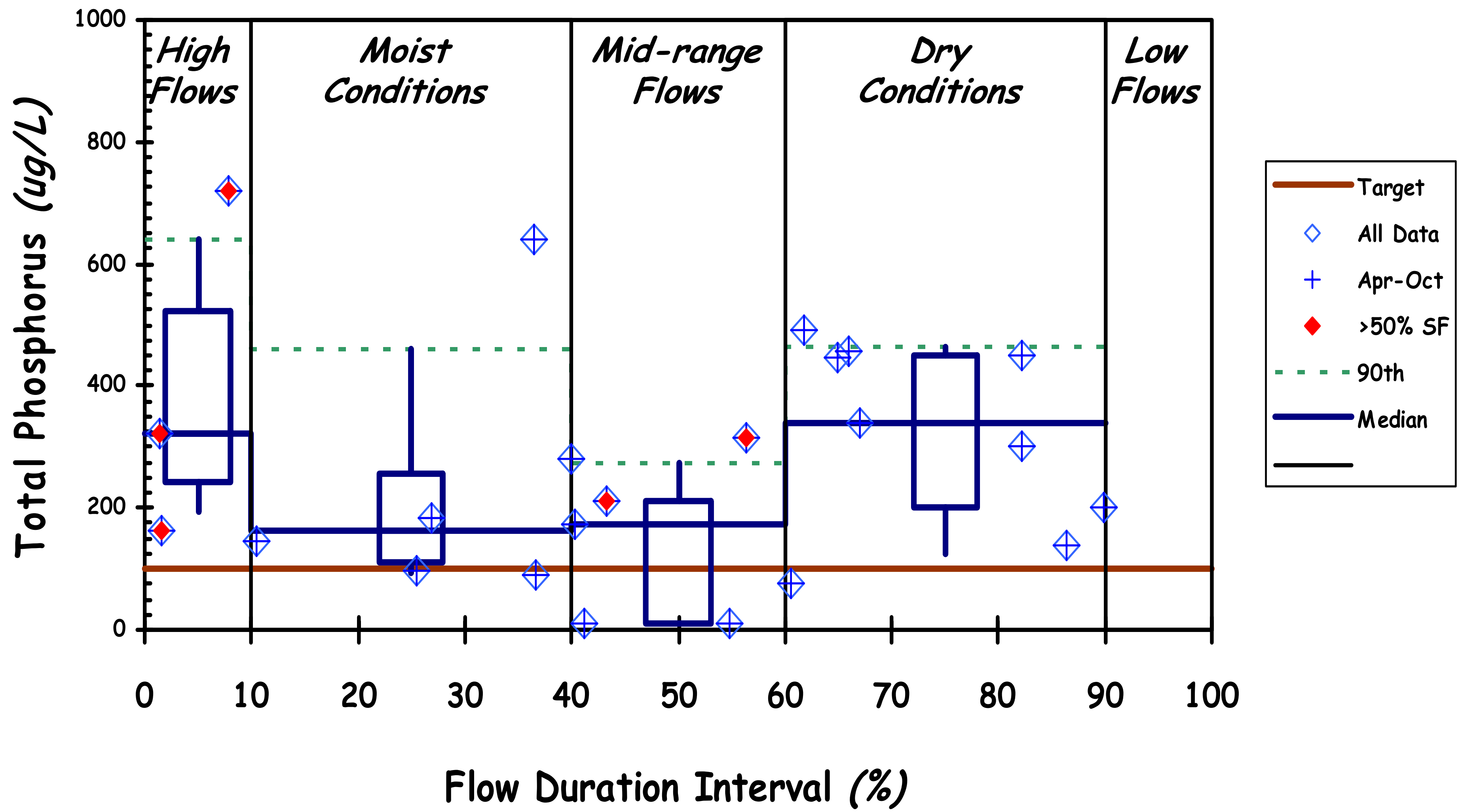

St. Mary's River near Poe
WQ Duration Curve (2004 Monitoring Data)
Site: LES060-0006
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
Total Phosphorus (ug/L)
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04181500 Duration Interval
643 square miles



Blue Creek -- SR 124
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
Total Phosphorus (ug/L)
1000
800
600
400
200
0
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04180000** Duration Interval
79.6 square miles

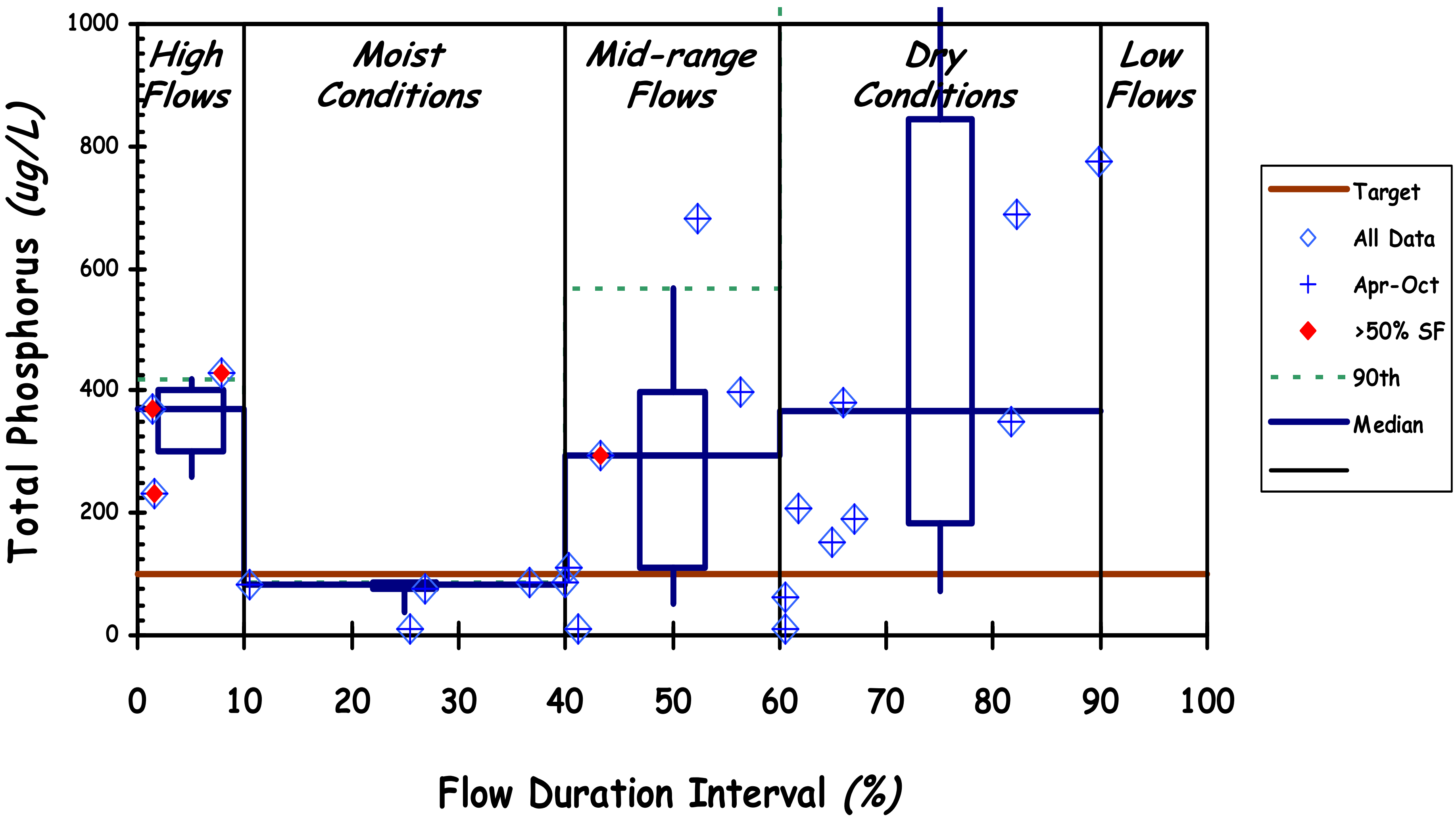

Yellow Creek -- CR 250 S
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0038
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
Total Phosphorus (ug/L)
0
200
400
600
800
1000
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04180000** Duration Interval
24.5 square miles

Holthouse Ditch -- CR 200 W
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES050-0008



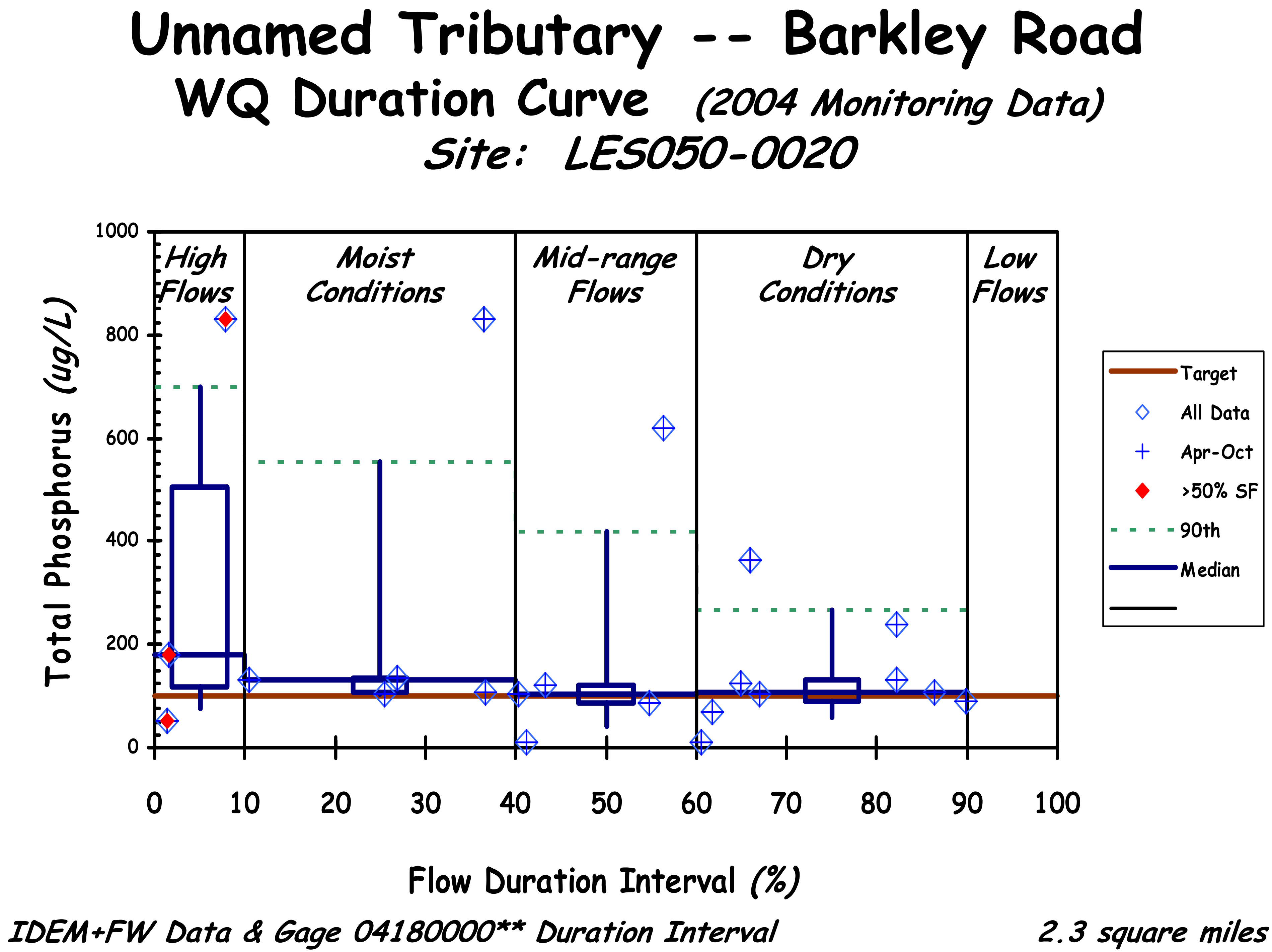
*IDEM+FW Data & Gage 04180000** Duration Interval* *27.3 square miles*

Nickelsen Creek – CR 1100 N
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES050-0015

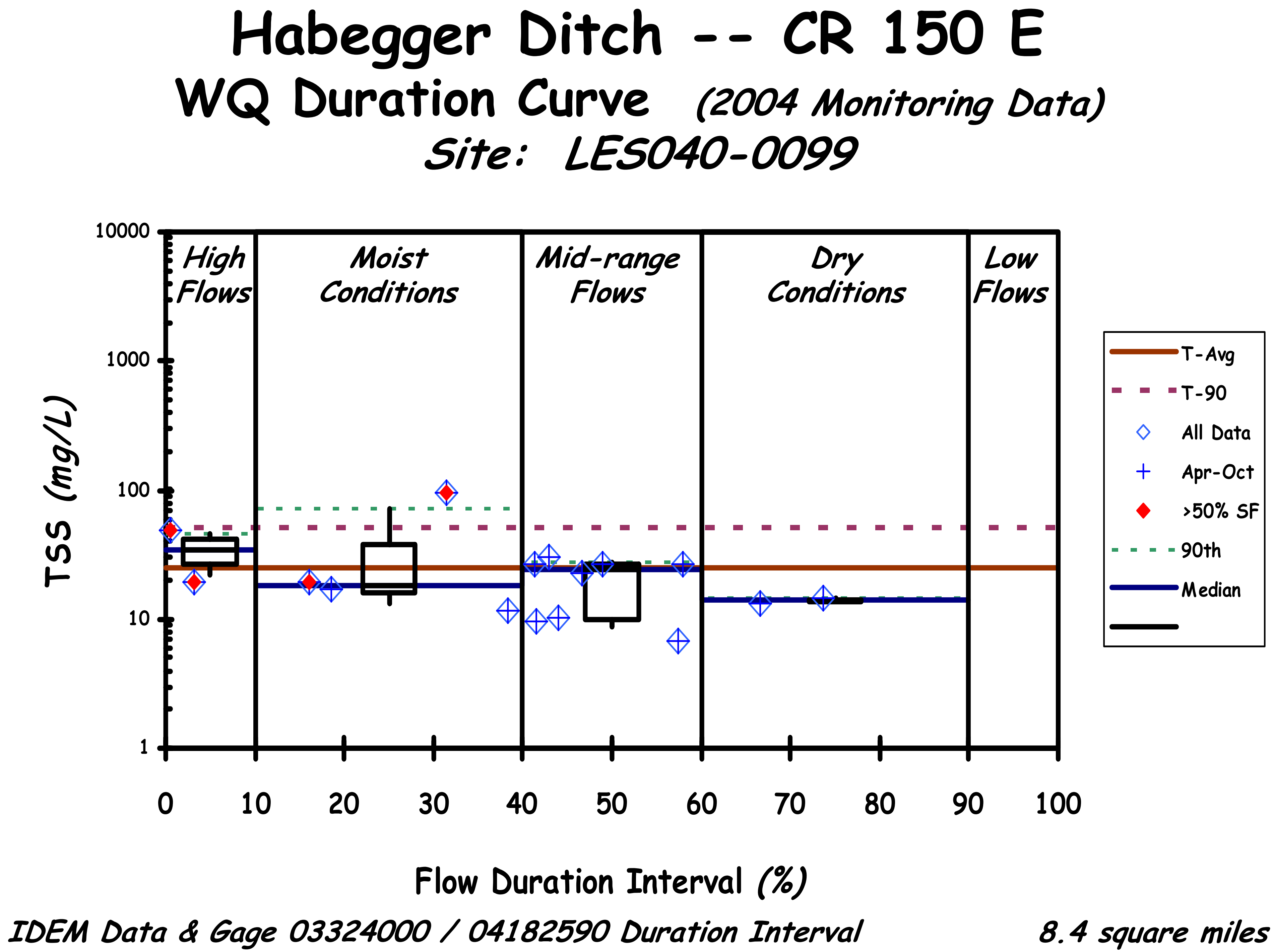


*IDEM+FW Data & Gage 04180000** Duration Interval*

12.2 square miles



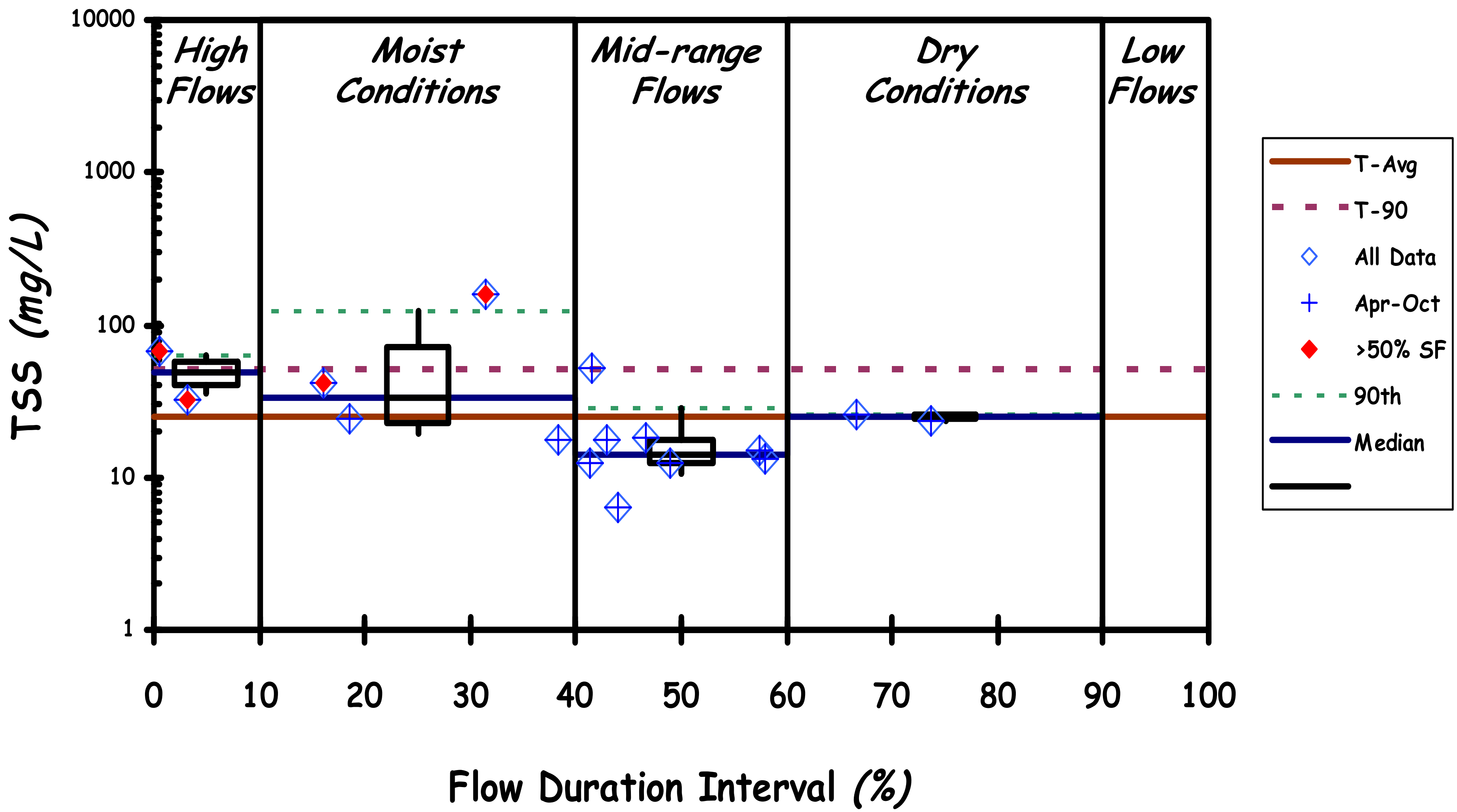
Unnamed Tributary -- Barkley Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0020
Total Phosphorus (ug/L)
1000
800
600
400
200
0
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04180000** Duration Interval
2.3 square miles


Habegger Ditch -- CR 150 E
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0099
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (mg/L)
10000
1000
100
10
1
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
8.4 square miles

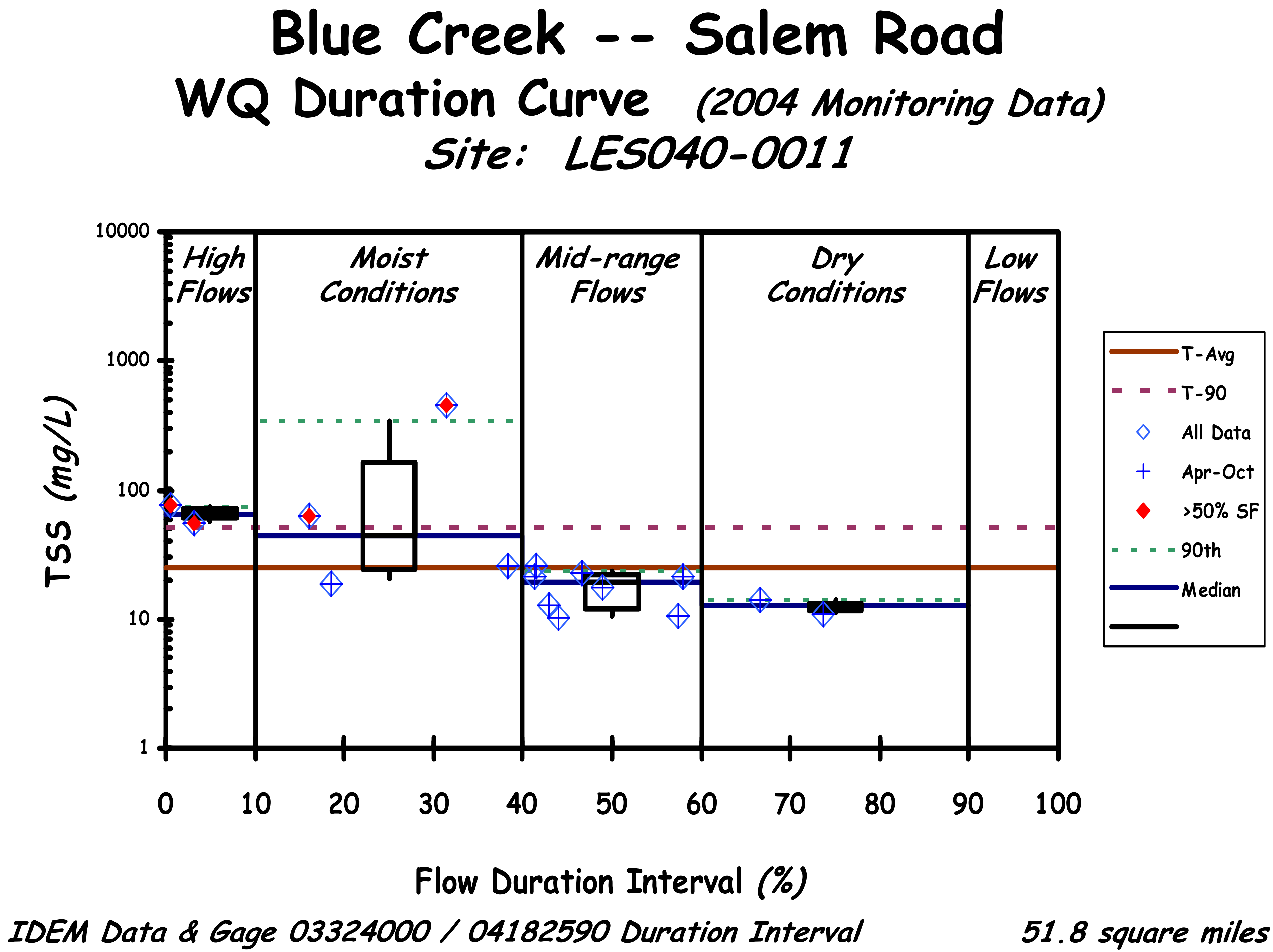
Gates Ditch -- CR 400 S

WQ Duration Curve *(2004 Monitoring Data)*

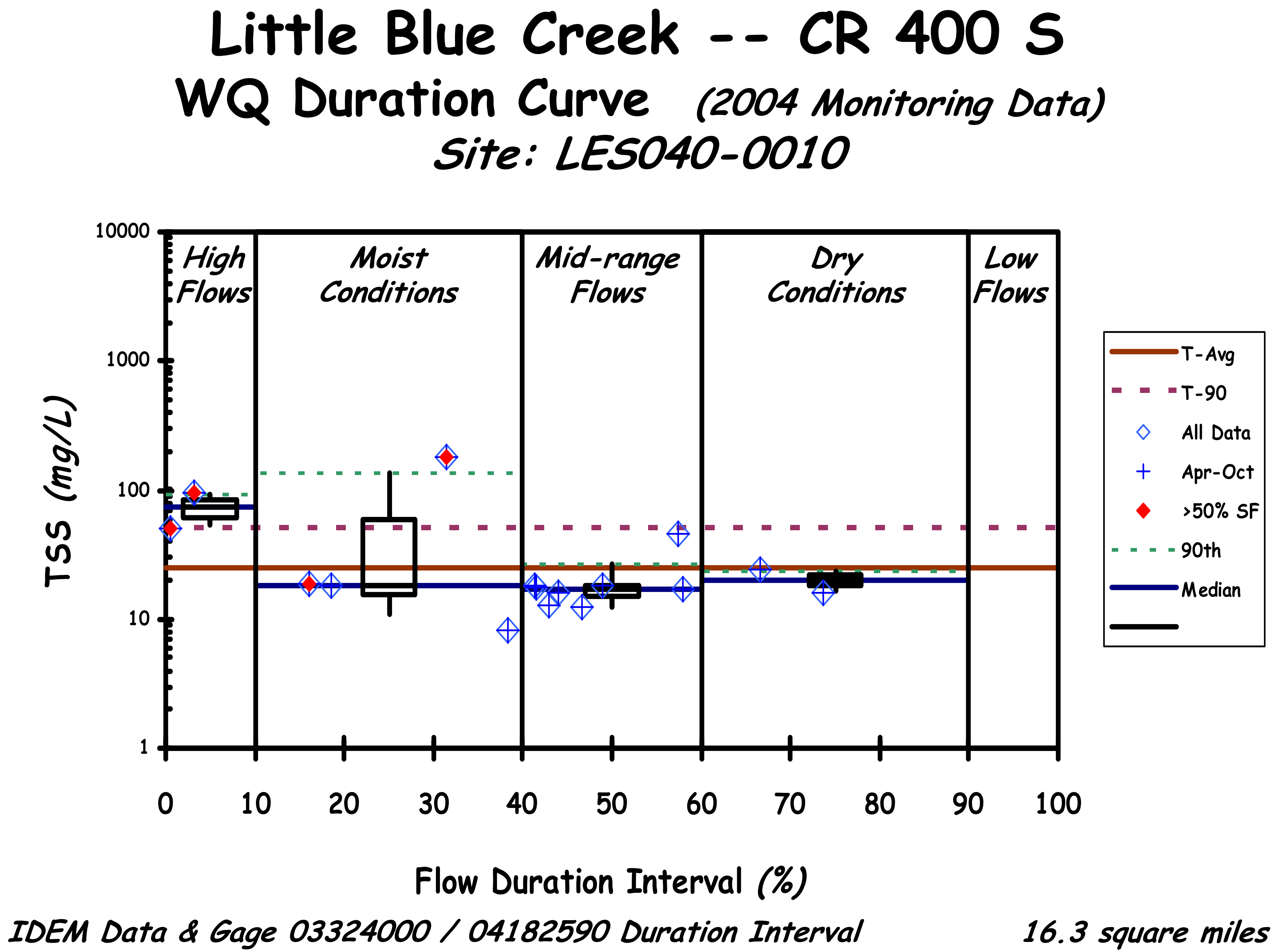
Site: LES040-0023



IDEM Data & Gage 03324000 / 04182590 Duration Interval *20.1 square miles*

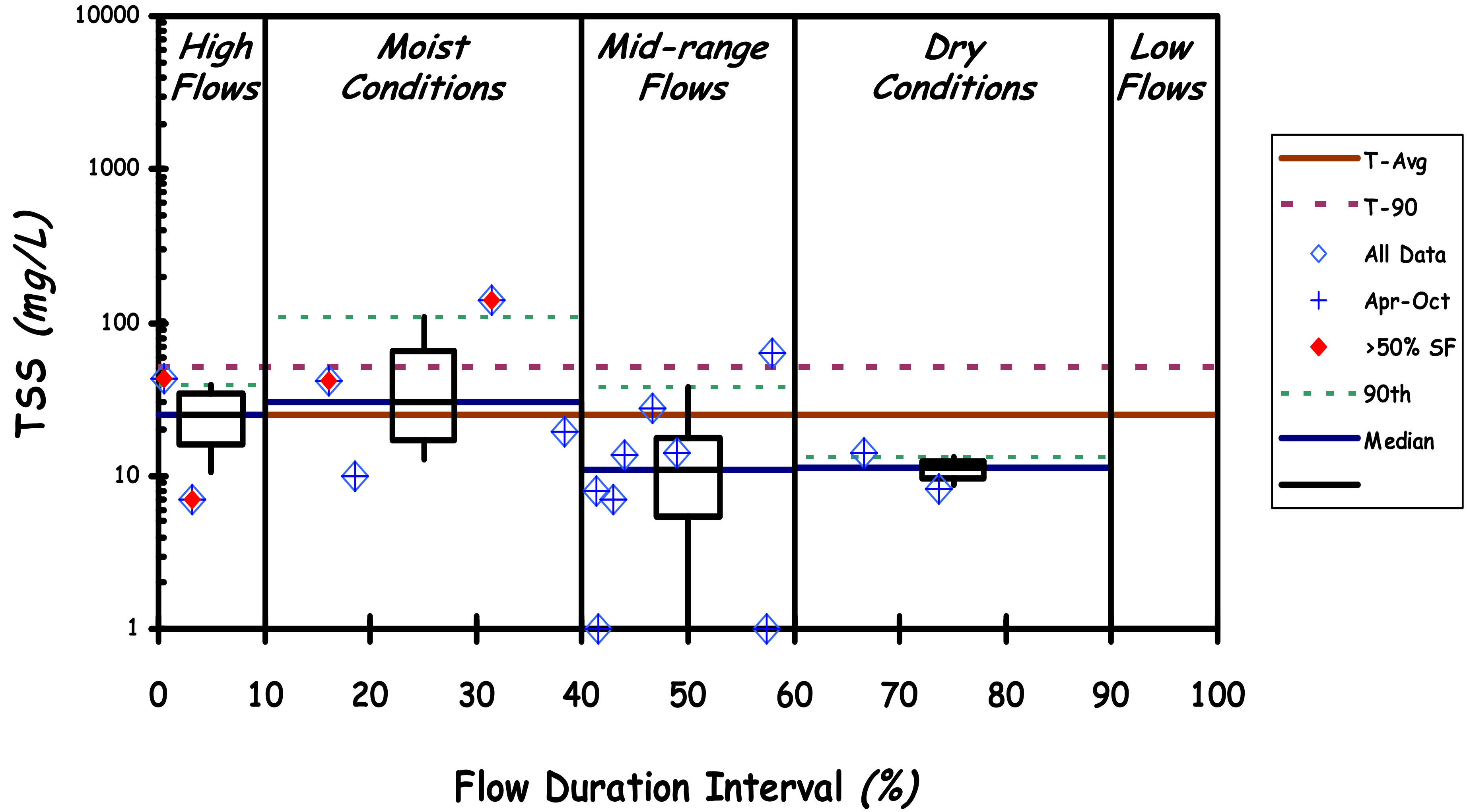


Blue Creek -- Salem Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0011
10000
1000
100
10
1
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (mg/L)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
51.8 square miles

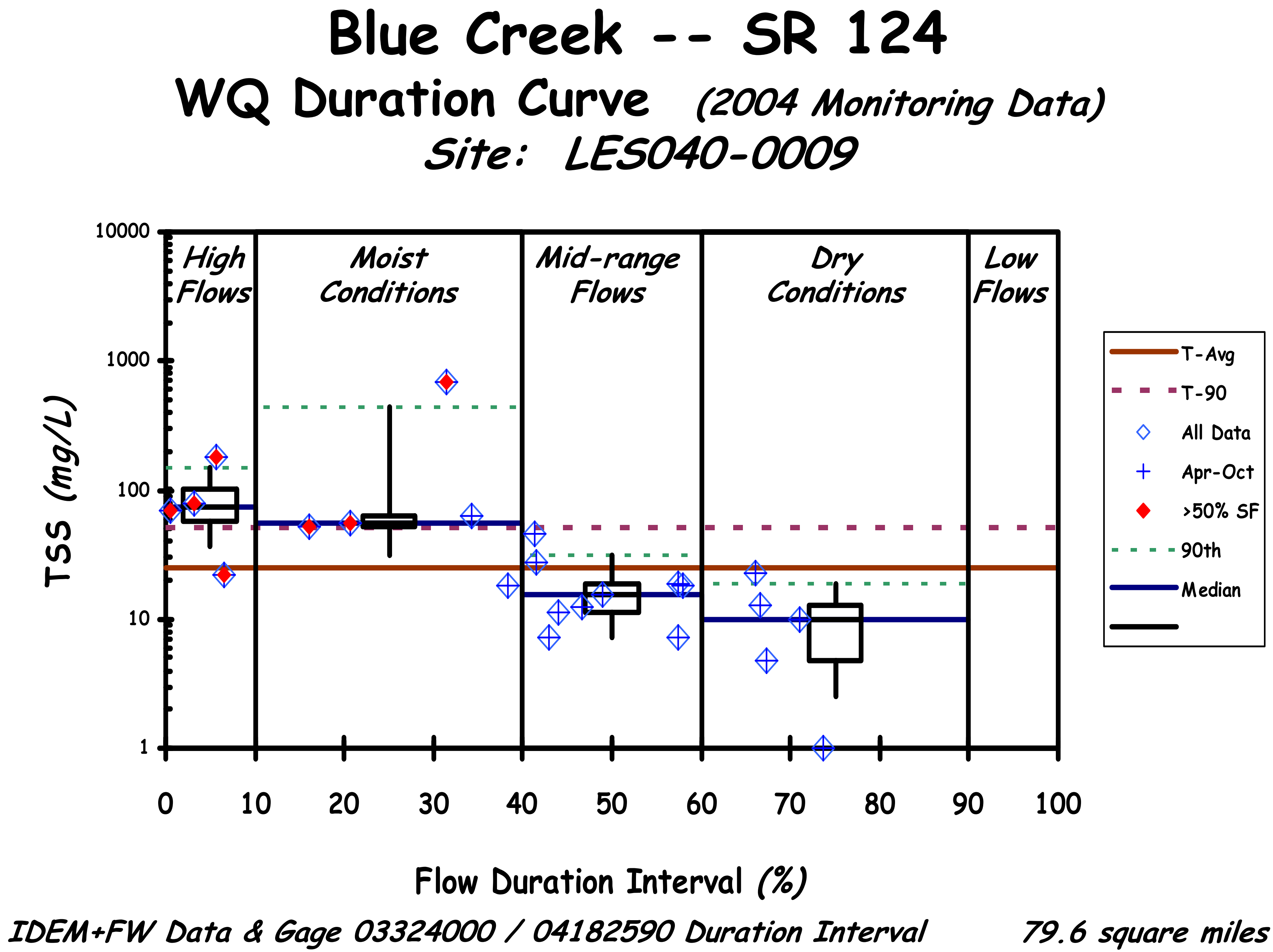


Little Blue Creek -- CR 400 S
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0010
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (mg/L)
10000
1000
100
10
1
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
16.3 square miles

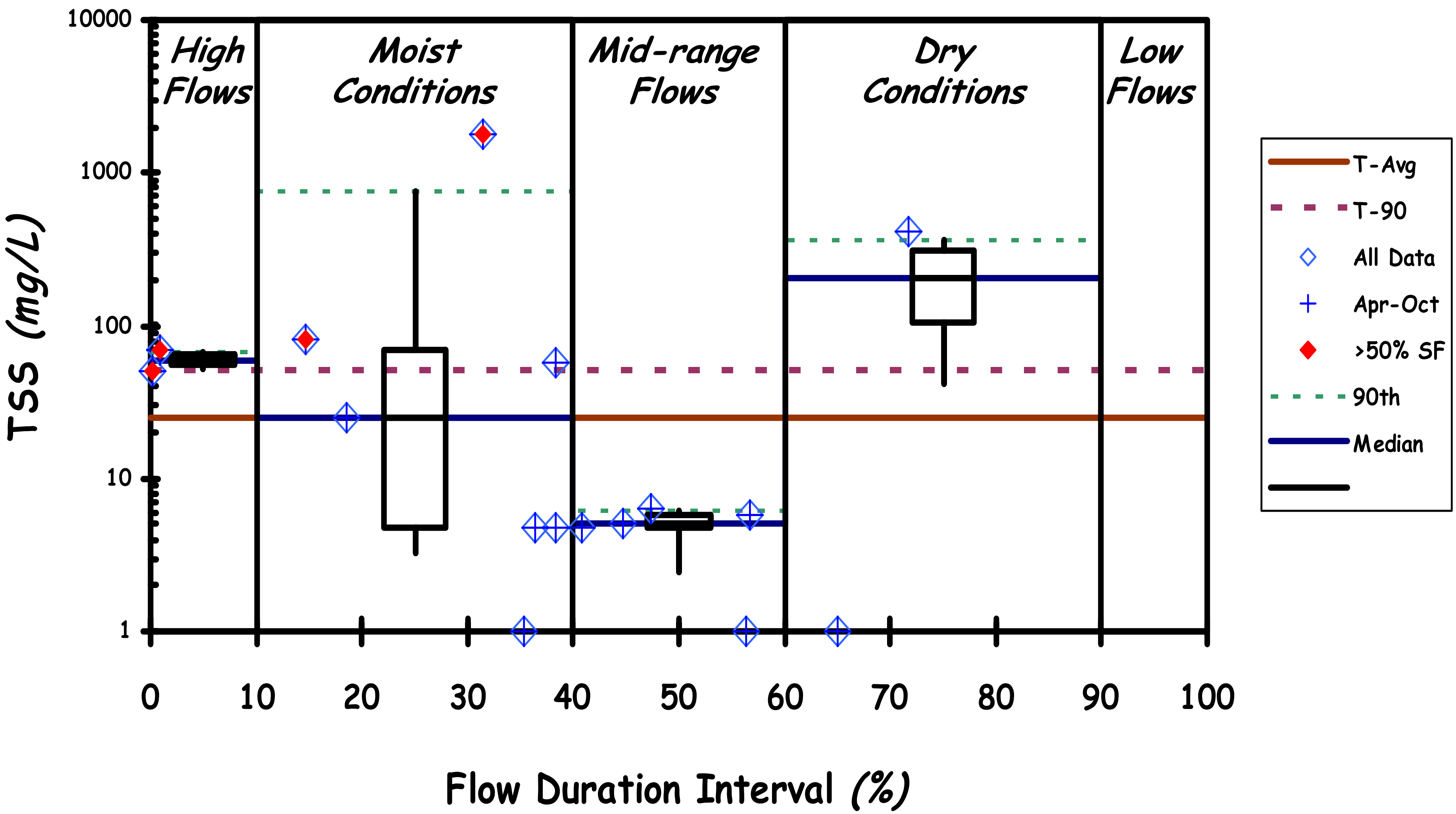
Blue Creek -- CR 300 S
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES040-0066



IDEM Data & Gage 03324000 / 04182590 Duration Interval *71.0 square miles*


Blue Creek -- SR 124
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (mg/L)
10000
1000
100
10
1
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
79.6 square miles

Martz Creek -- CR 200 N
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES040-0040

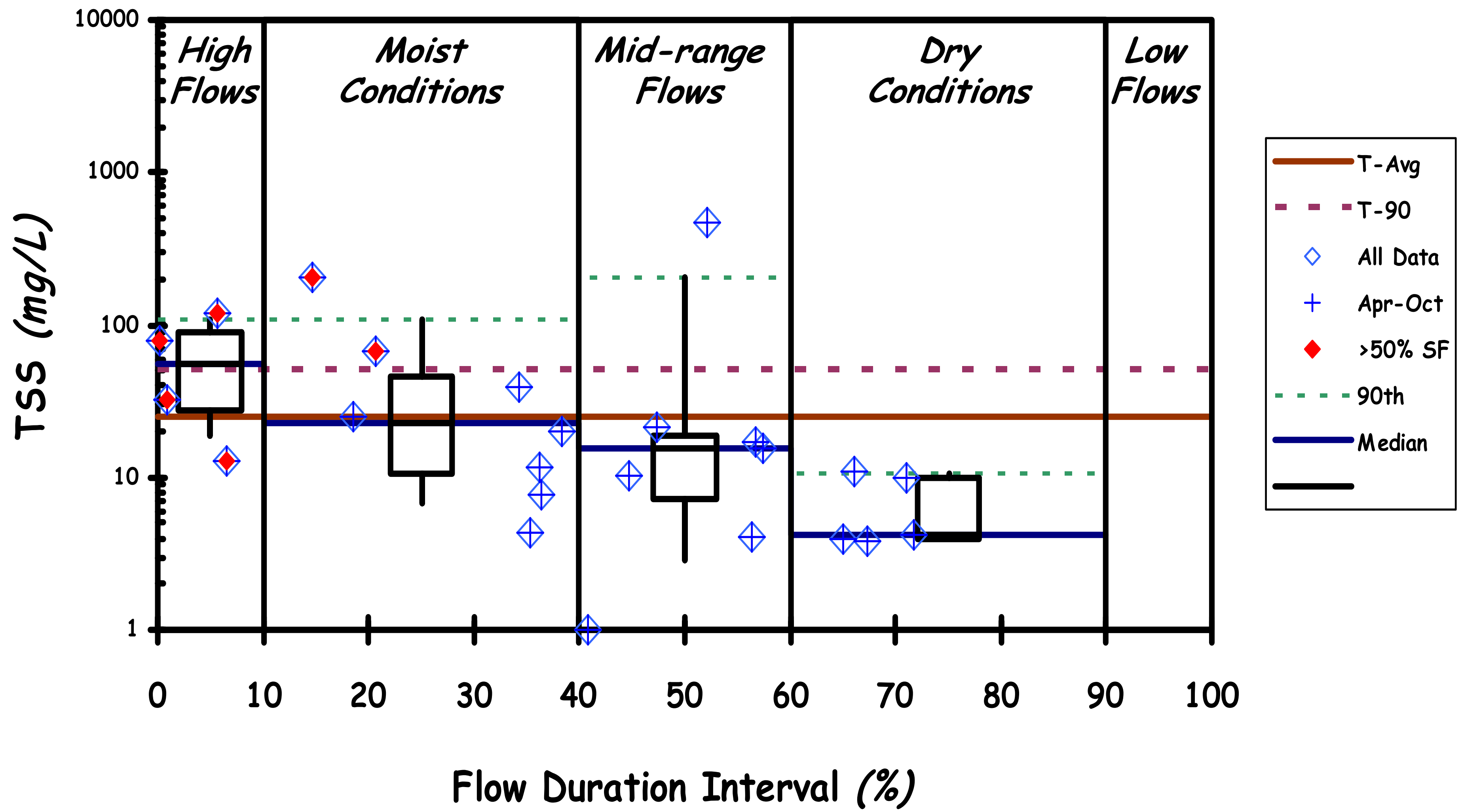


IDEM Data & Gage 03324000 / 04182590 Duration Interval *9.8 square miles*

Yellow Creek -- CR 250 S

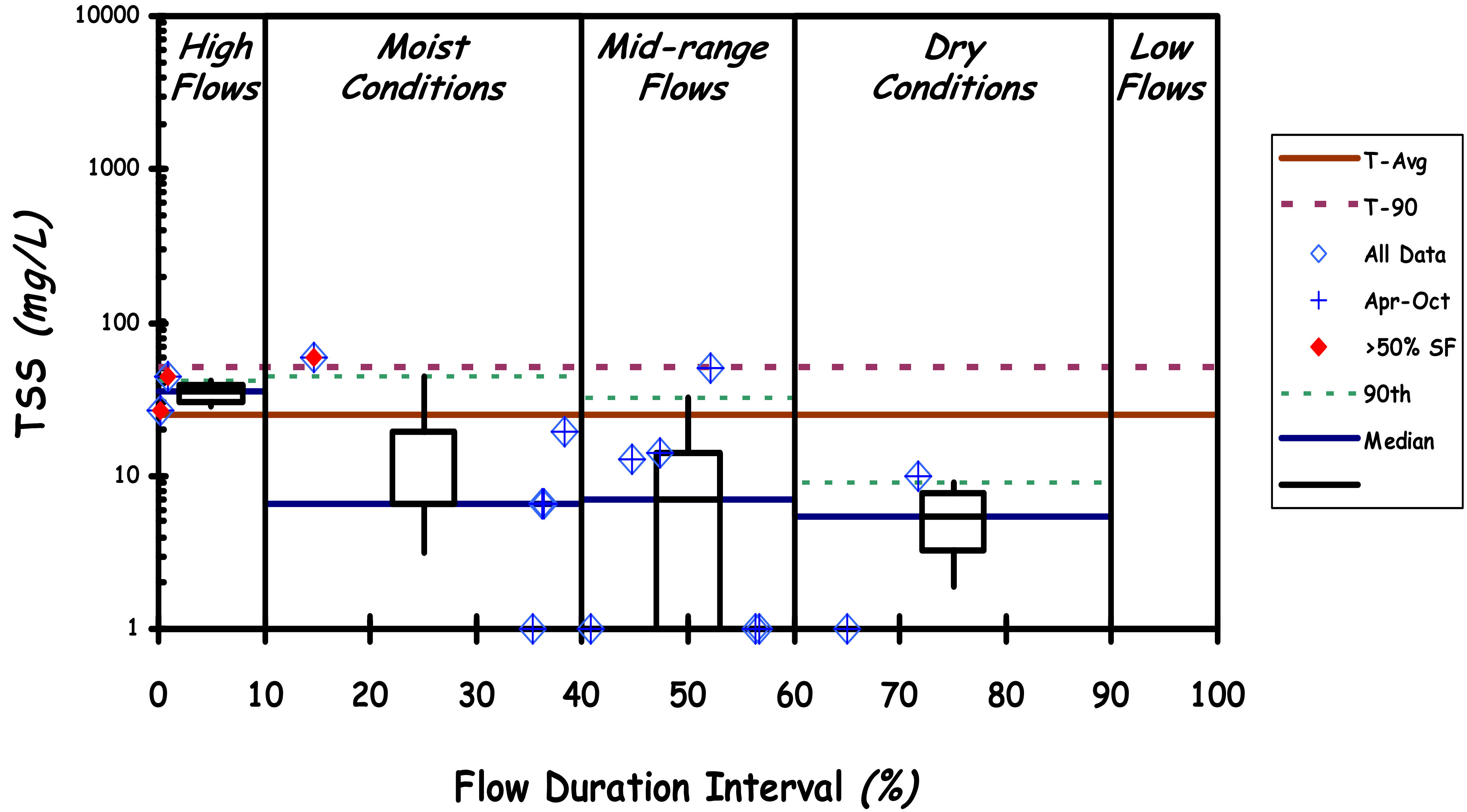
WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0038



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *24.5 square miles*

Borum Run -- Mercer Road
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES040-0097

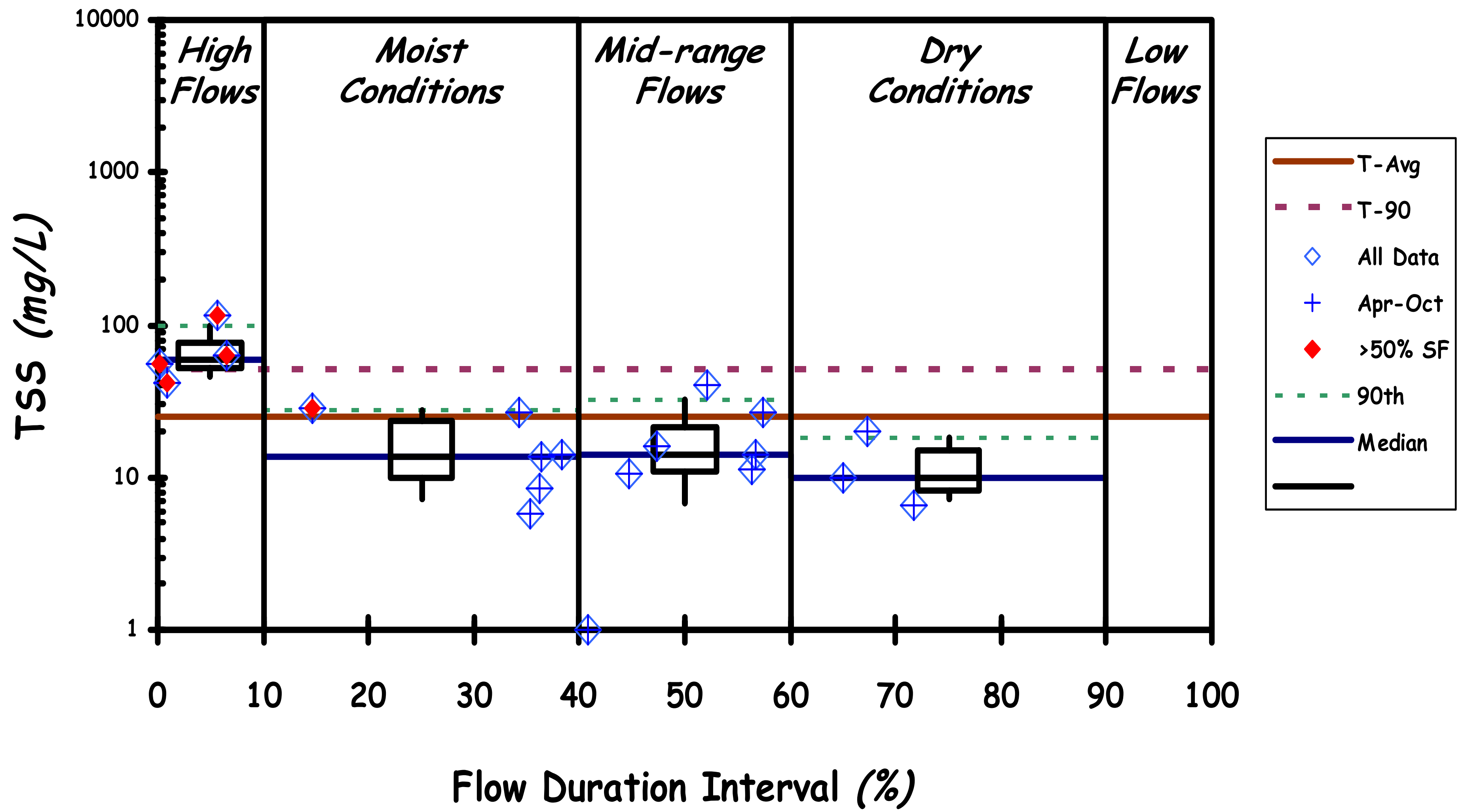


IDEM Data & Gage 03324000 / 04182590 Duration Interval *14.4 square miles*

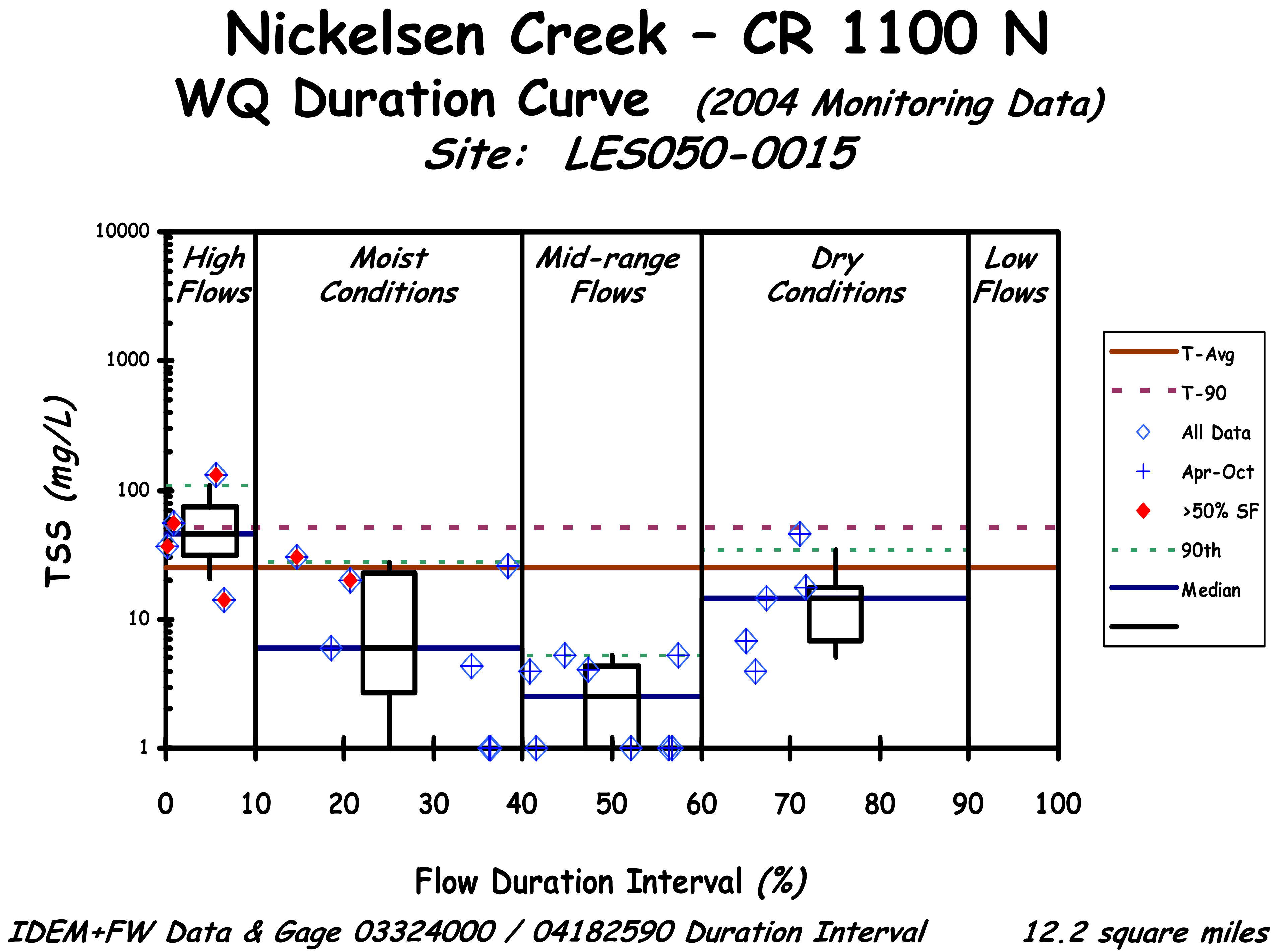
Holthouse Ditch -- CR 200 W

WQ Duration Curve *(2004 Monitoring Data)*

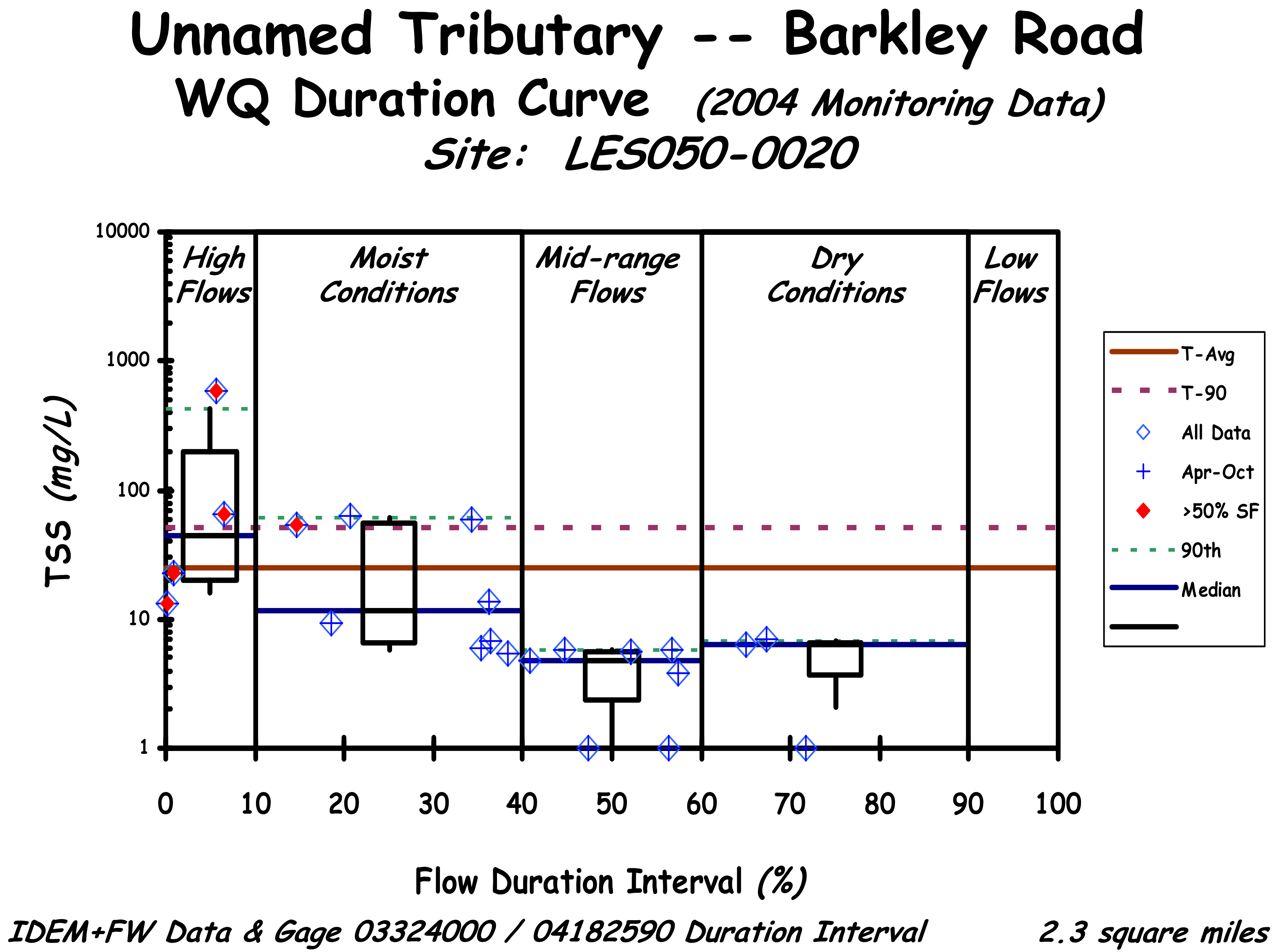
Site: LES050-0008



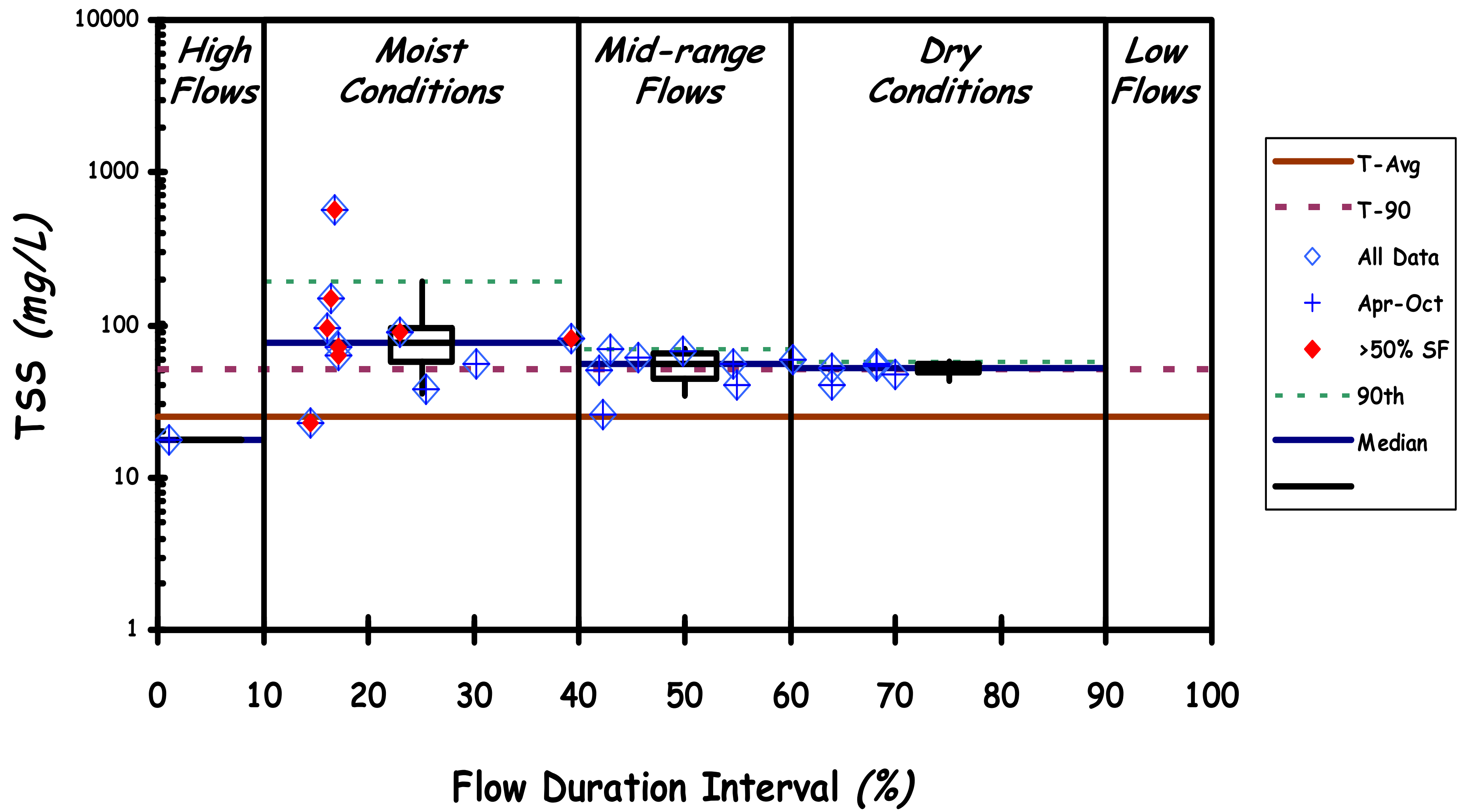
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *27.3 square miles*



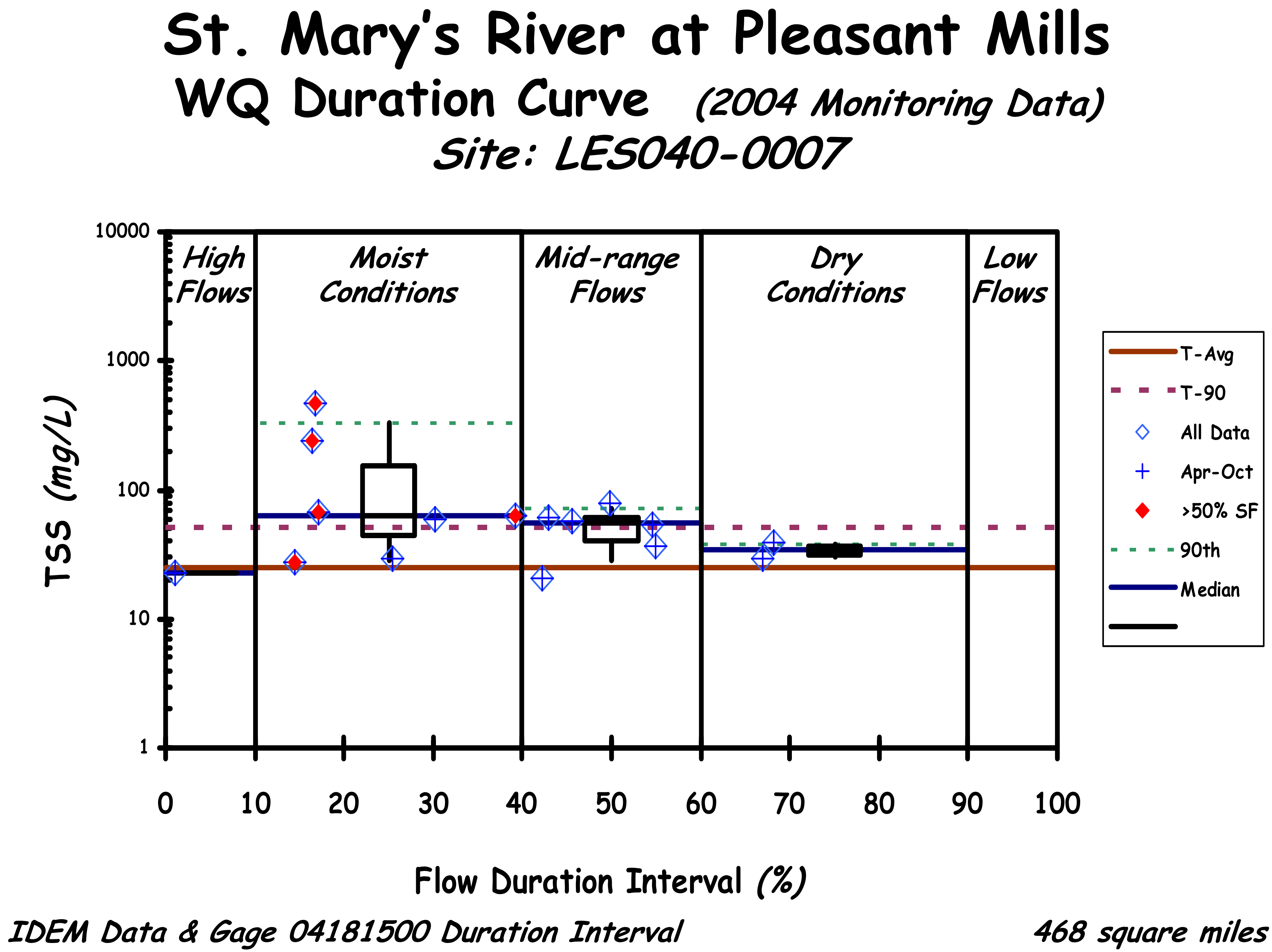
Nickelsen Creek - CR 1100 N
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0015
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
10000
1000
100
10
1
TSS (mg/L)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
12.2 square miles


Unnamed Tributary -- Barkley Road
WQ Duration Curve (2004 Monitoring Data)
Site: LES050-0020
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (mg/L)
10000
1000
100
10
1
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
2.3 square miles

St. Mary's River at Wilshire, OH
WQ Duration Curve *(2004 Monitoring Data)*
Site: UNK000-0007



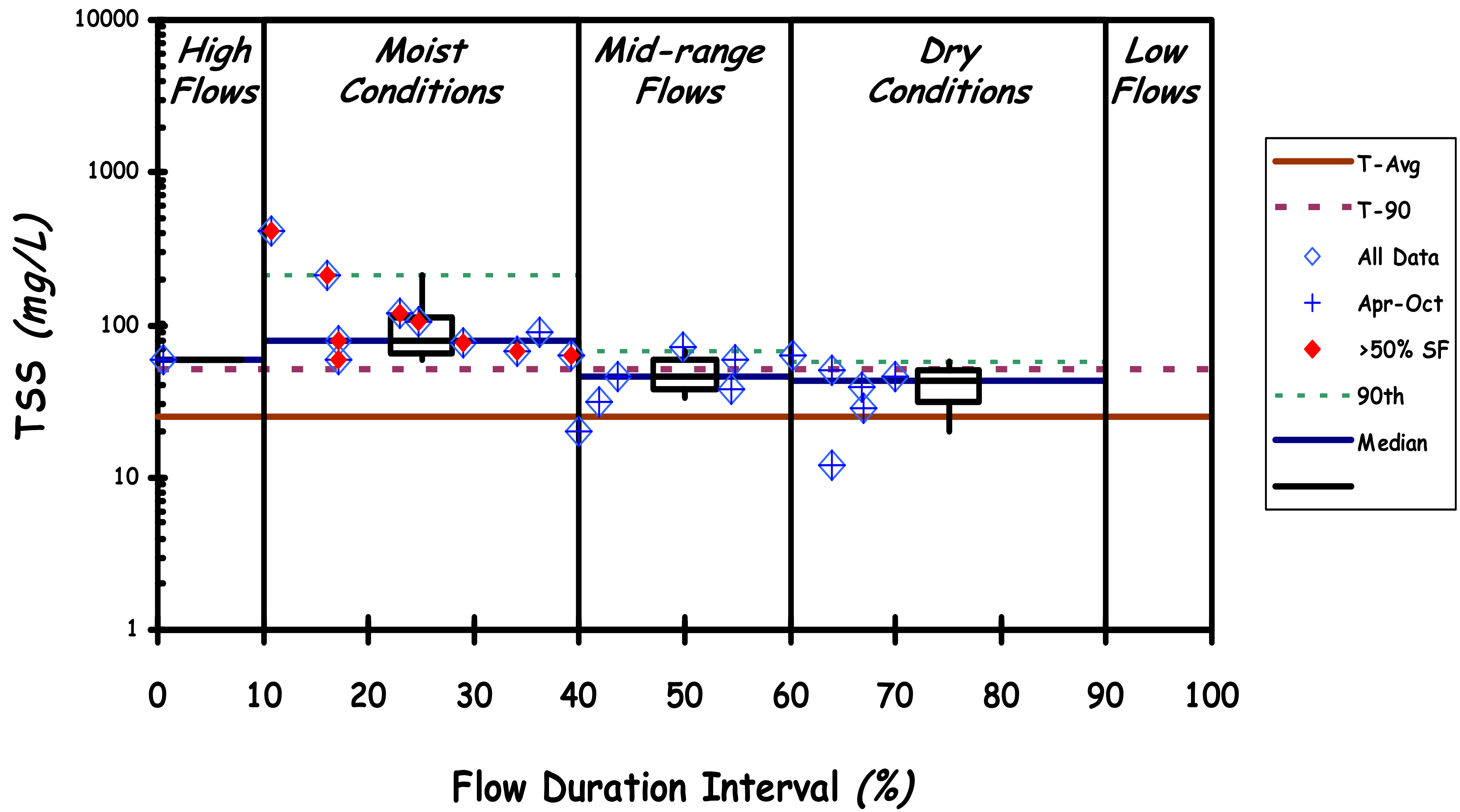
IDEM+FW Data & Gage 04181500 Duration Interval *354 square miles*


St. Mary's River at Pleasant Mills
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0007
TSS (mg/L)
10000
1000
100
10
1
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 04181500 Duration Interval
468 square miles

St. Mary's River near Poe

WQ Duration Curve (2004 Monitoring Data)

Site: LES060-0006

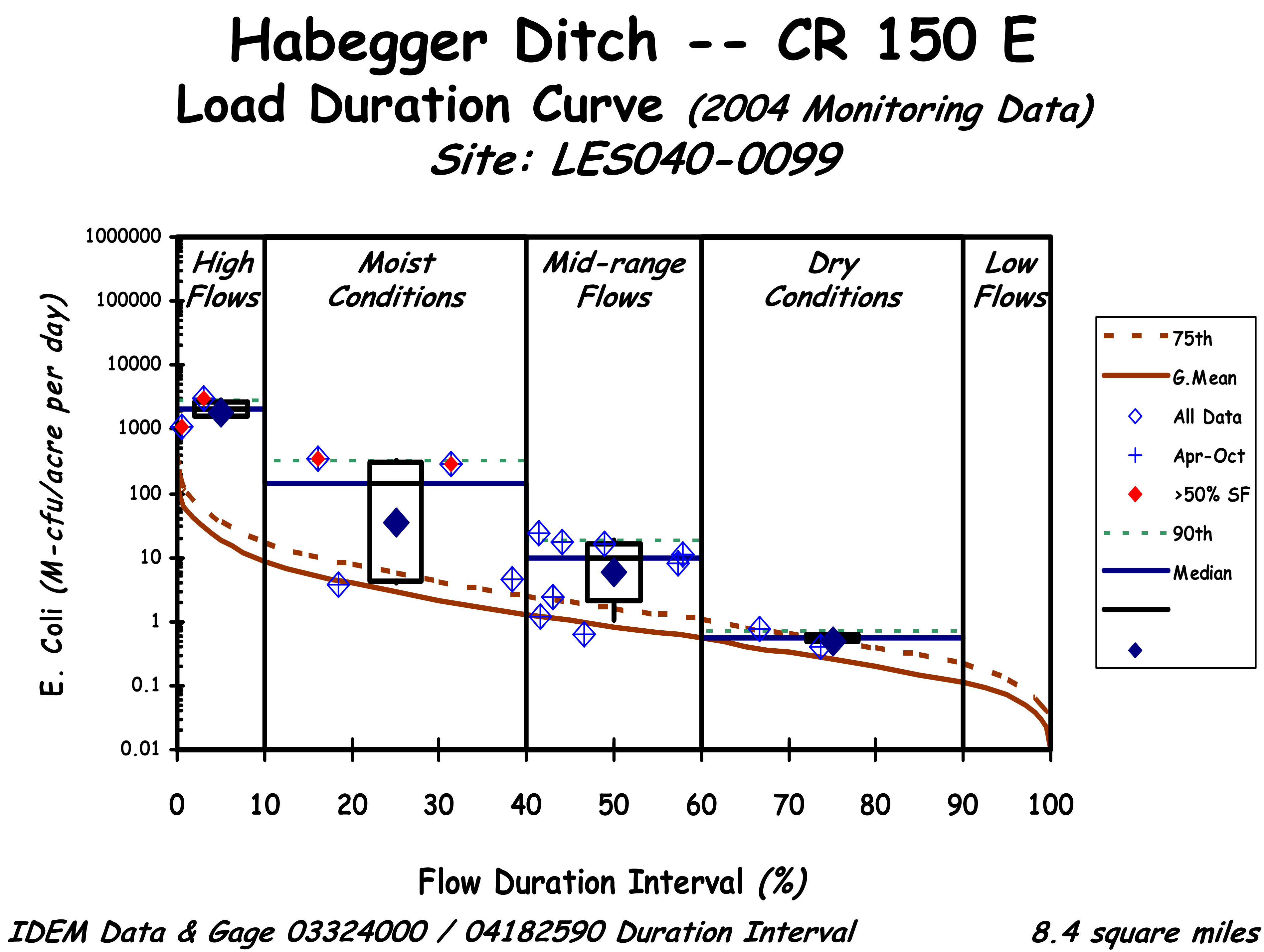


IDEM+FW Data & Gage 04181500 Duration Interval *643 square miles*

Attachment C

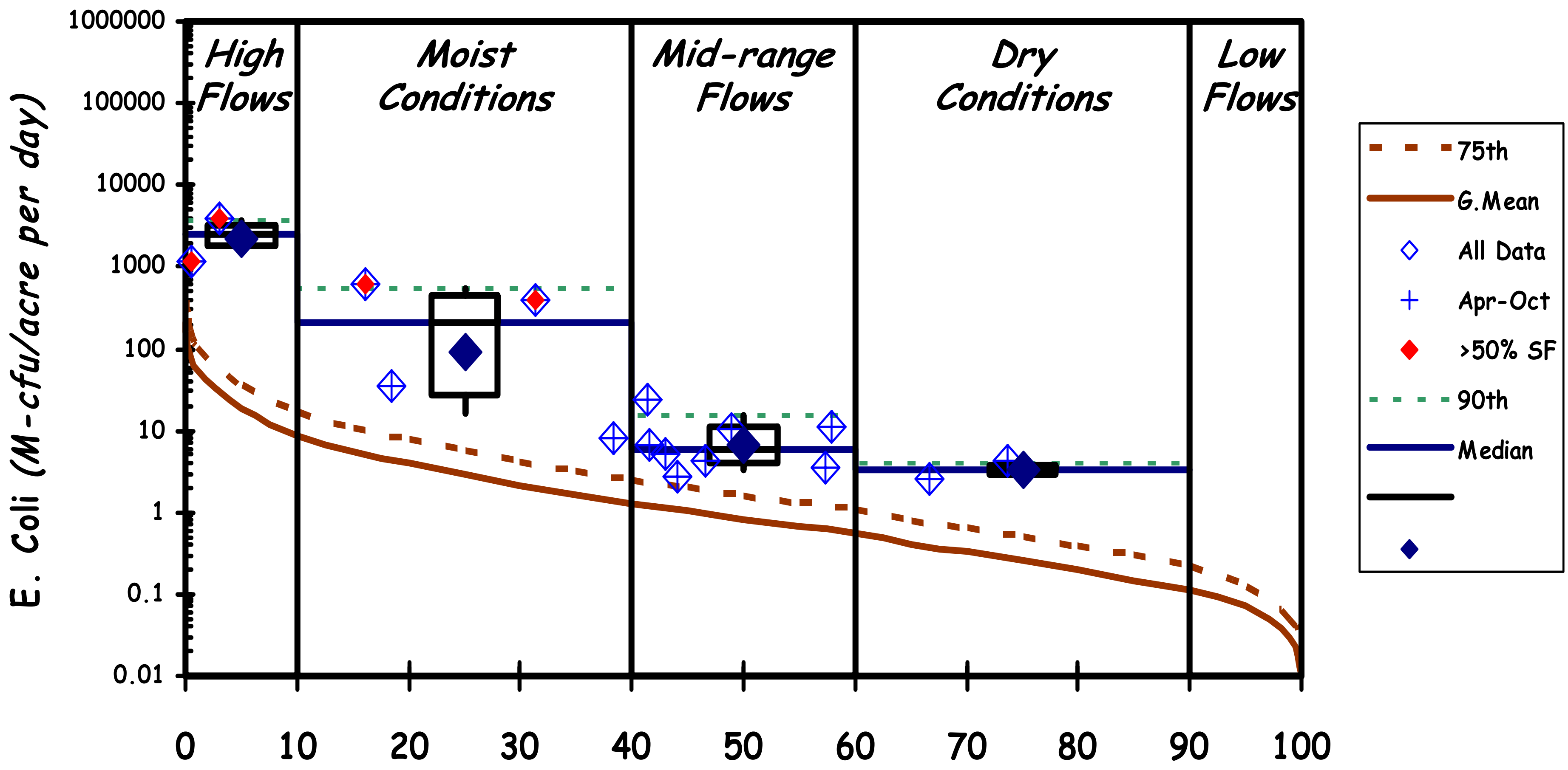
Load Duration Curves for St. Marys River Watershed TMDL

<<left intentionally blank for double-sided printing>>



Habegger Ditch -- CR 150 E
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0099
1000000
100000
10000
1000
100
10
1
0.1
0.01
E. Coli (M-cfu/acre per day)
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
75th
G.Mean
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
8.4 square miles

Gates Ditch -- CR 400 S
Load Duration Curve *(2004 Monitoring Data)*
Site: LES040-0023



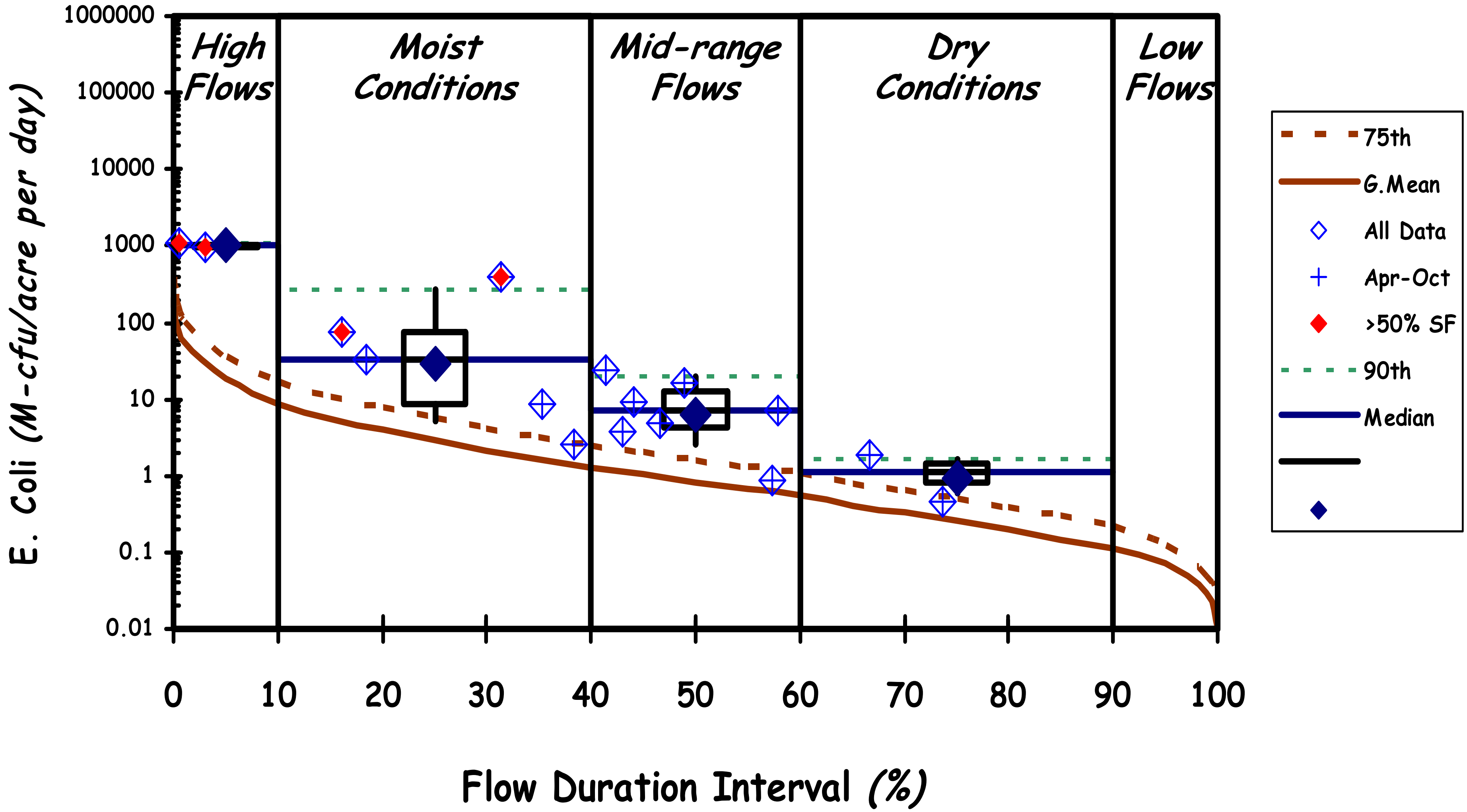
Flow Duration Interval *(%)*

IDEM Data & Gage 03324000 / 04182590 Duration Interval *20.1 square miles*

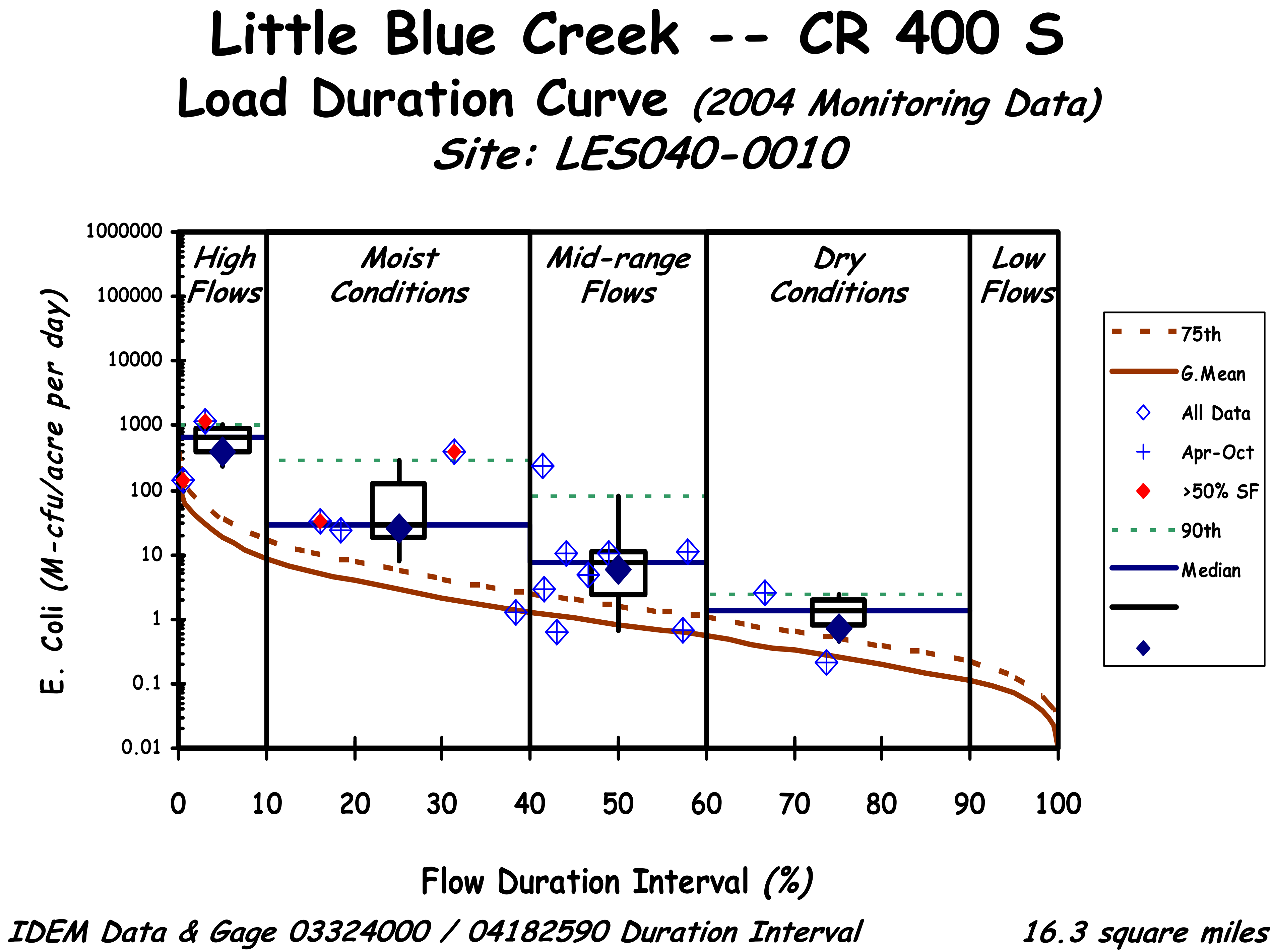
Blue Creek -- Salem Road

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0011



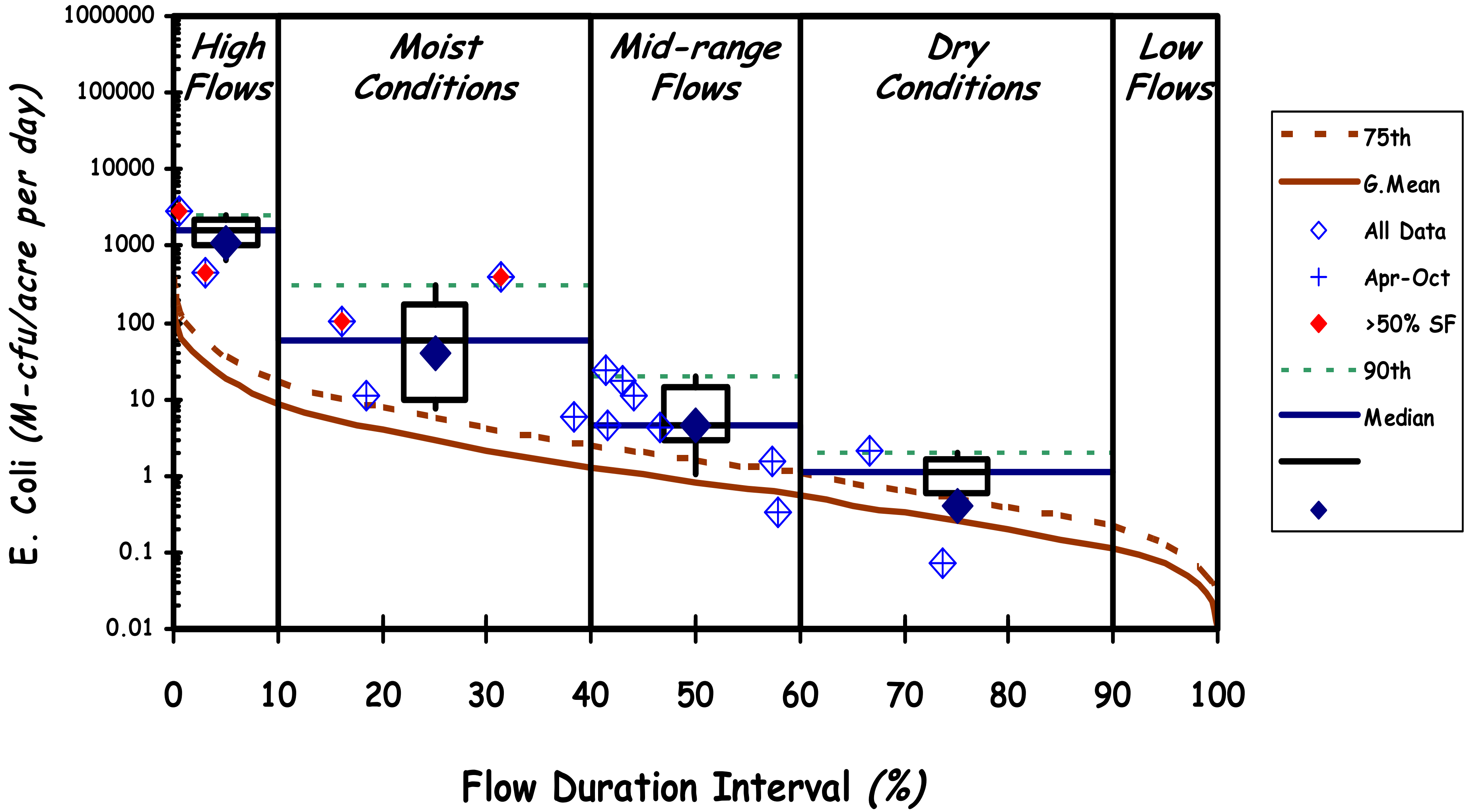
IDEM Data & Gage 03324000 / 04182590 Duration Interval *51.8 square miles*


Little Blue Creek -- CR 400 S
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0010
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
75th
G.Mean
All Data
Apr-Oct
>50% SF
90th
Median
1000000
100000
10000
1000
100
10
1
0.1
0.01
E. Coli (M-cfu/acre per day)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
IDEM Data & Gage 03324000 / 04182590 Duration Interval
16.3 square miles

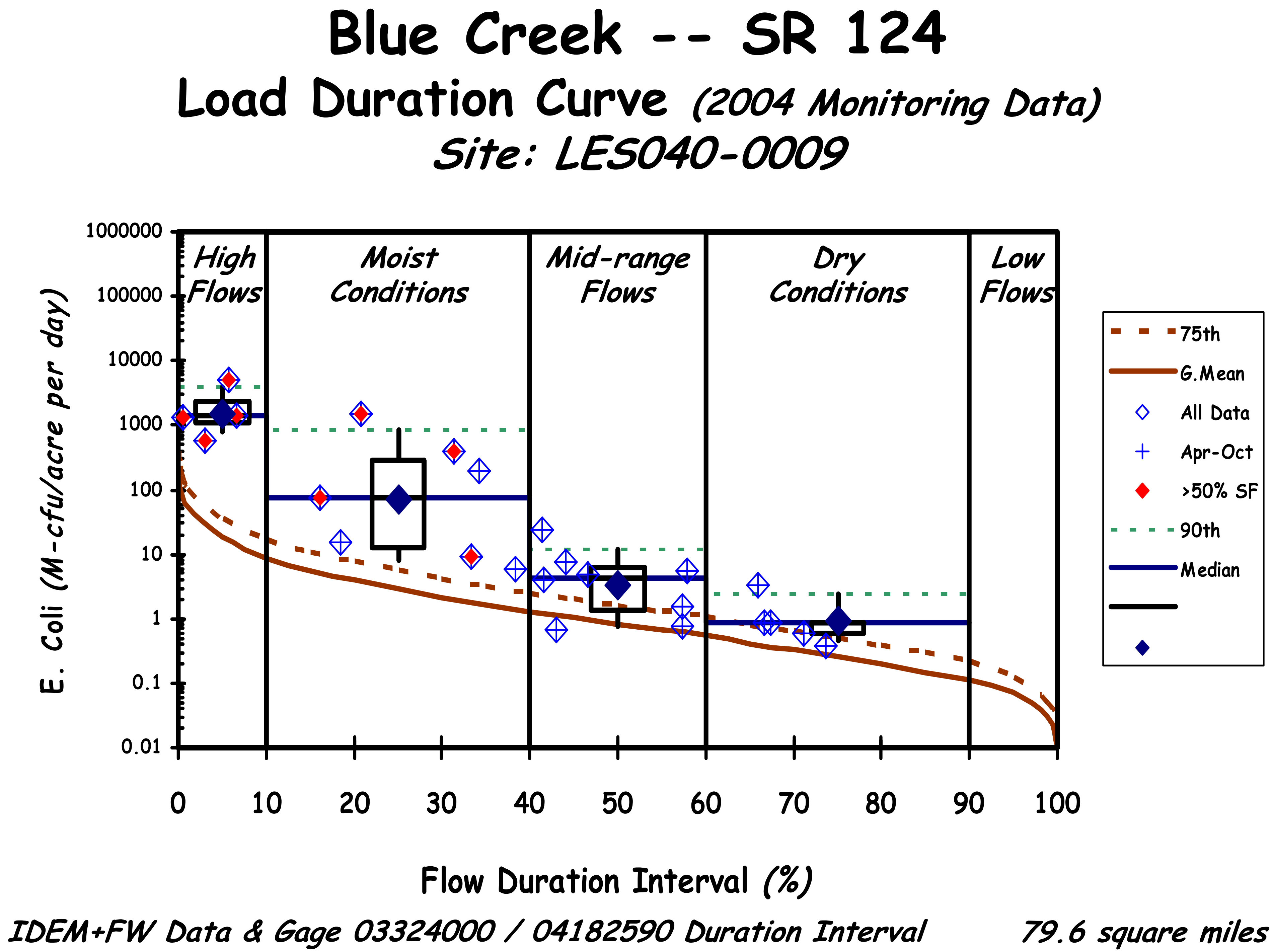
Blue Creek -- CR 300 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0066



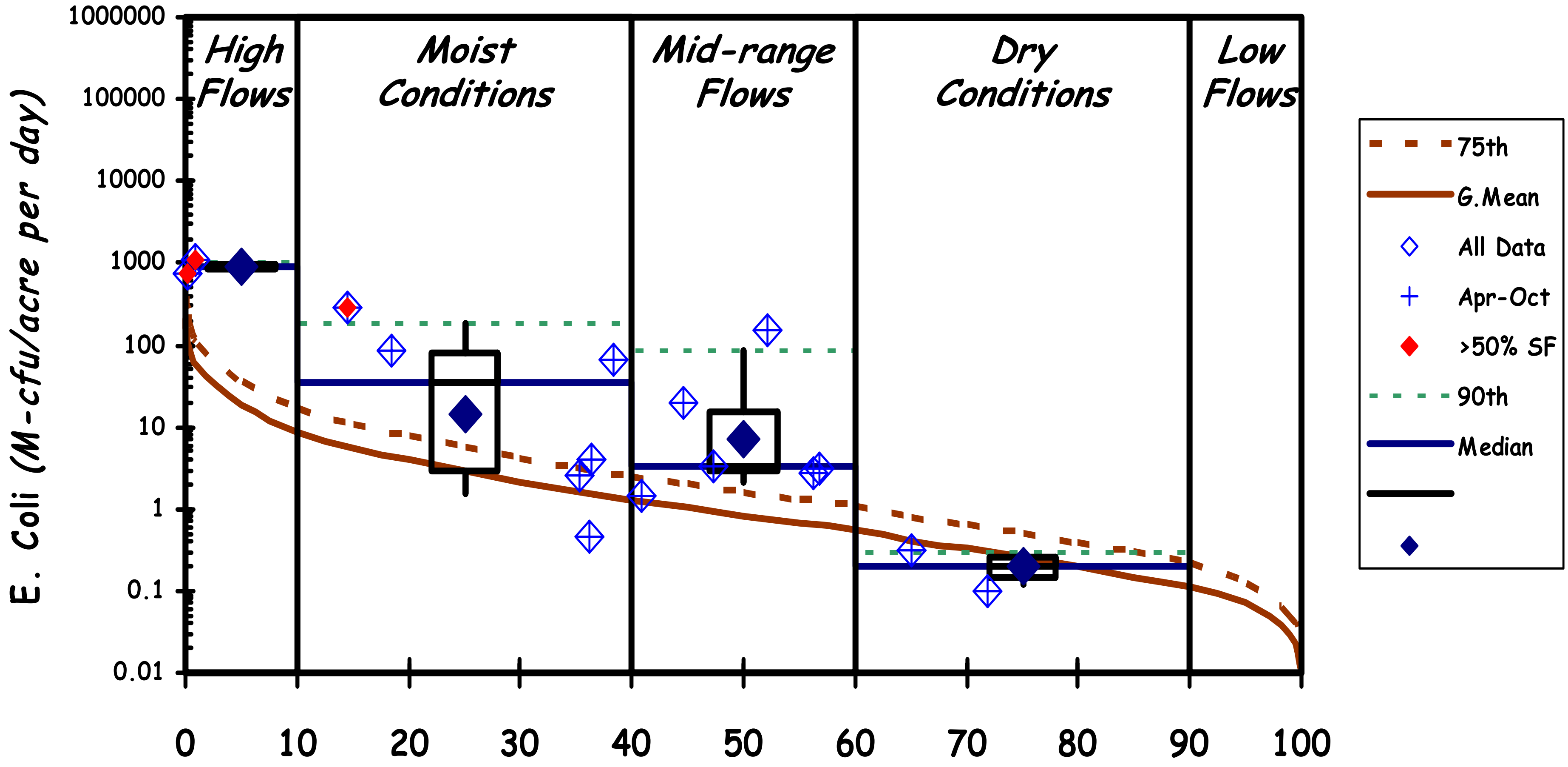
IDEM Data & Gage 03324000 / 04182590 Duration Interval *71.0 square miles*


Blue Creek -- SR 124
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
1000000
100000
10000
1000
100
10
1
0.1
0.01
E. Coli (M-cfu/acre per day)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
75th
G.Mean
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
79.6 square miles

Martz Creek -- CR 200 N

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0040

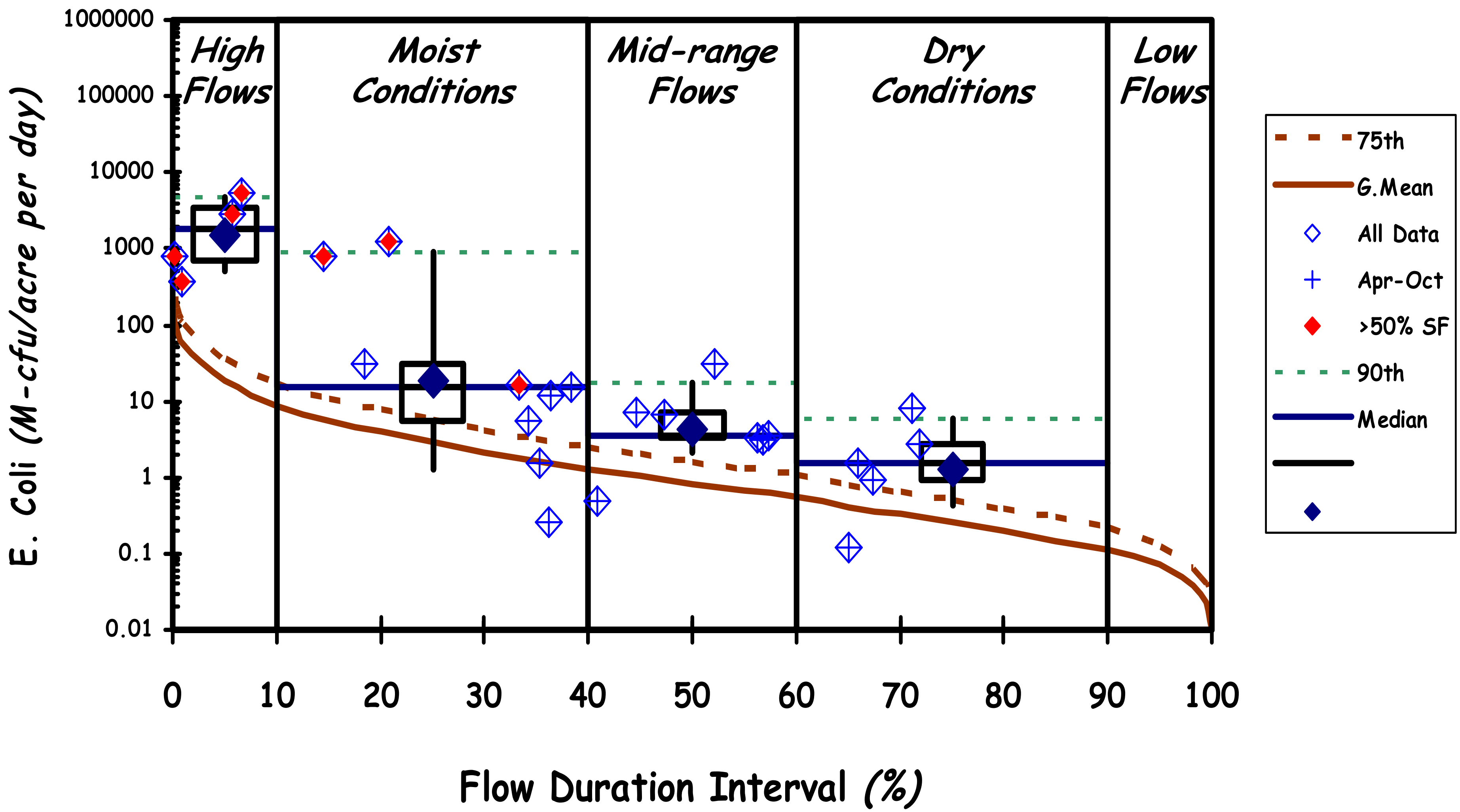


IDEM Data & Gage 03324000 / 04182590 Duration Interval *9.8 square miles*

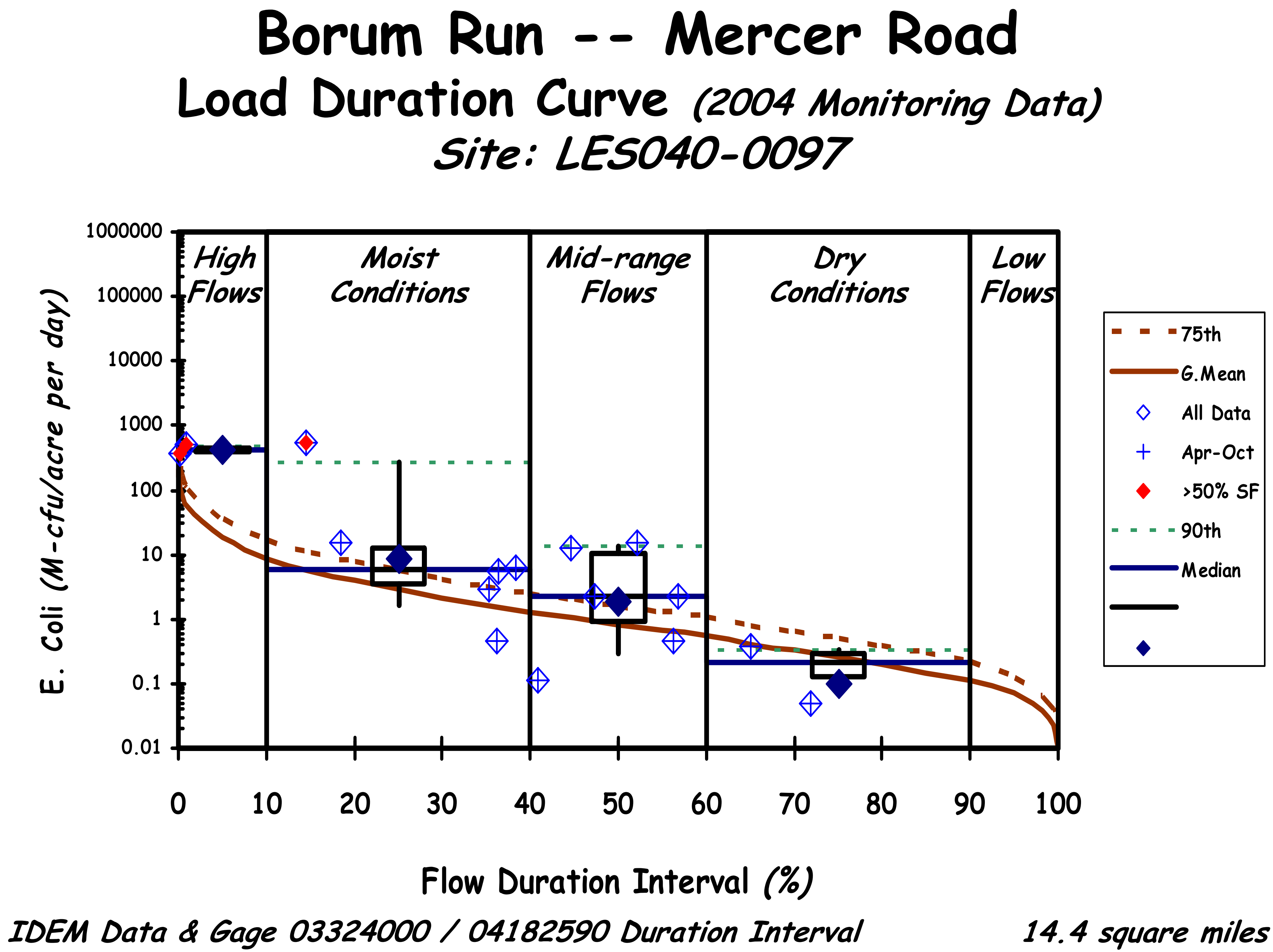
Yellow Creek -- CR 250 S

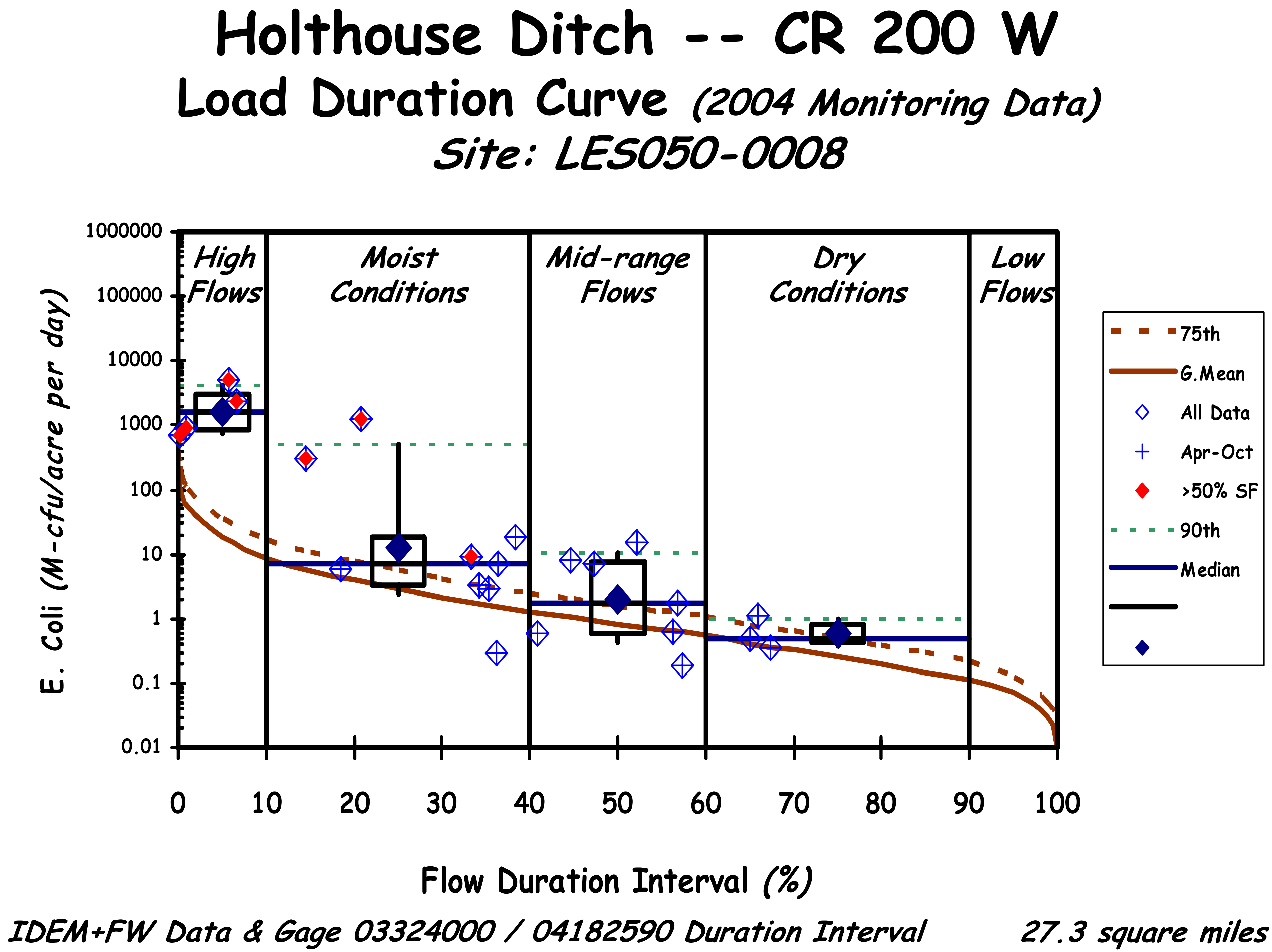
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0038

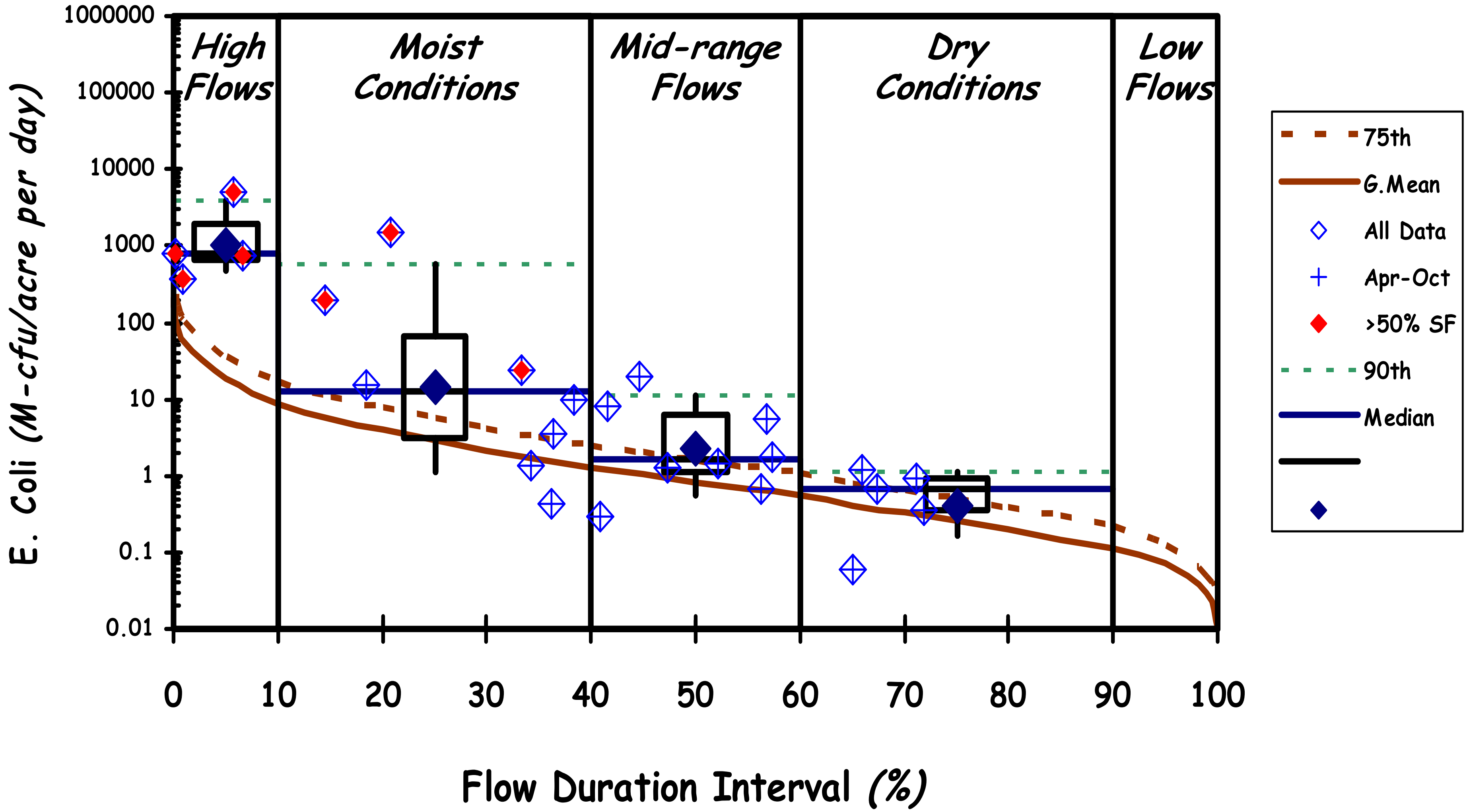


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *24.5 square miles*

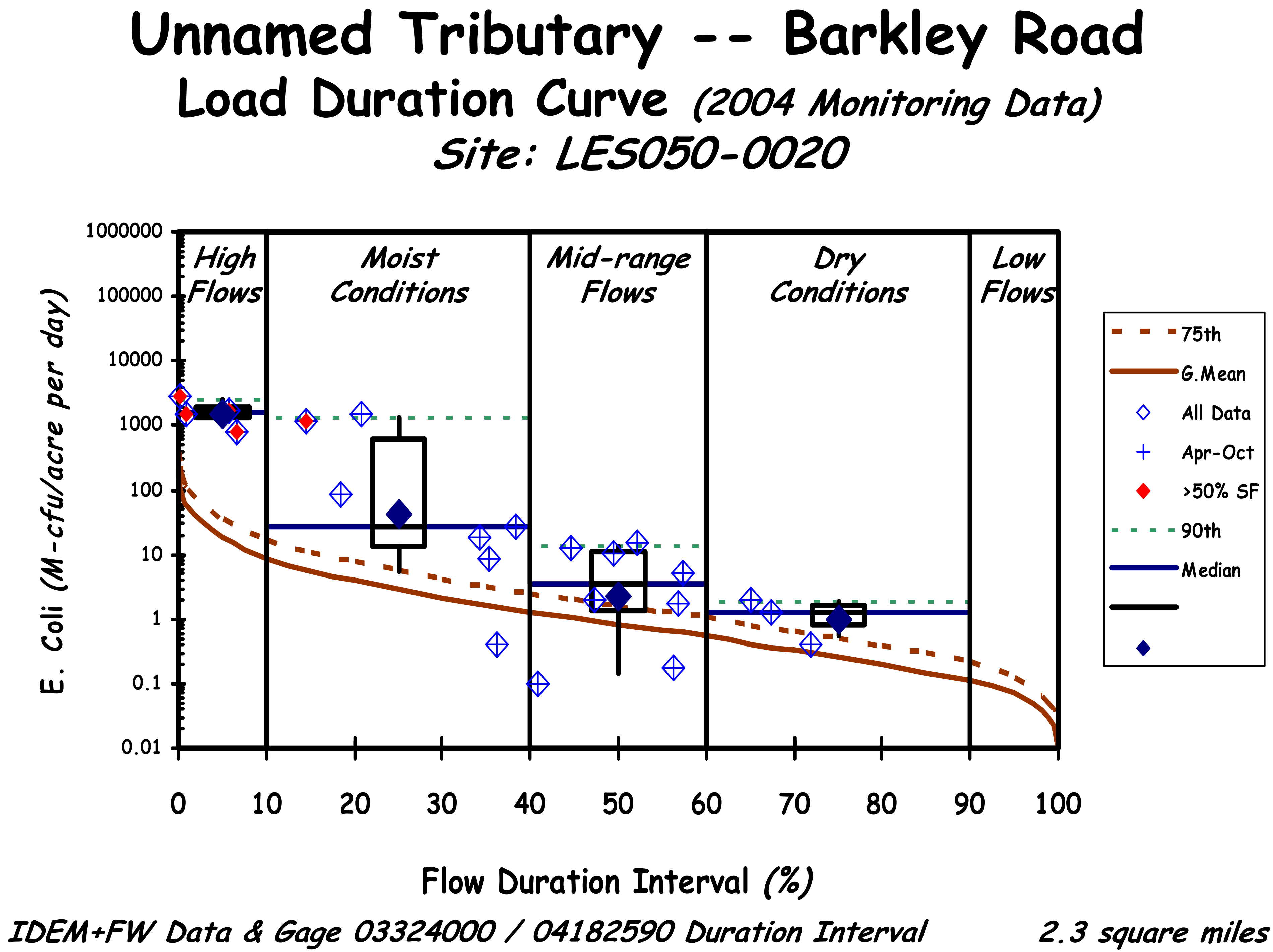

Borum Run -- Mercer Road
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0097
E. Coli (M-cfu/acre per day)
1000000
100000
10000
1000
100
10
1
0.1
0.01
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
75th
G.Mean
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
14.4 square miles


Holthouse Ditch -- CR 200 W
Load Duration Curve (2004 Monitoring Data)
Site: LES050-0008
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (M-cfu/acre per day)
1000000
100000
10000
1000
100
10
1
0.1
0.01
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
75th
G.Mean
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
27.3 square miles

Nickelsen Creek – CR 1100 N
Load Duration Curve *(2004 Monitoring Data)*
Site: LES050-0015



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *12.2 square miles*

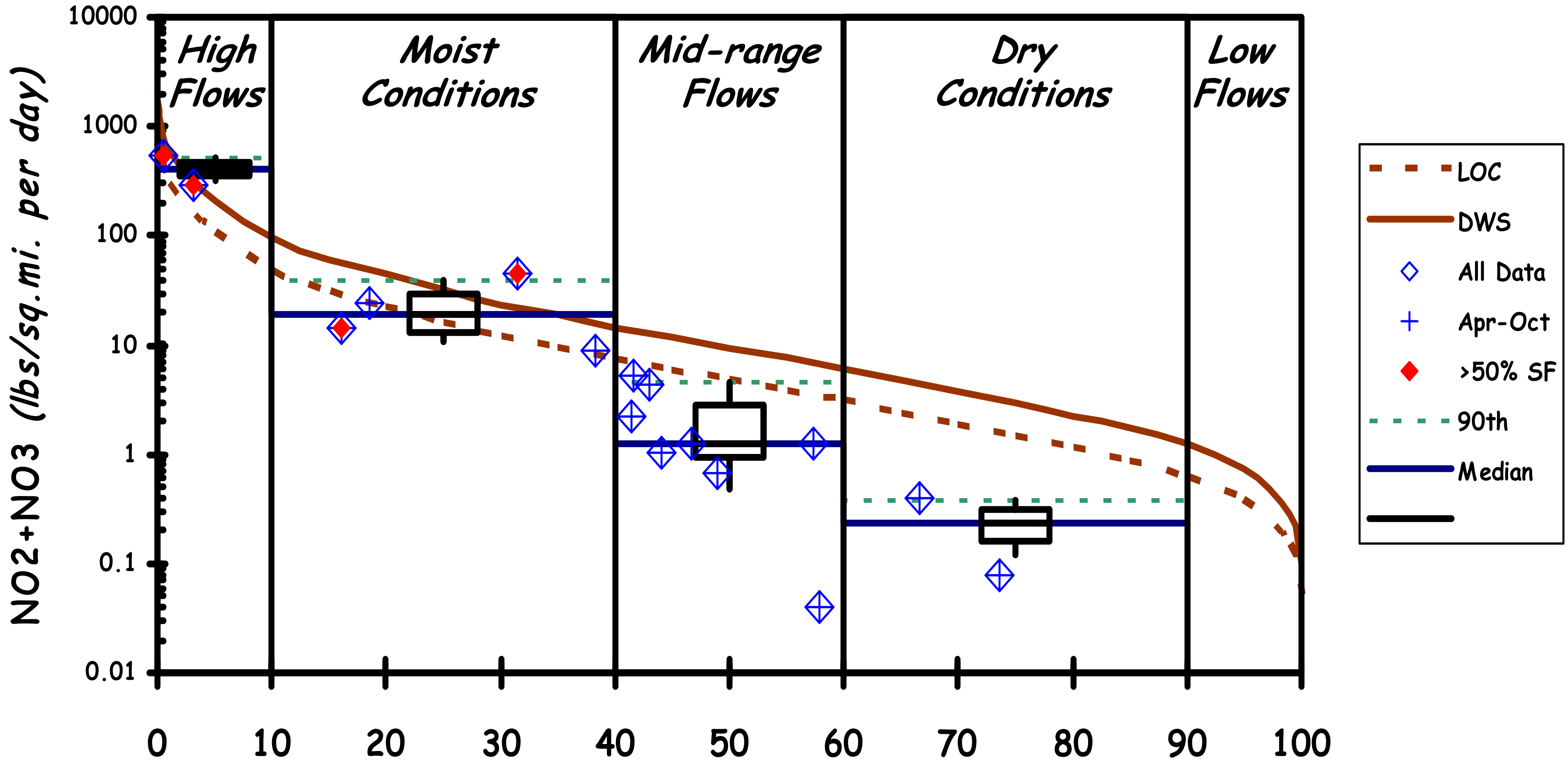


Unnamed Tributary -- Barkley Road
Load Duration Curve (2004 Monitoring Data)
Site: LES050-0020
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (M-cfu/acre per day)
1000000
100000
10000
1000
100
10
1
0.1
0.01
0
10
20
30
40
50
60
70
80
90
100
75th
G.Mean
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
2.3 square miles

Habegger Ditch -- CR 150 E

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0099

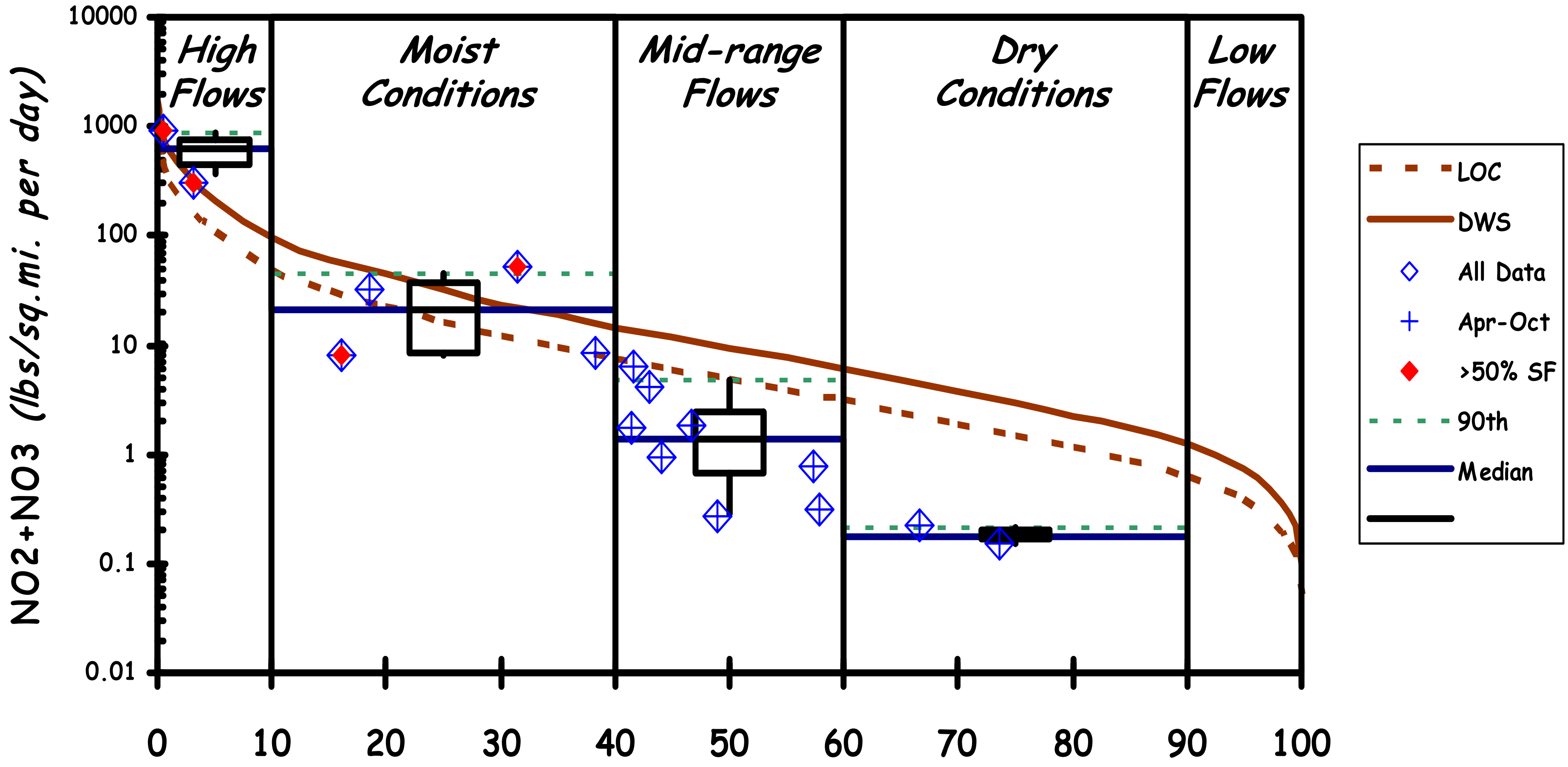


IDEM Data & Gage 03324000 / 04182590 Duration Interval *8.4 square miles*

Gates Ditch -- CR 400 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0023



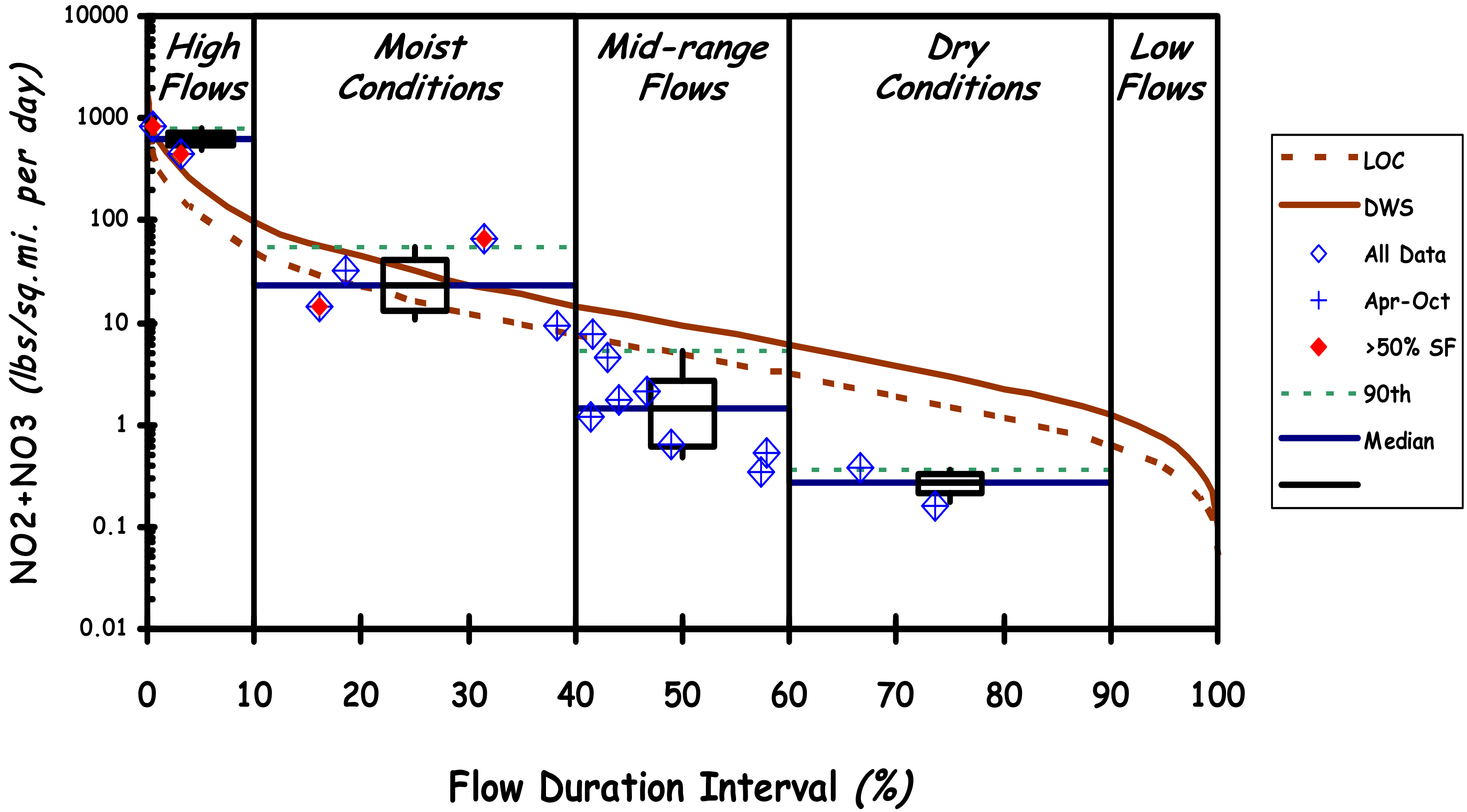
IDEM Data & Gage 03324000 / 04182590 Duration Interval

20.1 square miles

Blue Creek -- Salem Road

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0011

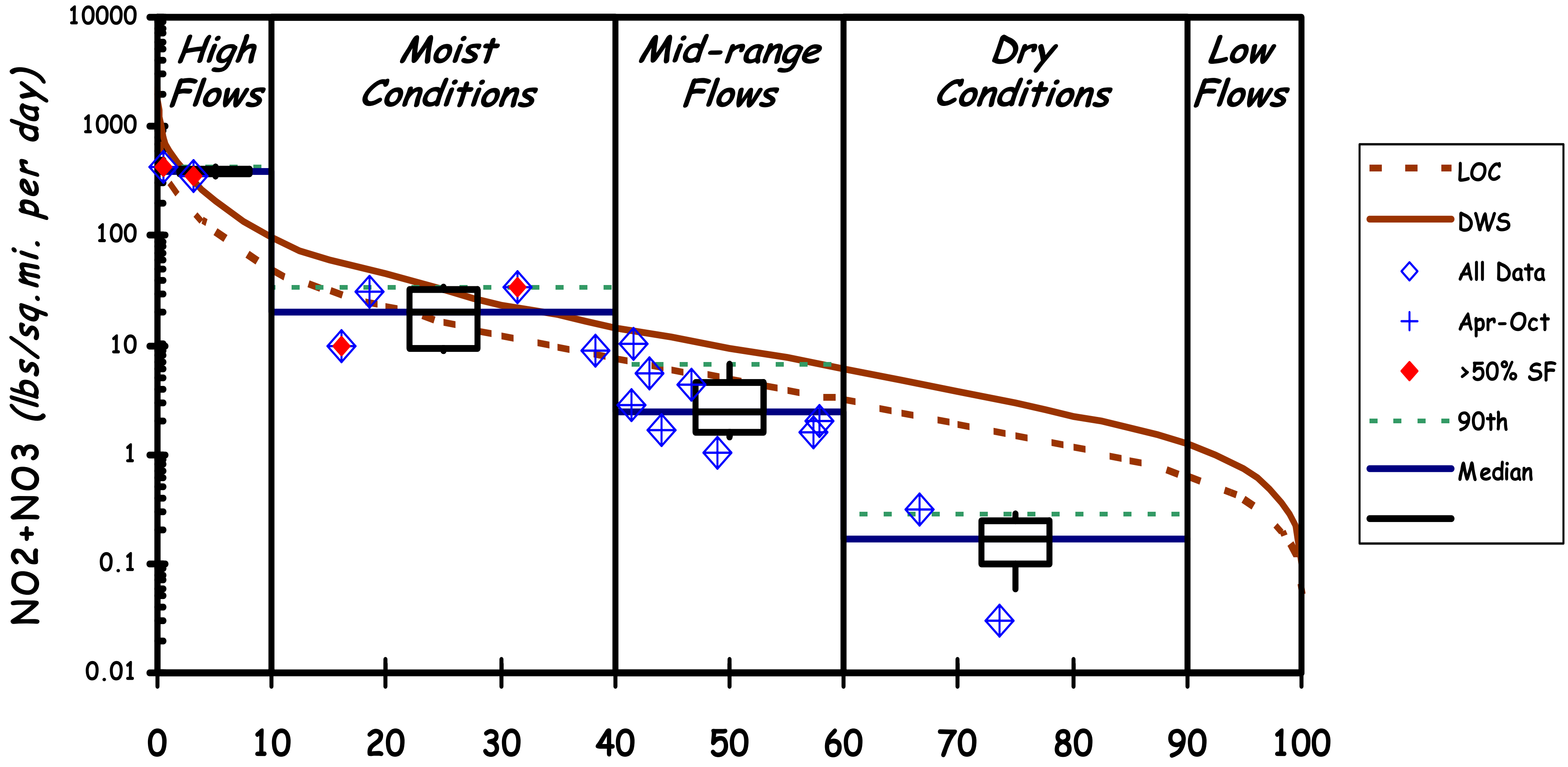


IDEM Data & Gage 03324000 / 04182590 Duration Interval *51.8 square miles*

Little Blue Creek -- CR 400 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0010



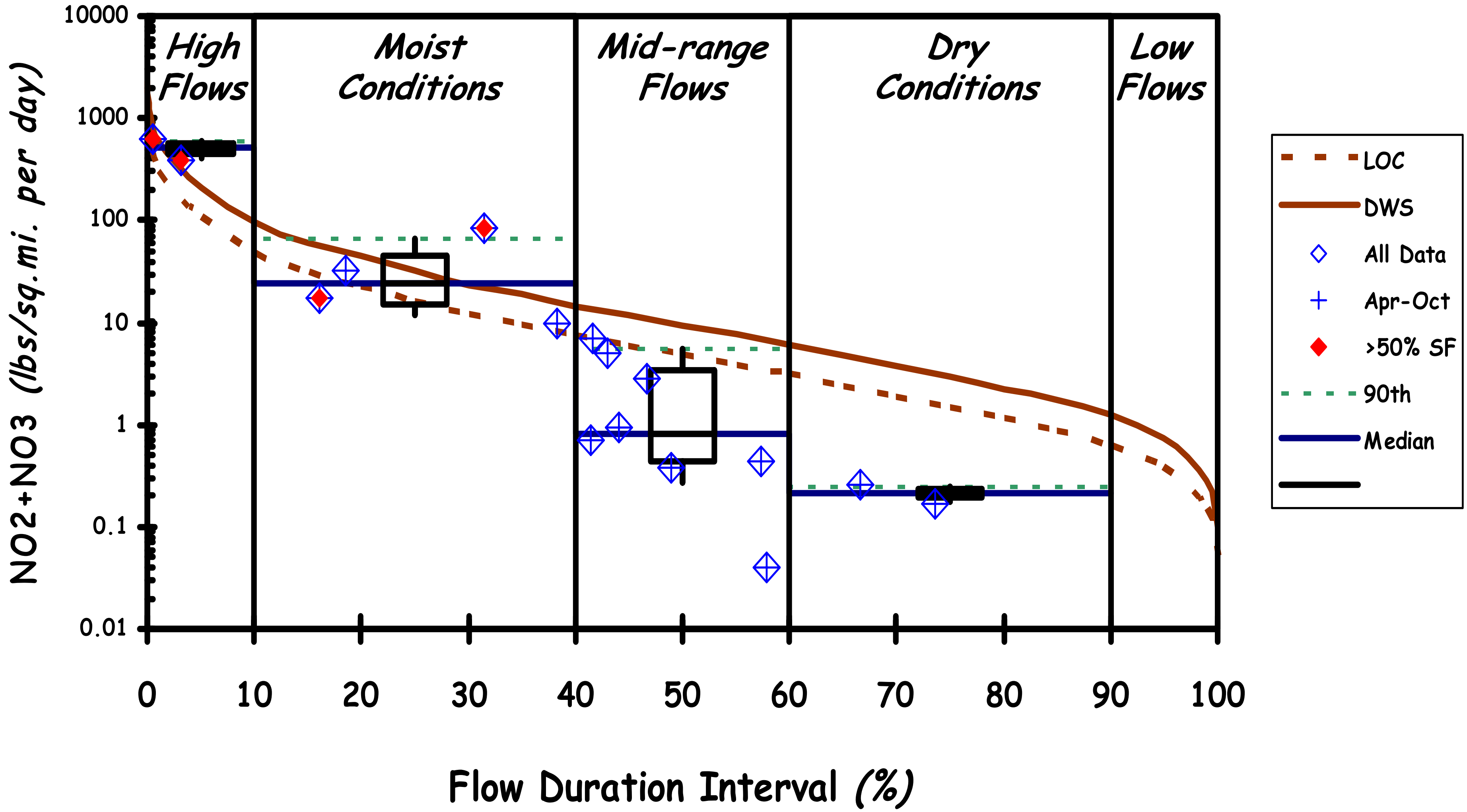
Flow Duration Interval *(%)*

IDEM Data & Gage 03324000 / 04182590 Duration Interval *16.3 square miles*

Blue Creek -- CR 300 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0066

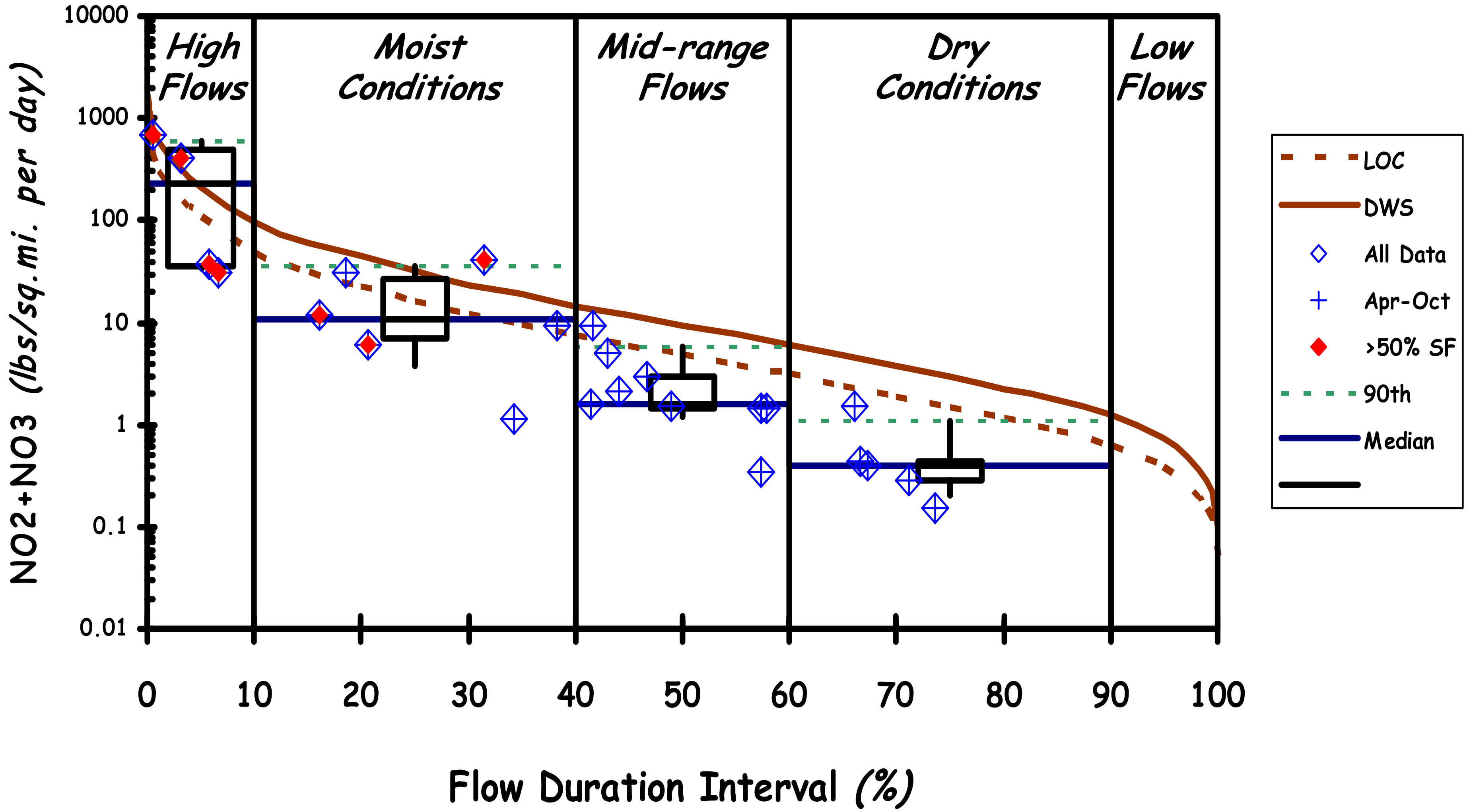


IDEM Data & Gage 03324000 / 04182590 Duration Interval *71.0 square miles*

Blue Creek -- SR 124

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0009

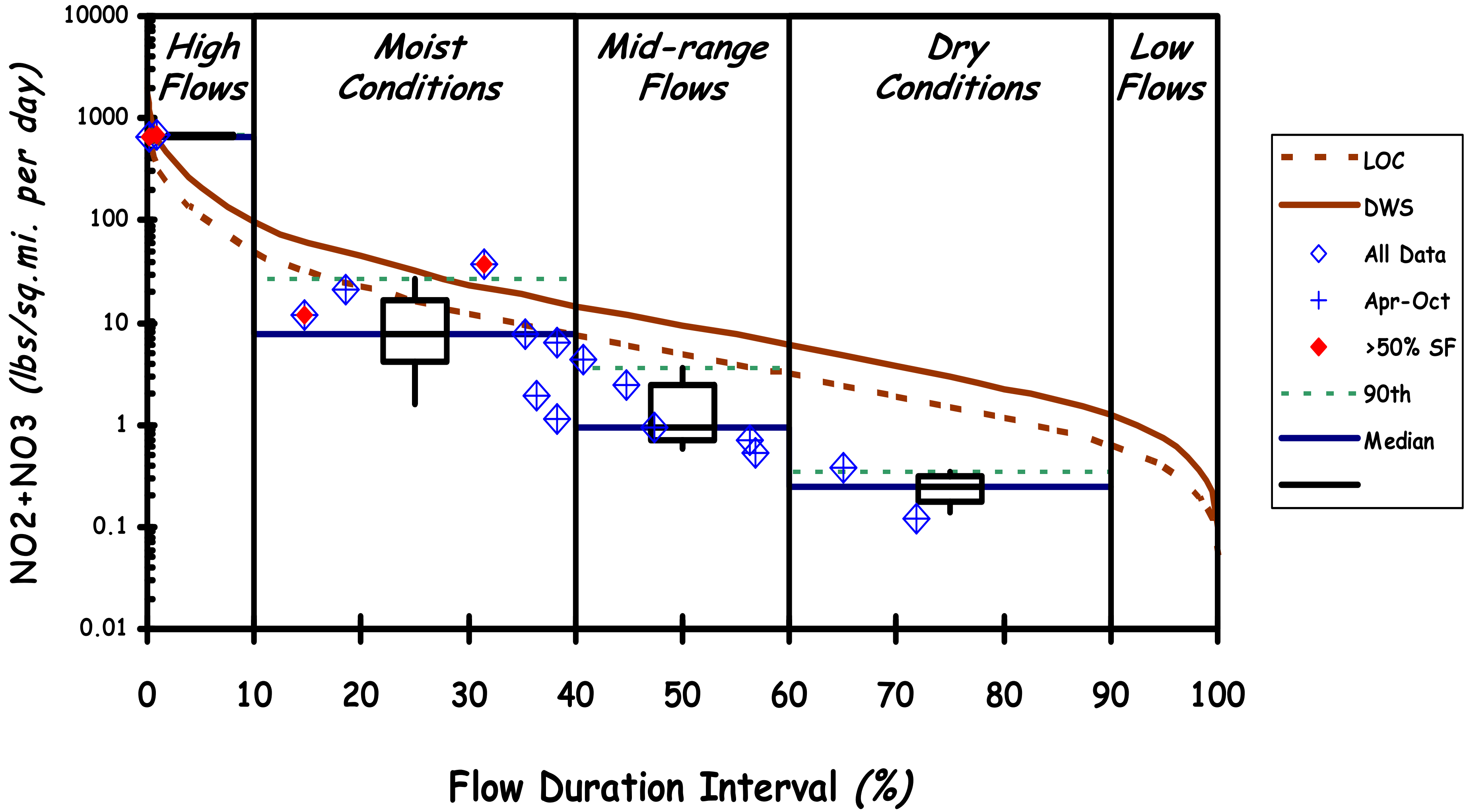


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *79.6 square miles*

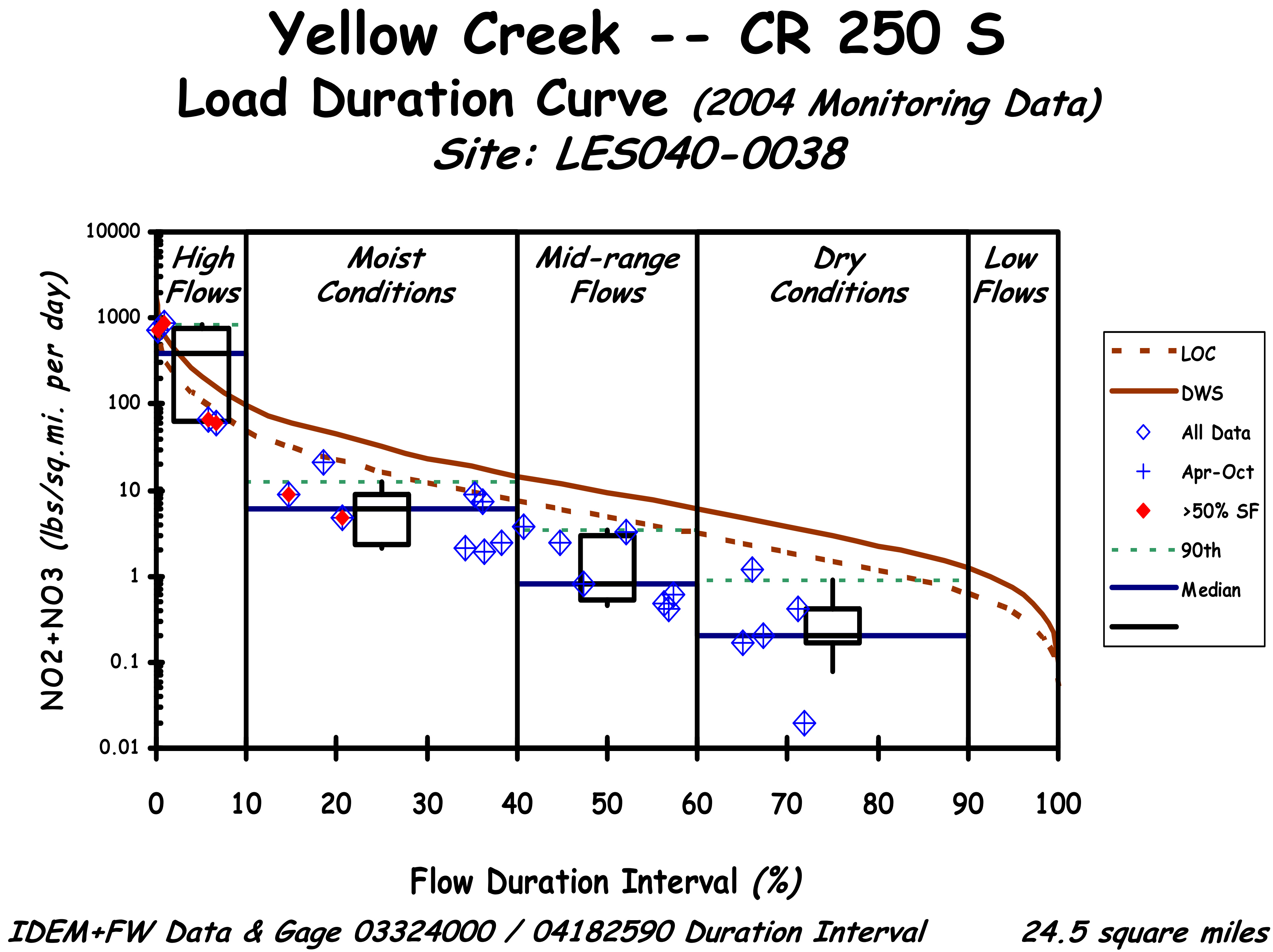
Martz Creek -- CR 200 N

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0040



IDEM Data & Gage 03324000 / 04182590 Duration Interval *9.8 square miles*

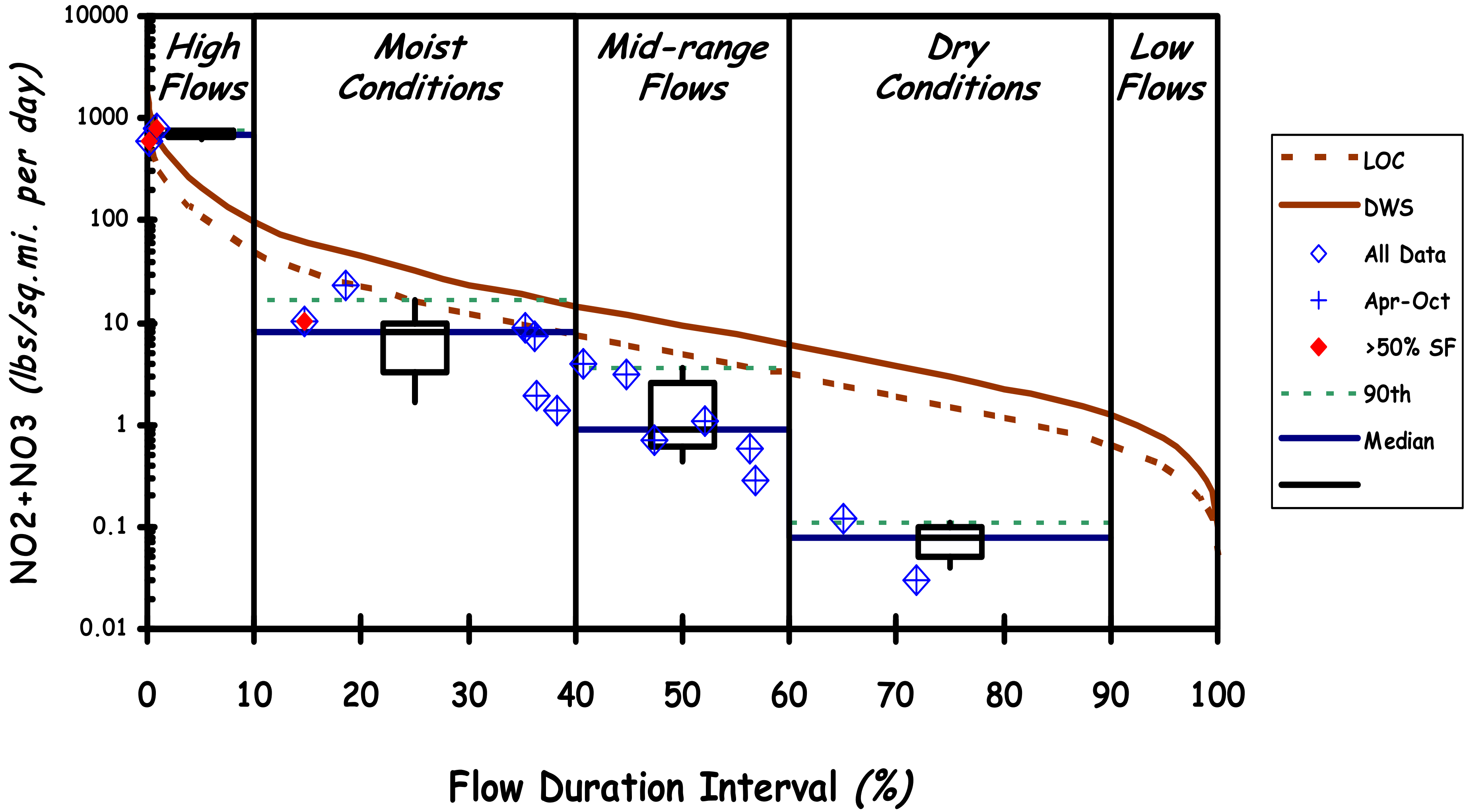


Yellow Creek -- CR 250 S
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0038
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (lbs/sq.mi. per day)
10000
1000
100
10
1
0.1
0.01
0
10
20
30
40
50
60
70
80
90
100
LOC
DWS
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
24.5 square miles

Borum Run -- Mercer Road

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0097

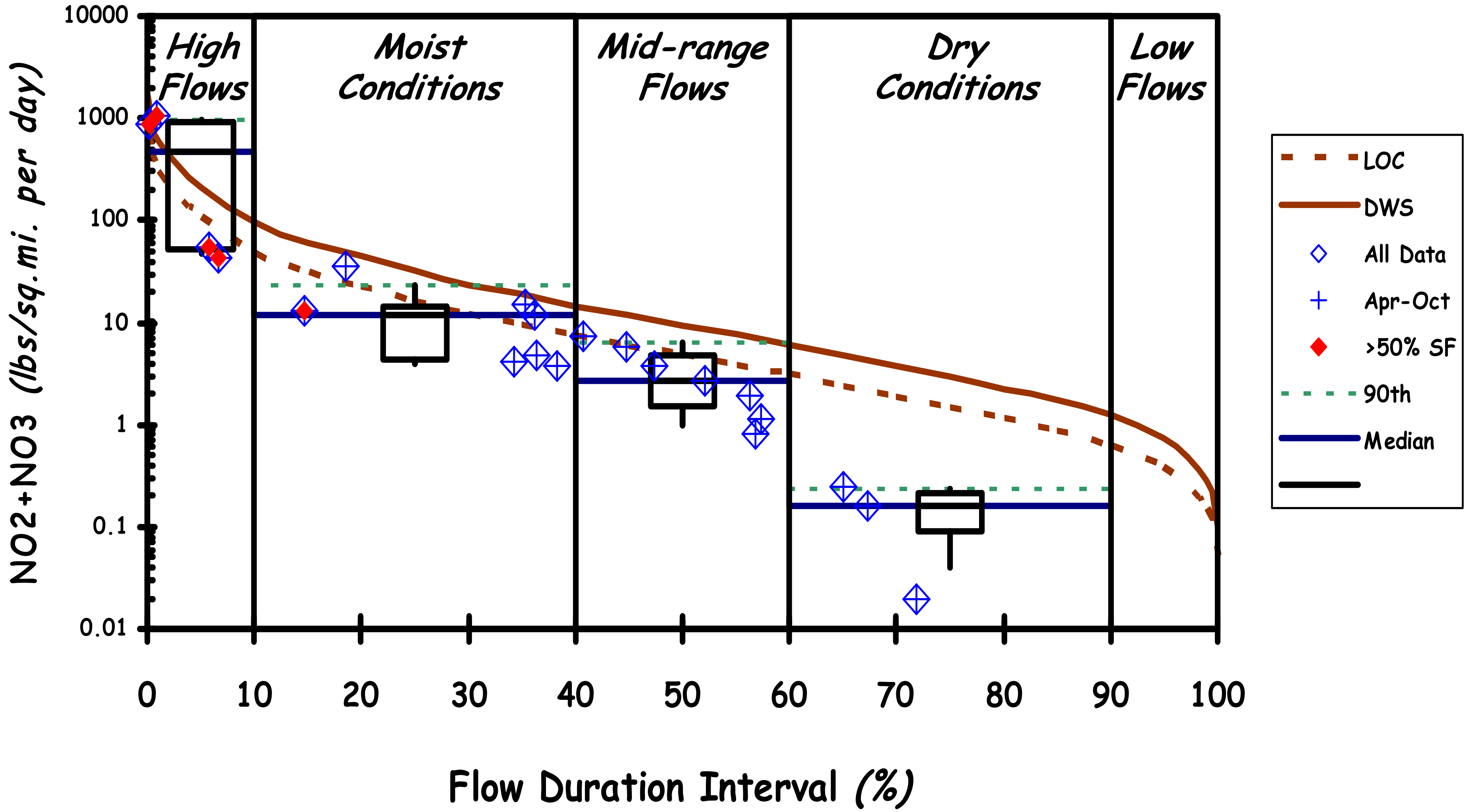


IDEM Data & Gage 03324000 / 04182590 Duration Interval *14.4 square miles*

Holthouse Ditch -- CR 200 W

Load Duration Curve *(2004 Monitoring Data)*

Site: LES050-0008

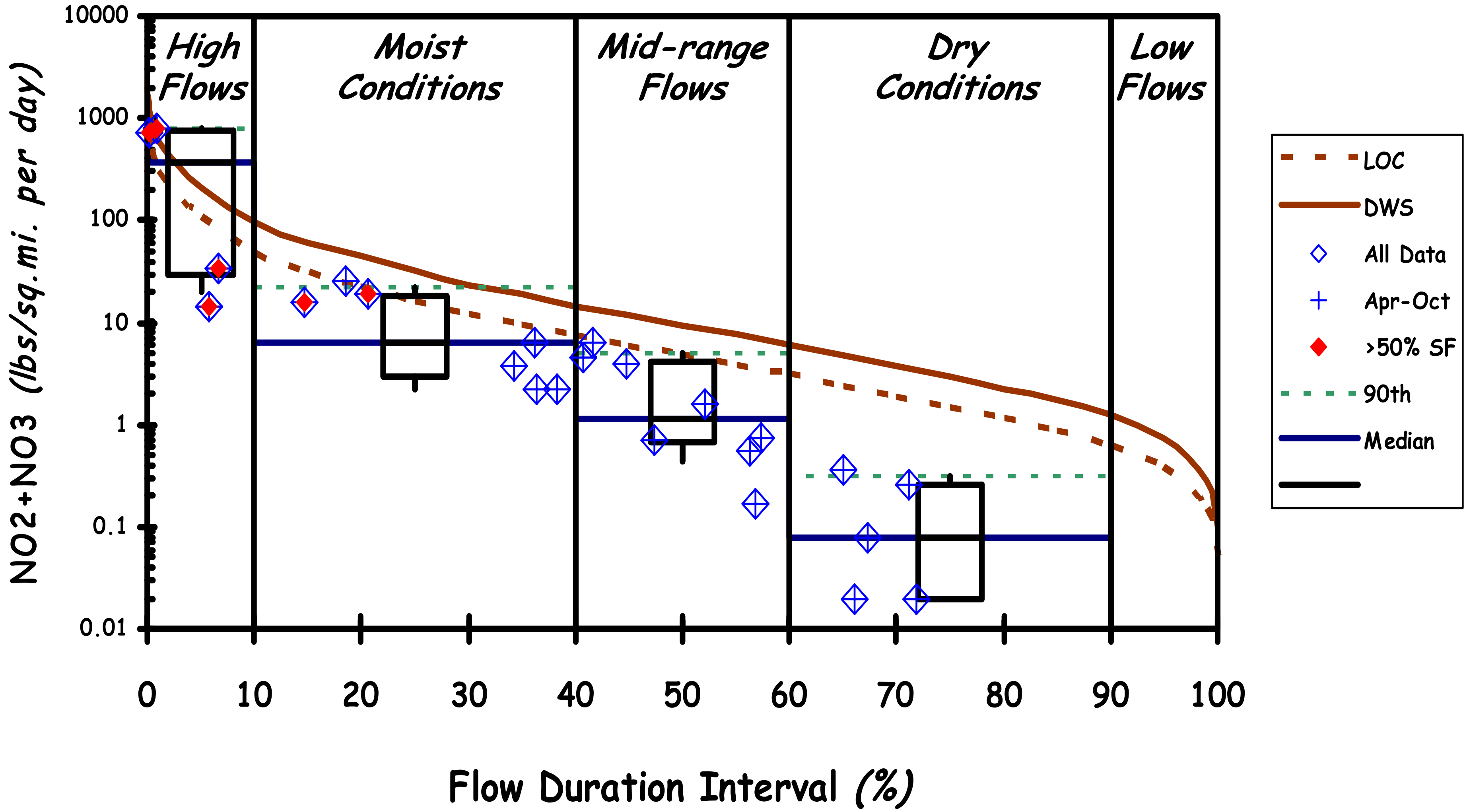


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *27.3 square miles*

Nickelsen Creek - CR 1100 N

Load Duration Curve *(2004 Monitoring Data)*

Site: LES050-0015

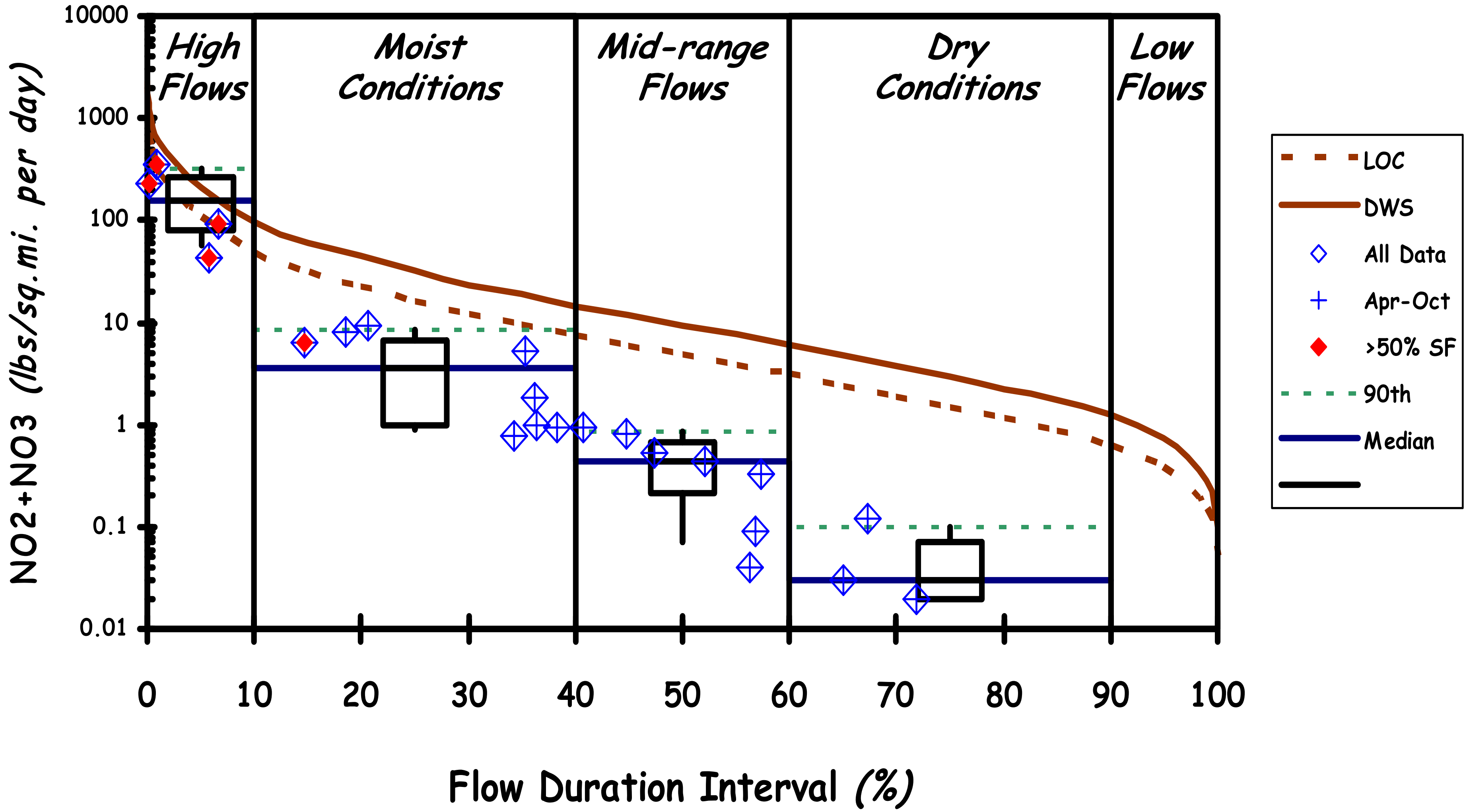


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *12.2 square miles*

Unnamed Tributary -- Barkley Road

Load Duration Curve *(2004 Monitoring Data)*

Site: LES050-0020

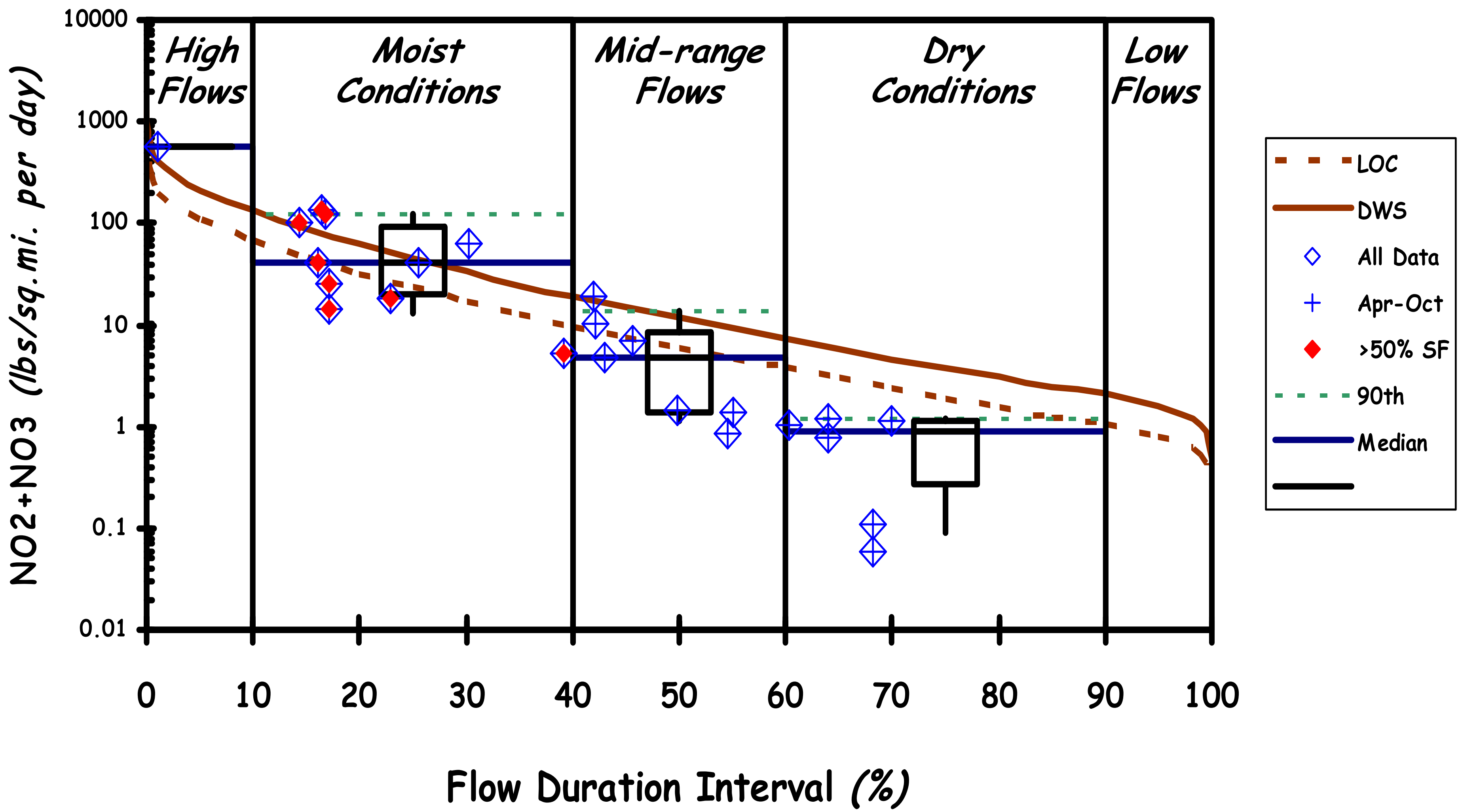


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *2.3 square miles*

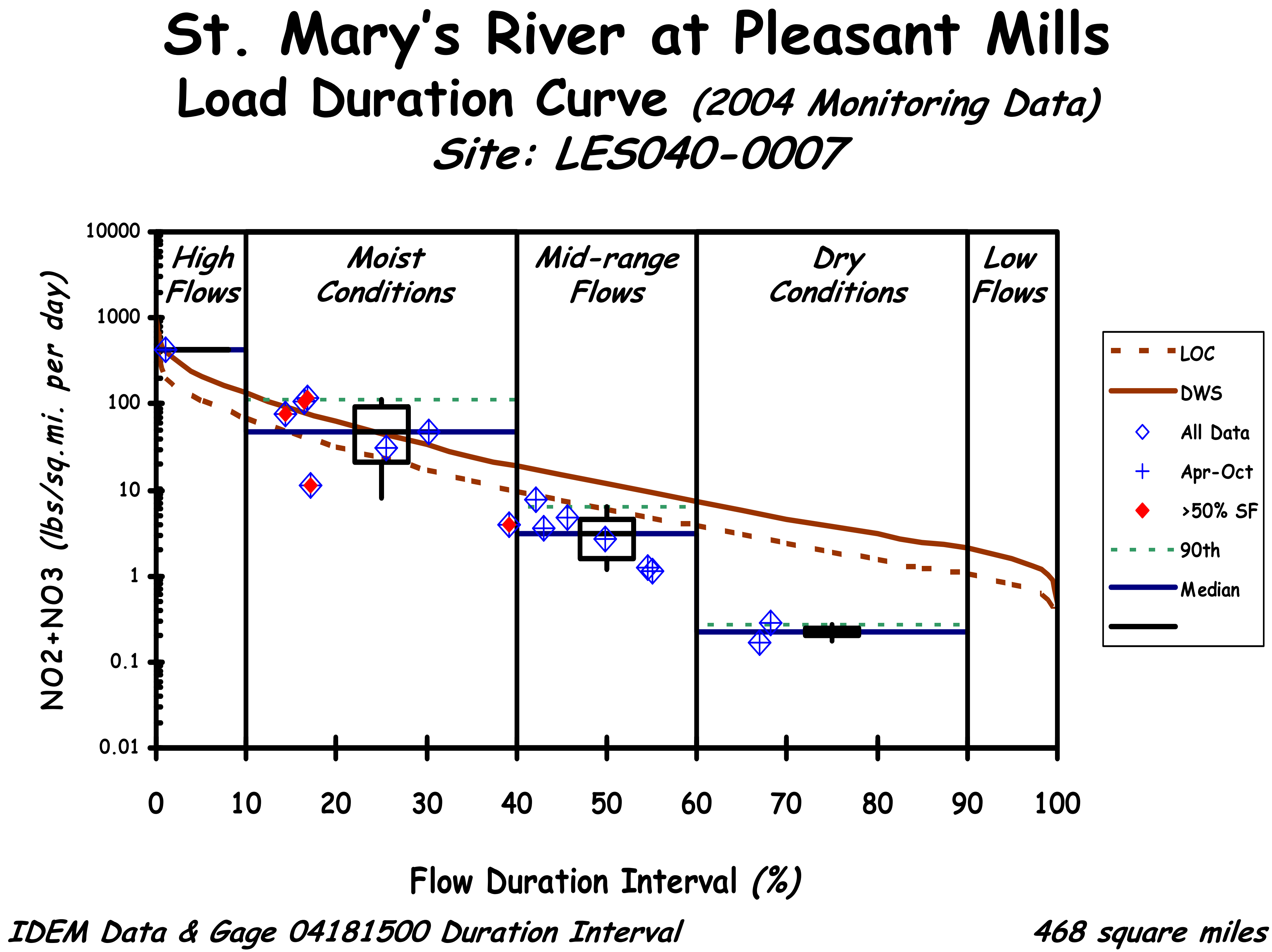
St. Mary's River at Wilshire, OH

Load Duration Curve *(2004 Monitoring Data)*

Site: UNK000-0007



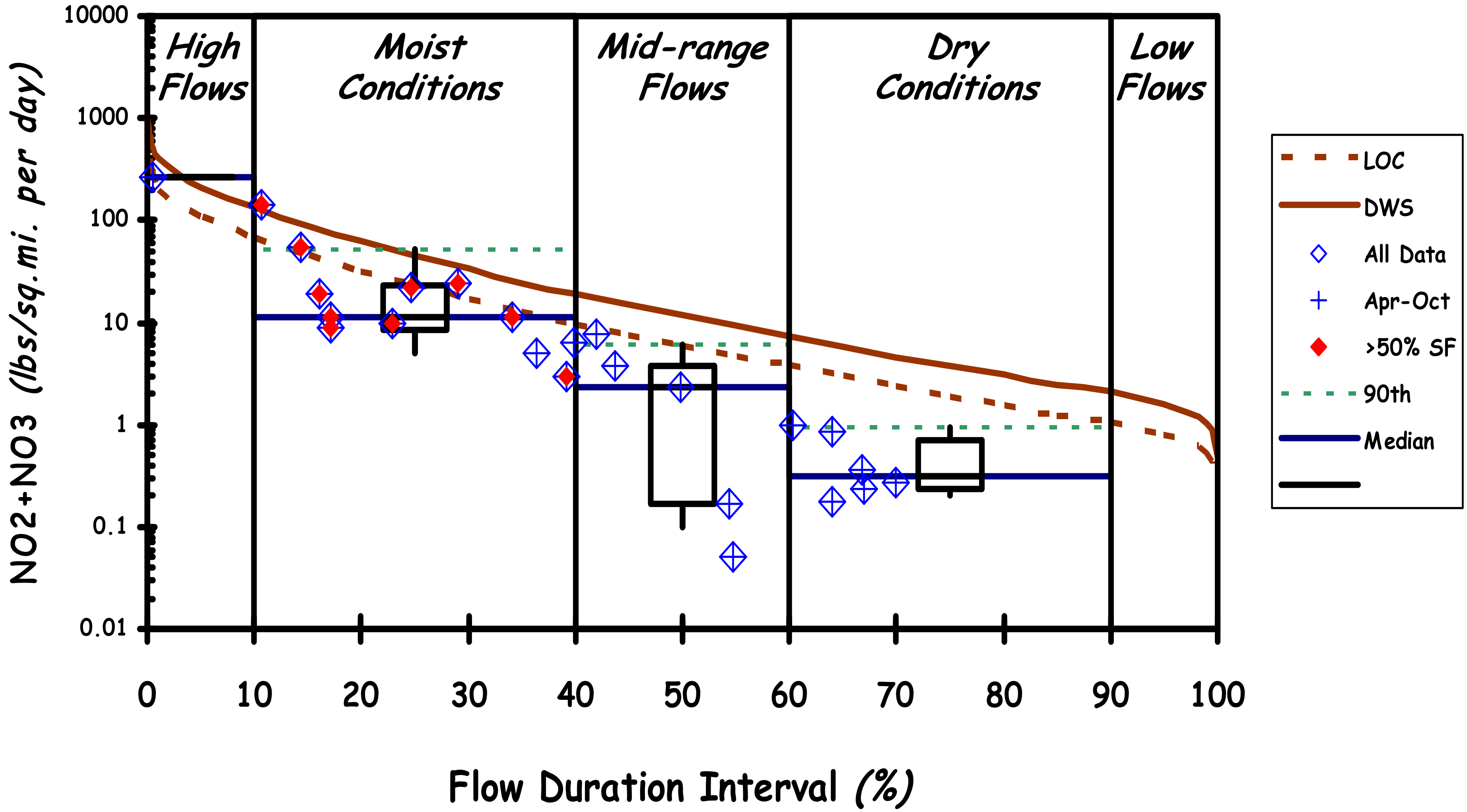
IDEM+FW Data & Gage 04181500 Duration Interval *354 square miles*


St. Mary's River at Pleasant Mills
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0007
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (lbs/sq.mi. per day)
10000
1000
100
10
1
0.1
0.01
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
LOC
DWS
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 04181500 Duration Interval
468 square miles

St. Mary's River near Poe

Load Duration Curve *(2004 Monitoring Data)*

Site: LES060-0006

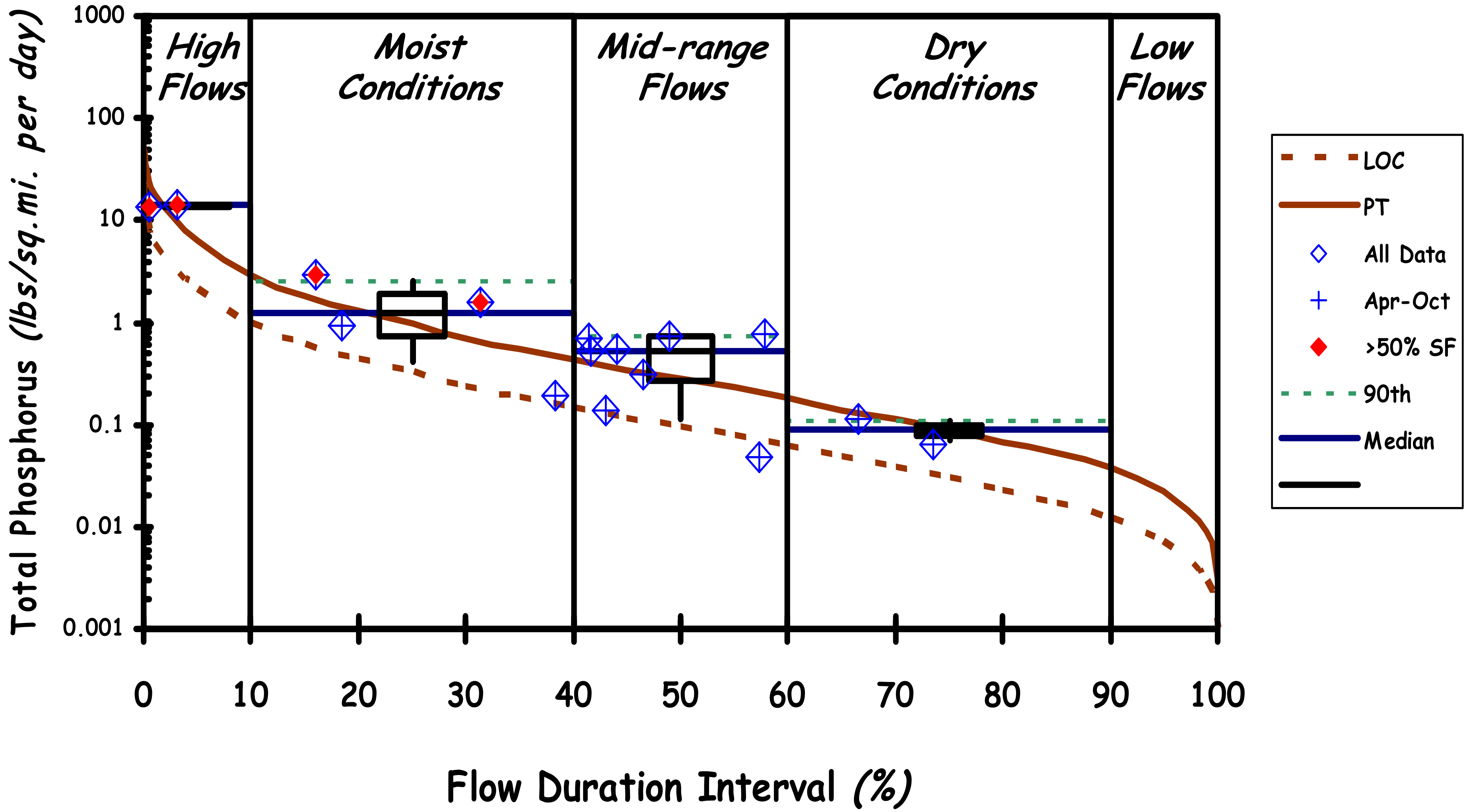


IDEM+FW Data & Gage 04181500 Duration Interval *643 square miles*

Habegger Ditch -- CR 150 E

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0099

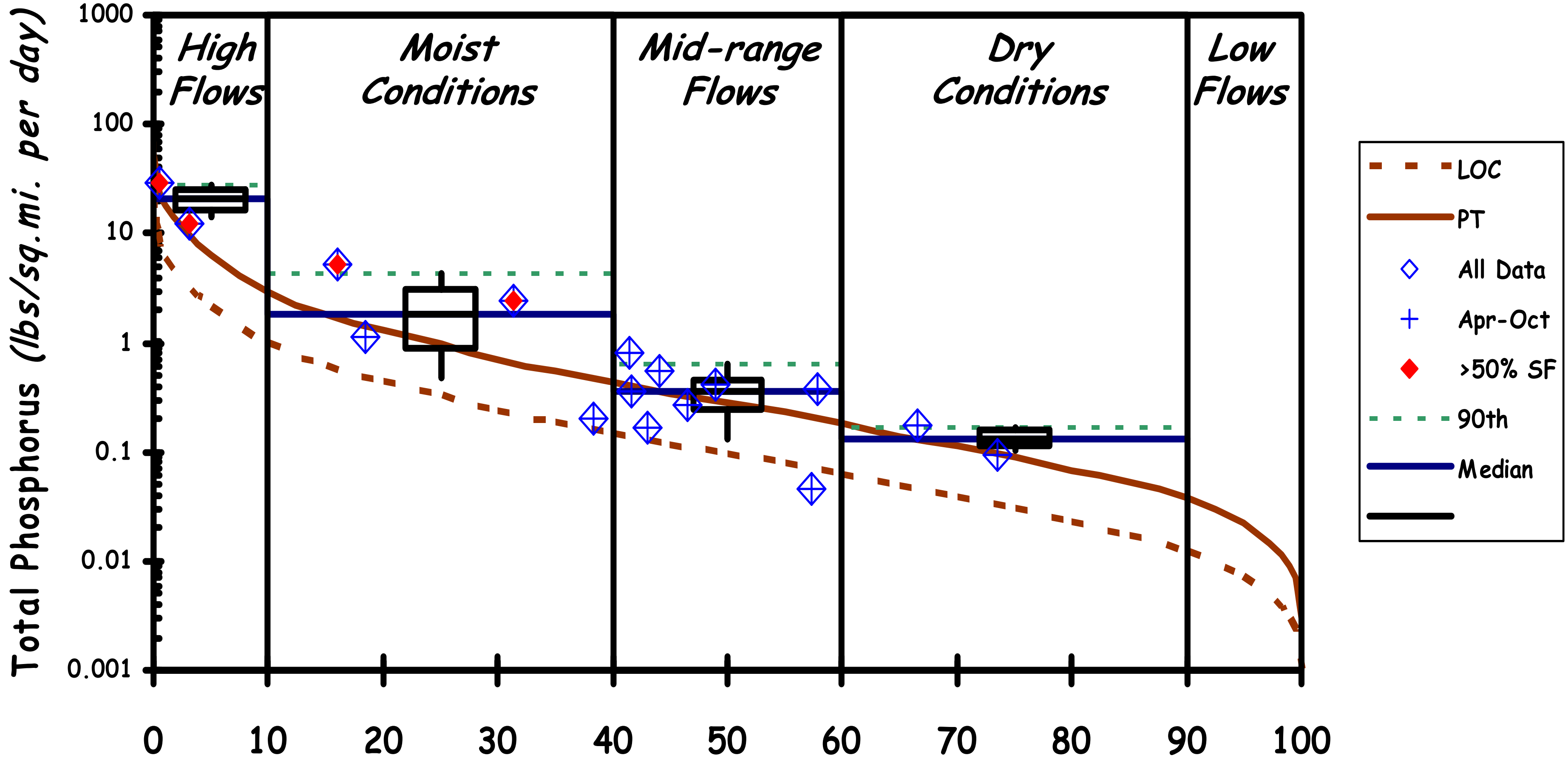


IDEM Data & Gage 03324000 / 04182590 Duration Interval *8.4 square miles*

Gates Ditch -- CR 400 S

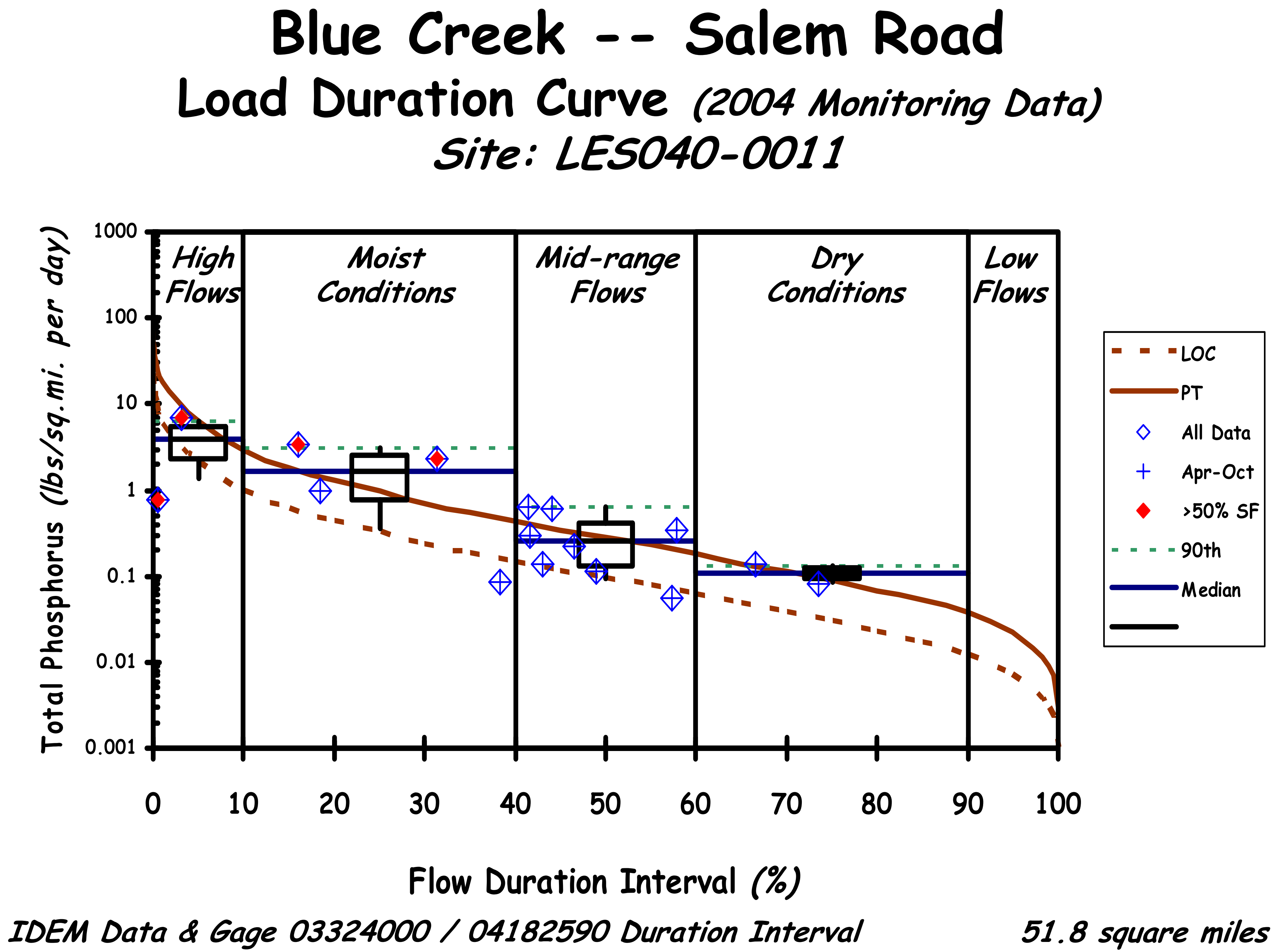
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0023



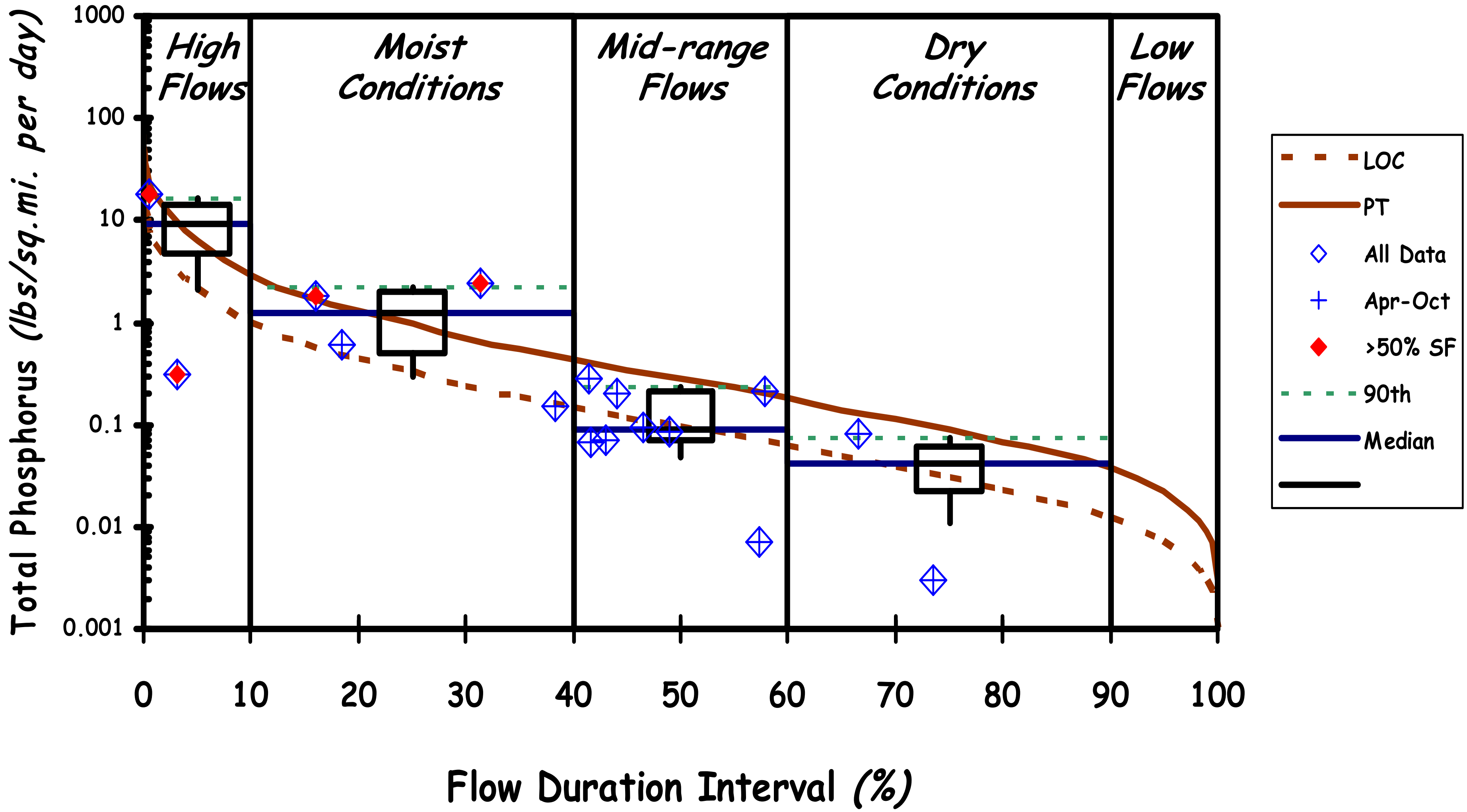
Flow Duration Interval *(%)*

IDEM Data & Gage 03324000 / 04182590 Duration Interval *20.1 square miles*



Blue Creek -- Salem Road
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0011
Total Phosphorus (lbs/sq.mi. per day)
1000
100
10
1
0.1
0.01
0.001
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
LOC
PT
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
51.8 square miles

Little Blue Creek -- CR 400 S
Load Duration Curve *(2004 Monitoring Data)*
Site: LES040-0010

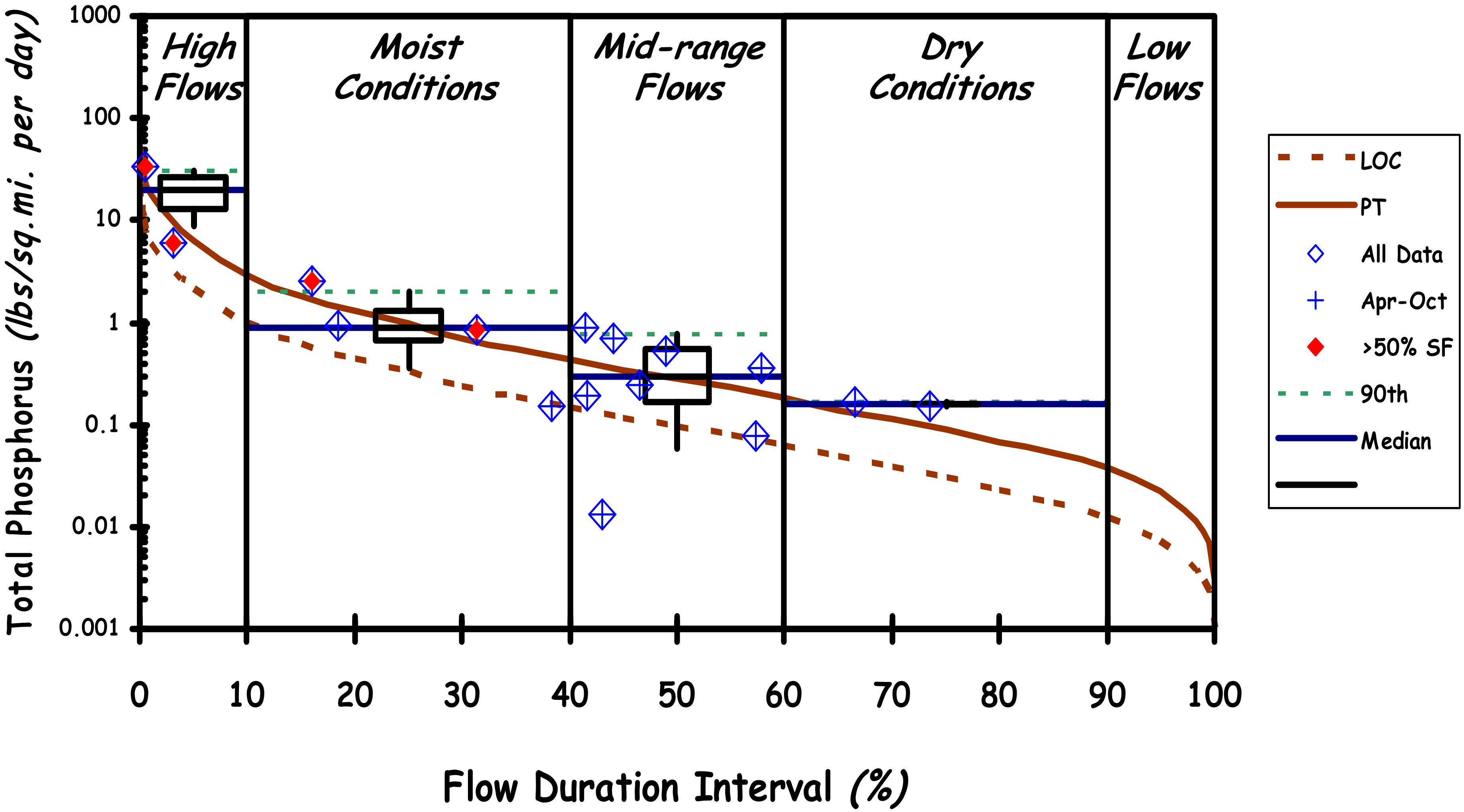


IDEM Data & Gage 03324000 / 04182590 Duration Interval *16.3 square miles*

Blue Creek -- CR 300 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0066

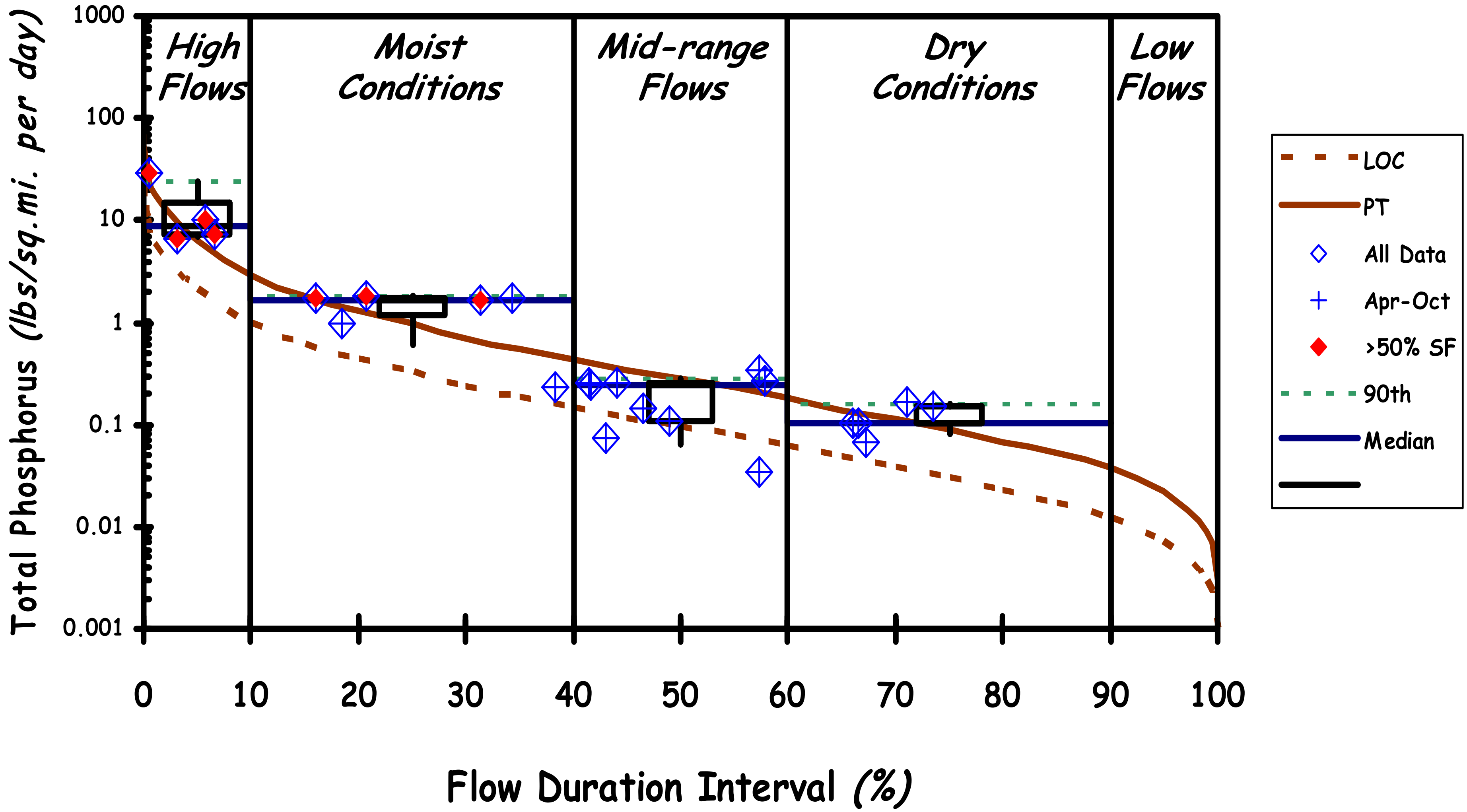


IDEM Data & Gage 03324000 / 04182590 Duration Interval *71.0 square miles*

Blue Creek -- SR 124

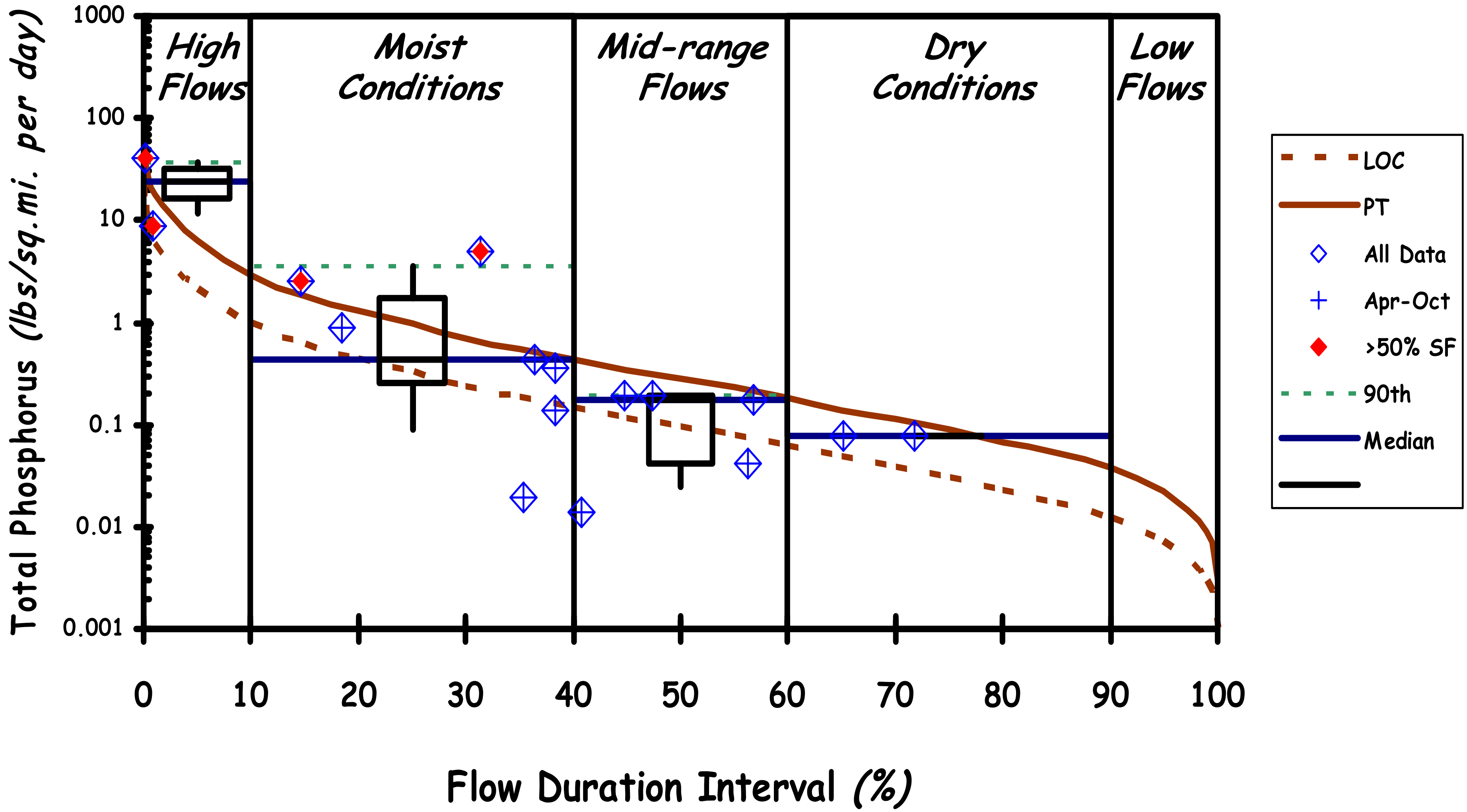
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0009



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *79.6 square miles*

Martz Creek -- CR 200 N
Load Duration Curve *(2004 Monitoring Data)*
Site: LES040-0040

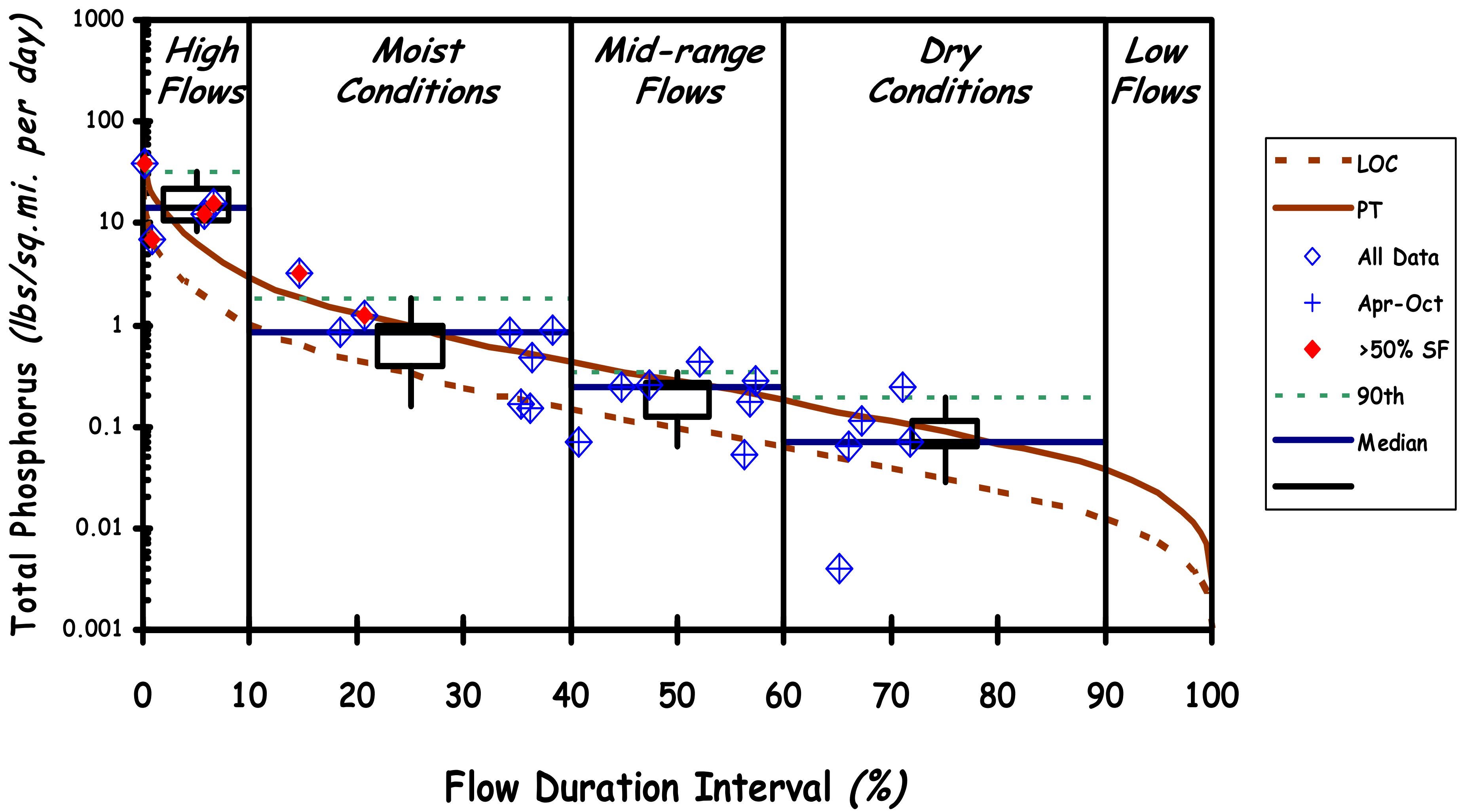


IDEM Data & Gage 03324000 / 04182590 Duration Interval *9.8 square miles*

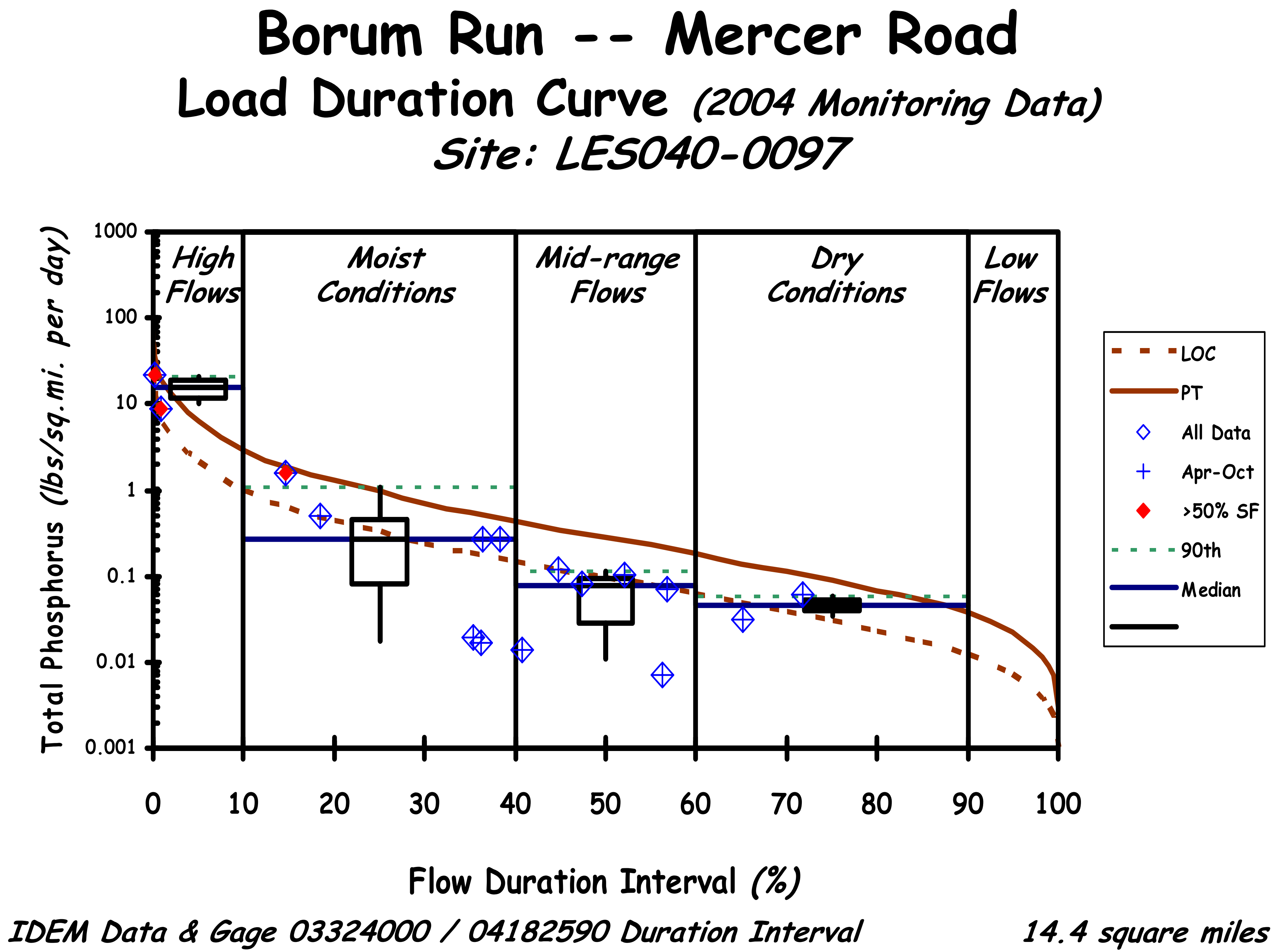
Yellow Creek -- CR 250 S

Load Duration Curve *(2004 Monitoring Data)*

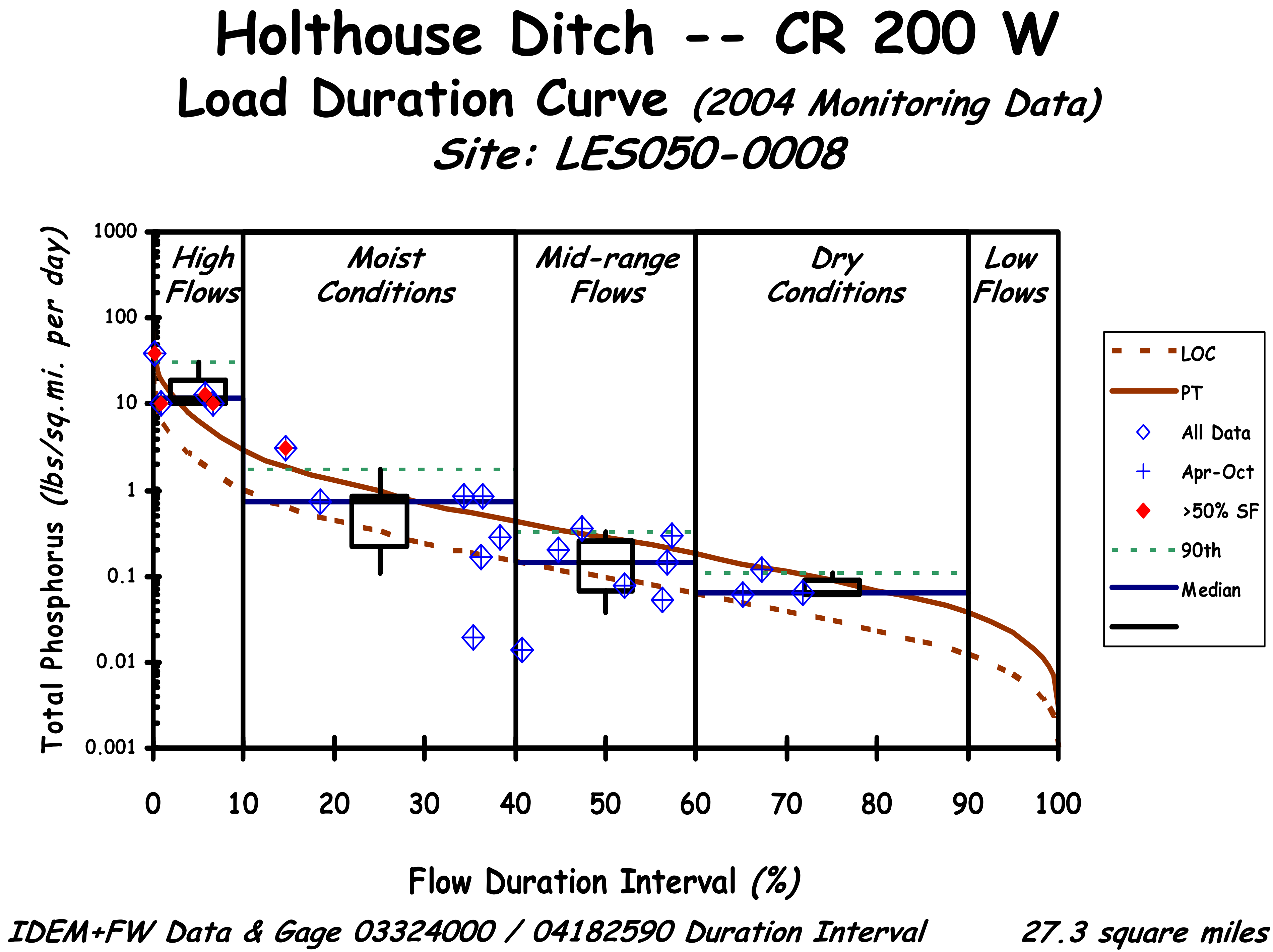
Site: LES040-0038



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *24.5 square miles*

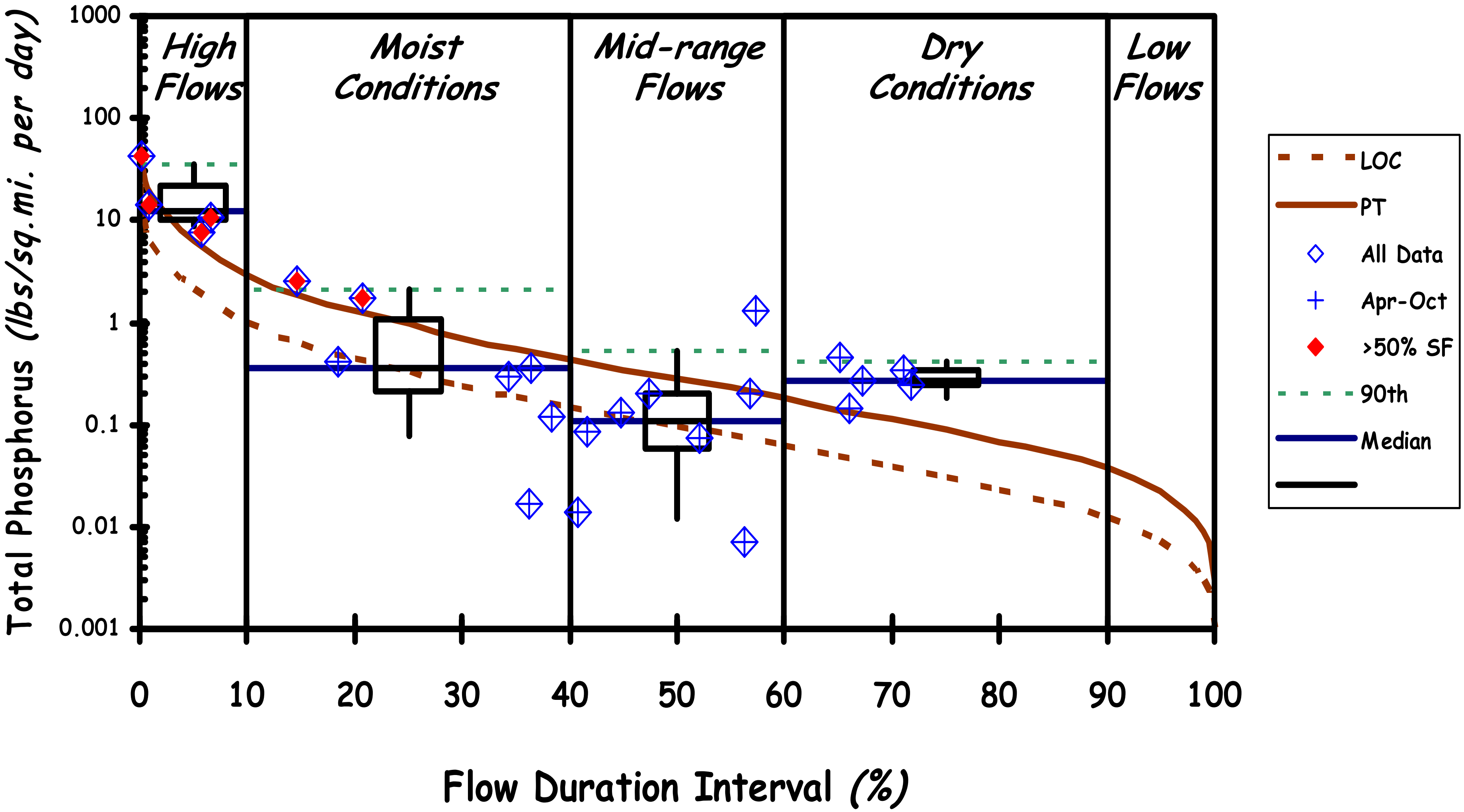


Borum Run -- Mercer Road
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0097
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
Total Phosphorus (lbs/sq.mi. per day)
1000
100
10
1
0.1
0.01
0.001
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
LOC
PT
All Data
Apr-Oct
>50% SF
90th
Median
IDEM Data & Gage 03324000 / 04182590 Duration Interval
14.4 square miles



Holthouse Ditch -- CR 200 W
Load Duration Curve (2004 Monitoring Data)
Site: LES050-0008
Total Phosphorus (lbs/sq.mi. per day)
1000
100
10
1
0.1
0.01
0.001
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
LOC
PT
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
27.3 square miles

Nickelsen Creek – CR 1100 N
Load Duration Curve *(2004 Monitoring Data)*
Site: LES050-0015

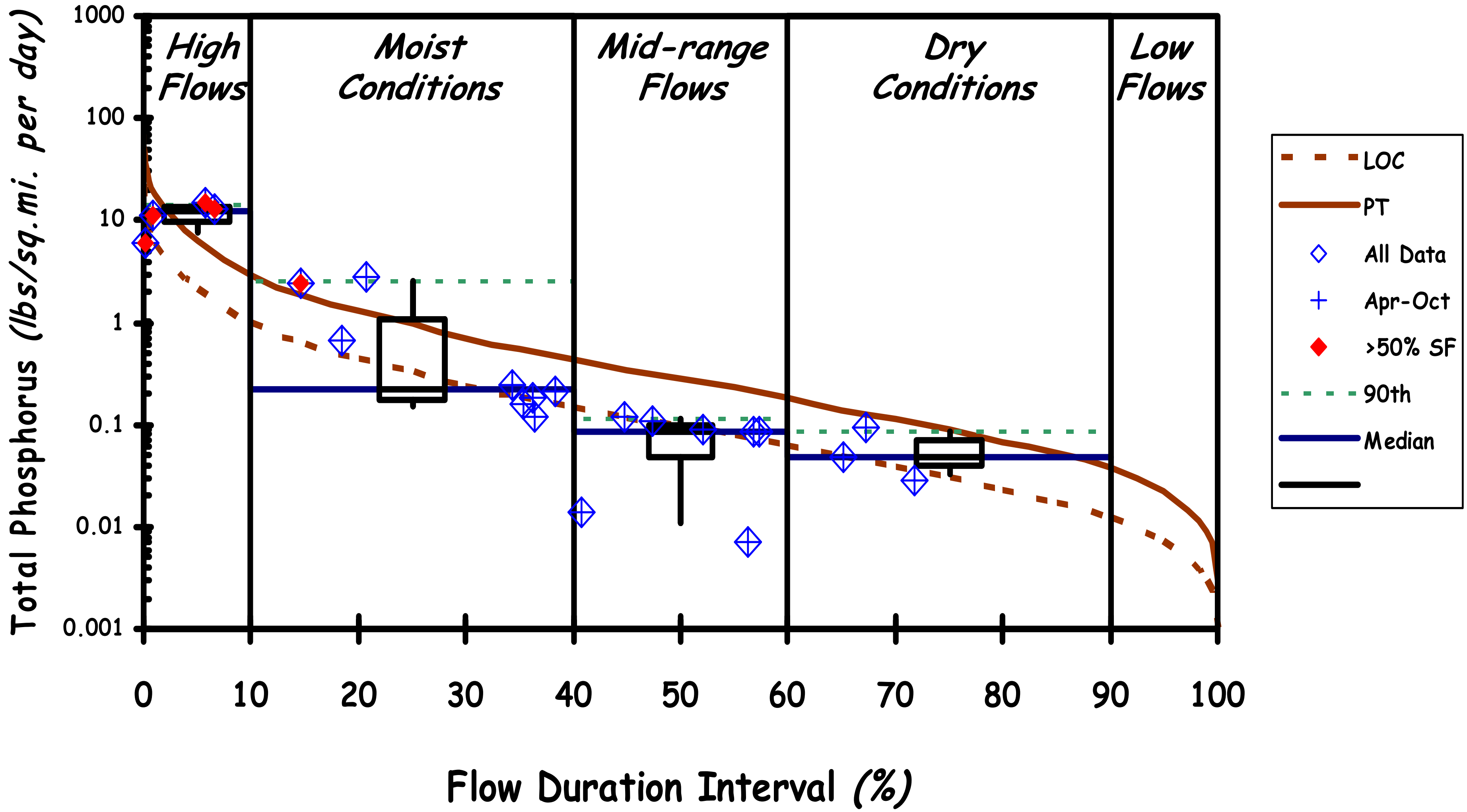


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *12.2 square miles*

Unnamed Tributary -- Barkley Road

Load Duration Curve *(2004 Monitoring Data)*

Site: LES050-0020

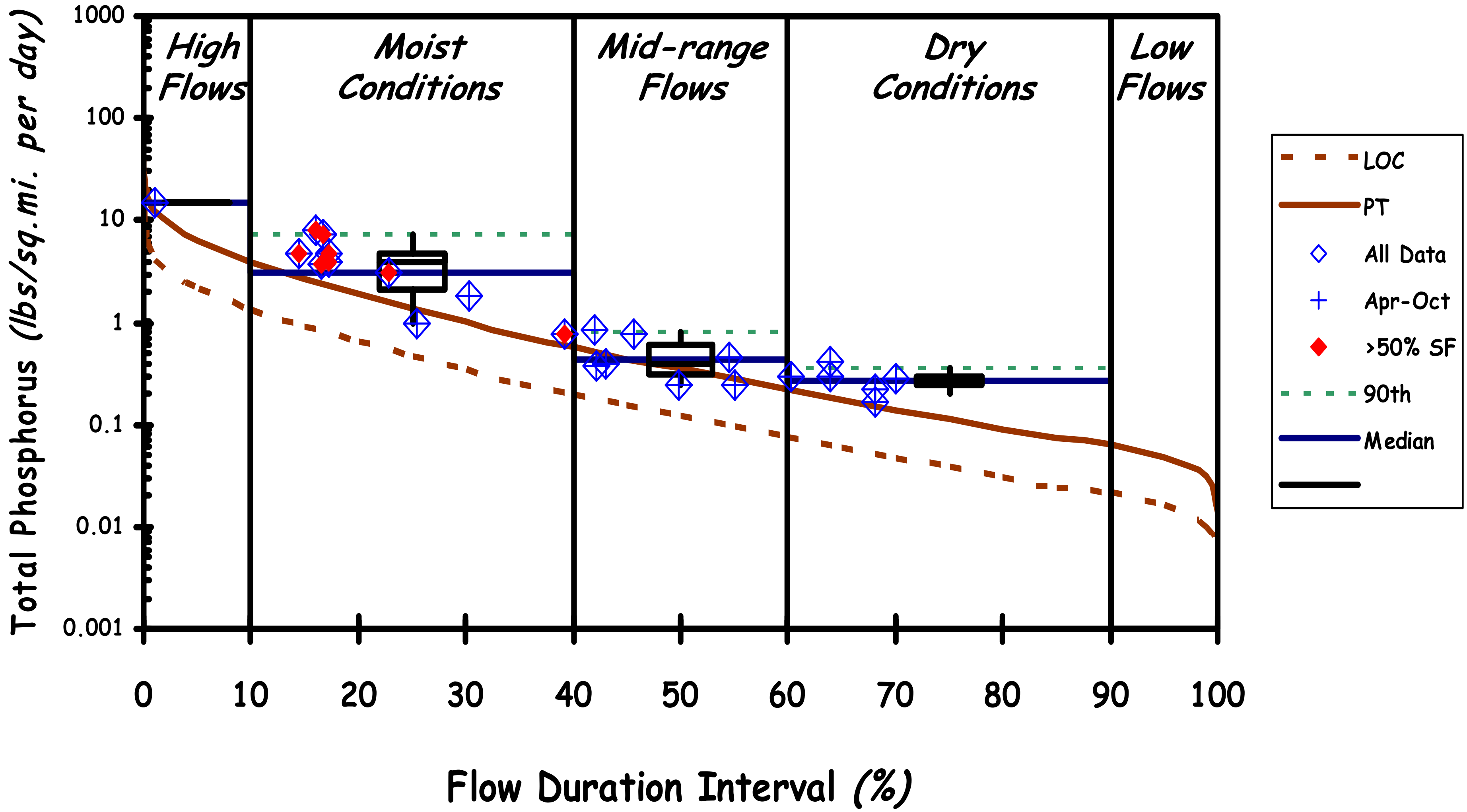


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *2.3 square miles*

St. Mary's River at Wilshire, OH

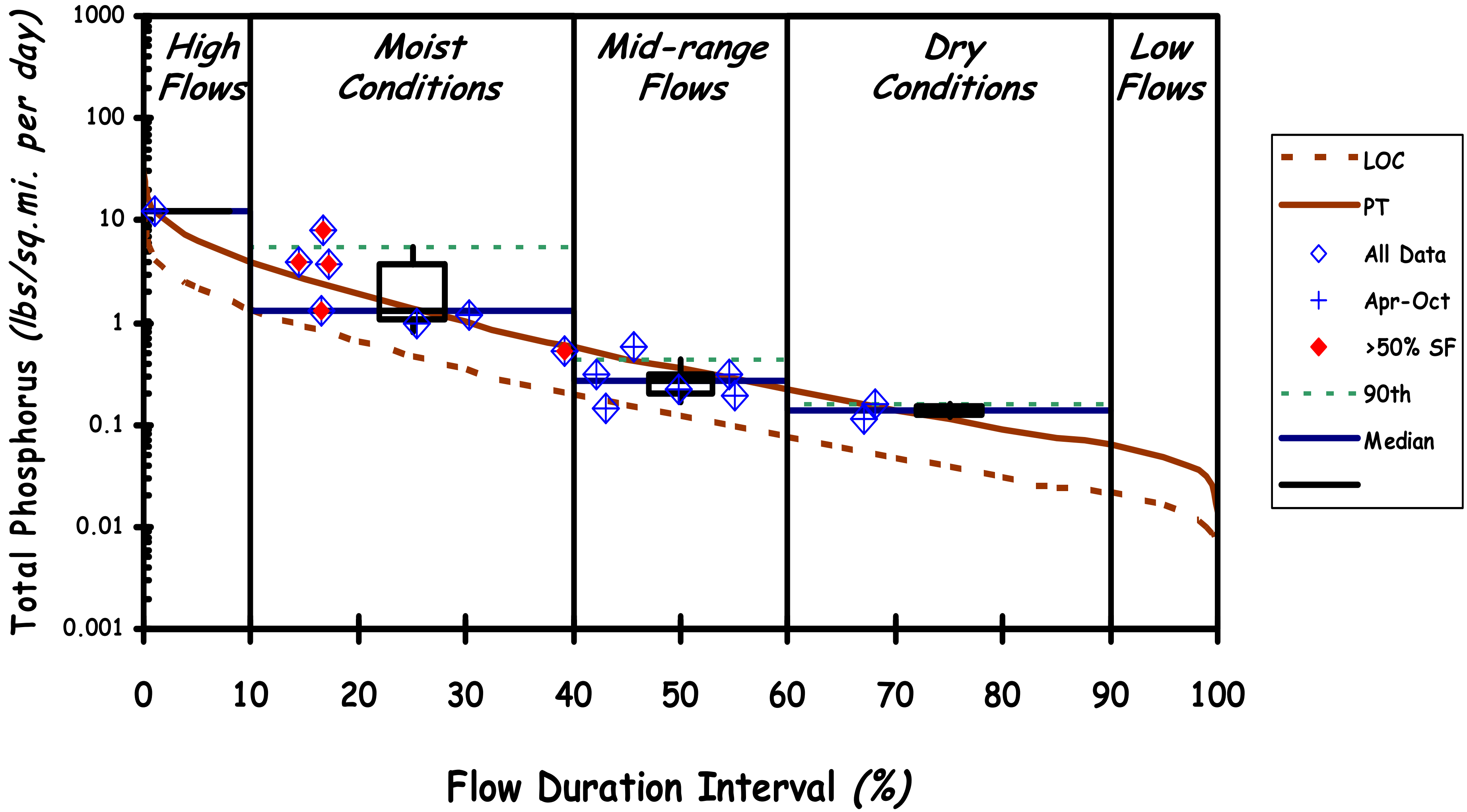
Load Duration Curve *(2004 Monitoring Data)*

Site: UNK000-0007



IDEM+FW Data & Gage 04181500 Duration Interval *354 square miles*

St. Mary's River at Pleasant Mills
Load Duration Curve *(2004 Monitoring Data)*
Site: LES040-0007

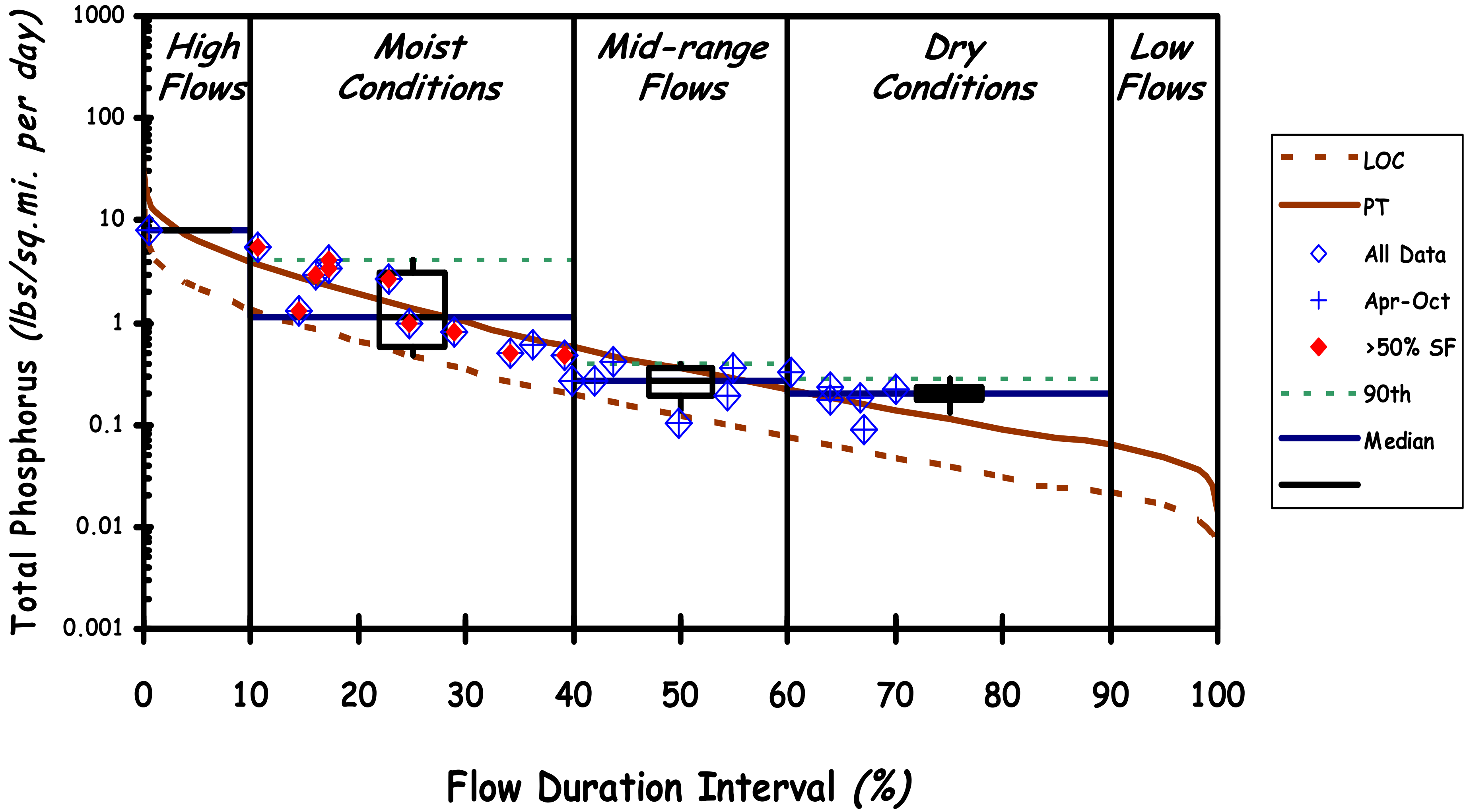


IDEM Data & Gage 04181500 Duration Interval *468 square miles*

St. Mary's River near Poe

Load Duration Curve *(2004 Monitoring Data)*

Site: LES060-0006

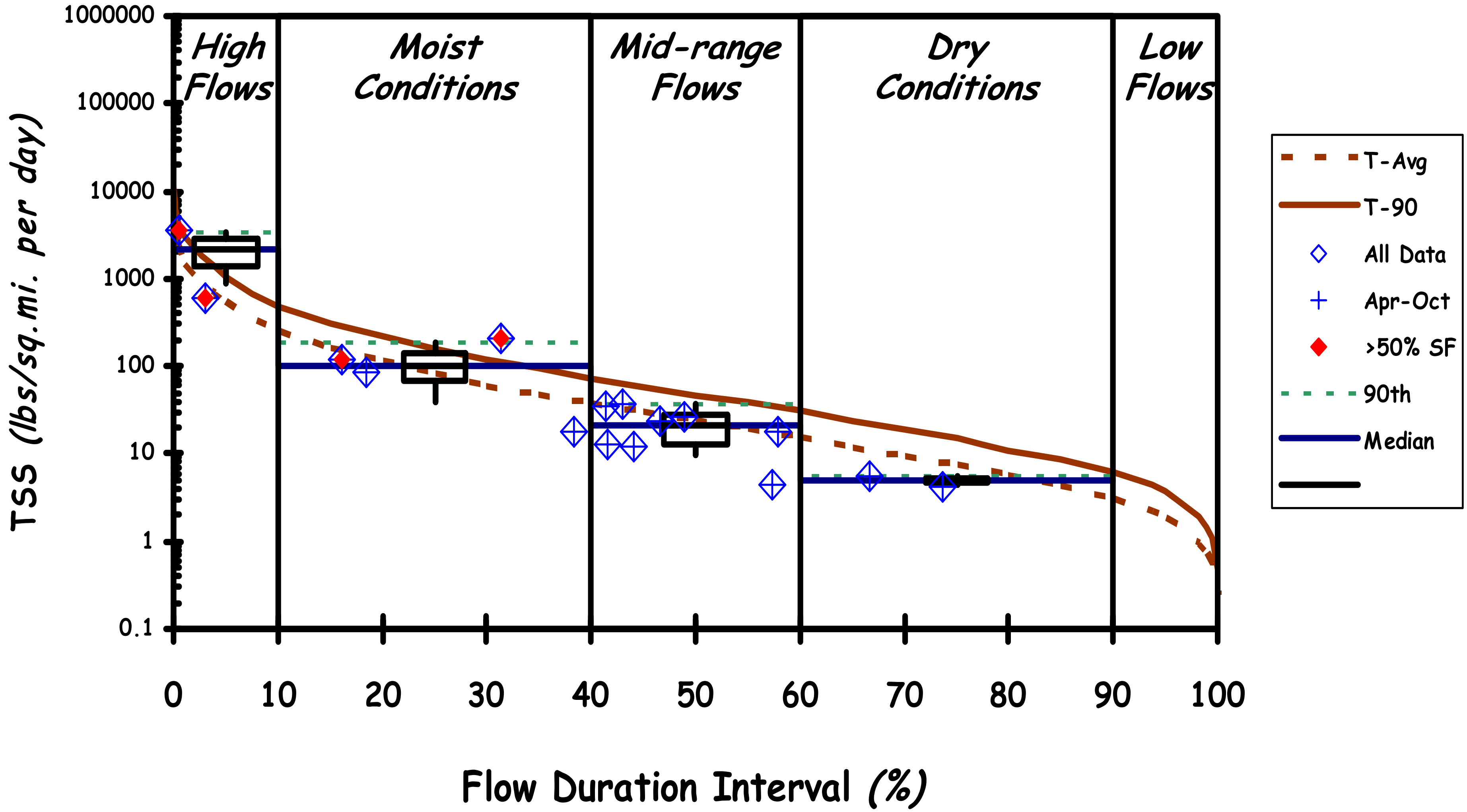


IDEM+FW Data & Gage 04181500 Duration Interval *643 square miles*

Habegger Ditch -- CR 150 E

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0099

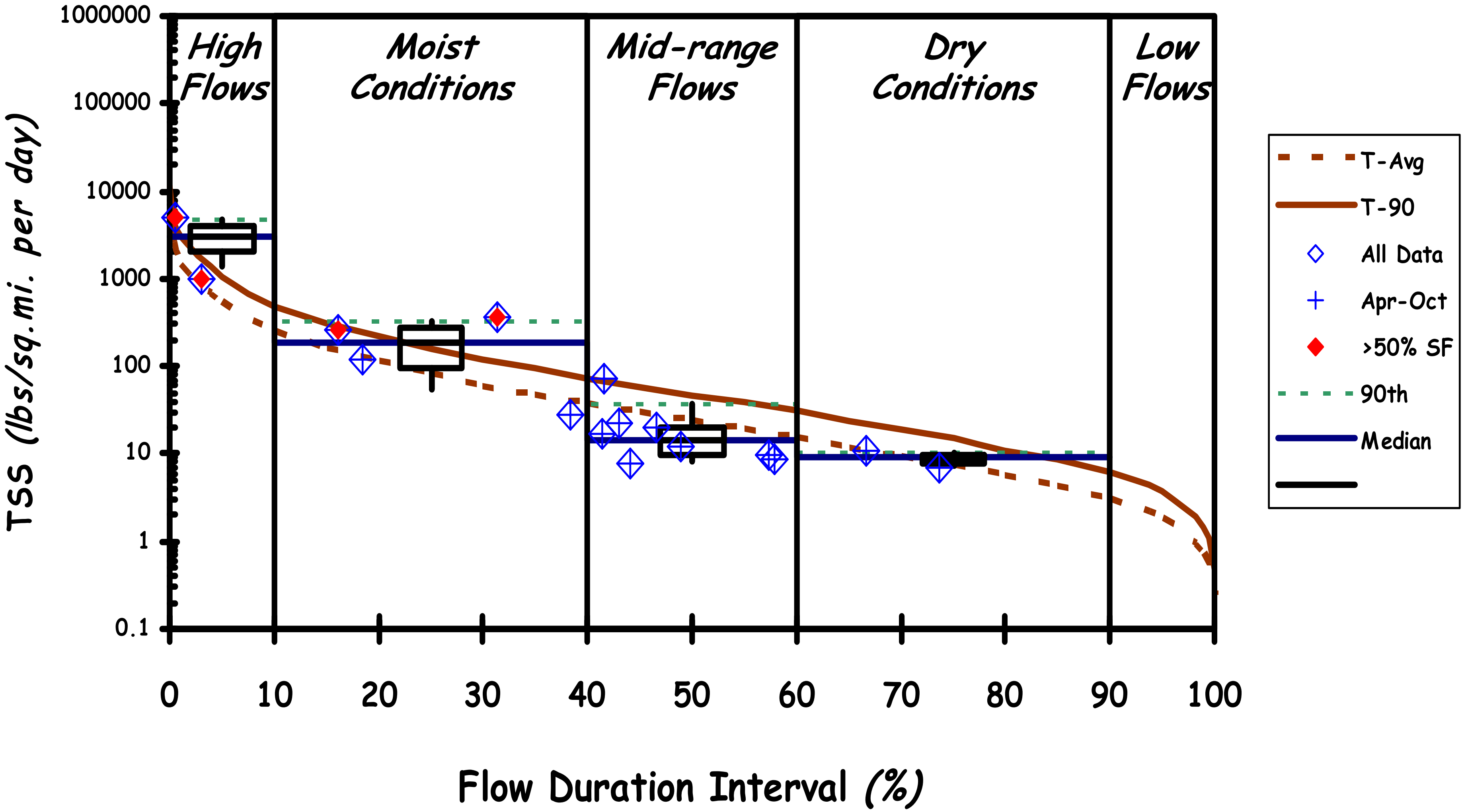


IDEM Data & Gage 03324000 / 04182590 Duration Interval *8.4 square miles*

Gates Ditch -- CR 400 S

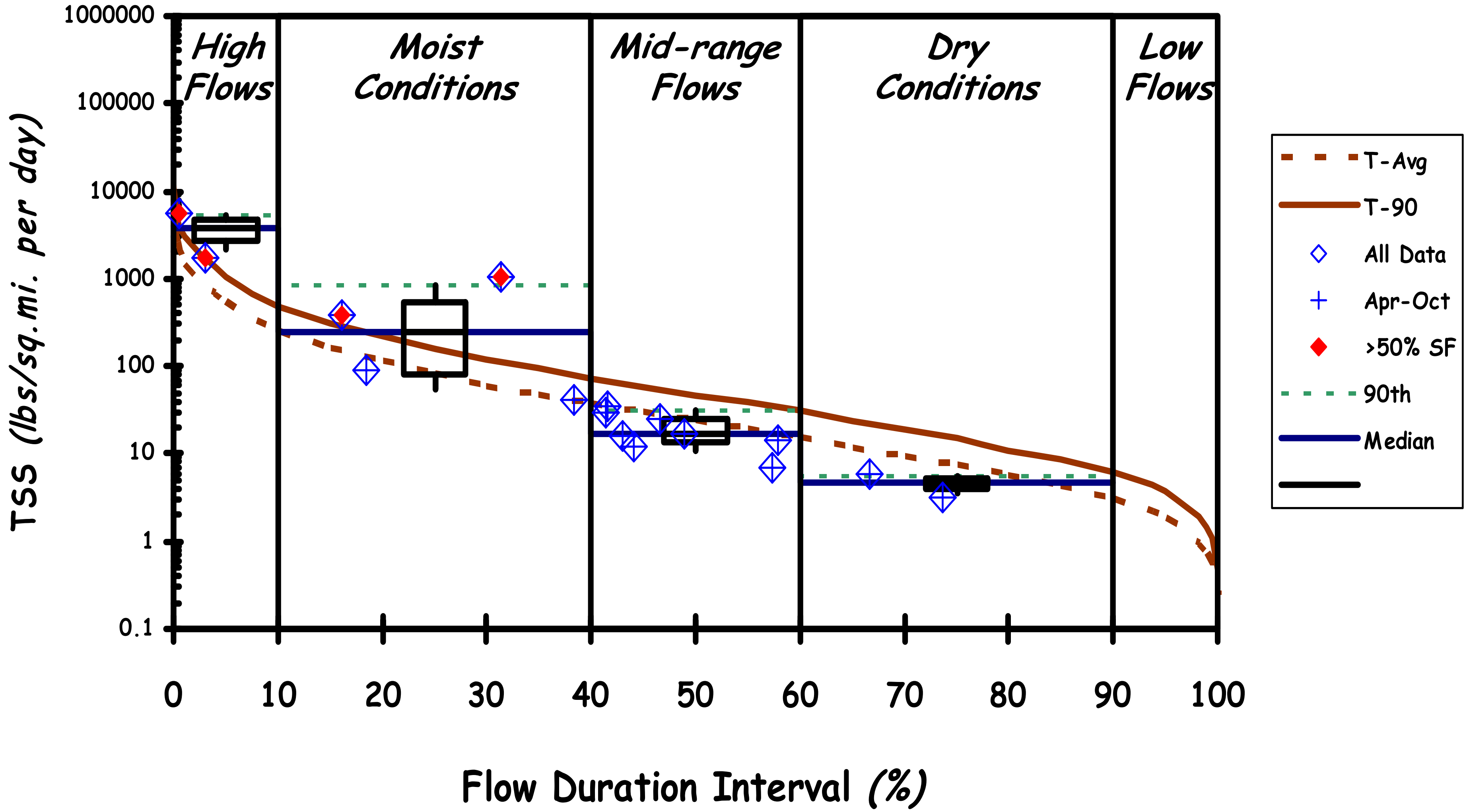
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0023



IDEM Data & Gage 03324000 / 04182590 Duration Interval *20.1 square miles*

Blue Creek -- Salem Road
Load Duration Curve *(2004 Monitoring Data)*
Site: LES040-0011

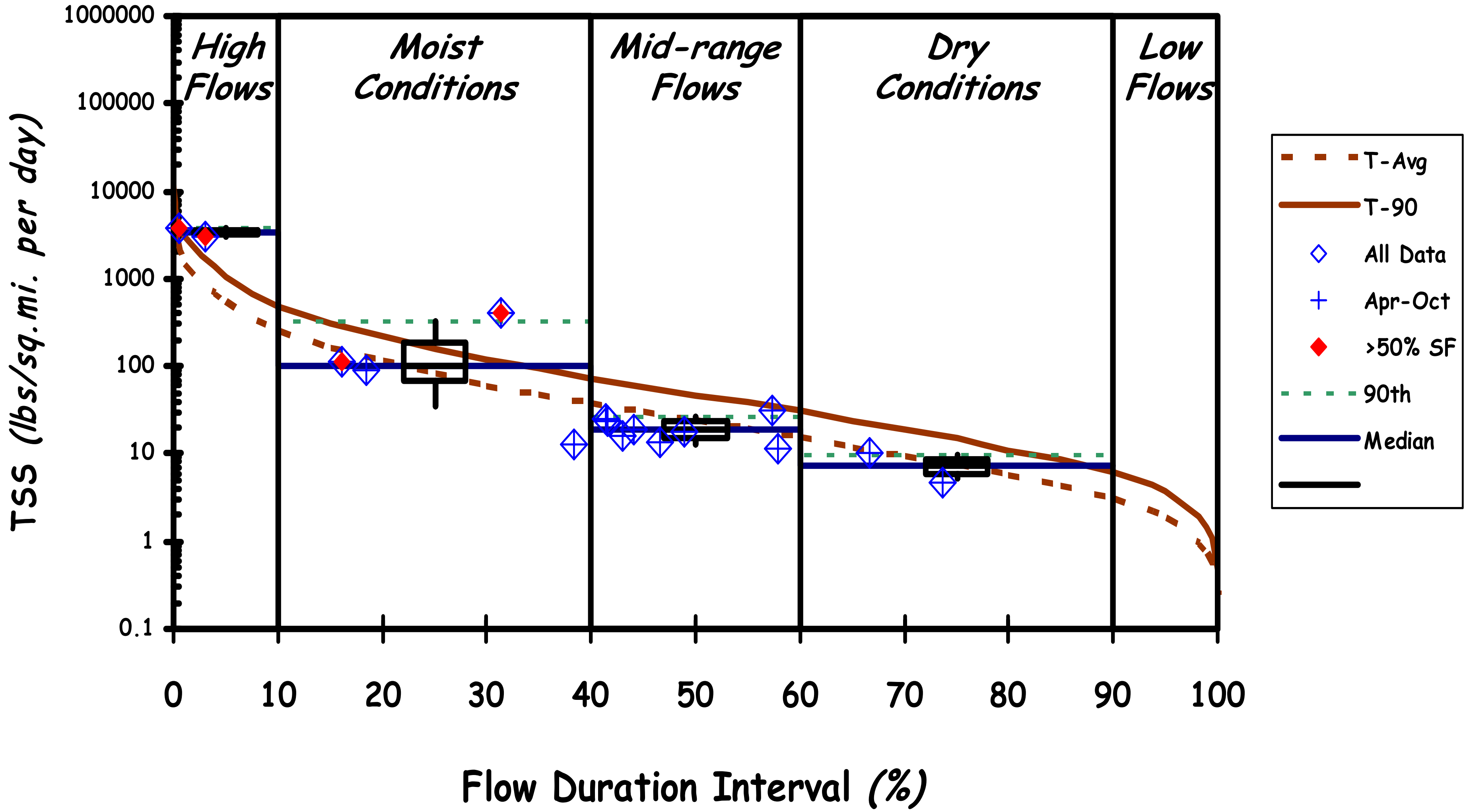


IDEM Data & Gage 03324000 / 04182590 Duration Interval *51.8 square miles*

Little Blue Creek -- CR 400 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0010

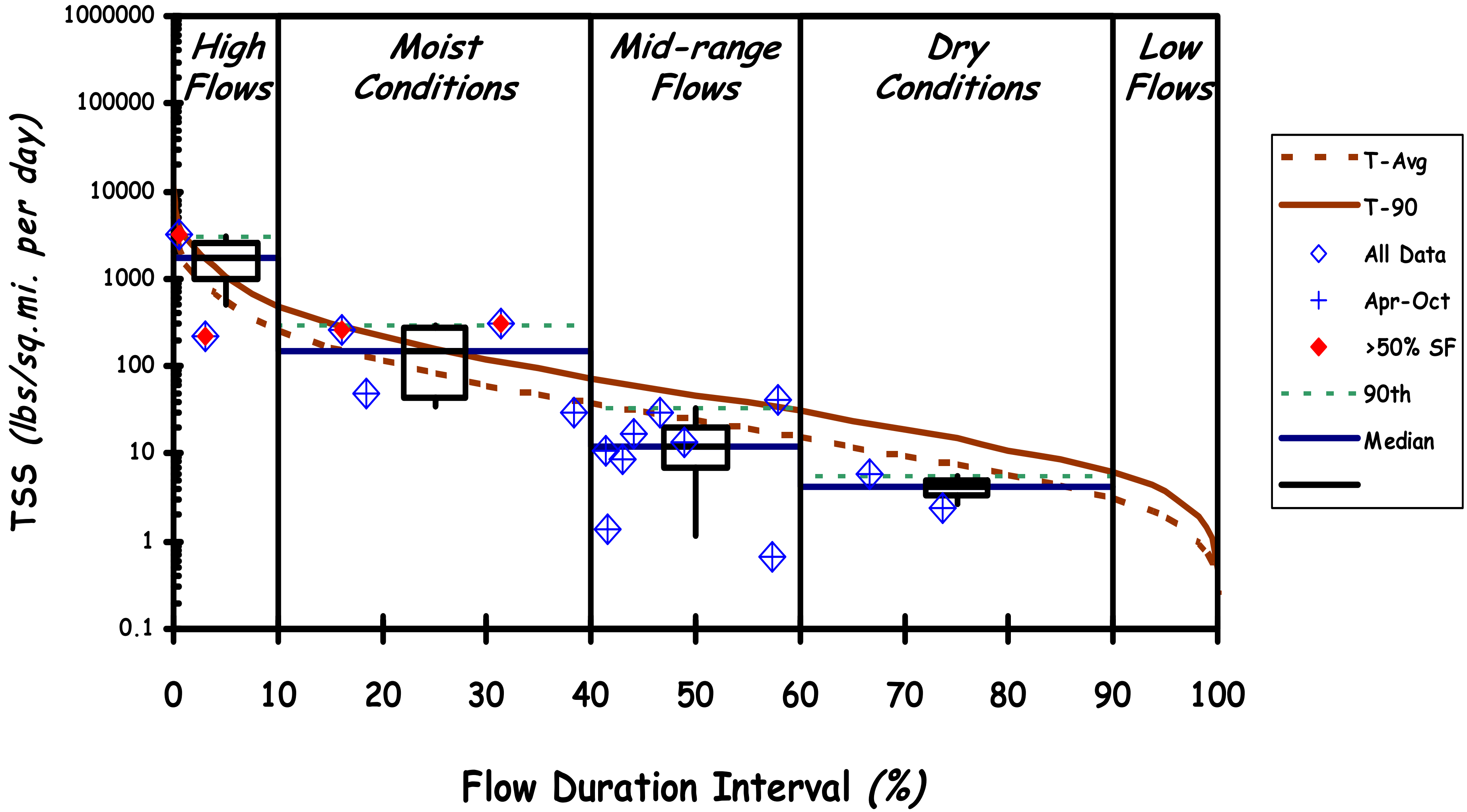


IDEM Data & Gage 03324000 / 04182590 Duration Interval *16.3 square miles*

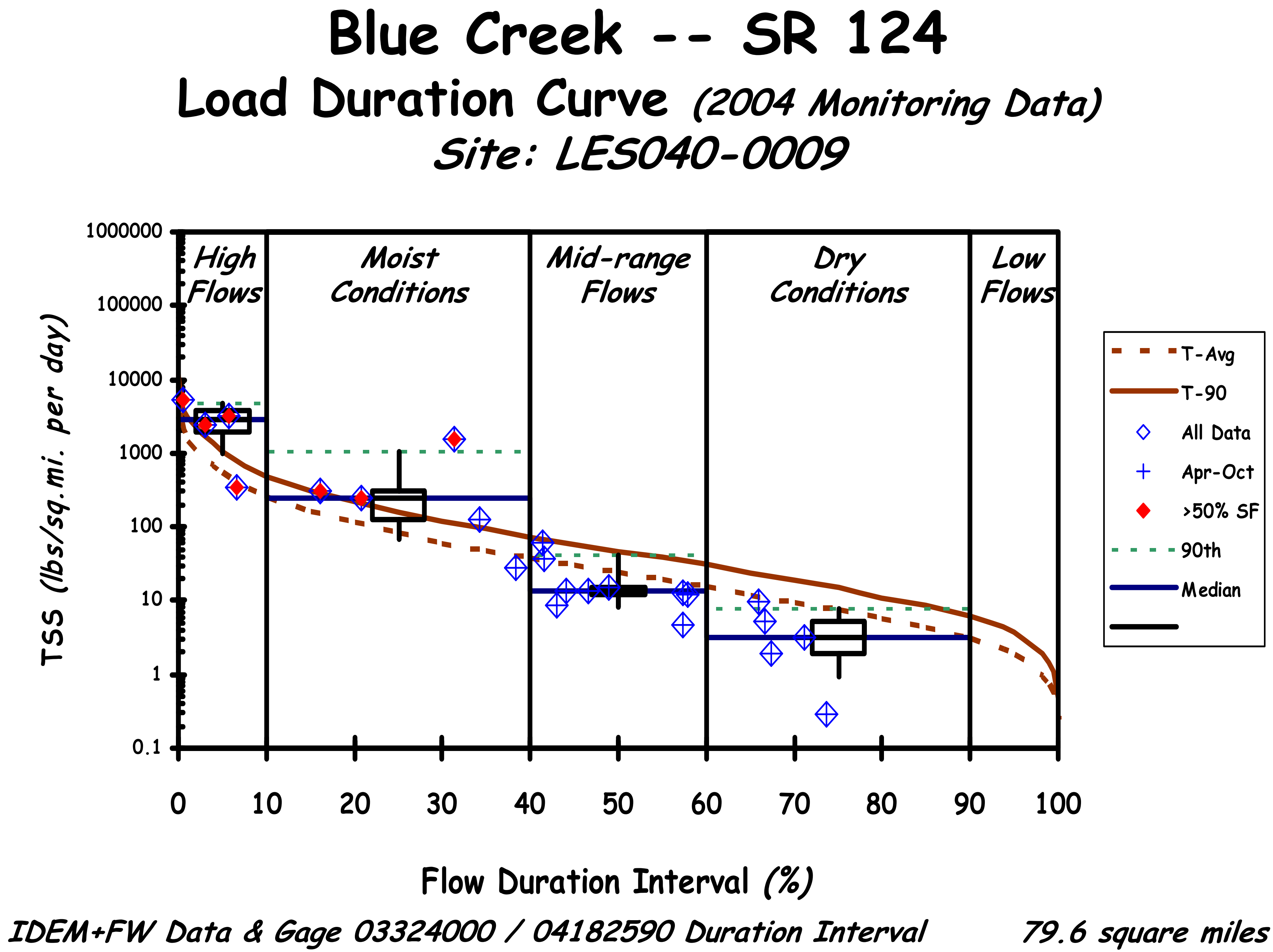
Blue Creek -- CR 300 S

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0066



IDEM Data & Gage 03324000 / 04182590 Duration Interval *71.0 square miles*

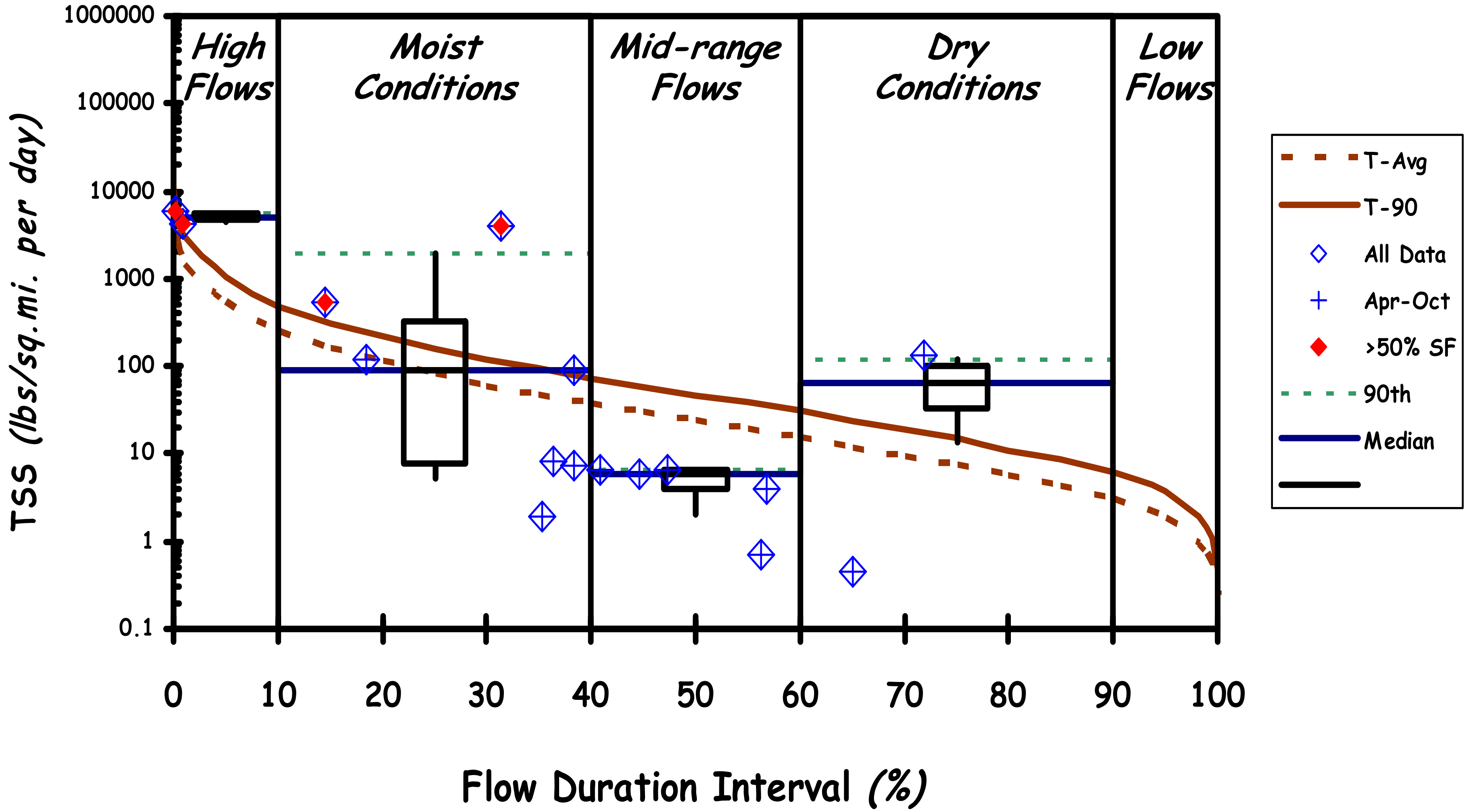


Blue Creek -- SR 124
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (lbs/sq.mi. per day)
1000000
100000
10000
1000
100
10
1
0.1
0
10
20
30
40
50
60
70
80
90
100
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
79.6 square miles

Martz Creek -- CR 200 N

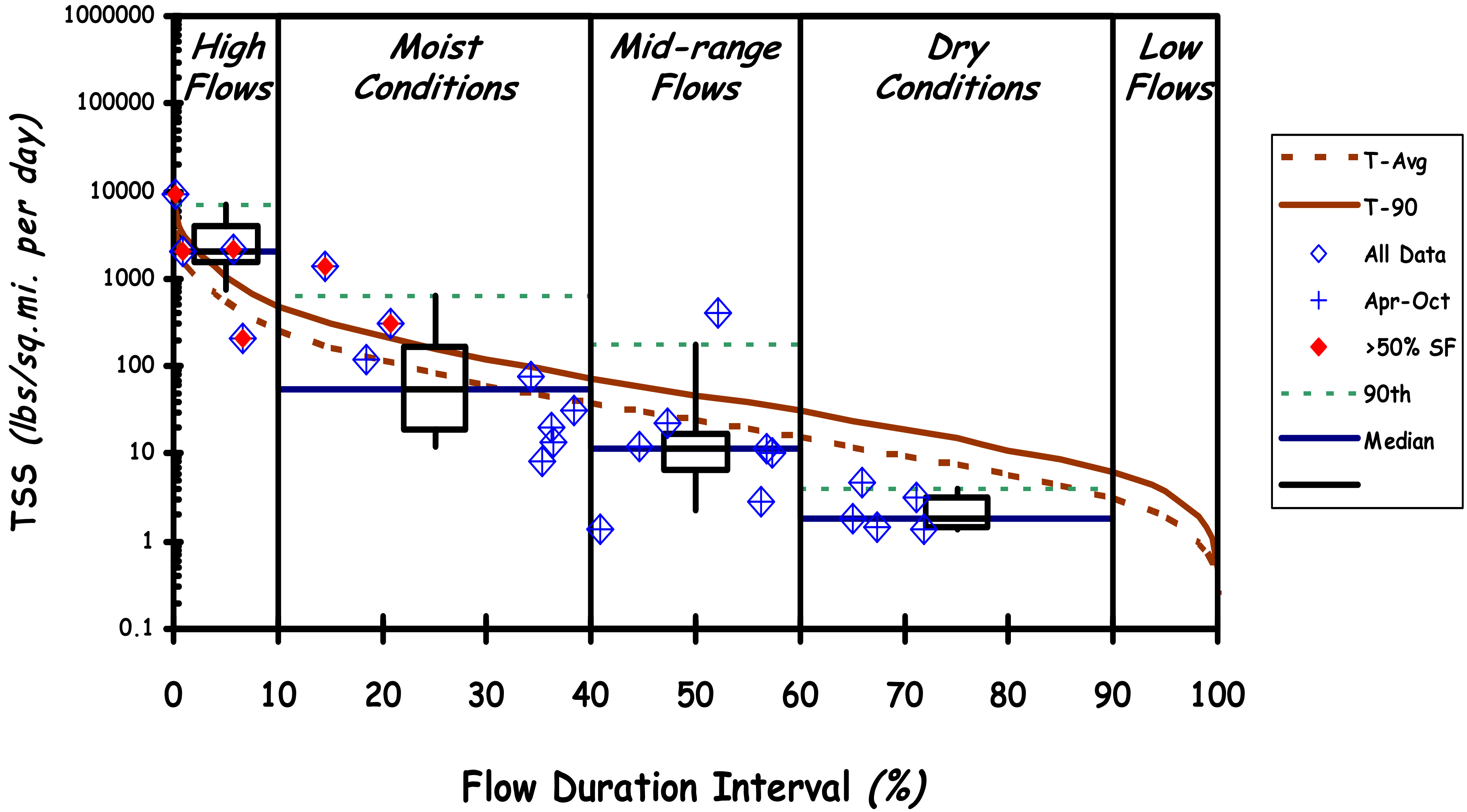
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0040

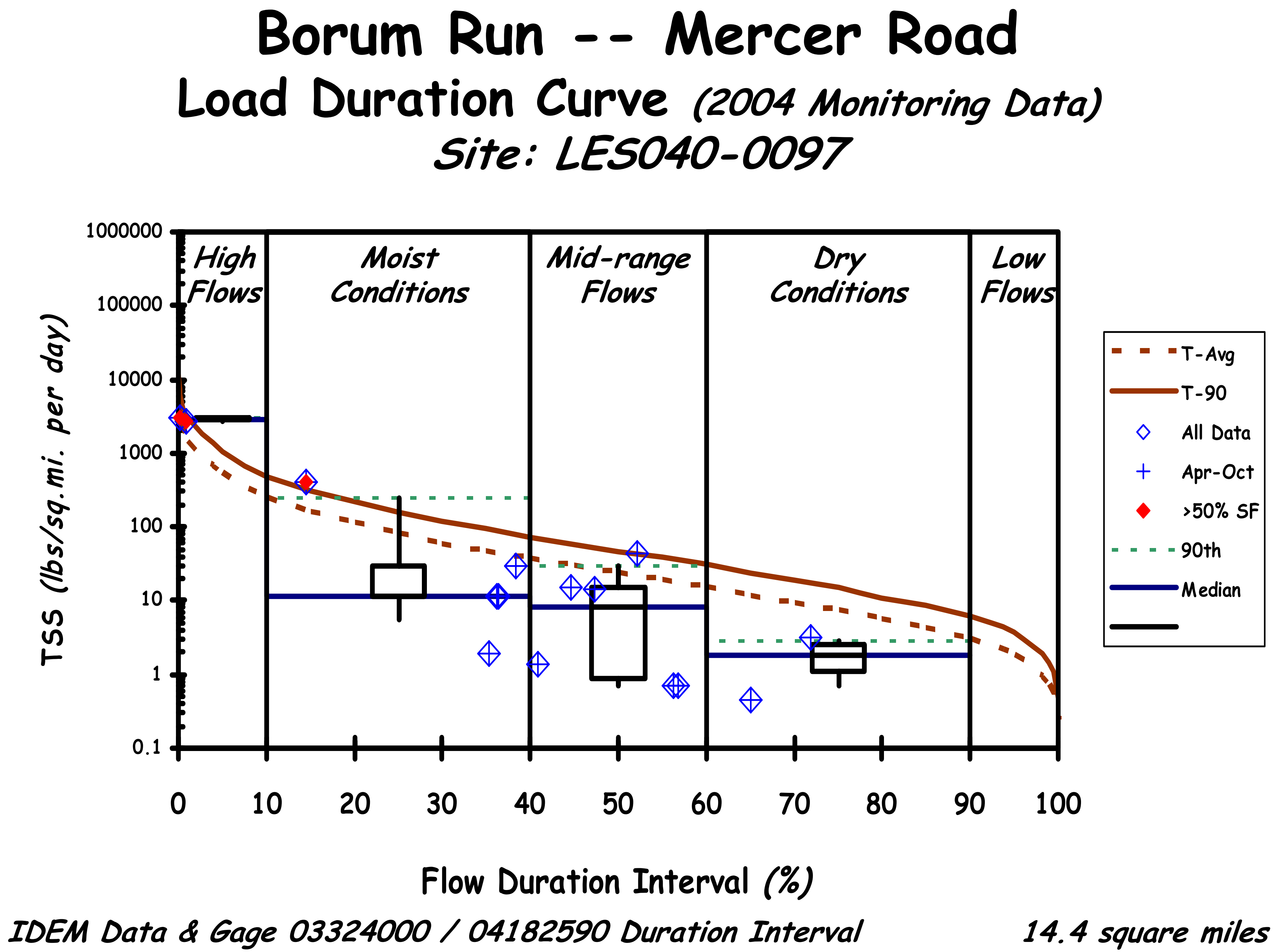


IDEM Data & Gage 03324000 / 04182590 Duration Interval *9.8 square miles*

Yellow Creek -- CR 250 S
Load Duration Curve *(2004 Monitoring Data)*
Site: LES040-0038

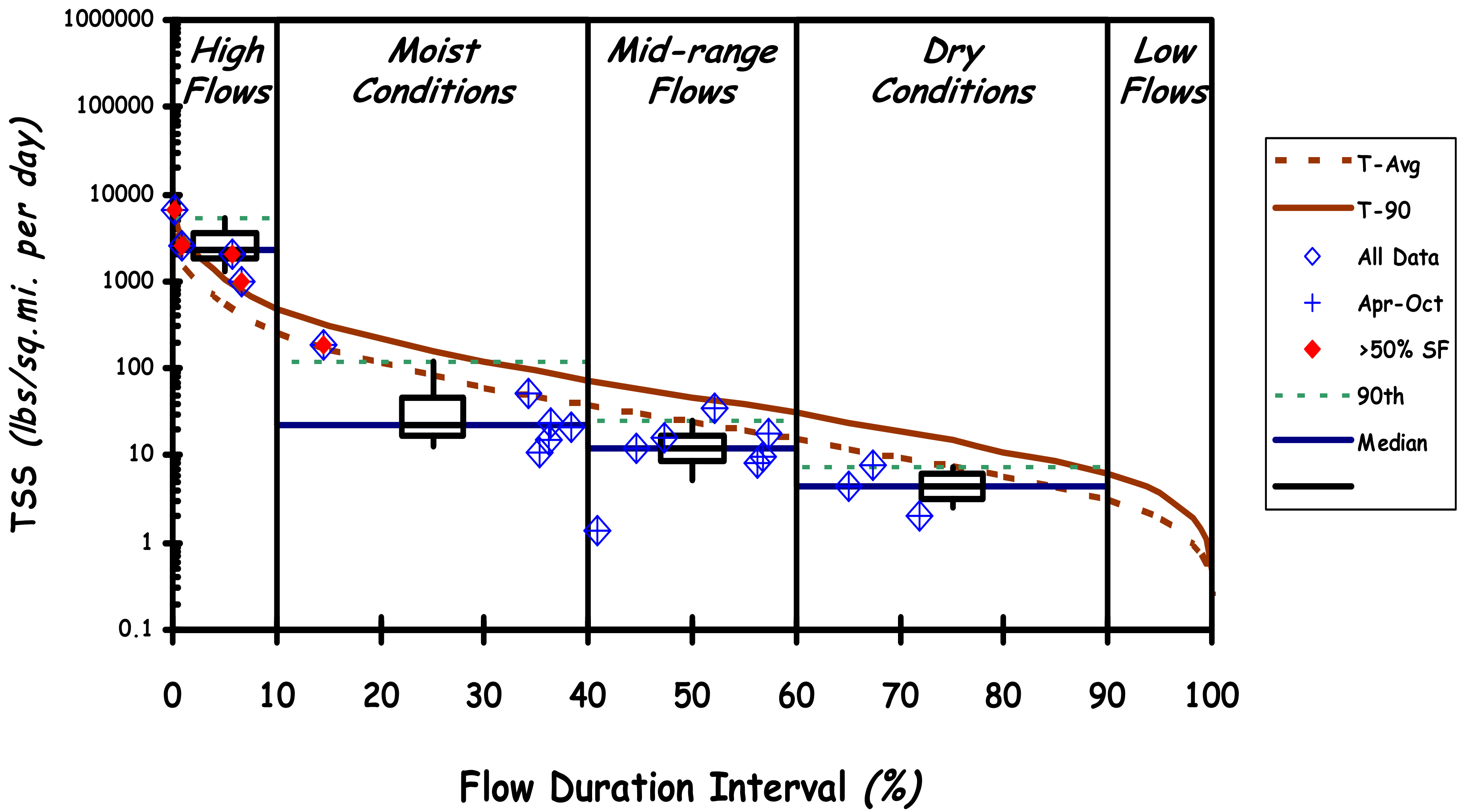


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *24.5 square miles*

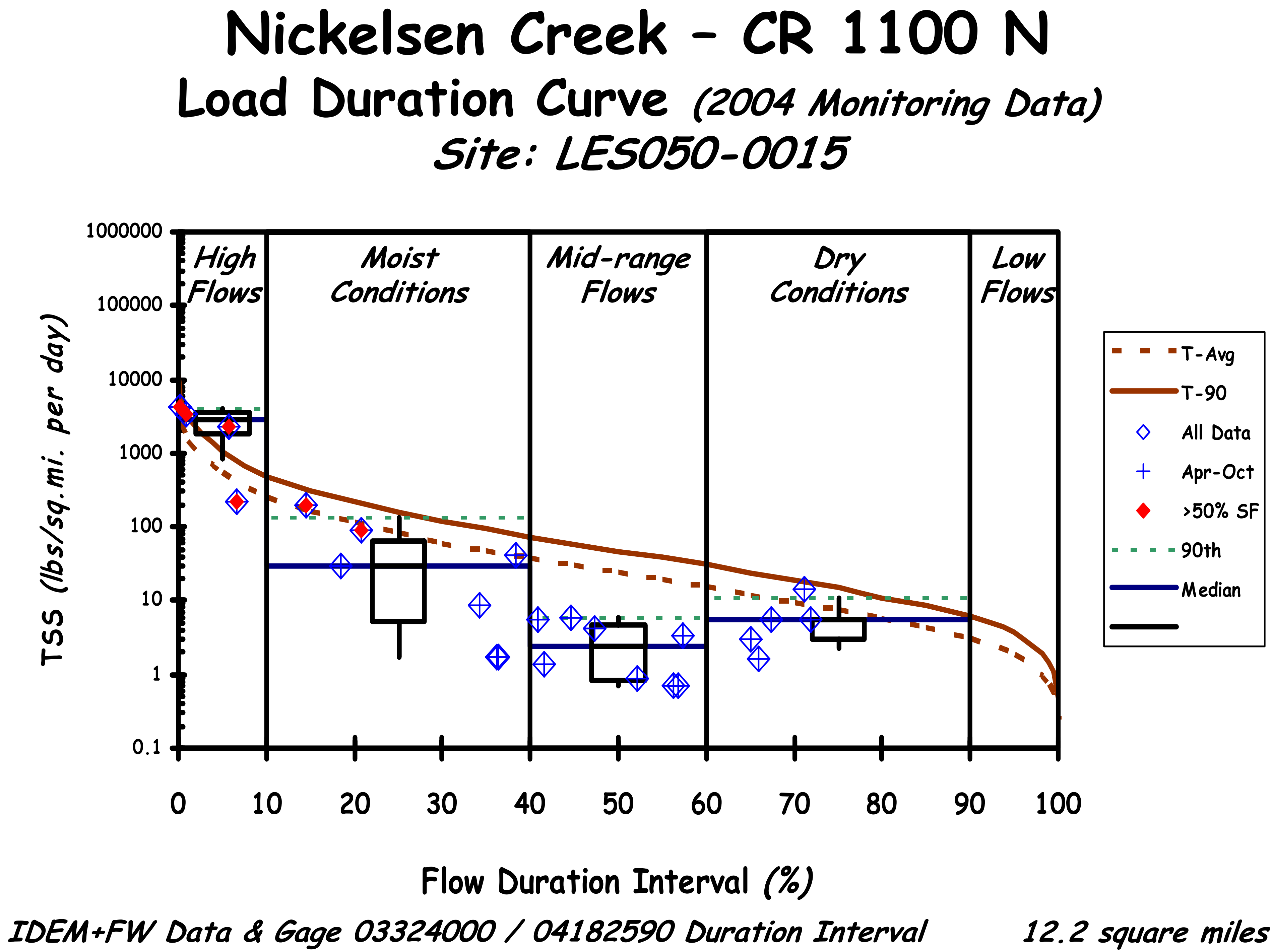


Borum Run -- Mercer Road
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0097
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
TSS (lbs/sq.mi. per day)
1000000
100000
10000
1000
100
10
1
0.1
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
IDEM Data & Gage 03324000 / 04182590 Duration Interval
14.4 square miles

Holthouse Ditch -- CR 200 W
Load Duration Curve *(2004 Monitoring Data)*
Site: LES050-0008

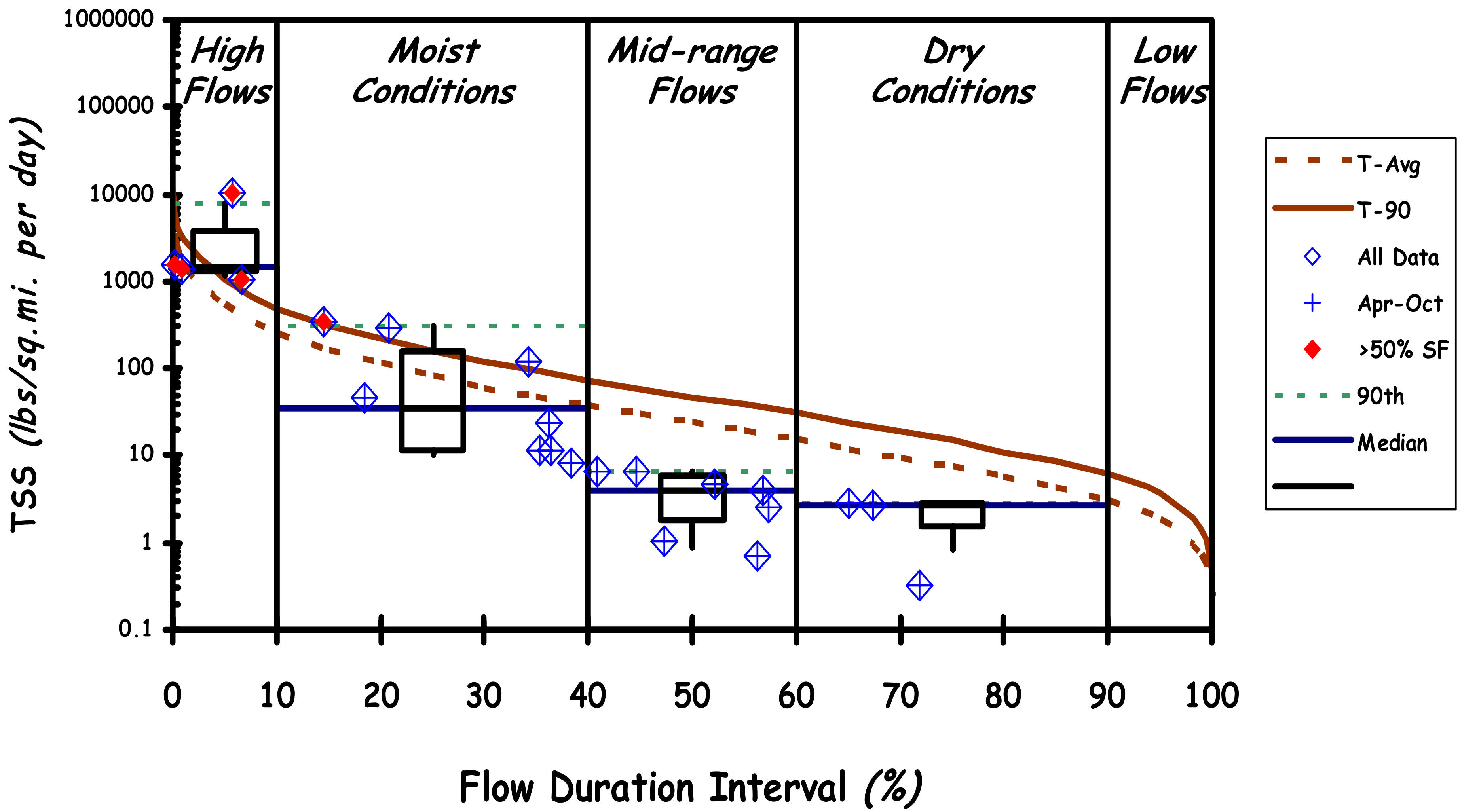


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *27.3 square miles*

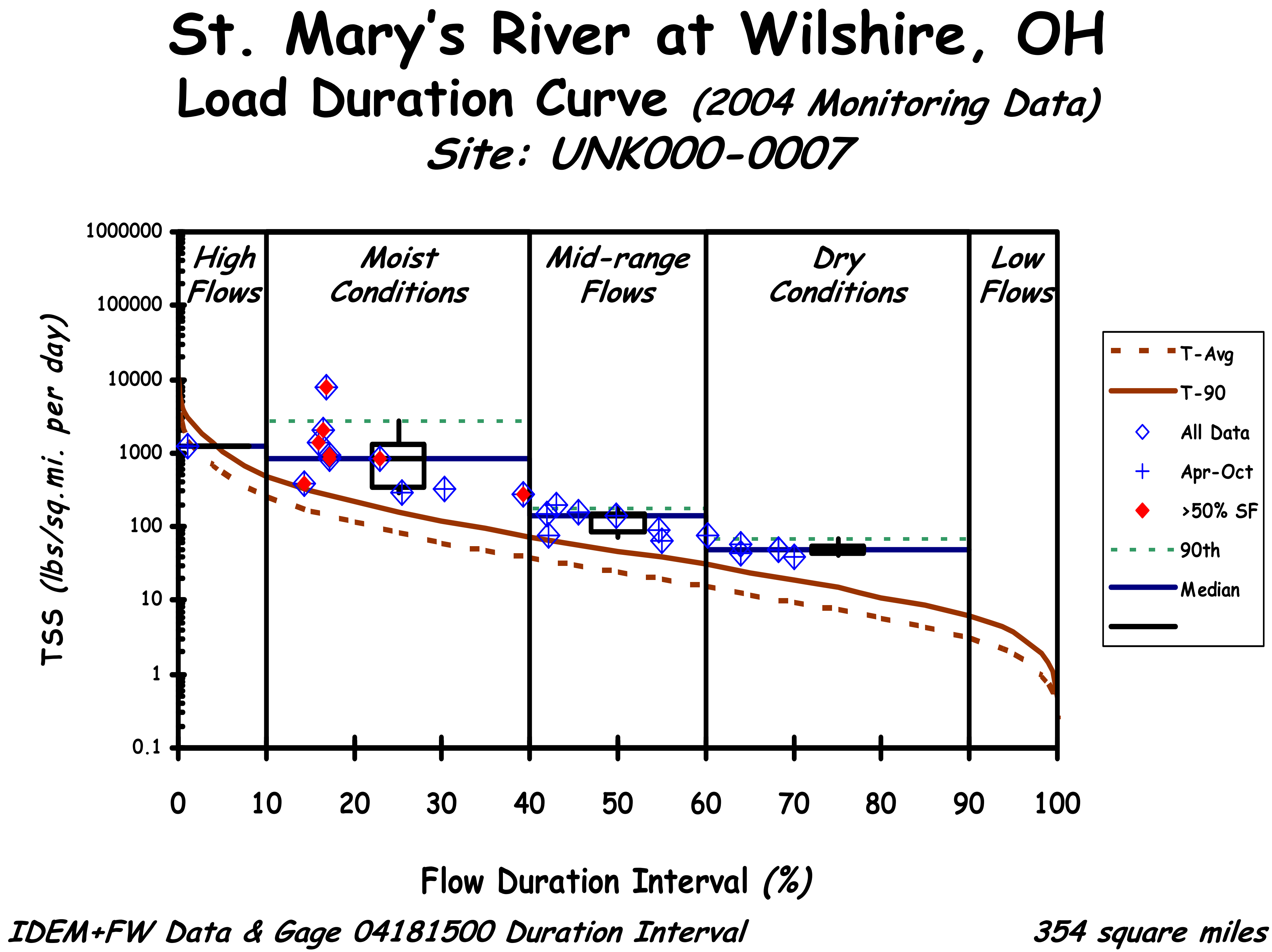


Nickelsen Creek - CR 1100 N
Load Duration Curve (2004 Monitoring Data)
Site: LES050-0015
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (lbs/sq.mi. per day)
1000000
100000
10000
1000
100
10
1
0.1
0
10
20
30
40
50
60
70
80
90
100
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
12.2 square miles

Unnamed Tributary -- Barkley Road
Load Duration Curve *(2004 Monitoring Data)*
Site: LES050-0020



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *2.3 square miles*

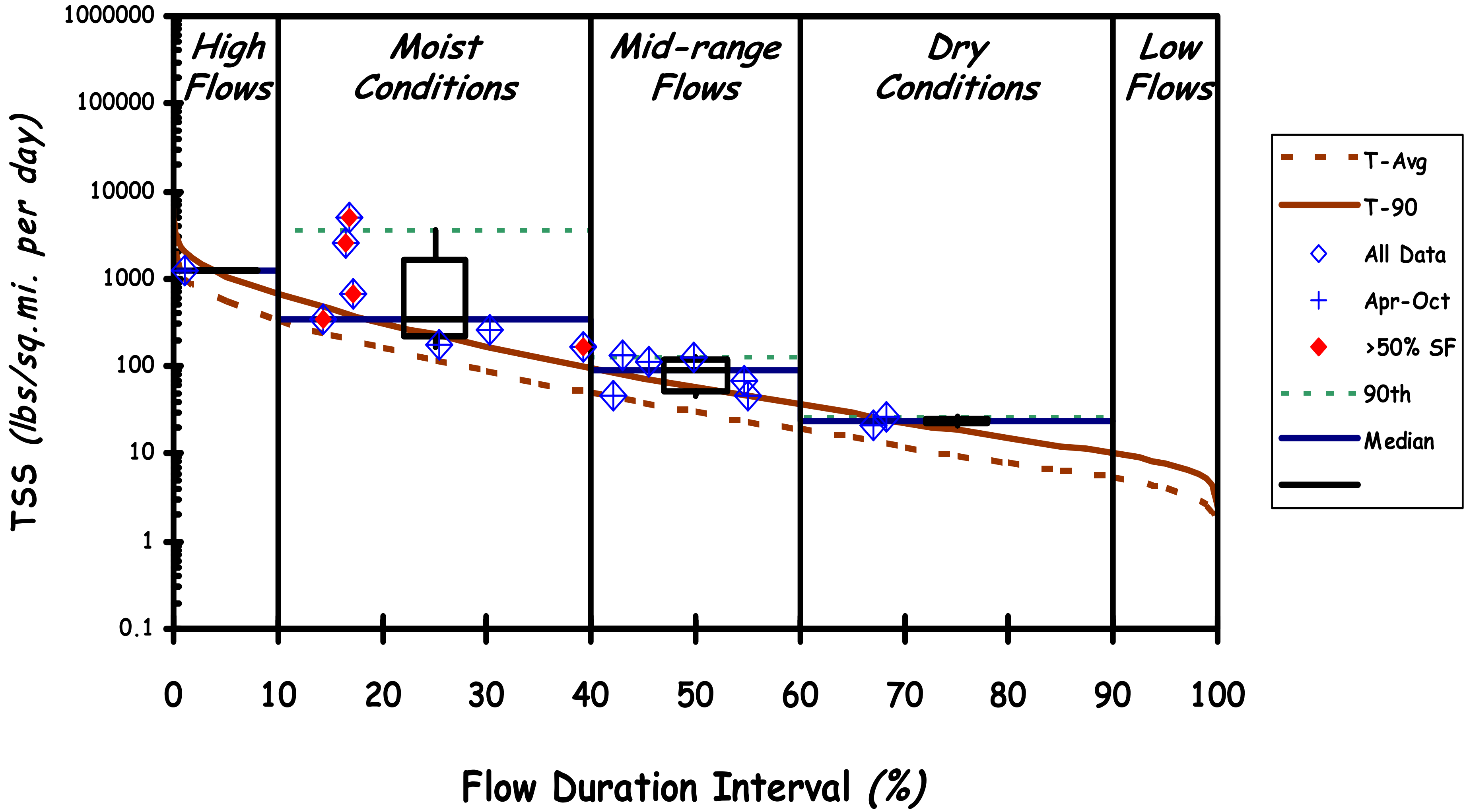


St. Mary's River at Wilshire, OH
Load Duration Curve (2004 Monitoring Data)
Site: UNK000-0007
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (lbs/sq.mi. per day)
1000000
100000
10000
1000
100
10
1
0.1
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04181500 Duration Interval
354 square miles

St. Mary's River at Pleasant Mills

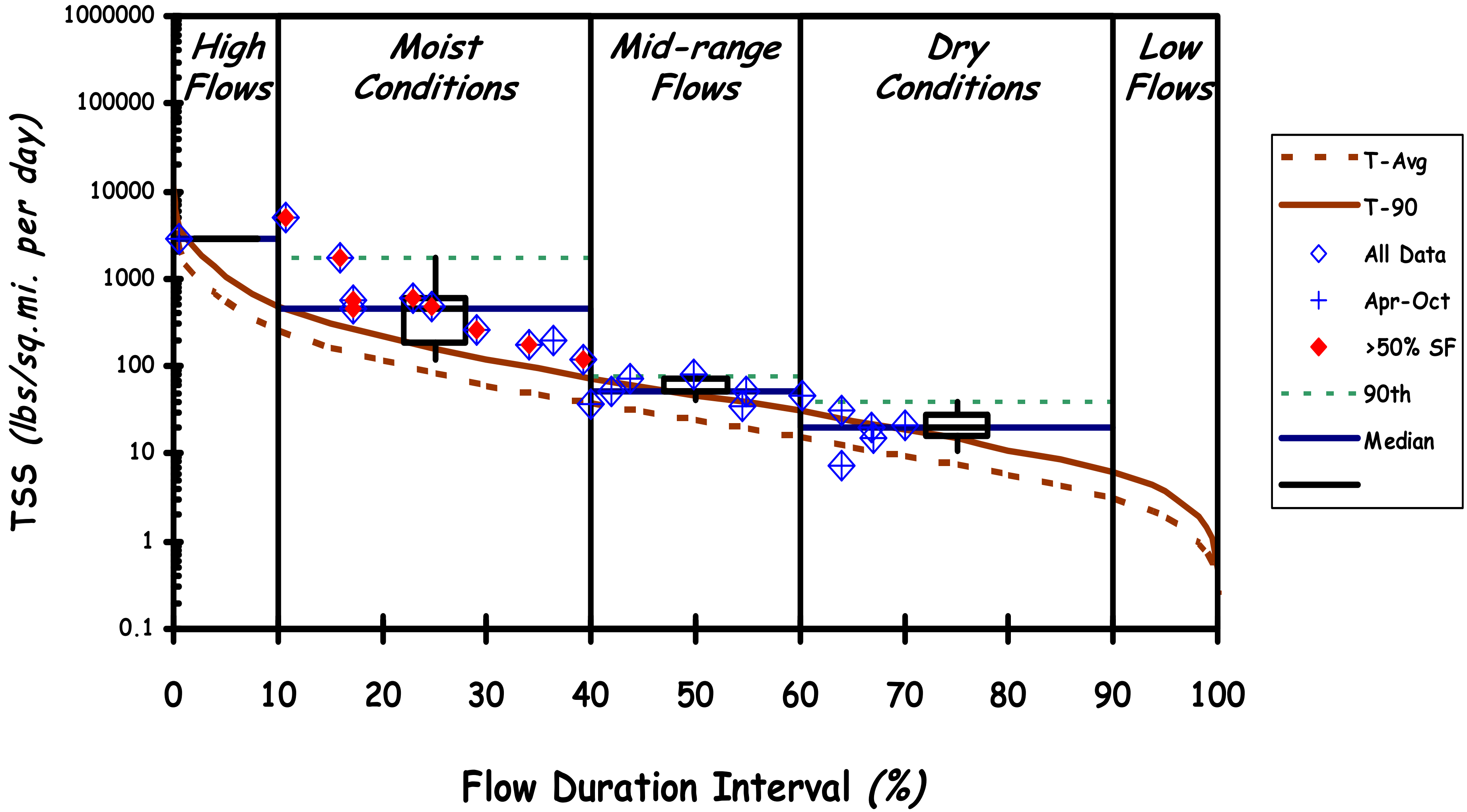
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0007



IDEM Data & Gage 04181500 Duration Interval *468 square miles*

St. Mary's River near Poe
Load Duration Curve *(2004 Monitoring Data)*
Site: LES060-0006



IDEM+FW Data & Gage 04181500 Duration Interval *643 square miles*

Attachment D

E. coli Data for Maumee River TMDL

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Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
1	IDEM	2000 E Coli	Maumee River	LEM010-0015	Lake Ave Bridge, D/S of Filtration Plan	AA00227	6/13/2000	Normal	E. Coli	387.3	MPN/100mL	Allen			
1	IDEM	2000 E Coli	Maumee River	LEM010-0015	Lake Ave Bridge, D/S of Filtration Plan	AA00296	6/20/2000	Normal	E. Coli	426	MPN/100mL	Allen			
1	IDEM	2000 E Coli	Maumee River	LEM010-0015	Lake Ave Bridge, D/S of Filtration Plan	AA00461	6/28/2000	Normal	E. Coli	882	MPN/100mL	Allen			
1	IDEM	2000 E Coli	Maumee River	LEM010-0015	Lake Ave Bridge, D/S of Filtration Plan	AA00569	7/4/2000	Normal	E. Coli	3654	MPN/100mL	Allen			
1	IDEM	2000 E Coli	Maumee River	LEM010-0015	Lake Ave Bridge, D/S of Filtration Plan	AA00667	7/11/2000	Normal	E. Coli	172.3	MPN/100mL	Allen		620	
2	Ft. Wayne		Maumee River		Anthony Blvd		4/3/2001	Normal	E. coli	560	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/9/2001	Normal	E. coli	340	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/16/2001	Normal	E. coli	1320	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/23/2001	Normal	E. coli	1000	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/30/2001	Normal	E. coli	20	Colonies/100ml	Allen		347	April 3 to April 30
2	Ft. Wayne		Maumee River		Anthony Blvd		5/7/2001	Normal	E. coli	44	Colonies/100ml	Allen		209	April 9 to May 7
2	Ft. Wayne		Maumee River		Anthony Blvd		5/14/2001	Normal	E. coli	26	Colonies/100ml	Allen		125	April 16 to May 14
2	Ft. Wayne		Maumee River		Anthony Blvd		5/21/2001	Normal	E. coli	432	Colonies/100ml	Allen		100	April 23 to May 21
2	Ft. Wayne		Maumee River		Anthony Blvd		5/29/2001	Normal	E. coli	590	Colonies/100ml	Allen		90	April 30 to May 29
2	Ft. Wayne		Maumee River		Anthony Blvd		6/4/2001	Normal	E. coli	1000	Colonies/100ml	Allen		196	May 7 to June 4
2	Ft. Wayne		Maumee River		Anthony Blvd		6/11/2001	Normal	E. coli	570	Colonies/100ml	Allen		328	May 14 to June 11
2	Ft. Wayne		Maumee River		Anthony Blvd		6/18/2001	Normal	E. coli	230	Colonies/100ml	Allen		507	May 21 to June 18
2	Ft. Wayne		Maumee River		Anthony Blvd		6/26/2001	Normal	E. coli	1600	Colonies/100ml	Allen		658	May 29 to June 26
2	Ft. Wayne		Maumee River		Anthony Blvd		7/2/2001	Normal	E. coli	150	Colonies/100ml	Allen		501	June 4 to July 2
2	Ft. Wayne		Maumee River		Anthony Blvd		7/9/2001	Normal	E. coli	980	Colonies/100ml	Allen		499	June 11 to July 9
2	Ft. Wayne		Maumee River		Anthony Blvd		7/16/2001	Normal	E. coli	60	Colonies/100ml	Allen		318	June 18 to July 16
2	Ft. Wayne		Maumee River		Anthony Blvd		7/23/2001	Normal	E. coli	980	Colonies/100ml	Allen		425	June 26 to July 23
2	Ft. Wayne		Maumee River		Anthony Blvd		7/30/2001	Normal	E. coli	810	Colonies/100ml	Allen		371	June 26 to July 30
2	Ft. Wayne		Maumee River		Anthony Blvd		8/6/2001	Normal	E. coli	330	Colonies/100ml	Allen		434	July 2 to Aug 6
2	Ft. Wayne		Maumee River		Anthony Blvd		8/14/2001	Normal	E. coli	110	Colonies/100ml	Allen		280	July 9 to Aug 14
2	Ft. Wayne		Maumee River		Anthony Blvd		8/20/2001	Normal	E. coli	6000	Colonies/100ml	Allen		704	July 16 to Aug 20
2	Ft. Wayne		Maumee River		Anthony Blvd		8/27/2001	Normal	E. coli	1080	Colonies/100ml	Allen		718	July 23 to Aug 27
2	Ft. Wayne		Maumee River		Anthony Blvd		9/4/2001	Normal	E. coli	260	Colonies/100ml	Allen		572	July 30 to Sept 4
2	Ft. Wayne		Maumee River		Anthony Blvd		9/10/2001	Normal	E. coli	2400	Colonies/100ml	Allen		850	Aug 6 to Sept 10
2	Ft. Wayne		Maumee River		Anthony Blvd		9/17/2001	Normal	E. coli	8000	Colonies/100ml	Allen		2004	Aug 14 to Sept 17
2	Ft. Wayne		Maumee River		Anthony Blvd		9/24/2001	Normal	E. coli	20000	Colonies/100ml	Allen		2550	Aug 20 to Sept 24
2	Ft. Wayne		Maumee River		Anthony Blvd		10/1/2001	Normal	E. coli	460	Colonies/100ml	Allen		2150	Aug 27 to Oct 1
2	Ft. Wayne		Maumee River		Anthony Blvd		10/9/2001	Normal	E. coli	440	Colonies/100ml	Allen		2388	Sept 4 to Oct 9
2	Ft. Wayne		Maumee River		Anthony Blvd		10/15/2001	Normal	E. coli	3200	Colonies/100ml	Allen		2530	Sept 10 to Oct 15
2	Ft. Wayne		Maumee River		Anthony Blvd		10/22/2001	Normal	E. coli	700	Colonies/100ml	Allen		1554	Sept 17 to Oct 22
2	Ft. Wayne		Maumee River		Anthony Blvd		10/29/2001	Normal	E. coli	220	Colonies/100ml	Allen		631	Sept 24 to Oct 29
2	Ft. Wayne		Maumee River		Anthony Blvd		4/1/2002	Normal	E. coli	616	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/8/2002	Normal	E. coli	1040	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/15/2002	Normal	E. coli	460	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/22/2002	Normal	E. coli	360	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/29/2002	Normal	E. coli	4440	Colonies/100ml	Allen		860	April 1 to April 29
2	Ft. Wayne		Maumee River		Anthony Blvd		5/6/2002	Normal	E. coli	300	Colonies/100ml	Allen		745	April 8 to May 6
2	Ft. Wayne		Maumee River		Anthony Blvd		5/13/2002	Normal	E. coli	4300	Colonies/100ml	Allen		989	April 15 to May 13

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
2	Ft. Wayne		Maumee River		Anthony Blvd		5/20/2002	Normal	E. coli	100	Colonies/100ml	Allen		729	April 22 to May 20
2	Ft. Wayne		Maumee River		Anthony Blvd		5/29/2002	Normal	E. coli	1100	Colonies/100ml	Allen		912	April 29 to May 29
2	Ft. Wayne		Maumee River		Anthony Blvd		6/3/2002	Normal	E. coli	540	Colonies/100ml	Allen		598	May 6 to June 3
2	Ft. Wayne		Maumee River		Anthony Blvd		6/10/2002	Normal	E. coli	330	Colonies/100ml	Allen		610	May 13 to June 10
2	Ft. Wayne		Maumee River		Anthony Blvd		6/17/2002	Normal	E. coli	260	Colonies/100ml	Allen		348	May 20 to June 17
2	Ft. Wayne		Maumee River		Anthony Blvd		6/24/2002	Normal	E. coli	430	Colonies/100ml	Allen		466	May 29 to June 24
2	Ft. Wayne		Maumee River		Anthony Blvd		7/1/2002	Normal	E. coli	540	Colonies/100ml	Allen		404	June 3 to July 1
2	Ft. Wayne		Maumee River		Anthony Blvd		7/8/2002	Normal	E. coli	290	Colonies/100ml	Allen		357	June 10 to July 8
2	Ft. Wayne		Maumee River		Anthony Blvd		7/15/2002	Normal	E. coli	70	Colonies/100ml	Allen		262	June 17 to July 15
2	Ft. Wayne		Maumee River		Anthony Blvd		7/22/2002	Normal	E. coli	470	Colonies/100ml	Allen		295	June 24 to July 22
2	Ft. Wayne		Maumee River		Anthony Blvd		7/29/2002	Normal	E. coli	60	Colonies/100ml	Allen		199	July 1 to July 29
2	Ft. Wayne		Maumee River		Anthony Blvd		8/5/2002	Normal	E. coli	270	Colonies/100ml	Allen		173	July 8 to Aug 5
2	Ft. Wayne		Maumee River		Anthony Blvd		8/12/2002	Normal	E. coli	600	Colonies/100ml	Allen		200	July 15 to Aug 12
2	Ft. Wayne		Maumee River		Anthony Blvd		8/19/2002	Normal	E. coli	400	Colonies/100ml	Allen		283	July 22 to Aug 19
2	Ft. Wayne		Maumee River		Anthony Blvd		8/26/2002	Normal	E. coli	2400	Colonies/100ml	Allen		393	July 29 to Aug 26
2	Ft. Wayne		Maumee River		Anthony Blvd		9/3/2002	Normal	E. coli	110	Colonies/100ml	Allen		443	Aug 5 to Sept 3
2	Ft. Wayne		Maumee River		Anthony Blvd		9/9/2002	Normal	E. coli	50	Colonies/100ml	Allen		316	Aug 12 to Aug 9
2	Ft. Wayne		Maumee River		Anthony Blvd		9/16/2002	Normal	E. coli	90	Colonies/100ml	Allen		216	Aug 19 to Aug 16
2	Ft. Wayne		Maumee River		Anthony Blvd		9/24/2002	Normal	E. coli	310	Colonies/100ml	Allen		206	Aug 26 to Sept 24
2	Ft. Wayne		Maumee River		Anthony Blvd		9/30/2002	Normal	E. coli	900	Colonies/100ml	Allen		169	Sept 3 to Sept 30
2	Ft. Wayne		Maumee River		Anthony Blvd		10/7/2002	Normal	E. coli	220	Colonies/100ml	Allen		194	Sept 9 to Oct 7
2	Ft. Wayne		Maumee River		Anthony Blvd		10/14/2002	Normal	E. coli	70	Colonies/100ml	Allen		208	Sept 16 to Oct 14
2	Ft. Wayne		Maumee River		Anthony Blvd		10/21/2002	Normal	E. coli	115	Colonies/100ml	Allen		218	Sept 24 to Oct 21
2	Ft. Wayne		Maumee River		Anthony Blvd		10/28/2002	Normal	E. coli	800	Colonies/100ml	Allen		264	Sept 30 to Oct 28
2	Ft. Wayne		Maumee River		Anthony Blvd		4/7/2003	Normal	E. coli	Test Failed	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/14/2003	Normal	E. coli	80	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/21/2003	Normal	E. coli	9	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		4/28/2003	Normal	E. coli	13	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		5/5/2003	Normal	E. coli	28	Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		5/12/2003	Normal	E. coli	1100	Colonies/100ml	Allen		49	April 14 to May 12
2	Ft. Wayne		Maumee River		Anthony Blvd		5/19/2003	Normal	E. coli	146	Colonies/100ml	Allen		55	April 21 to May 19
2	Ft. Wayne		Maumee River		Anthony Blvd		5/27/2003	Normal	E. coli	84	Colonies/100ml	Allen		87	April 28 to May 27
2	Ft. Wayne		Maumee River		Anthony Blvd		6/2/2003	Normal	E. coli	40	Colonies/100ml	Allen		109	May 5 to June 2
2	Ft. Wayne		Maumee River		Anthony Blvd		6/9/2003	Normal	E. coli	44	Colonies/100ml	Allen		119	May 12 to June 9
2	Ft. Wayne		Maumee River		Anthony Blvd		6/16/2003	Normal	E. coli	495	Colonies/100ml	Allen		101	May 19 to June 16
2	Ft. Wayne		Maumee River		Anthony Blvd		6/23/2003	Normal	E. coli	320	Colonies/100ml	Allen		119	May 27 to June 23
2	Ft. Wayne		Maumee River		Anthony Blvd		6/30/2003	Normal	E. coli	400	Colonies/100ml	Allen		162	June 2 to June 30
2	Ft. Wayne		Maumee River		Anthony Blvd		7/7/2003	Normal	E. coli	250	Colonies/100ml	Allen		234	June 9 to July 7
2	Ft. Wayne		Maumee River		Anthony Blvd		7/15/2003	Normal	E. coli	300	Colonies/100ml	Allen		343	June 16 to July 15
2	Ft. Wayne		Maumee River		Anthony Blvd		7/21/2003	Normal	E. coli	140	Colonies/100ml	Allen		266	June 23 to July 21
2	Ft. Wayne		Maumee River		Anthony Blvd		7/28/2003	Normal	E. coli	10	Colonies/100ml	Allen		133	June 30 to July 28
2	Ft. Wayne		Maumee River		Anthony Blvd		8/4/2003	Normal	E. coli	760	Colonies/100ml	Allen		151	July 7 to Aug 4
2	Ft. Wayne		Maumee River		Anthony Blvd		8/11/2003	Normal	E. coli	230	Colonies/100ml	Allen		149	July 15 to Aug 11

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
2	Ft. Wayne		Maumee River		Anthony Blvd		8/18/2003	Normal	E. coli	42	Colonies/100ml	Allen		101	July 21 to Aug 18
2	Ft. Wayne		Maumee River		Anthony Blvd		8/25/2003	Normal	E. coli	26	Colonies/100ml	Allen		72	July 28 to Aug 25
2	Ft. Wayne		Maumee River		Anthony Blvd		9/2/2003	Normal	E. coli	10	Colonies/100ml	Allen		72	Aug 4 to Sept 2
2	Ft. Wayne		Maumee River		Anthony Blvd		9/8/2003	Normal	E. coli	14	Colonies/100ml	Allen		32	Aug 11 to Sept 8
2	Ft. Wayne		Maumee River		Anthony Blvd		9/15/2003	Normal	E. coli	3	Colonies/100ml	Allen		14	Aug 18 to Sept 15
2	Ft. Wayne		Maumee River		Anthony Blvd		9/22/2003	Normal	E. coli	5	Colonies/100ml	Allen		9	Aug 25 to Sept 22
2	Ft. Wayne		Maumee River		Anthony Blvd		9/29/2003	Normal	E. coli	104	Colonies/100ml	Allen		12	Sept 2 to Sept 29
2	Ft. Wayne		Maumee River		Anthony Blvd		10/6/2003	Normal	E. coli	80	Colonies/100ml	Allen		18	Sept 8 to Oct 8
2	Ft. Wayne		Maumee River		Anthony Blvd		10/13/2003	Normal	E. coli	136	Colonies/100ml	Allen		28	Sept 15 to Oct 13
2	Ft. Wayne		Maumee River		Anthony Blvd		10/20/2003	Normal	E. coli		Colonies/100ml	Allen			
2	Ft. Wayne		Maumee River		Anthony Blvd		10/27/2003	Normal	E. coli	15	Colonies/100ml	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI7451	4/2/1991	Normal	E. Coli	30	CFU/100mL	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI5905	5/29/1991	Normal	E. Coli	330	CFU/100mL	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI9173	6/19/1991	Normal	E. Coli	90	CFU/100mL	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI9231	7/17/1991	Normal	E. Coli	150	CFU/100mL	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI9384	8/20/1991	Normal	E. Coli	6200	CFU/100mL	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI9484	9/17/1991	Normal	E. Coli	5200	CFU/100mL	Allen			
3	IDEM	1991 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI9587	10/8/1991	Normal	E. Coli	2200	CFU/100mL	Allen			
3	IDEM	1992 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI12063	4/29/1992	Normal	E. Coli	210	CFU/100mL	Allen			
3	IDEM	1992 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI12304	5/12/1992	Normal	E. Coli	10	CFU/100mL	Allen			
3	IDEM	1992 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI8292	6/9/1992	Normal	E. Coli	550	CFU/100mL	Allen			
3	IDEM	1992 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI13227	9/15/1992	Normal	E. Coli	6300	CFU/100mL	Allen			
3	IDEM	1992 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI13412	10/15/1992	Normal	E. Coli	780	CFU/100mL	Allen			
3	IDEM	1993 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI14389	4/7/1993	Normal	E. Coli	380	CFU/100mL	Allen			
3	IDEM	1993 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI14692	6/17/1993	Normal	E. Coli	5400	CFU/100mL	Allen			
3	IDEM	1993 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI14986	7/15/1993	Normal	E. Coli	1200	CFU/100mL	Allen			
3	IDEM	1993 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI15152	8/10/1993	Normal	E. Coli	3500	CFU/100mL	Allen			
3	IDEM	1993 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI15436	9/15/1993	Normal	E. Coli	18000	CFU/100mL	Allen			
3	IDEM	1993 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI15641	10/13/1993	Normal	E. Coli	190	CFU/100mL	Allen			
3	IDEM	1994 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI16755	6/20/1994	Normal	E. Coli	150	CFU/100mL	Allen			
3	IDEM	1994 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI17121	7/18/1994	Normal	E. Coli	150	CFU/100mL	Allen			
3	IDEM	1994 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI17590	8/16/1994	Normal	E. Coli	290	CFU/100mL	Allen			
3	IDEM	1994 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI17865	9/22/1994	Normal	E. Coli	20	CFU/100mL	Allen			
3	IDEM	1994 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI00046	10/12/1994	Normal	E. Coli	170	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI18737	5/4/1995	Normal	E. Coli	50	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI18968	6/1/1995	Normal	E. Coli	110	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI19285	7/5/1995	Normal	E. Coli	400	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI19392	7/20/1995	Normal	E. Coli	540	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI19796	8/28/1995	Normal	E. Coli	160	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI20200	9/20/1995	Normal	E. Coli	340	CFU/100mL	Allen			
3	IDEM	1995 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI20229	10/18/1995	Normal	E. Coli	200	CFU/100mL	Allen			
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI21228	5/1/1996	Normal	E. Coli	2600	CFU/100mL	Allen			
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI21533	6/3/1996	Normal	E. Coli	320	CFU/100mL	Allen			

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI21637	6/27/1996	Normal	E. Coli	120	CFU/100mL	Allen			
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI21986	7/23/1996	Normal	E. Coli	630	CFU/100mL	Allen			
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI22109	8/27/1996	Normal	E. Coli	50	CFU/100mL	Allen			
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI22556	9/24/1996	Normal	E. Coli	2900	CFU/100mL	Allen			
3	IDEM	1996 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI22764	10/16/1996	Normal	E. Coli	170	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI23411	4/23/1997	Normal	E. Coli	30	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI23526	5/21/1997	Normal	E. Coli	2600	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI23641	6/26/1997	Normal	E. Coli	8800	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI23755	7/15/1997	Normal	E. Coli	540	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI23861	8/12/1997	Normal	E. Coli	150	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI23992	9/17/1997	Normal	E. Coli	21000	CFU/100mL	Allen			
3	IDEM	1997 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI24227	10/15/1997	Normal	E. Coli	310	CFU/100mL	Allen			
3	IDEM	2000 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI29326	4/5/2000	Normal	E. Coli	240	CFU/100mL	Allen			
3	IDEM	2000 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	DI30130	8/9/2000	Normal	E. Coli	770	MPN/100mL	Allen			
3	IDEM	2003 Fixed Statior	Maumee River	LEM010-0014	U/s of Landin Road bridge, d/s of county boat ramp, Ft. Wayne MWTF	AA15440	4/21/2003	Normal	E. Coli	57	MPN/100mL	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/3/2001	Normal	E. coli	600	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/9/2001	Normal	E. coli	270	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/16/2001	Normal	E. coli	390	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/23/2001	Normal	E. coli	480	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/30/2001	Normal	E. coli	10	Colonies/100ml	Allen		198	April 3 to April 30
3	Ft. Wayne		Maumee River		Landin Rd		5/7/2001	Normal	E. coli	44	Colonies/100ml	Allen		117	April 9 to May 7
3	Ft. Wayne		Maumee River		Landin Rd		5/14/2001	Normal	E. coli	64	Colonies/100ml	Allen		88	April 16 to May 14
3	Ft. Wayne		Maumee River		Landin Rd		5/21/2001	Normal	E. coli	308	Colonies/100ml	Allen		84	April 23 to May 21
3	Ft. Wayne		Maumee River		Landin Rd		5/29/2001	Normal	E. coli	650	Colonies/100ml	Allen		89	April 30 to May 29
3	Ft. Wayne		Maumee River		Landin Rd		6/4/2001	Normal	E. coli	600	Colonies/100ml	Allen		202	May 7 to June 4
3	Ft. Wayne		Maumee River		Landin Rd		6/11/2001	Normal	E. coli	360	Colonies/100ml	Allen		308	May 14 to June 11
3	Ft. Wayne		Maumee River		Landin Rd		6/18/2001	Normal	E. coli	170	Colonies/100ml	Allen		374	May 21 to June 18
3	Ft. Wayne		Maumee River		Landin Rd		6/26/2001	Normal	E. coli	1024	Colonies/100ml	Allen		476	May 21 to June 26
3	Ft. Wayne		Maumee River		Landin Rd		7/2/2001	Normal	E. coli	200	Colonies/100ml	Allen		376	May 29 to July 2
3	Ft. Wayne		Maumee River		Landin Rd		7/9/2001	Normal	E. coli	800	Colonies/100ml	Allen		398	June 4 to July 9
3	Ft. Wayne		Maumee River		Landin Rd		7/16/2001	Normal	E. coli	60	Colonies/100ml	Allen		278	June 11 to July 16
3	Ft. Wayne		Maumee River		Landin Rd		7/23/2001	Normal	E. coli	830	Colonies/100ml	Allen		382	June 18 to July 23
3	Ft. Wayne		Maumee River		Landin Rd		7/30/2001	Normal	E. coli	1020	Colonies/100ml	Allen		382	June 26 to July 30
3	Ft. Wayne		Maumee River		Landin Rd		8/6/2001	Normal	E. coli	440	Colonies/100ml	Allen		447	June 26 to Aug 6
3	Ft. Wayne		Maumee River		Landin Rd		8/14/2001	Normal	E. coli	60	Colonies/100ml	Allen		266	July 2 to Aug 14
3	Ft. Wayne		Maumee River		Landin Rd		8/20/2001	Normal	E. coli	3200	Colonies/100ml	Allen		590	July 9 to Aug 20
3	Ft. Wayne		Maumee River		Landin Rd		8/27/2001	Normal	E. coli	920	Colonies/100ml	Allen		602	July 16 to Aug 27
3	Ft. Wayne		Maumee River		Landin Rd		9/4/2001	Normal	E. coli	200	Colonies/100ml	Allen		435	July 23 to Sept 4
3	Ft. Wayne		Maumee River		Landin Rd		9/10/2001	Normal	E. coli	2240	Colonies/100ml	Allen		602	July 30 to Sept 10
3	Ft. Wayne		Maumee River		Landin Rd		9/17/2001	Normal	E. coli	1460	Colonies/100ml	Allen		1140	Aug 6 to Sept 17
3	Ft. Wayne		Maumee River		Landin Rd		9/24/2001	Normal	E. coli	8000	Colonies/100ml	Allen		1369	Aug 14 to Sept 24
3	Ft. Wayne		Maumee River		Landin Rd		10/1/2001	Normal	E. coli	500	Colonies/100ml	Allen		1212	Aug 20 to Oct 1
3	Ft. Wayne		Maumee River		Landin Rd		10/9/2001	Normal	E. coli	1020	Colonies/100ml	Allen		1679	Aug 27 to Oct 9

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
3	Ft. Wayne		Maumee River		Landin Rd		10/15/2001	Normal	E. coli	4600	Colonies/100ml	Allen		1939	Sept 4 to Oct 15
3	Ft. Wayne		Maumee River		Landin Rd		10/22/2001	Normal	E. coli	620	Colonies/100ml	Allen		1634	Sept 10 to Oct 22
3	Ft. Wayne		Maumee River		Landin Rd		10/29/2001	Normal	E. coli	1020	Colonies/100ml	Allen		1082	Sept 17 to Oct 29
3	Ft. Wayne		Maumee River		Landin Rd		4/1/2002	Normal	E. coli	768	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/8/2002	Normal	E. coli	440	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/15/2002	Normal	E. coli	400	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/22/2002	Normal	E. coli	300	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/29/2002	Normal	E. coli	5000	Colonies/100ml	Allen		727	April 1 to April 29
3	Ft. Wayne		Maumee River		Landin Rd		5/6/2002	Normal	E. coli	400	Colonies/100ml	Allen		638	April 8 to May 6
3	Ft. Wayne		Maumee River		Landin Rd		5/13/2002	Normal	E. coli	5400	Colonies/100ml	Allen		1053	April 15 to May 13
3	Ft. Wayne		Maumee River		Landin Rd		5/20/2002	Normal	E. coli	300	Colonies/100ml	Allen		994	April 22 to May 20
3	Ft. Wayne		Maumee River		Landin Rd		5/29/2002	Normal	E. coli	1800	Colonies/100ml	Allen		1423	April 29 to May 29
3	Ft. Wayne		Maumee River		Landin Rd		6/3/2002	Normal	E. coli	200	Colonies/100ml	Allen		747	May 6 to June 3
3	Ft. Wayne		Maumee River		Landin Rd		6/10/2002	Normal	E. coli	470	Colonies/100ml	Allen		772	May 13 to June 10
3	Ft. Wayne		Maumee River		Landin Rd		6/17/2002	Normal	E. coli	250	Colonies/100ml	Allen		418	May 20 to June 17
3	Ft. Wayne		Maumee River		Landin Rd		6/24/2002	Normal	E. coli	660	Colonies/100ml	Allen		489	May 29 to June 24
3	Ft. Wayne		Maumee River		Landin Rd		7/1/2002	Normal	E. coli	430	Colonies/100ml	Allen		367	June 3 to July 1
3	Ft. Wayne		Maumee River		Landin Rd		7/8/2002	Normal	E. coli	420	Colonies/100ml	Allen		426	June 10 to July 8
3	Ft. Wayne		Maumee River		Landin Rd		7/15/2002	Normal	E. coli	Test Failed	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		7/22/2002	Normal	E. coli	400	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		7/29/2002	Normal	E. coli	130	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		8/5/2002	Normal	E. coli	160	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		8/12/2002	Normal	E. coli	65	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		8/19/2002	Normal	E. coli	620	Colonies/100ml	Allen		202	July 22 to Aug 19
3	Ft. Wayne		Maumee River		Landin Rd		8/26/2002	Normal	E. coli	1480	Colonies/100ml	Allen		262	June 29 to Aug 26
3	Ft. Wayne		Maumee River		Landin Rd		9/3/2002	Normal	E. coli	420	Colonies/100ml	Allen		332	Aug 5 to Sept 3
3	Ft. Wayne		Maumee River		Landin Rd		9/9/2002	Normal	E. coli	560	Colonies/100ml	Allen		426	Aug 12 to Sept 9
3	Ft. Wayne		Maumee River		Landin Rd		9/16/2002	Normal	E. coli	370	Colonies/100ml	Allen		603	Aug 19 to Sept 16
3	Ft. Wayne		Maumee River		Landin Rd		9/24/2002	Normal	E. coli	680	Colonies/100ml	Allen		614	Aug 26 to Sept 30
3	Ft. Wayne		Maumee River		Landin Rd		9/30/2002	Normal	E. coli	640	Colonies/100ml	Allen		520	Sept 3 to Sept 24
3	Ft. Wayne		Maumee River		Landin Rd		10/7/2002	Normal	E. coli	220	Colonies/100ml	Allen		457	Sept 9 to Oct 7
3	Ft. Wayne		Maumee River		Landin Rd		10/14/2002	Normal	E. coli	130	Colonies/100ml	Allen		341	Sept 16 to Oct 14
3	Ft. Wayne		Maumee River		Landin Rd		10/21/2002	Normal	E. coli	105	Colonies/100ml	Allen		265	Sept 24 to Oct 21
3	Ft. Wayne		Maumee River		Landin Rd		10/28/2002	Normal	E. coli	270	Colonies/100ml	Allen		220	Sept 30 to Oct 28
3	Ft. Wayne		Maumee River		Landin Rd		4/7/2003	Normal	E. coli	32	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/14/2003	Normal	E. coli	36	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/21/2003	Normal	E. coli	7	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		4/28/2003	Normal	E. coli	48	Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		5/5/2003	Normal	E. coli	28	Colonies/100ml	Allen		26	April 7 to May 5
3	Ft. Wayne		Maumee River		Landin Rd		5/12/2003	Normal	E. coli	1000	Colonies/100ml	Allen		51	April 14 to May 12
3	Ft. Wayne		Maumee River		Landin Rd		5/19/2003	Normal	E. coli	152	Colonies/100ml	Allen		68	April 21 to May 19
3	Ft. Wayne		Maumee River		Landin Rd		5/27/2003	Normal	E. coli	64	Colonies/100ml	Allen		106	April 28 to May 27
3	Ft. Wayne		Maumee River		Landin Rd		6/2/2003	Normal	E. coli	352	Colonies/100ml	Allen		157	May 5 to June 2

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
3	Ft. Wayne		Maumee River		Landin Rd		6/9/2003	Normal	E. coli	296	Colonies/100ml	Allen		252	May 12 to June 9
3	Ft. Wayne		Maumee River		Landin Rd		6/16/2003	Normal	E. coli	500	Colonies/100ml	Allen		219	May 19 to June 16
3	Ft. Wayne		Maumee River		Landin Rd		6/23/2003	Normal	E. coli	340	Colonies/100ml	Allen		258	May 27 to June 23
3	Ft. Wayne		Maumee River		Landin Rd		6/30/2003	Normal	E. coli	500	Colonies/100ml	Allen		389	June 2 to June 30
3	Ft. Wayne		Maumee River		Landin Rd		7/7/2003	Normal	E. coli	200	Colonies/100ml	Allen		347	June 9 to July 7
3	Ft. Wayne		Maumee River		Landin Rd		7/15/2003	Normal	E. coli	1500	Colonies/100ml	Allen		480	June 16 to July 15
3	Ft. Wayne		Maumee River		Landin Rd		7/21/2003	Normal	E. coli	140	Colonies/100ml	Allen		372	June 23 to July 21
3	Ft. Wayne		Maumee River		Landin Rd		7/28/2003	Normal	E. coli	15	Colonies/100ml	Allen		199	June 30 to July 28
3	Ft. Wayne		Maumee River		Landin Rd		8/4/2003	Normal	E. coli	840	Colonies/100ml	Allen		221	July 7 to Aug 4
3	Ft. Wayne		Maumee River		Landin Rd		8/11/2003	Normal	E. coli	250	Colonies/100ml	Allen		231	July 15 to Aug 11
3	Ft. Wayne		Maumee River		Landin Rd		8/18/2003	Normal	E. coli	78	Colonies/100ml	Allen		128	July 21 to Aug 18
3	Ft. Wayne		Maumee River		Landin Rd		8/25/2003	Normal	E. coli	22	Colonies/100ml	Allen		88	July 28 to Aug 25
3	Ft. Wayne		Maumee River		Landin Rd		9/2/2003	Normal	E. coli	8	Colonies/100ml	Allen		78	Aug 4 to Sept2
3	Ft. Wayne		Maumee River		Landin Rd		9/8/2003	Normal	E. coli	20	Colonies/100ml	Allen		37	Aug 11 to Sept 8
3	Ft. Wayne		Maumee River		Landin Rd		9/15/2003	Normal	E. coli	1	Colonies/100ml	Allen		12	Aug 18 to Sept 15
3	Ft. Wayne		Maumee River		Landin Rd		9/22/2003	Normal	E. coli	7	Colonies/100ml	Allen		8	Aug 25 to Sept 22
3	Ft. Wayne		Maumee River		Landin Rd		9/29/2003	Normal	E. coli	24	Colonies/100ml	Allen		8	Sept 2 to Sept 29
3	Ft. Wayne		Maumee River		Landin Rd		10/6/2003	Normal	E. coli	78	Colonies/100ml	Allen		12	Sept 8 to Oct 6
3	Ft. Wayne		Maumee River		Landin Rd		10/13/2003	Normal	E. coli	84	Colonies/100ml	Allen		16	Sept 15 to Oct 13
3	Ft. Wayne		Maumee River		Landin Rd		10/20/2003	Normal	E. coli		Colonies/100ml	Allen			
3	Ft. Wayne		Maumee River		Landin Rd		10/27/2003	Normal	E. coli	52	Colonies/100ml	Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/2/2001		E. coli	10		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/9/2001		E. coli	320		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/16/2001		E. coli	50		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/23/2001		E. coli	250		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/30/2001		E. coli	10		Allen		53	April 2 to April 30
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/7/2001		E. coli	40		Allen		69	April 9 to May 7
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/14/2001		E. coli	40		Allen		46	April 16 to May 14
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/21/2001		E. coli	520		Allen		73	April 23 to May 21
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/28/2001		E. coli	1500		Allen		105	April 30 to May 28
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/4/2001		E. coli	1000		Allen		263	May 7 to June 4
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/11/2001		E. coli	200		Allen		362	May 14 to June 11
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/18/2001		E. coli	200		Allen		500	May 21 to June 18
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/25/2001		E. coli	1200		Allen		591	May 28 to June 25
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/2/2001		E. coli	320		Allen		434	June 4 to July 2
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/9/2001		E. coli	490		Allen		376	June 11 to July 9
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/16/2001		E. coli	12000		Allen		853	June 18 to July 16
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/23/2001		E. coli	18000		Allen		2098	June 25 to July 23
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/30/2001		E. coli	600		Allen		1826	July 2 to July 30
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/6/2001		E. coli	170		Allen		1609	July 9 to Aug 6
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/13/2001		E. coli	130		Allen		1234	July 16 to Aug 13
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/20/2001		E. coli	1200		Allen		779	July 23 to Aug 20
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/27/2001		E. coli	7000		Allen		645	July 30 to Aug 27

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/3/2001		E. coli	20		Allen		327	Aug 6 to Aug 27
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/10/2001		E. coli	3500		Allen		598	Aug 13 to Sept 10
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/17/2001		E. coli	20		Allen		411	Aug 20 to Sept 17
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/24/2001		E. coli	230		Allen		296	Aug 27 to Sept 24
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/1/2001		E. coli	230		Allen		149	Sept 3 to Oct 1
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/8/2001		E. coli	2100		Allen		379	Sept 10 to Oct 8
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/15/2001		E. coli	5000		Allen		407	Sept 17 to Oct 15
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/22/2001		E. coli	4000		Allen		1173	Sept 24 to Oct 22
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/2/2002		E. coli	500		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/9/2002		E. coli	520		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/16/2002		E. coli	20		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/23/2002		E. coli	10		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/30/2002		E. coli	110		Allen		89	April 2 to April 30
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/7/2002		E. coli	50		Allen		56	April 9 to May 7
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/14/2002		E. coli	1600		Allen		71	April 16 to May 14
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/21/2002		E. coli	200		Allen		112	April 23 to May 21
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/28/2002		E. coli	70		Allen		165	April 30 to May 28
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/4/2002		E. coli	300		Allen		202	May 7 to June 4
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/11/2002		E. coli	400		Allen		306	May 14 to June 11
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/18/2002		E. coli	3500		Allen		358	May 21 to June 18
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/25/2002		E. coli	1500		Allen		536	May 28 to June 25
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/2/2002		E. coli	600		Allen		823	June 4 to July 2
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/9/2002		E. coli	3500		Allen		1346	June 11 to July 9
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/16/2002		E. coli	1000		Allen		1616	June 18 to July 16
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/23/2002		E. coli	4600		Allen		1707	June 25 to July 23
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/30/2002		E. coli	14000		Allen		2668	July 2 to July 30
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/6/2002		E. coli	430		Allen		2496	July 9 to Aug 6
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/13/2002		E. coli	560		Allen		1730	July 16 to Aug 13
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/20/2002		E. coli	710		Allen		1616	July 23 to Aug 20
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/27/2002		E. coli	500		Allen		1037	July 30 to Aug 27
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/3/2002		E. coli	800		Allen		585	Aug 6 to Sept 3
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/10/2002		E. coli	110		Allen		445	Aug 13 to Sept 10
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/17/2002		E. coli	120		Allen		327	Aug 20 to Sept 17
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/24/2002		E. coli	100		Allen		221	Aug 27 to Sept 24
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/1/2002		E. coli	300		Allen		200	Sept 3 to Oct 1
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/9/2002		E. coli	200		Allen		151	Sept 10 to Oct 9
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/15/2002		E. coli	250		Allen		178	Sept 17 to Oct 15
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/22/2002		E. coli	800		Allen		261	Sept 24 to Oct 22
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/29/2002		E. coli	40		Allen		217	Oct 1 to Oct 29
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/3/2003		E. coli	170		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/8/2003		E. coli	650		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/17/2003	<	E. coli	10		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/24/2003		E. coli	100		Allen			

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/1/2003		E. coli	400		Allen		135	April 3 to May 1
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/6/2003		E. coli	600		Allen		173	April 8 to May 6
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/13/2003		E. coli	390		Allen		156	April 17 to May 13
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/20/2003		E. coli	15000		Allen		675	April 24 to May 20
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/27/2003		E. coli	300		Allen		841	May 1 to May 27
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/3/2003		E. coli	2200		Allen		1183	May 6 to June 3
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/10/2003		E. coli	1400		Allen		1401	May 13 to June 10
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/17/2003		E. coli	8000		Allen		2564	May 20 to June 17
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/26/2003		E. coli	90		Allen		922	May 27 to June 26
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/2/2003		E. coli	3200		Allen		1480	June 3 to July 2
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/9/2003		E. coli	1600		Allen		1389	June 10 to July 9
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/16/2003		E. coli	900		Allen		1271	June 17 to July 16
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/23/2003		E. coli	2100		Allen		973	June 26 to July 23
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/30/2003		E. coli	730		Allen		1478	July 2 to July 30
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/6/2003		E. coli	2000		Allen		1346	July 9 to Aug 6
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/13/2003		E. coli	1700		Allen		1362	July 16 to Aug 13
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/27/2003		E. coli	4000		Allen		1836	July 23 to Aug 27
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/4/2003		E. coli	600		Allen		1429	July 30 to Sept 4
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/10/2003		E. coli	210		Allen		1114	Aug 6 to Sept 10
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/17/2003		E. coli	1100		Allen		988	Aug 13 to Sept 17
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/23/2003		E. coli	2700		Allen		1084	Aug 27 to Sept 23
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/1/2003		E. coli	800		Allen		786	Sept 4 to Oct 1
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/9/2003		E. coli	160		Allen		603	Sept 10 to Oct 9
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/16/2003		E. coli	500		Allen		717	Sept 17 to Oct 16
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/22/2003		E. coli	60		Allen		401	Sept 23 to Oct 22
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/29/2003		E. coli	2000		Allen		378	Oct 1 to Oct 29
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/7/2004		E. coli	50		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/14/2004		E. coli	100		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/21/2004		E. coli	10		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	4/28/2004		E. coli	10		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/5/2004		E. coli	450		Allen		47	April 7 to May 5
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/12/2004		E. coli	1100		Allen		87	April 14 to May 12
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/19/2004		E. coli	3300		Allen		175	April 21 to May 19
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	5/26/2004		E. coli	1200		Allen		455	April 28 to May 26
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/3/2004		E. coli	1800		Allen		1287	May 5 to June 3
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/9/2004		E. coli	18000		Allen		2691	May 12 to June 9
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/16/2004		E. coli	800		Allen		2525	May 19 to June 16
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/23/2004		E. coli	31000		Allen		3952	May 26 to June 23
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	6/30/2004		E. coli	7000		Allen		5624	June 3 to June 30
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/8/2004		E. coli	22000		Allen		9278	June 9 to July 8
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/21/2004		E. coli	12000		Allen		8555	June 16 to July 21
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	7/28/2004		E. coli	2000		Allen		10276	June 23 to July 28
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/4/2004		E. coli	22000		Allen		9595	June 30 to Aug 4

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/10/2004		E. coli	1800		Allen		7312	July 8 to Aug 10
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	8/18/2004	>	E. coli	80000		Allen		9467	July 21 to Aug 18
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/1/2004		E. coli	800		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/9/2004		E. coli	360		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/15/2004		E. coli	110		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/22/2004		E. coli	900		Allen			
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	9/29/2004		E. coli	2800		Allen		603	Sept 1 to Sept 29
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/13/2004	<	E. coli	10		Allen		251	Sept 9 to Oct 13
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/20/2004		E. coli	10		Allen		123	Sept 15 to Oct 20
4	Allen County Health Dep		Trier Drain (Maumee Basin		Rose and Broadway by RR	30-13-12-51Y	10/27/2004	<	E. coli	10		Allen		76	Sept 22 to Oct 27
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/2/2001		E. coli	800		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/9/2001		E. coli	300		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/16/2001		E. coli	290		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/23/2001		E. coli	48000		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/30/2001		E. coli	28000		Allen		2479	April 2 to April 30
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/7/2001		E. coli	29000		Allen		5082	April 9 to May 7
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/14/2001		E. coli	28000		Allen		12591	April 16 to May 14
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/21/2001		E. coli	2400		Allen		19215	April 23 to May 21
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/28/2001		E. coli	7000		Allen		13074	April 30 to May 28
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/4/2001		E. coli	1400		Allen		7181	May 7 to June 4
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/11/2001		E. coli	13000		Allen		6117	May 14 to June 11
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/18/2001		E. coli	15000		Allen		5399	May 21 to June 18
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/25/2001		E. coli	3000		Allen		5645	May 28 to June 25
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/2/2001		E. coli	27000		Allen		7395	June 4 to July 2
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/9/2001		E. coli	420		Allen		5812	June 11 to July 9
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/16/2001		E. coli	60000		Allen		7892	June 18 to July 16
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/23/2001		E. coli	57000		Allen		10307	June 25 to July 23
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/30/2001		E. coli	800		Allen		7913	July 2 to July 30
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/6/2001		E. coli	130		Allen		2722	July 9 to Aug 6
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/13/2001		E. coli	3400		Allen		4135	July 16 to Aug 13
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/20/2001		E. coli	180		Allen		1294	July 23 to Aug 20
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/27/2001		E. coli	900		Allen		564	July 30 to Aug 27
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/3/2001		E. coli	180000		Allen		1667	Aug 6 to Sept 3
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/10/2001		E. coli	1600		Allen		2755	Aug 13 to Sept 10
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/17/2001		E. coli	90		Allen		1332	Aug 20 to Sept 17
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/24/2001		E. coli	4000		Allen		2477	Aug 27 to Sept 24
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/1/2001		E. coli	8000		Allen		3835	Sept 3 to Oct 1
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/8/2001		E. coli	63000		Allen		3109	Sept 10 to Oct 8
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/15/2001		E. coli	610		Allen		2563	Sept 17 to Oct 15
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/22/2001		E. coli	3000		Allen		5169	Sept 24 to Oct 22
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/2/2002		E. coli	300		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/9/2002		E. coli	1200		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/16/2002		E. coli	2000		Allen			

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/23/2002		E. coli	1000		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/30/2002		E. coli	5000		Allen		1292	April 2 to April 30
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/7/2002		E. coli	38000		Allen		3402	April 9 to May 7
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/14/2002		E. coli	2000		Allen		3768	April 16 to May 14
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/21/2002		E. coli	770		Allen		3114	April 23 to May 21
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/28/2002		E. coli	1400		Allen		3330	April 30 to May 28
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/4/2002		E. coli	1000		Allen		2414	May 7 to June 4
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/11/2002		E. coli	3900		Allen		1531	May 14 to June 11
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/18/2002		E. coli	3400		Allen		1702	May 21 to June 18
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/25/2002		E. coli	19000		Allen		3232	May 28 to June 25
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/2/2002		E. coli	6500		Allen		4394	June 4 to July 7
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/9/2002		E. coli	10000		Allen		6964	June 11 to July 9
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/16/2002	>	E. coli	200000		Allen		15305	June 18 to July 16
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/23/2002		E. coli	2700		Allen		14615	June 25 to July 23
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/30/2002		E. coli	18000		Allen		14458	July 2 to July 30
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/6/2002		E. coli	210		Allen		7277	July 9 to Aug 6
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/13/2002		E. coli	40		Allen		2412	July 16 to Aug 13
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/20/2002		E. coli	6600		Allen		1219	July 23 to Aug 20
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/27/2002		E. coli	2000		Allen		1148	July 30 to Aug 27
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/3/2002		E. coli	23000		Allen		1206	Aug 6 to Sept 3
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/10/2002		E. coli	3300		Allen		2092	Aug 13 to Sept 10
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/17/2002		E. coli	69000		Allen		9288	Aug 20 to Sept 17
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/24/2002		E. coli	4000		Allen		8403	Aug 27 to Sept 24
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/1/2002		E. coli	6000		Allen		10468	Sept 3 to Oct 1
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/8/2002		E. coli	33000		Allen		11252	Sept 10 to Oct 8
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/15/2002		E. coli	33000		Allen		17833	Sept 17 to Oct 15
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/22/2002		E. coli	43000		Allen		16223	Sept 24 to Oct 22
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/29/2002		E. coli	3700		Allen		15972	Oct 1 to Oct 29
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/2/2003		E. coli	29000		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/9/2003		E. coli			Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/16/2003		E. coli	2300		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/23/2003		E. coli	6000		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/30/2003		E. coli	180		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/6/2003		E. coli	2200		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/13/2003		E. coli	900		Allen		1375	April 16 to May 13
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/27/2003		E. coli	1100		Allen		1187	April 23 to May 27
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/3/2003		E. coli	2500		Allen		996	April 30 to June 3
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/10/2003		E. coli	5000		Allen		1936	May 6 to June 10
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/17/2003	>	E. coli	200000		Allen		4772	May 13 to June 17
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/26/2003		E. coli	3400		Allen		6225	May 27 to June 26
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/2/2003		E. coli	65000		Allen		14076	June 3 to July 2
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/9/2003		E. coli	300		Allen		9211	June 10 to July 9
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/16/2003		E. coli	78000		Allen		15956	June 17 to July 16

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/23/2003		E. coli	610		Allen		5009	June 26 to July 23
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/30/2003		E. coli	8200		Allen		5974	July 2 to July 30
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/6/2003		E. coli	1400		Allen		2773	July 9 to Aug 6
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/13/2003		E. coli	2700		Allen		4303	July 16 to Aug 13
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/20/2003		E. coli	400		Allen		1499	July 23 to Aug 20
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/27/2003		E. coli	15000		Allen		2844	July 30 to Aug 27
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/4/2003		E. coli	300		Allen		1467	Aug 6 to Sept 4
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/10/2003		E. coli	580		Allen		1230	Aug 13 to Sept 10
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/17/2003		E. coli	1500		Allen		1094	Aug 20 to Sept 17
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/23/2003		E. coli	7300		Allen		1955	Aug 27 to Sept 23
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/1/2003		E. coli	200		Allen		825	Sept 4 to Oct 1
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/9/2003		E. coli	3100		Allen		1315	Sept 10 to Oct 9
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/16/2003		E. coli	300		Allen		1153	Sept 17 to Oct 16
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/22/2003		E. coli	70		Allen		625	Sept 23 to Oct 22
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/29/2003		E. coli	6000		Allen		601	Oct 1 to Oct 29
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/7/2004		E. coli	4400		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/14/2004		E. coli	200		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/21/2004		E. coli	7000		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	4/28/2004		E. coli	4600		Allen			
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/5/2004		E. coli	420		Allen		1641	April 7 to May 5
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/12/2004		E. coli	700		Allen		1136	April 14 to May 12
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/19/2004		E. coli	2000		Allen		1801	April 21 to May 19
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	5/26/2004		E. coli	900		Allen		1195	April 28 to May 26
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/3/2004		E. coli	10000		Allen		1395	May 5 to June 3
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/9/2004		E. coli	20000		Allen		3022	May 12 to June 9
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/17/2004		E. coli	1000		Allen		3245	May 19 to June 17
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/23/2004		E. coli	27000		Allen		5462	May 26 to June 23
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	6/30/2004		E. coli	700		Allen		5194	June 3 to June 30
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/8/2004		E. coli	24000		Allen		6188	June 9 to July 8
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/14/2004		E. coli	4700		Allen		4632	June 17 to July 14
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/21/2004		E. coli	2000		Allen		5321	June 23 to July 21
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	7/28/2004		E. coli	2300		Allen		3251	June 30 to July 28
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/4/2004		E. coli	30000		Allen		6893	July 8 to Aug 4
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/10/2004		E. coli	1600		Allen		4011	July 14 to Aug 10
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/18/2004	>	E. coli	80000		Allen		7070	July 21 to Aug 18
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	8/26/2004		E. coli	7900		Allen		9305	July 28 to Aug 26
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/1/2004		E. coli	3000		Allen		9813	Aug 4 to Sept 1
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/9/2004		E. coli	4000		Allen		6558	Aug 10 to Sept 9
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/15/2004		E. coli	260		Allen		4560	Aug 18 to Sept 15
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/22/2004		E. coli	1600		Allen		2085	Aug 26 to Sept 22
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	9/29/2004		E. coli	1700		Allen		1534	Sept 1 to Sept 29
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/6/2004		E. coli	7200		Allen		1827	Sept 9 to Oct 6
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/13/2004		E. coli	120000		Allen		3608	Sept 15 to Oct 13

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/20/2004		E. coli	2000		Allen		5425	Sept 22 to Oct 20
5	Allen County Health Dep		Rushart Drain (Maumee Basin		Berthaud Rd. south of Slushe	31-14-34-51Y	10/27/2004		E. coli	3700		Allen		6416	Sept 29 to Oct 27
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI7450	4/2/1991	Normal	E. Coli	50	CFU/100mL	Allen			
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI5904	5/29/1991	Normal	E. Coli	840	CFU/100mL	Allen			
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI9172	6/19/1991	Normal	E. Coli	170	CFU/100mL	Allen			
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI9230	7/17/1991	Normal	E. Coli	250	CFU/100mL	Allen			
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI9383	8/20/1991	Normal	E. Coli	530	CFU/100mL	Allen			
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI9483	9/17/1991	Normal	E. Coli	3100	CFU/100mL	Allen			
6	IDEM	1991 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI9586	10/8/1991	Normal	E. Coli	1600	CFU/100mL	Allen			
6	IDEM	1992 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI8291	6/9/1992	Normal	E. Coli	330	CFU/100mL	Allen			
6	IDEM	1992 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI13123	8/18/1992	Normal	E. Coli	1700	CFU/100mL	Allen			
6	IDEM	1992 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI13226	9/15/1992	Normal	E. Coli	700	CFU/100mL	Allen			
6	IDEM	1992 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI13411	10/15/1992	Normal	E. Coli	450	CFU/100mL	Allen			
6	IDEM	1993 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI14388	4/6/1993	Normal	E. Coli	250	CFU/100mL	Allen			
6	IDEM	1993 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI14691	6/17/1993	Normal	E. Coli	180	CFU/100mL	Allen			
6	IDEM	1993 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI14985	7/15/1993	Normal	E. Coli	2500	CFU/100mL	Allen			
6	IDEM	1993 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI15151	8/10/1993	Normal	E. Coli	210	CFU/100mL	Allen			
6	IDEM	1993 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI15435	9/15/1993	Normal	E. Coli	39000	CFU/100mL	Allen			
6	IDEM	1993 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI15640	10/13/1993	Normal	E. Coli	630	CFU/100mL	Allen			
6	IDEM	1994 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI16754	6/20/1994	Normal	E. Coli	150	CFU/100mL	Allen			
6	IDEM	1994 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI17120	7/18/1994	Normal	E. Coli	20	CFU/100mL	Allen			
6	IDEM	1994 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI17589	8/16/1994	Normal	E. Coli	270	CFU/100mL	Allen			
6	IDEM	1994 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI17864	9/22/1994	Normal	E. Coli	< 10	CFU/100mL	Allen			
6	IDEM	1994 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI00045	10/12/1994	Normal	E. Coli	80	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI18736	5/4/1995	Normal	E. Coli	40	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI18967	6/1/1995	Normal	E. Coli	140	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI19284	7/5/1995	Normal	E. Coli	400	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI19391	7/20/1995	Normal	E. Coli	800	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI19795	8/28/1995	Normal	E. Coli	280	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI20199	9/20/1995	Normal	E. Coli	110	CFU/100mL	Allen			
6	IDEM	1995 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI20228	10/18/1995	Normal	E. Coli	130	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI21227	5/1/1996	Normal	E. Coli	800	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI21532	6/3/1996	Normal	E. Coli	120	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI21636	6/27/1996	Normal	E. Coli	240	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI21985	7/23/1996	Normal	E. Coli	590	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI22108	8/27/1996	Normal	E. Coli	350	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI22555	9/24/1996	Normal	E. Coli	380	CFU/100mL	Allen			
6	IDEM	1996 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI22763	10/16/1996	Normal	E. Coli	60	CFU/100mL	Allen			
6	IDEM	1997 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI23410	4/23/1997	Normal	E. Coli	190	CFU/100mL	Allen			
6	IDEM	1997 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI23525	5/21/1997	Normal	E. Coli	1700	CFU/100mL	Allen			
6	IDEM	1997 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI23640	6/26/1997	Normal	E. Coli	11000	CFU/100mL	Allen			
6	IDEM	1997 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI23754	7/15/1997	Normal	E. Coli	560	CFU/100mL	Allen			
6	IDEM	1997 Fixed Station	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburn	DI23860	8/12/1997	Normal	E. Coli	110	CFU/100mL	Allen			

Attachment D: *E. coli* Data for the Maumee River TMDL

Site #	Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action	geomean	Other
6	IDEM	1997 Fixed Statior	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	DI23991	9/17/1997	Normal	E. Coli	89000	CFU/100mL	Allen			
6	IDEM	1997 Fixed Statior	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	DI24226	10/15/1997	Normal	E. Coli	530	CFU/100mL	Allen			
6	IDEM	1999 Fixed Statior	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	DI27785	8/4/1999	Normal	E. Coli	150 (H)	CFU/100mL	Allen			
6	IDEM	2000 Fixed Statior	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	DI30129	8/9/2000	Normal	E. Coli	310 (HJ)	MPN/100mL	Allen			
6	IDEM	2000 E Coli	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	AA00221	6/12/2000	Normal	E. Coli	1553.07	MPN/100mL	Allen			
6	IDEM	2000 E Coli	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	AA00293	6/19/2000	Normal	E. Coli >	2420	MPN/100mL	Allen			
6	IDEM	2000 E Coli	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	AA00453	6/27/2000	Normal	E. Coli	1989	MPN/100mL	Allen			
6	IDEM	2000 E Coli	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	AA00564	7/3/2000	Normal	E. Coli	987	MPN/100mL	Allen			
6	IDEM	2000 E Coli	Maumee River	LEM010-0013	SR 101 Bridge, 3 Miles N of Woodburr	AA00664	7/10/2000	Normal	E. Coli	556	MPN/100mL	Allen		1326	June 12 to July 1C
7	IDEM	2005 Corvallis E. col	Maumee River	LEM010-0039	Coliseum Boulevarc	AA27280	12-Sep-05		E. Coli	61.3	MPN/100mL	Allen			
7	IDEM	2005 Corvallis E. col	Maumee River	LEM010-0039	Coliseum Boulevarc	AA27297	19-Sep-05		E. Coli	920.8	MPN/100mL	Allen			
7	IDEM	2005 Corvallis E. col	Maumee River	LEM010-0039	Coliseum Boulevarc	AA27313	26-Sep-05		E. Coli	12997	MPN/100mL	Allen			
7	IDEM	2005 Corvallis E. col	Maumee River	LEM010-0039	Coliseum Boulevarc	AA27330	03-Oct-05		E. Coli	387.3	MPN/100mL	Allen			
7	IDEM	2005 Corvallis E. col	Maumee River	LEM010-0039	Coliseum Boulevarc	AA27348	11-Oct-05		E. Coli	88.4	MPN/100mL	Allen			

Attachment E

Water Quality Duration Curves for Maumee River TMDL

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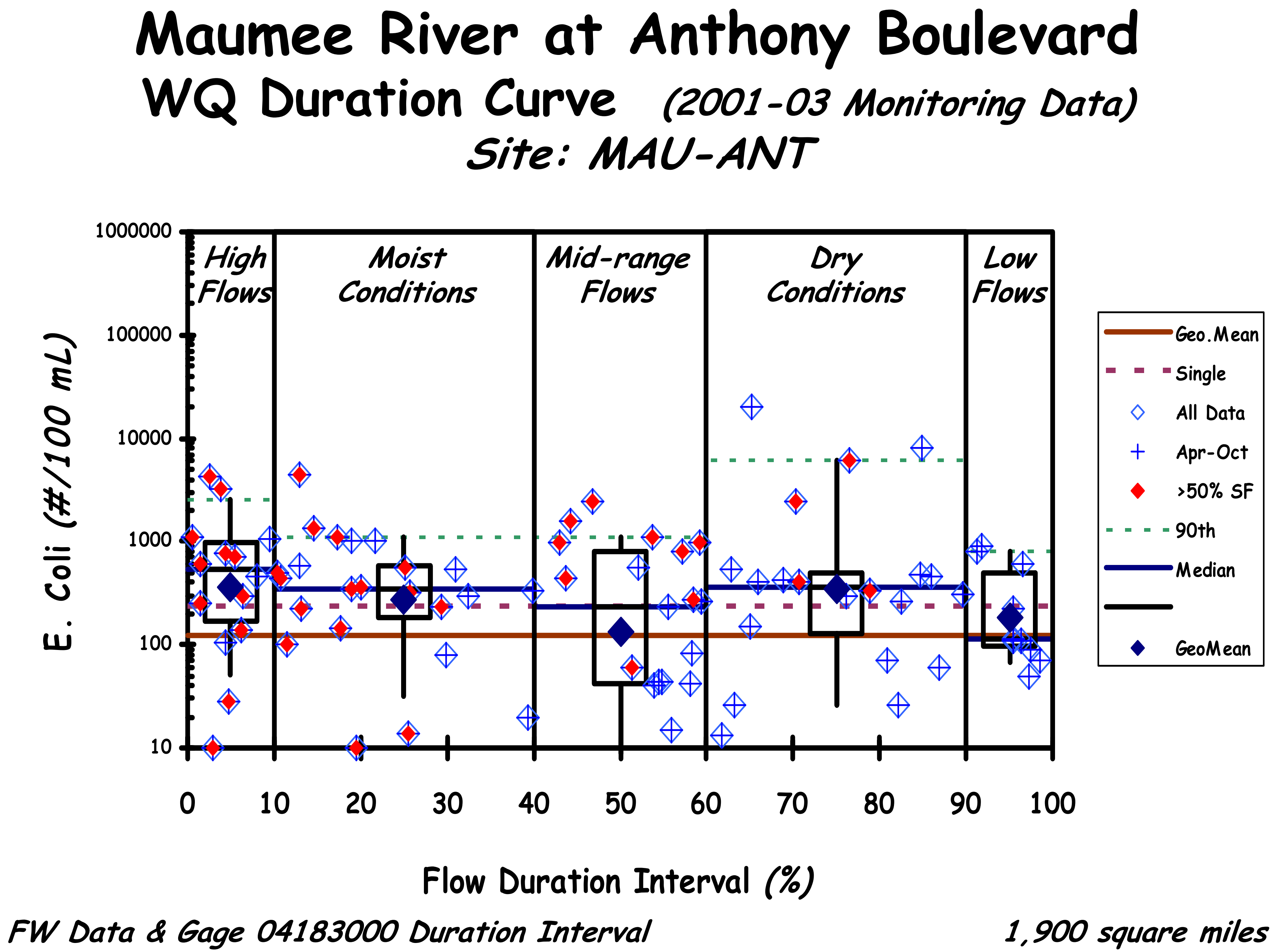
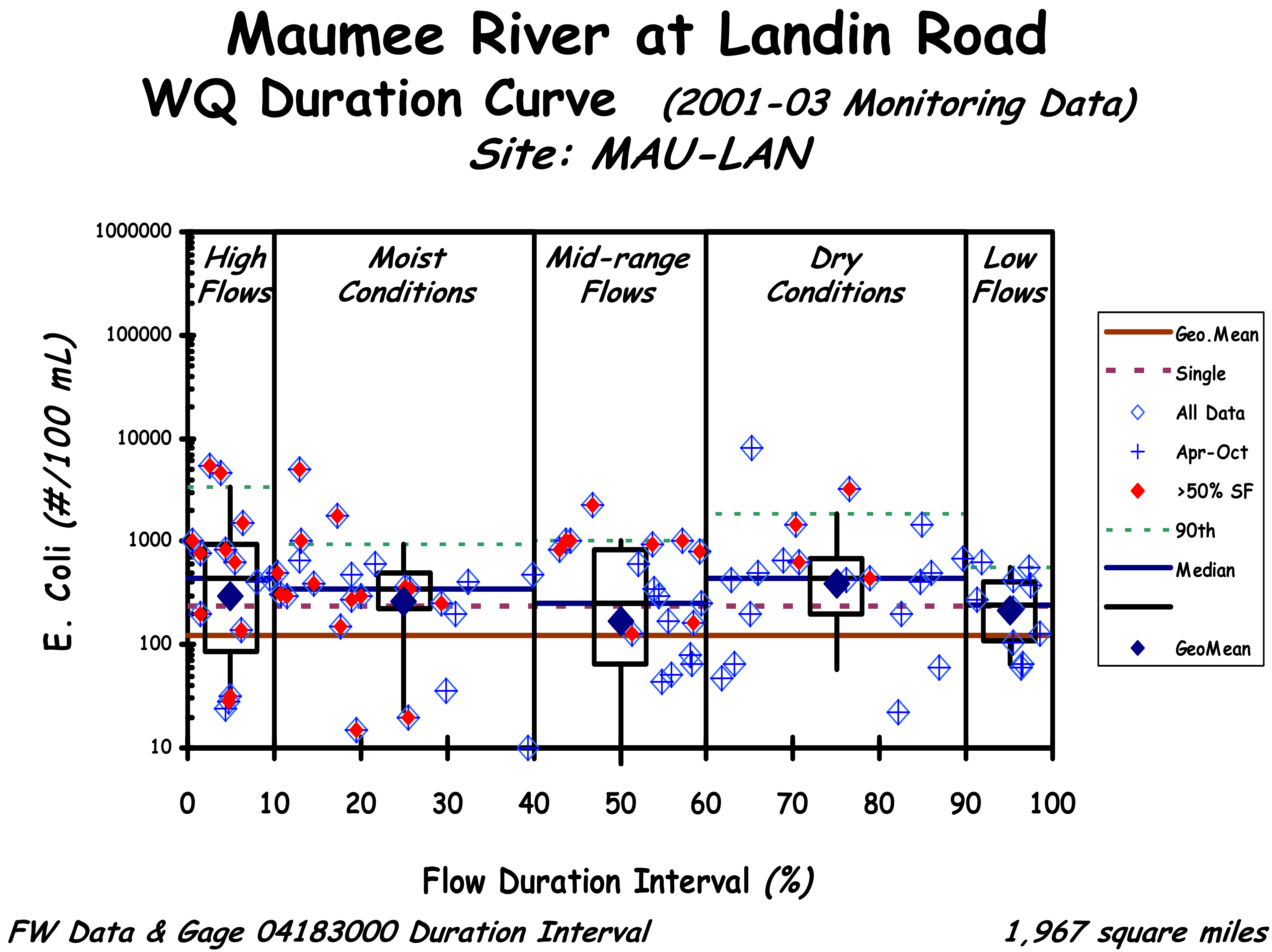
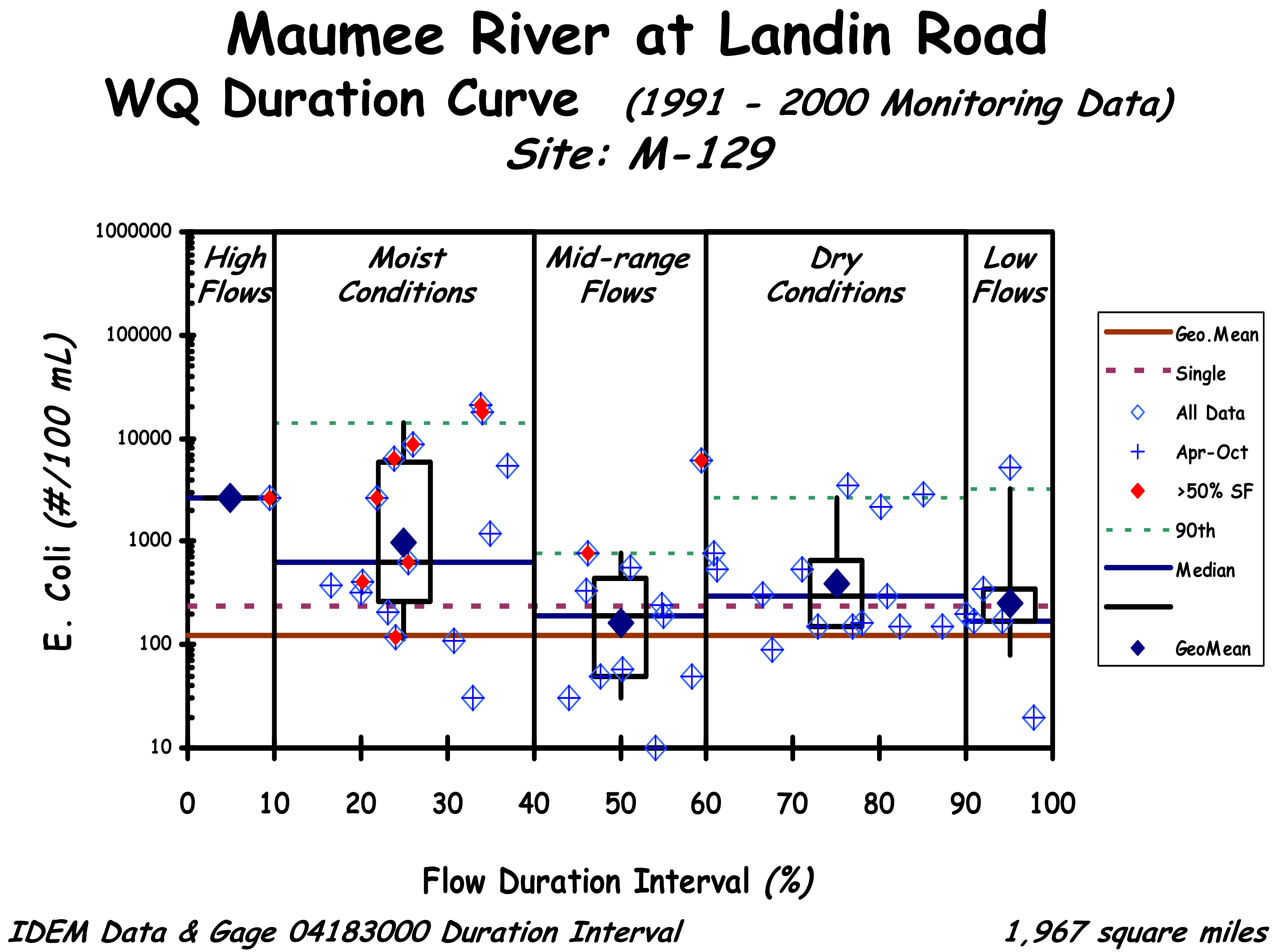
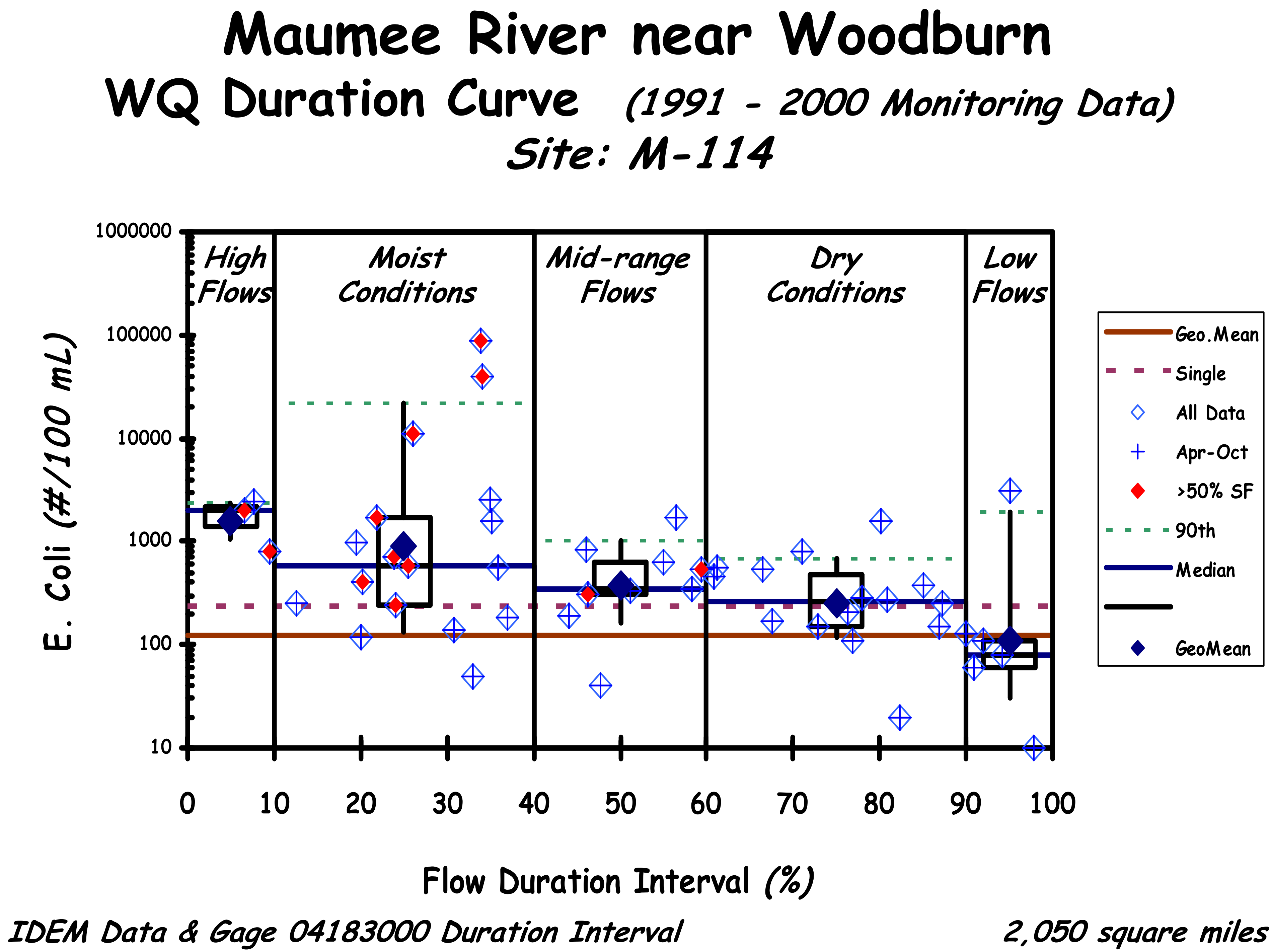


Maumee River at Anthony Boulevard
WQ Duration Curve (2001-03 Monitoring Data)
Site: MAU-ANT
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
FW Data & Gage 04183000 Duration Interval
1,900 square miles



Maumee River at Landin Road
WQ Duration Curve (2001-03 Monitoring Data)
Site: MAU-LAN
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
FW Data & Gage 04183000 Duration Interval
1,967 square miles


Maumee River at Landin Road
WQ Duration Curve (1991 - 2000 Monitoring Data)
Site: M-129
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM Data & Gage 04183000 Duration Interval
1,967 square miles



Maumee River near Woodburn
WQ Duration Curve (1991 - 2000 Monitoring Data)
Site: M-114
E. Coli (#/100 mL)
1000000
100000
10000
1000
100
10
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Geo.Mean
Single
All Data
Apr-Oct
>50% SF
90th
Median
GeoMean
IDEM Data & Gage 04183000 Duration Interval
2,050 square miles

Attachment F

Load Duration Curves for Maumee River TMDL

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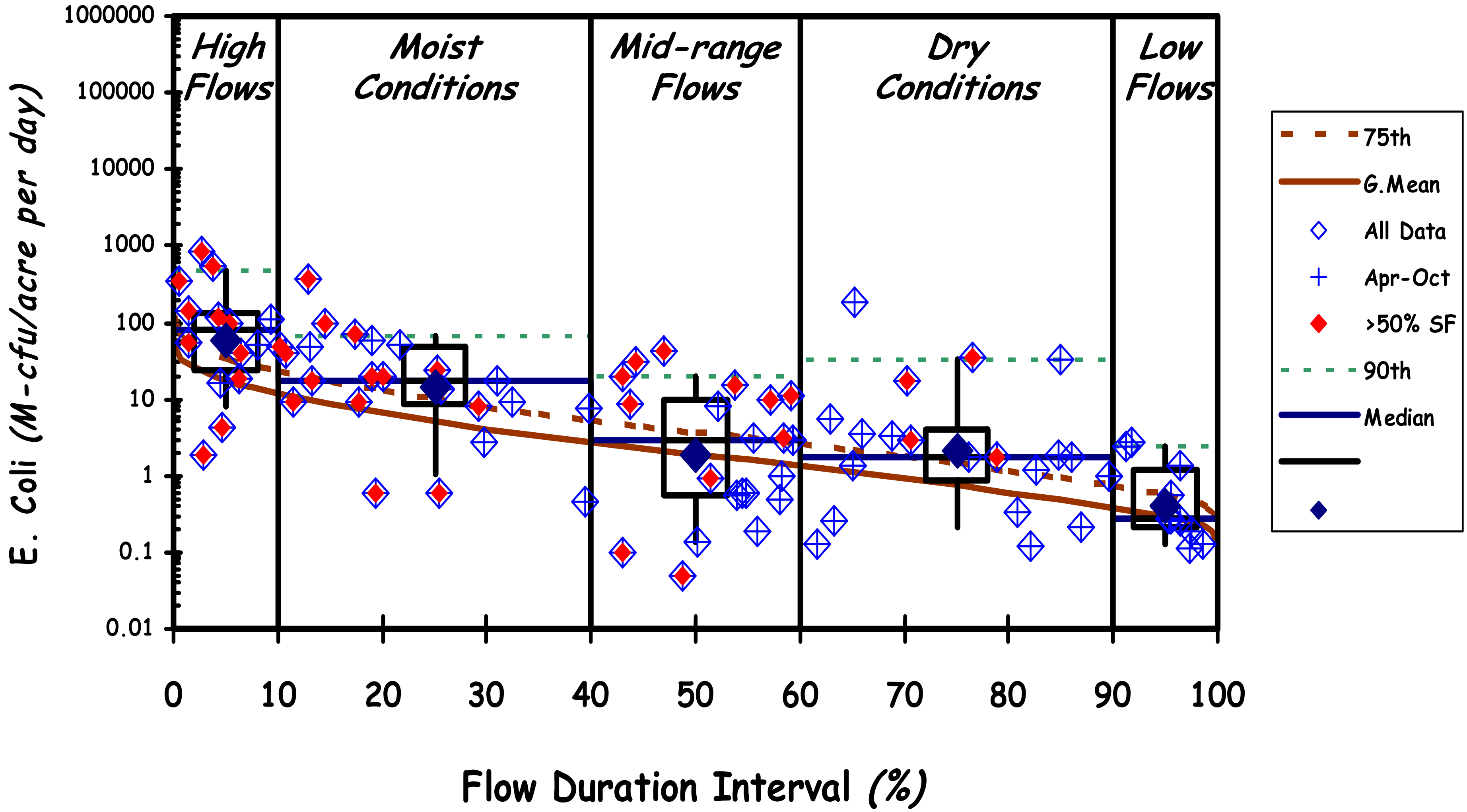
Maumee River at Anthony Boulevard
Load Duration Curve *(2001-03 Monitoring Data)*
Site: MAU-ANT

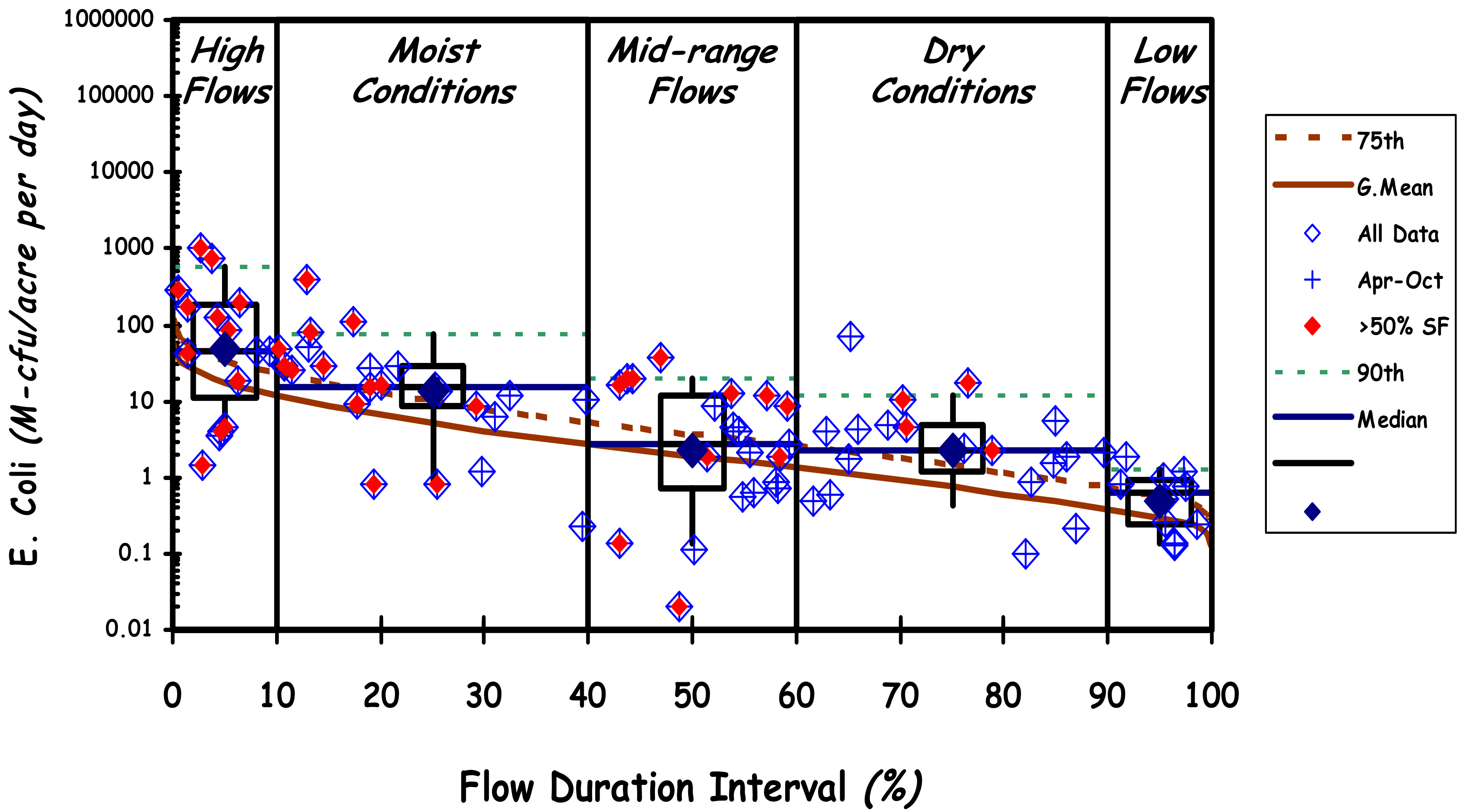


FW Data & Gage 04183000 Duration Interval *1,900 square miles*

Maumee River at Landin Road

Load Duration Curve *(2001-03 Monitoring Data)*

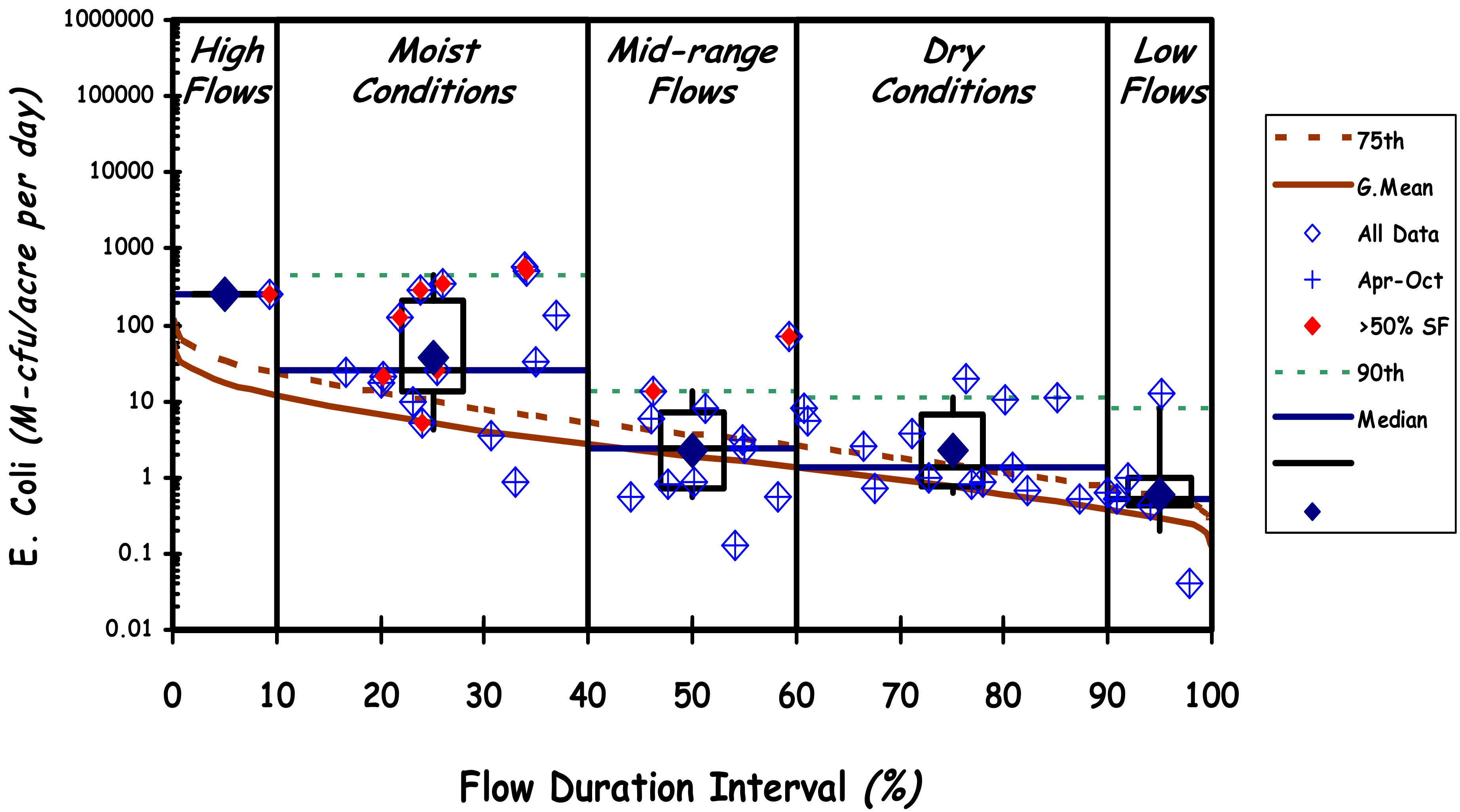
Site: MAU-LAN



FW Data & Gage 04183000 Duration Interval

1,967 square miles

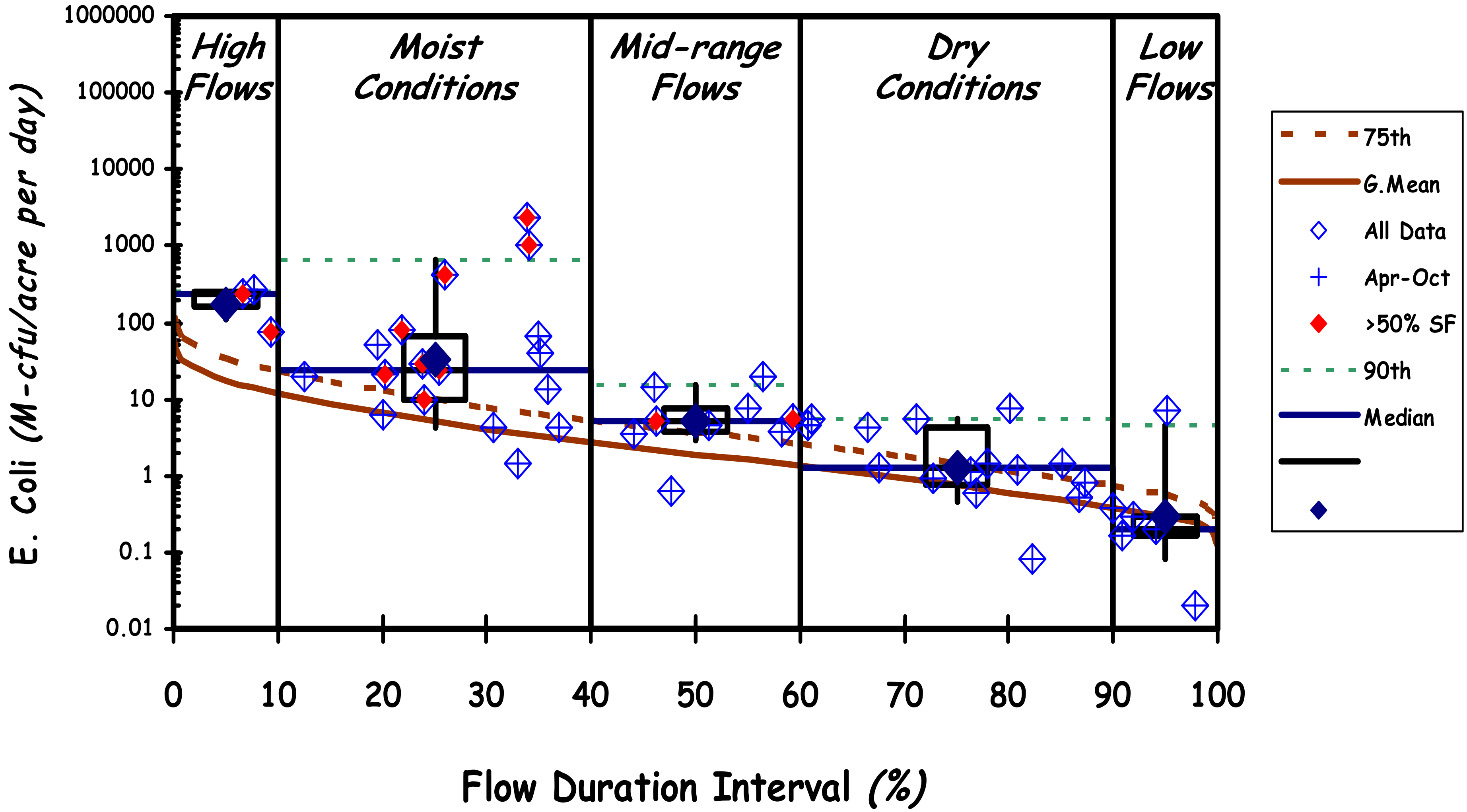
Maumee River at Landin Road
Load Duration Curve *(1991 - 2000 Monitoring Data)*
Site: M-129



IDEM Data & Gage 04183000 Duration Interval

1,967 square miles

Maumee River near Woodburn
Load Duration Curve *(1991 - 2000 Monitoring Data)*
Site: M-114



IDEM Data & Gage 04183000 Duration Interval

2,050 square miles

Attachment G

Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watershed TMDL

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Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21366	04/06/04	MS/MSD	Nitrogen, Nitrate plus	3.96	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21385	04/20/04		Nitrogen, Nitrate plus	0.522	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21401	05/06/04		Nitrogen, Nitrate plus	6.99	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21418	05/19/04		Nitrogen, Nitrate plus	17.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21434	06/02/04		Nitrogen, Nitrate plus	13.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21452	06/16/04		Nitrogen, Nitrate plus	9.01	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21468	06/29/04	MS/MSD	Nitrogen, Nitrate plus	2.69	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21486	07/13/04		Nitrogen, Nitrate plus	2.13	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21502	07/27/04		Nitrogen, Nitrate plus	1.15	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21519	08/10/04		Nitrogen, Nitrate plus	1.56	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21537	08/25/04		Nitrogen, Nitrate plus	1.78	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21570	09/21/04		Nitrogen, Nitrate plus	1.05	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	ST 124, East of SR 101	AA20879	03/09/04		Nitrogen-Nitrate plus Nitrite	6.38	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21349	03/23/04		Nitrogen-Nitrate plus Nitrite	5.9	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	Salem Rd, South of CR	AA21554	9/8/2004		Nitrogen-Nitrate plus Nitrite	1.97	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21587	10/05/04		Nitrogen-Nitrate plus Nitrite	0.494	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	ST 124, East of SR 101	AA20879	03/09/04		Phosphorus	0.203	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21349	03/23/04		Phosphorus	0.15	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21366	04/06/04	MS/MSD	Phosphorus	0.058	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21385	04/20/04		Phosphorus	0.051	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21401	05/06/04		Phosphorus	0.182	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21418	05/19/04		Phosphorus	0.72	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21434	06/02/04		Phosphorus	0.215 (DJ)	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21452	06/16/04		Phosphorus	0.386	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21468	06/29/04	MS/MSD	Phosphorus	0.135	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21486	07/13/04		Phosphorus	0.404	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21502	07/27/04		Phosphorus	0.185	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21519	08/10/04		Phosphorus	0.11	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21537	08/25/04		Phosphorus	0.209	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	Salem Rd, South of CR	AA21554	9/8/2004		Phosphorus	0.282	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21570	09/21/04		Phosphorus	0.245	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21587	10/05/04		Phosphorus	0.51	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21349	03/23/04		Total Suspended	18.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21366	04/06/04	MS/MSD	Total Suspended	7.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21385	04/20/04		Total Suspended	7.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21401	05/06/04		Total Suspended	27.9	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21418	05/19/04		Total Suspended	692	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21434	06/02/04		Total Suspended	77.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21452	06/16/04		Total Suspended	69.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21468	06/29/04	MS/MSD	Total Suspended	12.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21486	07/13/04		Total Suspended	18.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21502	07/27/04		Total Suspended	45.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21519	08/10/04		Total Suspended	15.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21537	08/25/04		Total Suspended	11.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	Salem Rd, South of CR	AA21554	9/8/2004		Total Suspended	51.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21570	09/21/04		Total Suspended	12.7	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0009	SR 124, East of SR 101	AA21587	10/05/04		Total Suspended	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21367	04/06/04		Nitrogen, Nitrate plus	3.54	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21386	04/20/04	MS/MSD	Nitrogen, Nitrate plus	0.534	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21402	05/06/04	MS/MSD	Nitrogen, Nitrate plus	5.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21419	05/19/04		Nitrogen, Nitrate plus	28.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21435	06/02/04		Nitrogen, Nitrate plus	14.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21453	06/16/04		Nitrogen, Nitrate plus	10.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21469	06/29/04		Nitrogen, Nitrate plus	1.98	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21487	07/13/04		Nitrogen, Nitrate plus	0.801	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd, South of CR	AA21503	07/27/04		Nitrogen, Nitrate plus	0.885	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21520	08/10/04		Nitrogen, Nitrate plus	0.652	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21538	08/25/04		Nitrogen, Nitrate plus	1.44	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd, South of CR	AA21571	09/21/04		Nitrogen, Nitrate plus	0.917	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21336	03/09/04		Nitrogen-Nitrate plus Nitrite	6.64	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21337	03/09/04		Nitrogen-Nitrate plus Nitrite	6.65	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21350	03/23/04		Nitrogen-Nitrate plus Nitrite	6.11	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21553	9/8/2004		Nitrogen-Nitrate plus Nitrite	2.31	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	SR 124, East of SR 101	AA21553	9/8/2004		Nitrogen-Nitrate plus Nitrite	2.31	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21588	10/05/04		Nitrogen-Nitrate plus Nitrite	0.531	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21336	03/09/04		Phosphorus	0.201	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21337	03/09/04		Phosphorus	0.196	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21350	03/23/04		Phosphorus	0.055	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21367	04/06/04		Phosphorus	0.11	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21386	04/20/04	MS/MSD	Phosphorus	0.083	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21402	05/06/04	MS/MSD	Phosphorus	0.221	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21419	05/19/04		Phosphorus	1.03	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21435	06/02/04		Phosphorus	0.227 (DJ)	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21453	06/16/04		Phosphorus	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21469	06/29/04		Phosphorus	0.204	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21487	07/13/04		Phosphorus	0.518	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd, South of CR	AA21503	07/27/04		Phosphorus	0.474	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21520	08/10/04		Phosphorus	0.114	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21538	08/25/04		Phosphorus	0.506	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21553	9/8/2004		Phosphorus	0.54	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	SR 124, East of SR 101	AA21553	9/8/2004		Phosphorus	0.54	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd, South of CR	AA21571	09/21/04		Phosphorus	0.335	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21588	10/05/04		Phosphorus	0.27	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21336	03/09/04		Total Suspended	17.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21337	03/09/04		Total Suspended	18.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21350	03/23/04		Total Suspended	26	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21367	04/06/04		Total Suspended	12.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21386	04/20/04	MS/MSD	Total Suspended	10.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21402	05/06/04	MS/MSD	Total Suspended	26.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21419	05/19/04		Total Suspended	460	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21435	06/02/04		Total Suspended	55.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21453	06/16/04		Total Suspended	75.7	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21469	06/29/04		Total Suspended	22.7	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21487	07/13/04		Total Suspended	21.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd, South of CR	AA21503	07/27/04		Total Suspended	21.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21520	08/10/04		Total Suspended	17.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21538	08/25/04		Total Suspended	10.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21553	9/8/2004		Total Suspended	63.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	SR 124, East of SR 101	AA21553	9/8/2004		Total Suspended	63.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd, South of CR	AA21571	09/21/04		Total Suspended	14.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0011	Salem Rd., South of CR	AA21588	10/05/04		Total Suspended	11	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21370	04/06/04		Nitrogen, Nitrate plus	3.95	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21371	04/06/04	Duplicate	Nitrogen, Nitrate plus	3.98	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21389	04/20/04		Nitrogen, Nitrate plus	0.666	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21405	05/06/04		Nitrogen, Nitrate plus	5.14	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21422	05/19/04		Nitrogen, Nitrate plus	36.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21438	06/02/04		Nitrogen, Nitrate plus	12.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21456	06/16/04		Nitrogen, Nitrate plus	8.25	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21472	06/29/04		Nitrogen, Nitrate plus	2.63	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21490	07/13/04		Nitrogen, Nitrate plus	0.0582	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21506	07/27/04	MS/MSD	Nitrogen, Nitrate plus	0.522	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21523	08/10/04		Nitrogen, Nitrate plus	0.387	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21541	08/25/04		Nitrogen, Nitrate plus	0.766	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21575	09/21/04		Nitrogen, Nitrate plus	0.611	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA20867	03/09/04		Nitrogen-Nitrate plus Nitrite	6.52	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21353	03/23/04		Nitrogen-Nitrate plus Nitrite	6.23	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21558	9/8/2004		Nitrogen-Nitrate plus Nitrite	2.81	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21592	10/05/04		Nitrogen-Nitrate plus Nitrite	0.593	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA20867	03/09/04		Phosphorus	0.186	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21353	03/23/04		Phosphorus	0.097	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21370	04/06/04		Phosphorus	0.085	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21371	04/06/04	Duplicate	Phosphorus	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21389	04/20/04		Phosphorus	0.116	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21405	05/06/04		Phosphorus	0.143	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21422	05/19/04		Phosphorus	0.373	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21438	06/02/04		Phosphorus	0.194 (DJ)	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21456	06/16/04		Phosphorus	0.437	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21472	06/29/04		Phosphorus	0.229	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21490	07/13/04		Phosphorus	0.534	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21506	07/27/04	MS/MSD	Phosphorus	0.662	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21523	08/10/04		Phosphorus	0.534	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21541	08/25/04		Phosphorus	0.571	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21558	9/8/2004		Phosphorus	0.409	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21575	09/21/04		Phosphorus	0.396	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21592	10/05/04		Phosphorus	0.512	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA20867	03/09/04		Total Suspended	10	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21353	03/23/04		Total Suspended	19.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21370	04/06/04		Total Suspended	6.9	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21371	04/06/04	Duplicate	Total Suspended	6.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21389	04/20/04		Total Suspended	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21405	05/06/04		Total Suspended	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21422	05/19/04		Total Suspended	139	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21438	06/02/04		Total Suspended	6.9	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21456	06/16/04		Total Suspended	43.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21472	06/29/04		Total Suspended	27.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21490	07/13/04		Total Suspended	62.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21506	07/27/04	MS/MSD	Total Suspended	8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21523	08/10/04		Total Suspended	14.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21541	08/25/04		Total Suspended	13.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21558	9/8/2004		Total Suspended	41.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21575	09/21/04		Total Suspended	14	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Blue Creek	LES040-0066	CR 300 S, E of CR 000	AA21592	10/05/04		Total Suspended	8.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 300 S, East of CR 200 E	AA21369	04/06/04		Nitrogen, Nitrate plus	3.37	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21388	04/20/04		Nitrogen, Nitrate plus	1.19	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21404	05/06/04		Nitrogen, Nitrate plus	4.61	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21421	05/19/04		Nitrogen, Nitrate plus	22.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21437	06/02/04		Nitrogen, Nitrate plus	9.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21455	06/16/04		Nitrogen, Nitrate plus	12.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21471	06/29/04		Nitrogen, Nitrate plus	1.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21489	07/13/04		Nitrogen, Nitrate plus	0.462	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21505	07/27/04		Nitrogen, Nitrate plus	1.32	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21522	08/10/04		Nitrogen, Nitrate plus	0.276	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21540	08/25/04		Nitrogen, Nitrate plus	0.787	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21574	09/21/04		Nitrogen, Nitrate plus	0.526	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR400 S, East of CR 200 E	AA20868	03/09/04		Nitrogen-Nitrate plus Nitrite	6.71	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21352	03/23/04		Nitrogen-Nitrate plus Nitrite	5.47	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21556	9/8/2004		Nitrogen-Nitrate plus Nitrite	1.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21557	9/8/2004	Duplicate	Nitrogen-Nitrate plus Nitrite	1.29	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21591	10/05/04		Nitrogen-Nitrate plus Nitrite	0.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR400 S, East of CR 200 E	AA20868	03/09/04		Phosphorus	0.224	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21352	03/23/04		Phosphorus	0.129	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 300 S, East of CR 200 E	AA21369	04/06/04		Phosphorus	0.133	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21388	04/20/04		Phosphorus	0.068	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21404	05/06/04		Phosphorus	0.262	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21421	05/19/04		Phosphorus	1.08	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21437	06/02/04		Phosphorus	0.398 (DJ)	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21455	06/16/04		Phosphorus	0.384	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21471	06/29/04		Phosphorus	0.253	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21489	07/13/04		Phosphorus	0.564	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21505	07/27/04		Phosphorus	0.588	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21522	08/10/04		Phosphorus	0.43	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21540	08/25/04		Phosphorus	0.453	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21556	9/8/2004		Phosphorus	0.826	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21557	9/8/2004	Duplicate	Phosphorus	0.565	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21574	09/21/04		Phosphorus	0.42	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21591	10/05/04		Phosphorus	0.314	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR400 S, East of CR 200 E	AA20868	03/09/04		Total Suspended	24.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21352	03/23/04		Total Suspended	17.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 300 S, East of CR 200 E	AA21369	04/06/04		Total Suspended	17.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21388	04/20/04		Total Suspended	14.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21404	05/06/04		Total Suspended	52.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21421	05/19/04		Total Suspended	157	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21437	06/02/04		Total Suspended	32.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21455	06/16/04		Total Suspended	66.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21471	06/29/04		Total Suspended	18.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21489	07/13/04		Total Suspended	13.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21505	07/27/04		Total Suspended	12.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21522	08/10/04		Total Suspended	12.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21540	08/25/04		Total Suspended	6.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21556	9/8/2004		Total Suspended	41.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21557	9/8/2004	Duplicate	Total Suspended	33.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21574	09/21/04		Total Suspended	26.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Gates Ditch	LES040-0023	CR 400 S, East of CR 200 E	AA21591	10/05/04		Total Suspended	23.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21372	04/06/04		Nitrogen, Nitrate plus	3.48	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21390	04/20/04		Nitrogen, Nitrate plus	1.93	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21406	05/06/04		Nitrogen, Nitrate plus	3.83	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21423	05/19/04		Nitrogen, Nitrate plus	20.1	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21439	06/02/04		Nitrogen, Nitrate plus	9.56	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21457	06/16/04		Nitrogen, Nitrate plus	7.02	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21473	06/29/04		Nitrogen, Nitrate plus	1.14	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21491	07/13/04		Nitrogen, Nitrate plus	0.0624	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21507	07/27/04		Nitrogen, Nitrate plus	1.65	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21524	08/10/04		Nitrogen, Nitrate plus	0.695	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21542	08/25/04		Nitrogen, Nitrate plus	0.86	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21576	09/21/04		Nitrogen, Nitrate plus	0.969	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21338	03/09/04		Nitrogen-Nitrate plus Nitrite	4.92	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21354	03/23/04		Nitrogen-Nitrate plus Nitrite	5.37	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21356	03/23/04		Nitrogen-Nitrate plus Nitrite	5.69	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21559	9/8/2004		Nitrogen-Nitrate plus Nitrite	2.38	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21593	10/05/04		Nitrogen-Nitrate plus Nitrite	0.287	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21338	03/09/04		Phosphorus	0.19	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21354	03/23/04		Phosphorus	0.091	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21356	03/23/04		Phosphorus	0.121	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21372	04/06/04		Phosphorus	0.11	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21390	04/20/04		Phosphorus	0.072	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21406	05/06/04		Phosphorus	0.384	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21423	05/19/04		Phosphorus	0.706	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21439	06/02/04		Phosphorus	0.458 (DJ)	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21457	06/16/04		Phosphorus	0.178	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21473	06/29/04		Phosphorus	0.29	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21491	07/13/04		Phosphorus	1.17	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21507	07/27/04		Phosphorus	0.527	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21524	08/10/04		Phosphorus	0.754	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21542	08/25/04		Phosphorus	0.449	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21559	9/8/2004		Phosphorus	0.477	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21576	09/21/04		Phosphorus	0.264	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21593	10/05/04		Phosphorus	0.221	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21338	03/09/04		Total Suspended	17.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21354	03/23/04		Total Suspended	11.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21356	03/23/04		Total Suspended	10.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21372	04/06/04		Total Suspended	29.9	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21390	04/20/04		Total Suspended	6.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21406	05/06/04		Total Suspended	9.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21423	05/19/04		Total Suspended	94.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21439	06/02/04		Total Suspended	19.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21457	06/16/04		Total Suspended	48.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21473	06/29/04		Total Suspended	22.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21491	07/13/04		Total Suspended	26.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21507	07/27/04		Total Suspended	26.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21524	08/10/04		Total Suspended	26.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21542	08/25/04		Total Suspended	10.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21559	9/8/2004		Total Suspended	19.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21576	09/21/04		Total Suspended	13.4	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Habegger Ditch	LES040-0099	CR 150 E at CR 500 S	AA21593	10/05/04		Total Suspended	14.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21368	04/06/04		Nitrogen, Nitrate plus	4.33	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21387	04/20/04		Nitrogen, Nitrate plus	2.39	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21403	05/06/04		Nitrogen, Nitrate plus	7.45	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21420	05/19/04		Nitrogen, Nitrate plus	15.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21436	06/02/04		Nitrogen, Nitrate plus	11.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21441	06/02/04	Duplicate	Nitrogen, Nitrate plus	11.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21454	06/16/04		Nitrogen, Nitrate plus	5.75	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21470	06/29/04		Nitrogen, Nitrate plus	3.98	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21488	07/13/04		Nitrogen, Nitrate plus	3.05	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21504	07/27/04		Nitrogen, Nitrate plus	2.09	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21521	08/10/04		Nitrogen, Nitrate plus	1.05	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21539	08/25/04		Nitrogen, Nitrate plus	1.36	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21572	09/21/04		Nitrogen, Nitrate plus	0.767	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21573	09/21/04	Duplicate	Nitrogen, Nitrate plus	0.741	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA20870	03/09/04		Nitrogen-Nitrate plus Nitrite	6.31	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21351	03/23/04		Nitrogen-Nitrate plus Nitrite	5.68	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21555	9/8/2004		Nitrogen-Nitrate plus Nitrite	1.56	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21589	10/05/04		Nitrogen-Nitrate plus Nitrite	0.0807	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21590	10/05/04		Nitrogen-Nitrate plus Nitrite	0.0941	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA20870	03/09/04		Phosphorus	0.125	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21351	03/23/04		Phosphorus	0.097	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21368	04/06/04		Phosphorus	0.055	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21387	04/20/04		Phosphorus	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21403	05/06/04		Phosphorus	0.05	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21420	05/19/04		Phosphorus	1.05	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21436	06/02/04		Phosphorus	0.122 (DJ)	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21441	06/02/04	Duplicate	Phosphorus	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21454	06/16/04		Phosphorus	0.242	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21470	06/29/04		Phosphorus	0.088	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21488	07/13/04		Phosphorus	0.314	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21504	07/27/04		Phosphorus	0.207	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21521	08/10/04		Phosphorus	0.088	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21539	08/25/04		Phosphorus	0.171	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21555	9/8/2004		Phosphorus	0.302	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21572	09/21/04		Phosphorus	0.192	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21573	09/21/04	Duplicate	Phosphorus	0.16	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21589	10/05/04		Phosphorus	0.053	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21590	10/05/04		Phosphorus	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA20870	03/09/04		Total Suspended	18	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21351	03/23/04		Total Suspended	8.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21368	04/06/04		Total Suspended	12.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21387	04/20/04		Total Suspended	46.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21403	05/06/04		Total Suspended	17.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21420	05/19/04		Total Suspended	183	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21436	06/02/04		Total Suspended	95	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21441	06/02/04	Duplicate	Total Suspended	96.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21454	06/16/04		Total Suspended	49.9	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21470	06/29/04		Total Suspended	12.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21488	07/13/04		Total Suspended	17.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21504	07/27/04		Total Suspended	18.3	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21521	08/10/04		Total Suspended	18.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21539	08/25/04		Total Suspended	16	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21555	9/8/2004		Total Suspended	18.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21572	09/21/04		Total Suspended	24	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21573	09/21/04	Duplicate	Total Suspended	23.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21589	10/05/04		Total Suspended	15.9	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Little Blue Creek	LES040-0010	CR 400 S (17 S Rd), West of	AA21590	10/05/04		Total Suspended	12.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21363	04/05/04		Nitrogen, Nitrate plus	2.62	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21381	04/19/04		Nitrogen, Nitrate plus	0.653	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21398	05/05/04		Nitrogen, Nitrate plus	4.81	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21415	05/18/04	MS/MSD	Nitrogen, Nitrate plus	3.85	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21431	06/01/04		Nitrogen, Nitrate plus	14.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21448	06/15/04		Nitrogen, Nitrate plus	6.04	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21465	06/28/04		Nitrogen, Nitrate plus	2.15	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21482	07/12/04		Nitrogen, Nitrate plus	0.606	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21483	07/12/04		Nitrogen, Nitrate plus	0.615	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21499	07/26/04		Nitrogen, Nitrate plus	1.55	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21509	07/26/04	Duplicate	Nitrogen, Nitrate plus	1.58	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21516	08/09/04		Nitrogen, Nitrate plus	0.787	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21534	08/24/04		Nitrogen, Nitrate plus	1.13	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21567	09/20/04		Nitrogen, Nitrate plus	0.388	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Road	AA20871	03/09/04		Nitrogen-Nitrate plus Nitrite	4.34	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N East of Salem Rd	AA21346	03/22/04		Nitrogen-Nitrate plus Nitrite	4.11	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21550	9/7/2004		Nitrogen-Nitrate plus Nitrite	1.34	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N East of Salem Rd	AA21584	10/04/04		Nitrogen-Nitrate plus Nitrite	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Road	AA20871	03/09/04		Phosphorus	0.173	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N East of Salem Rd	AA21346	03/22/04		Phosphorus	0.085	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21363	04/05/04		Phosphorus	0.051	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21381	04/19/04		Phosphorus	0.074	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21398	05/05/04		Phosphorus	0.087	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21415	05/18/04	MS/MSD	Phosphorus	0.509	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21431	06/01/04		Phosphorus	0.112 (DJ)	mg/L	Adams	Estimated
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21448	06/15/04		Phosphorus	0.334	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21465	06/28/04		Phosphorus	0.212	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21482	07/12/04		Phosphorus	0.255	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21483	07/12/04		Phosphorus	0.244	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21499	07/26/04		Phosphorus	0.529	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21509	07/26/04	Duplicate	Phosphorus	0.561	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21516	08/09/04		Phosphorus	0.249	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21534	08/24/04		Phosphorus	0.28	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21550	9/7/2004		Phosphorus	0.474	mg/L	Adams	

Attachment G: Nutrient and TSS Data for Blue Creek/Habegger and Yellow Creek Watersheds

Agency Name	Project ID	Stream Name	Lsite	Description	Sample Number	Sample Date	Sample Type	Parameter	Lab Result	Units	County	Action
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21567	09/20/04		Phosphorus	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N East of Salem Rd	AA21584	10/04/04		Phosphorus	0.221	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Road	AA20871	03/09/04		Total Suspended	24.7	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N East of Salem Rd	AA21346	03/22/04		Total Suspended	11.5	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21363	04/05/04		Total Suspended	ND	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21381	04/19/04		Total Suspended	4.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21398	05/05/04		Total Suspended	4.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21415	05/18/04	MS/MSD	Total Suspended	476	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21431	06/01/04		Total Suspended	32.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21448	06/15/04		Total Suspended	79.4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21465	06/28/04		Total Suspended	10.2	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21482	07/12/04		Total Suspended	17	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21483	07/12/04		Total Suspended	15.6	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21499	07/26/04		Total Suspended	5.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21509	07/26/04	Duplicate	Total Suspended	20.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21516	08/09/04		Total Suspended	21.1	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21534	08/24/04		Total Suspended	7.8	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21550	9/7/2004		Total Suspended	206	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N, East of Salem Rd	AA21567	09/20/04		Total Suspended	4	mg/L	Adams	
IDEM	2004 St. Marys Watershed	Yellow Creek	LES040-0038	CR 250 N East of Salem Rd	AA21584	10/04/04		Total Suspended	4.2	mg/L	Adams	

Attachment H

Water Quality Duration Curves for Blue Creek/Habegger and Yellow Creek Watershed TMDL

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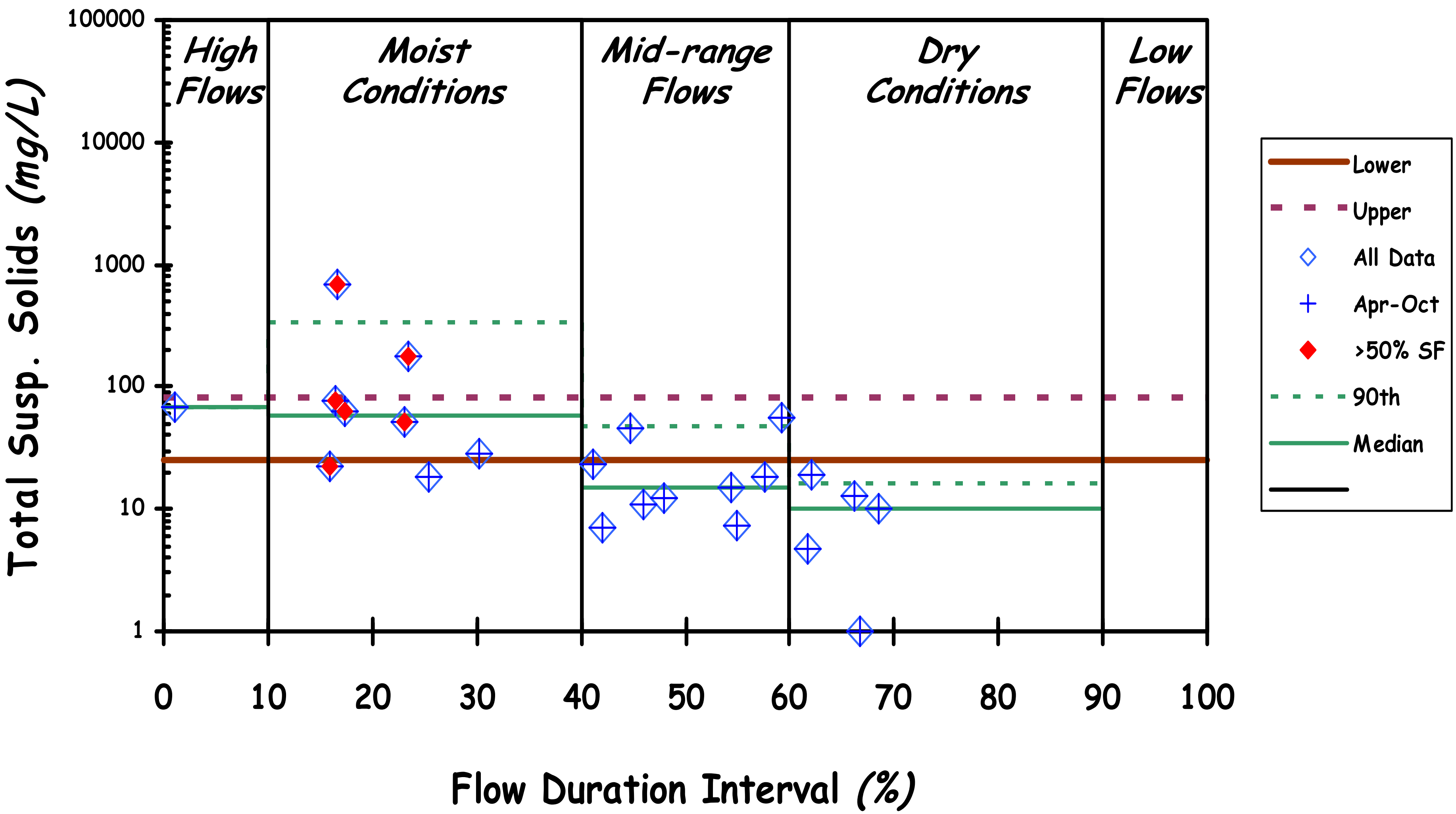
Blue Creek -- SR 124

WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0009



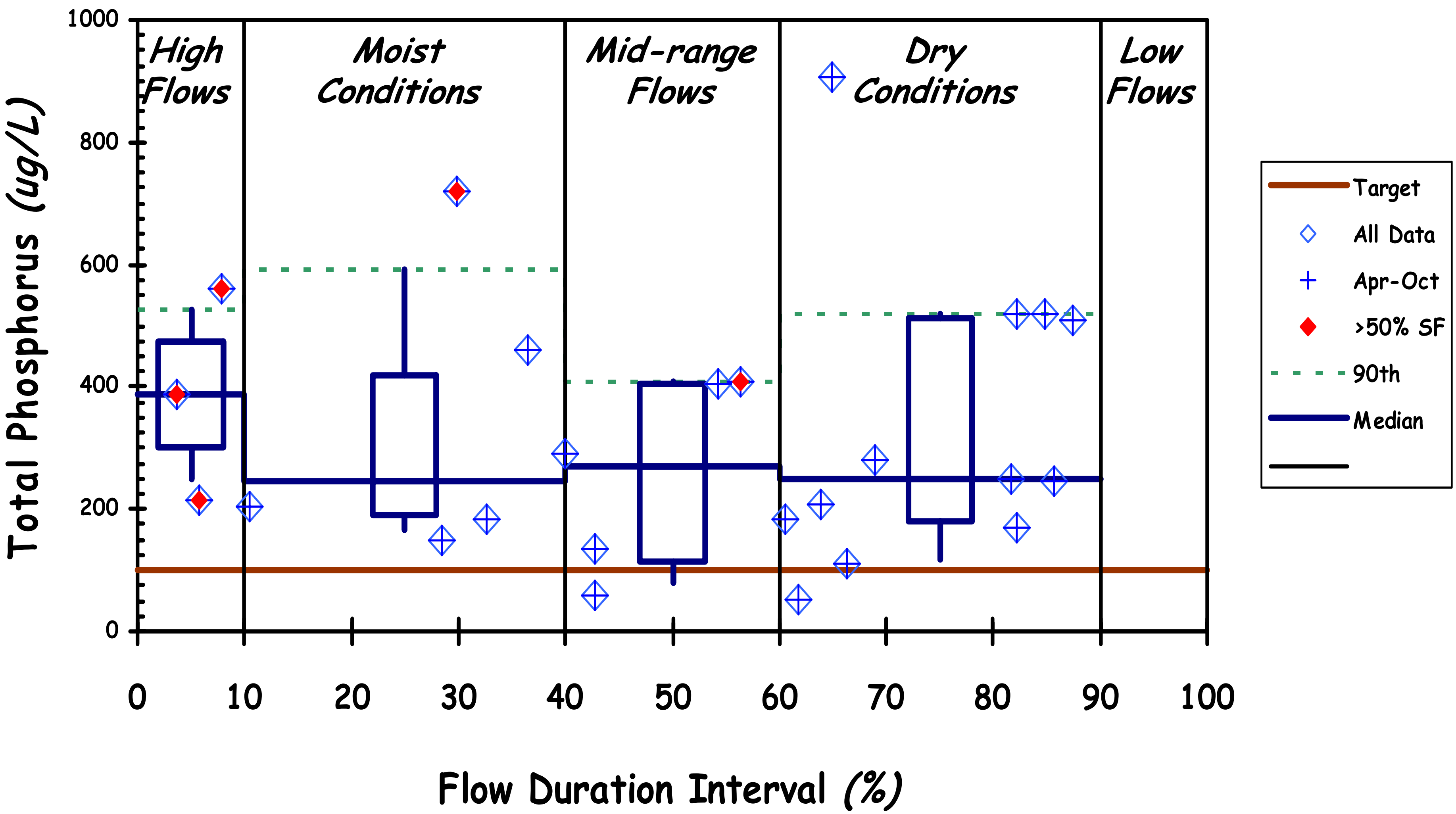
IDEM & FW WQ Data -- Decatur Gage Duration Interval

--- square miles

Blue Creek -- SR 124

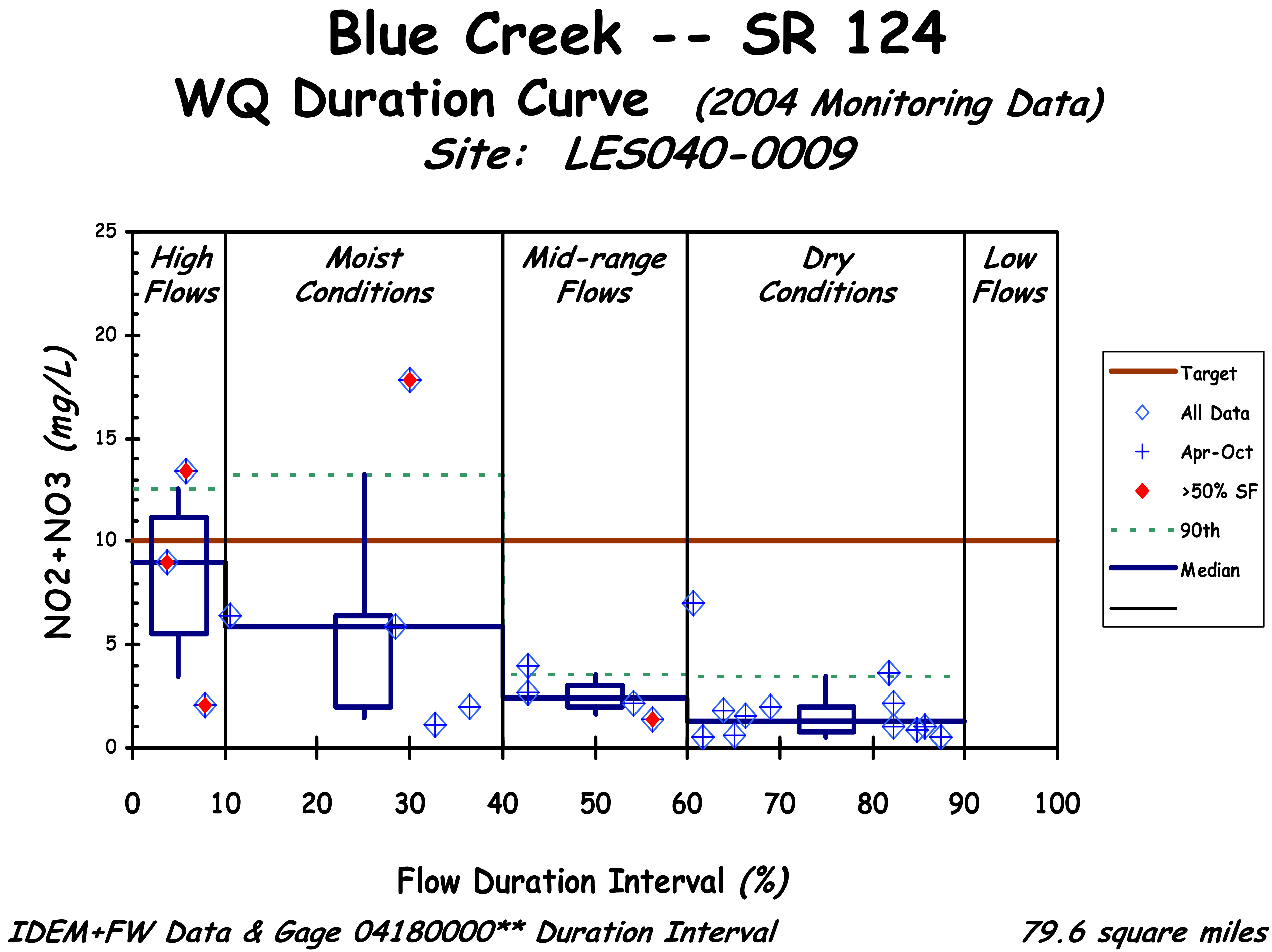
WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0009

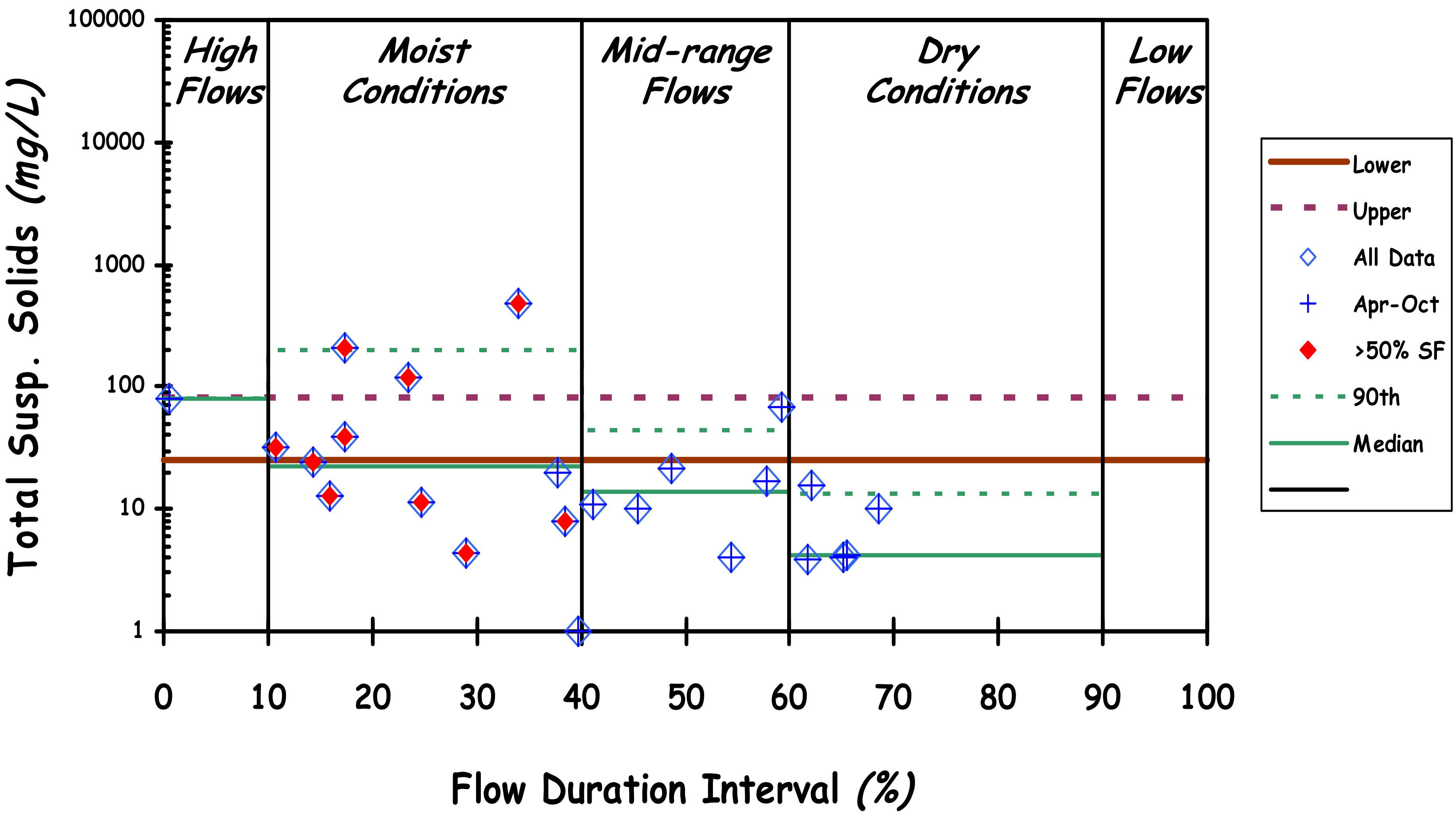


*IDEM+FW Data & Gage 04180000** Duration Interval*

79.6 square miles


Blue Creek -- SR 124
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (mg/L)
0
5
10
15
20
25
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04180000** Duration Interval
79.6 square miles

Yellow Creek -- CR 250 S
WQ Duration Curve *(2004 Monitoring Data)*
Site: LES040-0038



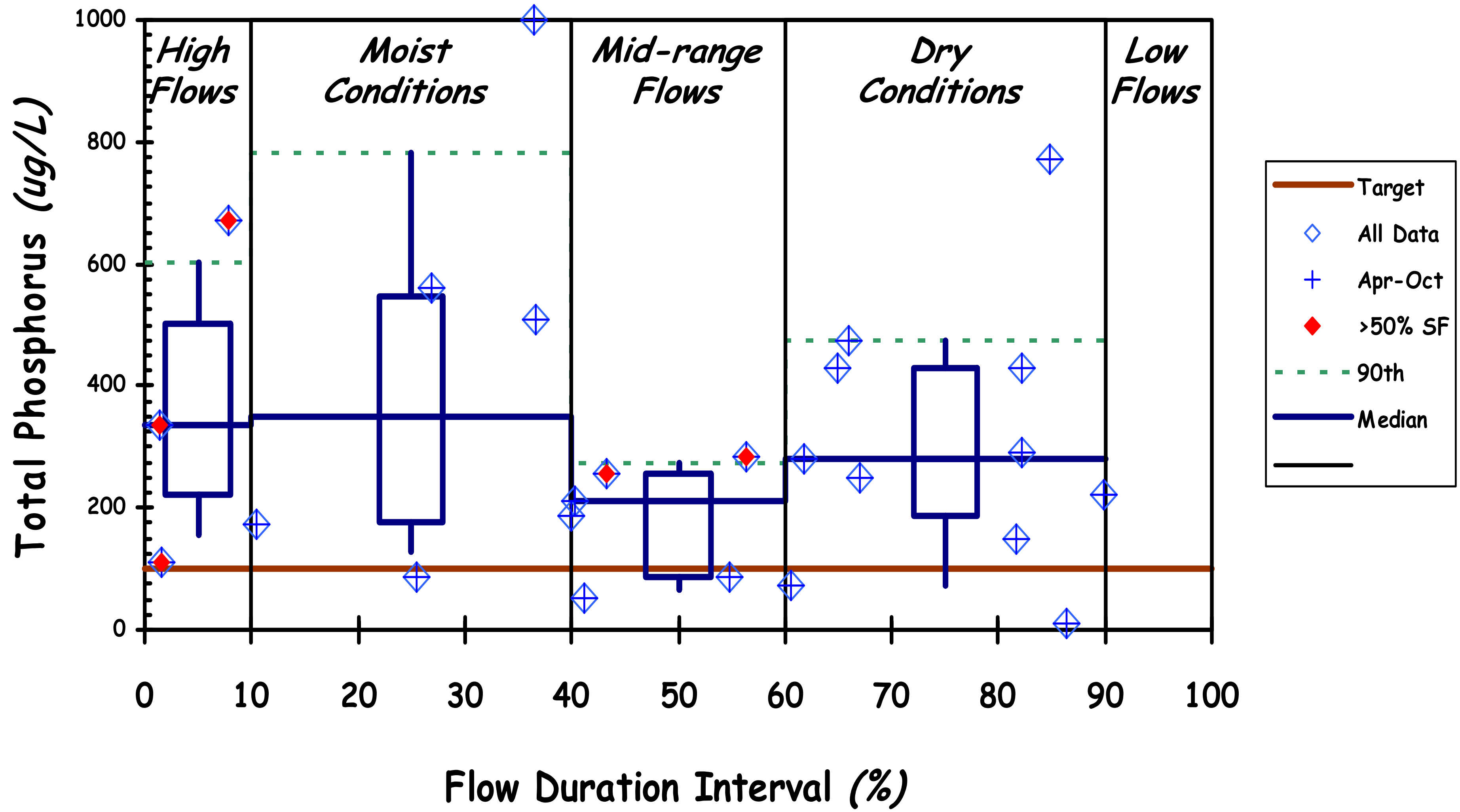
IDEM & FW WQ Data -- Decatur Gage Duration Interval

--- square miles

Yellow Creek -- CR 250 S

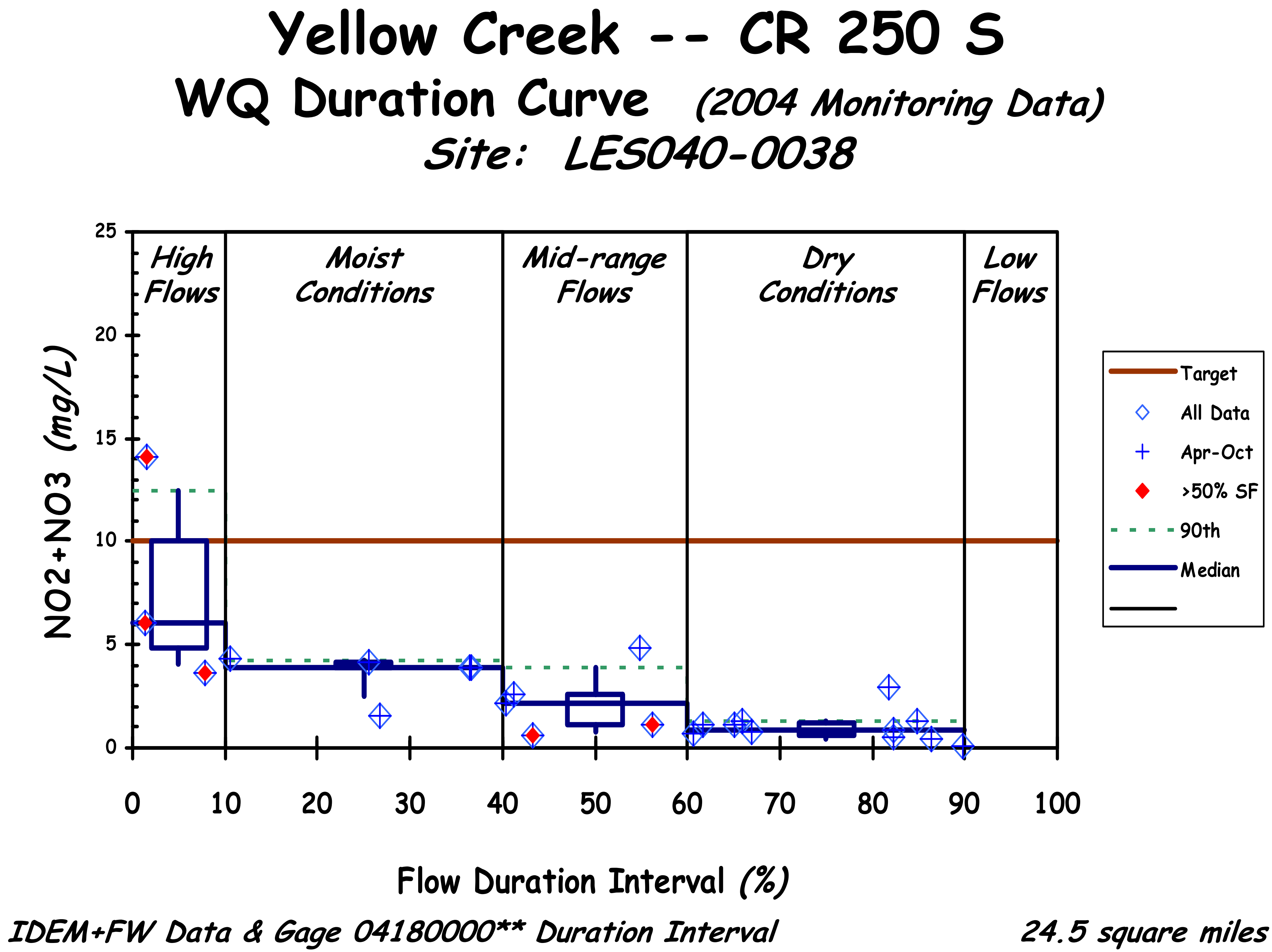
WQ Duration Curve *(2004 Monitoring Data)*

Site: LES040-0038



*IDEM+FW Data & Gage 04180000** Duration Interval*

24.5 square miles



Yellow Creek -- CR 250 S
WQ Duration Curve (2004 Monitoring Data)
Site: LES040-0038
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
NO2+NO3 (mg/L)
0
5
10
15
20
25
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
Target
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 04180000** Duration Interval
24.5 square miles

Attachment I

Load Duration Curves for Blue Creek/Habegger and Yellow Creek Watershed TMDL

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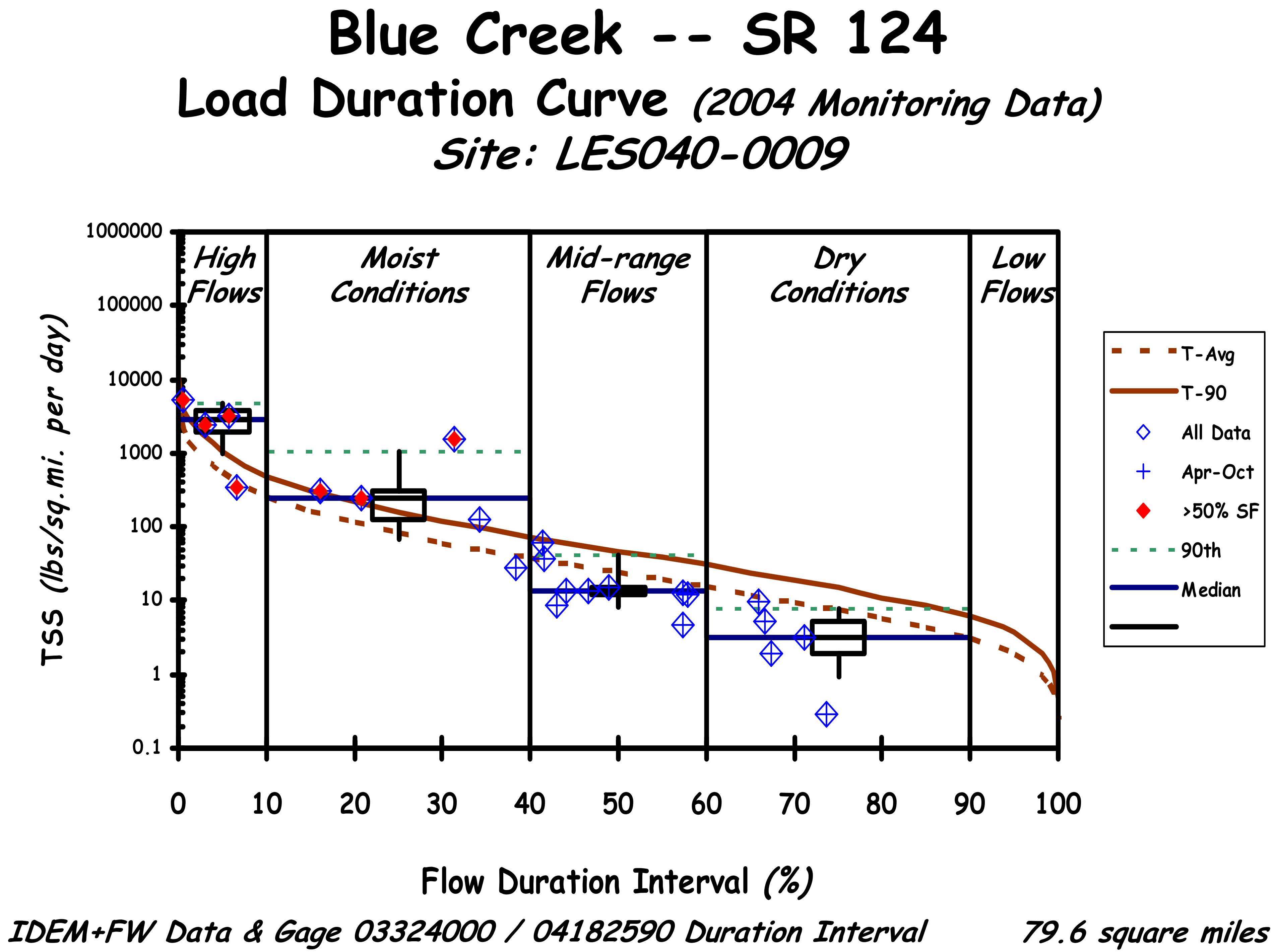
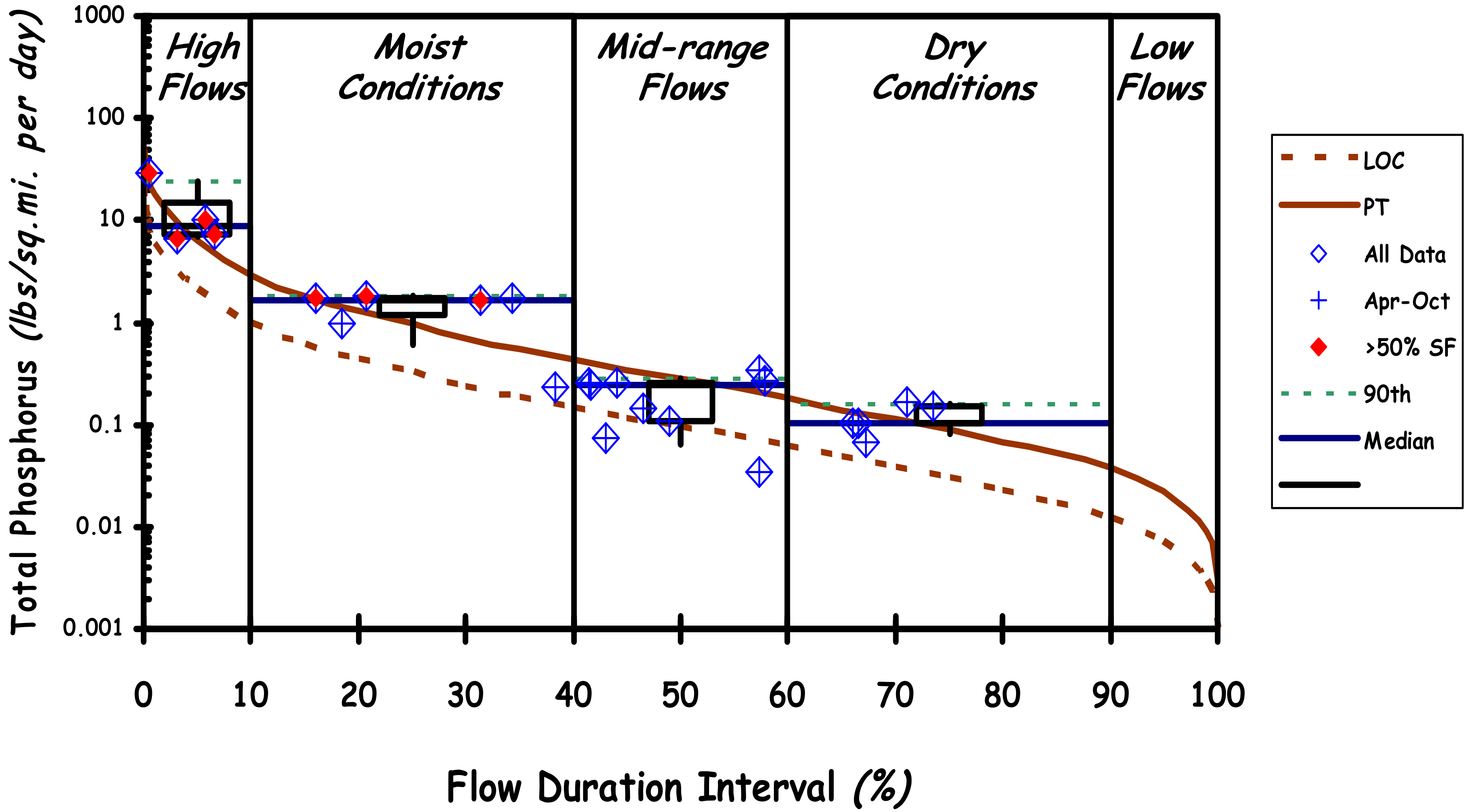


Blue Creek -- SR 124
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0009
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
TSS (lbs/sq.mi. per day)
1000000
100000
10000
1000
100
10
1
0.1
0
10
20
30
40
50
60
70
80
90
100
T-Avg
T-90
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
79.6 square miles

Blue Creek -- SR 124

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0009

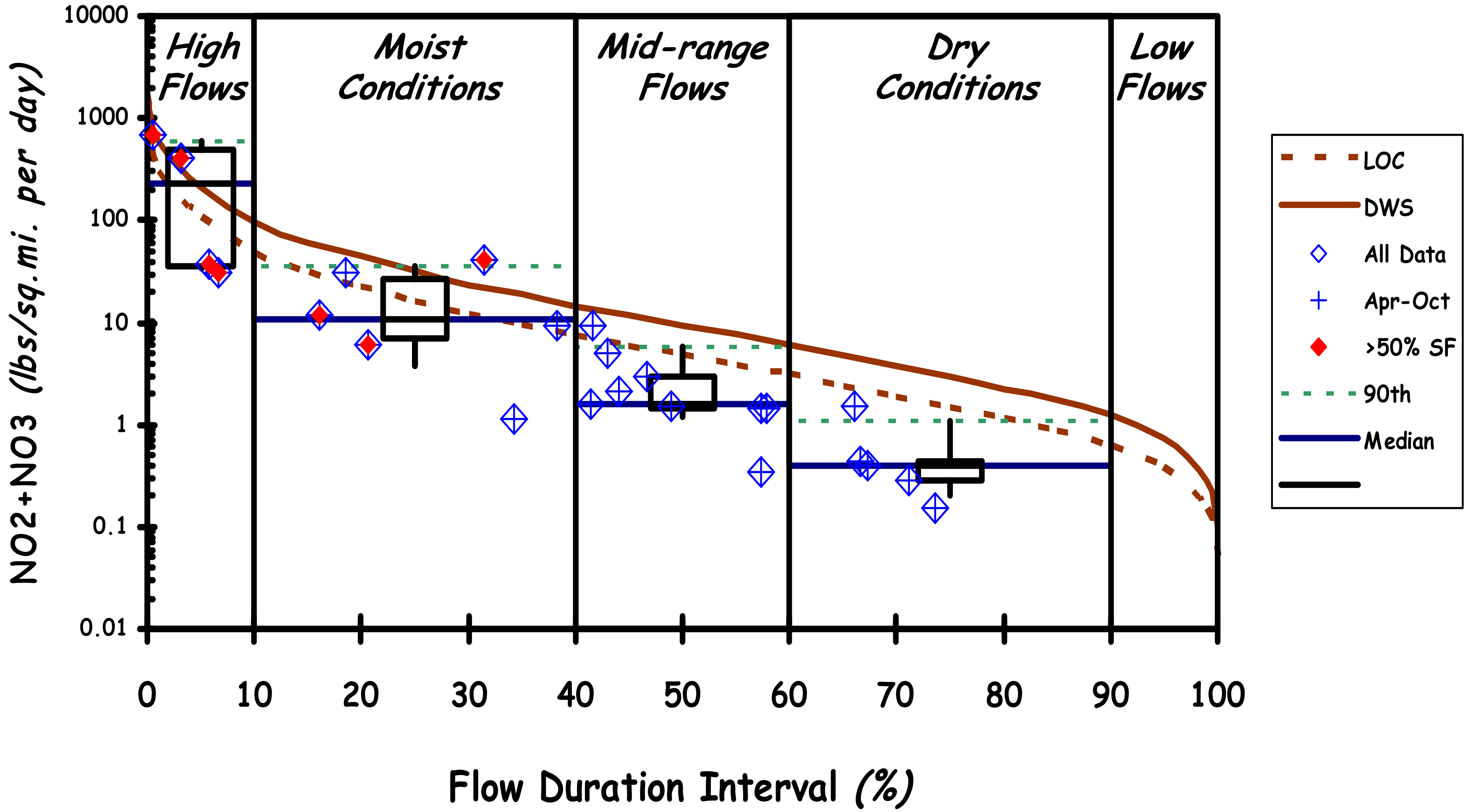


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *79.6 square miles*

Blue Creek -- SR 124

Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0009

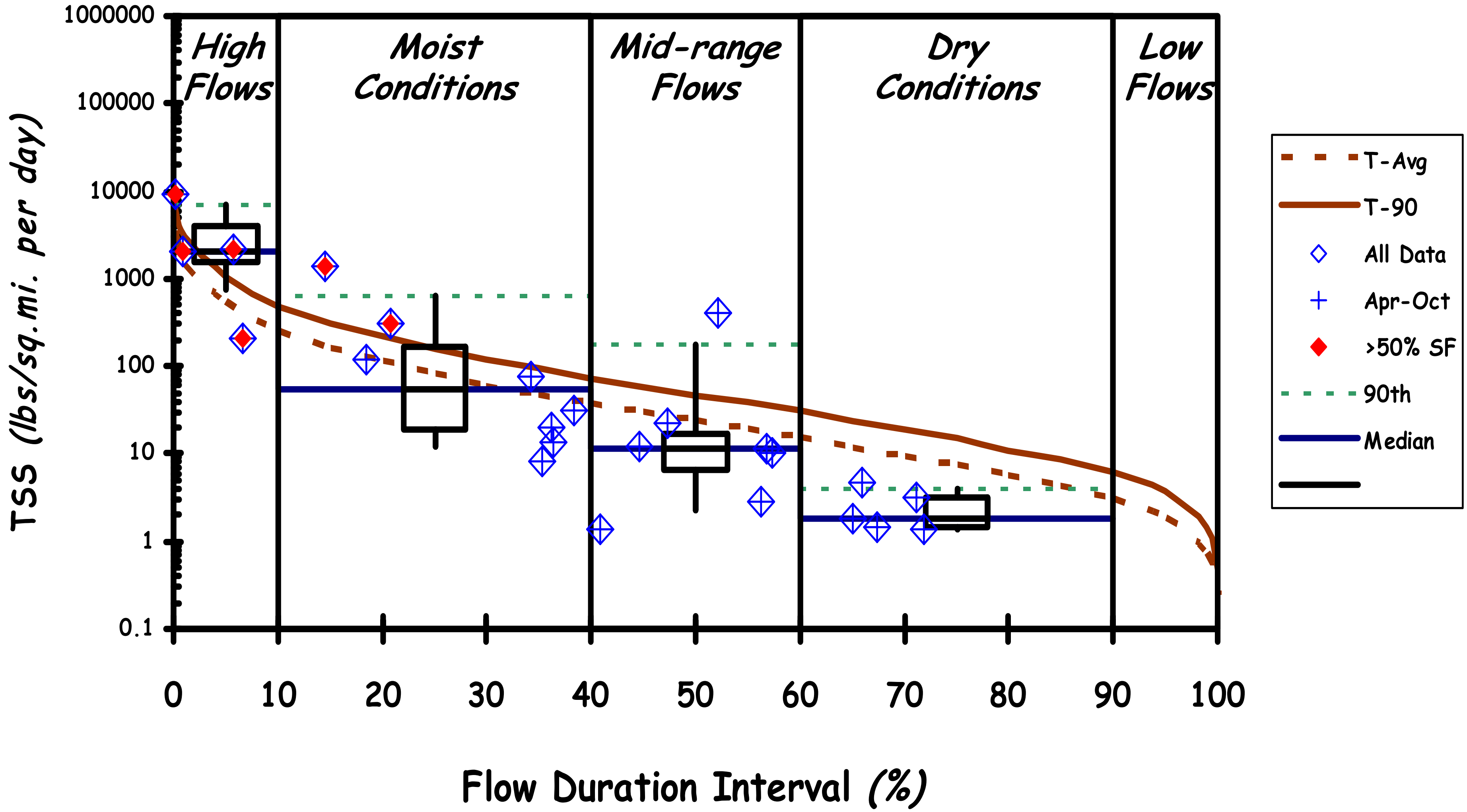


IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *79.6 square miles*

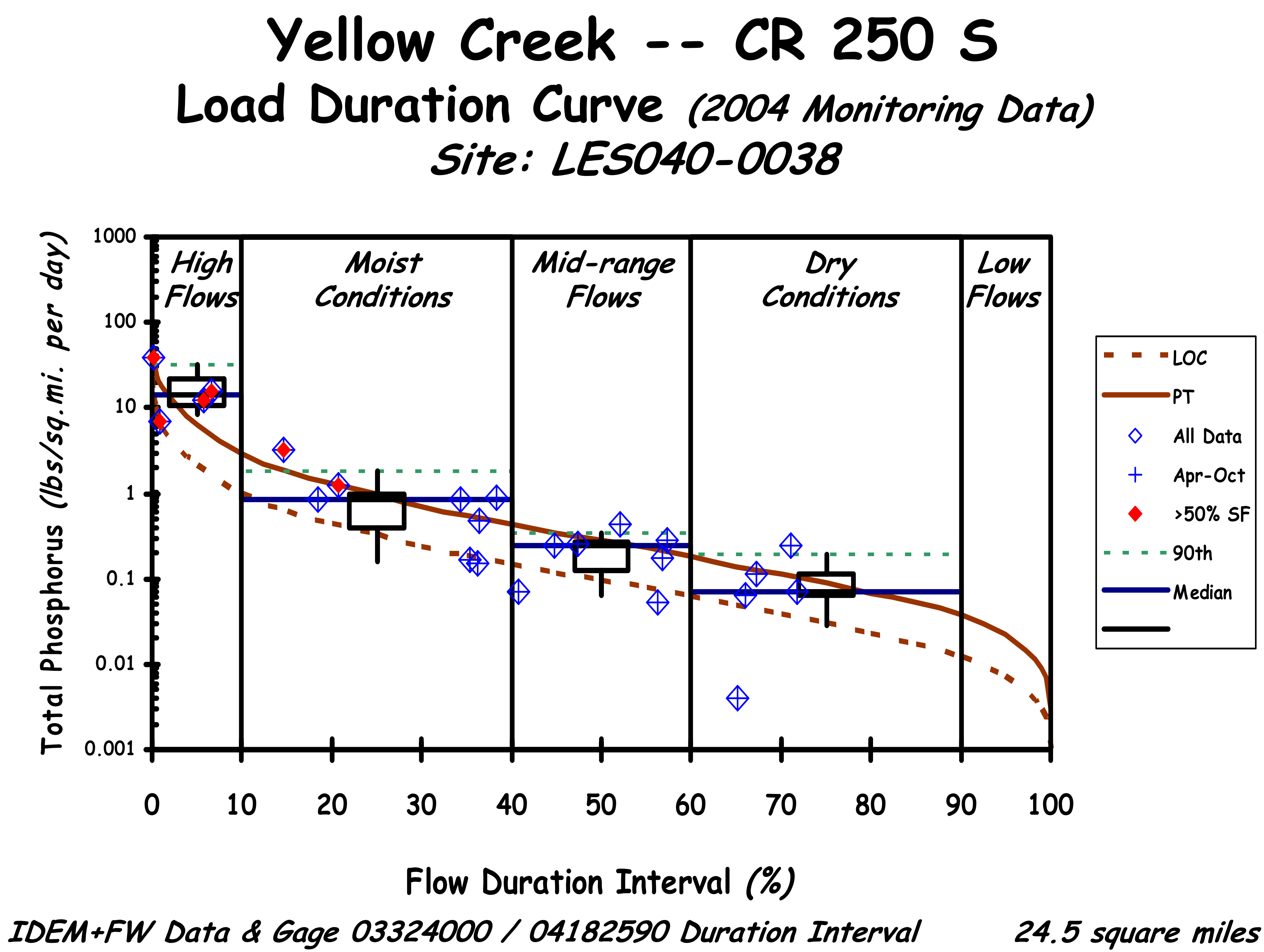
Yellow Creek -- CR 250 S

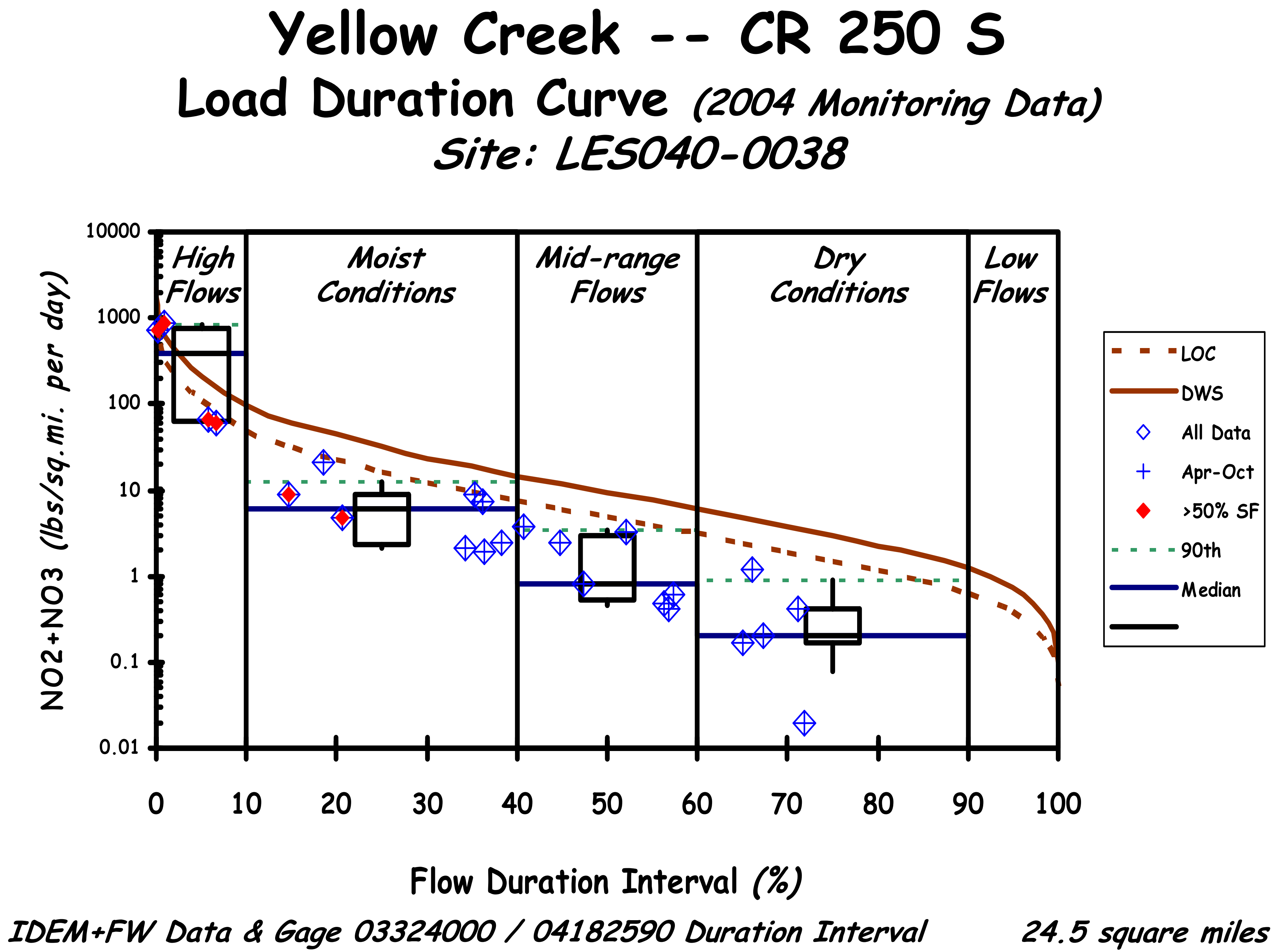
Load Duration Curve *(2004 Monitoring Data)*

Site: LES040-0038



IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval *24.5 square miles*


Yellow Creek -- CR 250 S
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0038
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
Total Phosphorus (lbs/sq.mi. per day)
1000
100
10
1
0.1
0.01
0.001
0
10
20
30
40
50
60
70
80
90
100
LOC
PT
All Data
Apr-Oct
>50% SF
90th
Median
Flow Duration Interval (%)
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
24.5 square miles



Yellow Creek -- CR 250 S
Load Duration Curve (2004 Monitoring Data)
Site: LES040-0038
High Flows
Moist Conditions
Mid-range Flows
Dry Conditions
Low Flows
10000
1000
100
10
1
0.1
0.01
NO2+NO3 (lbs/sq.mi. per day)
0
10
20
30
40
50
60
70
80
90
100
Flow Duration Interval (%)
LOC
DWS
All Data
Apr-Oct
>50% SF
90th
Median
IDEM+FW Data & Gage 03324000 / 04182590 Duration Interval
24.5 square miles