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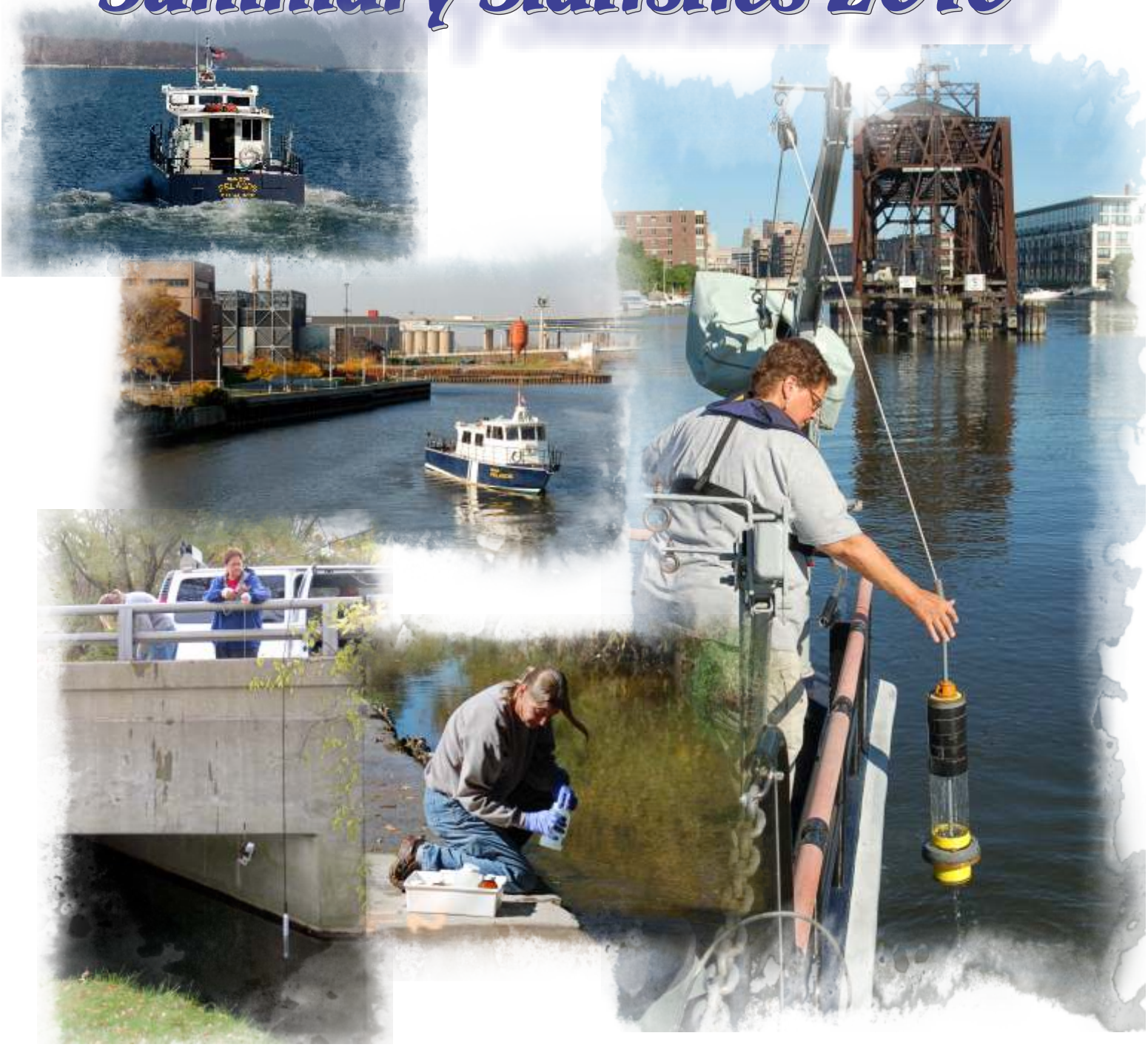
Water Quality Monitoring Data Summary Statistics 2010



Compiled by the Water Quality Research Department

Milwaukee Metropolitan Sewerage District

11/29/2011 11-209

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT (MMSD) SURFACE WATER QUALITY MONITORING PROGRAM DATA SUMMARY STATISTICS REPORT - SURVEY DESCRIPTIONS

Overview

The goal of the Milwaukee Metropolitan Sewerage District (MMSD) water quality monitoring program is to document long term beneficial water quality improvements as a direct result of the facilities and watercourse improvement projects, nonpoint pollution prevention programs, and stormwater management plans. The monitoring strategies developed by the District support and substantiate the District's goals and policies of improved water quality and environmental protection.

In 1979 the District began its surface water quality-monitoring program to comply with the spirit of the Federal Water Pollution Control Act objectives and State water quality standards. Since the completion of the Inline Storage System (ISS) in 1993, the District has substantially reduced overflows helping to significantly improve Milwaukee-area water quality. Another component to the District's mission is to protect and manage the area's water resources through flood management planning/implementation. Both the reductions of CSO's and improvements made in managing floods are further justification to document long term, surface water quality trends within the District's service area.

The Water Quality Monitoring program includes thirteen different surveys. Three surveys monitor Lake Michigan conditions near our wastewater treatment plants (Outer Harbor and South Shore surveys) and background Lake conditions (Nearshore survey). The District also conducts ten other surveys to monitor the effects of our operations and improvements made to our facilities and from our flood management efforts. These surveys include Rivers (Milwaukee, Menomonee, and Kinnickinnic), Little Menomonee River, Root River, Lincoln, Oak, Southbranch, Indian, Fish, Underwood, and Honey Creeks.

The information that follows lists additional details about this program, the rationale for monitoring area surface waters and the related laboratory variable names and detection limits used to assist with data interpretation. Data analysis for this report includes two parts, statistical summaries of the physical, chemical and biological analytical data from each monitoring site and box plots showing trends in the summarized data dating back to 1980 where available. Due to the extent of box plot trend analysis for 105 sites and 42 variables, it was decided to select some key indicator variables and show trends of select sites that would spatially represent the surveys. The box plots show a comparison of the median and percentile values for up to 14 years prior to the ISS completion, 17 years after ISS completion, the past three years (2008-2010) and the current year of analysis (2010). Results that are below the laboratory method detection limit are included as a zero value.

Monitoring Seasonal Time Frame/Frequency

Water quality monitoring of the local area rivers occurs year round. Winter sampling frequency is dependent on ice conditions on the waterways. As ice conditions recede more surveys are added to the schedule. The District's water quality monitoring program survey schedule is generally conducted on a biweekly basis. Due to sampling logistics and safety concerns, the Nearshore Lake survey is conducted four to seven times in a sampling season, approximately three weeks between collection dates. The biweekly monitoring program will address by random design both dry and wet weather-sampling periods.

Monitoring Depth

The District's routine water quality monitoring program provides for sampling the water column at various depths depending on the specific depth of a particular monitoring location. Exact sampling depths at any

location may vary from year to year or week to week depending on lake levels, seiches, dam operation and precipitation. Generally, three samples are collected at sites greater than four meters in depth (one meter below the surface, one meter above the bottom, and mid-depth point). Locations less than four meters in depth are generally sampled at either two depths (one meter below the surface and one meter above the bottom) or one depth (mid-depth) depending on site conditions. Samples are collected from mid-channel or where the predominance of flow is occurring at each location. Samples for metals tests are collected at mid-depth at sites greater than four meters depth and at the surface for shallower monitoring sites.

Monitoring Variables

In all, there are 44 types of water quality analyses listed in this data summary report. Each sample's tests may vary by survey type and depth due to method specifications, scientific judgement and costs. Where feasible the variables analyzed for each survey are kept consistent for data assessment purposes.

Types of Surveys

The District's surface water quality monitoring program is presently engaged in both Lake Michigan and River/Creek surveys including the following:

*Outer Harbor (*East of Jones Island Water Reclamation Facility)
Major Rivers (Milwaukee, Menomonee, Kinnickinnic Rivers)
Fish Creek
Southbranch Creek
Indian Creek
Lincoln Creek
Underwood Creek
Little Menomonee River
Honey Creek
South Shore (East of the South Shore Water Reclamation Facility)
Oak Creek
Root River
Nearshore (Nearshore zone of Lake Michigan)

The sampling rationale for the various monitoring surveys is briefly explained below.

Outer Harbor

Data collected from this area (Figure 1) on a biweekly basis are utilized to evaluate the impact that the Jones Island and river discharges are having on the quality of this part of the Lake that is intensively used for recreational boating and fishing. Sampling sites for this effort were selected based upon their position relative to the effluent outfall at Jones Island and the movement of water (or currents) found in the area. Samples are collected at 15 different locations. The point identified as OH-02 is the existing outfall for the Jones Island Water Reclamation Facility. As a point of reference the distance from Outer Harbor sampling point OH-7 to Outer Harbor sampling point OH-14 is one mile.

Rivers

Extensive monitoring of the three major river systems (Figure 2) within the District's sewer service boundaries provides baseline data for measuring and documenting potential sources of pollution both inside

and outside the District boundaries. Water quality improvements as a direct result of facility and watercourse planning and systems operations can also be measured through the use of this survey's sampling results. There are 28 sites that are routinely monitored for this survey (designated "RI" and a site number). There are several additional sites listed in Figure 2 that have either been monitored in the past or are associated with specific event monitoring projects.

- *Milwaukee River* - The Milwaukee River is the largest river within the District's Service area and is currently recognized by community leaders as an important recreational water resource within the metropolitan area. This River enters the District at Pioneer Road (County Trunk C) from the north after passing through 86% of its drainage area. This monitoring effort was started in 1980 to provide baseline data for the Water Pollution Abatement Plan (WPAP) and will enable the District to assess its positive effects on water quality over time. In addition, recent plans for flood management improvements by MMSD on tributaries to this river will also be evaluated by utilizing current and historical water quality monitoring databases.

- *Menomonee and Kinnickinnic River Surveys* - Basically these two rivers have all of their respective watersheds within the boundaries of the District's service area. Water Quality improvement may result through the control of Combined Sewer Overflows (CSO) discharges and by the elimination of various discharge points which represent relief bypasses. Uncontrolled, nonpoint sources of pollution may continue to have impacts. Also, evaluation of current and future flood management improvements, as part of MMSD's Watercourse Management Plan, will rely heavily on water quality data for these waters. Data collected will be useful to evaluate all of these factors.

  The Menomonee River Valley has also been recently cited as having a promising potential for economic development. Continued water quality monitoring could help in planning that development.

Fish Creek

Fish Creek (Figure 3) is mainly located along the border between Milwaukee and Ozaukee counties in the Village of Bayside and the City of Mequon. The stream emerges from a storm sewer outfall at the south side of Donges Bay Road just west of Port Washington Road in the City of Mequon. Fish Creek drains directly into Lake Michigan 3.43 miles downstream from the source. Major precipitation events result in rapid surface runoff to Fish Creek, thereby causing a flashy response in this stream. This further results in significant flooding in the Village of Bayside. The District is in the process of evaluating options to reduce flooding as well as decreasing erosion along Fish Creek.

This survey is conducted 8 times per year (once a month, April - November) and has two sampling sites (FC-01 and FC-02). The Fish Creek survey was added to the District's monitoring program in 2002 in order to collect baseline data. If construction type improvements are chosen as a means to manage flooding problems in this watershed, then the water quality monitoring data will help in documenting and planning this process.

Southbranch Creek

This creek, (Figure 4) approximately 1.5 miles long, drains a 2.95 square mile area within the Villages of Brown Deer, River Hills and the City of Milwaukee before it enters into the Milwaukee River. The entire watershed lies in an urban setting and drains by means of a storm sewer system. Southbranch Creek has a long history of flooding. In response to this recurring problem the MMSD along with other concerned parties implemented a flood management plan intended to minimize flooding. Highlights include the installation of four stormwater detention basins, the replacement of some culverts and deepening a section of the creek. Water quality monitoring in this watershed was added to the District's sampling program in 1999 to obtain data before, during and after this flood management and environmental restoration project. This survey is

conducted 10 times per year, once per month in the spring and autumn and twice per month during the summer of each year. The four sampling sites are designated with a "SB" and a site number.

Indian Creek

Indian Creek (Figure 5) is a major tributary of the Milwaukee River located in northern Milwaukee County. The creek, 2.6 miles in length, originates in the Village of Bayside near the intersection of East Brown Deer Road and North Rexleigh Drive. The Creek flows in a generally southwest direction through the Village of Fox Point, crosses Interstate 43 at the boundary of Fox Point and the Village of River Hills, and has its confluence with the Milwaukee River just south of Bradley Road in River Hills. Large storms typically cause flooding in this watershed.

This survey is conducted eight times per year (once a month, April - November) and has four sampling sites (IC-01 through IC-04). The Indian Creek survey was added to the District's monitoring program in 2002 prior to implementation of the MMSD watercourse management plan for this stream. Continued monitoring will assist in documenting changes in water quality due to the completion of this plan.

Lincoln Creek

This creek (Figure 6) enters the Milwaukee River downstream Silver Spring Drive (RI-03) and is north of our Port Washington Road sampling site (R1-04). Lincoln Creek is approximately nine miles in length and drains a 21-square mile watershed. There is a history of this creek having poor water quality and flooding problems due to urbanization within its watershed. In response to these problems the District along with other concerned parties have developed and implemented a flood management plan which involves environmental restoration, creation of wetland stormwater detention areas, changes in creek channel morphology, streambank erosion controls and improvement in creek bed substrate. Water quality monitoring in this watershed was added to the District's sampling program in 1997 to obtain data before, during and after the implementation of this plan. This survey is sampled once per month; April through November. The five sampling sites (designated "LC" and a site number) cover nearly 90% of the creek, from the headwaters to within a half mile of its confluence with the Milwaukee River.

Underwood Creek

Underwood Creek (Figure 7) originates in the City of Brookfield and flows approximately 8 miles, in a southeasterly direction, to its confluence with the Menomonee River. The Underwood Creek subwatershed encompasses approximately 19.8 square miles and includes portions of the communities of Brookfield, Elm Grove and Wauwatosa. The Underwood Creek subwatershed is comprised of the Underwood Creek mainstem, Dousman Ditch, and the South Branch of Underwood Creek. The majority of Underwood Creek (UC) and the South Branch of UC are in a concrete lined channel. The South Branch of UC flows 1.6 miles in a northerly direction from its origin at West Greenfield Avenue to its confluence with Underwood Creek near West Bluemound Road. The South Branch of UC flows through the cities of Milwaukee, West Allis, Brookfield, and New Berlin. Flooding problems have occurred in the UC subwatershed and sections of this creek have undergone flood management improvements.

Underwood Creek was added to the MMSD sampling program in 2003 and includes two sites on the South Branch of UC and five sites on the Underwood Creek mainstem. Surveys are scheduled once a month from April – November. The monitoring plan is to collect data for several years prior to any stream improvement projects, during construction and after the implementation of this plan to compare and document water quality changes in this watershed.

Little Menomonee River

The Little Menomonee River (Figure 8) originates in southern Ozaukee County near Freistadt Rd. and flows in a mostly southerly direction for a distance of approximately 10 miles to its confluence with the Menomonee River near Highway 100 and Hampton Avenue (Timmerman Field airport area). The Little Menomonee River subwatershed encompasses approximately 21.8 square miles, or nearly 16 percent of the Menomonee River watershed and includes portions of the communities of Mequon, Germantown and Milwaukee. It is entirely confined within the borders of Ozaukee and Milwaukee counties.

The Little Menomonee River was added to the MMSD monitoring program in 2007 and includes two sites (ML-01 and ML-02). Surveys are scheduled to be sampled twice a month (March - December) and are completed concurrently with the Menomonee River survey. The monitoring plan is to collect data from this subwatershed in order to assess water quality impacts stemming from the Little Menomonee River.

Honey Creek

Honey Creek (Figure 9) originates at the S. 43rd Street storm sewer outfall in the City of Greenfield and flows in a northerly direction for approximately 8.8 miles until its confluence with the Menomonee River in the City of Wauwatosa. The Honey Creek subwatershed encompasses 11 square miles and includes portions of the communities of Greenfield, Milwaukee, Wauwatosa, and West Allis. Channel modifications such as deepening, straightening, and lining with concrete have been made to 7.1 miles of Honey Creek. The Creek flows under State Fair Park in an enclosed channel that consists of 3 – 10 foot by 15 foot pipes. The Honey Creek subwatershed has experienced minor flooding problems, but the biggest problem with this Creek has been the ecological degradation and habitat loss due to channel modifications.

Honey Creek was added to the MMSD sampling program in 2003 and includes five sampling sites (HC-01 - HC-05). This survey is conducted eight times per year (once a month, April - November). Monitoring data is being collected to assess water quality changes in this watershed and will be used for future watercourse planning purposes.

South Shore

Data collected from this area (Figure 10) on a biweekly basis is used to assess the impact of the discharge of the South Shore Water Reclamation Facility on the local environs of Lake Michigan. The point identified as SS-01 is the point of discharge from this facility. A major drinking water plant intake (Oak Creek) is located approximately one-mile southeast of SS-01.

As with the Outer Harbor Survey, sample locations were based upon the Lake currents found in the area and relative position of a selected sampling site to the outfall. Samples are collected at three depths at each site in a scheme similar to the Outer Harbor effort. The distance from SS-1 to SS-3 is 1,000 feet; the distance from SS-1 to SS-11 is 3,000 feet.

Oak Creek

This stream (Figure 11) lies completely within the District boundaries. Oak Creek flows into Lake Michigan about two miles north of the MMSD's South Shore Water Reclamation Facility. Knowledge of its water quality is helpful in determining impacts to the Lake's nearshore area. When monitoring began for the Oak Creek survey in 1985 the area was primarily rural drainage basin. Since then it has undergone significant development. Urbanization will increase the flows that the stream will be required to handle. The objective of the District is to monitor the resulting water quality changes over time. Oak Creek is a part of the District's facility and watercourse management planning initiatives. This survey is sampled once per month; April through November. There are seven sampling sites monitored for this survey and are designated with "OC" and a site number.

Root River

This river (Figure 12) drains approximately 197 square miles within Milwaukee, Waukesha, Racine and Kenosha counties. There is a history of low storm sewers within this river's watershed (potential for water back up) and flooding problems due to increasing urbanization within this watershed. In response to these problems, the District along with other concerned parties, have developed a flood management plan. Depending on alternatives chosen within this plan, improvements to this watercourse could involve environmental restoration, creation of wetland stormwater detention areas, changes in creek channel morphology, streambank erosion controls and improvement in riverbed substrate. Water quality monitoring in this watershed was added to the District's sampling program to obtain data before, during and after the implementation of this plan.

This survey is conducted 10 times per year, once per month in the spring and autumn and twice per month during the summer of each year. The six sampling sites (designated "RR" and a site number) cover the upper 72 square miles of the watershed located within the District's service area.

Nearshore Lake Michigan

The purpose of this effort is to provide a data base for the District to assess the impact of MMSD discharges as well as all other sources of pollution, including stormwater runoff, on overall nearshore water quality. The scope of this effort overlaps those efforts being undertaken in the Outer Harbor and at South Shore and is conducted on a monthly basis (weather dependent). Some of this survey's sites are located at a distance from shore to provide data for determining Lake background levels. Lake background information has been useful in developing some of the District's effluent limitations and permit discharge fees. Sites located a distance from shore and are not one of the sites that overlap our Outer Harbor or South Shore efforts have a reduced list of variables tested. This is due to historical results that show values less than the method detection limit or very low concentrations for that test and were consequently removed from the list of tests requested for Lab analysis. The 14 points (Figure 13) sampled during this survey cover the area of the nearshore environs of Lake Michigan from Fox Point on the north to Wind Point on the south and from the western shore of Lake Michigan to a point ten miles east of the western shore. Sample sites are designated as "NS" and a site number. The total area of lake covered by this survey is over 300 square miles.

Data Usage

The data generated by the District's surface water quality and other related environmental monitoring programs have been utilized extensively in-house as well as by other agencies and/or organizations and individual citizens.

Also, this data has allowed other public agencies to make informed, defensible decisions regarding Milwaukee's valuable surface water resources. Examples of uses for this data include the MMSD 2020 Facilities Plan (developed by multi-agency and citizen stakeholder committees) and the Regional Water Quality Management Plan (required under the Clean Water Act) that has been recently updated by the Southeastern Wisconsin Regional Planning Commission. This type of long-term, comprehensive information has provided a service to the community by eliminating the need for smaller, more expensive piecemeal projects that would be required each time a specific need for information arises.

The District's comprehensive and aggressive surface water quality monitoring program reflects the District's commitment to the improvement and preservation of the community's surface water resources and it should be continued for use in future water resource decisions for the Milwaukee metropolitan area.

Abbreviations Legend for MMSD Water Quality Data – 2010

Variable Abbr. & name	Units of Measure
pH	Std. Units
TEMP - Temperature	Degrees Celsius
DO - Dissolved Oxygen	mg/L
CHLA - Chlorophyll “a”	mg/m^3
NITRATE - Nitrate Nitrogen	mg/L
NITRITE - Nitrite Nitrogen	mg/L
NO5 – Nitrite + Nitrate Nitrogen	mg/L
AMMONIA - Ammonia Nitrogen	mg/L
TKN - Total Kjeldahl Nitrogen	mg/L
PHOS – Phosphorus	mg/L
SOLPHOS - Soluble Phosphorus	mg/L
SOLSIL -Soluble Silica	mg/L
SCHII - Sechii Disk	meters
IXLITE - 1% Light Level (measured with a Photometer)	meters
TS - Total Solids	mg/L
DS - Dissolved Solids	mg/L
VSS - Volatile Suspended Solids	mg/L
SS - Suspended Solids	mg/L
TURB – Turbidity	NTU
SPEC - Specific Conductivity	umhos/cm
CHLOR – Chloride	mg/L
FECAL - Fecal Coliform Bacteria	CFU/100 mL
LFC - Log_{10} Fecal Coliform Bacteria	CFU/100 mL
ECOLIQT - Escherichia coli Bacteria	MPN/100 mL
CA - Total Calcium	mg/L
MG - Total Magnesium	mg/L
CD - Total Cadmium	ug/L
CR - Total Chromium	ug/L
CU - Total Copper	ug/L
NI - Total Nickel	ug/L
PB - Total Lead	ug/L
ZN - Total Zinc	ug/L
AG - Total Silver	ug/L
AS - Total Arsenic	ug/L
SE - Total Selenium	ug/L
HG - Mercury	ug/L
HARD – Hardness	mg/L
TALK - Total Alkalinity	mg/L
BOD5/20 - Biochemical Oxygen Demand 5 and 20 day	mg/L
TC - Total Carbon	mg/L
TNIC - Total Nonpurgeable Inorganic Carbon	mg/L
TNOC - Total Nonpurgeable Organic Carbon	mg/L
TNDOC - Total Nonpurgeable Dissolved Organic Carbon	mg/L

Water Quality Standards/Criteria
for MMSD Water Quality Data – 2010

Variable	Standard/Criterion	References
Dissolved Oxygen		
Creeks/Rivers/Harbor	5 mg/L	1
Open Lake	6 mg/l	1
Fecal Coliform Bacteria	200 CFU/100 ml	1
Chloride	395 mg/L	2
Chlorophyll a	5.8 mg/m^3	3*
Total Phosphorus		
Open Lake	0.007 mg/L	1
Creeks/Upstream Menomonee and Kinnickinnic Rivers	0.075 mg/L	1
Downstream Menomonee and Kinnickinnic Rivers All Milwaukee River /Harbor	0.10 mg/L	1

References

1. Wisconsin Department of Natural Resources (WDNR), Wisconsin Administrative Code, NR 102, Register, November, 2010, No. 659.

2. WDNR, Wisconsin Administrative Code, NR 105, Chronic Toxicity Criteria, Register, February, 2004, No. 578.

3. United States Environmental Protection Agency (USEPA), December, 2000. Ambient Water Quality Criteria Recommendations, Rivers and Streams in Nutrient Ecoregion VII: USEPA, Office of Water, EPA 822-B-00-018. * (These values are not standards or criterion, but are recommended criterion that are used in the box plot trend analyses for reference).

Summary of Method Detection Limits (MDLs) for 2010 Water Quality Data

Analyte (units)	Source [1]- Reference Method(s)	MDL [2]
Alkalinity (mg/L as $CaCO_3$)	4-310.2	6.6 mg/L (prior to 3/16/10) 6 mg/L
Ammonia (mg/L as N)	1-4500NH_3G (5-350.1)	0.01 mg/L (prior to 4/07/10) 0.009 mg/L
Arsenic (µg/L)	3-6010 C	4.0 µg/L (11/16/10) 3.5 µg/L
Biochemical Oxygen Demand (BOD) –		
5 day (mg/L)	1-5210 B	2 mg/L
20 day (mg/L)	1-5210 B	2 mg/L
Cadmium (µg/L)	3-6010 C	0.9 µg/L
Calcium (mg/L)	3-6010 C	0.22 mg/L
Carbon (mg/L as C)		
Dissolved Organic Nonpurgeable	1-5310 C	0.35 mg/L (Prior to 5/25/10) 0.67 mg/L
Total Inorganic Nonpurgeable	1-5310 C	0.35 mg/L (Prior to 5/25/10) 0.67 mg/L
Total Organic Nonpurgeable	1-5310 C	0.35 mg/L (Prior to 5/25/10) 0.67 mg/L
Total	1-5310 C	0.35 mg/L (Prior to 5/25/10) 0.67 mg/L
Chloride (mg/L)	1-4500 Cl E (2-325.2)	4.0 mg/L
Chlorophyll *a* (mg/m^3)	1-10200 H	0.11 mg/m^3
Chromium (µg/L)	3-6010 C	3.8 µg/L
Copper (µg/L)	3-6010 C	3.9 µg/L
E. coli (MPN/100 mL)	1-9223 B	**1/100 mL** (prior to 6/16/10, 6/21/10 - 7/21/10, 7/29/10, 8/10/10 - 8/30/10, 9/9/10 - 9/20/10, 9/28/10 - 10/6/10, after 10/13/10) **1 and 100/100 mL** (6/16/10) **10/100 mL** (8/31/10, 9/21/10, 10/13/10) **100/100 mL** (7/23/10, 7/28/10, 8/9/10, 9/1/10)
Fecal Coliform (CFU/100 mL)	1-9222 D	**1 and 3/100 mL** (4/21/10) **2/100 mL** (4/12/10, 4/28/10, 5/19/10, 6/1/10, 6/17/10, 6/30/10, 7/14/10, 8/4/10, 8/19/10, 9/27/10, 11/8/10) **2 and 3/100 mL** (6/21/10)

Summary of Method Detection Limits (MDLs) for 2010 Water Quality Data

Analyte (units)	Source [1]- Reference Method(s)	MDL [2]
Fecal Coliform (CFU/100 mL)	1-9222 D	**3/100 mL** (prior to 3/11/10, 3/16/10 - 4/5/10, 4/13/10 – 4/20/10, 4/29/10 – 5/10/10, 5/20/10 – 5/25/10, 6/7/10, 6/10/10, 6/15/10, 6/28/10, 6/29/10, 7/6/10, 7/7/10, 7/12/10, 7/13/10, 7/21/10, 7/27/10, 8/2/10, 8/5/10, 8/10/10, 8/16/10 – 8/18/10, 8/24/10, 8/30/10, 9/7/10 – 9/14/10, 9/28/10 – 10/12/10, 10/18/10 – 11/4/10, 11/9/10, 11/15/10, 11/16/10, 12/1/10, 12/7/10) **3 and 10/100 mL** (8/31/10) **10/100 mL** (3/11/10, 4/6/10, 5/11/10 – 5/17/10, 6/3/10, 6/8/10, 6/9/10, 6/14/10, 6/16/10, 6/23/10, 6/24/10, 7/20/10, 7/29/10, 8/9/10, 8/23/10, 8/25/10, 9/20/10, 9/21/10, 10/13/10, 11/10/10, 11/17/10, 11/23/10) **10 and 50 mL** (7/15/10) **50/100 mL** (7/8/10, 7/9/10, 7/28/10, 8/11/10, 9/1/10) **200/100 mL** (7/23/10)
Hardness (mg/L as $CaCO_3$)	3-6010 C	NA (calculated)
Lead (μg/L)	3-6010 C	3.2 μg/L
Magnesium (mg/L)	3-6010 C	0.03 mg/L
Mercury (μg/L) (Total)	3-7470 A	0.1 μg/L [3]
Nickel (μg/L)	3-6010 C	3.2 μg/L
Nitrate + Nitrite (mg/L as N)	5-353.2	0.020 mg/L (prior to 3/16/10) 0.018
Nitrate (mg/L as N)	5-353.2	0.020 mg/L (prior to 3/16/10) 0.018
Nitrite (mg/L as N)	5-353.2	0.004 mg/L (prior to 3/16/10) 0.003
Total Kjeldahl Nitrogen (mg/L as N)	2-351.2	0.26 mg/L (prior to 3/11/10) 0.21 mg/L **0.6 mg/L** (3/11/10, 3/16/10, 3/18/10, 3/30/10, 4/1/10)
Phosphorus (mg/L as P) Soluble	2-365.1	0.017 mg/L (prior to 3/11/10) 0.038 mg/L **0.009 mg/L** (6/24/10, 6/28/10, 6/29/10, 6/30/10, 7/6/10, 7/7/10, 7/8/10)

Summary of Method Detection Limits (MDLs) for 2010 Water Quality Data

Analyte (units)	Source [1]- Reference Method(s)	MDL [2]
Phosphorus (mg/L as P)		
Total	2-365.1	0.017 mg/L (prior to 3/11/10) 0.038 mg/L **0.009 mg/L** (6/24/10, 6/28/10, 6/29/10, 6/30/10, 7/6/10, 7/7/10, 7/8/10)
PAH (µg/L)	3-8270 C	See PAH Lab Report [3]
Selenium (µg/L)	3-6010 C	9.9 µg/L
Silica (mg/L as SiO_2)	2-370.1	0.52 mg/L
Silver (µg/L)	3-6010 C	2.1 µg/L
Solids (mg/L)		
Suspended	1-2540 D	1 mg/L
Volatile	1-2540 E	1 mg/L
Total	1-2540 B	1 mg/L
Dissolved	1-2540 C	1 mg/L
Turbidity (NTU)	2-180.1	0.01 NTU
Zinc (µg/L)	3-6010 C	13.0 µg/L

Footnotes

[1] See Method References on Page C-4.

[2] The MDL value listed is based on a 1:1 dilution. For differences in analyte dilution values consult LIMS (Laboratory Information Management System) Results.

[3] MDL for samples analyzed at Pace Analytical Laboratory (Green Bay).

Summary of Method Detection Limits (MDLs) for 2010 Water Quality Data

METHOD REFERENCES

1. "Standard Methods for the Examination of Water and Wastewater," 20th ed., 1998. American Public Health Association (APHA), 1015 15th Street, NW, Washington, DC 20005.

2. "Methods of Chemical Analysis of Water and Wastes," USEPA, EMSL, Cincinnati, OH 45268, March, 1983 (EPA-600/4-79-020).

3. "Test Methods for Evaluating Solid Waste," 3rd Edition. SW846. 1995. USEPA, SWER, Washington, DC 20460.

4. "Methods of Chemical Analysis of Water and Wastes," USEPA, EMSL, Cincinnati, OH 45268, March, 1974 (EPA-600/4-79-020)..

5. "Methods of Chemical Analysis of Water and Wastes," USEPA, EMSL, Cincinnati, OH 45268, March, 1993 (EPA-600/4-79-020).

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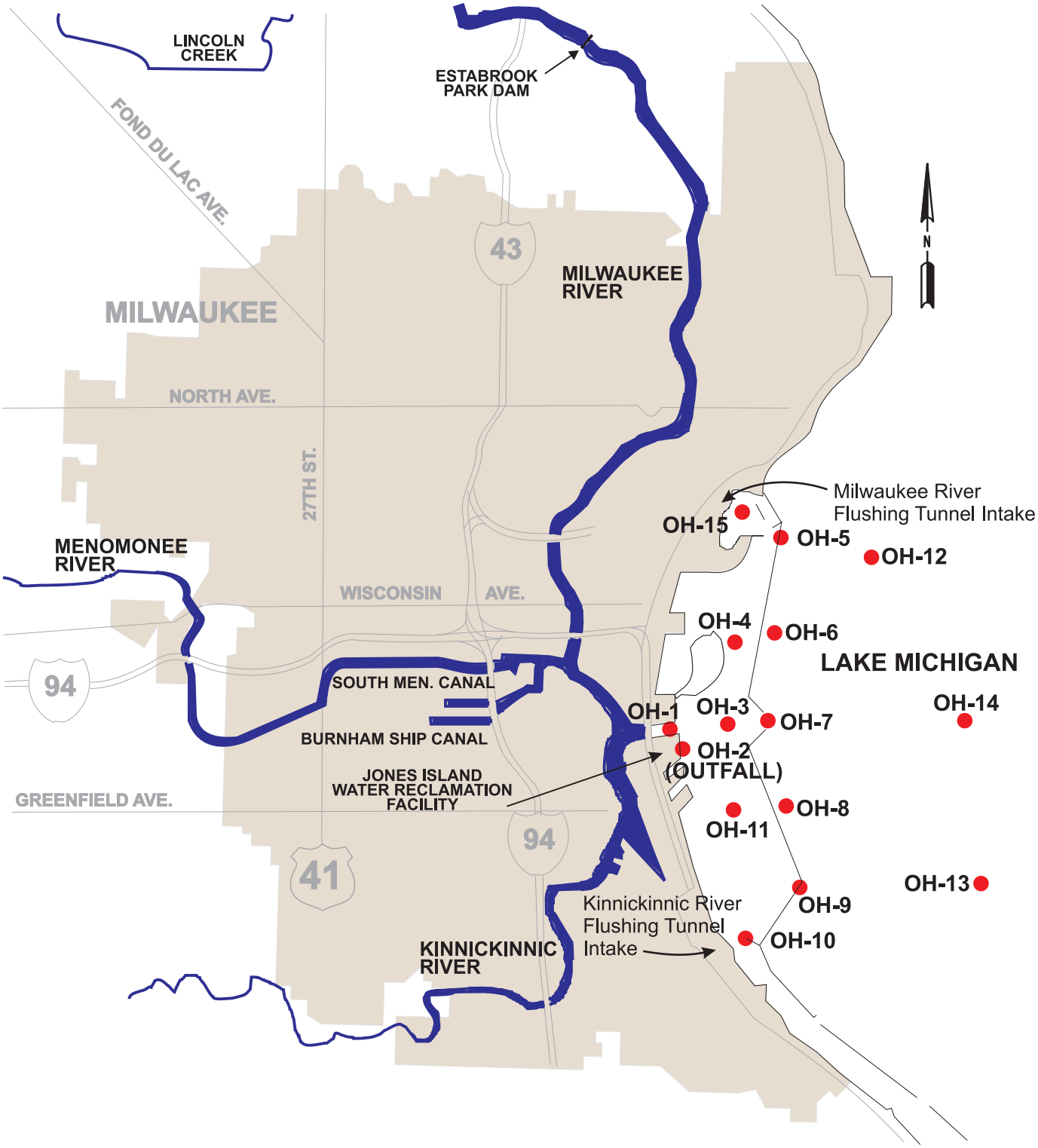

LEGEND

● WATER QUALITY SAMPLING LOCATIONS

COMBINED SEWER SERVICE AREA

Preserving The Environment • Improving Water Quality

FIGURE 1
OUTER HARBOR (OH) SURVEY
WATER QUALITY SAMPLING LOCATIONS

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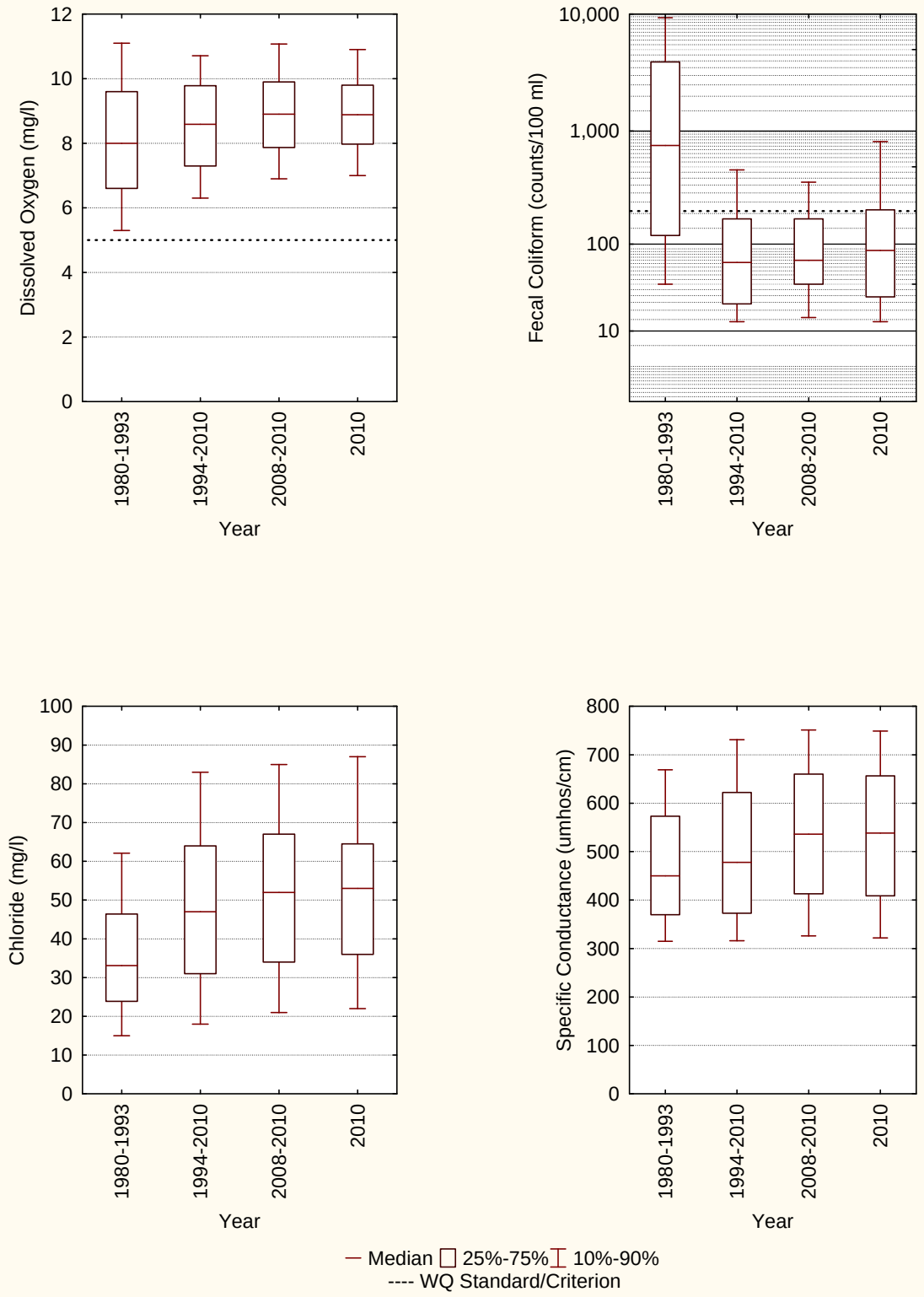
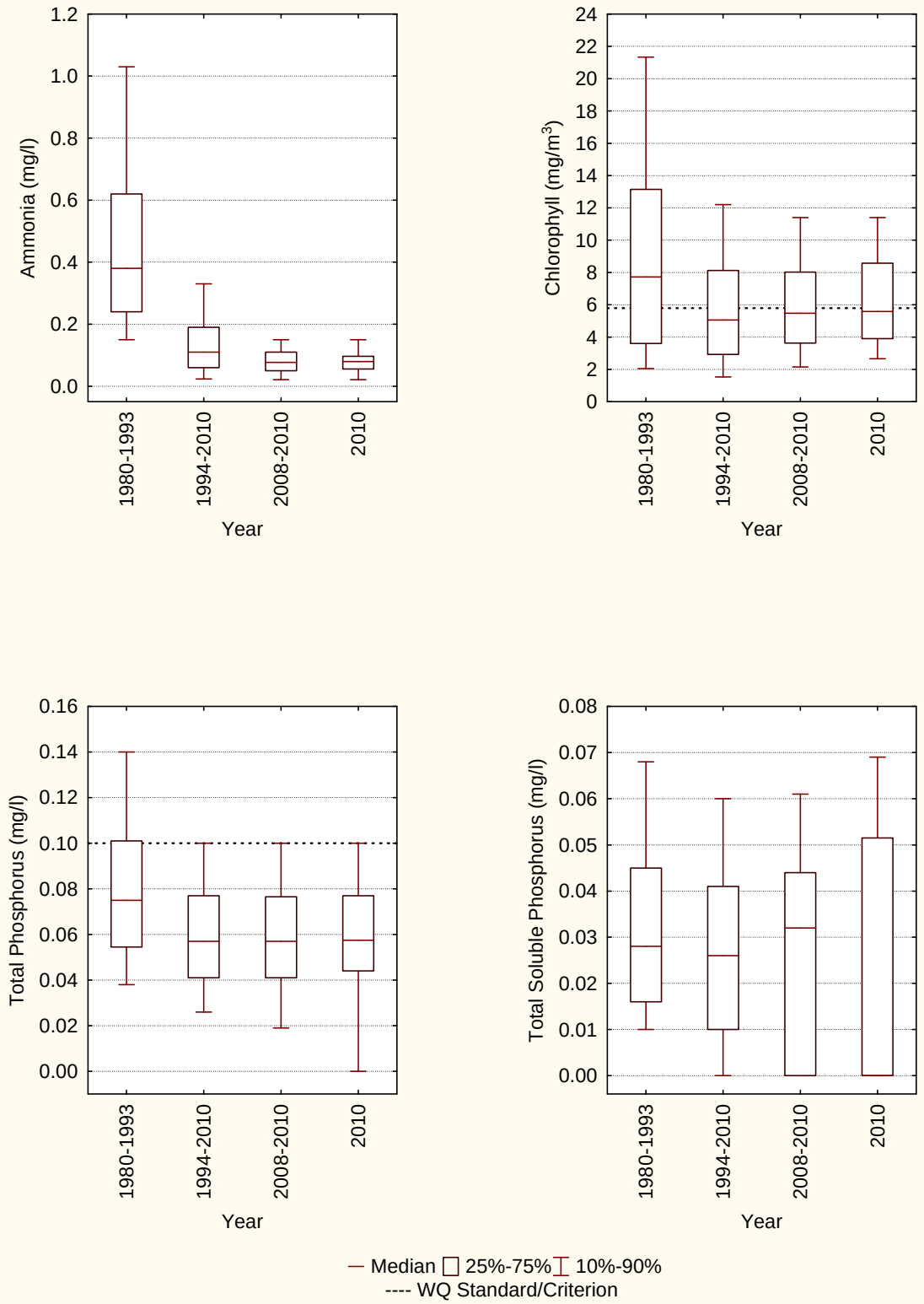
MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-01

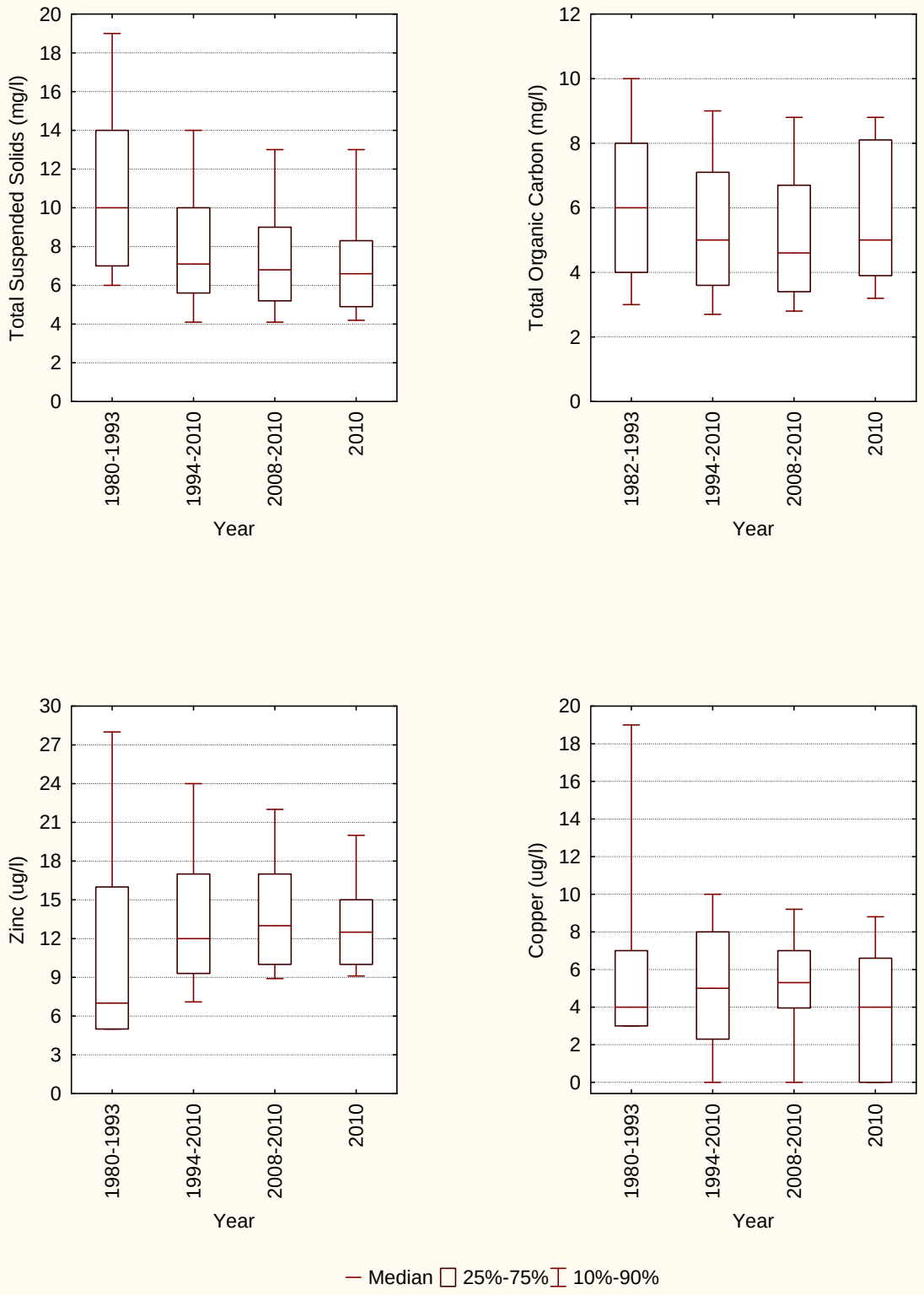


— Median ▢ 25%-75% ⊥ 10%-90%
---- WQ Standard/Criterion

MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-01



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-01



OUTER HARBOR - SITE 1
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	14.3	8.9	6.46	0.77	0.015	0.79	0.080	0.55	0.059	0.027	4.44
Standard Error	0.0	0.5	0.2	0.44	0.03	0.001	0.03	0.005	0.03	0.004	0.003	0.23
Median	8.0	13.9	8.9	5.58	0.68	0.014	0.69	0.080	0.52	0.058	0.000	4.05
Mode	8.0	13.7	7.3	11.10	1.20	0.013	1.20	0.056	0.00	0.000	0.000	2.20
Standard Deviation	0.2	4.8	1.4	3.32	0.32	0.006	0.32	0.044	0.28	0.036	0.032	2.10
Sample Variance	0.0	23.0	2.1	11.03	0.10	0.000	0.10	0.002	0.08	0.001	0.001	4.42
Kurtosis	0.7	-0.3	-0.2	-0.61	0.30	-0.220	0.14	0.223	-0.11	-0.279	-0.446	1.49
Skewness	0.7	0.2	0.4	0.59	1.05	0.190	1.01	0.469	0.28	-0.039	0.750	1.08
Range	0.8	21.3	6.3	13.01	1.28	0.031	1.27	0.200	1.20	0.140	0.120	10.20
Minimum	7.8	3.8	6.2	0.99	0.32	0.000	0.33	0.000	0.00	0.000	0.000	1.80
Maximum	8.6	25.1	12.5	14.00	1.60	0.031	1.60	0.200	1.20	0.140	0.120	12.00
Count	78	84	84	57	84	84	84	84	84	84	84	84
Confidence Level(95.0%)	0.0	1.0	0.3	0.88	0.07	0.001	0.07	0.010	0.06	0.008	0.007	0.46

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.2	3.2	326.5	318.3	2.1	8.2	6.7	531	52.0	1168	2.0	75
Standard Error	0.1	0.2	15.6	15.9	0.4	1.6	0.6	16	2.4	995	0.1	25
Median	1.2	3.3	320.0	302.9	2.0	6.6	5.5	539	53.0	87	1.9	37
Mode	0.9	3.5	320.0	ND	1.4	4.9	6.4	587	53.0	14	1.1	42
Standard Deviation	0.3	0.8	64.4	65.7	1.5	6.5	5.1	149	21.9	5266	0.7	101
Sample Variance	0.1	0.6	4149.3	4318.2	2.4	42.9	25.5	22166	479.8	27728256	0.5	10142
Kurtosis	0.0	1.3	0.2	0.1	10.1	12.4	15.6	-1	-0.5	28	3.6	9
Skewness	-0.5	-0.7	0.6	0.7	2.8	3.4	3.6	0	0.1	5	1.5	3
Range	1.2	3.5	240.0	240.3	7.5	27.9	31.1	515	87.0	27988	3.4	408
Minimum	0.4	1.0	230.0	224.8	0.0	4.1	1.9	286	12.0	12	1.1	2
Maximum	1.6	4.5	470.0	465.1	7.5	32.0	33.0	801	99.0	28000	4.4	410
Count	28	26	17	17	17	17	84	84	84	28	28	16
Confidence Level(95.0%)	0.1	0.3	33.1	33.8	0.8	3.4	1.1	32	4.8	2042	0.3	54

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 1
WATER QUALITY DATA - 2010

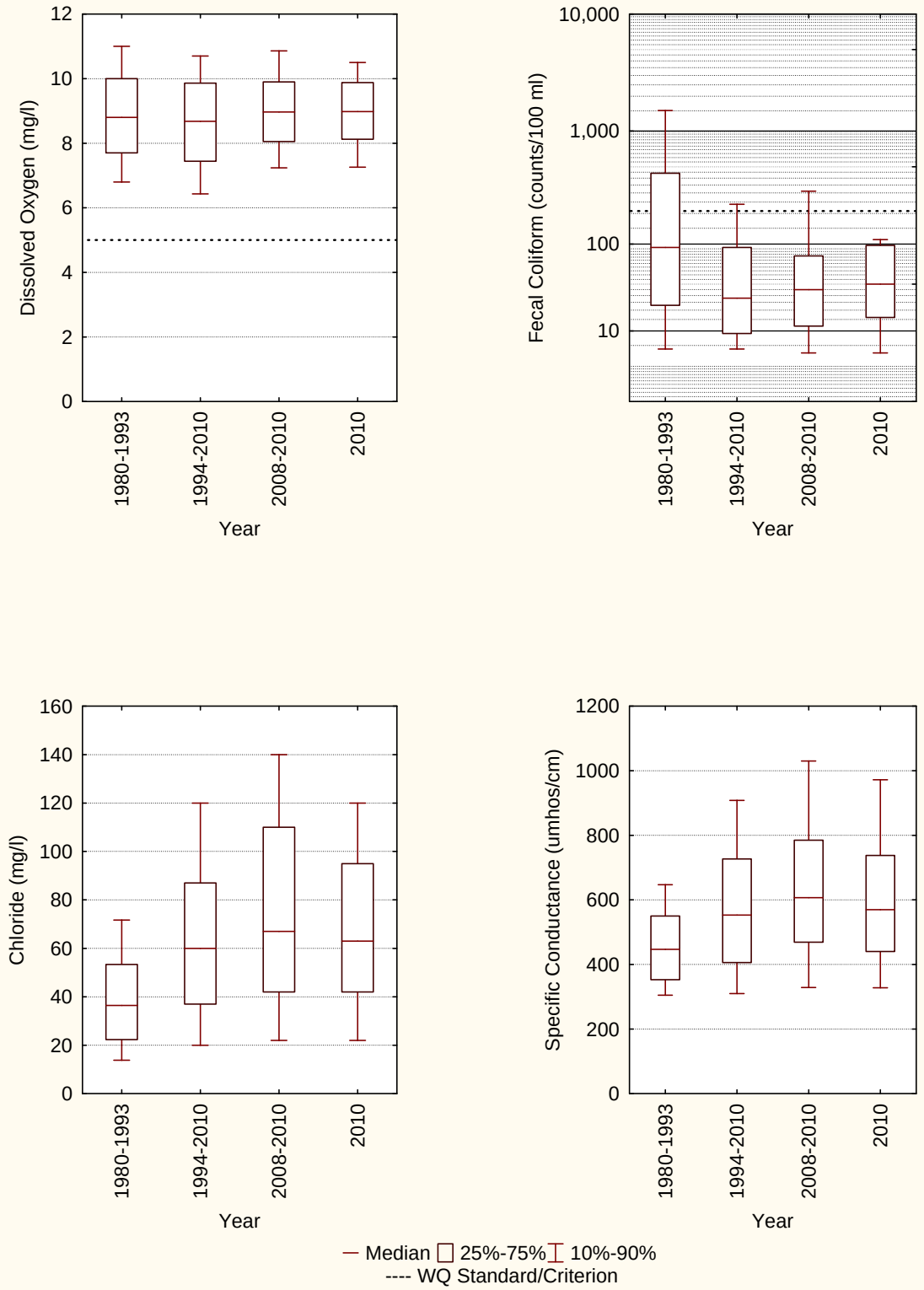
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	46.65	20.92	0.0	4.3	4.1	1.4	0.0	13.5	0.0	0.6	1.1	ND
Standard Error	1.17	0.75	0.0	0.1	0.4	0.1	0.0	0.6	0.0	0.2	0.3	ND
Median	45.00	20.00	0.0	4.3	4.0	1.8	0.0	12.5	0.0	0.0	0.0	ND
Mode	45.00	20.00	0.0	4.6	0.0	0.0	0.0	12.0	0.0	0.0	0.0	ND
Standard Deviation	9.18	5.87	0.1	1.1	3.5	1.1	0.3	4.8	0.0	1.5	2.7	ND
Sample Variance	84.27	34.44	0.0	1.1	12.3	1.3	0.1	22.8	0.0	2.2	7.1	ND
Kurtosis	-0.01	-0.38	30.7	-0.6	-0.4	-1.6	62.0	3.7	ND	3.7	3.6	ND
Skewness	0.74	0.44	5.6	0.3	0.5	-0.2	7.9	1.7	ND	2.2	2.2	ND
Range	38.00	23.00	0.6	4.2	14.0	3.2	2.1	25.0	0.0	5.5	9.9	0.0
Minimum	32.00	11.00	0.0	2.5	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
Maximum	70.00	34.00	0.6	6.7	14.0	3.2	2.1	32.0	0.0	5.5	9.9	0.0
Count	62	62	62	62	61	62	62	62	62	62	60	0
Confidence Level(95.0%)	2.33	1.49	0.0	0.3	0.9	0.3	0.1	1.2	0.0	0.4	0.7	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	203	167	ND	ND	46.7	41.0	5.7	ND
Standard Error	6	6	ND	ND	1.8	1.5	0.4	ND
Median	190	160	ND	ND	44.0	40.0	5.0	ND
Mode	190	140	ND	ND	60.0	43.0	8.7	ND
Standard Deviation	46	40	ND	ND	12.6	10.4	2.5	ND
Sample Variance	2158	1592	ND	ND	158.9	107.8	6.3	ND
Kurtosis	0	-1	ND	ND	0.9	0.9	-0.1	ND
Skewness	1	1	ND	ND	0.9	0.9	0.8	ND
Range	190	140	0.0	0.0	54.0	44.0	9.7	0.0
Minimum	120	110	0.0	0.0	28.0	26.0	2.3	0.0
Maximum	310	250	0.0	0.0	82.0	70.0	12.0	0.0
Count	62	51	0	0	51	51	51	0
Confidence Level(95.0%)	12	11	ND	ND	3.5	2.9	0.7	ND

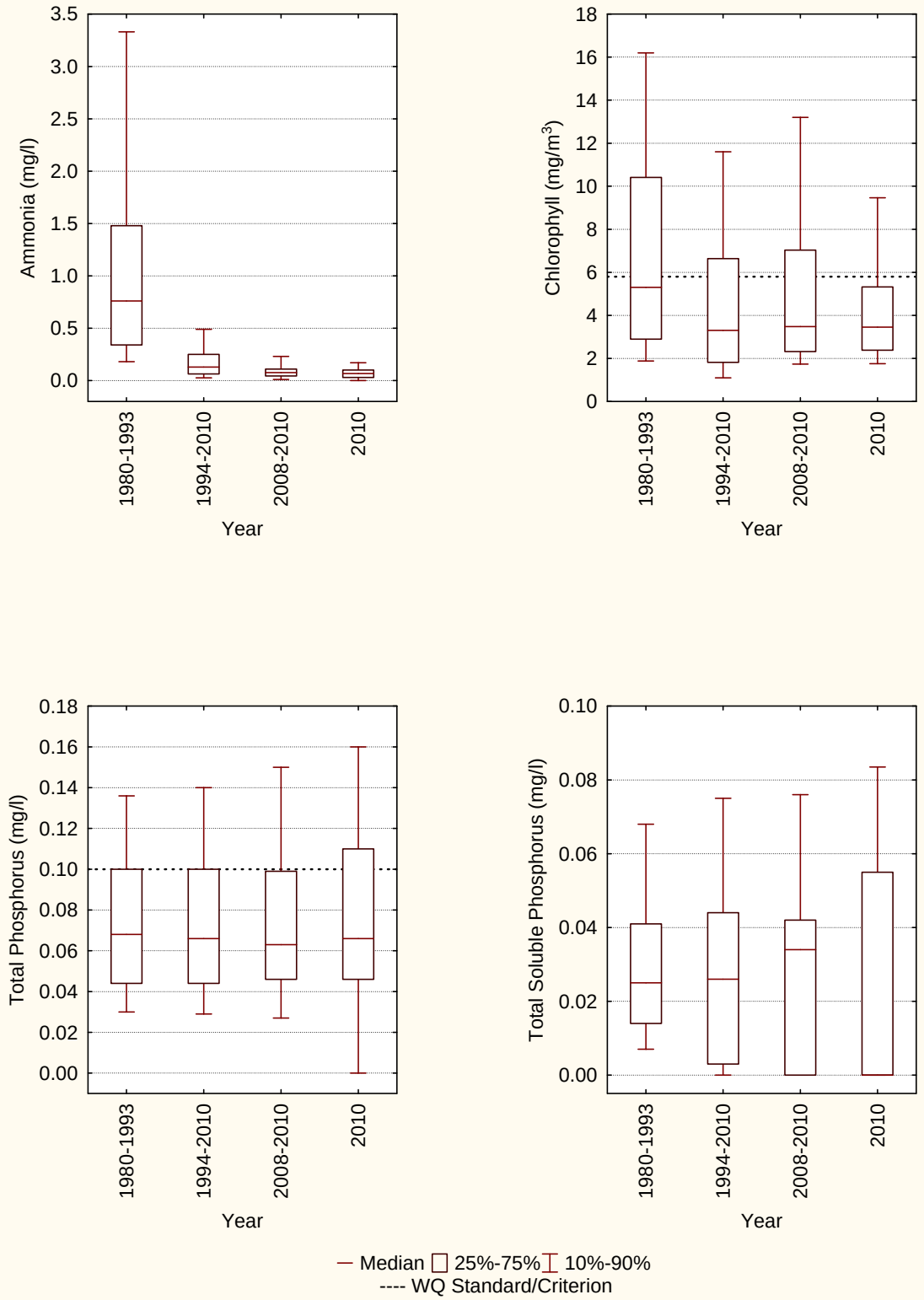
ND = No Data

Provisional MMSD Water Quality Data

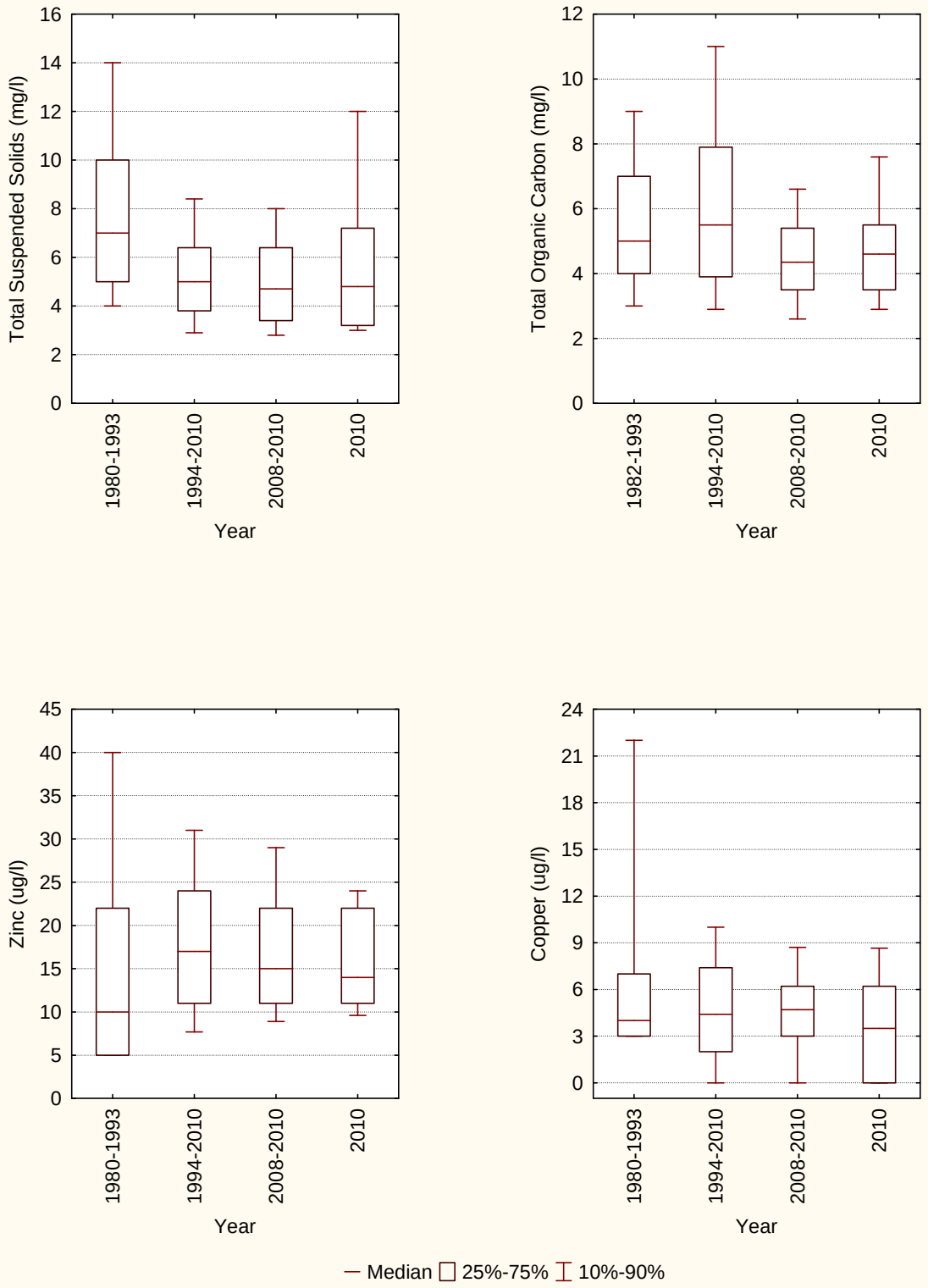
MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-02



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-02



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-02



OUTER HARBOR - SITE 2
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	13.5	9.0	4.47	2.16	0.035	2.20	0.098	0.72	0.077	0.030	3.32
Standard Error	0.1	0.6	0.2	0.59	0.23	0.006	0.23	0.019	0.07	0.009	0.006	0.14
Median	7.8	12.8	9.0	3.46	1.70	0.018	1.70	0.067	0.62	0.066	0.000	3.20
Mode	8.0	12.2	9.9	3.62	1.40	0.016	1.40	0.000	0.00	0.000	0.000	3.10
Standard Deviation	0.4	4.1	1.5	3.25	1.63	0.046	1.66	0.133	0.48	0.062	0.041	0.97
Sample Variance	0.1	16.9	2.3	10.54	2.66	0.002	2.76	0.018	0.23	0.004	0.002	0.95
Kurtosis	-0.1	0.0	1.1	2.01	1.65	8.808	1.69	10.322	2.65	0.943	1.025	-0.54
Skewness	0.0	0.0	0.4	1.63	1.36	2.908	1.36	3.056	1.37	1.029	1.328	0.22
Range	1.8	19.2	7.2	12.29	7.08	0.227	7.28	0.680	2.40	0.250	0.150	3.90
Minimum	6.9	3.7	5.6	1.01	0.32	0.003	0.32	0.000	0.00	0.000	0.000	1.70
Maximum	8.7	22.9	12.8	13.30	7.40	0.230	7.60	0.680	2.40	0.250	0.150	5.60
Count	48	51	51	30	51	51	51	51	51	51	50	51
Confidence Level(95.0%)	0.1	1.2	0.4	1.21	0.46	0.013	0.47	0.037	0.14	0.017	0.012	0.27

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.6	4.5	360.6	355.1	2.1	5.5	4.3	625	70.5	62	1.5	66
Standard Error	0.1	0.3	26.1	26.3	0.4	0.8	0.3	38	6.0	17	0.1	33
Median	1.6	4.6	350.0	342.8	1.8	4.8	3.3	570	63.0	40	1.6	28
Mode	1.4	5.6	350.0	416.8	1.5	3.2	2.9	676	82.0	110	2.0	ND
Standard Deviation	0.3	1.4	107.7	108.3	1.5	3.1	2.4	268	42.7	72	0.6	131
Sample Variance	0.1	1.9	11593.4	11726.0	2.3	9.7	5.9	72016	1823.5	5161	0.4	17274
Kurtosis	-0.4	-0.1	-0.4	-0.4	2.6	1.4	0.7	1	0.7	7	1.3	15
Skewness	0.2	0.0	0.7	0.7	1.3	1.4	1.3	1	0.9	2	-1.0	4
Range	1.3	5.3	360.0	363.5	6.3	11.2	8.7	1179	177.0	300	2.5	545
Minimum	1.0	2.0	210.0	202.5	0.0	1.8	1.8	281	13.0	0	0.0	5
Maximum	2.3	7.3	570.0	566.0	6.3	13.0	10.5	1460	190.0	300	2.5	550
Count	17	17	17	17	17	17	51	51	51	17	17	16
Confidence Level(95.0%)	0.2	0.7	55.4	55.7	0.8	1.6	0.7	75	12.0	37	0.3	70

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 2
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	44.22	17.10	0.0	4.8	3.6	2.1	0.4	16.3	0.0	0.6	0.9	ND
Standard Error	1.10	0.54	0.0	0.2	0.5	0.2	0.2	0.9	0.0	0.2	0.3	ND
Median	42.00	16.00	0.0	4.6	3.5	2.2	0.0	14.0	0.0	0.0	0.0	ND
Mode	39.00	15.00	0.0	4.5	0.0	0.0	0.0	13.0	0.0	0.0	0.0	ND
Standard Deviation	7.88	3.86	0.3	1.2	3.5	1.4	1.8	6.3	0.2	1.3	2.3	ND
Sample Variance	62.05	14.89	0.1	1.3	12.2	1.9	3.1	40.1	0.0	1.8	5.1	ND
Kurtosis	0.58	0.72	51.0	-0.3	-0.9	1.0	27.5	-0.5	51.0	3.8	4.3	ND
Skewness	0.88	0.84	7.1	0.3	0.5	0.3	5.0	0.7	7.1	2.2	2.4	ND
Range	36.00	17.00	1.9	5.0	11.0	6.5	11.0	23.8	1.1	5.0	8.9	0.0
Minimum	32.00	11.00	0.0	2.6	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0
Maximum	68.00	28.00	1.9	7.6	11.0	6.5	11.0	31.0	1.1	5.0	8.9	0.0
Count	51	51	51	51	50	51	51	51	51	51	51	0
Confidence Level(95.0%)	2.22	1.09	0.1	0.3	1.0	0.4	0.5	1.8	0.0	0.4	0.6	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	181	142	ND	ND	39.5	34.8	4.8	ND
Standard Error	5	3	ND	ND	1.1	0.9	0.2	ND
Median	170	140	ND	ND	38.0	34.0	4.6	ND
Mode	160	130	ND	ND	39.0	34.0	4.7	ND
Standard Deviation	35	24	ND	ND	8.0	6.5	1.7	ND
Sample Variance	1225	573	ND	ND	64.5	42.5	2.8	ND
Kurtosis	0	2	ND	ND	2.6	3.1	0.7	ND
Skewness	1	1	ND	ND	1.4	1.5	1.0	ND
Range	160	110	0.0	0.0	38.0	32.0	7.2	0.0
Minimum	120	110	0.0	0.0	28.0	25.0	2.3	0.0
Maximum	280	220	0.0	0.0	66.0	57.0	9.5	0.0
Count	51	51	0	0	51	51	51	0
Confidence Level(95.0%)	10	7	ND	ND	2.3	1.8	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 3
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	13.6	10.1	7.39	0.80	0.014	0.82	0.049	0.40	0.032	0.006	3.08
Standard Error	0.0	0.5	0.1	0.60	0.03	0.001	0.04	0.007	0.03	0.003	0.002	0.12
Median	8.1	13.7	10.1	6.48	0.76	0.013	0.78	0.039	0.39	0.041	0.000	2.80
Mode	8.1	14.5	9.3	2.09	1.10	0.011	1.10	0.000	0.00	0.000	0.000	2.80
Standard Deviation	0.2	4.5	1.2	4.74	0.34	0.006	0.34	0.067	0.32	0.033	0.017	1.17
Sample Variance	0.0	20.7	1.4	22.51	0.12	0.000	0.12	0.005	0.11	0.001	0.000	1.38
Kurtosis	0.1	-0.6	0.1	0.64	0.65	1.174	0.48	40.380	5.01	-1.165	4.966	0.93
Skewness	0.6	0.0	0.3	0.98	0.84	0.961	0.81	5.261	1.29	0.378	2.496	1.16
Range	0.8	19.6	5.8	21.53	1.62	0.034	1.60	0.580	2.00	0.110	0.070	5.10
Minimum	7.8	3.7	7.3	0.97	0.28	0.004	0.30	0.000	0.00	0.000	0.000	1.50
Maximum	8.6	23.3	13.1	22.50	1.90	0.038	1.90	0.580	2.00	0.110	0.070	6.60
Count	90	96	96	63	96	96	96	96	96	96	96	96
Confidence Level(95.0%)	0.0	0.9	0.2	1.19	0.07	0.001	0.07	0.014	0.07	0.007	0.003	0.24

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.6	4.9	253.4	246.3	1.8	7.1	5.2	436	38.2	1556	1.5	2233
Standard Error	0.1	0.4	13.7	13.7	0.4	1.7	0.6	10	1.7	1116	0.2	1394
Median	1.6	4.5	260.0	247.9	1.8	4.7	3.3	427	36.0	19	1.3	1560
Mode	1.9	4.5	250.0	ND	0.0	3.5	3.3	406	20.0	0	0.0	ND
Standard Deviation	0.7	2.2	62.8	63.0	1.7	7.8	6.2	100	16.8	6311	1.1	2788
Sample Variance	0.5	4.9	3946.9	3969.7	2.8	60.8	38.3	9922	283.4	39834206	1.2	7771425
Kurtosis	2.7	1.8	3.2	3.3	9.9	13.3	21.5	0	-0.1	28	1.0	-2
Skewness	0.8	0.9	-0.7	-0.7	2.6	3.4	4.2	1	0.6	5	1.0	1
Range	3.6	10.6	318.0	321.4	8.0	38.0	44.0	438	72.0	35000	4.5	5790
Minimum	0.3	1.1	72.0	63.9	0.0	0.0	1.1	284	12.0	0	0.0	10
Maximum	3.9	11.7	390.0	385.3	8.0	38.0	45.1	722	84.0	35000	4.5	5800
Count	32	29	21	21	21	21	96	96	96	32	32	4
Confidence Level(95.0%)	0.3	0.8	28.6	28.7	0.8	3.5	1.3	20	3.4	2276	0.4	4436

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 3
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	40.91	16.53	0.0	3.7	3.5	1.1	0.2	11.5	0.0	1.1	1.5	0.0
Standard Error	1.01	0.57	0.0	0.2	0.6	0.2	0.1	0.8	0.0	0.3	0.6	0.0
Median	39.00	15.00	0.0	3.7	3.1	0.8	0.0	11.0	0.0	0.0	0.0	0.0
Mode	39.00	15.00	0.0	3.7	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0
Standard Deviation	5.73	3.25	0.0	0.9	3.3	1.1	0.8	4.3	0.2	1.7	3.3	0.0
Sample Variance	32.80	10.58	0.0	0.8	11.0	1.3	0.6	18.8	0.0	3.0	10.7	0.0
Kurtosis	0.89	1.44	ND	-0.9	-0.1	-1.9	22.4	1.7	32.0	1.0	1.4	ND
Skewness	1.29	1.50	ND	0.1	0.7	0.2	4.7	-0.8	5.7	1.4	1.8	ND
Range	21.00	12.00	0.0	3.1	12.0	2.8	4.0	19.0	1.2	5.9	9.9	0.0
Minimum	33.00	13.00	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	54.00	25.00	0.0	5.2	12.0	2.8	4.0	19.0	1.2	5.9	9.9	0.0
Count	32	32	32	32	32	32	32	32	32	32	31	3
Confidence Level(95.0%)	2.06	1.17	0.0	0.3	1.2	0.4	0.3	1.6	0.1	0.6	1.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	171	137	0.5	4.7	36.9	32.7	4.2	ND
Standard Error	5	3	0.2	0.3	0.9	0.8	0.2	ND
Median	160	140	0.0	4.7	36.0	32.0	3.8	ND
Mode	160	140	0.0	4.1	32.0	29.0	3.6	ND
Standard Deviation	28	23	1.0	1.4	7.4	6.1	1.4	ND
Sample Variance	761	517	1.0	2.0	54.5	37.5	2.0	ND
Kurtosis	1	3	2.1	6.0	3.8	4.4	1.3	ND
Skewness	1	1	1.9	-1.7	1.8	1.9	1.3	ND
Range	110	124	3.2	6.9	36.0	31.0	6.2	0.0
Minimum	130	96	0.0	0.0	28.0	25.0	2.4	0.0
Maximum	240	220	3.2	6.9	64.0	56.0	8.6	0.0
Count	32	63	21	20	63	63	63	0
Confidence Level(95.0%)	10	6	0.5	0.7	1.9	1.5	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 4
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	13.4	10.9	7.40	0.52	0.010	0.53	0.021	0.24	0.010	0.002	2.30
Standard Error	0.0	0.8	0.2	1.03	0.02	0.001	0.02	0.005	0.03	0.004	0.002	0.13
Median	8.2	13.0	10.9	7.21	0.50	0.010	0.51	0.000	0.28	0.000	0.000	2.15
Mode	8.2	10.8	10.9	ND	0.46	0.012	0.35	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	5.1	1.1	5.05	0.15	0.004	0.15	0.031	0.22	0.023	0.010	0.82
Sample Variance	0.0	26.0	1.2	25.53	0.02	0.000	0.02	0.001	0.05	0.001	0.000	0.67
Kurtosis	0.4	-0.9	-0.8	2.81	1.22	-0.487	1.20	0.722	-0.99	4.177	42.000	9.28
Skewness	0.7	-0.1	0.4	1.29	1.06	0.611	1.04	1.395	0.31	2.183	6.481	2.32
Range	0.9	18.5	4.2	21.90	0.64	0.014	0.65	0.110	0.75	0.095	0.066	4.80
Minimum	7.9	3.3	8.8	1.30	0.33	0.004	0.33	0.000	0.00	0.000	0.000	1.20
Maximum	8.8	21.8	13.0	23.20	0.97	0.018	0.98	0.110	0.75	0.095	0.066	6.00
Count	40	42	42	24	42	42	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.6	0.3	2.13	0.05	0.001	0.05	0.010	0.07	0.007	0.003	0.25

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	2.3	8.8	212.9	209.4	1.1	3.5	3.2	372	25.3	143	0.9	418
Standard Error	0.1	0.4	9.7	9.5	0.2	0.7	0.6	8	1.3	114	0.2	394
Median	2.2	9.3	200.0	197.8	1.3	3.1	2.3	364	24.0	5	0.7	35
Mode	2.0	10.0	200.0	197.8	0.0	3.1	2.8	395	18.0	0	0.0	ND
Standard Deviation	0.7	2.0	44.4	43.7	1.1	3.0	3.6	53	8.3	521	0.9	788
Sample Variance	0.4	3.9	1971.4	1912.0	1.3	9.3	13.2	2820	69.6	271384	0.8	621468
Kurtosis	0.2	2.5	3.3	3.5	0.1	15.7	16.3	3	2.6	20	1.1	4
Skewness	0.3	-1.8	0.6	0.6	0.8	3.7	4.0	1	1.5	4	1.2	2
Range	2.7	7.5	230.0	229.7	3.9	16.0	19.4	278	37.0	2400	3.4	1596
Minimum	1.1	3.5	110.0	105.6	0.0	0.0	1.2	291	15.0	0	0.0	4
Maximum	3.8	11.0	340.0	335.3	3.9	16.0	20.6	569	52.0	2400	3.4	1600
Count	20	20	21	21	21	21	42	42	42	21	21	4
Confidence Level(95.0%)	0.3	0.9	20.2	19.9	0.5	1.4	1.1	17	2.6	237	0.4	1254

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 4
WATER QUALITY DATA - 2010

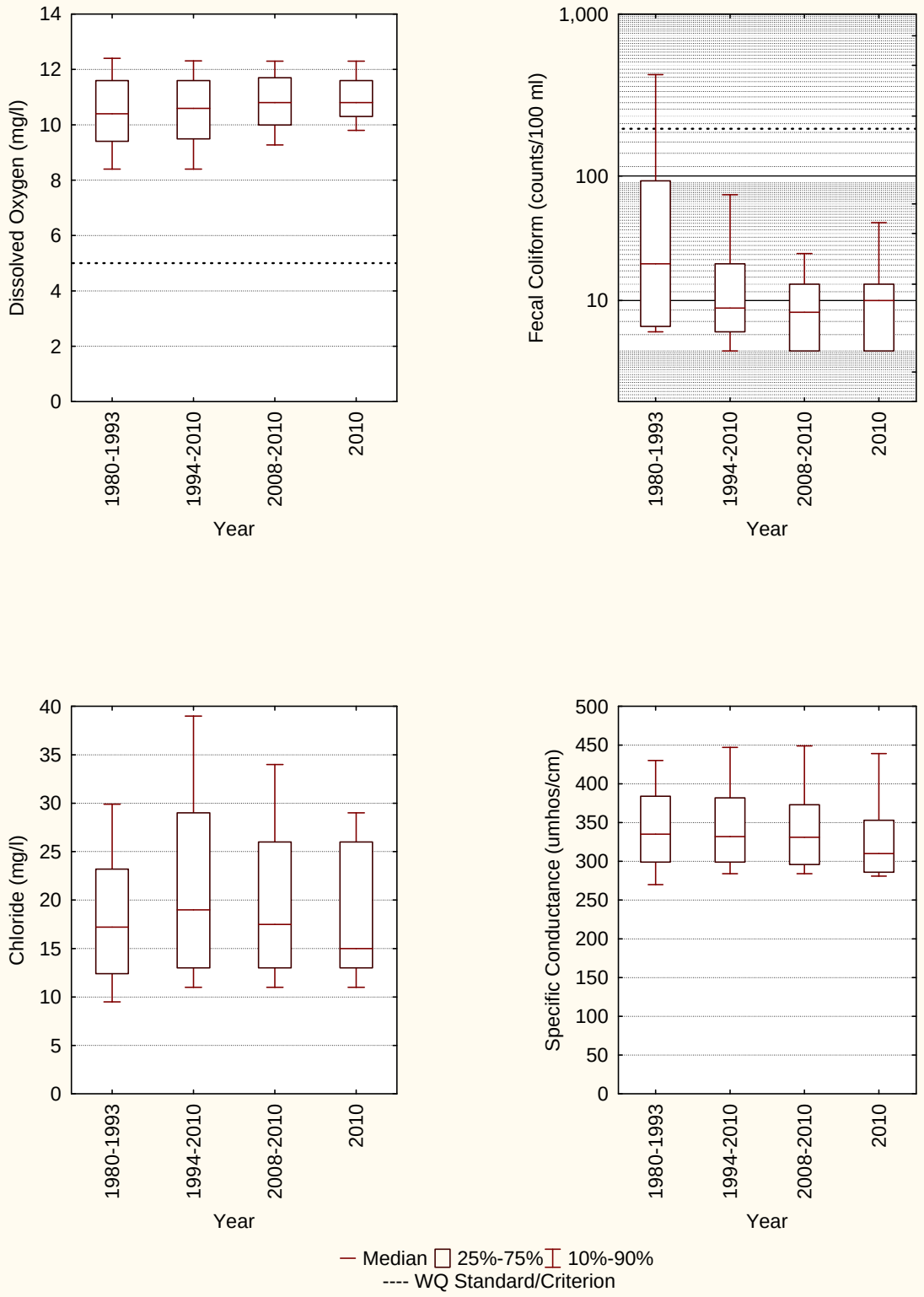
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	37.48	14.29	0.0	3.7	3.5	1.2	0.0	9.2	0.0	0.9	0.5	0.0
Standard Error	0.89	0.48	0.0	0.2	0.7	0.4	0.0	0.6	0.0	0.3	0.5	0.0
Median	37.00	14.00	0.0	3.7	3.6	0.0	0.0	9.5	0.0	0.0	0.0	0.0
Mode	37.00	13.00	0.0	4.2	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0
Standard Deviation	4.08	2.22	0.0	1.1	3.2	1.7	0.0	2.9	0.0	1.5	2.1	0.0
Sample Variance	16.66	4.91	0.0	1.3	10.5	2.9	0.0	8.3	0.0	2.2	4.3	0.0
Kurtosis	1.90	3.25	ND	0.6	-1.1	1.4	ND	5.0	ND	4.0	21.0	ND
Skewness	1.25	1.55	ND	0.9	0.3	1.3	ND	-1.2	ND	1.9	4.6	ND
Range	17.00	10.00	0.0	4.1	9.4	6.0	0.0	15.0	0.0	5.7	9.5	0.0
Minimum	32.00	11.00	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	49.00	21.00	0.0	6.2	9.4	6.0	0.0	15.0	0.0	5.7	9.5	0.0
Count	21	21	21	21	21	21	21	21	21	21	21	3
Confidence Level(95.0%)	1.86	1.01	0.0	0.5	1.5	0.8	0.0	1.3	0.0	0.7	0.9	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	152	127	0.5	ND	33.8	30.2	3.6	ND
Standard Error	4	2	0.5	ND	0.8	0.7	0.2	ND
Median	150	120	0.0	ND	33.0	29.0	3.4	ND
Mode	140	120	0.0	ND	30.0	29.0	2.9	ND
Standard Deviation	19	15	1.0	ND	5.1	4.2	1.1	ND
Sample Variance	369	223	1.0	ND	26.3	18.0	1.3	ND
Kurtosis	3	8	4.0	ND	5.0	5.3	4.1	ND
Skewness	1	3	2.0	ND	2.1	2.2	2.0	ND
Range	80	80	2.0	0.0	24.0	20.0	5.1	0.0
Minimum	130	110	0.0	0.0	29.0	26.0	2.3	0.0
Maximum	210	190	2.0	0.0	53.0	46.0	7.4	0.0
Count	21	42	4	0	42	42	42	0
Confidence Level(95.0%)	9	5	1.6	ND	1.6	1.3	0.3	ND

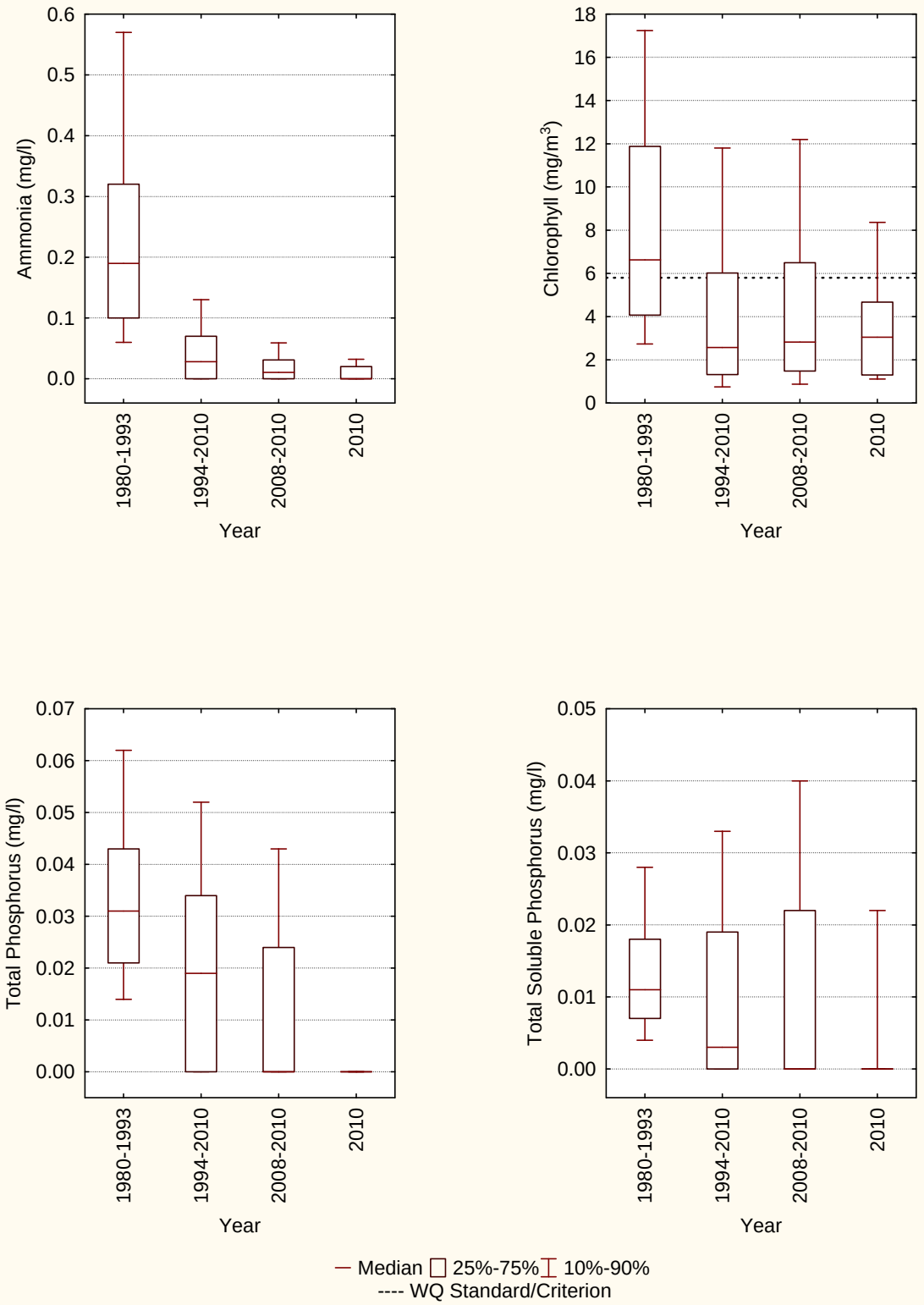
ND = No Data

Provisional MMSD Water Quality Data

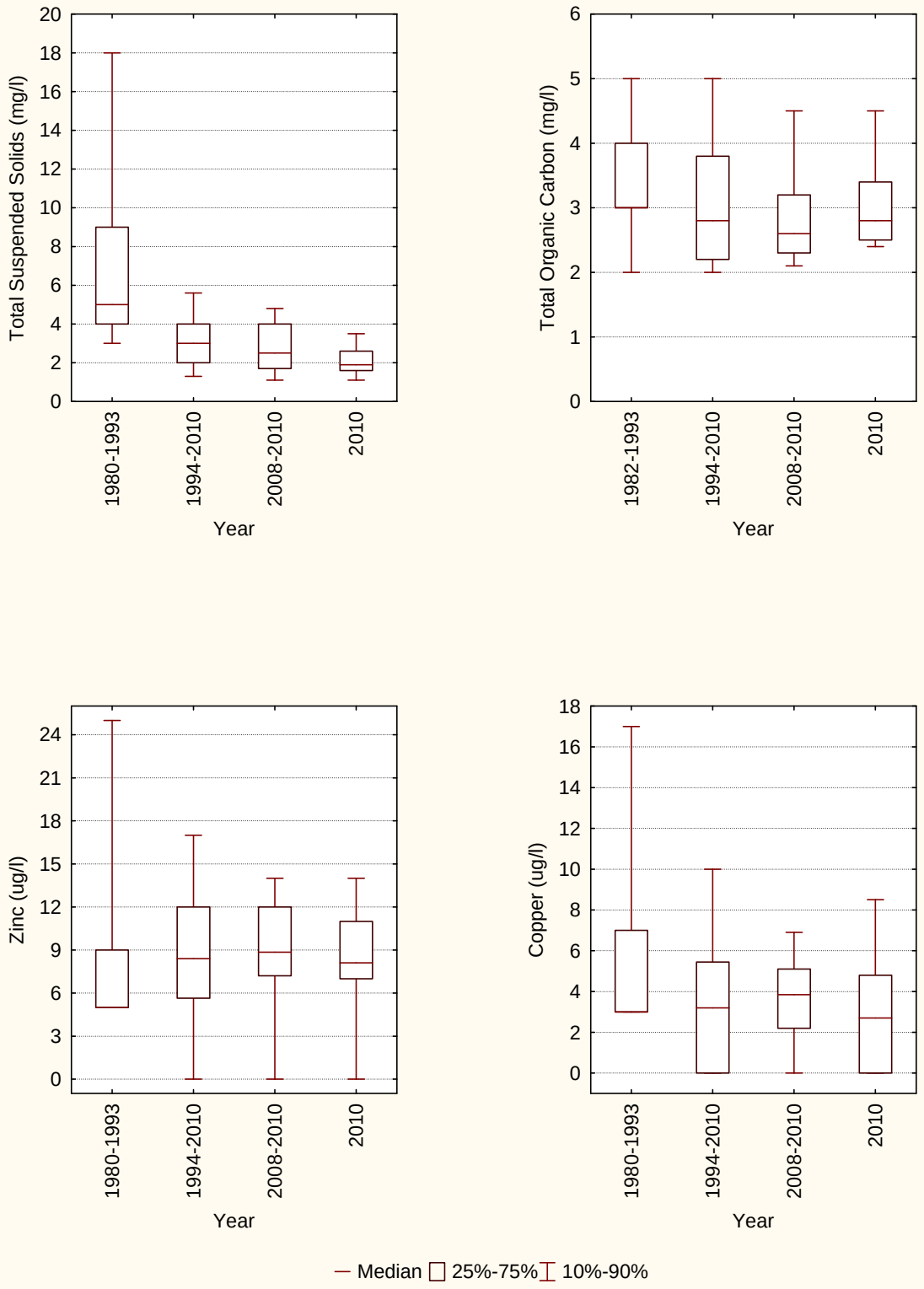
MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-05



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-05



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-05



OUTER HARBOR - SITE 5
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	11.3	10.9	3.98	0.44	0.006	0.44	0.012	0.16	0.006	0.006	2.18
Standard Error	0.0	0.6	0.1	0.70	0.03	0.001	0.03	0.003	0.03	0.003	0.002	0.13
Median	8.1	10.5	10.8	3.05	0.36	0.005	0.36	0.000	0.00	0.000	0.000	2.00
Mode	8.0	15.5	10.8	ND	0.35	0.000	0.36	0.000	0.00	0.000	0.000	2.00
Standard Deviation	0.2	4.5	0.9	3.83	0.19	0.004	0.19	0.020	0.19	0.020	0.018	0.91
Sample Variance	0.0	20.2	0.9	14.65	0.04	0.000	0.04	0.000	0.04	0.000	0.000	0.83
Kurtosis	0.0	-0.2	0.3	5.56	4.10	0.540	3.75	6.167	-0.42	13.059	8.156	15.20
Skewness	0.5	0.3	0.1	2.20	1.66	0.765	1.60	2.370	0.79	3.617	3.025	3.28
Range	0.7	19.2	4.9	17.40	0.98	0.016	0.98	0.094	0.64	0.097	0.078	5.80
Minimum	7.8	3.0	8.3	0.50	0.22	0.000	0.22	0.000	0.00	0.000	0.000	1.20
Maximum	8.5	22.2	13.2	17.90	1.20	0.016	1.20	0.094	0.64	0.097	0.078	7.00
Count	48	51	51	30	51	51	51	51	51	51	50	51
Confidence Level(95.0%)	0.1	1.3	0.3	1.43	0.05	0.001	0.05	0.006	0.05	0.006	0.005	0.26

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	3.2	8.4	191.2	189.2	0.2	2.0	2.0	335	19.0	27	0.8	ND
Standard Error	0.4	0.9	6.9	6.8	0.1	0.2	0.2	9	1.3	17	0.2	ND
Median	2.9	8.0	190.0	188.4	0.0	1.9	1.8	310	15.0	10	1.0	ND
Mode	1.7	14.0	200.0	ND	0.0	1.9	2.0	281	11.0	0	0.0	ND
Standard Deviation	1.4	3.8	28.3	28.0	0.4	0.9	1.2	65	9.3	69	0.7	ND
Sample Variance	2.1	14.5	798.5	785.8	0.2	0.8	1.4	4244	86.9	4737	0.5	ND
Kurtosis	0.4	-1.4	2.6	2.5	1.9	0.6	8.7	2	4.3	16	-0.2	ND
Skewness	1.0	0.4	1.3	1.2	1.9	0.0	2.4	2	1.9	4	0.4	ND
Range	5.1	10.8	110.0	110.3	1.2	3.6	6.9	259	45.0	290	2.5	0
Minimum	1.5	3.2	160.0	156.4	0.0	0.0	0.6	276	10.0	0	0.0	0
Maximum	6.6	14.0	270.0	266.7	1.2	3.6	7.5	535	55.0	290	2.5	0
Count	17	17	17	17	17	17	51	51	51	17	17	0
Confidence Level(95.0%)	0.7	2.0	14.5	14.4	0.2	0.5	0.3	18	2.6	35	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 5
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	35.65	13.06	0.0	3.2	3.0	0.6	0.0	8.5	0.2	0.5	0.8	ND
Standard Error	0.73	0.41	0.0	0.2	0.7	0.3	0.0	1.3	0.1	0.3	0.6	ND
Median	35.00	13.00	0.0	3.0	2.7	0.0	0.0	8.1	0.0	0.0	0.0	ND
Mode	38.00	12.00	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	3.02	1.68	0.0	1.0	3.1	1.0	0.0	5.5	0.6	1.2	2.4	ND
Sample Variance	9.12	2.81	0.0	1.0	9.3	1.1	0.0	29.8	0.4	1.5	5.6	ND
Kurtosis	-0.99	-0.89	ND	-0.7	-0.8	-0.6	ND	1.5	7.3	3.5	7.6	ND
Skewness	0.37	0.53	ND	0.6	0.6	1.1	ND	0.4	2.8	2.1	2.8	ND
Range	10.00	5.00	0.0	3.3	8.6	2.7	0.0	22.0	2.1	3.9	8.4	0.0
Minimum	31.00	11.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	41.00	16.00	0.0	5.3	8.6	2.7	0.0	22.0	2.1	3.9	8.4	0.0
Count	17	17	17	17	17	17	17	17	17	17	16	0
Confidence Level(95.0%)	1.55	0.86	0.0	0.5	1.6	0.5	0.0	2.8	0.3	0.6	1.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	142	119	ND	ND	31.6	28.4	3.2	ND
Standard Error	3	2	ND	ND	0.7	0.6	0.2	ND
Median	140	110	ND	ND	30.0	27.0	2.8	ND
Mode	140	110	ND	ND	30.0	26.0	2.4	ND
Standard Deviation	14	14	ND	ND	5.2	4.2	1.1	ND
Sample Variance	194	195	ND	ND	26.6	17.8	1.3	ND
Kurtosis	-1	3	ND	ND	2.7	3.1	6.0	ND
Skewness	0	2	ND	ND	1.7	1.7	2.3	ND
Range	50	70	0.0	0.0	23.0	20.0	5.5	0.0
Minimum	120	100	0.0	0.0	27.0	24.0	2.2	0.0
Maximum	170	170	0.0	0.0	50.0	44.0	7.7	0.0
Count	17	51	0	0	51	51	51	0
Confidence Level(95.0%)	7	4	ND	ND	1.4	1.2	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 6
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	10.4	11.4	ND	0.32	0.003	0.32	0.003	0.07	0.000	0.001	1.77
Standard Error	0.0	0.7	0.2	ND	0.01	0.000	0.01	0.001	0.02	0.000	0.001	0.05
Median	8.1	10.4	11.3	ND	0.30	0.004	0.30	0.000	0.00	0.000	0.000	1.70
Mode	8.1	12.0	11.7	ND	0.30	0.000	0.30	0.000	0.00	0.000	0.000	1.60
Standard Deviation	0.2	4.4	1.1	ND	0.07	0.002	0.07	0.009	0.13	0.000	0.006	0.35
Sample Variance	0.0	19.1	1.2	ND	0.01	0.000	0.01	0.000	0.02	0.000	0.000	0.13
Kurtosis	1.2	-0.1	-0.6	ND	2.85	-0.708	2.57	21.423	-0.27	ND	45.000	0.45
Skewness	1.1	0.2	0.3	ND	1.29	-0.049	1.25	4.312	1.23	ND	6.708	1.02
Range	0.7	18.4	4.2	0.00	0.37	0.008	0.37	0.053	0.38	0.000	0.038	1.40
Minimum	7.9	2.2	9.6	0.00	0.21	0.000	0.21	0.000	0.00	0.000	0.000	1.20
Maximum	8.6	20.6	13.8	0.00	0.58	0.008	0.58	0.053	0.38	0.000	0.038	2.60
Count	42	45	45	0	45	45	45	45	45	45	45	45
Confidence Level(95.0%)	0.0	1.3	0.3	ND	0.02	0.001	0.02	0.003	0.04	0.000	0.002	0.11

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	5.7	12.9	169.3	168.6	0.2	0.7	1.1	295	12.6	14	0.8	ND
Standard Error	0.6	0.7	5.0	5.0	0.1	0.2	0.1	4	0.5	5	0.2	ND
Median	6.2	14.4	170.0	168.7	0.0	0.0	1.0	287	12.0	8	0.9	ND
Mode	7.3	14.4	170.0	170.0	0.0	0.0	1.0	280	11.0	0	0.0	ND
Standard Deviation	2.3	2.5	19.4	19.4	0.4	0.8	0.5	27	3.5	18	0.6	ND
Sample Variance	5.3	6.4	378.1	374.9	0.2	0.7	0.2	712	11.9	315	0.3	ND
Kurtosis	-0.6	0.1	0.7	0.8	4.4	-1.9	-0.5	15	18.4	4	-1.1	ND
Skewness	0.1	-1.3	0.1	0.2	2.4	0.3	0.7	3	3.8	2	0.0	ND
Range	7.6	7.2	80.0	80.0	1.2	2.1	1.7	155	21.0	64	1.8	0
Minimum	2.4	7.4	130.0	130.0	0.0	0.0	0.4	277	10.0	0	0.0	0
Maximum	10.0	14.6	210.0	210.0	1.2	2.1	2.1	432	31.0	64	1.8	0
Count	15	15	15	15	15	15	45	45	45	15	15	0
Confidence Level(95.0%)	1.3	1.4	10.8	10.7	0.2	0.5	0.1	8	1.0	10	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 6
WATER QUALITY DATA - 2010

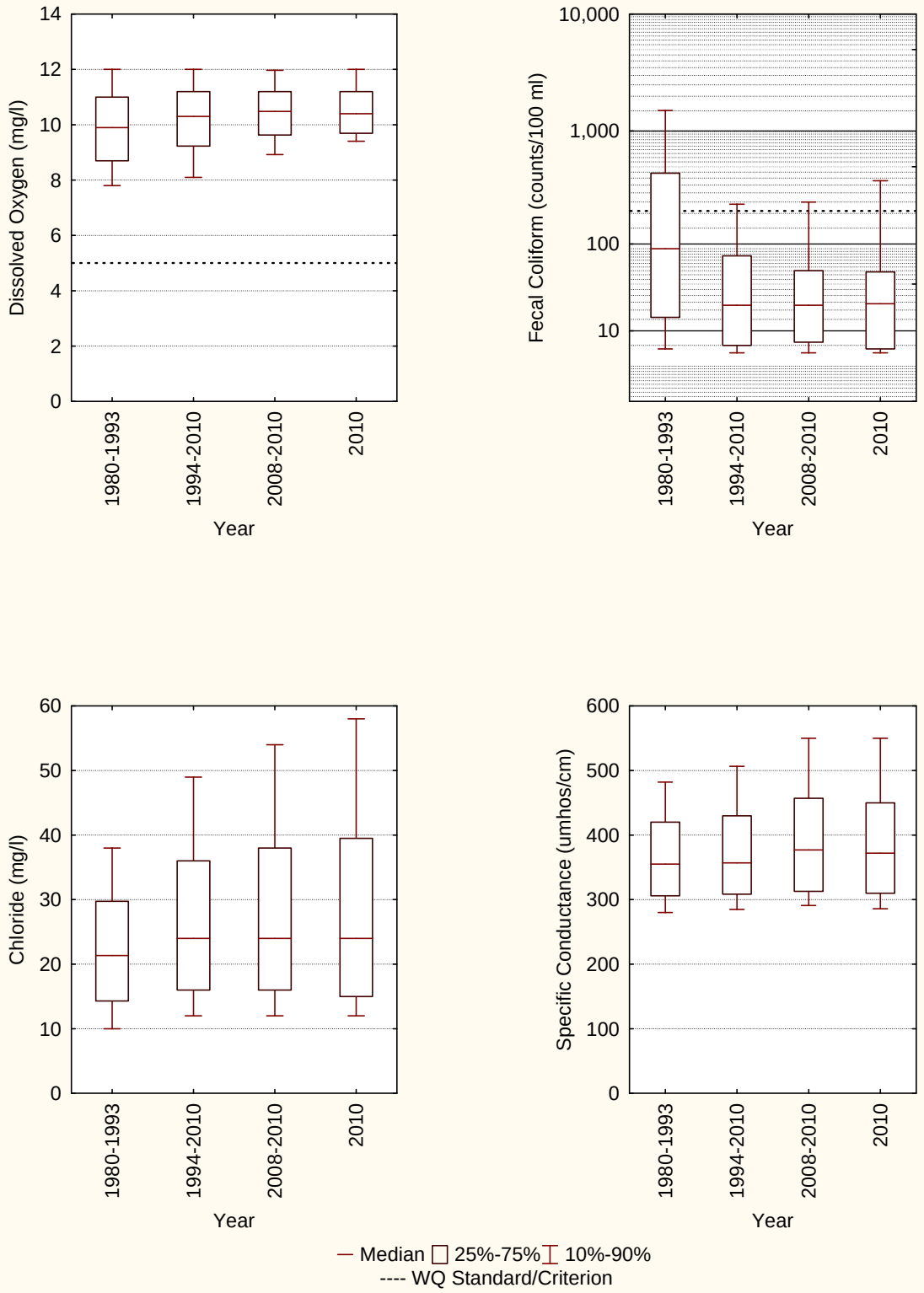
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	33.40	11.47	0.0	3.3	3.2	1.0	0.0	6.9	0.1	1.1	1.6	ND
Standard Error	0.42	0.22	0.0	0.4	0.9	0.4	0.0	1.1	0.1	0.7	0.9	ND
Median	33.00	12.00	0.0	3.0	3.0	0.0	0.0	7.0	0.0	0.0	0.0	ND
Mode	35.00	12.00	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.64	0.83	0.0	1.5	3.3	1.5	0.0	4.2	0.3	2.6	3.4	ND
Sample Variance	2.69	0.70	0.0	2.4	11.1	2.2	0.0	17.6	0.1	6.7	11.3	ND
Kurtosis	-1.09	-0.23	ND	6.9	-0.4	1.3	ND	-0.1	15.0	4.4	1.2	ND
Skewness	-0.19	-0.31	ND	2.4	0.7	1.4	ND	-0.5	3.9	2.3	1.7	ND
Range	5.00	3.00	0.0	6.2	9.6	4.7	0.0	14.0	1.1	8.4	9.2	0.0
Minimum	31.00	10.00	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	13.00	0.0	8.1	9.6	4.7	0.0	14.0	1.1	8.4	9.2	0.0
Count	15	15	15	15	15	15	15	15	15	15	15	0
Confidence Level(95.0%)	0.91	0.46	0.0	0.8	1.8	0.8	0.0	2.3	0.2	1.4	1.9	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	131	111	ND	ND	29.0	26.4	2.6	ND
Standard Error	2	1	ND	ND	0.4	0.3	0.1	ND
Median	130	110	ND	ND	28.0	26.0	2.5	ND
Mode	130	110	ND	ND	28.0	25.0	2.5	ND
Standard Deviation	8	7	ND	ND	2.6	2.3	0.5	ND
Sample Variance	64	51	ND	ND	7.0	5.4	0.2	ND
Kurtosis	-1	20	ND	ND	12.8	9.4	14.3	ND
Skewness	0	4	ND	ND	3.1	2.7	3.2	ND
Range	20	50	0.0	0.0	15.0	13.0	3.0	0.0
Minimum	120	100	0.0	0.0	27.0	24.0	2.0	0.0
Maximum	140	150	0.0	0.0	42.0	37.0	5.0	0.0
Count	15	45	0	0	45	45	45	0
Confidence Level(95.0%)	4	2	ND	ND	0.8	0.7	0.1	ND

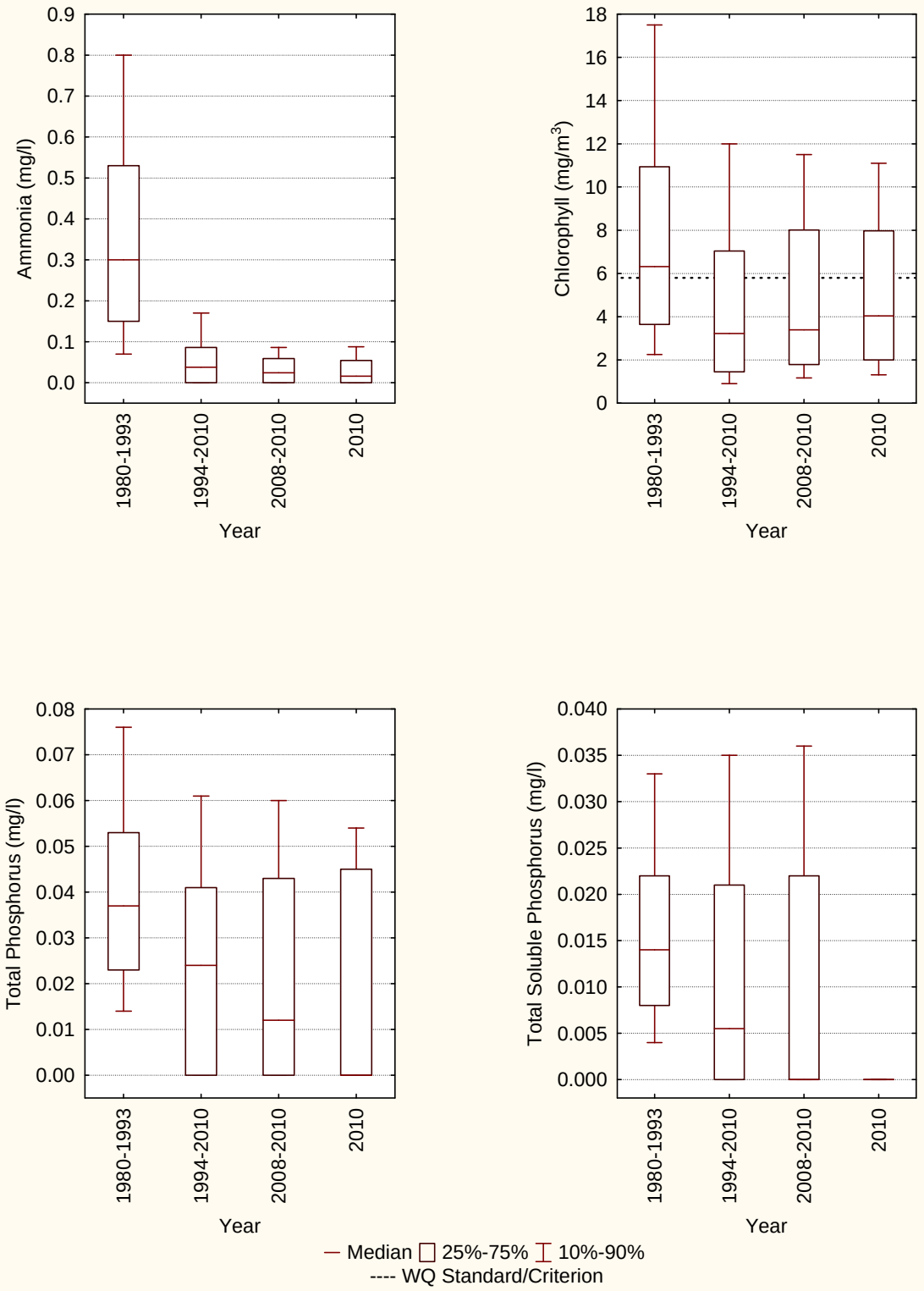
ND = No Data

Provisional MMSD Water Quality Data

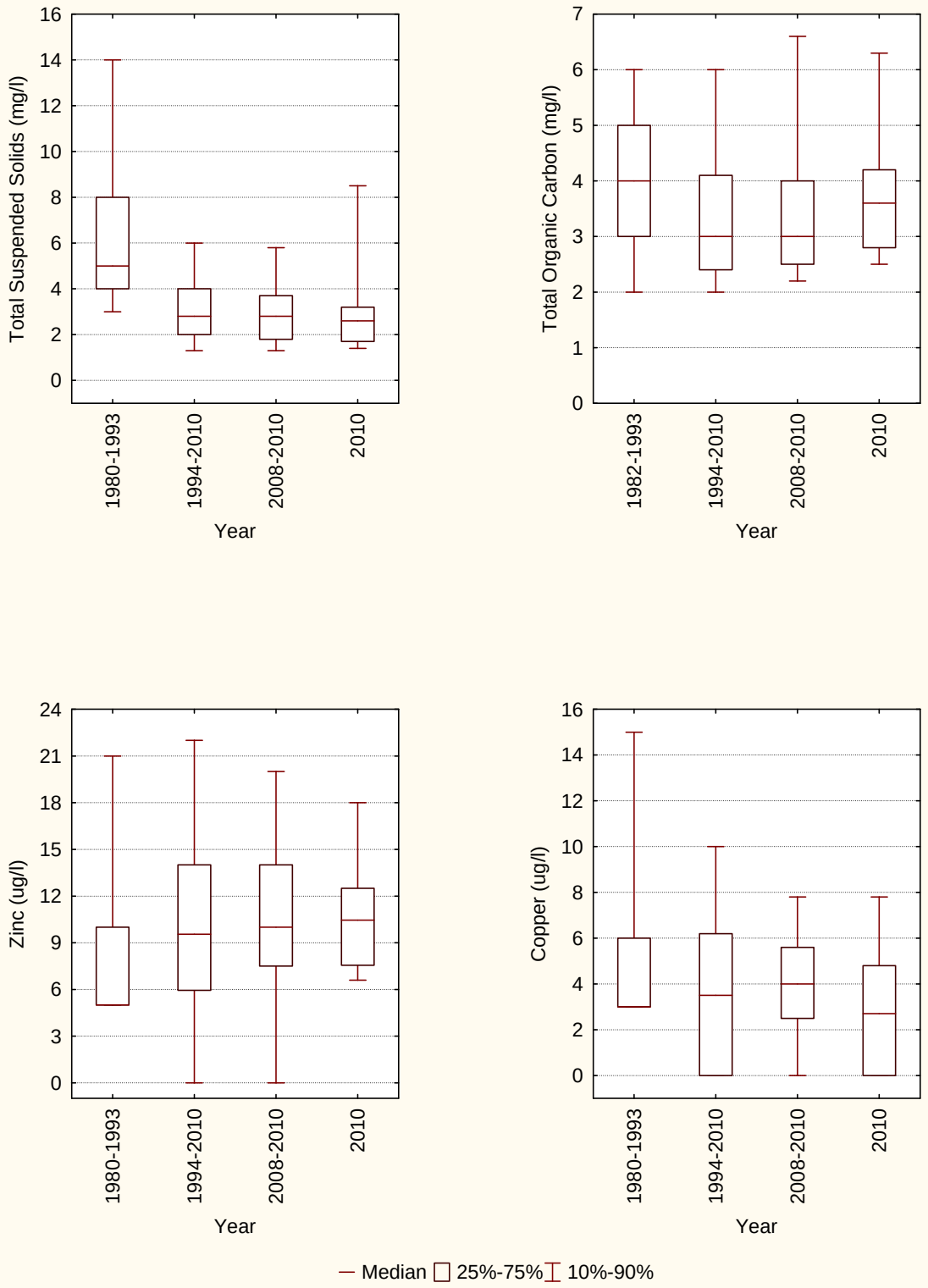
MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-07



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-07



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-07



OUTER HARBOR - SITE 7
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.4	10.5	5.37	0.61	0.010	0.62	0.028	0.30	0.021	0.004	2.71
Standard Error	0.0	0.5	0.1	0.54	0.03	0.001	0.03	0.004	0.03	0.004	0.002	0.12
Median	8.1	12.1	10.4	4.04	0.55	0.010	0.56	0.016	0.28	0.000	0.000	2.50
Mode	8.1	13.8	10.6	1.74	0.34	0.013	0.65	0.000	0.00	0.000	0.000	2.00
Standard Deviation	0.2	4.2	1.1	4.06	0.28	0.006	0.29	0.034	0.25	0.033	0.015	1.13
Sample Variance	0.0	18.0	1.1	16.48	0.08	0.000	0.08	0.001	0.06	0.001	0.000	1.28
Kurtosis	0.9	-0.3	1.0	0.56	1.16	-0.310	0.89	-0.231	-0.90	3.744	24.100	7.05
Skewness	0.7	0.2	0.2	1.05	1.01	0.399	0.95	1.027	0.32	1.795	4.700	2.11
Range	0.9	19.6	6.2	16.60	1.34	0.024	1.34	0.110	0.86	0.160	0.097	7.00
Minimum	7.7	2.5	7.4	0.30	0.26	0.000	0.26	0.000	0.00	0.000	0.000	1.40
Maximum	8.6	22.1	13.6	16.90	1.60	0.024	1.60	0.110	0.86	0.160	0.097	8.40
Count	78	84	84	57	84	84	84	84	84	84	84	84
Confidence Level(95.0%)	0.0	0.9	0.2	1.08	0.06	0.001	0.06	0.007	0.05	0.007	0.003	0.25

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	2.2	6.3	234.1	230.8	0.6	3.3	3.2	394	29.2	254	1.4	34
Standard Error	0.2	0.7	14.7	14.4	0.2	0.7	0.3	11	1.8	162	0.2	15
Median	1.9	5.7	220.0	217.2	0.0	2.6	2.5	372	24.0	24	1.4	14
Mode	1.8	4.5	250.0	ND	0.0	ND	1.6	381	11.0	3	0.5	4
Standard Deviation	1.3	3.7	60.6	59.4	0.9	2.9	2.7	98	16.4	856	0.9	60
Sample Variance	1.7	13.4	3675.7	3523.7	0.8	8.2	7.3	9620	269.4	732554	0.8	3544
Kurtosis	3.0	1.9	0.7	0.9	2.8	5.4	5.6	0	0.1	22	0.5	11
Skewness	1.7	1.4	1.0	1.0	1.6	2.3	2.2	1	0.9	5	0.7	3
Range	5.6	14.4	220.0	218.0	3.1	12.0	14.2	399	64.0	4400	3.6	240
Minimum	0.6	1.6	160.0	158.6	0.0	0.0	0.5	277	10.0	0	0.0	0
Maximum	6.2	16.0	380.0	376.6	3.1	12.0	14.7	676	74.0	4400	3.6	240
Count	28	26	17	17	17	17	84	84	84	28	28	16
Confidence Level(95.0%)	0.5	1.5	31.2	30.5	0.5	1.5	0.6	21	3.6	332	0.3	32

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 7
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	38.46	14.93	0.0	3.4	3.0	0.9	0.0	11.0	0.0	0.9	1.3	ND
Standard Error	1.01	0.62	0.0	0.3	0.6	0.2	0.0	1.3	0.0	0.3	0.5	ND
Median	37.00	14.00	0.0	3.0	2.7	0.0	0.0	10.5	0.0	0.0	0.0	ND
Mode	37.00	13.00	0.0	3.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0	ND
Standard Deviation	5.34	3.27	0.0	1.4	3.1	1.3	0.0	6.9	0.0	1.5	2.7	ND
Sample Variance	28.55	10.66	0.0	2.0	9.4	1.6	0.0	47.1	0.0	2.3	7.3	ND
Kurtosis	1.06	0.78	ND	4.3	0.8	-0.4	ND	8.5	ND	2.7	1.5	ND
Skewness	1.22	1.06	ND	1.1	1.0	0.9	ND	2.2	ND	1.8	1.8	ND
Range	21.00	13.00	0.0	8.0	11.0	3.9	0.0	38.0	0.0	5.8	7.9	0.0
Minimum	32.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	53.00	24.00	0.0	8.0	11.0	3.9	0.0	38.0	0.0	5.8	7.9	0.0
Count	28	28	28	28	28	28	28	28	28	28	26	0
Confidence Level(95.0%)	2.07	1.27	0.0	0.6	1.2	0.5	0.0	2.7	0.0	0.6	1.1	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	157	130	0.1	3.7	35.1	31.3	3.9	ND
Standard Error	5	3	0.1	0.3	1.0	0.8	0.2	ND
Median	150	120	0.0	4.0	34.0	30.5	3.6	ND
Mode	140	110	0.0	4.0	29.0	25.0	3.6	ND
Standard Deviation	27	20	0.5	1.4	7.1	5.9	1.5	ND
Sample Variance	704	396	0.3	1.9	50.7	34.5	2.2	ND
Kurtosis	1	1	17.0	2.2	1.4	1.5	1.6	ND
Skewness	1	1	4.1	-0.9	1.3	1.2	1.5	ND
Range	110	80	2.2	6.2	28.0	24.0	6.0	0.0
Minimum	120	110	0.0	0.0	27.0	24.0	2.3	0.0
Maximum	230	190	2.2	6.2	55.0	48.0	8.3	0.0
Count	28	51	17	17	51	50	50	0
Confidence Level(95.0%)	10	6	0.3	0.7	2.0	1.7	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 8
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	10.7	11.3	ND	0.35	0.004	0.36	0.001	0.10	0.000	0.002	1.82
Standard Error	0.0	0.7	0.1	ND	0.01	0.000	0.01	0.001	0.02	0.000	0.002	0.05
Median	8.1	10.5	11.1	ND	0.33	0.004	0.33	0.000	0.00	0.000	0.000	1.80
Mode	8.1	8.1	11.8	ND	0.32	0.000	0.33	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	4.4	1.0	ND	0.08	0.002	0.08	0.004	0.15	0.000	0.014	0.30
Sample Variance	0.0	19.4	1.0	ND	0.01	0.000	0.01	0.000	0.02	0.000	0.000	0.09
Kurtosis	0.6	-0.3	0.0	ND	7.50	0.970	7.74	8.607	0.24	ND	45.000	2.48
Skewness	0.9	0.0	0.6	ND	2.12	0.011	2.14	3.142	1.12	ND	6.708	1.61
Range	0.7	18.2	3.9	0.00	0.44	0.011	0.44	0.018	0.54	0.000	0.091	1.30
Minimum	7.9	2.3	9.8	0.00	0.25	0.000	0.26	0.000	0.00	0.000	0.000	1.40
Maximum	8.6	20.5	13.7	0.00	0.69	0.011	0.70	0.018	0.54	0.000	0.091	2.70
Count	42	45	45	0	45	45	45	45	45	45	45	45
Confidence Level(95.0%)	0.0	1.3	0.3	ND	0.02	0.001	0.02	0.001	0.04	0.000	0.004	0.09

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	5.2	13.4	168.3	167.1	0.2	1.2	1.2	305	14.2	24	0.8	ND
Standard Error	0.5	0.7	10.2	10.2	0.1	0.2	0.1	5	0.7	13	0.2	ND
Median	5.2	14.5	180.0	178.2	0.0	1.3	1.0	292	13.0	5	0.7	ND
Mode	6.0	14.5	180.0	ND	0.0	0.0	1.2	290	12.0	5	0.7	ND
Standard Deviation	2.1	2.8	39.5	39.4	0.5	0.8	0.6	34	4.4	50	0.7	ND
Sample Variance	4.3	7.7	1563.1	1553.4	0.2	0.7	0.4	1135	19.1	2475	0.4	ND
Kurtosis	0.3	2.9	10.6	10.7	1.1	-0.7	3.7	14	13.7	7	0.5	ND
Skewness	0.5	-1.9	-3.0	-3.1	1.7	-0.3	1.9	3	3.2	3	0.8	ND
Range	7.3	10.1	165.0	164.2	1.2	2.7	2.7	199	26.0	180	2.3	0
Minimum	1.9	5.9	35.0	33.9	0.0	0.0	0.4	276	10.0	0	0.0	0
Maximum	9.2	16.0	200.0	198.1	1.2	2.7	3.1	475	36.0	180	2.3	0
Count	15	15	15	15	15	15	45	45	45	15	15	0
Confidence Level(95.0%)	1.1	1.5	21.9	21.8	0.3	0.5	0.2	10	1.3	28	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 8
WATER QUALITY DATA - 2010

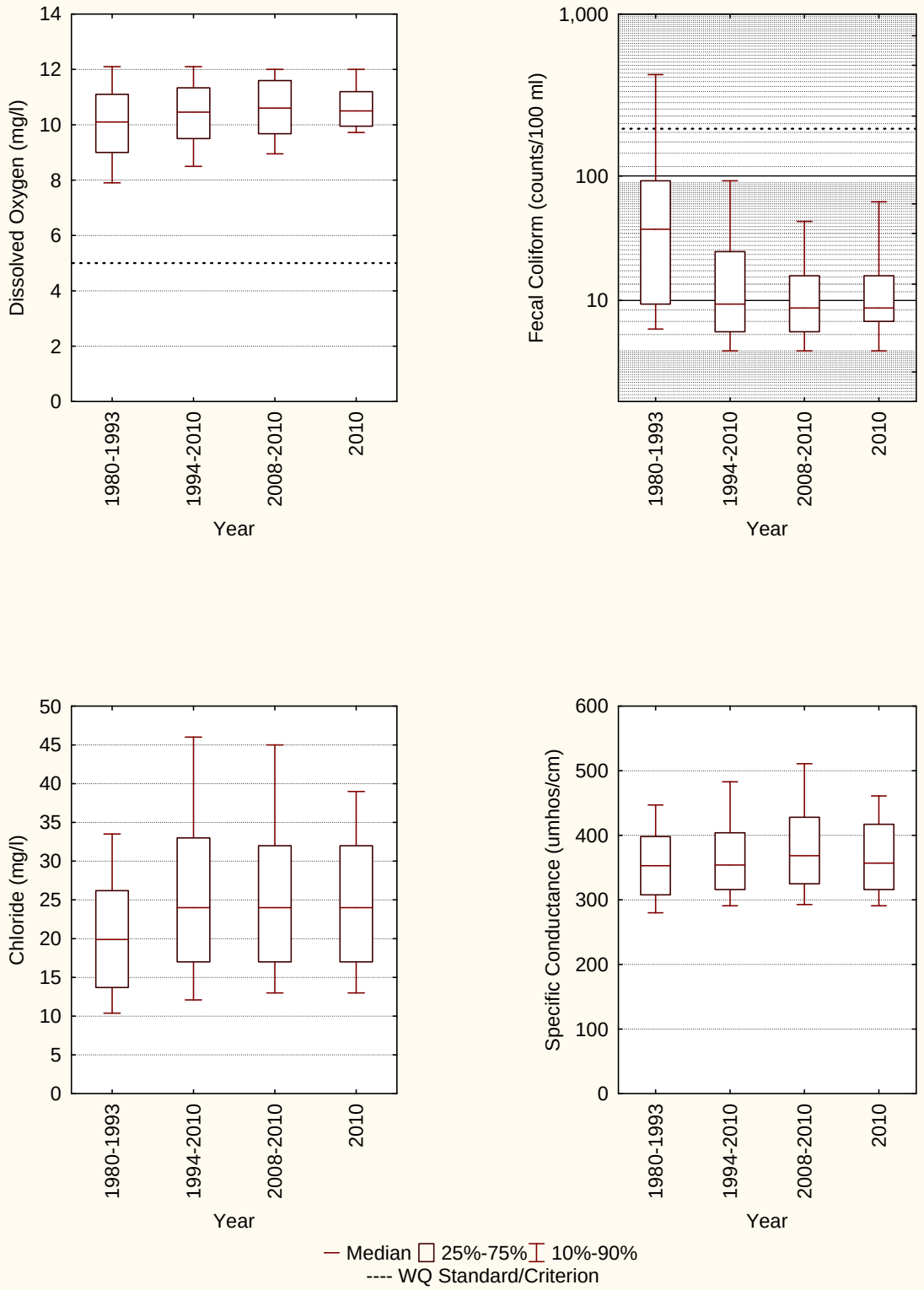
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	33.73	11.67	0.0	3.0	2.8	0.4	0.0	5.3	0.2	0.8	0.9	ND
Standard Error	0.44	0.23	0.0	0.2	0.9	0.2	0.0	1.0	0.1	0.4	0.6	ND
Median	33.00	11.00	0.0	3.2	0.0	0.0	0.0	7.0	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.71	0.90	0.1	0.8	3.6	0.8	0.0	4.0	0.4	1.5	2.3	ND
Sample Variance	2.92	0.81	0.0	0.7	12.9	0.6	0.0	16.1	0.2	2.2	5.3	ND
Kurtosis	1.38	2.01	15.0	-1.1	0.2	1.0	ND	-1.5	4.4	0.8	4.5	ND
Skewness	1.17	1.46	3.9	0.3	1.1	1.7	ND	-0.5	2.4	1.5	2.4	ND
Range	6.00	3.00	0.5	2.5	10.0	2.0	0.0	11.0	1.2	4.1	6.9	0.0
Minimum	32.00	11.00	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	38.00	14.00	0.5	4.6	10.0	2.0	0.0	11.0	1.2	4.1	6.9	0.0
Count	15	15	15	15	15	15	15	15	15	15	15	0
Confidence Level(95.0%)	0.95	0.50	0.1	0.5	2.0	0.4	0.0	2.2	0.2	0.8	1.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	131	112	ND	ND	29.2	26.6	2.7	ND
Standard Error	2	1	ND	ND	0.5	0.5	0.1	ND
Median	130	110	ND	ND	28.0	26.0	2.6	ND
Mode	130	110	ND	ND	28.0	26.0	2.5	ND
Standard Deviation	8	10	ND	ND	3.5	3.1	0.6	ND
Sample Variance	70	99	ND	ND	12.2	9.4	0.3	ND
Kurtosis	1	26	ND	ND	8.3	7.4	12.2	ND
Skewness	1	5	ND	ND	2.9	2.7	2.9	ND
Range	30	70	0.0	0.0	17.0	15.0	3.3	0.0
Minimum	120	100	0.0	0.0	27.0	24.0	2.1	0.0
Maximum	150	170	0.0	0.0	44.0	39.0	5.4	0.0
Count	15	45	0	0	45	44	44	0
Confidence Level(95.0%)	5	3	ND	ND	1.1	0.9	0.2	ND

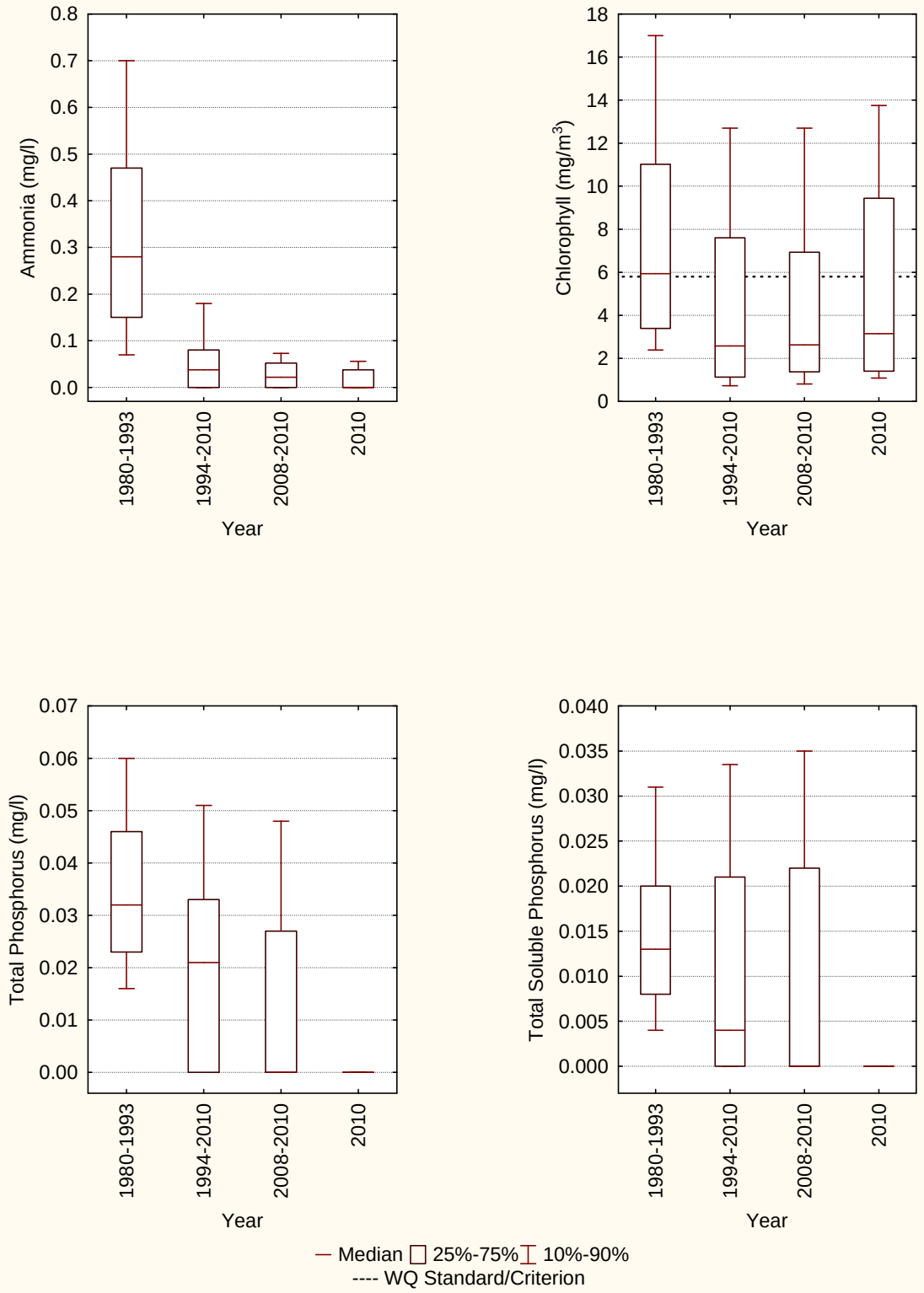
ND = No Data

Provisional MMSD Water Quality Data

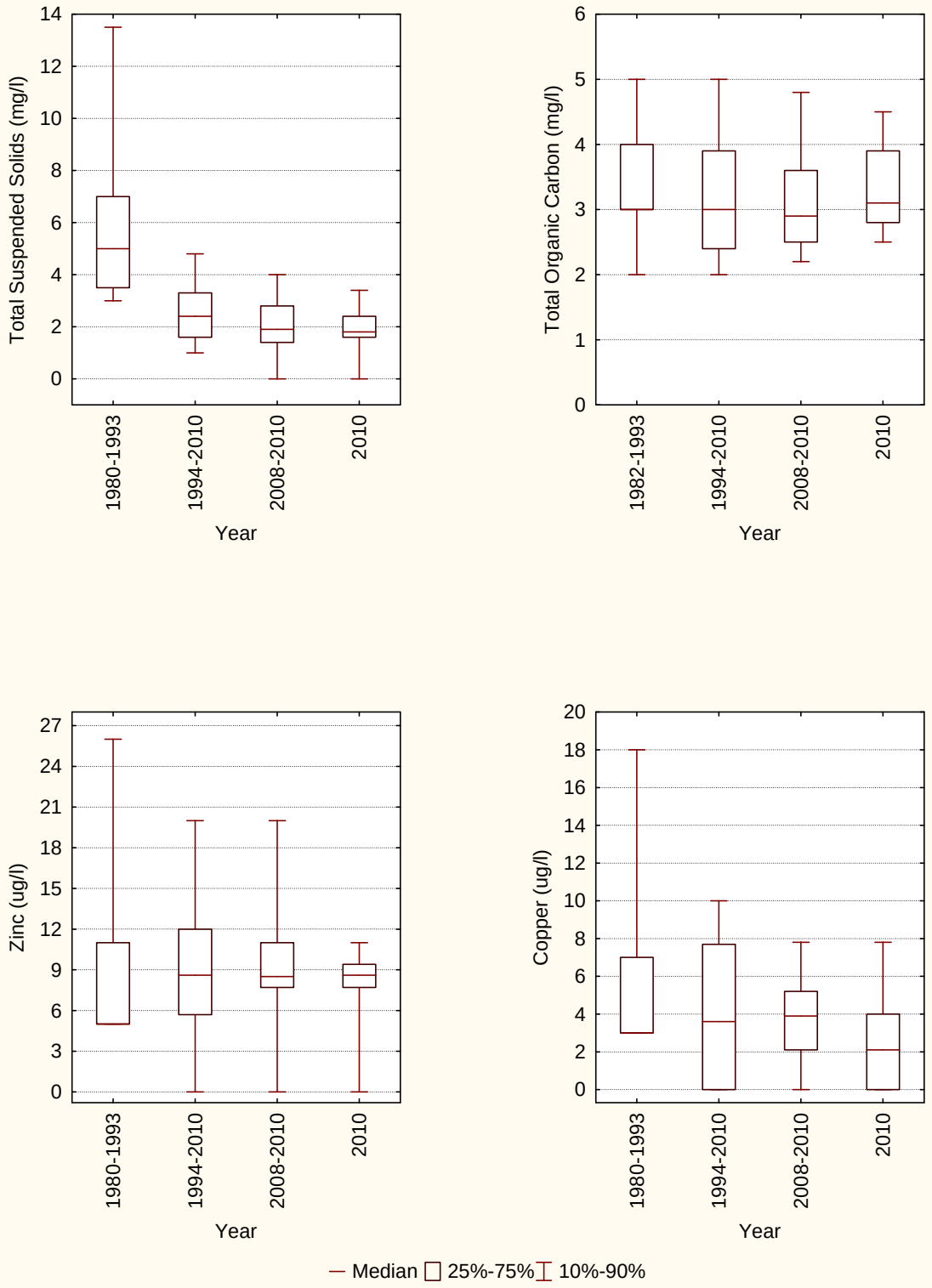
MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-09



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-09



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-09



OUTER HARBOR - SITE 9
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	11.9	10.7	5.67	0.57	0.009	0.58	0.019	0.19	0.006	0.002	2.38
Standard Error	0.0	0.6	0.2	0.98	0.03	0.001	0.03	0.003	0.03	0.003	0.002	0.13
Median	8.1	11.7	10.5	3.15	0.55	0.009	0.55	0.000	0.11	0.000	0.000	2.20
Mode	8.0	10.5	10.0	4.87	0.89	0.012	0.54	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	4.4	1.2	5.39	0.19	0.005	0.19	0.024	0.21	0.021	0.013	0.89
Sample Variance	0.1	19.8	1.4	29.05	0.03	0.000	0.04	0.001	0.05	0.000	0.000	0.80
Kurtosis	4.8	0.0	2.4	-0.05	-0.75	-0.455	-0.78	-0.254	-0.68	13.548	30.551	23.29
Skewness	1.1	0.2	1.1	1.03	0.51	-0.308	0.48	0.948	0.65	3.590	5.460	4.11
Range	1.4	20.0	6.8	18.66	0.67	0.018	0.68	0.077	0.75	0.110	0.080	6.10
Minimum	7.6	2.5	8.1	0.54	0.31	0.000	0.31	0.000	0.00	0.000	0.000	1.50
Maximum	9.0	22.5	14.9	19.20	0.98	0.018	0.99	0.077	0.75	0.110	0.080	7.60
Count	48	51	51	30	51	51	51	51	50	51	51	51
Confidence Level(95.0%)	0.1	1.3	0.3	2.01	0.05	0.001	0.05	0.007	0.06	0.006	0.004	0.25

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	3.1	8.0	210.6	208.6	0.5	2.0	1.8	375	25.4	25	1.0	18
Standard Error	0.4	0.8	6.9	7.0	0.2	0.2	0.1	10	1.5	12	0.1	8
Median	2.5	7.5	210.0	208.2	0.0	1.8	1.8	357	24.0	8	0.9	9
Mode	2.1	8.0	220.0	ND	0.0	1.8	1.9	461	24.0	5	0.7	11
Standard Deviation	1.7	3.4	28.6	28.7	0.6	1.0	0.8	73	10.9	50	0.6	33
Sample Variance	3.1	11.7	818.4	822.9	0.4	1.0	0.6	5349	118.4	2529	0.3	1115
Kurtosis	1.0	1.4	0.5	0.5	-1.4	0.8	2.5	0	1.2	13	0.9	14
Skewness	1.4	1.1	0.7	0.7	0.8	-0.3	1.0	1	1.1	4	0.5	4
Range	5.8	13.0	110.0	111.2	1.6	3.8	4.1	285	46.0	210	2.3	139
Minimum	1.3	3.0	170.0	167.0	0.0	0.0	0.5	279	12.0	0	0.0	1
Maximum	7.1	16.0	280.0	278.2	1.6	3.8	4.6	564	58.0	210	2.3	140
Count	17	17	17	17	17	17	51	51	51	17	17	16
Confidence Level(95.0%)	0.9	1.8	14.7	14.7	0.3	0.5	0.2	21	3.1	26	0.3	18

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 9
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	37.24	14.06	0.0	3.6	2.7	1.0	0.0	7.4	0.1	0.6	0.3	ND
Standard Error	1.03	0.58	0.0	0.3	0.8	0.3	0.0	0.9	0.1	0.3	0.3	ND
Median	36.00	14.00	0.0	3.4	2.1	0.0	0.0	8.6	0.0	0.0	0.0	ND
Mode	36.00	14.00	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	4.27	2.38	0.0	1.3	3.3	1.2	0.0	3.7	0.2	1.4	1.4	ND
Sample Variance	18.19	5.68	0.0	1.8	10.9	1.5	0.0	14.0	0.1	1.9	1.8	ND
Kurtosis	4.23	3.60	ND	-0.3	0.9	-1.1	ND	0.9	17.0	3.5	17.0	ND
Skewness	1.78	1.58	ND	0.8	1.1	0.7	ND	-1.4	4.1	2.2	4.1	ND
Range	18.00	10.00	0.0	4.6	11.0	3.4	0.0	12.0	1.0	4.1	5.6	0.0
Minimum	32.00	11.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	50.00	21.00	0.0	6.6	11.0	3.4	0.0	12.0	1.0	4.1	5.6	0.0
Count	17	17	17	17	17	17	17	17	17	17	17	0
Confidence Level(95.0%)	2.19	1.23	0.0	0.7	1.7	0.6	0.0	1.9	0.1	0.7	0.7	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	151	125	ND	ND	33.5	29.9	3.5	ND
Standard Error	5	2	ND	ND	0.8	0.7	0.2	ND
Median	150	120	ND	ND	32.0	29.0	3.1	ND
Mode	150	120	ND	ND	31.0	28.0	2.9	ND
Standard Deviation	20	15	ND	ND	5.9	4.9	1.2	ND
Sample Variance	386	237	ND	ND	35.3	23.6	1.4	ND
Kurtosis	4	3	ND	ND	5.2	5.8	5.1	ND
Skewness	2	2	ND	ND	2.1	2.2	2.2	ND
Range	80	60	0.0	0.0	28.0	23.0	5.7	0.0
Minimum	130	110	0.0	0.0	27.0	25.0	2.3	0.0
Maximum	210	170	0.0	0.0	55.0	48.0	8.0	0.0
Count	17	51	0	0	51	51	51	0
Confidence Level(95.0%)	10	4	ND	ND	1.7	1.4	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 10
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	13.1	10.7	7.21	0.65	0.011	0.66	0.021	0.26	0.011	0.004	2.58
Standard Error	0.0	0.7	0.2	0.81	0.02	0.000	0.02	0.003	0.03	0.003	0.002	0.09
Median	8.1	13.2	10.7	8.23	0.62	0.010	0.63	0.013	0.29	0.000	0.000	2.50
Mode	8.0	13.0	10.9	1.66	0.82	0.015	0.80	0.000	0.00	0.000	0.000	2.20
Standard Deviation	0.2	4.9	1.3	4.43	0.16	0.003	0.16	0.023	0.22	0.022	0.016	0.68
Sample Variance	0.1	23.8	1.7	19.60	0.02	0.000	0.02	0.001	0.05	0.001	0.000	0.46
Kurtosis	2.9	-0.6	0.0	-1.34	-1.33	-0.666	-1.32	0.052	-0.89	1.457	15.332	3.57
Skewness	1.5	-0.2	0.5	-0.12	0.03	0.479	0.04	0.876	0.14	1.700	4.033	1.43
Range	1.1	19.2	6.1	13.86	0.50	0.013	0.51	0.084	0.81	0.075	0.078	3.50
Minimum	7.8	3.1	8.1	1.14	0.39	0.005	0.40	0.000	0.00	0.000	0.000	1.40
Maximum	8.9	22.3	14.2	15.00	0.89	0.018	0.91	0.084	0.81	0.075	0.078	4.90
Count	48	51	51	30	51	51	51	51	51	51	51	51
Confidence Level(95.0%)	0.1	1.4	0.4	1.65	0.04	0.001	0.04	0.006	0.06	0.006	0.004	0.19

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	2.0	7.3	249.4	245.9	1.2	3.5	3.1	410	32.5	25	0.9	16
Standard Error	0.2	0.7	9.6	9.8	0.3	0.4	0.2	9	1.7	12	0.2	7
Median	1.9	5.8	240.0	236.5	1.2	3.3	2.7	390	29.0	12	1.1	7
Mode	1.4	10.0	240.0	ND	0.0	3.3	1.9	373	25.0	3	0.5	3
Standard Deviation	0.7	2.9	39.8	40.2	1.1	1.5	1.4	62	11.9	50	0.6	28
Sample Variance	0.4	8.2	1580.9	1617.2	1.1	2.2	2.0	3897	141.7	2512	0.4	803
Kurtosis	-0.8	-1.6	-0.4	-0.4	3.9	0.2	2.9	0	4.2	13	-0.1	15
Skewness	0.2	0.2	0.4	0.3	1.4	0.9	1.5	1	1.7	4	0.2	4
Range	2.3	8.8	140.0	144.0	4.3	5.5	7.0	249	66.0	210	2.3	117
Minimum	0.9	3.2	180.0	173.3	0.0	1.2	1.6	306	14.0	0	0.0	3
Maximum	3.2	12.0	320.0	317.3	4.3	6.7	8.6	555	80.0	210	2.3	120
Count	17	17	17	17	17	17	51	51	51	17	17	16
Confidence Level(95.0%)	0.3	1.5	20.4	20.7	0.5	0.8	0.4	18	3.3	26	0.3	15

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 10
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	38.41	14.88	0.2	3.8	3.4	0.7	3.7	8.7	0.0	1.0	1.3	ND
Standard Error	1.04	0.55	0.2	0.4	0.8	0.4	3.6	0.7	0.0	0.4	0.7	ND
Median	38.00	14.00	0.0	3.0	2.5	0.0	0.0	8.6	0.0	0.0	0.0	ND
Mode	38.00	14.00	0.0	2.6	0.0	0.0	0.0	13.0	0.0	0.0	0.0	ND
Standard Deviation	4.30	2.29	0.7	1.8	3.5	1.5	14.8	3.0	0.0	1.7	2.8	ND
Sample Variance	18.51	5.24	0.4	3.3	12.3	2.2	218.1	8.8	0.0	3.0	7.9	ND
Kurtosis	1.99	1.86	17.0	3.7	0.0	1.8	16.9	4.1	ND	0.2	2.0	ND
Skewness	1.18	1.33	4.1	2.1	0.9	1.8	4.1	-1.3	ND	1.3	1.9	ND
Range	17.00	9.00	2.7	6.2	11.0	4.2	61.0	13.0	0.0	5.1	8.1	0.0
Minimum	33.00	12.00	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	50.00	21.00	2.7	8.6	11.0	4.2	61.0	13.0	0.0	5.1	8.1	0.0
Count	17	17	17	17	17	17	17	17	17	17	17	0
Confidence Level(95.0%)	2.21	1.18	0.3	0.9	1.8	0.8	7.6	1.5	0.0	0.9	1.4	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	157	130	ND	ND	35.1	31.1	3.9	ND
Standard Error	5	2	ND	ND	0.8	0.7	0.2	ND
Median	150	120	ND	ND	33.0	29.0	3.6	ND
Mode	150	120	ND	ND	33.0	29.0	3.6	ND
Standard Deviation	20	16	ND	ND	6.0	5.2	1.1	ND
Sample Variance	385	244	ND	ND	36.1	26.6	1.2	ND
Kurtosis	2	1	ND	ND	4.5	5.0	1.2	ND
Skewness	1	1	ND	ND	2.1	2.2	1.3	ND
Range	80	60	0.0	0.0	28.0	23.0	4.5	0.0
Minimum	130	110	0.0	0.0	27.0	25.0	2.4	0.0
Maximum	210	170	0.0	0.0	55.0	48.0	6.9	0.0
Count	17	51	0	0	51	51	51	0
Confidence Level(95.0%)	10	4	ND	ND	1.7	1.4	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 11
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	13.1	10.2	7.12	0.77	0.014	0.79	0.041	0.35	0.027	0.004	2.72
Standard Error	0.0	0.6	0.1	0.68	0.03	0.001	0.03	0.005	0.02	0.004	0.002	0.10
Median	8.0	13.3	10.0	7.02	0.80	0.012	0.81	0.033	0.34	0.000	0.000	2.70
Mode	8.0	13.8	10.6	1.79	1.10	0.012	1.20	0.000	0.00	0.000	0.000	2.80
Standard Deviation	0.2	4.7	1.1	4.06	0.26	0.006	0.27	0.040	0.19	0.030	0.018	0.79
Sample Variance	0.0	21.7	1.3	16.45	0.07	0.000	0.07	0.002	0.04	0.001	0.000	0.63
Kurtosis	5.3	-0.4	5.8	-1.25	-0.50	1.317	-0.69	0.298	-0.54	-0.549	19.437	2.36
Skewness	1.6	-0.1	1.8	0.08	0.22	0.964	0.22	0.891	-0.37	0.672	4.404	0.82
Range	1.4	20.1	7.2	13.37	1.14	0.030	1.13	0.170	0.65	0.110	0.098	4.50
Minimum	7.6	3.0	8.2	0.93	0.26	0.004	0.27	0.000	0.00	0.000	0.000	1.30
Maximum	9.0	23.1	15.4	14.30	1.40	0.034	1.40	0.170	0.65	0.110	0.098	5.80
Count	60	63	63	36	63	63	63	63	63	63	63	63
Confidence Level(95.0%)	0.1	1.2	0.3	1.37	0.07	0.002	0.07	0.010	0.05	0.008	0.004	0.20

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.8	5.3	258.1	253.4	1.4	4.7	4.2	425	35.7	644	1.4	1504
Standard Error	0.1	0.5	11.4	11.5	0.2	1.0	0.7	9	1.5	521	0.2	1188
Median	1.8	5.2	260.0	252.9	1.4	3.6	3.0	432	35.0	18	1.3	507
Mode	2.5	4.5	280.0	277.7	0.0	2.3	2.4	450	38.0	0	0.0	ND
Standard Deviation	0.6	2.1	52.3	52.6	1.0	4.4	5.5	75	12.0	2386	1.1	2377
Sample Variance	0.3	4.6	2736.2	2764.6	1.0	19.7	30.4	5565	143.9	5693172	1.1	5649711
Kurtosis	1.2	6.5	2.6	2.6	0.3	16.1	31.4	0	0.2	20	0.4	3
Skewness	-0.6	2.0	1.2	1.3	0.3	3.8	5.4	0	0.3	5	0.7	2
Range	2.3	10.0	220.0	221.6	3.6	21.2	38.8	320	53.0	11000	4.0	4997
Minimum	0.3	2.5	190.0	184.6	0.0	1.8	1.1	282	11.0	0	0.0	3
Maximum	2.6	12.5	410.0	406.2	3.6	23.0	39.9	602	64.0	11000	4.0	5000
Count	21	20	21	21	21	21	63	63	63	21	21	4
Confidence Level(95.0%)	0.3	1.0	23.8	23.9	0.5	2.0	1.4	19	3.0	1086	0.5	3782

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 11
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	39.71	15.76	0.0	3.5	3.8	1.4	0.0	11.5	0.0	0.7	1.0	0.0
Standard Error	1.17	0.62	0.0	0.2	0.9	0.4	0.0	1.3	0.0	0.3	0.6	0.0
Median	39.00	15.00	0.0	3.5	2.6	0.0	0.0	10.0	0.0	0.0	0.0	0.0
Mode	34.00	14.00	0.0	3.8	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0
Standard Deviation	5.34	2.86	0.0	1.1	4.1	2.0	0.0	6.0	0.0	1.5	2.5	0.0
Sample Variance	28.51	8.19	0.0	1.1	16.5	3.9	0.0	36.6	0.0	2.2	6.1	0.0
Kurtosis	1.54	3.05	ND	6.8	1.0	6.0	ND	5.7	ND	1.8	3.3	ND
Skewness	1.09	1.64	ND	2.1	1.2	2.1	ND	1.8	ND	1.8	2.2	ND
Range	22.00	12.00	0.0	5.0	14.0	8.1	0.0	31.0	0.0	4.6	7.6	0.0
Minimum	32.00	12.00	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	54.00	24.00	0.0	7.2	14.0	8.1	0.0	31.0	0.0	4.6	7.6	0.0
Count	21	21	21	21	21	21	21	21	21	21	20	3
Confidence Level(95.0%)	2.43	1.30	0.0	0.5	1.8	0.9	0.0	2.8	0.0	0.7	1.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	164	135	0.5	ND	36.3	32.3	4.1	ND
Standard Error	5	2	0.5	ND	0.9	0.7	0.2	ND
Median	160	130	0.0	ND	35.0	31.0	3.8	ND
Mode	170	140	0.0	ND	34.0	31.0	3.4	ND
Standard Deviation	24	19	1.1	ND	6.9	5.8	1.3	ND
Sample Variance	556	378	1.1	ND	48.2	34.1	1.6	ND
Kurtosis	2	3	4.0	ND	4.5	4.4	3.3	ND
Skewness	1	1	2.0	ND	2.1	2.1	1.9	ND
Range	100	104	2.1	0.0	32.0	26.0	5.5	0.0
Minimum	130	96	0.0	0.0	27.0	25.0	2.4	0.0
Maximum	230	200	2.1	0.0	59.0	51.0	7.9	0.0
Count	21	63	4	0	63	63	63	0
Confidence Level(95.0%)	11	5	1.7	ND	1.7	1.5	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 12
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	10.3	11.5	1.39	0.30	0.002	0.30	0.002	0.07	0.000	0.000	1.81
Standard Error	0.0	0.7	0.2	0.28	0.01	0.000	0.01	0.001	0.02	0.000	0.000	0.05
Median	8.1	10.1	11.4	0.99	0.30	0.000	0.30	0.000	0.00	0.000	0.000	1.80
Mode	8.0	14.4	11.2	1.31	0.31	0.000	0.31	0.000	0.00	0.000	0.000	1.60
Standard Deviation	0.1	4.4	1.0	1.48	0.04	0.002	0.05	0.006	0.12	0.000	0.000	0.30
Sample Variance	0.0	19.4	1.1	2.18	0.00	0.000	0.00	0.000	0.01	0.000	0.000	0.09
Kurtosis	0.2	-0.5	-0.6	3.98	1.06	-0.915	1.45	5.971	0.08	ND	ND	0.22
Skewness	0.8	0.1	0.3	2.12	0.45	0.750	0.60	2.630	1.36	ND	ND	0.94
Range	0.6	18.2	4.0	5.79	0.22	0.007	0.23	0.023	0.35	0.000	0.000	1.10
Minimum	7.9	2.1	9.9	0.19	0.22	0.000	0.22	0.000	0.00	0.000	0.000	1.40
Maximum	8.5	20.3	13.8	5.98	0.44	0.007	0.45	0.023	0.35	0.000	0.000	2.50
Count	42	45	45	27	45	45	45	45	45	45	45	45
Confidence Level(95.0%)	0.0	1.3	0.3	0.58	0.01	0.001	0.01	0.002	0.04	0.000	0.000	0.09

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.5	14.9	157.9	157.3	0.0	0.7	0.8	289	11.5	8	0.3	ND
Standard Error	0.6	0.8	6.2	6.2	0.0	0.2	0.0	3	0.3	4	0.2	ND
Median	7.5	16.0	160.0	159.0	0.0	1.0	0.7	283	11.0	0	0.0	ND
Mode	8.0	17.0	160.0	160.0	0.0	0.0	0.5	275	11.0	0	0.0	ND
Standard Deviation	2.4	3.1	24.2	24.2	0.0	0.6	0.3	18	1.9	17	0.6	ND
Sample Variance	6.0	9.4	584.1	585.6	0.0	0.4	0.1	310	3.7	299	0.4	ND
Kurtosis	-1.6	-0.5	4.2	3.9	ND	-2.1	0.8	6	8.8	7	1.2	ND
Skewness	-0.2	-0.6	-1.6	-1.5	ND	0.0	1.1	2	2.7	3	1.6	ND
Range	6.8	10.0	101.0	101.0	0.0	1.5	1.3	87	10.2	62	1.8	0
Minimum	3.2	10.0	89.0	89.0	0.0	0.0	0.4	275	9.8	0	0.0	0
Maximum	10.0	20.0	190.0	190.0	0.0	1.5	1.7	362	20.0	62	1.8	0
Count	15	15	15	15	15	15	45	45	45	15	15	0
Confidence Level(95.0%)	1.4	1.7	13.4	13.4	0.0	0.4	0.1	5	0.6	10	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 12
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.80	11.13	0.1	3.3	2.6	0.8	0.5	4.4	0.1	0.7	0.5	ND
Standard Error	0.38	0.13	0.1	0.3	0.7	0.3	0.4	1.3	0.1	0.3	0.5	ND
Median	33.00	11.00	0.0	3.2	2.7	0.0	0.0	0.0	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.47	0.52	0.2	1.2	2.7	1.2	1.4	5.2	0.4	1.2	1.8	ND
Sample Variance	2.17	0.27	0.0	1.5	7.2	1.4	2.0	26.7	0.2	1.4	3.2	ND
Kurtosis	0.09	1.40	5.8	1.6	-0.4	-0.9	5.7	-1.4	4.7	0.6	15.0	ND
Skewness	0.70	0.28	2.6	1.3	0.7	1.0	2.6	0.5	2.5	1.5	3.9	ND
Range	5.00	2.00	0.7	4.3	8.3	3.1	4.6	14.0	1.2	3.3	6.9	0.0
Minimum	31.00	10.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	12.00	0.7	6.3	8.3	3.1	4.6	14.0	1.2	3.3	6.9	0.0
Count	15	15	15	15	15	15	15	15	15	15	15	0
Confidence Level(95.0%)	0.82	0.29	0.1	0.7	1.5	0.7	0.8	2.9	0.2	0.6	1.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	128	110	ND	ND	28.4	25.8	2.5	ND
Standard Error	1	1	ND	ND	0.2	0.2	0.0	ND
Median	130	110	ND	ND	28.0	25.0	2.5	ND
Mode	130	110	ND	ND	27.0	25.0	2.4	ND
Standard Deviation	6	4	ND	ND	1.5	1.5	0.3	ND
Sample Variance	31	18	ND	ND	2.3	2.3	0.1	ND
Kurtosis	0	3	ND	ND	2.7	3.8	2.7	ND
Skewness	0	0	ND	ND	1.6	1.9	0.9	ND
Range	20	20	0.0	0.0	6.0	7.0	1.5	0.0
Minimum	120	100	0.0	0.0	27.0	24.0	2.0	0.0
Maximum	140	120	0.0	0.0	33.0	31.0	3.5	0.0
Count	15	45	0	0	45	45	45	0
Confidence Level(95.0%)	3	1	ND	ND	0.5	0.5	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 13
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	10.1	11.4	1.16	0.31	0.002	0.31	0.002	0.05	0.000	0.002	1.83
Standard Error	0.0	0.6	0.2	0.32	0.01	0.000	0.01	0.001	0.02	0.000	0.002	0.04
Median	8.1	9.6	11.4	0.64	0.31	0.003	0.31	0.000	0.00	0.000	0.000	1.80
Mode	8.1	13.7	12.3	0.47	0.31	0.000	0.31	0.000	0.00	0.000	0.000	1.90
Standard Deviation	0.1	4.3	1.1	1.69	0.06	0.002	0.06	0.007	0.10	0.000	0.016	0.29
Sample Variance	0.0	18.6	1.1	2.84	0.00	0.000	0.00	0.000	0.01	0.000	0.000	0.08
Kurtosis	0.8	-0.2	-0.6	9.88	2.69	-1.306	2.37	11.765	2.51	ND	45.000	0.72
Skewness	1.0	0.2	0.3	3.25	1.14	0.318	1.13	3.408	1.89	ND	6.708	0.87
Range	0.6	18.9	4.1	7.05	0.29	0.008	0.28	0.033	0.41	0.000	0.110	1.20
Minimum	8.0	1.9	9.8	0.22	0.22	0.000	0.23	0.000	0.00	0.000	0.000	1.40
Maximum	8.6	20.8	13.9	7.27	0.51	0.008	0.51	0.033	0.41	0.000	0.110	2.60
Count	42	45	45	27	45	45	45	45	45	45	45	45
Confidence Level(95.0%)	0.0	1.3	0.3	0.67	0.02	0.001	0.02	0.002	0.03	0.000	0.005	0.09

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.2	16.7	155.7	155.2	0.0	0.5	0.9	289	11.6	2	0.2	3
Standard Error	0.7	0.8	6.9	6.9	0.0	0.2	0.1	2	0.2	1	0.1	2
Median	7.7	18.0	160.0	160.0	0.0	0.0	0.7	284	11.0	0	0.0	0
Mode	10.0	18.0	180.0	160.0	0.0	0.0	0.4	282	11.0	0	0.0	0
Standard Deviation	2.5	3.1	26.7	26.7	0.0	0.7	0.6	17	1.7	4	0.4	7
Sample Variance	6.5	9.6	710.2	710.4	0.0	0.5	0.4	276	2.7	12	0.1	53
Kurtosis	-0.4	5.6	0.8	0.7	ND	0.0	2.6	15	6.2	3	1.5	12
Skewness	-0.7	-2.3	-1.0	-1.0	ND	1.2	1.8	4	2.3	2	1.7	3
Range	8.1	11.7	95.0	95.0	0.0	2.1	2.4	97	8.0	10	1.0	28
Minimum	1.9	7.3	95.0	95.0	0.0	0.0	0.3	276	10.0	0	0.0	0
Maximum	10.0	19.0	190.0	190.0	0.0	2.1	2.7	373	18.0	10	1.0	28
Count	15	15	15	15	15	15	45	45	45	15	15	15
Confidence Level(95.0%)	1.4	1.7	14.8	14.8	0.0	0.4	0.2	5	0.5	2	0.2	4

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 13
WATER QUALITY DATA - 2010

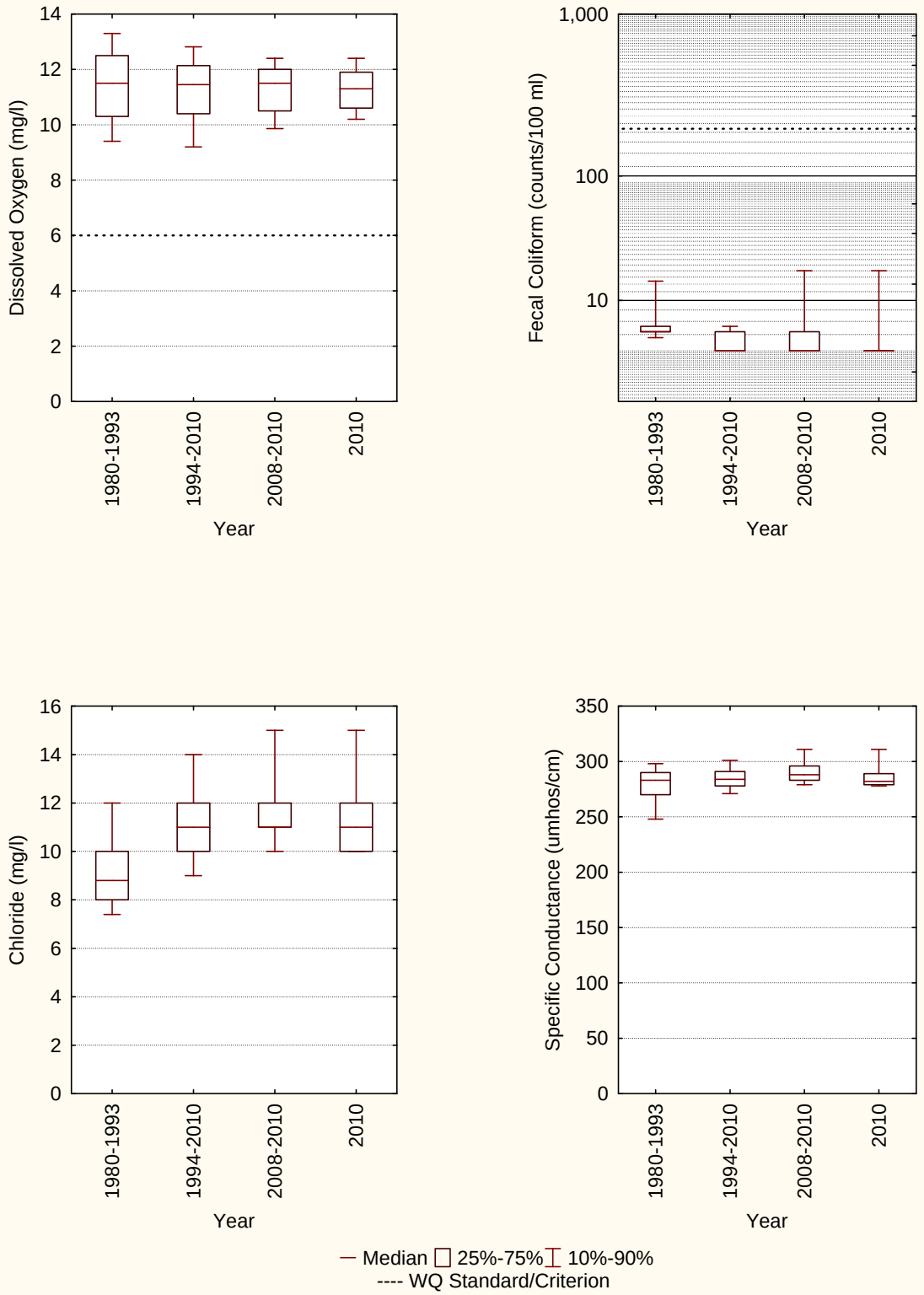
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	33.33	11.27	0.0	3.2	3.1	0.8	0.2	4.6	0.0	0.9	0.5	ND
Standard Error	0.41	0.18	0.0	0.5	0.8	0.4	0.2	1.4	0.0	0.5	0.5	ND
Median	33.00	11.00	0.0	2.9	2.6	0.0	0.0	0.0	0.0	0.0	0.0	ND
Mode	34.00	11.00	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.59	0.70	0.0	2.0	3.1	1.4	0.7	5.4	0.0	2.1	2.0	ND
Sample Variance	2.52	0.50	0.0	3.8	9.5	1.9	0.5	29.3	0.0	4.5	4.1	ND
Kurtosis	-0.69	-0.67	ND	7.3	-1.2	3.0	15.0	-1.4	ND	5.1	14.0	ND
Skewness	0.23	-0.43	ND	2.1	0.4	1.8	3.9	0.5	ND	2.3	3.7	ND
Range	5.00	2.00	0.0	9.3	8.7	4.6	2.6	14.0	0.0	7.2	7.6	0.0
Minimum	31.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	12.00	0.0	9.3	8.7	4.6	2.6	14.0	0.0	7.2	7.6	0.0
Count	15	15	15	15	15	15	15	15	15	15	14	0
Confidence Level(95.0%)	0.88	0.39	0.0	1.1	1.7	0.8	0.4	3.0	0.0	1.2	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	129	110	ND	ND	28.4	25.9	2.5	ND
Standard Error	2	1	ND	ND	0.3	0.2	0.0	ND
Median	130	110	ND	ND	28.0	26.0	2.5	ND
Mode	130	110	ND	ND	27.0	26.0	2.5	ND
Standard Deviation	7	5	ND	ND	1.7	1.7	0.3	ND
Sample Variance	50	23	ND	ND	2.9	2.8	0.1	ND
Kurtosis	-1	8	ND	ND	1.8	3.0	6.7	ND
Skewness	0	1	ND	ND	1.5	1.6	1.7	ND
Range	20	30	0.0	0.0	6.0	7.0	1.5	0.0
Minimum	120	100	0.0	0.0	27.0	24.0	2.1	0.0
Maximum	140	130	0.0	0.0	33.0	31.0	3.6	0.0
Count	15	45	0	0	45	45	45	0
Confidence Level(95.0%)	4	1	ND	ND	0.5	0.5	0.1	ND

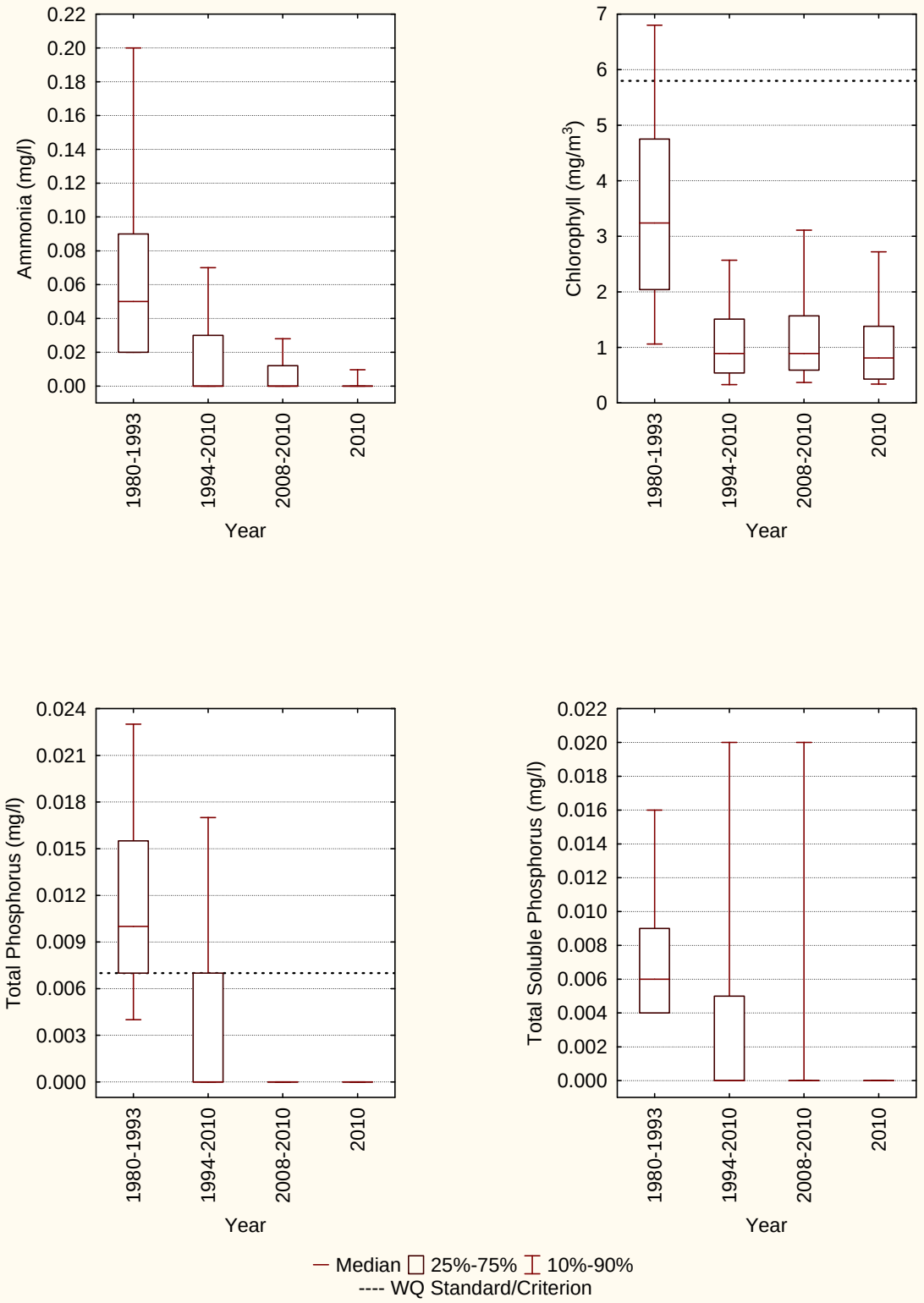
ND = No Data

Provisional MMSD Water Quality Data

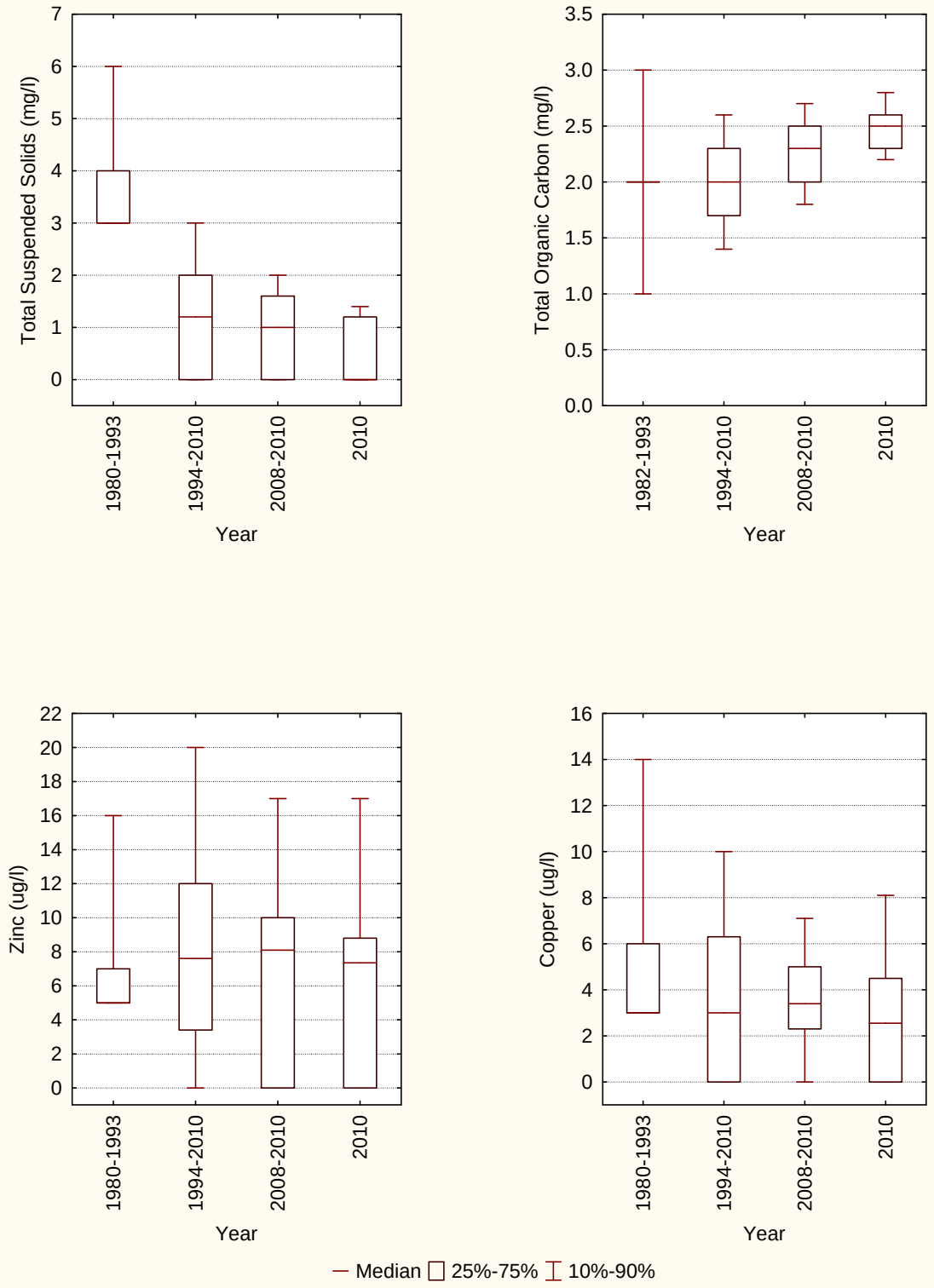
MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-14



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-14



MMSD Water Quality Monitoring Program Data
Outer Harbor, Site OH-14



OUTER HARBOR - SITE 14
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	10.7	11.3	1.20	0.30	0.003	0.31	0.002	0.12	0.000	0.001	1.83
Standard Error	0.0	0.5	0.1	0.17	0.01	0.000	0.01	0.000	0.02	0.000	0.001	0.04
Median	8.1	10.2	11.3	0.81	0.30	0.003	0.30	0.000	0.00	0.000	0.000	1.80
Mode	8.0	13.8	11.9	0.36	0.31	0.000	0.31	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	4.4	0.9	1.24	0.05	0.003	0.05	0.004	0.15	0.002	0.005	0.32
Sample Variance	0.1	19.0	0.8	1.54	0.00	0.000	0.00	0.000	0.02	0.000	0.000	0.10
Kurtosis	0.0	-0.5	0.2	10.46	3.22	5.477	3.01	5.959	-0.18	78.000	78.000	0.15
Skewness	0.2	0.3	0.4	2.86	1.50	1.526	1.49	2.697	0.83	8.832	8.832	0.46
Range	1.1	18.8	4.3	7.07	0.25	0.017	0.25	0.018	0.63	0.014	0.046	1.50
Minimum	7.6	1.8	9.6	0.17	0.23	0.000	0.23	0.000	0.00	0.000	0.000	1.20
Maximum	8.7	20.6	13.9	7.24	0.48	0.017	0.48	0.018	0.63	0.014	0.046	2.70
Count	72	78	78	54	78	78	78	78	78	78	78	78
Confidence Level(95.0%)	0.1	1.0	0.2	0.34	0.01	0.001	0.01	0.001	0.03	0.000	0.001	0.07

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.7	15.6	165.3	164.8	0.3	0.6	0.9	288	11.6	14	0.3	ND
Standard Error	0.6	0.9	3.9	3.9	0.1	0.2	0.1	2	0.2	11	0.1	ND
Median	6.6	18.0	170.0	168.4	0.0	0.0	0.8	282	11.0	0	0.0	ND
Mode	10.0	18.5	160.0	160.0	0.0	0.0	0.4	282	11.0	0	0.0	ND
Standard Deviation	2.8	4.5	15.1	15.1	0.5	0.7	0.5	14	2.2	55	0.6	ND
Sample Variance	7.9	20.2	226.7	227.9	0.2	0.4	0.2	201	4.8	3040	0.4	ND
Kurtosis	0.4	0.5	0.9	0.8	-0.6	-2.0	3.7	5	4.3	24	5.5	ND
Skewness	0.4	-1.2	-0.7	-0.6	1.2	0.3	1.6	2	2.1	5	2.4	ND
Range	12.4	15.2	60.0	60.0	1.2	1.6	2.4	65	10.7	280	2.4	0
Minimum	1.6	4.8	130.0	130.0	0.0	0.0	0.3	276	9.3	0	0.0	0
Maximum	14.0	20.0	190.0	190.0	1.2	1.6	2.7	341	20.0	280	2.4	0
Count	26	24	15	15	15	15	78	78	78	26	26	0
Confidence Level(95.0%)	1.1	1.9	8.3	8.4	0.3	0.4	0.1	3	0.5	22	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 14
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.96	11.31	0.0	2.6	2.8	0.5	0.0	6.7	0.0	0.5	1.4	ND
Standard Error	0.25	0.11	0.0	0.3	0.6	0.2	0.0	1.2	0.0	0.3	0.6	ND
Median	33.00	11.00	0.0	2.8	2.6	0.0	0.0	7.4	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.28	0.55	0.0	1.3	3.3	1.0	0.0	6.0	0.0	1.4	2.8	ND
Sample Variance	1.64	0.30	0.0	1.8	10.8	1.0	0.0	35.8	0.0	1.9	7.8	ND
Kurtosis	0.18	-0.52	ND	0.7	1.5	2.1	ND	-0.4	ND	8.9	0.8	ND
Skewness	0.57	0.07	ND	-0.5	1.3	1.9	ND	0.5	ND	3.0	1.6	ND
Range	5.00	2.00	0.0	5.4	12.0	3.2	0.0	20.0	0.0	5.7	7.6	0.0
Minimum	31.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	12.00	0.0	5.4	12.0	3.2	0.0	20.0	0.0	5.7	7.6	0.0
Count	26	26	26	26	26	26	26	26	26	26	25	0
Confidence Level(95.0%)	0.52	0.22	0.0	0.5	1.3	0.4	0.0	2.4	0.0	0.6	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	129	110	0.0	2.4	28.3	25.8	2.4	ND
Standard Error	1	0	0.0	0.2	0.3	0.3	0.1	ND
Median	130	110	0.0	2.5	28.0	25.0	2.5	ND
Mode	130	110	0.0	2.6	27.0	25.0	2.6	ND
Standard Deviation	6	3	0.0	0.7	1.7	1.8	0.5	ND
Sample Variance	39	7	0.0	0.5	3.0	3.3	0.2	ND
Kurtosis	0	13	ND	9.9	2.3	3.3	16.5	ND
Skewness	0	1	ND	-2.9	1.4	1.6	-2.4	ND
Range	20	20	0.0	3.1	8.0	9.0	3.9	0.0
Minimum	120	100	0.0	0.0	26.0	23.0	0.0	0.0
Maximum	140	120	0.0	3.1	34.0	32.0	3.9	0.0
Count	26	45	15	15	45	45	45	0
Confidence Level(95.0%)	3	1	0.0	0.4	0.5	0.5	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

OUTER HARBOR - SITE 15
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	14.9	10.3	7.17	0.47	0.009	0.48	0.034	0.34	0.021	0.005	3.33
Standard Error	0.1	1.3	0.3	2.39	0.03	0.001	0.03	0.006	0.05	0.008	0.005	0.34
Median	8.1	13.5	10.2	5.01	0.49	0.008	0.50	0.026	0.34	0.000	0.000	2.90
Mode	8.0	21.7	11.4	ND	0.51	0.013	0.52	0.032	0.34	0.000	0.000	2.80
Standard Deviation	0.2	5.2	1.1	7.16	0.13	0.003	0.13	0.026	0.19	0.031	0.020	1.35
Sample Variance	0.0	27.1	1.3	51.28	0.02	0.000	0.02	0.001	0.04	0.001	0.000	1.81
Kurtosis	-0.7	-1.4	-0.8	3.29	-0.25	-1.098	-0.32	2.233	-0.10	1.099	16.000	2.80
Skewness	0.6	0.0	0.2	1.88	0.46	0.223	0.44	1.711	-0.20	1.305	4.000	1.64
Range	0.7	14.5	4.0	22.10	0.47	0.009	0.48	0.084	0.65	0.100	0.080	5.00
Minimum	7.9	7.2	8.5	1.50	0.29	0.004	0.29	0.011	0.00	0.000	0.000	2.00
Maximum	8.6	21.7	12.5	23.60	0.76	0.013	0.77	0.095	0.65	0.100	0.080	7.00
Count	15	16	16	9	16	16	16	16	16	16	16	16
Confidence Level(95.0%)	0.1	2.8	0.6	5.50	0.07	0.002	0.07	0.014	0.10	0.016	0.011	0.72

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	232.5	229.7	0.8	2.8	2.4	399	26.9	31	1.1	ND
Standard Error	ND	ND	7.1	7.0	0.2	0.4	0.3	11	1.5	13	0.2	ND
Median	ND	ND	220.0	218.3	0.6	2.6	1.9	403	26.0	13	1.1	ND
Mode	ND	ND	220.0	ND	0.0	2.0	1.6	403	25.0	3	0.5	ND
Standard Deviation	ND	ND	28.4	28.0	0.9	1.5	1.2	46	6.1	54	0.6	ND
Sample Variance	ND	ND	806.7	782.3	0.8	2.2	1.5	2098	36.7	2901	0.4	ND
Kurtosis	ND	ND	1.8	1.7	-0.4	-0.7	0.0	0	1.6	12	-0.1	ND
Skewness	ND	ND	1.3	1.3	0.7	0.0	1.1	0	0.8	3	0.2	ND
Range	0.0	0.0	110.0	107.7	2.8	5.2	4.0	181	25.0	220	2.3	0
Minimum	0.0	0.0	190.0	188.7	0.0	0.0	1.0	316	17.0	0	0.0	0
Maximum	0.0	0.0	300.0	296.4	2.8	5.2	5.0	497	42.0	220	2.3	0
Count	0	0	16	16	16	16	16	16	16	16	16	0
Confidence Level(95.0%)	ND	ND	15.1	14.9	0.5	0.8	0.6	24	3.2	29	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

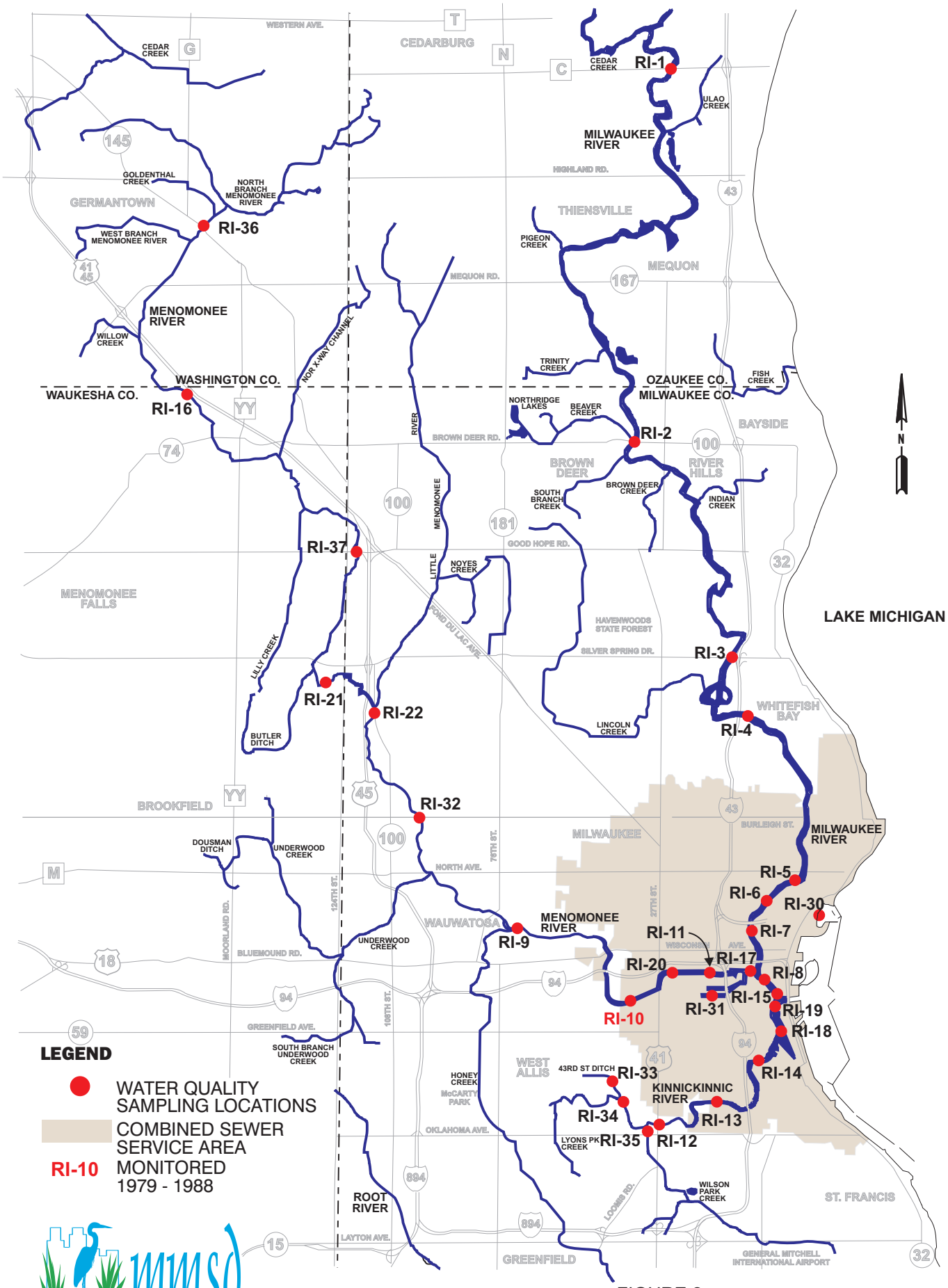
OUTER HARBOR - SITE 15
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	39.38	16.31	0.1	3.7	5.8	0.6	0.4	9.1	0.0	0.7	1.3	ND
Standard Error	0.95	0.50	0.1	0.3	0.9	0.3	0.4	1.2	0.0	0.4	0.7	ND
Median	39.00	16.50	0.0	3.5	5.8	0.0	0.0	8.7	0.0	0.0	0.0	ND
Mode	42.00	15.00	0.0	4.0	12.0	0.0	0.0	13.0	0.0	0.0	0.0	ND
Standard Deviation	3.81	1.99	0.2	1.2	3.5	1.2	1.8	4.6	0.0	1.7	2.9	ND
Sample Variance	14.52	3.96	0.0	1.4	11.9	1.3	3.2	21.3	0.0	2.8	8.7	ND
Kurtosis	-0.96	-0.84	16.0	2.8	-0.4	0.4	16.0	0.6	ND	5.5	4.3	ND
Skewness	0.03	0.14	4.0	1.3	0.4	1.4	4.0	-0.6	ND	2.4	2.2	ND
Range	13.00	7.00	0.8	4.7	12.0	3.2	7.1	17.0	0.0	5.8	9.9	0.0
Minimum	33.00	13.00	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	46.00	20.00	0.8	6.9	12.0	3.2	7.1	17.0	0.0	5.8	9.9	0.0
Count	16	16	16	16	16	16	16	16	16	16	16	0
Confidence Level(95.0%)	2.03	1.06	0.1	0.6	1.8	0.6	0.9	2.5	0.0	0.9	1.6	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	166	142	0.3	4.1	37.8	33.6	4.4	ND
Standard Error	5	4	0.2	0.2	1.6	1.3	0.3	ND
Median	165	140	0.0	4.1	36.0	32.5	3.7	ND
Mode	150	140	0.0	4.4	35.0	33.0	3.6	ND
Standard Deviation	19	17	0.8	0.9	6.4	5.3	1.3	ND
Sample Variance	346	296	0.6	0.8	40.8	27.6	1.7	ND
Kurtosis	-1	3	5.0	0.7	1.4	1.7	0.6	ND
Skewness	0	1	2.5	0.9	1.3	1.4	1.1	ND
Range	70	70	2.3	3.1	23.0	19.0	4.2	0.0
Minimum	130	120	0.0	2.9	31.0	28.0	2.9	0.0
Maximum	200	190	2.3	6.0	54.0	47.0	7.1	0.0
Count	16	16	16	16	16	16	16	0
Confidence Level(95.0%)	10	9	0.4	0.5	3.4	2.8	0.7	ND

ND = No Data

Provisional MMSD Water Quality Data



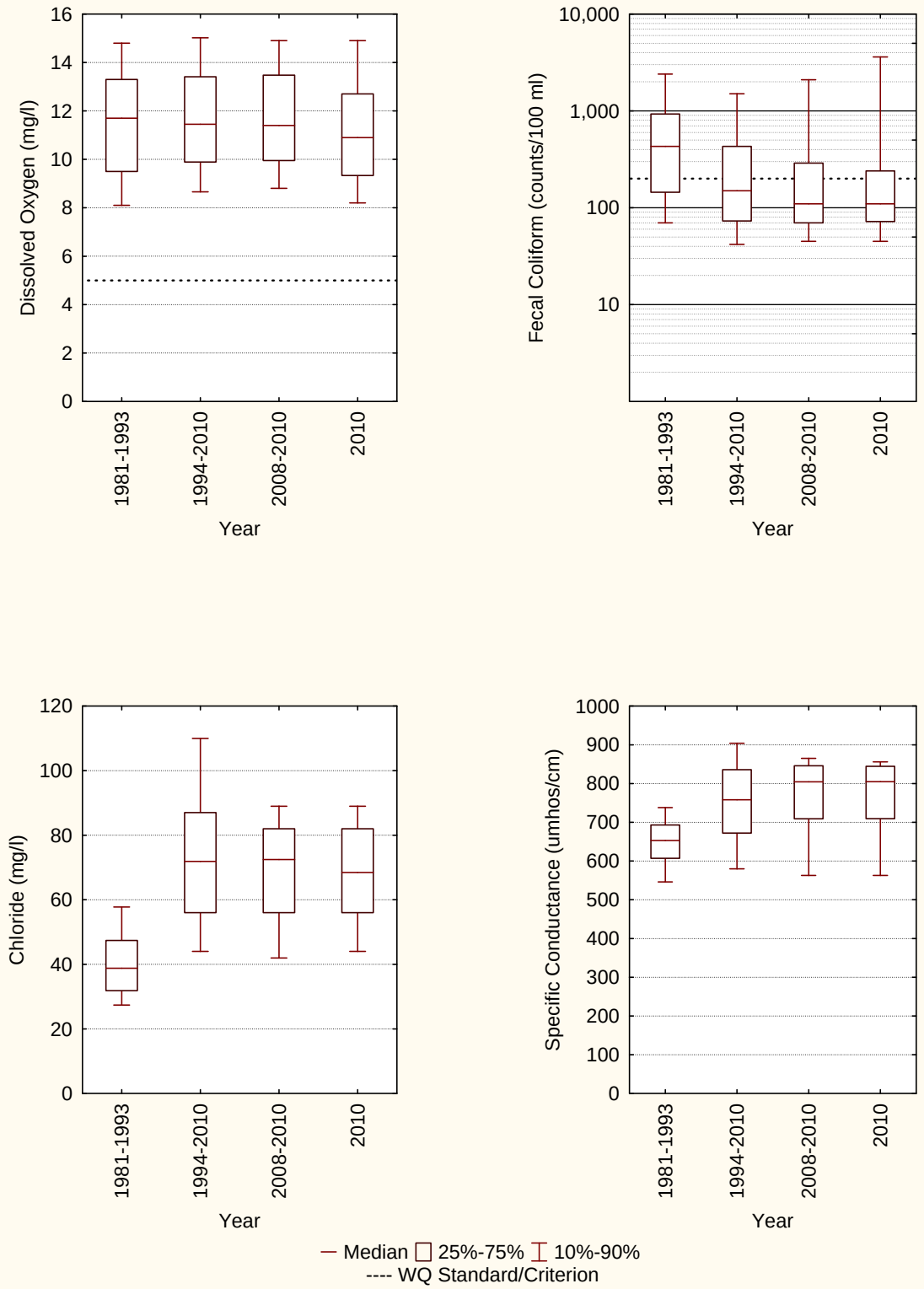
Preserving The Environment • Improving Water Quality

FIGURE 2

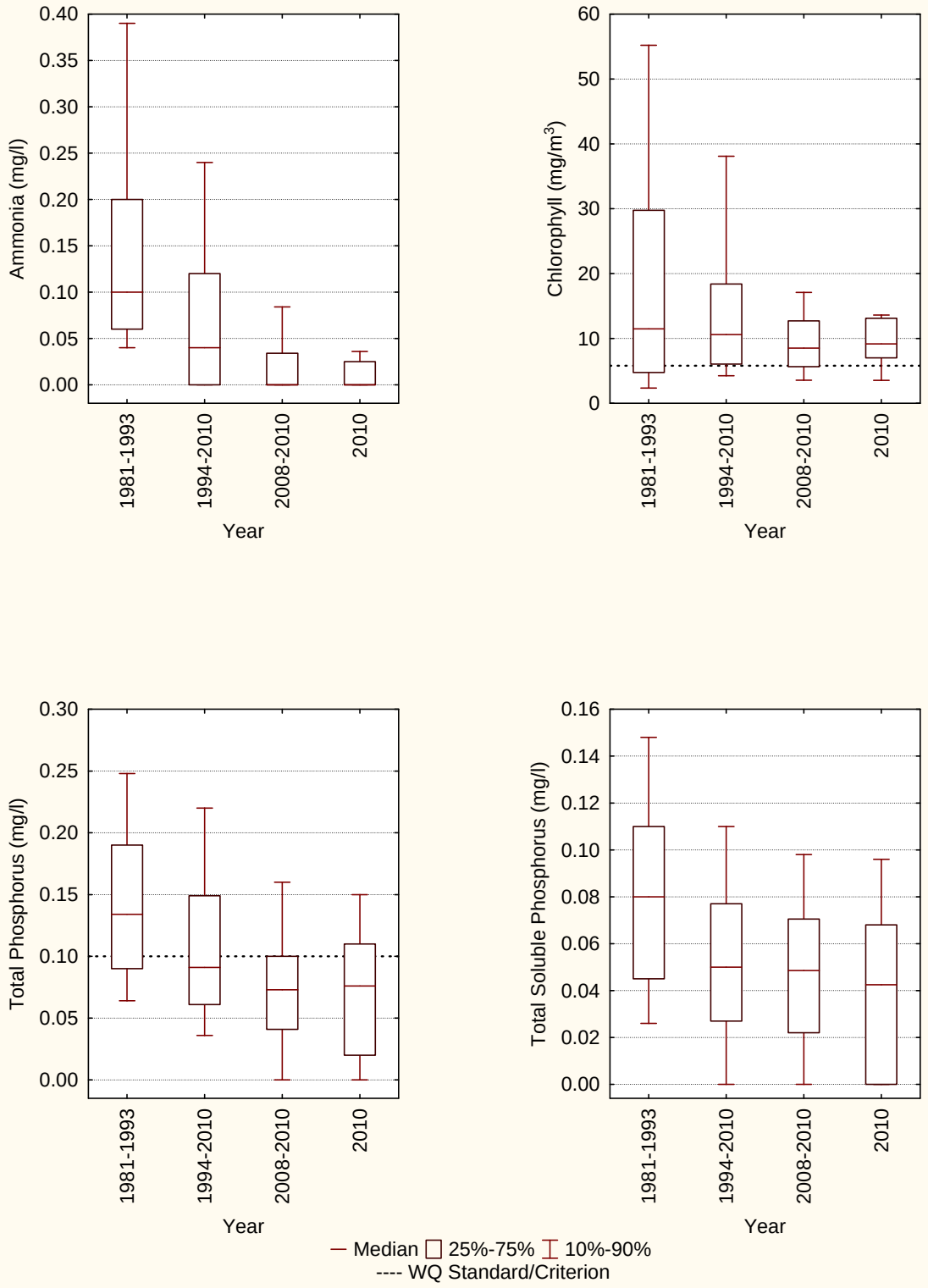
RIVERS (RI) SURVEY WATER QUALITY SAMPLING LOCATIONS

1/9/09 02-034 UWM survey

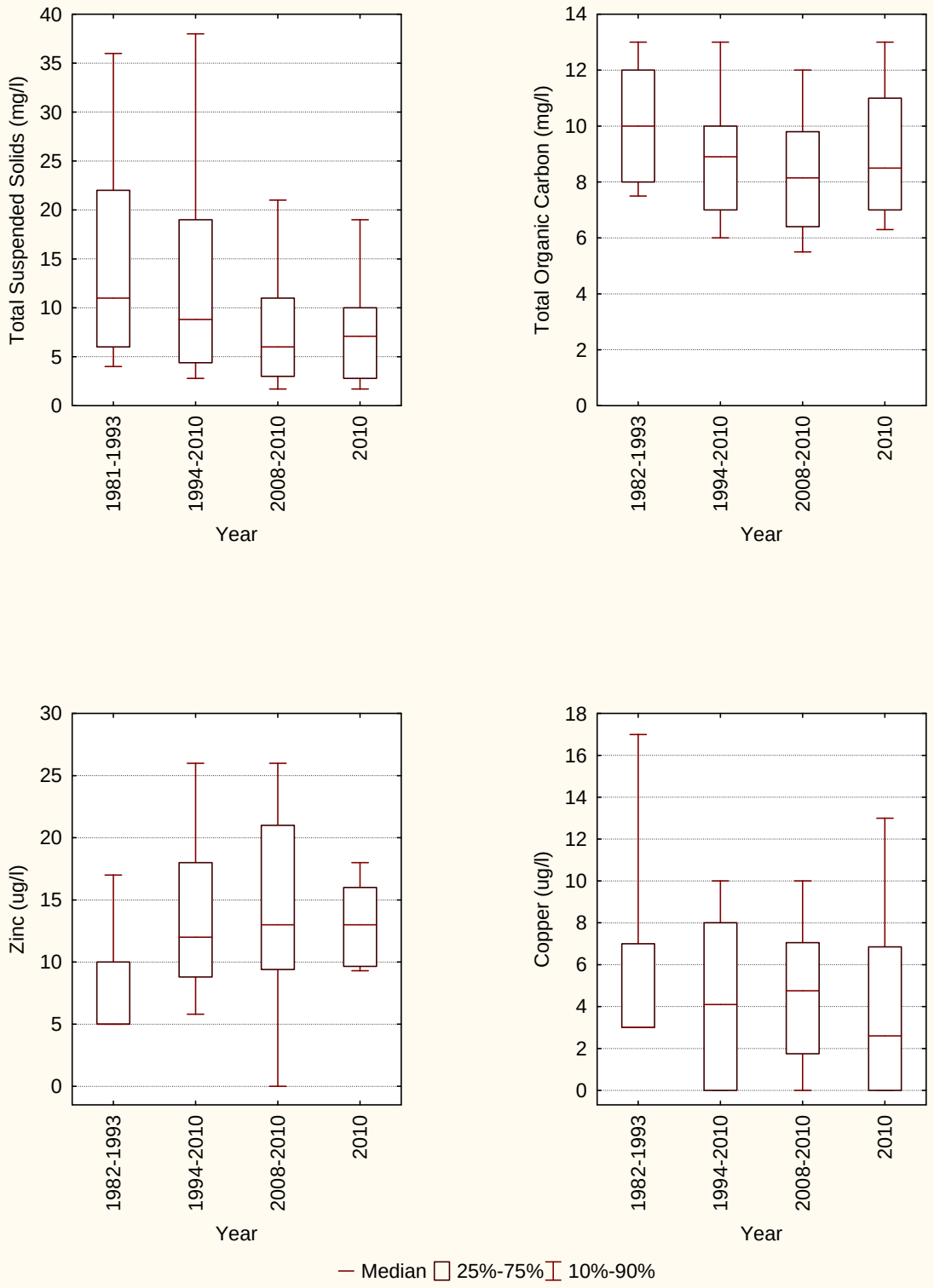
MMSD Water Quality Monitoring Program Data
Milwaukee River at Pioneer Road, Site RI-01



MMSD Water Quality Monitoring Program Data
Milwaukee River at Pioneer Road, Site RI-01



MMSD Water Quality Monitoring Program Data
Milwaukee River at Pioneer Road, Site RI-01



PIONEER ROAD - SITE 1
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.3	14.4	11.2	9.22	1.46	0.012	1.48	0.012	0.79	0.080	0.041	ND
Standard Error	0.0	1.9	0.5	1.05	0.13	0.001	0.13	0.003	0.04	0.015	0.008	ND
Median	8.3	13.9	10.9	9.16	1.35	0.013	1.40	0.000	0.82	0.076	0.043	ND
Mode	8.2	24.5	11.5	13.60	1.40	0.014	1.40	0.000	1.10	0.000	0.000	ND
Standard Deviation	0.2	9.3	2.4	3.80	0.59	0.004	0.59	0.016	0.21	0.075	0.038	ND
Sample Variance	0.0	85.6	5.7	14.41	0.35	0.000	0.34	0.000	0.04	0.006	0.001	ND
Kurtosis	0.1	-1.4	-0.4	-1.09	0.21	-0.432	0.19	-0.980	-0.25	5.493	-1.239	ND
Skewness	-0.5	-0.2	0.6	-0.27	1.02	-0.020	1.00	0.864	-0.44	1.773	0.319	ND
Range	0.7	28.0	8.4	11.04	2.15	0.017	2.14	0.042	0.74	0.340	0.110	0.00
Minimum	7.9	-0.4	8.1	2.96	0.75	0.004	0.76	0.000	0.36	0.000	0.000	0.00
Maximum	8.6	27.6	16.5	14.00	2.90	0.021	2.90	0.042	1.10	0.340	0.110	0.00
Count	24	24	23	13	22	22	22	24	22	24	22	0
Confidence Level(95.0%)	0.1	3.9	1.0	2.29	0.26	0.002	0.26	0.007	0.09	0.031	0.017	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	451.9	438.5	2.6	10.3	4.2	769	67.4	1413	2.3	1837
Standard Error	ND	ND	18.5	20.0	0.5	2.8	1.0	24	3.6	965	0.1	1382
Median	ND	ND	480.0	473.4	1.9	7.1	2.7	805	68.5	110	2.0	91
Mode	ND	ND	490.0	ND	1.5	13.0	ND	856	89.0	110	2.0	48
Standard Deviation	ND	ND	84.9	89.5	2.1	13.6	4.6	120	17.1	4728	0.7	6772
Sample Variance	ND	ND	7216.2	8014.5	4.5	184.6	21.2	14379	292.3	22354235	0.5	45855001
Kurtosis	ND	ND	3.9	4.2	4.7	10.7	12.3	1	-0.6	21	3.3	22
Skewness	ND	ND	-1.9	-2.1	1.9	3.1	3.2	-1	-0.3	5	1.9	5
Range	0.0	0.0	350.0	361.4	9.5	63.0	21.5	466	62.0	22968	2.9	32967
Minimum	0.0	0.0	210.0	176.0	0.0	0.0	0.9	488	34.0	32	1.5	33
Maximum	0.0	0.0	560.0	537.4	9.5	63.0	22.4	954	96.0	23000	4.4	33000
Count	0	0	21	20	21	23	22	24	22	24	24	24
Confidence Level(95.0%)	ND	ND	38.7	41.9	1.0	5.9	2.0	51	7.6	1996	0.3	2859

ND = No Data

Provisional MMSD Water Quality Data

PIONEER ROAD - SITE 1
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	67.21	36.75	0.1	4.4	4.6	1.9	0.1	13.6	0.0	1.2	1.2	0.0
Standard Error	2.00	1.37	0.0	0.2	1.3	0.2	0.1	1.0	0.0	0.5	0.5	0.0
Median	66.50	38.00	0.0	4.3	2.6	2.2	0.0	13.0	0.0	0.0	0.0	0.0
Mode	66.00	41.00	0.0	4.4	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	9.81	6.73	0.2	1.1	6.2	1.2	0.7	4.8	0.0	2.4	2.6	0.0
Sample Variance	96.26	45.33	0.0	1.3	38.1	1.4	0.5	22.9	0.0	5.8	6.9	0.0
Kurtosis	2.05	1.83	11.0	0.8	2.0	-0.6	24.0	3.7	ND	3.7	2.7	ND
Skewness	-1.04	-1.27	3.4	0.6	1.6	-0.6	4.9	1.6	ND	2.1	2.0	ND
Range	43.00	28.00	0.9	4.7	21.0	3.6	3.3	22.1	0.0	8.1	8.2	0.0
Minimum	39.00	18.00	0.0	2.4	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0
Maximum	82.00	46.00	0.9	7.1	21.0	3.6	3.3	29.0	0.0	8.1	8.2	0.0
Count	24	24	24	24	24	24	24	24	24	24	23	3
Confidence Level(95.0%)	4.14	2.84	0.1	0.5	2.6	0.5	0.3	2.0	0.0	1.0	1.1	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	320	277	0.9	4.2	75.9	67.0	9.0	9.0
Standard Error	11	8	0.3	1.0	1.8	1.8	0.5	0.6
Median	325	290	0.0	4.1	77.0	68.5	8.5	8.6
Mode	310	290	0.0	0.0	80.0	68.0	11.0	7.1
Standard Deviation	52	37	1.5	4.7	8.2	8.4	2.4	2.6
Sample Variance	2682	1337	2.2	21.9	67.5	70.0	5.8	6.9
Kurtosis	2	6	1.8	1.3	9.6	6.5	-0.6	-0.1
Skewness	-1	-2	1.5	1.1	-2.6	-2.1	0.6	0.8
Range	220	180	5.3	17.0	42.0	41.0	8.2	9.4
Minimum	170	150	0.0	0.0	45.0	38.0	5.8	5.6
Maximum	390	330	5.3	17.0	87.0	79.0	14.0	15.0
Count	24	22	24	21	22	22	22	22
Confidence Level(95.0%)	22	16	0.6	2.1	3.6	3.7	1.1	1.2

ND = No Data

Provisional MMSD Water Quality Data

BROWN DEER ROAD - SITE 2
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	14.6	9.5	8.07	1.31	0.013	1.32	0.025	0.77	0.087	0.045	ND
Standard Error	0.0	1.9	0.6	1.17	0.12	0.001	0.12	0.004	0.05	0.012	0.009	ND
Median	8.2	14.1	9.2	7.58	1.15	0.013	1.20	0.021	0.76	0.096	0.054	ND
Mode	8.2	10.5	6.8	7.58	1.20	0.015	1.20	0.000	0.69	0.000	0.000	ND
Standard Deviation	0.2	9.2	2.8	4.22	0.58	0.005	0.57	0.021	0.22	0.061	0.040	ND
Sample Variance	0.0	85.0	7.8	17.77	0.33	0.000	0.33	0.000	0.05	0.004	0.002	ND
Kurtosis	1.4	-1.3	-0.5	4.14	0.71	4.935	0.68	6.378	-0.53	0.838	-1.318	ND
Skewness	-0.1	-0.2	0.7	1.49	1.36	1.702	1.33	1.948	0.12	0.526	0.168	ND
Range	1.0	27.8	9.9	17.40	1.90	0.024	1.89	0.100	0.83	0.250	0.120	0.00
Minimum	7.7	-0.3	5.4	2.00	0.70	0.006	0.71	0.000	0.37	0.000	0.000	0.00
Maximum	8.7	27.5	15.3	19.40	2.60	0.030	2.60	0.100	1.20	0.250	0.120	0.00
Count	24	24	24	13	22	22	22	24	22	24	22	0
Confidence Level(95.0%)	0.1	3.9	1.2	2.55	0.26	0.002	0.25	0.009	0.10	0.026	0.018	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	460.0	449.6	3.1	11.9	7.0	774	72.8	898	2.3	654
Standard Error	ND	ND	14.1	15.2	0.5	2.2	1.4	21	3.4	397	0.1	259
Median	ND	ND	480.0	468.0	2.9	8.8	5.2	800	71.5	170	2.2	155
Mode	ND	ND	500.0	ND	3.0	16.0	ND	842	62.0	38	1.6	47
Standard Deviation	ND	ND	66.1	71.4	2.4	10.8	6.7	103	16.0	1945	0.7	1271
Sample Variance	ND	ND	4371.4	5104.7	5.8	115.9	44.7	10695	256.9	3784095	0.5	1614601
Kurtosis	ND	ND	1.0	1.4	2.1	5.3	10.9	0	-0.5	5	0.4	7
Skewness	ND	ND	-1.1	-1.2	1.3	2.2	2.9	-1	-0.1	2	0.9	3
Range	0.0	0.0	250.0	271.9	10.0	47.0	31.6	357	61.0	6584	2.6	5088
Minimum	0.0	0.0	300.0	274.0	0.0	1.0	1.3	549	39.0	16	1.2	12
Maximum	0.0	0.0	550.0	545.9	10.0	48.0	32.9	906	100.0	6600	3.8	5100
Count	0	0	22	22	22	24	22	24	22	24	24	24
Confidence Level(95.0%)	ND	ND	29.3	31.7	1.1	4.5	3.0	44	7.1	821	0.3	537

ND = No Data

Provisional MMSD Water Quality Data

BROWN DEER ROAD - SITE 2
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

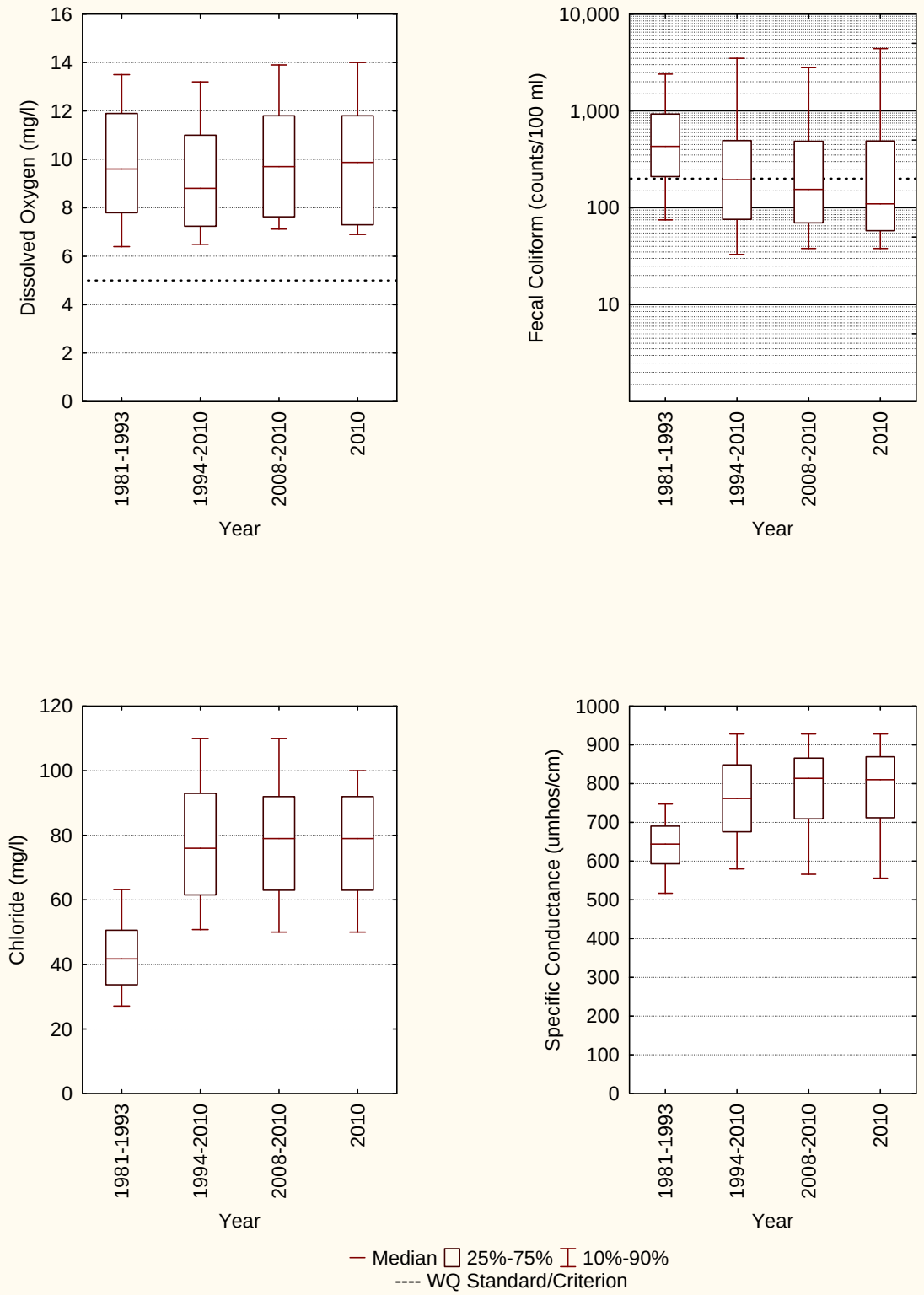
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	66.04	35.96	0.1	4.2	3.3	2.3	0.5	13.8	0.0	1.1	1.1	0.0
Standard Error	1.99	1.32	0.0	0.1	0.9	0.3	0.4	0.8	0.0	0.5	0.5	0.0
Median	66.00	37.50	0.0	4.3	1.4	2.2	0.0	13.0	0.0	0.0	0.0	0.0
Mode	73.00	34.00	0.0	4.2	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0
Standard Deviation	9.73	6.45	0.2	0.7	4.1	1.7	2.0	4.1	0.2	2.3	2.5	0.0
Sample Variance	94.65	41.61	0.0	0.5	17.2	2.7	4.1	17.2	0.1	5.1	6.3	0.0
Kurtosis	0.38	-0.17	12.9	0.1	0.3	2.3	22.4	0.8	24.0	4.4	1.7	ND
Skewness	-0.49	-0.59	3.6	-0.3	1.2	1.1	4.7	1.2	4.9	2.1	1.9	ND
Range	42.00	25.00	0.8	2.9	13.0	6.8	9.8	15.9	1.1	8.7	7.0	0.0
Minimum	42.00	22.00	0.0	2.7	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0
Maximum	84.00	47.00	0.8	5.6	13.0	6.8	9.8	24.0	1.1	8.7	7.0	0.0
Count	24	24	24	24	22	24	24	24	24	24	23	3
Confidence Level(95.0%)	4.11	2.72	0.1	0.3	1.8	0.7	0.9	1.7	0.1	1.0	1.1	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	313	272	0.5	5.2	74.5	65.8	8.9	8.7
Standard Error	10	7	0.2	0.7	1.7	1.8	0.5	0.5
Median	320	280	0.0	5.1	75.0	68.0	8.6	8.3
Mode	360	290	0.0	0.0	74.0	70.0	13.0	7.2
Standard Deviation	51	34	1.0	3.1	7.8	8.3	2.2	2.2
Sample Variance	2580	1180	0.9	9.7	60.5	68.2	5.0	4.7
Kurtosis	0	3	0.5	1.3	2.8	1.6	0.2	0.4
Skewness	-1	-1	1.6	0.5	-1.3	-1.1	0.9	0.9
Range	200	160	2.5	13.0	36.0	36.0	8.0	8.3
Minimum	190	170	0.0	0.0	51.0	43.0	6.0	5.7
Maximum	390	330	2.5	13.0	87.0	79.0	14.0	14.0
Count	24	22	24	21	22	22	22	22
Confidence Level(95.0%)	21	15	0.4	1.4	3.4	3.7	1.0	1.0

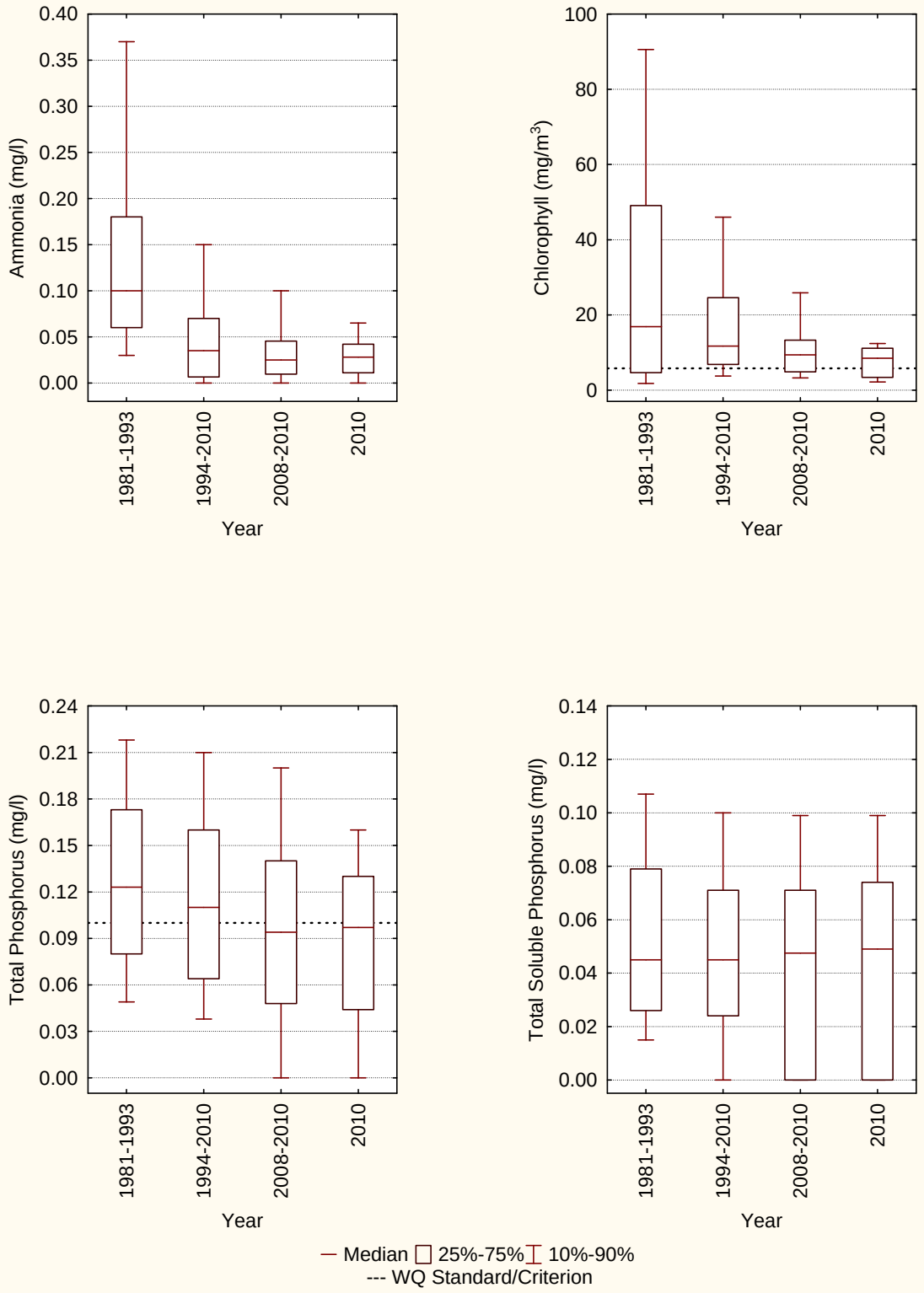
ND = No Data

Provisional MMSD Water Quality Data

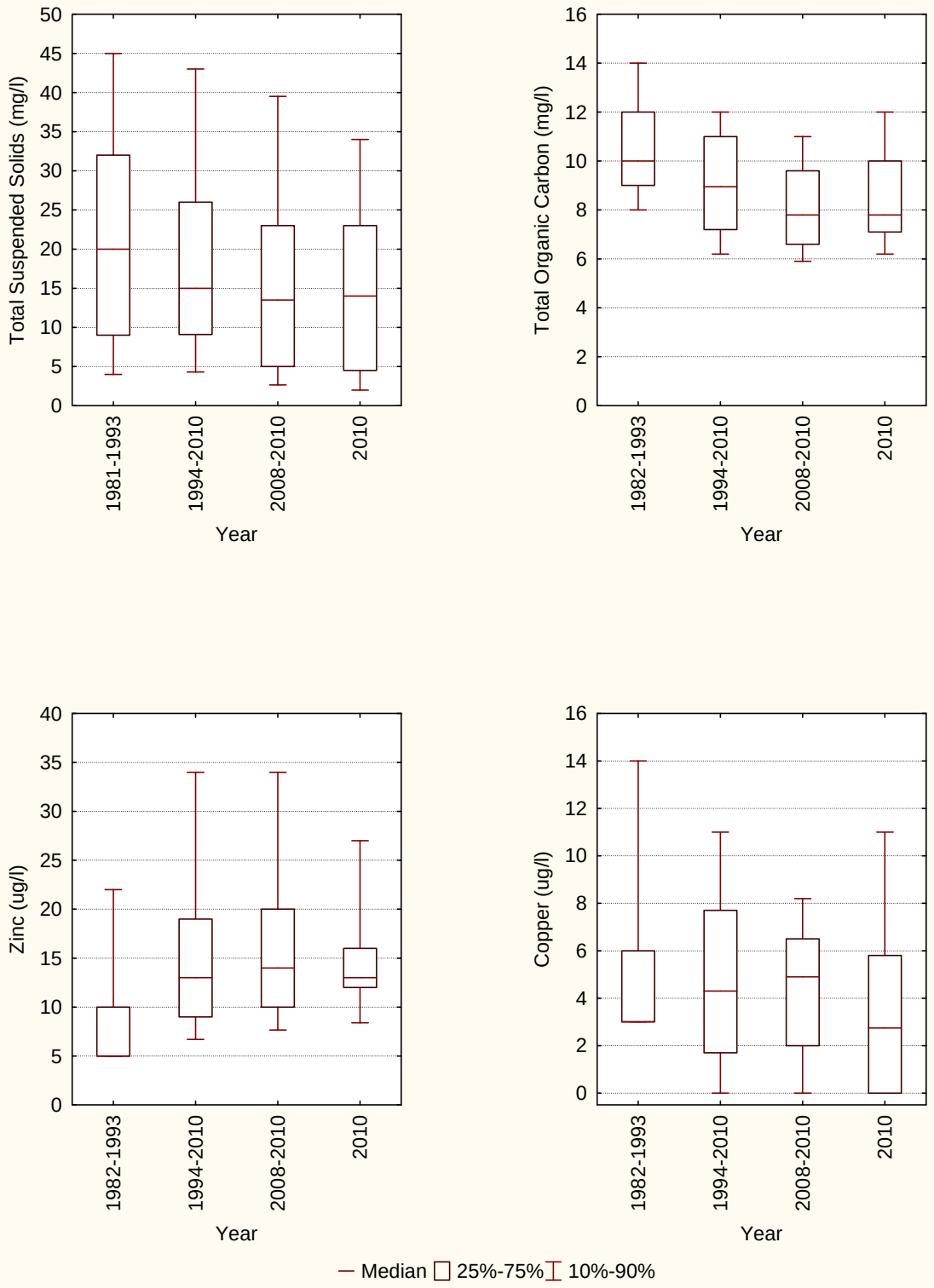
MMSD Water Quality Monitoring Program Data
Milwaukee River at Silver Spring Drive, Site RI-03



MMSD Water Quality Monitoring Program Data
Milwaukee River at Silver Spring Drive, Site RI-03



MMSD Water Quality Monitoring Program Data
Milwaukee River at Silver Spring Drive, Site RI-03



SILVER SPRING DRIVE - SITE 3
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	12.6	9.9	8.50	1.38	0.014	1.41	0.034	0.83	0.090	0.045	ND
Standard Error	0.0	1.9	0.5	1.54	0.14	0.001	0.14	0.006	0.09	0.013	0.008	ND
Median	8.2	11.5	9.9	8.52	1.10	0.014	1.10	0.028	0.71	0.097	0.049	ND
Mode	8.2	-0.4	6.7	ND	1.10	0.016	1.10	0.000	1.10	0.000	0.000	ND
Standard Deviation	0.2	9.7	2.7	6.17	0.69	0.006	0.70	0.034	0.45	0.068	0.039	ND
Sample Variance	0.0	93.6	7.1	38.11	0.47	0.000	0.50	0.001	0.21	0.005	0.002	ND
Kurtosis	-0.2	-1.6	-1.2	4.02	-0.65	0.851	-0.61	4.677	9.25	0.131	-1.136	ND
Skewness	-0.5	0.0	0.4	1.57	0.85	0.968	0.87	1.858	2.57	0.573	0.269	ND
Range	0.6	26.5	7.7	25.12	2.14	0.024	2.23	0.150	2.27	0.250	0.120	0.00
Minimum	7.8	-0.4	6.7	1.38	0.46	0.005	0.47	0.000	0.33	0.000	0.000	0.00
Maximum	8.4	26.1	14.4	26.50	2.60	0.029	2.70	0.150	2.60	0.250	0.120	0.00
Count	27	27	26	16	25	25	25	27	25	27	25	0
Confidence Level(95.0%)	0.1	3.8	1.1	3.29	0.28	0.002	0.29	0.013	0.19	0.027	0.016	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	462.1	443.3	4.6	18.6	13.1	786	78.3	1873	2.3	1010
Standard Error	ND	ND	16.9	20.0	1.2	4.7	4.3	28	4.9	1042	0.2	551
Median	ND	ND	485.0	466.0	3.6	14.0	8.9	810	79.0	110	2.0	88
Mode	ND	ND	500.0	ND	4.0	23.0	10.7	803	100.0	ND	ND	72
Standard Deviation	ND	ND	82.8	98.2	6.1	24.6	21.4	146	24.6	5413	0.8	2808
Sample Variance	ND	ND	6852.0	9647.3	36.9	607.0	457.6	21241	602.8	29303928	0.6	7884229
Kurtosis	ND	ND	1.0	3.1	18.7	17.0	20.1	2	2.1	12	1.1	10
Skewness	ND	ND	-0.9	-1.5	4.1	3.8	4.3	-1	0.6	4	1.2	3
Range	0.0	0.0	330.0	458.0	32.0	128.6	110.0	724	122.0	23986	3.2	10974
Minimum	0.0	0.0	270.0	140.0	0.0	1.4	1.1	366	28.0	14	1.1	26
Maximum	0.0	0.0	600.0	598.0	32.0	130.0	111.0	1090	150.0	24000	4.4	11000
Count	0	0	24	24	25	27	25	27	25	27	27	26
Confidence Level(95.0%)	ND	ND	35.0	41.5	2.5	9.7	8.8	58	10.1	2141	0.3	1134

ND = No Data

Provisional MMSD Water Quality Data

SILVER SPRING DRIVE - SITE 3
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	67.70	36.37	0.0	4.4	3.9	2.0	0.3	14.8	0.0	1.2	0.7	0.0
Standard Error	1.95	1.32	0.0	0.2	0.9	0.2	0.2	1.4	0.0	0.4	0.5	0.0
Median	66.00	39.00	0.0	4.2	2.8	2.1	0.0	13.0	0.0	0.0	0.0	0.0
Mode	65.00	41.00	0.0	4.1	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0
Standard Deviation	10.14	6.88	0.0	1.2	4.8	1.3	1.0	7.3	0.2	2.1	2.3	0.0
Sample Variance	102.75	47.40	0.0	1.3	22.6	1.6	1.0	53.8	0.0	4.6	5.2	0.0
Kurtosis	1.81	1.25	ND	5.0	2.5	0.3	17.8	4.1	27.0	2.9	9.7	ND
Skewness	-0.79	-1.05	ND	2.0	1.6	0.0	4.2	1.5	5.2	1.9	3.3	ND
Range	47.00	30.00	0.0	5.3	18.0	4.8	4.8	39.0	1.1	7.7	8.5	0.0
Minimum	38.00	17.00	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	85.00	47.00	0.0	8.2	18.0	4.8	4.8	39.0	1.1	7.7	8.5	0.0
Count	27	27	27	27	26	27	27	27	27	27	25	3
Confidence Level(95.0%)	4.01	2.72	0.0	0.5	1.9	0.5	0.4	2.9	0.1	0.8	0.9	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	319	272	0.6	6.3	73.7	65.1	8.6	8.6
Standard Error	10	9	0.2	0.9	2.0	2.1	0.4	0.5
Median	330	290	0.0	5.7	75.0	67.0	7.8	7.5
Mode	300	290	0.0	0.0	75.0	69.0	10.0	6.8
Standard Deviation	52	45	1.1	4.5	10.2	10.3	2.1	2.4
Sample Variance	2695	1992	1.3	20.0	103.8	105.5	4.6	6.0
Kurtosis	1	9	-0.1	0.2	7.6	6.5	-0.5	-0.4
Skewness	-1	-3	1.3	0.6	-2.5	-2.2	0.7	0.9
Range	220	230	3.2	16.0	50.0	50.0	7.1	8.2
Minimum	170	100	0.0	0.0	36.0	28.0	5.9	5.8
Maximum	390	330	3.2	16.0	86.0	78.0	13.0	14.0
Count	27	25	27	24	25	25	25	25
Confidence Level(95.0%)	21	18	0.4	1.9	4.2	4.2	0.9	1.0

ND = No Data

Provisional MMSD Water Quality Data

PORT WASHINGTON ROAD - SITE 4
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.7	9.8	9.43	1.36	0.014	1.38	0.035	0.79	0.089	0.045	ND
Standard Error	0.0	1.9	0.5	1.81	0.14	0.001	0.14	0.007	0.05	0.012	0.008	ND
Median	8.2	11.6	9.5	10.55	1.10	0.014	1.10	0.024	0.69	0.091	0.051	ND
Mode	8.2	ND	6.6	12.90	1.10	0.015	1.10	0.000	1.00	0.000	0.000	ND
Standard Deviation	0.2	9.7	2.8	7.22	0.69	0.005	0.69	0.035	0.27	0.061	0.039	ND
Sample Variance	0.0	94.6	7.8	52.14	0.47	0.000	0.47	0.001	0.07	0.004	0.002	ND
Kurtosis	-0.6	-1.6	-1.1	3.19	-0.61	-0.053	-0.58	3.627	-0.73	-0.306	-0.762	ND
Skewness	-0.6	0.0	0.5	1.36	0.90	0.585	0.90	1.696	0.49	0.349	0.359	ND
Range	0.6	27.3	8.1	28.60	2.11	0.021	2.10	0.150	0.91	0.230	0.130	0.00
Minimum	7.8	-0.4	6.6	1.20	0.49	0.006	0.50	0.000	0.39	0.000	0.000	0.00
Maximum	8.4	26.9	14.7	29.80	2.60	0.027	2.60	0.150	1.30	0.230	0.130	0.00
Count	27	27	26	16	25	25	25	27	25	27	25	0
Confidence Level(95.0%)	0.1	3.8	1.1	3.85	0.28	0.002	0.28	0.014	0.11	0.024	0.016	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	447.9	430.4	3.8	17.4	12.1	787	79.0	7209	2.5	1342
Standard Error	ND	ND	24.0	25.2	0.5	2.9	2.7	30	5.2	4980	0.2	638
Median	ND	ND	485.0	468.1	3.2	15.0	8.0	832	81.0	200	2.3	145
Mode	ND	ND	500.0	ND	5.0	15.0	ND	860	100.0	26	1.4	88
Standard Deviation	ND	ND	117.7	123.5	2.7	14.9	13.6	156	25.8	25878	0.9	3253
Sample Variance	ND	ND	13860.7	15251.9	7.3	221.4	184.5	24483	664.0	669663164	0.9	10583365
Kurtosis	ND	ND	1.5	1.4	2.0	2.1	8.6	2	0.3	21	1.5	7
Skewness	ND	ND	-1.3	-1.3	1.2	1.4	2.6	-1	0.2	5	1.3	3
Range	0.0	0.0	470.0	486.0	12.0	61.0	63.0	735	113.0	129974	3.7	11981
Minimum	0.0	0.0	140.0	118.0	0.0	1.0	1.0	335	27.0	26	1.4	19
Maximum	0.0	0.0	610.0	604.0	12.0	62.0	64.0	1070	140.0	130000	5.1	12000
Count	0	0	24	24	25	27	25	27	25	27	27	26
Confidence Level(95.0%)	ND	ND	49.7	52.1	1.1	5.9	5.6	62	10.6	10237	0.4	1314

ND = No Data

Provisional MMSD Water Quality Data

PORT WASHINGTON ROAD - SITE 4
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

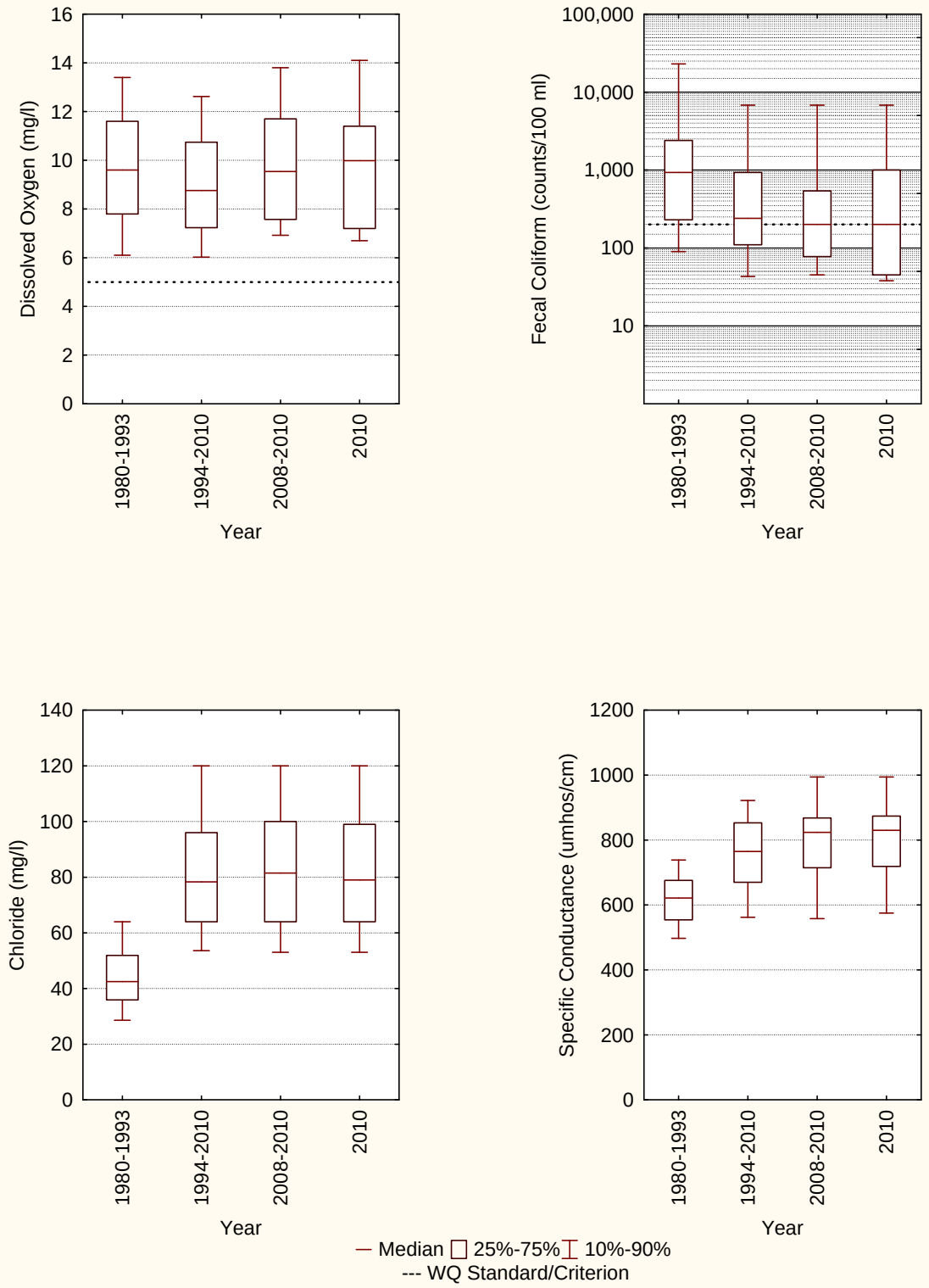
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	66.52	35.63	0.0	4.8	3.5	2.1	0.9	14.6	0.0	1.4	1.3	0.0
Standard Error	2.48	1.65	0.0	0.3	0.8	0.3	0.9	1.1	0.0	0.5	0.5	0.0
Median	67.00	38.00	0.0	4.4	2.5	2.3	0.0	14.0	0.0	0.0	0.0	0.0
Mode	67.00	43.00	0.0	4.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	12.90	8.59	0.2	1.7	4.2	1.3	4.4	5.7	0.2	2.5	2.7	0.0
Sample Variance	166.49	73.86	0.0	2.8	17.2	1.8	19.7	32.4	0.0	6.3	7.3	0.0
Kurtosis	2.50	1.38	27.0	13.6	1.3	1.5	26.2	2.1	27.0	3.8	1.6	ND
Skewness	-1.40	-1.31	5.2	3.3	1.3	0.3	5.1	0.4	5.2	2.1	1.8	ND
Range	55.00	35.00	1.0	9.2	15.0	5.9	23.0	29.0	1.1	9.4	8.5	0.0
Minimum	28.00	12.00	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	83.00	47.00	1.0	12.0	15.0	5.9	23.0	29.0	1.1	9.4	8.5	0.0
Count	27	27	27	27	25	27	27	27	27	27	26	3
Confidence Level(95.0%)	5.10	3.40	0.1	0.7	1.7	0.5	1.8	2.3	0.1	1.0	1.1	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	312	267	0.8	5.8	71.7	63.4	8.3	8.3
Standard Error	13	11	0.3	0.9	2.5	2.5	0.4	0.4
Median	330	290	0.0	5.3	75.0	68.0	7.8	7.5
Mode	360	300	0.0	0.0	81.0	68.0	6.2	10.0
Standard Deviation	68	54	1.3	4.6	12.6	12.3	2.1	2.2
Sample Variance	4564	2912	1.7	20.8	159.0	151.1	4.5	4.9
Kurtosis	2	5	-0.4	-0.5	4.9	4.3	0.0	0.7
Skewness	-1	-2	1.1	0.4	-2.1	-2.0	0.9	1.0
Range	270	254	3.9	14.0	57.0	55.0	7.5	8.2
Minimum	120	86	0.0	0.0	30.0	24.0	5.5	5.8
Maximum	390	340	3.9	14.0	87.0	79.0	13.0	14.0
Count	27	25	27	24	25	25	25	25
Confidence Level(95.0%)	27	22	0.5	1.9	5.2	5.1	0.9	0.9

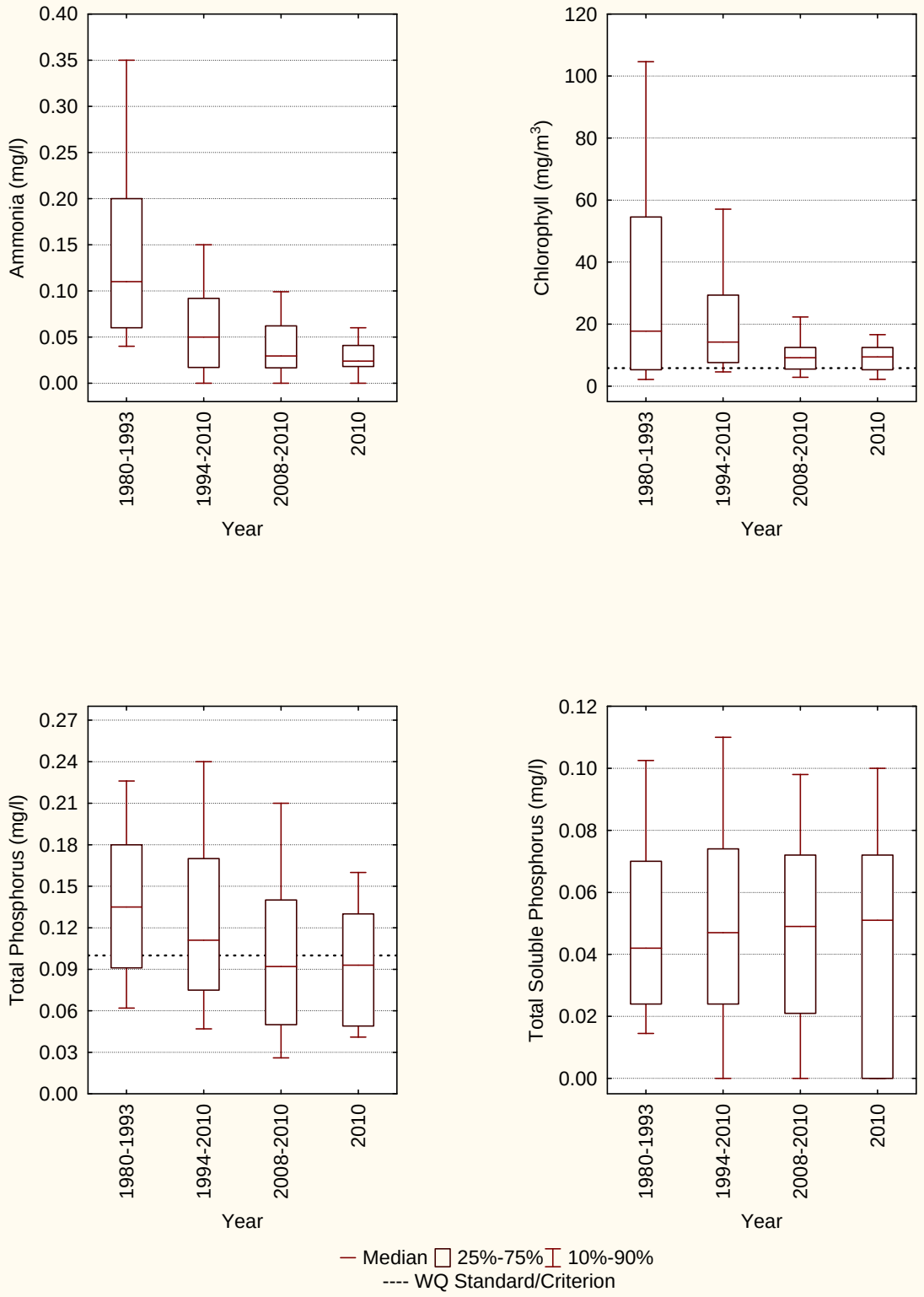
ND = No Data

Provisional MMSD Water Quality Data

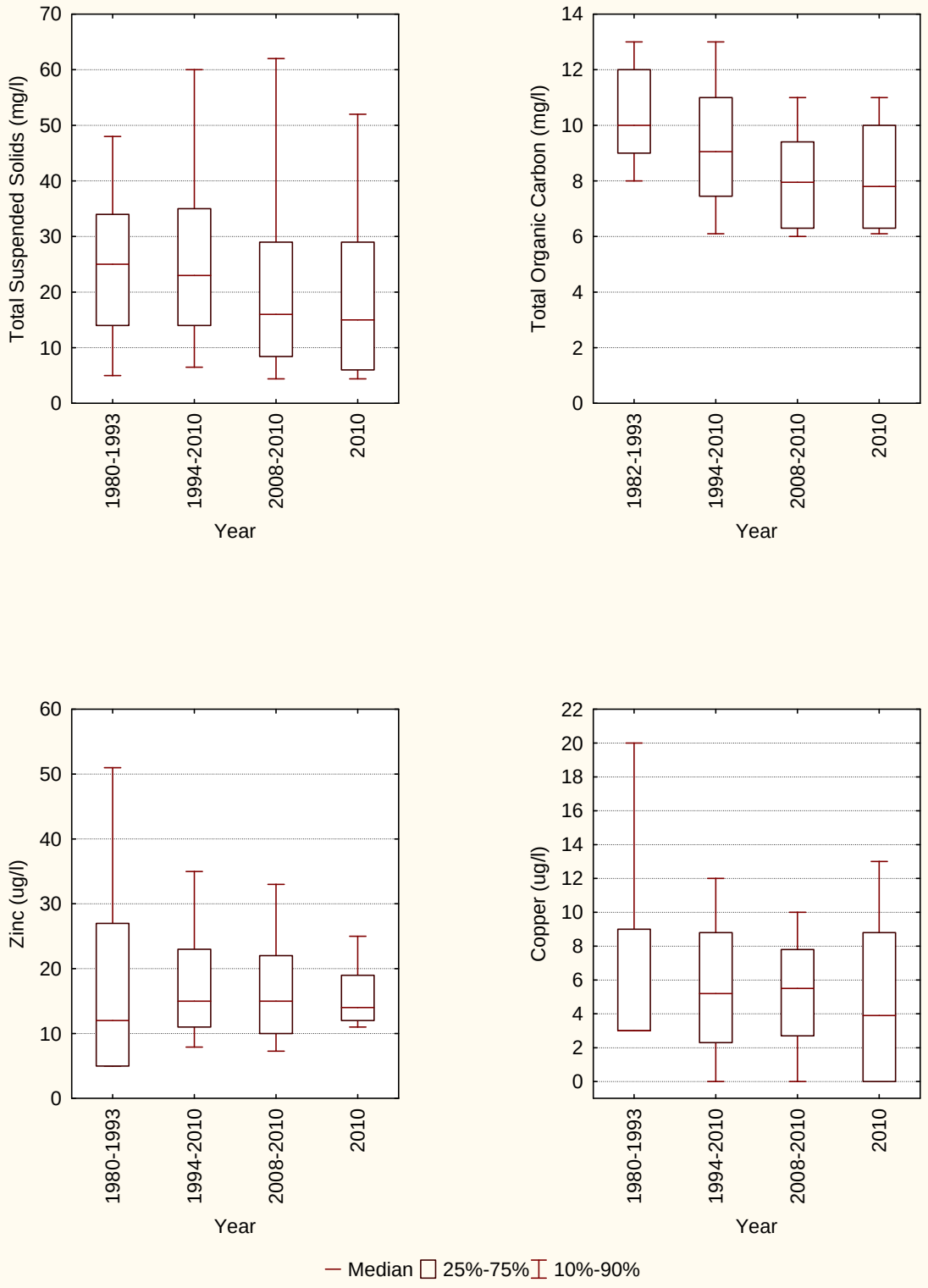
MMSD Water Quality Monitoring Program Data
Milwaukee River at North Avenue Dam, Site RI-05



MMSD Water Quality Monitoring Program Data
Milwaukee River at North Avenue Dam, Site RI-05



MMSD Water Quality Monitoring Program Data
Milwaukee River at North Avenue Dam, Site RI-05



NORTH AVENUE - SITE 5
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	12.8	9.7	8.93	1.22	0.014	1.25	0.028	0.83	0.092	0.043	ND
Standard Error	0.0	1.9	0.6	1.33	0.14	0.001	0.13	0.004	0.06	0.013	0.008	ND
Median	8.2	11.3	10.0	9.44	1.00	0.013	1.00	0.024	0.73	0.093	0.051	ND
Mode	8.2	-0.4	14.6	ND	1.00	0.016	1.10	0.000	1.10	0.100	0.000	ND
Standard Deviation	0.2	9.1	2.6	4.96	0.65	0.006	0.64	0.021	0.28	0.060	0.040	ND
Sample Variance	0.0	82.7	6.9	24.60	0.43	0.000	0.41	0.000	0.08	0.004	0.002	ND
Kurtosis	0.3	-1.4	-0.7	-0.81	0.55	5.413	0.51	0.109	-0.96	1.307	-1.109	ND
Skewness	-0.4	-0.1	0.5	0.19	1.35	1.795	1.30	0.496	0.10	0.867	0.343	ND
Range	0.7	25.8	8.3	15.46	2.19	0.028	2.18	0.078	0.95	0.260	0.120	0.00
Minimum	7.8	-0.4	6.3	1.94	0.41	0.007	0.42	0.000	0.35	0.000	0.000	0.00
Maximum	8.5	25.4	14.6	17.40	2.60	0.035	2.60	0.078	1.30	0.260	0.120	0.00
Count	23	23	22	14	23	23	23	23	23	23	23	0
Confidence Level(95.0%)	0.1	3.9	1.2	2.86	0.28	0.003	0.28	0.009	0.12	0.026	0.017	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	460.5	437.3	5.3	22.3	15.0	791	82.6	2659	2.5	ND
Standard Error	ND	ND	19.6	23.3	1.0	5.1	3.9	34	5.9	1417	0.2	ND
Median	ND	ND	480.0	465.0	3.7	15.0	10.0	830	79.0	200	2.3	ND
Mode	ND	ND	490.0	ND	2.5	15.0	ND	ND	120.0	45	1.7	ND
Standard Deviation	ND	ND	92.0	109.5	4.8	24.6	18.8	162	28.4	6644	0.9	ND
Sample Variance	ND	ND	8461.7	11994.1	22.7	606.8	352.9	26215	806.3	44146099	0.8	ND
Kurtosis	ND	ND	-0.1	0.5	4.4	6.8	10.5	1	-0.5	13	-0.3	ND
Skewness	ND	ND	-0.5	-0.7	1.9	2.4	3.0	-1	0.3	3	0.8	ND
Range	0.0	0.0	320.0	427.6	21.0	108.0	85.7	693	109.0	28979	3.1	0
Minimum	0.0	0.0	290.0	180.0	0.0	2.0	2.1	357	31.0	21	1.3	0
Maximum	0.0	0.0	610.0	607.6	21.0	110.0	87.8	1050	140.0	29000	4.5	0
Count	0	0	22	22	23	23	23	23	23	22	22	0
Confidence Level(95.0%)	ND	ND	40.8	48.6	2.1	10.7	8.1	70	12.3	2946	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

NORTH AVENUE - SITE 5
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	66.17	35.39	0.0	4.9	5.8	2.5	0.5	16.9	0.0	1.5	1.0	0.0
Standard Error	2.52	1.67	0.0	0.2	1.4	0.3	0.3	1.6	0.0	0.4	0.6	0.0
Median	68.00	38.00	0.0	4.6	3.9	2.4	0.0	14.0	0.0	0.0	0.0	0.0
Mode	68.00	43.00	0.0	4.1	0.0	2.5	0.0	12.0	0.0	0.0	0.0	0.0
Standard Deviation	12.07	8.01	0.1	1.0	6.8	1.2	1.5	7.8	0.0	2.1	2.7	0.0
Sample Variance	145.70	64.16	0.0	1.0	46.1	1.4	2.3	61.3	0.0	4.6	7.3	0.0
Kurtosis	1.88	1.42	23.0	1.8	2.7	3.0	16.6	7.1	ND	1.8	4.7	ND
Skewness	-1.19	-1.32	4.8	1.2	1.6	0.6	3.9	2.4	ND	1.4	2.5	ND
Range	50.00	31.00	0.7	4.2	25.0	5.6	6.9	35.8	0.0	7.7	9.3	0.0
Minimum	34.00	14.00	0.0	3.7	0.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0
Maximum	84.00	45.00	0.7	7.9	25.0	5.6	6.9	45.0	0.0	7.7	9.3	0.0
Count	23	23	23	23	23	23	23	23	23	23	23	3
Confidence Level(95.0%)	5.22	3.46	0.1	0.4	2.9	0.5	0.7	3.4	0.0	0.9	1.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	311	264	1.2	5.7	70.9	62.4	8.4	8.5
Standard Error	13	12	0.3	0.9	2.6	2.6	0.5	0.5
Median	330	290	0.0	4.9	73.0	67.0	7.8	8.4
Mode	340	290	0.0	0.0	73.0	68.0	10.0	6.2
Standard Deviation	62	55	1.4	4.1	12.4	12.3	2.2	2.3
Sample Variance	3857	3074	2.0	16.7	154.4	150.6	4.8	5.2
Kurtosis	2	5	-1.5	0.4	5.1	4.1	-0.3	0.1
Skewness	-1	-2	0.5	0.6	-2.2	-1.9	0.7	0.8
Range	250	243	3.8	15.0	55.0	54.0	7.2	8.3
Minimum	140	87	0.0	0.0	31.0	24.0	5.8	5.7
Maximum	390	330	3.8	15.0	86.0	78.0	13.0	14.0
Count	23	23	23	22	23	23	23	23
Confidence Level(95.0%)	27	24	0.6	1.8	5.4	5.3	0.9	1.0

ND = No Data

Provisional MMSD Water Quality Data

WALNUT STREET - SITE 6
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	16.6	8.8	8.84	0.93	0.014	0.94	0.037	0.80	0.103	0.046	ND
Standard Error	0.0	1.2	0.3	1.22	0.04	0.001	0.05	0.004	0.04	0.009	0.006	ND
Median	8.2	17.5	8.9	7.83	0.97	0.012	0.98	0.040	0.82	0.098	0.056	ND
Mode	8.2	24.7	7.2	ND	1.00	0.016	1.00	0.000	1.10	0.100	0.000	ND
Standard Deviation	0.2	7.3	2.0	4.06	0.28	0.007	0.28	0.027	0.23	0.059	0.038	ND
Sample Variance	0.0	53.6	4.0	16.49	0.08	0.000	0.08	0.001	0.05	0.003	0.001	ND
Kurtosis	0.6	-1.6	-1.7	-0.89	1.49	3.047	1.81	-0.059	-0.62	1.641	-1.478	ND
Skewness	-0.3	-0.1	0.0	0.12	0.36	1.575	0.47	0.470	0.11	0.952	-0.125	ND
Range	0.9	21.2	6.2	12.94	1.35	0.031	1.34	0.110	0.88	0.270	0.110	0.00
Minimum	7.7	5.9	5.5	2.66	0.35	0.005	0.36	0.000	0.42	0.000	0.000	0.00
Maximum	8.6	27.1	11.7	15.60	1.70	0.036	1.70	0.110	1.30	0.270	0.110	0.00
Count	40	40	40	11	38	38	38	40	38	40	38	0
Confidence Level(95.0%)	0.1	2.3	0.6	2.73	0.09	0.002	0.09	0.009	0.08	0.019	0.013	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	432.6	410.0	4.8	23.0	17.7	737	72.4	4773	2.7	3561
Standard Error	ND	ND	11.6	15.3	0.8	5.1	4.0	24	3.4	1890	0.2	1712
Median	ND	ND	460.0	452.0	3.3	12.0	9.6	800	74.5	335	2.5	160
Mode	ND	ND	470.0	ND	1.1	11.0	13.7	737	43.0	200	2.3	ND
Standard Deviation	ND	ND	71.3	94.2	5.2	32.0	24.7	152	20.8	8452	1.0	7843
Sample Variance	ND	ND	5084.8	8867.3	26.7	1020.8	609.1	23008	433.8	71440228	1.1	61518663
Kurtosis	ND	ND	0.5	1.2	7.9	12.3	10.4	1	-0.6	1	-1.0	10
Skewness	ND	ND	-1.1	-1.4	2.7	3.4	3.2	-1	-0.2	2	0.3	3
Range	0.0	0.0	280.0	342.0	22.9	156.0	108.9	518	79.0	25986	3.3	32980
Minimum	0.0	0.0	240.0	160.0	1.1	4.0	3.1	357	31.0	14	1.1	20
Maximum	0.0	0.0	520.0	502.0	24.0	160.0	112.0	875	110.0	26000	4.4	33000
Count	0	0	38	38	38	40	38	40	38	20	20	21
Confidence Level(95.0%)	ND	ND	23.4	31.0	1.7	10.2	8.1	49	6.8	3956	0.5	3570

ND = No Data

Provisional MMSD Water Quality Data

WALNUT STREET - SITE 6
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

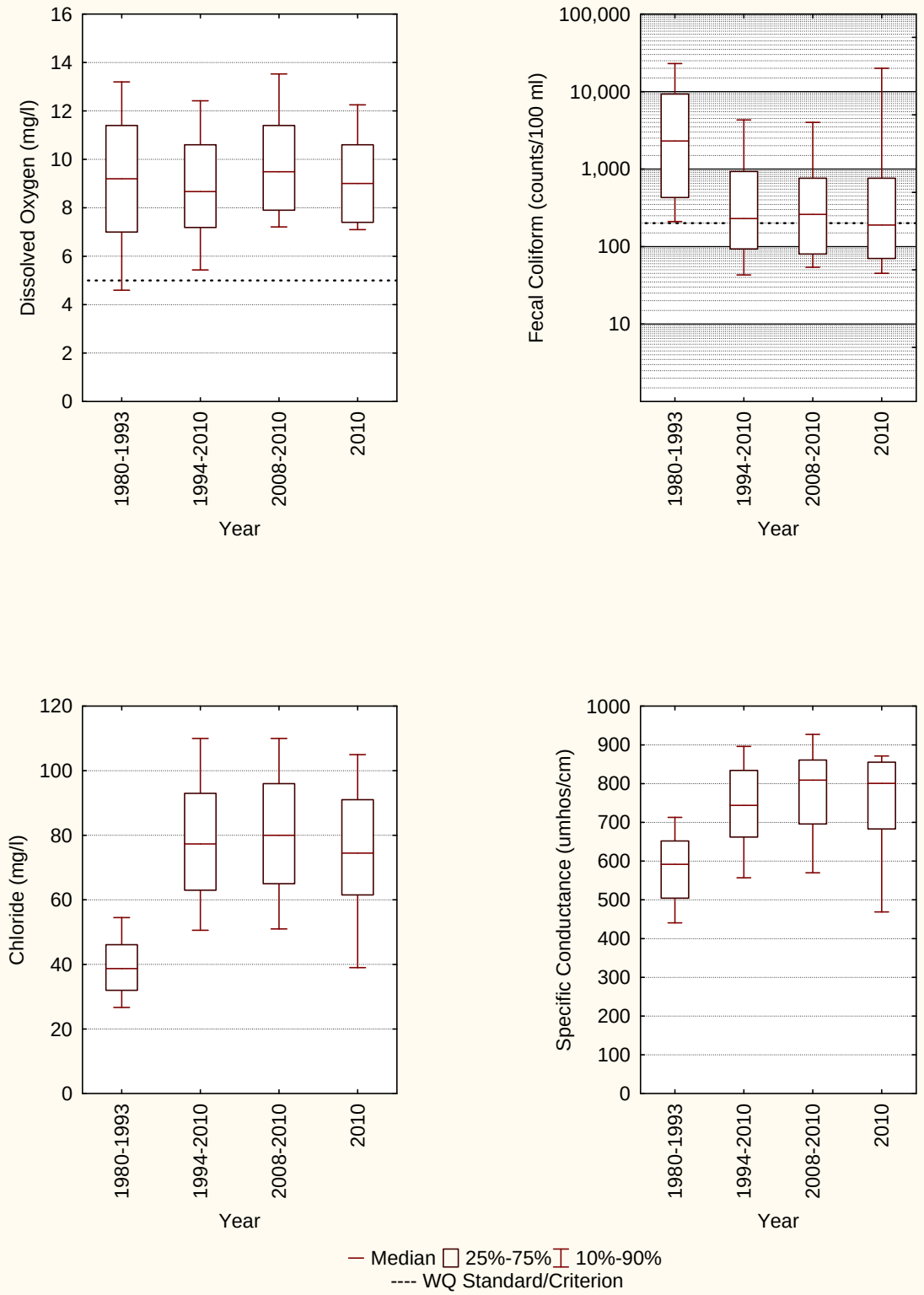
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	61.33	32.86	0.0	4.8	7.5	2.6	8.3	18.1	0.0	1.6	0.5	0.0
Standard Error	2.58	1.94	0.0	0.4	1.6	0.5	7.6	2.5	0.0	0.6	0.5	0.0
Median	64.00	36.00	0.0	4.4	5.3	2.1	0.0	14.0	0.0	0.0	0.0	0.0
Mode	63.00	31.00	0.0	3.9	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
Standard Deviation	11.82	8.91	0.0	1.8	7.4	2.1	34.9	11.3	0.0	2.9	2.0	0.0
Sample Variance	139.73	79.43	0.0	3.1	54.7	4.4	1218.3	126.6	0.0	8.5	4.0	0.0
Kurtosis	1.37	0.06	ND	1.3	2.1	-0.1	20.6	3.9	ND	3.7	19.0	ND
Skewness	-1.39	-1.00	ND	1.3	1.7	0.8	4.5	1.9	ND	2.1	4.4	ND
Range	44.00	31.00	0.0	6.5	26.0	6.8	160.0	45.4	0.0	10.0	8.7	0.0
Minimum	31.00	14.00	0.0	2.6	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0
Maximum	75.00	45.00	0.0	9.1	26.0	6.8	160.0	53.0	0.0	10.0	8.7	0.0
Count	21	21	21	21	21	21	21	21	21	21	19	3
Confidence Level(95.0%)	5.38	4.06	0.0	0.8	3.4	1.0	15.9	5.1	0.0	1.3	1.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	289	253	1.2	5.7	68.9	60.0	8.8	8.9
Standard Error	14	10	0.3	0.8	2.3	2.2	0.3	0.4
Median	310	280	0.0	5.0	73.0	65.0	8.6	8.4
Mode	330	290	0.0	0.0	77.0	69.0	10.0	11.0
Standard Deviation	66	62	1.7	3.5	14.1	13.4	2.1	2.3
Sample Variance	4303	3831	2.7	12.1	200.1	179.6	4.2	5.4
Kurtosis	1	2	1.0	4.1	2.6	2.0	-0.2	0.8
Skewness	-1	-2	1.2	1.2	-1.9	-1.7	0.5	0.9
Range	220	212	6.6	16.0	51.0	50.0	7.6	9.7
Minimum	130	88	0.0	0.0	31.0	24.0	5.4	5.3
Maximum	350	300	6.6	16.0	82.0	74.0	13.0	15.0
Count	21	38	40	18	38	38	38	38
Confidence Level(95.0%)	30	20	0.5	1.7	4.6	4.4	0.7	0.8

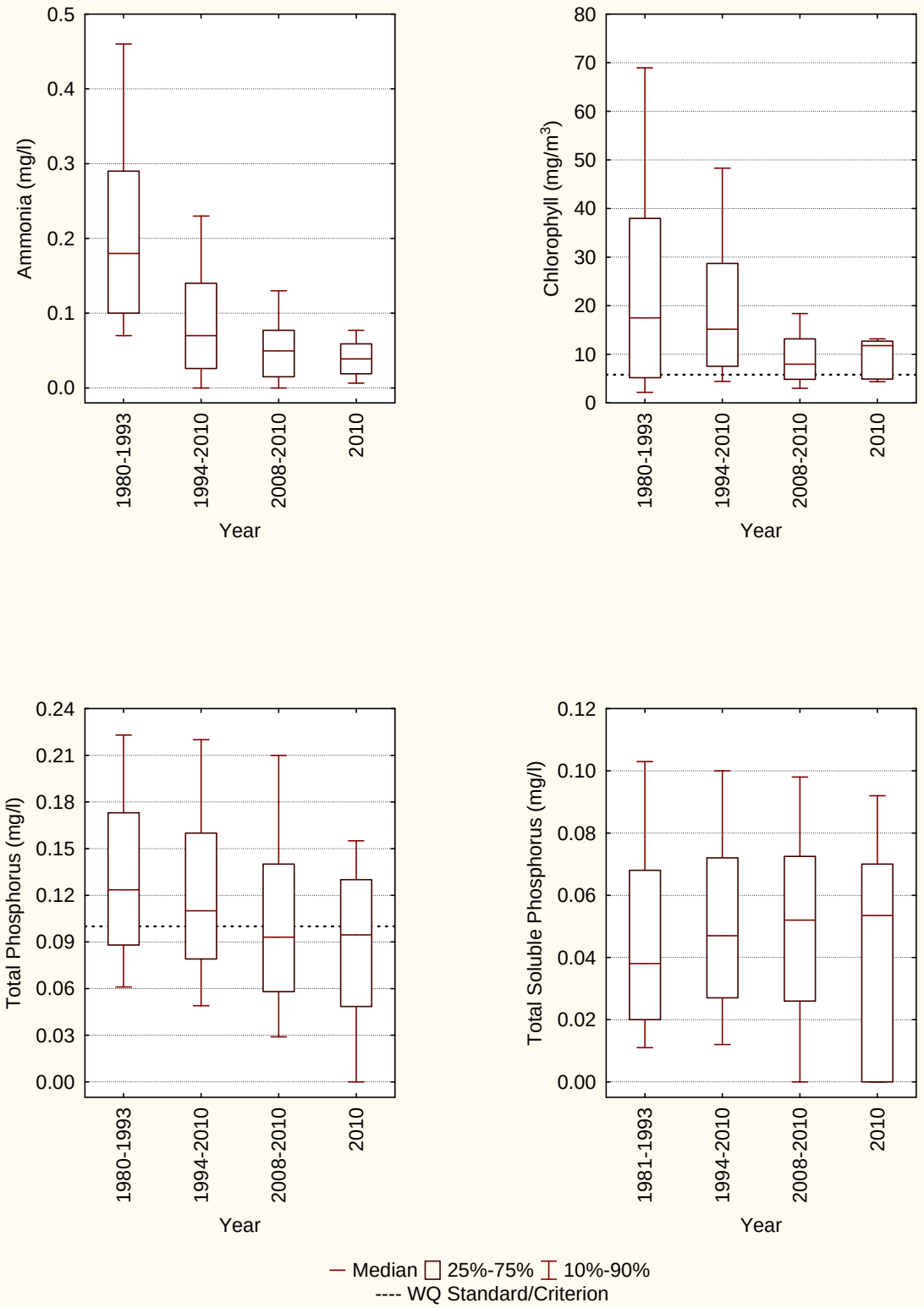
ND = No Data

Provisional MMSD Water Quality Data

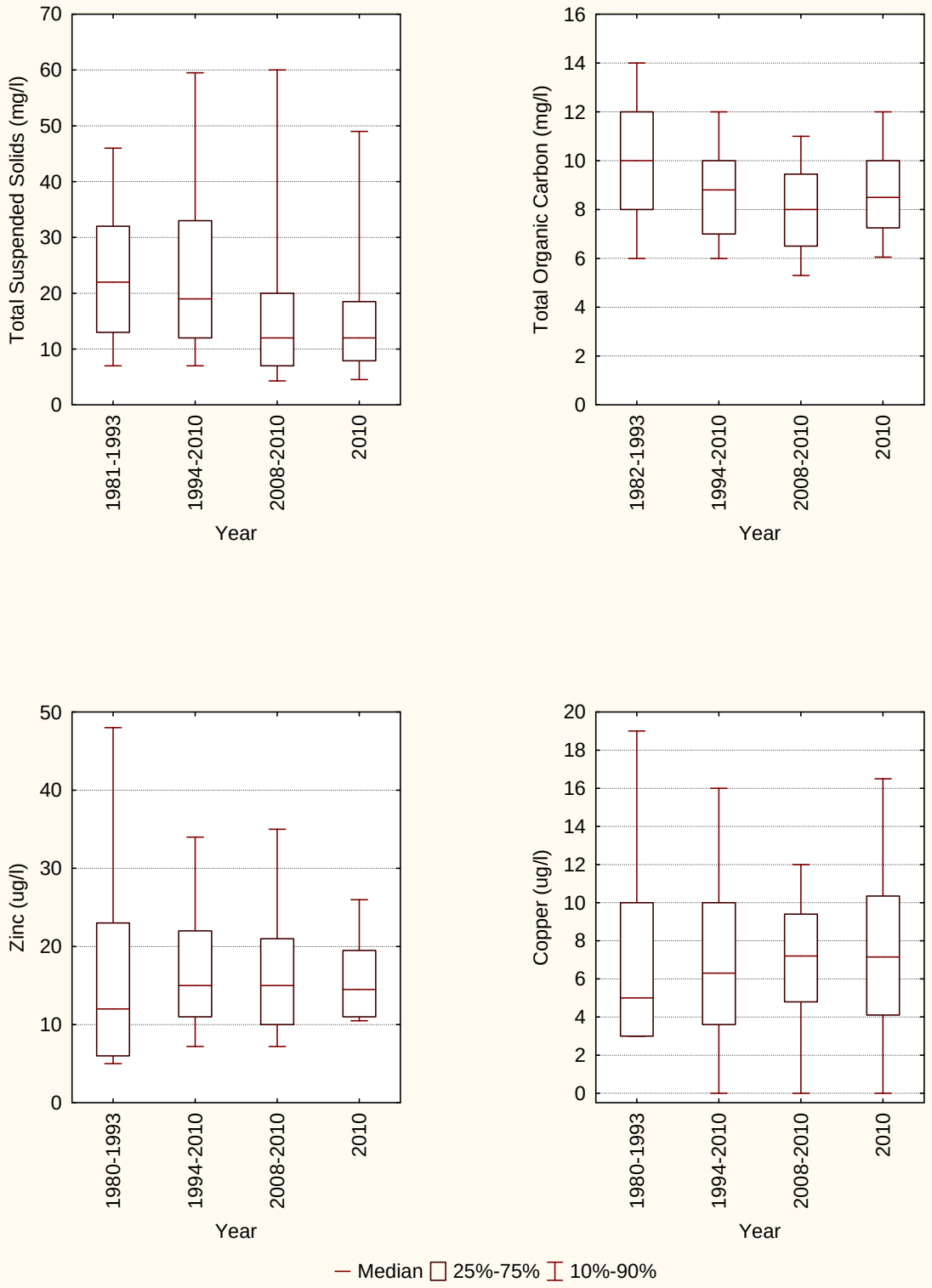
MMSD Water Quality Monitoring Program Data
Milwaukee River at Wells St., Site RI-07



MMSD Water Quality Monitoring Program Data
Milwaukee River at Wells St., Site RI-07



MMSD Water Quality Monitoring Program Data
Milwaukee River at Wells St., Site RI-07



WELLS STREET - SITE 7
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	15.8	9.3	9.78	1.01	0.014	1.03	0.043	0.82	0.093	0.045	ND
Standard Error	0.0	1.0	0.3	1.19	0.06	0.001	0.06	0.004	0.04	0.008	0.005	ND
Median	8.2	15.5	9.0	11.80	0.95	0.013	0.96	0.039	0.80	0.095	0.054	ND
Mode	8.2	7.6	12.0	12.50	1.10	0.012	1.10	0.000	1.20	0.000	0.000	ND
Standard Deviation	0.2	7.9	2.1	3.94	0.47	0.007	0.48	0.031	0.29	0.065	0.036	ND
Sample Variance	0.0	62.2	4.6	15.56	0.22	0.000	0.23	0.001	0.09	0.004	0.001	ND
Kurtosis	1.8	-1.2	-0.3	-1.75	4.92	1.935	5.58	1.692	0.73	1.663	-1.406	ND
Skewness	0.9	-0.2	0.6	-0.56	1.94	1.568	2.09	1.117	0.68	0.892	-0.107	ND
Range	0.9	27.0	8.2	9.91	2.31	0.028	2.40	0.140	1.33	0.300	0.110	0.00
Minimum	7.9	-0.2	6.2	4.29	0.29	0.006	0.30	0.000	0.27	0.000	0.000	0.00
Maximum	8.8	26.8	14.4	14.20	2.60	0.034	2.70	0.140	1.60	0.300	0.110	0.00
Count	60	60	60	11	60	59	60	60	60	60	60	0
Confidence Level(95.0%)	0.1	2.0	0.6	2.65	0.12	0.002	0.13	0.008	0.08	0.017	0.009	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	435.2	413.9	4.9	21.3	17.7	751	74.8	3730	2.5	8123
Standard Error	ND	ND	11.2	13.8	0.9	4.2	3.3	21	2.9	2019	0.2	4498
Median	ND	ND	460.0	450.5	3.3	12.0	9.5	801	74.5	190	2.3	6650
Mode	ND	ND	460.0	182.0	1.3	12.0	11.7	854	72.0	70	1.8	ND
Standard Deviation	ND	ND	86.5	107.3	7.1	32.4	25.3	163	22.8	8799	1.0	8997
Sample Variance	ND	ND	7483.0	11503.3	49.9	1052.6	638.5	26409	519.8	77430385	0.9	80942025
Kurtosis	ND	ND	0.9	0.9	16.0	14.2	7.0	1	-0.4	8	-0.1	-3
Skewness	ND	ND	-1.2	-1.4	3.9	3.7	2.8	-1	-0.2	3	0.9	0
Range	0.0	0.0	360.0	408.4	40.0	168.5	107.5	663	90.0	33984	3.3	18810
Minimum	0.0	0.0	200.0	150.0	0.0	1.5	2.5	347	30.0	16	1.2	190
Maximum	0.0	0.0	560.0	558.4	40.0	170.0	110.0	1010	120.0	34000	4.5	19000
Count	0	0	60	60	60	60	60	60	60	19	19	4
Confidence Level(95.0%)	ND	ND	22.3	27.7	1.8	8.4	6.5	42	5.9	4241	0.5	14316

ND = No Data

Provisional MMSD Water Quality Data

WELLS STREET - SITE 7
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	62.75	33.85	0.0	5.4	7.7	2.7	2.1	17.9	0.0	0.5	0.6	0.0
Standard Error	2.56	1.85	0.0	0.5	1.3	0.4	1.3	2.7	0.0	0.4	0.4	0.0
Median	64.50	36.00	0.0	4.6	7.2	2.4	0.0	14.5	0.0	0.0	0.0	0.0
Mode	63.00	40.00	0.0	3.7	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0
Standard Deviation	11.43	8.27	0.0	2.3	5.6	1.9	5.7	12.2	0.0	1.7	1.8	0.0
Sample Variance	130.72	68.34	0.0	5.3	31.5	3.7	32.7	149.5	0.0	2.8	3.2	0.0
Kurtosis	3.12	1.19	ND	5.7	-0.4	0.5	6.4	12.5	ND	14.9	7.7	ND
Skewness	-1.54	-1.19	ND	2.2	0.5	0.8	2.7	3.3	ND	3.8	3.0	ND
Range	49.00	32.00	0.0	9.4	19.0	7.0	19.0	55.0	0.0	7.2	6.4	0.0
Minimum	29.00	13.00	0.0	3.6	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0
Maximum	78.00	45.00	0.0	13.0	19.0	7.0	19.0	65.0	0.0	7.2	6.4	0.0
Count	20	20	20	20	20	20	20	20	20	20	20	3
Confidence Level(95.0%)	5.35	3.87	0.0	1.1	2.6	0.9	2.7	5.7	0.0	0.8	0.8	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	296	254	0.9	6.6	69.0	60.2	8.7	8.8
Standard Error	14	8	0.2	1.1	1.8	1.8	0.3	0.3
Median	310	270	0.0	5.8	72.5	64.0	8.5	8.7
Mode	350	290	0.0	5.8	72.0	64.0	13.0	12.0
Standard Deviation	61	62	1.3	4.7	14.2	13.7	2.2	2.4
Sample Variance	3678	3788	1.7	22.1	202.6	187.2	4.7	5.8
Kurtosis	2	3	-0.4	3.3	3.2	2.4	-0.5	0.1
Skewness	-1	-2	1.0	1.5	-2.0	-1.7	0.4	0.7
Range	240	244	4.3	20.0	55.0	54.0	8.0	9.8
Minimum	130	86	0.0	0.0	29.0	23.0	5.0	5.2
Maximum	370	330	4.3	20.0	84.0	77.0	13.0	15.0
Count	20	60	60	19	60	60	60	60
Confidence Level(95.0%)	28	16	0.3	2.3	3.7	3.5	0.6	0.6

ND = No Data

Provisional MMSD Water Quality Data

WATER STREET - SITE 8
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	13.9	9.2	6.02	1.08	0.018	1.10	0.093	0.69	0.086	0.046	ND
Standard Error	0.0	0.9	0.3	1.02	0.07	0.001	0.07	0.005	0.02	0.005	0.003	ND
Median	8.1	12.6	9.3	5.37	0.89	0.016	0.91	0.083	0.67	0.074	0.048	ND
Mode	8.2	10.3	12.8	ND	2.30	0.016	2.30	0.140	0.61	0.140	0.000	ND
Standard Deviation	0.2	7.8	2.6	4.10	0.57	0.007	0.57	0.043	0.21	0.043	0.027	ND
Sample Variance	0.1	60.9	6.7	16.77	0.32	0.000	0.32	0.002	0.04	0.002	0.001	ND
Kurtosis	-0.9	-1.2	-1.2	0.19	-0.07	2.482	-0.06	1.851	0.00	5.165	-0.156	ND
Skewness	0.2	0.0	0.4	0.74	1.05	1.561	1.06	1.259	0.52	1.940	-0.272	ND
Range	0.9	25.2	8.4	14.82	2.03	0.034	2.01	0.210	0.97	0.240	0.110	0.00
Minimum	7.7	0.9	5.6	0.68	0.37	0.008	0.39	0.030	0.33	0.040	0.000	0.00
Maximum	8.6	26.1	14.0	15.50	2.40	0.042	2.40	0.240	1.30	0.280	0.110	0.00
Count	77	77	77	16	75	75	75	77	75	77	75	0
Confidence Level(95.0%)	0.1	1.8	0.6	2.18	0.13	0.002	0.13	0.010	0.05	0.010	0.006	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	455.8	439.8	3.7	17.9	14.2	787	102.9	7983	2.5	2813
Standard Error	ND	ND	14.0	15.0	0.4	2.9	2.0	28	5.9	4282	0.2	1348
Median	ND	ND	435.0	425.5	3.0	11.0	8.8	780	91.0	150	2.2	130
Mode	ND	ND	510.0	493.5	4.0	11.0	3.9	1090	140.0	110	2.0	130
Standard Deviation	ND	ND	118.4	127.4	3.2	25.6	17.6	248	50.9	22250	1.1	7004
Sample Variance	ND	ND	14021.8	16229.9	10.1	656.8	309.0	61617	2586.7	495045288	1.1	49057462
Kurtosis	ND	ND	1.5	1.3	10.4	22.2	7.9	0	1.5	10	0.0	14
Skewness	ND	ND	0.6	0.4	2.9	4.3	2.9	0	1.4	3	1.0	4
Range	0.0	0.0	620.0	630.0	19.0	178.0	78.4	1000	230.0	89983	3.7	32972
Minimum	0.0	0.0	200.0	185.0	0.0	2.0	3.3	300	30.0	17	1.2	28
Maximum	0.0	0.0	820.0	815.0	19.0	180.0	81.7	1300	260.0	90000	5.0	33000
Count	0	0	72	72	75	77	75	77	75	27	27	27
Confidence Level(95.0%)	ND	ND	27.8	29.9	0.7	5.8	4.0	56	11.7	8802	0.4	2771

ND = No Data

Provisional MMSD Water Quality Data

WATER STREET - SITE 8
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

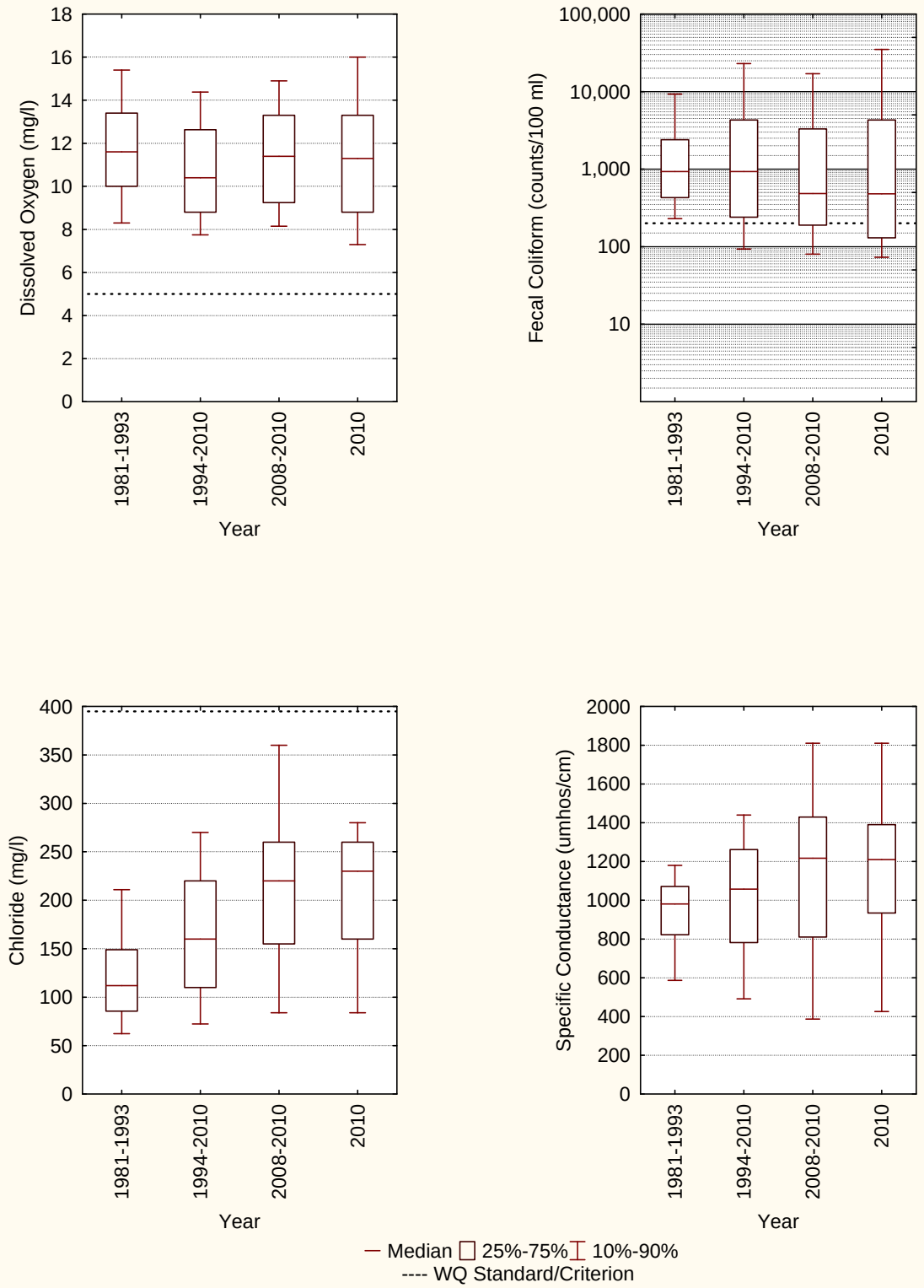
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	59.81	30.03	0.0	5.6	7.3	2.5	0.9	20.6	0.1	0.8	0.4	0.0
Standard Error	2.98	1.87	0.0	0.5	1.2	0.3	0.5	2.2	0.1	0.4	0.4	0.0
Median	60.00	31.00	0.0	5.1	7.0	2.2	0.0	16.0	0.0	0.0	0.0	0.0
Mode	59.00	35.00	0.0	5.1	0.0	1.8	0.0	12.0	0.0	0.0	0.0	0.0
Standard Deviation	15.49	9.74	0.0	2.4	6.1	1.5	2.6	11.3	0.4	1.9	1.9	0.0
Sample Variance	240.00	94.81	0.0	5.6	37.6	2.1	6.6	126.6	0.2	3.7	3.8	0.0
Kurtosis	-0.20	-0.51	ND	15.0	1.6	5.4	11.0	3.4	27.0	7.5	25.0	ND
Skewness	-0.60	-0.65	ND	3.6	1.2	1.6	3.3	1.9	5.2	2.7	5.0	ND
Range	60.00	33.10	0.0	12.3	25.0	7.6	11.0	45.1	2.2	8.0	9.7	0.0
Minimum	27.00	9.90	0.0	3.7	0.0	0.0	0.0	8.9	0.0	0.0	0.0	0.0
Maximum	87.00	43.00	0.0	16.0	25.0	7.6	11.0	54.0	2.2	8.0	9.7	0.0
Count	27	27	27	27	27	27	27	27	27	27	25	3
Confidence Level(95.0%)	6.13	3.85	0.0	0.9	2.4	0.6	1.0	4.5	0.2	0.8	0.8	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	273	231	0.9	7.6	61.5	54.1	7.4	7.4
Standard Error	15	7	0.2	1.0	1.6	1.5	0.2	0.3
Median	280	250	0.0	6.8	65.0	56.0	6.8	6.6
Mode	260	250	0.0	12.0	62.0	60.0	7.4	5.8
Standard Deviation	77	60	1.6	4.9	14.0	13.3	2.1	2.2
Sample Variance	5874	3602	2.5	23.6	195.1	177.5	4.4	5.0
Kurtosis	0	1	4.1	0.0	0.1	0.1	0.6	1.7
Skewness	-1	-1	2.0	0.4	-0.9	-0.8	1.0	1.3
Range	280	241	7.1	19.0	53.0	53.0	9.1	10.9
Minimum	110	69	0.0	0.0	26.0	20.0	3.9	4.1
Maximum	390	310	7.1	19.0	79.0	73.0	13.0	15.0
Count	27	75	77	24	75	75	75	75
Confidence Level(95.0%)	30	14	0.4	2.0	3.2	3.1	0.5	0.5

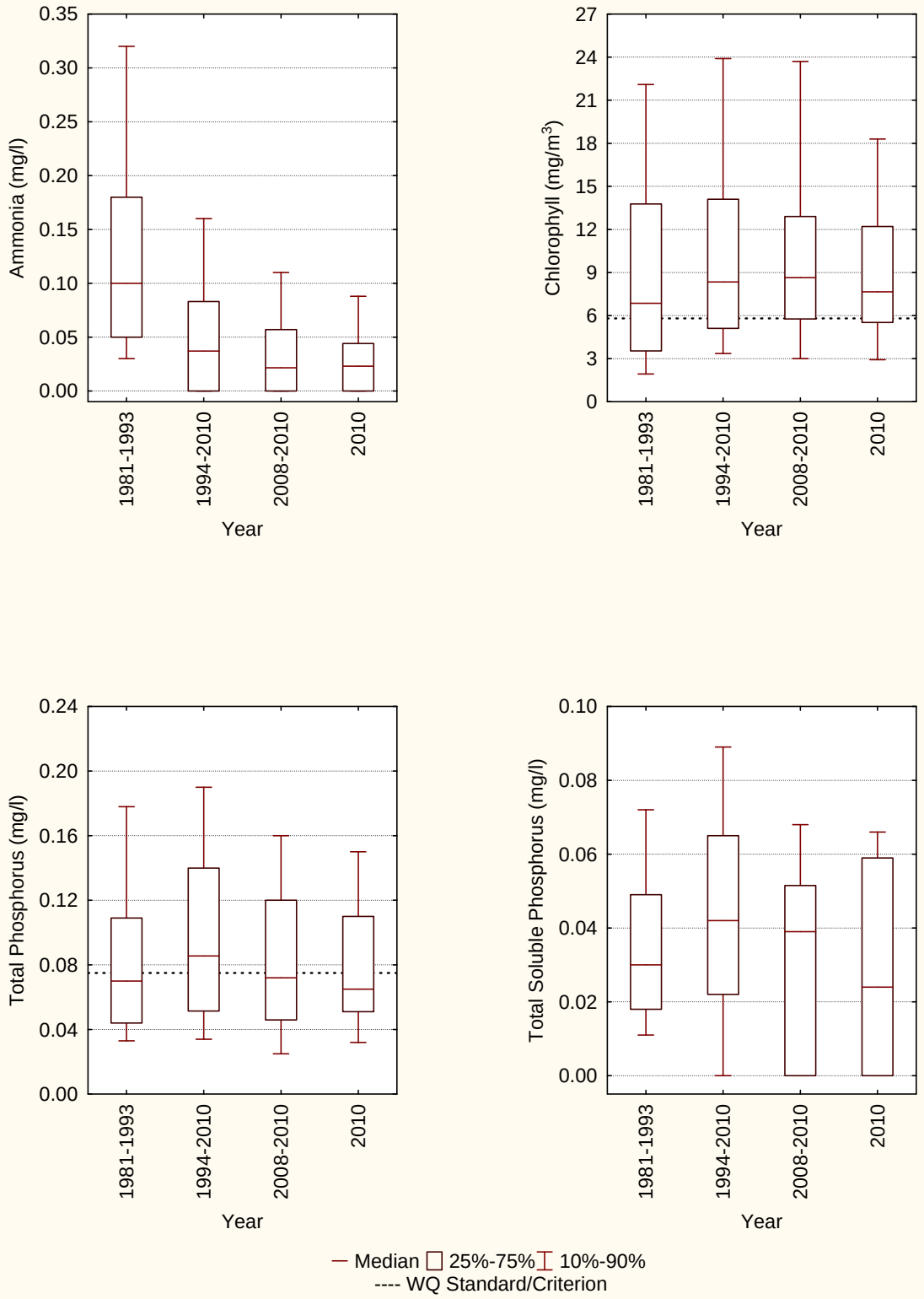
ND = No Data

Provisional MMSD Water Quality Data

MMSD Water Quality Monitoring Program Data
Menomonee River at North 70th St., Site RI-09

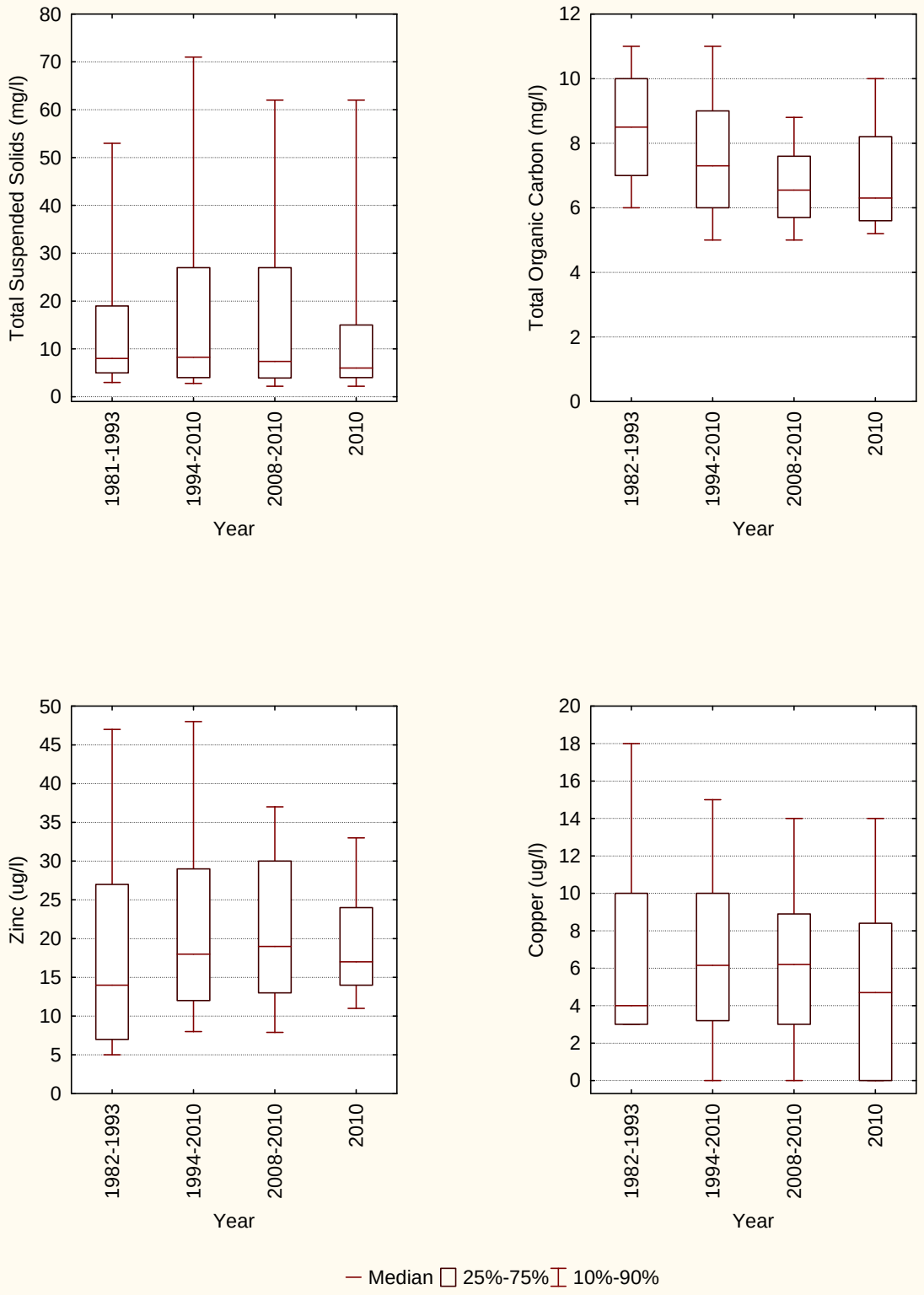


MMSD Water Quality Monitoring Program Data
Menomonee River at North 70th St., Site RI-09



— Median ☐ 25%-75% ⊥ 10%-90%
---- WQ Standard/Criterion

MMSD Water Quality Monitoring Program Data
Menomonee River at North 70th St., Site RI-09



70TH STREET - SITE 9
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.5	11.4	9.89	0.45	0.016	0.47	0.034	0.62	0.083	0.031	ND
Standard Error	0.0	1.7	0.6	1.91	0.06	0.002	0.06	0.007	0.04	0.009	0.006	ND
Median	8.1	11.6	11.3	7.66	0.43	0.017	0.45	0.023	0.62	0.065	0.024	ND
Mode	8.0	ND	10.6	7.66	0.12	0.017	0.13	0.000	0.39	0.085	0.000	ND
Standard Deviation	0.3	9.1	3.0	8.11	0.31	0.010	0.31	0.040	0.23	0.046	0.034	ND
Sample Variance	0.1	82.1	8.8	65.80	0.09	0.000	0.10	0.002	0.05	0.002	0.001	ND
Kurtosis	-0.2	-1.5	-0.6	8.40	0.08	-0.265	0.20	2.957	-1.23	0.572	0.992	ND
Skewness	0.5	-0.1	0.3	2.62	0.70	0.569	0.71	1.700	-0.02	1.058	0.967	ND
Range	0.9	25.0	10.3	35.34	1.10	0.039	1.20	0.160	0.75	0.172	0.130	0.00
Minimum	7.7	-0.3	7.0	2.46	0.00	0.000	0.00	0.000	0.25	0.028	0.000	0.00
Maximum	8.6	24.7	17.3	37.80	1.10	0.039	1.20	0.160	1.00	0.200	0.130	0.00
Count	29	29	27	18	27	27	27	29	27	29	27	0
Confidence Level(95.0%)	0.1	3.4	1.2	4.03	0.12	0.004	0.12	0.015	0.09	0.018	0.013	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	675.8	660.0	3.9	17.1	13.1	1264	234.0	9456	2.9	2787
Standard Error	ND	ND	46.8	50.0	0.7	4.7	3.8	143	33.6	4707	0.2	818
Median	ND	ND	705.0	696.5	2.6	6.0	5.0	1210	230.0	480	2.7	460
Mode	ND	ND	780.0	ND	3.0	15.0	3.7	1460	240.0	100	2.0	160
Standard Deviation	ND	ND	238.4	254.9	3.6	25.1	19.7	770	174.8	25347	1.0	4405
Sample Variance	ND	ND	56825.4	64966.6	13.2	628.2	389.1	592308	30570.3	642457958	1.0	19404468
Kurtosis	ND	ND	0.7	0.7	4.0	6.4	9.2	12	14.8	19	-0.7	1
Skewness	ND	ND	0.3	0.0	1.9	2.5	2.9	3	3.4	4	0.5	2
Range	0.0	0.0	1100.0	1206.0	16.0	108.0	89.1	4298	977.0	129974	3.7	13972
Minimum	0.0	0.0	200.0	90.0	0.0	2.0	1.8	272	23.0	26	1.4	28
Maximum	0.0	0.0	1300.0	1296.0	16.0	110.0	90.9	4570	1000.0	130000	5.1	14000
Count	0	0	26	26	27	29	27	29	27	29	29	29
Confidence Level(95.0%)	ND	ND	96.3	103.0	1.4	9.5	7.8	293	69.2	9641	0.4	1676

ND = No Data

Provisional MMSD Water Quality Data

70TH STREET - SITE 9
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	73.31	32.39	0.1	4.9	5.6	3.2	0.4	19.7	0.2	0.9	1.4	0.0
Standard Error	4.53	2.18	0.1	0.2	1.0	0.2	0.2	1.8	0.1	0.4	0.5	0.0
Median	78.00	37.00	0.0	4.9	4.7	3.1	0.0	17.0	0.0	0.0	0.0	0.0
Mode	110.00	37.00	0.0	5.3	0.0	2.6	0.0	15.0	0.0	0.0	0.0	0.0
Standard Deviation	24.40	11.76	0.6	1.0	5.3	1.0	0.9	9.5	0.5	1.9	2.9	0.0
Sample Variance	595.29	138.30	0.4	1.0	27.9	1.0	0.9	89.6	0.2	3.8	8.1	0.0
Kurtosis	-0.67	-0.84	27.0	-0.4	-0.6	2.0	4.5	1.8	4.7	2.5	1.0	ND
Skewness	-0.38	-0.51	5.1	-0.1	0.7	1.3	2.4	0.9	2.4	1.9	1.6	ND
Range	85.00	40.60	3.2	3.9	17.0	4.5	3.3	48.0	1.7	6.9	8.5	0.0
Minimum	25.00	9.40	0.0	3.1	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	110.00	50.00	3.2	7.0	17.0	6.3	3.3	48.0	1.7	6.9	8.5	0.0
Count	29	29	29	29	29	29	29	29	29	29	28	3
Confidence Level(95.0%)	9.28	4.47	0.2	0.4	2.0	0.4	0.4	3.6	0.2	0.7	1.1	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	316	231	1.5	7.5	61.8	54.6	7.1	7.0
Standard Error	20	13	0.4	1.2	2.8	2.8	0.4	0.4
Median	350	250	0.0	6.0	68.0	58.0	6.3	6.2
Mode	390	290	0.0	0.0	72.0	67.0	6.0	5.5
Standard Deviation	107	67	2.2	5.9	14.6	14.6	2.1	2.1
Sample Variance	11546	4464	4.7	34.6	211.8	211.8	4.3	4.5
Kurtosis	-1	0	5.9	0.4	0.1	0.0	1.8	1.3
Skewness	-1	-1	2.0	0.7	-0.9	-0.8	1.4	1.4
Range	360	260	9.7	23.0	56.0	58.0	8.7	7.4
Minimum	100	60	0.0	0.0	26.0	19.0	4.3	4.6
Maximum	460	320	9.7	23.0	82.0	77.0	13.0	12.0
Count	29	27	29	26	27	27	27	27
Confidence Level(95.0%)	41	26	0.8	2.4	5.8	5.8	0.8	0.8

ND = No Data

Provisional MMSD Water Quality Data

MUSKEGO AVENUE - SITE 11
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	14.5	8.2	4.93	0.76	0.022	0.78	0.127	0.74	0.096	0.049	ND
Standard Error	0.0	0.8	0.3	0.74	0.05	0.001	0.05	0.007	0.03	0.004	0.002	ND
Median	7.9	14.7	7.8	4.14	0.56	0.020	0.58	0.110	0.70	0.088	0.050	ND
Mode	7.9	22.0	12.0	ND	0.48	0.020	1.70	0.150	0.72	0.120	0.000	ND
Standard Deviation	0.2	7.3	2.5	3.13	0.42	0.008	0.42	0.062	0.24	0.034	0.021	ND
Sample Variance	0.0	53.5	6.2	9.82	0.18	0.000	0.17	0.004	0.06	0.001	0.000	ND
Kurtosis	0.1	-0.9	-0.8	-0.01	0.58	0.548	0.52	0.195	1.83	2.415	1.446	ND
Skewness	0.7	-0.2	0.2	0.84	1.31	1.010	1.29	0.801	1.11	1.431	-0.716	ND
Range	0.8	27.4	9.6	10.54	1.57	0.033	1.55	0.300	1.33	0.161	0.098	0.00
Minimum	7.6	0.2	3.4	0.76	0.33	0.011	0.35	0.030	0.27	0.049	0.000	0.00
Maximum	8.4	27.6	13.0	11.30	1.90	0.044	1.90	0.330	1.60	0.210	0.098	0.00
Count	81	81	81	18	80	81	80	81	81	81	81	0
Confidence Level(95.0%)	0.0	1.6	0.6	1.56	0.09	0.002	0.09	0.014	0.05	0.008	0.005	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	560.0	544.7	3.8	15.0	15.2	1053	164.5	4922	2.6	ND
Standard Error	ND	ND	24.3	25.0	0.4	1.8	1.8	51	9.5	2432	0.2	ND
Median	ND	ND	510.0	499.0	3.0	10.0	9.3	972	140.0	170	2.2	ND
Mode	ND	ND	500.0	489.0	6.0	11.0	22.8	1590	130.0	80	1.9	ND
Standard Deviation	ND	ND	214.5	220.8	3.3	16.6	15.9	458	85.8	12635	1.0	ND
Sample Variance	ND	ND	46007.8	48732.5	10.8	274.2	252.5	209612	7362.1	159648096	1.0	ND
Kurtosis	ND	ND	0.9	0.8	10.6	12.8	7.1	0	1.1	15	-0.5	ND
Skewness	ND	ND	1.0	0.9	2.8	3.4	2.5	1	1.1	4	0.8	ND
Range	0.0	0.0	980.0	1021.0	20.0	89.9	78.0	1939	433.0	59974	3.4	0
Minimum	0.0	0.0	220.0	170.0	0.0	2.1	2.8	351	37.0	26	1.4	0
Maximum	0.0	0.0	1200.0	1191.0	20.0	92.0	80.7	2290	470.0	60000	4.8	0
Count	0	0	78	78	81	81	81	81	81	27	27	0
Confidence Level(95.0%)	ND	ND	48.4	49.8	0.7	3.7	3.5	101	19.0	4998	0.4	ND

ND = No Data

Provisional MMSD Water Quality data

MUSKEGO AVENUE - SITE 11
MENOMONEE RIVER
WATER QUALITY DATA - 2010

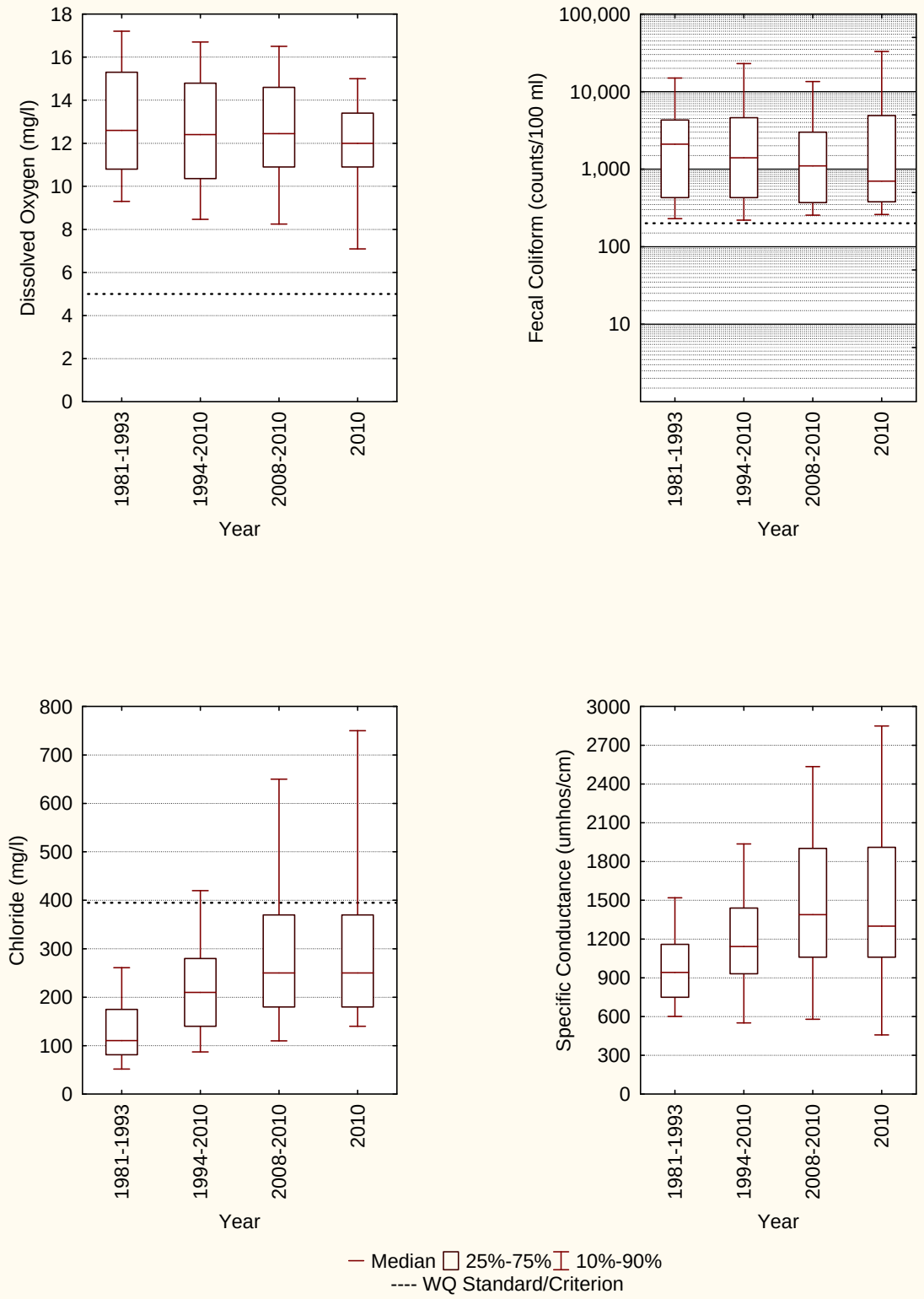
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	63.48	29.41	0.1	5.0	8.2	2.9	0.4	21.4	0.0	0.5	0.9	0.0
Standard Error	3.69	1.99	0.1	0.3	1.1	0.2	0.3	1.5	0.0	0.2	0.5	0.0
Median	66.00	30.00	0.0	4.8	6.7	3.0	0.0	19.0	0.0	0.0	0.0	0.0
Mode	54.00	36.00	0.0	4.9	4.4	2.6	0.0	14.0	0.0	0.0	0.0	0.0
Standard Deviation	19.15	10.33	0.7	1.6	5.7	1.1	1.3	7.9	0.2	1.1	2.5	0.0
Sample Variance	366.72	106.79	0.4	2.6	32.7	1.2	1.8	62.6	0.1	1.3	6.5	0.0
Kurtosis	-0.82	-1.13	27.0	7.0	2.7	1.3	16.4	0.1	27.0	1.9	5.7	ND
Skewness	-0.17	-0.28	5.2	2.2	1.5	-0.1	3.9	1.0	5.2	1.9	2.6	ND
Range	68.00	35.00	3.4	8.1	26.0	5.3	6.4	28.0	1.2	3.3	8.9	0.0
Minimum	28.00	10.00	0.0	2.9	0.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0
Maximum	96.00	45.00	3.4	11.0	26.0	5.3	6.4	40.0	1.2	3.3	8.9	0.0
Count	27	27	27	27	27	27	27	27	27	27	25	3
Confidence Level(95.0%)	7.58	4.09	0.3	0.6	2.3	0.4	0.5	3.1	0.1	0.5	1.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	279	210	1.6	9.0	56.6	49.8	7.1	7.0
Standard Error	17	7	0.3	0.8	1.6	1.6	0.2	0.2
Median	290	220	0.0	7.9	58.0	50.5	6.9	6.8
Mode	330	250	0.0	7.6	69.0	62.0	5.6	7.8
Standard Deviation	90	65	2.4	3.9	14.7	14.3	1.6	1.8
Sample Variance	8121	4238	5.8	15.4	216.5	205.4	2.7	3.1
Kurtosis	-1	-1	5.9	2.1	-0.9	-0.8	1.5	1.6
Skewness	0	-1	2.1	1.4	-0.5	-0.5	1.1	1.3
Range	310	236	12.0	16.5	55.0	54.0	7.4	7.5
Minimum	110	64	0.0	4.5	23.0	17.0	4.6	4.5
Maximum	420	300	12.0	21.0	78.0	71.0	12.0	12.0
Count	27	81	81	26	81	80	80	81
Confidence Level(95.0%)	36	14	0.5	1.6	3.3	3.2	0.4	0.4

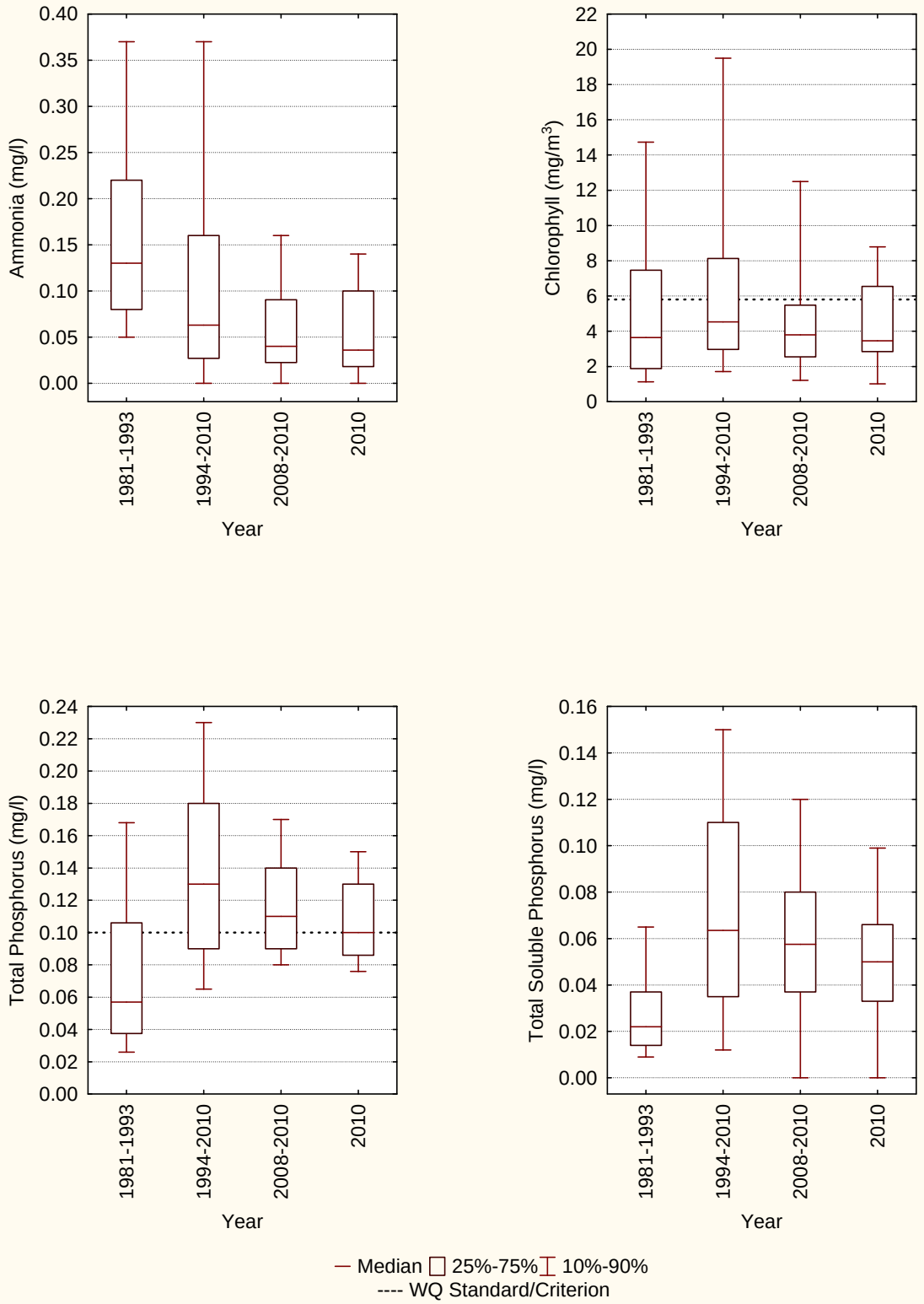
ND = No Data

Provisional MMSD Water Quality data

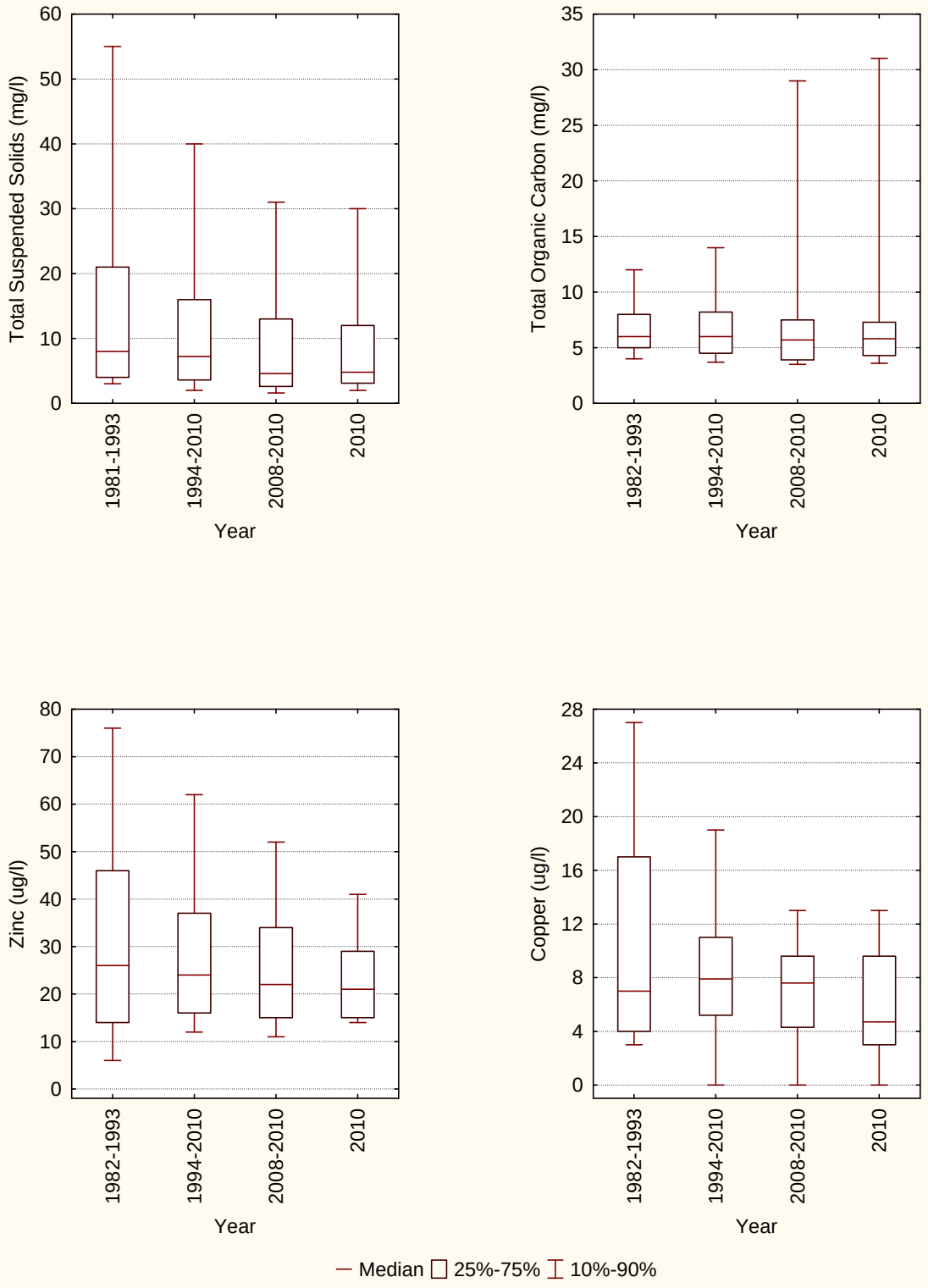
MMSD Water Quality Monitoring Program Data
Kinnickinnic River at S. 27th St., Site RI-12



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at S. 27th St., Site RI-12



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at S. 27th St., Site RI-12



27TH STREET - SITE 12
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	13.0	11.9	4.74	0.50	0.025	0.53	0.057	0.56	0.126	0.061	ND
Standard Error	0.1	1.6	0.6	0.94	0.05	0.003	0.05	0.010	0.07	0.020	0.013	ND
Median	8.0	12.0	12.0	3.46	0.41	0.022	0.43	0.036	0.57	0.100	0.050	ND
Mode	8.3	12.0	11.8	ND	0.38	0.017	1.10	0.000	1.00	0.130	0.000	ND
Standard Deviation	0.4	8.3	3.0	3.78	0.27	0.014	0.27	0.053	0.34	0.104	0.067	ND
Sample Variance	0.1	68.2	8.8	14.28	0.07	0.000	0.07	0.003	0.12	0.011	0.005	ND
Kurtosis	0.6	-1.4	1.2	4.08	0.37	1.828	0.02	0.379	4.26	22.992	15.211	ND
Skewness	-0.5	-0.1	0.4	1.84	1.17	1.266	1.05	1.022	1.55	4.636	3.49ND1210172	ND
Range	1.6	24.1	13.3	14.84	0.93	0.059	0.92	0.190	1.70	0.570	0.350	0.00
Minimum	7.1	-0.1	6.7	0.96	0.17	0.008	0.18	0.000	0.00	0.060	0.000	0.00
Maximum	8.7	24.0	20.0	15.80	1.10	0.067	1.10	0.190	1.70	0.630	0.350	0.00
Count	27	27	27	16	25	25	25	27	25	27	25	0
Confidence Level(95.0%)	0.1	3.3	1.2	2.01	0.11	0.006	0.11	0.021	0.14	0.041	0.028	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	897.9	888.1	3.0	11.1	13.0	1932	436.5	12679	3.2	4688
Standard Error	ND	ND	84.3	85.4	0.7	2.8	4.2	473	141.2	6250	0.2	1681
Median	ND	ND	815.0	811.1	1.8	4.8	5.2	1300	250.0	700	2.8	960
Mode	ND	ND	1800.0	ND	0.0	3.1	ND	1680	300.0	360	2.6	260
Standard Deviation	ND	ND	412.8	418.6	3.5	14.5	20.9	2457	705.9	33074	0.8	8896
Sample Variance	ND	ND	170391.1	175205.1	12.3	209.5	437.3	6038278	498361.8	1093886420	0.7	79134965
Kurtosis	ND	ND	0.3	0.2	7.7	8.7	15.9	22	21.1	15	0.1	10
Skewness	ND	ND	0.7	0.7	2.6	2.7	3.7	5	4.4	4	1.1	3
Range	0.0	0.0	1540.0	1590.0	16.0	66.4	102.5	13312	3654.0	159870	3.1	40901
Minimum	0.0	0.0	260.0	202.0	0.0	1.6	1.5	388	46.0	130	2.1	99
Maximum	0.0	0.0	1800.0	1792.0	16.0	68.0	104.0	13700	3700.0	160000	5.2	41000
Count	0	0	24	24	25	27	25	27	25	28	28	28
Confidence Level(95.0%)	ND	ND	174.3	176.7	1.4	5.7	8.6	972	291.4	12825	0.3	3449

ND = No Data

Provisional MMSD Water Quality Data

27TH STREET - SITE 12
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	75.00	33.06	0.0	5.6	6.7	4.1	0.2	26.3	0.1	1.0	1.5	0.0
Standard Error	4.63	2.26	0.0	0.4	1.0	0.5	0.2	4.1	0.1	0.4	0.6	0.0
Median	72.00	36.00	0.0	5.2	4.7	3.8	0.0	21.0	0.0	0.0	0.0	0.0
Mode	64.00	37.00	0.0	5.2	0.0	3.8	0.0	15.0	0.0	0.0	0.0	0.0
Standard Deviation	24.04	11.77	0.1	1.8	5.4	2.5	0.9	21.1	0.7	2.2	3.2	0.0
Sample Variance	577.92	138.48	0.0	3.4	29.1	6.2	0.9	443.8	0.5	4.9	10.6	0.0
Kurtosis	0.22	-0.14	27.0	4.5	2.9	0.9	18.8	15.8	27.0	3.3	1.8	ND
Skewness	-0.29	-0.68	5.2	1.5	1.3	0.9	4.3	3.7	5.2	2.1	1.8	ND
Range	94.00	43.00	0.6	9.0	24.0	10.0	4.5	109.0	3.6	7.4	9.7	0.0
Minimum	26.00	9.00	0.0	3.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0
Maximum	120.00	52.00	0.6	12.0	24.0	10.0	4.5	120.0	3.6	7.4	9.7	0.0
Count	27	27	27	27	27	27	27	27	27	27	26	3
Confidence Level(95.0%)	9.51	4.66	0.0	0.7	2.1	1.0	0.4	8.3	0.3	0.9	1.3	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	324	223	5.4	18.9	60.1	50.0	10.2	9.6
Standard Error	20	11	1.2	4.7	2.9	2.5	2.4	2.2
Median	340	230	3.3	8.4	60.0	53.0	5.8	6.2
Mode	420	220	0.0	12.0	66.0	54.0	5.7	5.6
Standard Deviation	106	54	6.1	22.9	14.5	12.7	11.9	10.9
Sample Variance	11309	2917	37.3	523.7	211.6	162.4	141.9	118.9
Kurtosis	0	2	-0.3	3.8	1.4	0.3	6.6	9.9
Skewness	-1	-1	1.1	2.1	-0.4	-0.8	2.6	3.1
Range	410	218	17.0	79.7	67.0	50.0	48.6	48.9
Minimum	100	82	0.0	4.3	28.0	23.0	3.4	3.1
Maximum	510	300	17.0	84.0	95.0	73.0	52.0	52.0
Count	27	25	27	24	25	25	25	25
Confidence Level(95.0%)	42	22	2.4	9.7	6.0	5.3	4.9	4.5

ND = No Data

Provisional MMSD Water Quality Data

8TH STREET - SITE 13
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.5	16.1	14.2	6.08	0.37	0.019	0.40	0.030	0.50	0.106	0.054	ND
Standard Error	0.1	1.6	0.7	0.87	0.07	0.003	0.08	0.010	0.06	0.019	0.018	ND
Median	8.5	15.8	14.8	5.09	0.27	0.016	0.29	0.000	0.48	0.079	0.041	ND
Mode	8.4	23.4	13.8	ND	1.00	0.017	ND	0.000	0.92	0.140	0.000	ND
Standard Deviation	0.3	7.9	3.3	3.15	0.34	0.015	0.35	0.047	0.28	0.090	0.083	ND
Sample Variance	0.1	61.7	11.1	9.90	0.11	0.000	0.13	0.002	0.08	0.008	0.007	ND
Kurtosis	-0.9	-1.3	-0.6	-0.17	-0.85	-0.347	-0.81	1.251	-0.73	9.796	12.548	ND
Skewness	-0.4	-0.1	-0.4	0.75	0.79	0.776	0.79	1.495	-0.11	2.726	3.258	ND
Range	1.0	25.3	11.5	10.76	0.97	0.053	1.06	0.160	0.93	0.450	0.380	0.00
Minimum	7.9	1.7	7.9	1.64	0.03	0.000	0.04	0.000	0.00	0.000	0.000	0.00
Maximum	8.9	27.0	19.4	12.40	1.00	0.053	1.10	0.160	0.93	0.450	0.380	0.00
Count	23	23	23	13	21	21	21	23	21	23	21	0
Confidence Level(95.0%)	0.1	3.4	1.4	1.90	0.15	0.007	0.16	0.020	0.13	0.039	0.038	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	792.4	782.8	2.8	10.5	10.6	1340	256.8	13774	3.4	10136
Standard Error	ND	ND	73.0	74.8	0.9	4.0	4.1	129	33.3	4471	0.2	5460
Median	ND	ND	710.0	705.6	1.6	3.9	4.2	1240	220.0	2100	3.3	1350
Mode	ND	ND	1000.0	ND	1.0	11.0	ND	ND	220.0	ND	ND	ND
Standard Deviation	ND	ND	334.5	342.7	3.9	19.3	18.7	617	152.5	21904	1.0	26749
Sample Variance	ND	ND	111909.0	117421.3	15.4	372.3	351.2	380252	23241.1	479798468	0.9	715492553
Kurtosis	ND	ND	1.2	1.1	13.1	14.1	14.7	1	3.2	5	-1.5	19
Skewness	ND	ND	0.8	0.7	3.4	3.6	3.7	1	1.5	2	0.1	4
Range	0.0	0.0	1360.0	1399.0	18.0	90.0	85.2	2447	649.0	86927	3.1	129956
Minimum	0.0	0.0	240.0	190.0	0.0	0.0	1.2	293	41.0	73	1.9	44
Maximum	0.0	0.0	1600.0	1589.0	18.0	90.0	86.4	2740	690.0	87000	4.9	130000
Count	0	0	21	21	20	23	21	23	21	24	24	24
Confidence Level(95.0%)	ND	ND	152.3	156.0	1.8	8.3	8.5	267	69.4	9249	0.4	11295

ND = No Data

Provisional MMSD Water Quality Data

8TH STREET - SITE 13
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

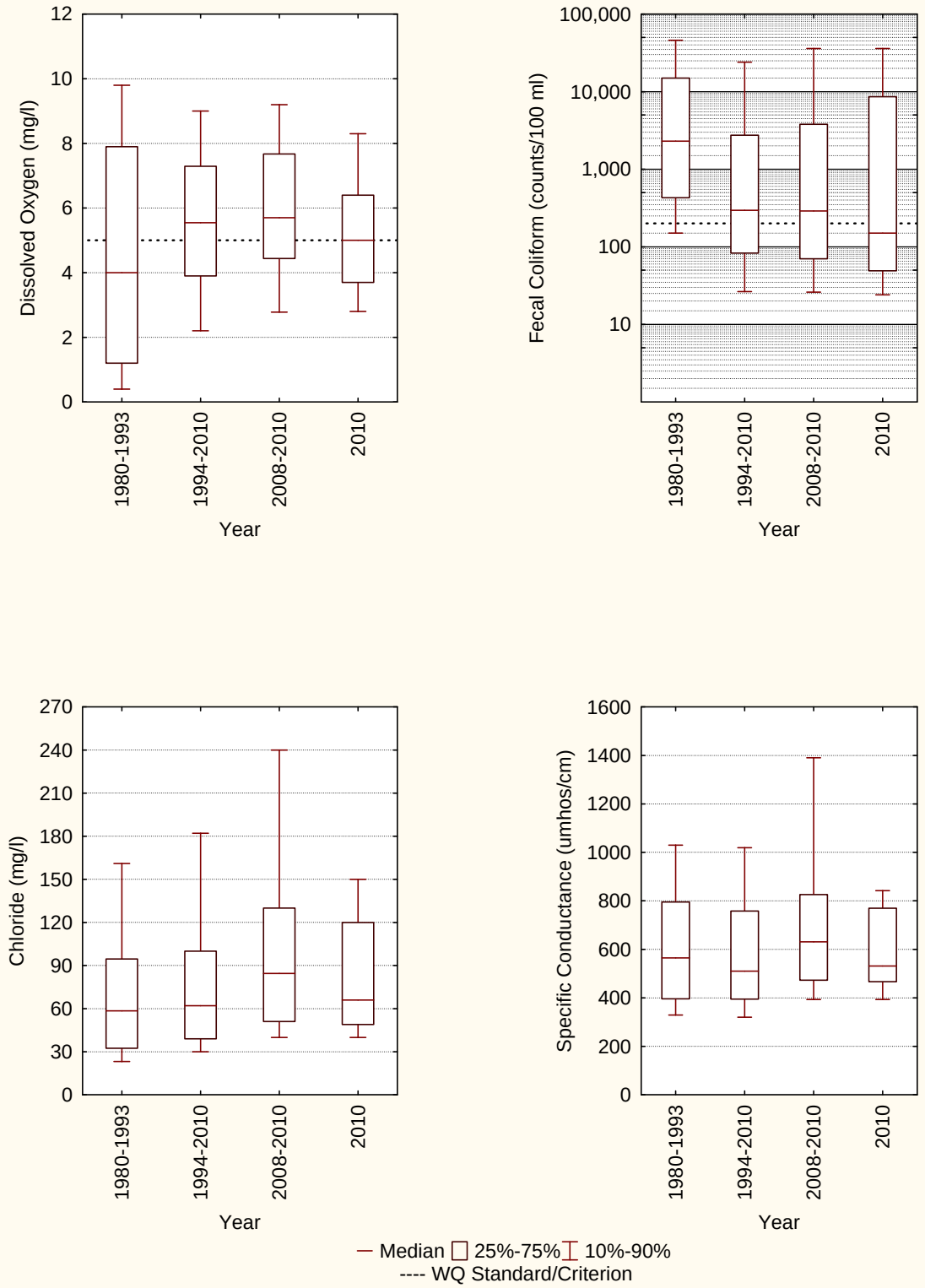
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	69.22	31.18	0.0	5.1	7.0	4.3	0.5	22.5	0.1	0.7	0.3	0.0
Standard Error	4.21	2.44	0.0	0.4	1.2	0.8	0.3	2.2	0.1	0.4	0.3	0.0
Median	73.00	34.00	0.0	4.6	6.1	3.4	0.0	20.0	0.0	0.0	0.0	0.0
Mode	82.00	34.00	0.0	5.8	0.0	3.7	0.0	20.0	0.0	0.0	0.0	0.0
Standard Deviation	20.17	11.69	0.1	1.9	5.9	4.0	1.5	10.7	0.7	2.0	1.5	0.0
Sample Variance	406.81	136.55	0.0	3.8	35.3	16.4	2.3	114.0	0.4	3.9	2.2	0.0
Kurtosis	0.26	-0.29	23.0	6.5	0.7	14.1	8.9	3.9	23.0	8.3	20.0	ND
Skewness	-0.87	-0.61	4.8	2.0	1.0	3.4	3.2	1.7	4.8	3.0	4.5	ND
Range	74.00	41.70	0.6	9.4	22.0	21.0	5.7	49.4	3.2	7.7	6.7	0.0
Minimum	25.00	8.30	0.0	2.6	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0
Maximum	99.00	50.00	0.6	12.0	22.0	21.0	5.7	57.0	3.2	7.7	6.7	0.0
Count	23	23	23	23	23	23	23	23	23	23	20	3
Confidence Level(95.0%)	8.72	5.05	0.1	0.8	2.6	1.7	0.7	4.6	0.3	0.8	0.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	300	205	3.6	9.6	54.5	48.0	6.1	5.8
Standard Error	20	12	0.9	2.1	2.7	2.6	0.8	0.7
Median	320	220	3.4	7.3	55.0	49.0	5.4	5.2
Mode	310	220	0.0	7.5	55.0	48.0	5.4	3.9
Standard Deviation	97	53	4.4	9.5	12.6	11.7	3.7	3.3
Sample Variance	9401	2802	19.0	91.0	158.1	137.6	13.5	10.8
Kurtosis	0	2	4.4	9.0	1.1	1.6	16.4	15.1
Skewness	-1	-2	2.1	2.7	-1.1	-1.3	3.9	3.7
Range	354	213	16.0	44.0	45.0	44.0	17.2	15.7
Minimum	96	67	0.0	0.0	26.0	21.0	3.8	3.3
Maximum	450	280	16.0	44.0	71.0	65.0	21.0	19.0
Count	23	21	23	20	21	21	20	20
Confidence Level(95.0%)	42	24	1.9	4.5	5.7	5.3	1.7	1.5

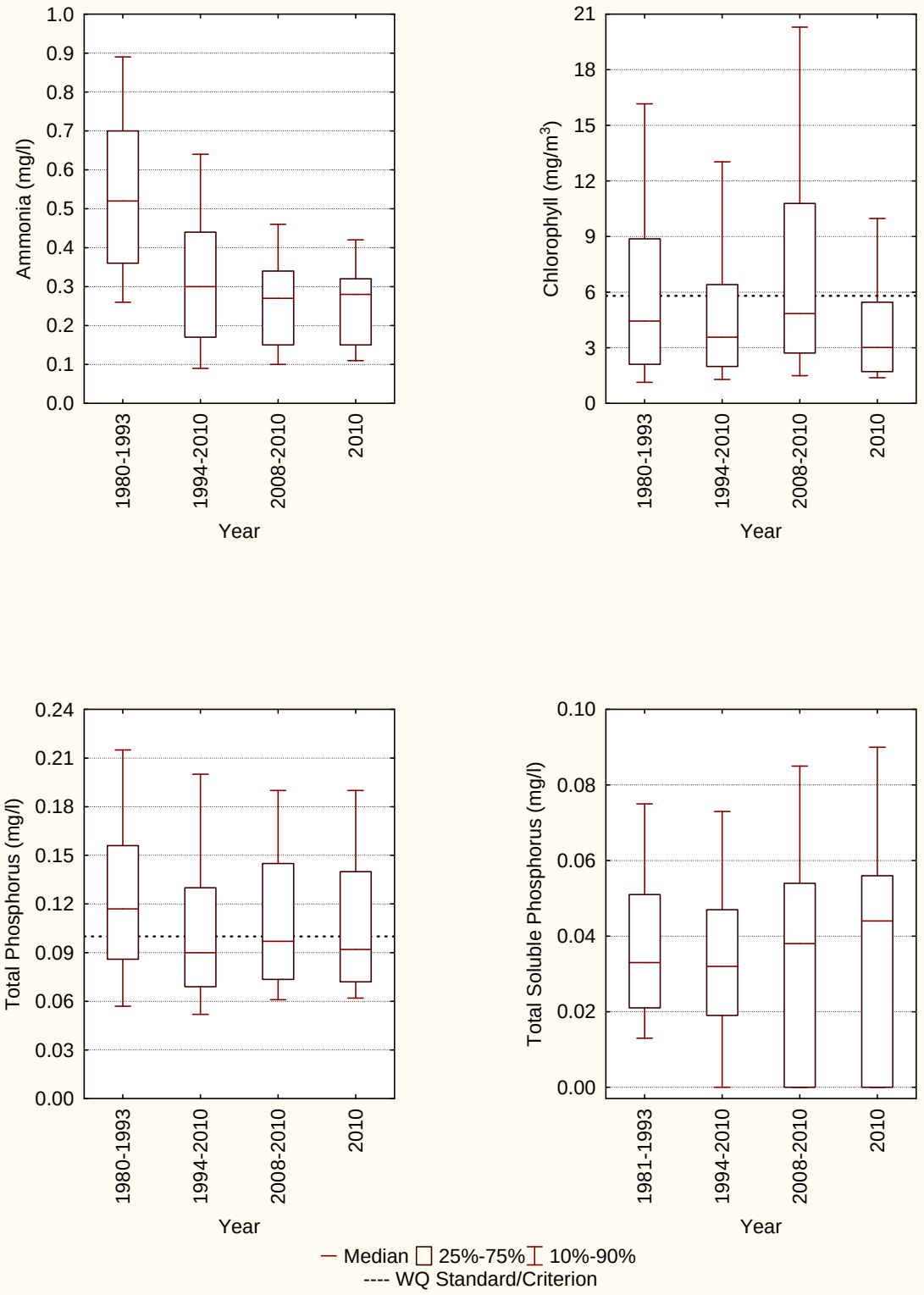
ND = No Data

Provisional MMSD Water Quality Data

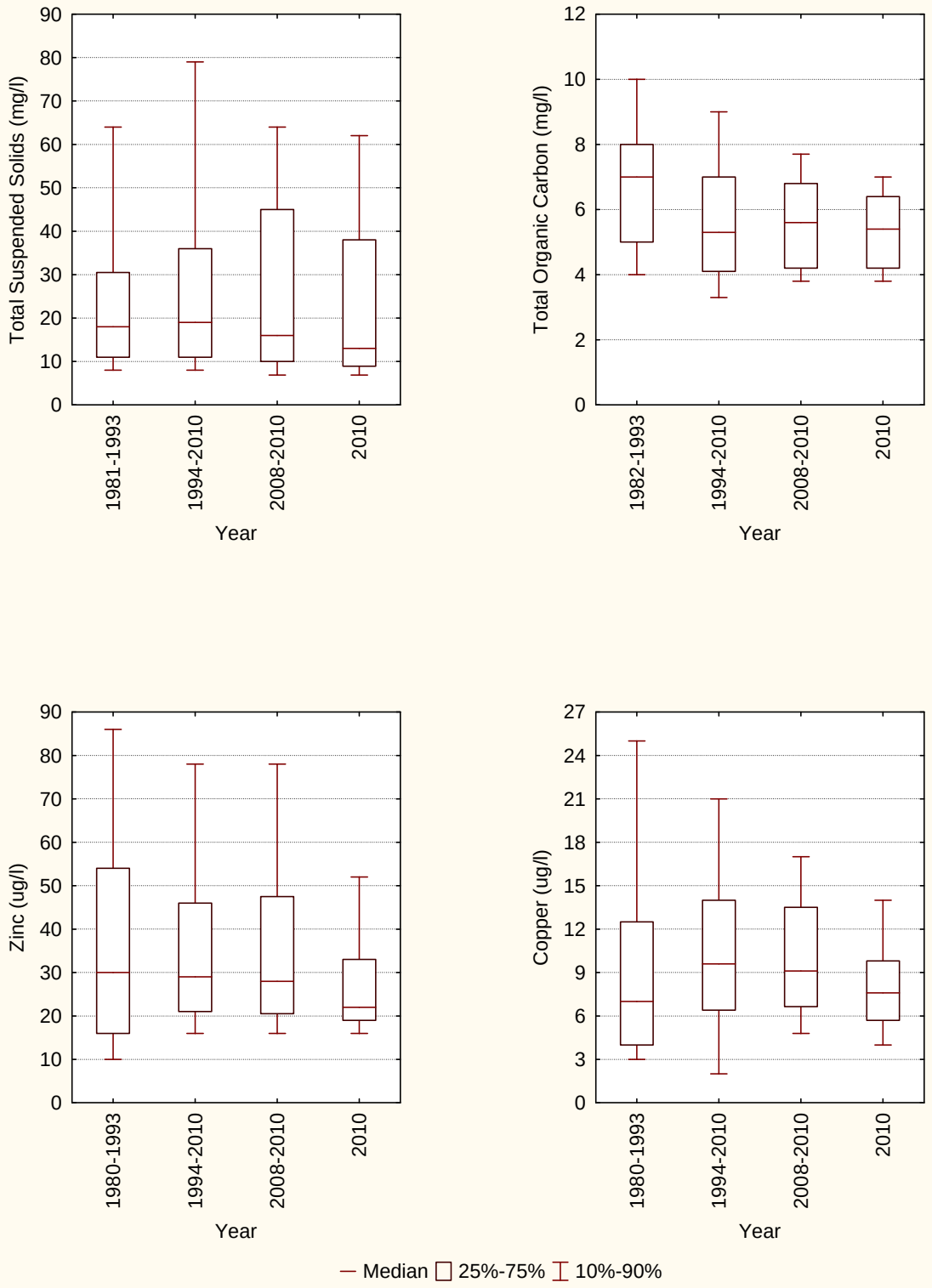
MMSD Water Quality Monitoring Program Data
Kinnickinnic River at 1st St., Site RI-14



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at 1st St., Site RI-14



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at 1st St., Site RI-14



1ST STREET - SITE 14
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	14.7	5.3	4.02	0.64	0.037	0.68	0.261	0.81	0.109	0.039	ND
Standard Error	0.0	0.9	0.3	0.79	0.04	0.002	0.04	0.015	0.04	0.007	0.005	ND
Median	7.5	15.6	5.0	3.02	0.55	0.032	0.60	0.280	0.77	0.092	0.044	ND
Mode	7.5	22.4	3.5	9.97	0.51	0.034	0.46	0.270	1.00	0.190	0.000	ND
Standard Deviation	0.3	6.5	2.1	2.97	0.31	0.018	0.32	0.114	0.33	0.055	0.033	ND
Sample Variance	0.1	41.7	4.3	8.83	0.10	0.000	0.10	0.013	0.11	0.003	0.001	ND
Kurtosis	1.3	-0.5	0.1	0.48	4.53	1.751	4.96	-0.637	5.72	0.171	-0.887	ND
Skewness	1.2	-0.6	0.5	1.21	2.14	1.425	2.21	-0.133	2.04	0.972	0.287	ND
Range	1.1	22.5	9.5	8.69	1.36	0.076	1.43	0.470	1.71	0.223	0.110	0.00
Minimum	7.2	0.0	1.7	1.28	0.34	0.011	0.37	0.000	0.29	0.027	0.000	0.00
Maximum	8.3	22.5	11.2	9.97	1.70	0.087	1.80	0.470	2.00	0.250	0.110	0.00
Count	55	55	55	14	53	53	53	55	53	55	53	0
Confidence Level(95.0%)	0.1	1.7	0.6	1.72	0.09	0.005	0.09	0.031	0.09	0.015	0.009	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	344.9	318.0	4.7	26.9	34.6	609	87.2	17084	2.7	13088
Standard Error	ND	ND	12.3	14.2	0.5	4.2	6.5	31	7.3	8901	0.3	6885
Median	ND	ND	320.0	278.0	3.4	13.0	13.9	531	66.0	150	2.2	130
Mode	ND	ND	280.0	130.0	2.1	11.0	14.1	826	120.0	24	1.4	150
Standard Deviation	ND	ND	89.9	103.0	3.6	31.1	47.5	227	52.9	44504	1.4	33727
Sample Variance	ND	ND	8075.5	10615.8	12.7	965.2	2258.6	51588	2801.0	1980567304	1.9	1137537089
Kurtosis	ND	ND	-0.9	-0.8	1.4	5.7	7.1	1	2.1	13	-0.8	10
Skewness	ND	ND	0.3	0.2	1.4	2.4	2.7	1	1.4	4	0.4	3
Range	0.0	0.0	350.0	392.6	16.0	137.0	209.9	1178	254.0	200000	5.3	139999
Minimum	0.0	0.0	180.0	130.0	0.0	3.0	3.1	212	26.0	0	0.0	1
Maximum	0.0	0.0	530.0	522.6	16.0	140.0	213.0	1390	280.0	200000	5.3	140000
Count	0	0	53	53	53	55	53	55	53	25	25	24
Confidence Level(95.0%)	ND	ND	24.8	28.4	1.0	8.4	13.1	61	14.6	18370	0.6	14242

ND = No Data

Provisional MMSD Water Quality Data

1ST STREET - SITE 14
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

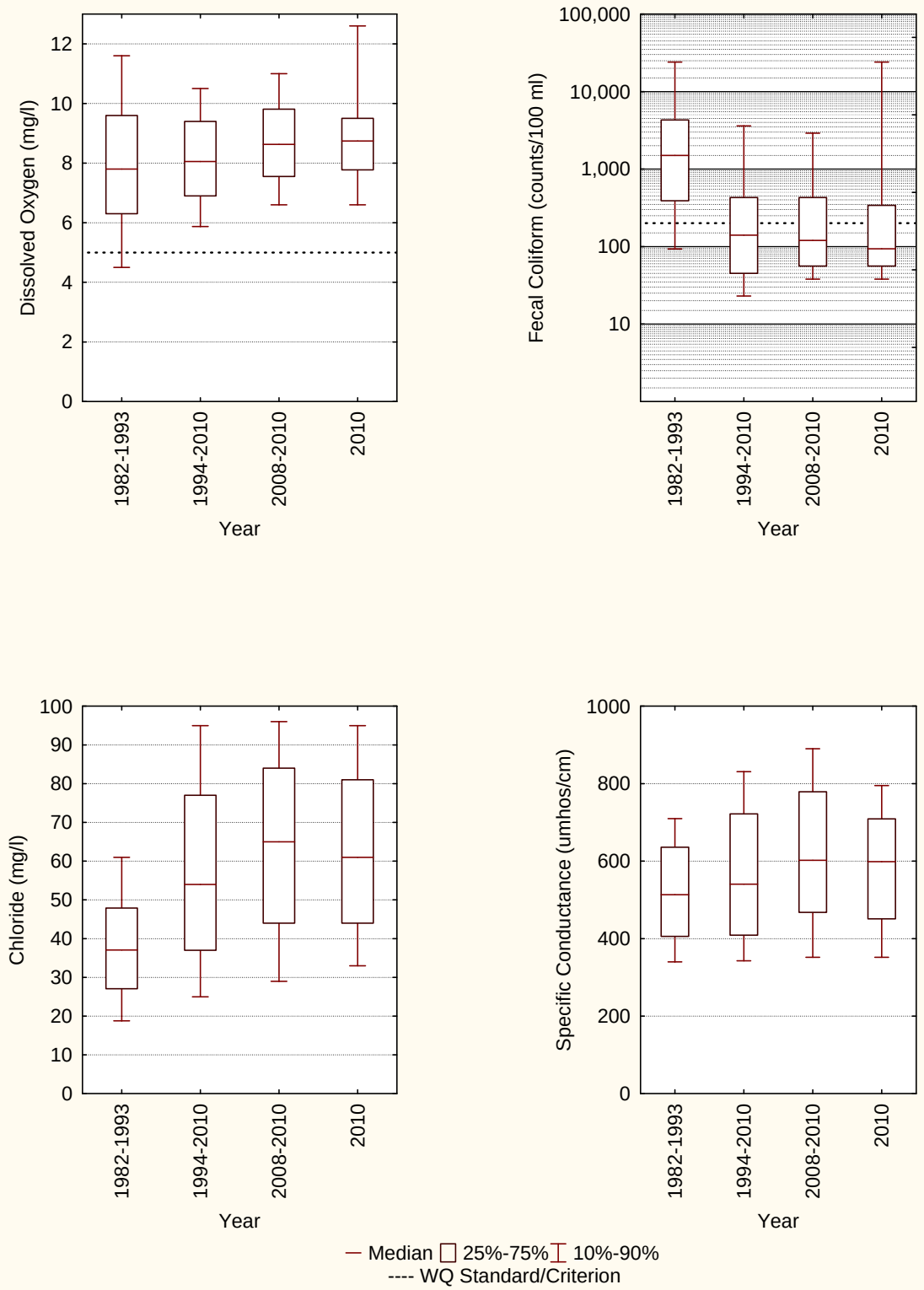
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	41.60	17.97	0.0	5.6	8.2	3.4	2.1	27.8	0.2	0.9	1.7	0.0
Standard Error	2.38	1.40	0.0	0.4	0.9	0.3	0.7	2.8	0.1	0.4	0.7	0.0
Median	42.00	17.00	0.0	5.4	7.6	3.2	0.0	22.0	0.0	0.0	0.0	0.0
Mode	33.00	27.00	0.0	5.6	9.8	3.9	0.0	19.0	0.0	0.0	0.0	0.0
Standard Deviation	11.89	7.00	0.0	1.9	4.5	1.4	3.5	14.2	0.6	2.0	3.5	0.0
Sample Variance	141.42	48.98	0.0	3.6	20.5	2.1	12.2	201.8	0.4	4.1	12.1	0.0
Kurtosis	-0.36	-1.14	ND	9.1	2.7	6.9	7.7	1.3	18.8	3.0	1.0	ND
Skewness	-0.04	0.15	ND	2.5	1.2	2.1	2.6	1.5	4.3	2.1	1.7	ND
Range	44.00	22.10	0.0	9.9	22.0	7.1	15.0	50.0	3.0	6.3	9.3	0.0
Minimum	18.00	5.90	0.0	3.1	0.0	1.6	0.0	14.0	0.0	0.0	0.0	0.0
Maximum	62.00	28.00	0.0	13.0	22.0	8.7	15.0	64.0	3.0	6.3	9.3	0.0
Count	25	25	25	25	25	25	25	25	25	25	24	3
Confidence Level(95.0%)	4.91	2.89	0.0	0.8	1.9	0.6	1.4	5.9	0.3	0.8	1.5	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	179	133	2.4	12.8	37.7	32.3	5.4	5.3
Standard Error	12	6	0.5	1.8	1.4	1.3	0.2	0.2
Median	180	140	0.0	10.4	37.0	33.0	5.4	5.3
Mode	130	140	0.0	12.0	44.0	41.0	4.2	4.4
Standard Deviation	58	47	3.6	8.3	10.0	9.5	1.4	1.4
Sample Variance	3358	2193	12.6	69.3	99.8	90.2	2.1	2.0
Kurtosis	-1	0	6.2	5.7	0.1	-0.2	-0.2	0.2
Skewness	0	-1	2.2	2.2	-0.2	-0.4	0.5	0.7
Range	202	209	17.0	37.0	45.0	40.0	6.3	6.0
Minimum	68	11	0.0	4.0	16.0	12.0	2.9	2.9
Maximum	270	220	17.0	41.0	61.0	52.0	9.2	8.9
Count	25	53	55	22	53	53	52	52
Confidence Level(95.0%)	24	13	1.0	3.7	2.8	2.6	0.4	0.4

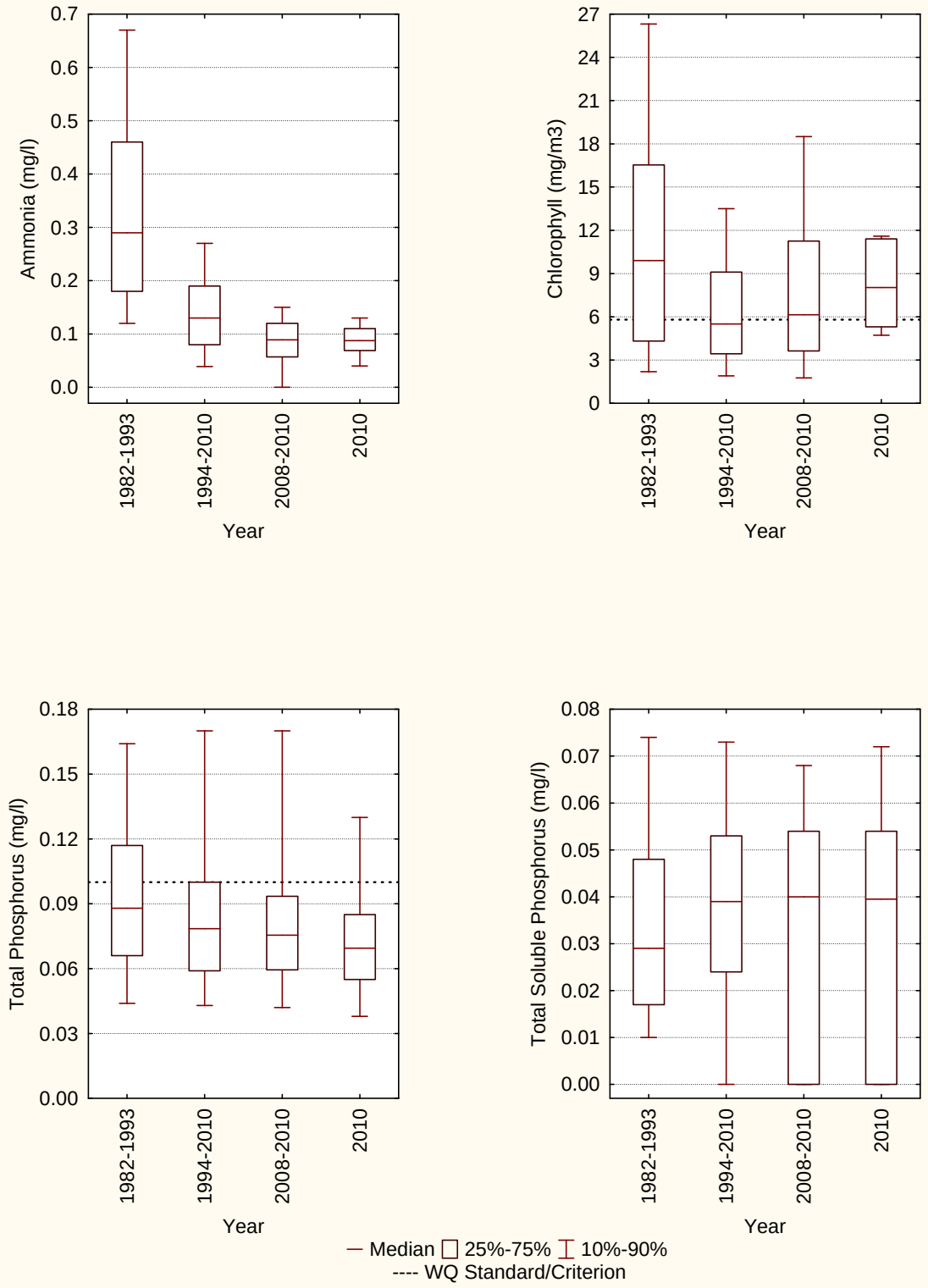
ND = No Data

Provisional MMSD Water Quality Data

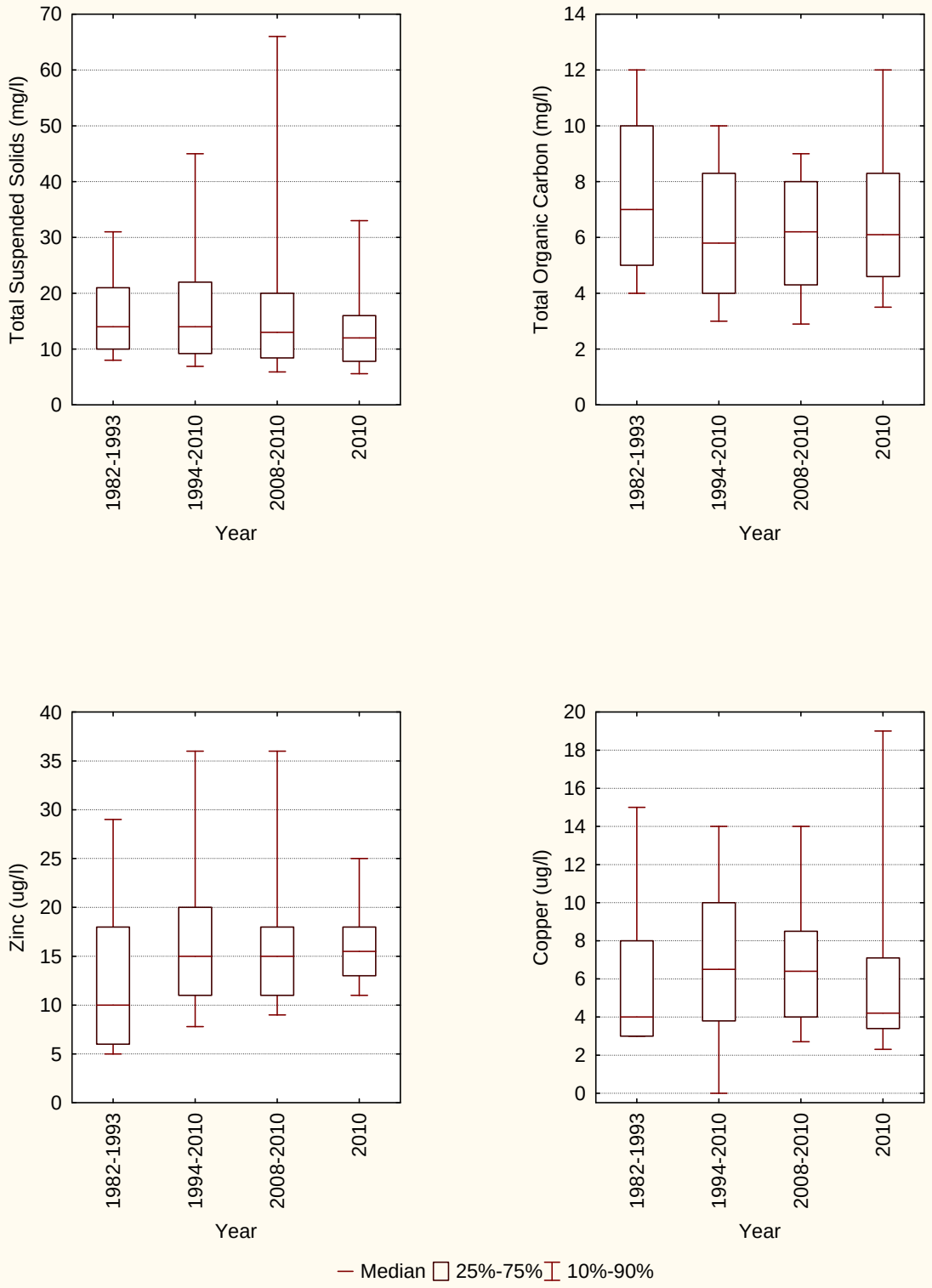
MMSD Water Quality Monitoring Program Data
Milwaukee River at C-NW Railway, Site RI-15



MMSD Water Quality Monitoring Program Data
Milwaukee River at C-NW Railway, Site RI-15



MMSD Water Quality Monitoring Program Data
Milwaukee River at C-NW Railway, Site RI-15



C-NW RAILWAY - SITE 15
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	14.4	8.9	7.90	0.85	0.017	0.87	0.094	0.67	0.076	0.031	ND
Standard Error	0.0	0.7	0.3	1.09	0.04	0.001	0.04	0.008	0.04	0.006	0.004	ND
Median	8.0	14.3	8.7	8.03	0.83	0.016	0.85	0.088	0.65	0.070	0.040	ND
Mode	8.0	10.6	9.5	ND	1.10	0.018	1.10	0.130	1.10	0.055	0.000	ND
Standard Deviation	0.2	5.5	1.9	3.62	0.29	0.008	0.29	0.056	0.31	0.042	0.029	ND
Sample Variance	0.0	29.9	3.6	13.09	0.09	0.000	0.09	0.003	0.09	0.002	0.001	ND
Kurtosis	-1.2	-0.3	0.4	-0.09	0.84	2.147	0.69	24.338	0.16	4.766	-1.316	ND
Skewness	0.2	-0.1	0.9	-0.54	1.02	1.433	0.96	4.074	0.31	1.815	0.221	ND
Range	0.6	23.1	7.6	12.11	1.25	0.037	1.24	0.406	1.50	0.230	0.089	0.00
Minimum	7.8	1.7	5.9	0.69	0.35	0.005	0.36	0.024	0.00	0.000	0.000	0.00
Maximum	8.4	24.8	13.5	12.80	1.60	0.041	1.60	0.430	1.50	0.230	0.089	0.00
Count	54	54	54	11	54	54	54	54	54	54	54	0
Confidence Level(95.0%)	0.1	1.5	0.5	2.43	0.08	0.002	0.08	0.015	0.08	0.011	0.008	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.0	2.3	355.7	337.7	4.0	18.0	16.0	594	60.5	3714	2.3	ND
Standard Error	0.1	0.3	12.2	13.4	0.6	3.3	2.9	25	3.2	2364	0.3	ND
Median	1.0	2.2	360.0	345.0	2.9	12.0	8.2	599	61.0	94	2.0	ND
Mode	1.1	1.5	360.0	190.0	2.0	12.0	12.9	352	81.0	38	1.6	ND
Standard Deviation	0.4	1.1	89.8	98.7	4.5	24.4	21.7	183	23.7	10029	1.1	ND
Sample Variance	0.2	1.1	8058.9	9748.5	20.1	597.8	469.9	33392	562.3	100582003	1.1	ND
Kurtosis	0.0	6.6	-0.4	-0.8	14.5	11.7	7.4	0	-0.4	8	1.4	ND
Skewness	-0.2	2.1	0.1	0.1	3.7	3.5	2.8	0	0.1	3	0.6	ND
Range	1.5	4.7	380.0	372.0	25.0	118.0	89.7	804	108.0	37000	4.6	0
Minimum	0.2	1.0	170.0	166.0	0.0	2.0	3.6	286	12.0	0	0.0	0
Maximum	1.7	5.7	550.0	538.0	25.0	120.0	93.3	1090	120.0	37000	4.6	0
Count	18	17	54	54	54	54	54	54	54	18	18	0
Confidence Level(95.0%)	0.2	0.5	24.5	26.9	1.2	6.7	5.9	50	6.5	4987	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

C-NW RAILWAY - SITE 15
MILWAUKEE RIVER
WATER QUALITY DATA - 2010

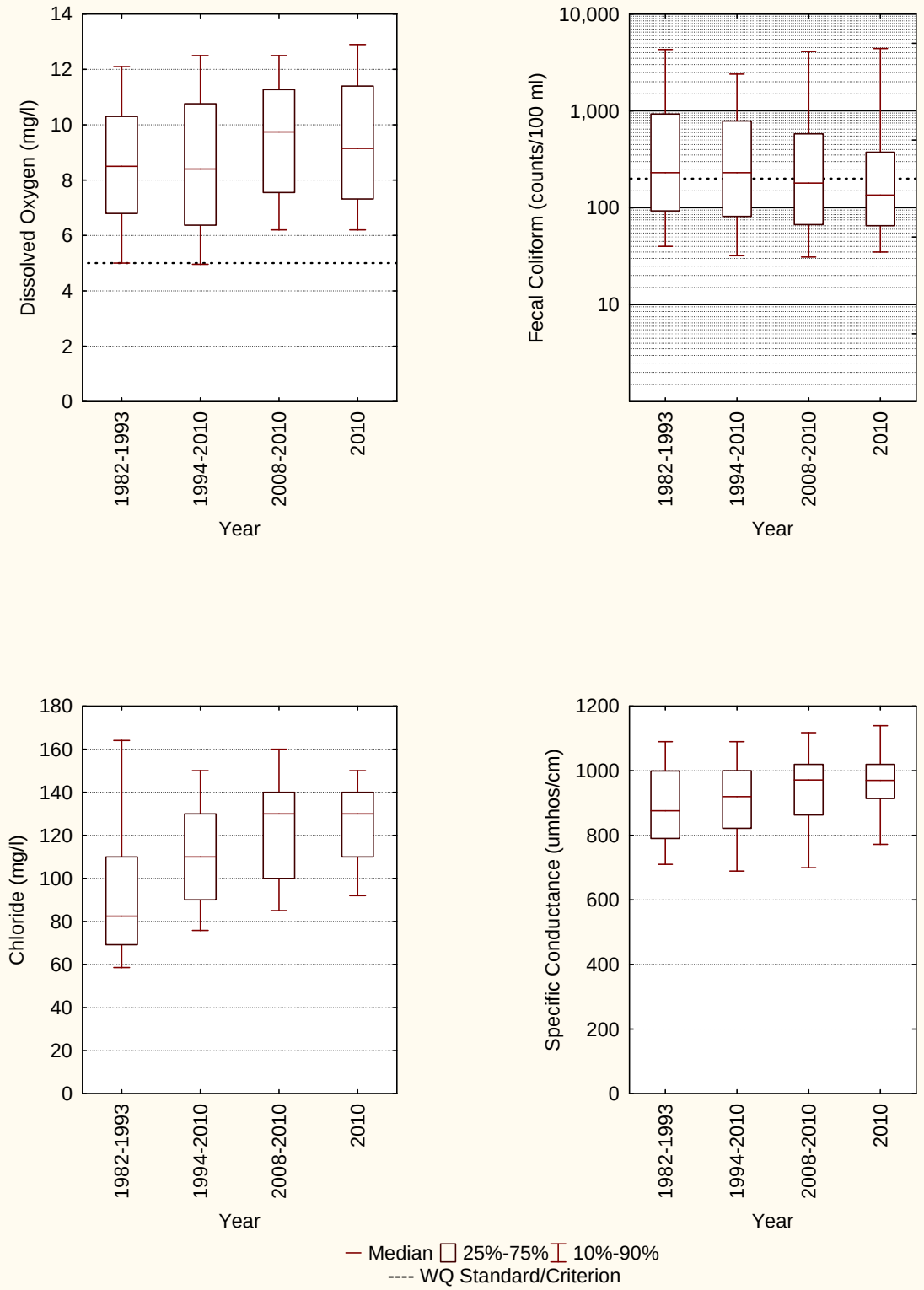
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	50.33	23.67	0.0	5.0	6.3	2.4	0.7	16.9	0.2	1.3	0.8	0.0
Standard Error	2.98	1.88	0.0	0.3	1.2	0.3	0.5	1.7	0.1	0.5	0.5	0.0
Median	49.50	22.50	0.0	4.6	4.2	2.5	0.0	15.5	0.0	0.0	0.0	0.0
Mode	65.00	28.00	0.0	4.4	4.2	0.0	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	12.65	7.99	0.0	1.3	5.2	1.4	2.3	7.0	0.6	2.3	2.2	0.0
Sample Variance	160.12	63.88	0.0	1.8	26.8	2.0	5.4	49.0	0.3	5.4	5.0	0.0
Kurtosis	-1.01	-0.44	ND	0.5	3.6	0.4	14.3	8.5	10.5	2.0	6.0	ND
Skewness	0.25	0.49	ND	0.8	2.0	-0.1	3.7	2.6	3.2	1.7	2.7	ND
Range	42.00	28.00	0.0	5.2	17.9	5.1	9.6	31.0	2.2	7.6	7.4	0.0
Minimum	31.00	13.00	0.0	3.0	2.1	0.0	0.0	10.0	0.0	0.0	0.0	0.0
Maximum	73.00	41.00	0.0	8.2	20.0	5.1	9.6	41.0	2.2	7.6	7.4	0.0
Count	18	18	18	18	18	18	18	18	18	18	17	3
Confidence Level(95.0%)	6.29	3.97	0.0	0.7	2.6	0.7	1.2	3.5	0.3	1.2	1.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	225	187	0.7	4.4	50.4	43.8	6.5	6.6
Standard Error	15	8	0.2	1.1	2.0	1.7	0.4	0.4
Median	220	190	0.0	5.0	49.5	43.5	6.1	6.0
Mode	190	200	0.0	0.0	68.0	49.0	13.0	8.3
Standard Deviation	65	60	1.5	4.4	14.6	12.6	2.9	3.0
Sample Variance	4179	3556	2.2	19.2	213.2	160.0	8.4	8.9
Kurtosis	-1	-1	4.2	3.1	-1.3	-1.1	0.2	0.9
Skewness	0	0	2.2	1.3	0.1	0.1	0.9	1.1
Range	220	223	5.7	17.0	46.0	44.0	10.6	12.6
Minimum	130	77	0.0	0.0	28.0	22.0	2.4	2.4
Maximum	350	300	5.7	17.0	74.0	66.0	13.0	15.0
Count	18	54	54	17	54	54	54	54
Confidence Level(95.0%)	32	16	0.4	2.3	4.0	3.5	0.8	0.8

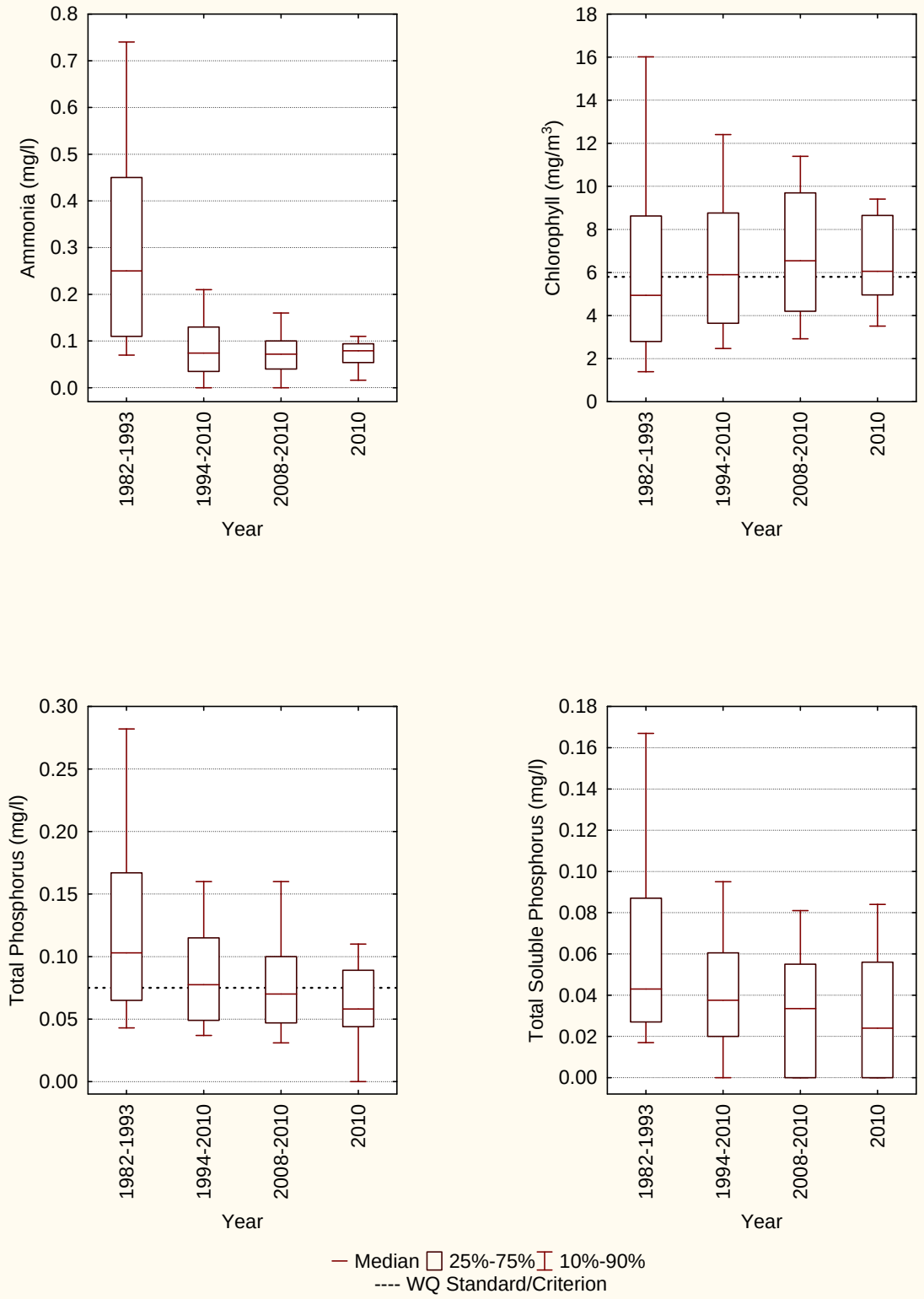
ND = No Data

Provisional MMSD Water Quality Data

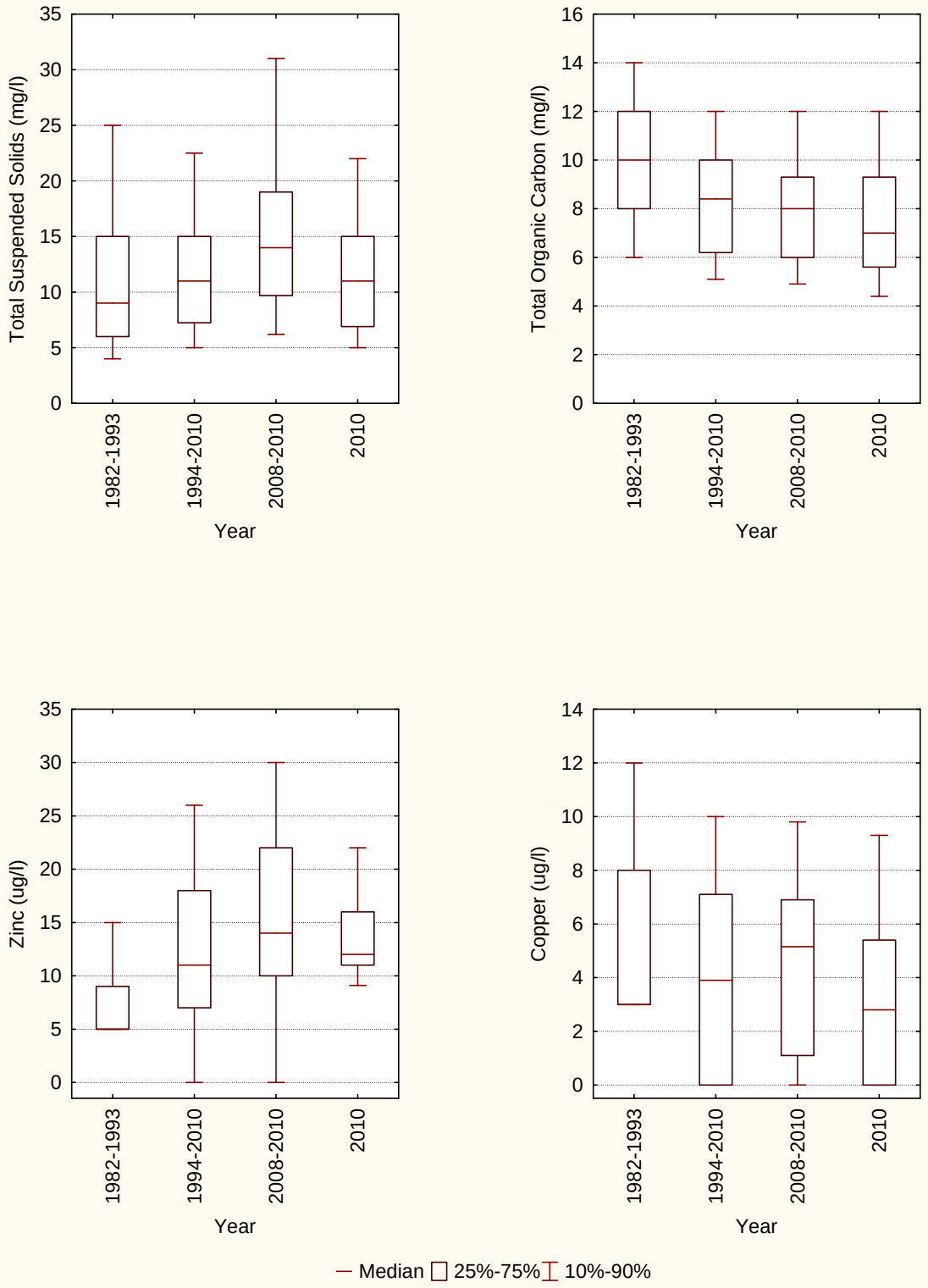
MMSD Water Quality Monitoring Program Data
Menomonee River at County Line Rd., Site RI-16



MMSD Water Quality Monitoring Program Data
Menomonee River at County Line Rd., Site RI-16



MMSD Water Quality Monitoring Program Data
Menomonee River at County Line Rd., Site RI-16



COUNTY LINE ROAD - SITE 16
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.8	11.8	9.3	6.77	0.68	0.028	0.70	0.073	0.73	0.066	0.032	ND
Standard Error	0.0	1.7	0.5	0.56	0.07	0.005	0.07	0.010	0.05	0.009	0.007	ND
Median	7.8	9.9	9.1	6.06	0.66	0.018	0.69	0.079	0.72	0.058	0.024	ND
Mode	7.9	ND	8.0	ND	1.40	0.017	1.40	0.110	0.70	0.000	0.000	ND
Standard Deviation	0.2	8.4	2.7	2.31	0.35	0.025	0.34	0.048	0.26	0.043	0.035	ND
Sample Variance	0.0	70.1	7.1	5.32	0.12	0.001	0.12	0.002	0.07	0.002	0.001	ND
Kurtosis	-0.6	-1.6	-0.9	-1.36	0.02	4.407	-0.11	3.723	-0.85	0.914	-0.636	ND
Skewness	-0.5	0.0	-0.2	-0.08	0.69	2.072	0.55	1.147	-0.19	0.774	0.674	ND
Range	0.6	24.0	9.8	7.27	1.24	0.102	1.23	0.230	0.92	0.170	0.110	0.00
Minimum	7.4	0.0	4.0	3.23	0.16	0.008	0.17	0.000	0.28	0.000	0.000	0.00
Maximum	8.0	24.0	13.8	10.50	1.40	0.110	1.40	0.230	1.20	0.170	0.110	0.00
Count	25	25	24	17	25	25	25	25	25	25	25	0
Confidence Level(95.0%)	0.1	3.5	1.1	1.19	0.14	0.010	0.14	0.020	0.11	0.018	0.014	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	534.2	521.9	3.3	12.3	9.3	958	127.0	918	2.3	ND
Standard Error	ND	ND	21.8	21.9	0.4	1.2	0.9	35	7.2	392	0.1	ND
Median	ND	ND	540.0	530.4	2.5	11.0	9.0	970	130.0	135	2.1	ND
Mode	ND	ND	540.0	ND	2.0	15.0	ND	1030	130.0	ND	ND	ND
Standard Deviation	ND	ND	106.6	107.5	2.0	5.9	4.6	175	35.9	1922	0.7	ND
Sample Variance	ND	ND	11364.5	11553.9	4.1	34.7	21.2	30700	1287.7	3695439	0.5	ND
Kurtosis	ND	ND	6.3	6.7	0.4	-0.7	2.1	5	2.9	6	0.2	ND
Skewness	ND	ND	-1.7	-1.9	0.9	0.4	1.1	-1	0.5	3	0.9	ND
Range	0.0	0.0	580.0	581.0	8.0	20.0	20.5	922	182.0	7384	2.7	0
Minimum	0.0	0.0	160.0	138.0	0.0	4.0	2.8	378	38.0	16	1.2	0
Maximum	0.0	0.0	740.0	719.0	8.0	24.0	23.3	1300	220.0	7400	3.9	0
Count	0	0	24	24	25	25	25	25	25	24	24	0
Confidence Level(95.0%)	ND	ND	45.0	45.4	0.8	2.4	1.9	72	14.8	812	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

COUNTY LINE ROAD - SITE 16
MENOMONEE RIVER
WATER QUALITY DATA - 2010

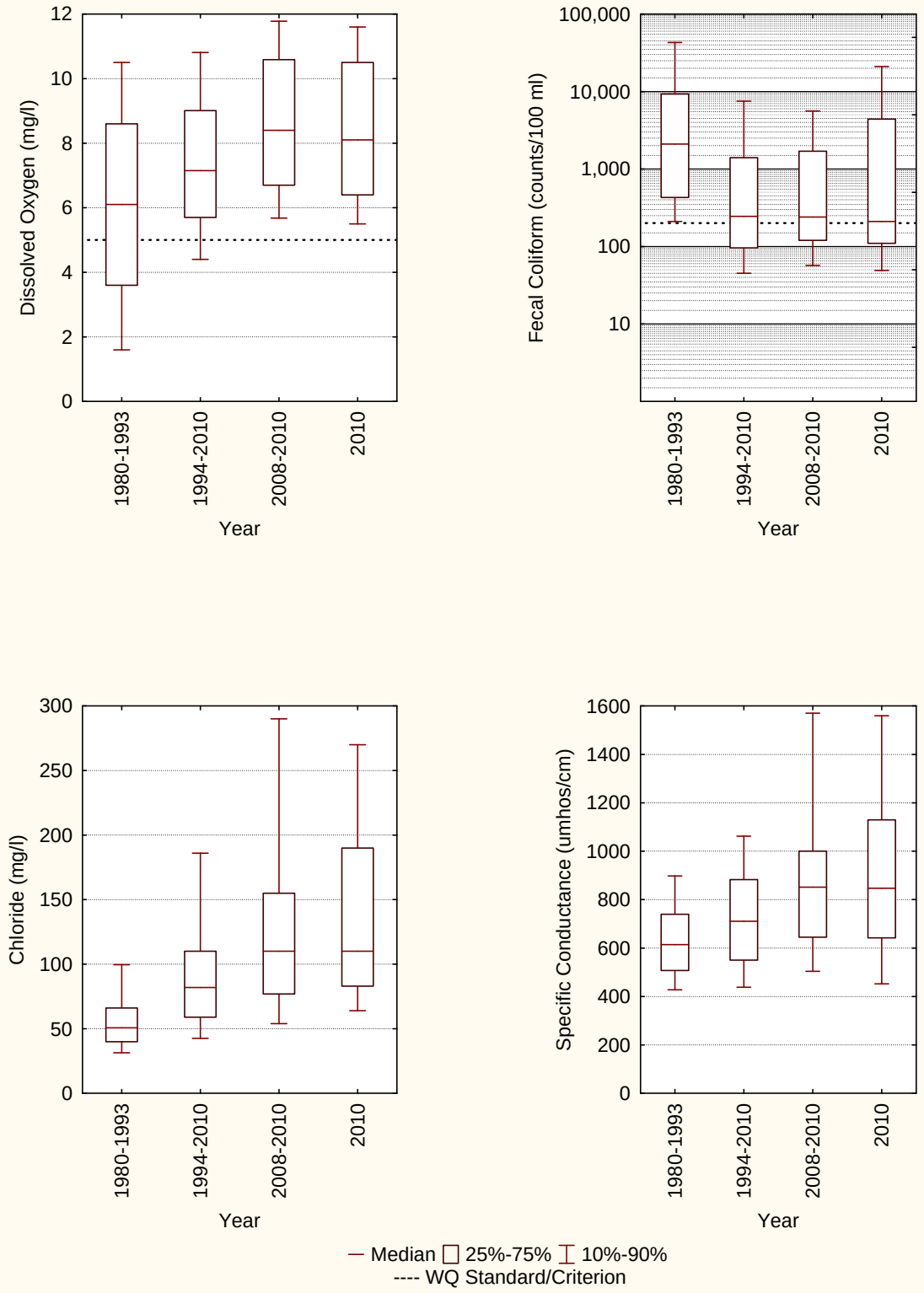
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	72.56	36.36	0.1	4.3	3.8	2.5	0.0	13.9	0.1	0.8	0.9	0.0
Standard Error	3.12	1.54	0.1	0.2	1.0	0.3	0.0	1.2	0.1	0.3	0.5	0.0
Median	72.00	38.00	0.0	4.4	2.8	2.6	0.0	12.0	0.0	0.0	0.0	0.0
Mode	66.00	41.00	0.0	4.4	0.0	2.6	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	15.61	7.71	0.7	1.0	5.1	1.4	0.0	6.0	0.6	1.7	2.4	0.0
Sample Variance	243.67	59.49	0.4	1.0	25.9	1.8	0.0	36.2	0.4	2.8	6.0	0.0
Kurtosis	2.80	2.95	25.0	-0.4	3.3	2.8	ND	7.0	25.0	6.1	4.3	ND
Skewness	-1.02	-1.34	5.0	0.3	1.8	0.5	ND	2.3	5.0	2.4	2.4	ND
Range	75.00	36.00	3.3	3.7	18.0	6.5	0.0	29.1	3.0	6.8	8.0	0.0
Minimum	24.00	12.00	0.0	2.6	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0
Maximum	99.00	48.00	3.3	6.3	18.0	6.5	0.0	36.0	3.0	6.8	8.0	0.0
Count	25	25	25	25	25	25	25	25	25	25	23	3
Confidence Level(95.0%)	6.44	3.18	0.3	0.4	2.1	0.6	0.0	2.5	0.2	0.7	1.1	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	331	268	1.1	9.3	71.2	63.4	7.7	7.7
Standard Error	14	10	0.3	0.9	2.1	2.2	0.6	0.5
Median	340	280	0.0	7.7	73.0	67.0	7.0	6.9
Mode	360	290	0.0	12.0	75.0	68.0	6.4	6.2
Standard Deviation	70	49	1.5	4.5	10.4	11.0	2.8	2.7
Sample Variance	4844	2406	2.2	20.1	108.3	121.5	8.0	7.5
Kurtosis	3	6	-0.9	0.1	6.7	5.5	0.2	0.4
Skewness	-1	-2	0.8	0.3	-2.4	-2.1	0.8	0.9
Range	330	228	4.1	20.0	48.0	52.0	10.9	9.9
Minimum	110	92	0.0	0.0	34.0	25.0	4.1	4.1
Maximum	440	320	4.1	20.0	82.0	77.0	15.0	14.0
Count	25	25	25	24	25	25	25	25
Confidence Level(95.0%)	29	20	0.6	1.9	4.3	4.5	1.2	1.1

ND = No Data

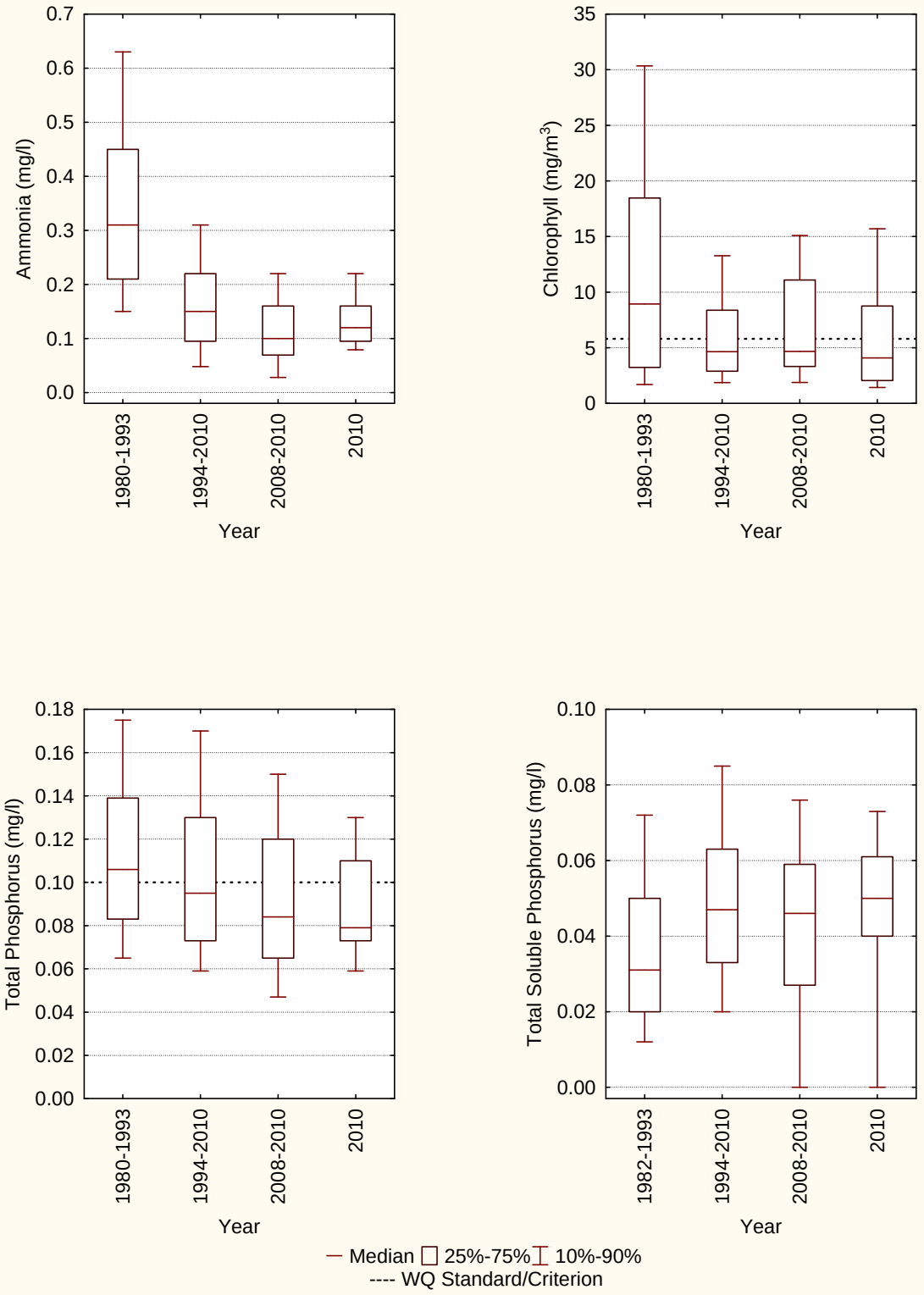
Provisional MMSD Water Quality Data

MMSD Water Quality Monitoring Program Data
Menomonee River at South Second St., Site RI-17

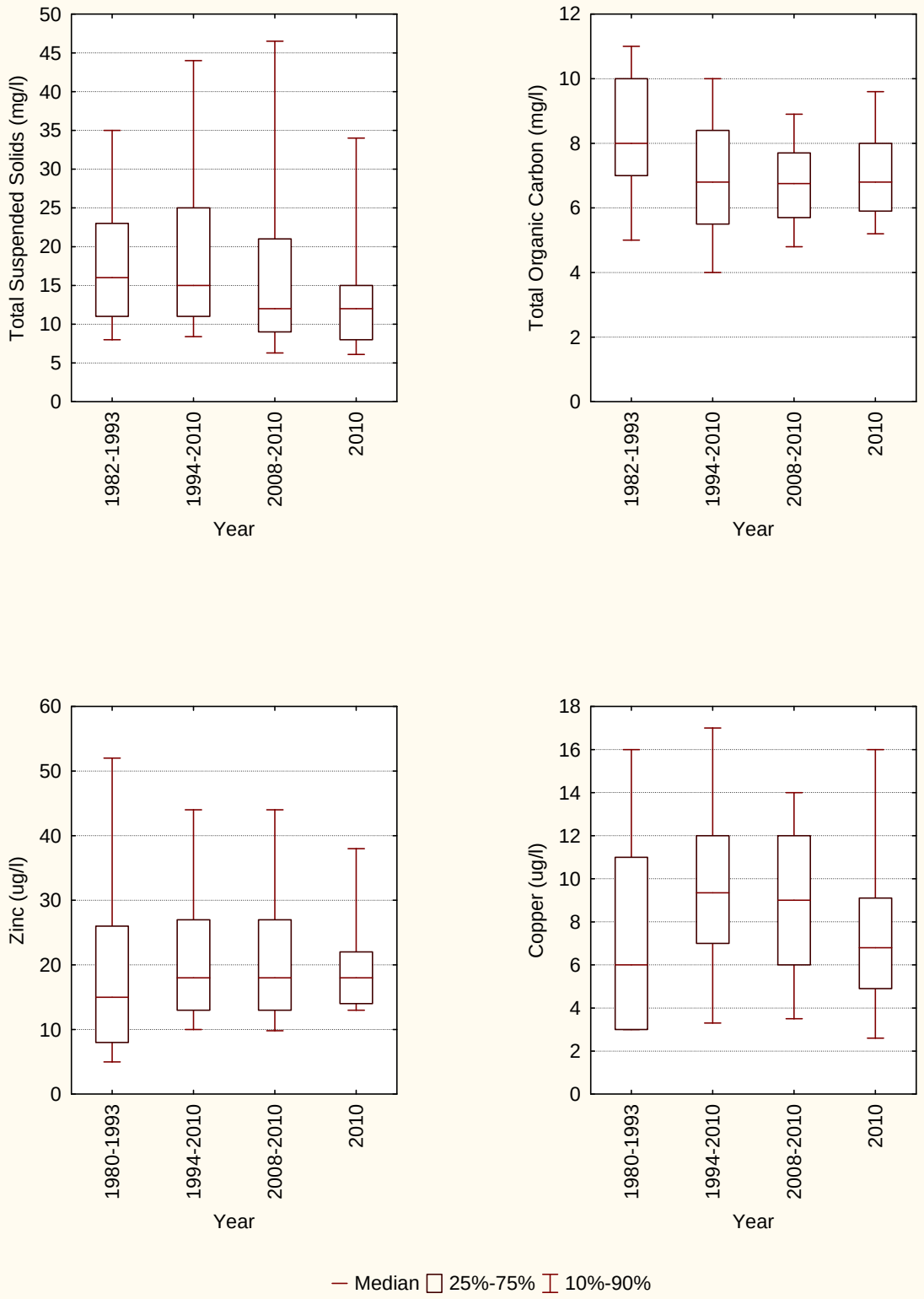


— Median ☐ 25%-75% ⊥ 10%-90%
---- WQ Standard/Criterion

MMSD Water Quality Monitoring Program Data
Menomonee River at South Second St., Site RI-17



MMSD Water Quality Monitoring Program Data
Menomonee River at South Second St., Site RI-17



2ND STREET - SITE 17
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	15.7	8.3	5.97	0.92	0.021	0.95	0.135	0.74	0.091	0.046	ND
Standard Error	0.0	0.7	0.3	1.22	0.06	0.001	0.06	0.007	0.02	0.004	0.003	ND
Median	8.0	15.2	8.1	4.10	0.73	0.019	0.76	0.120	0.73	0.079	0.050	ND
Mode	7.7	12.5	5.5	ND	2.00	0.019	2.10	0.120	0.83	0.100	0.000	ND
Standard Deviation	0.2	6.7	2.4	5.17	0.51	0.008	0.51	0.063	0.17	0.034	0.024	ND
Sample Variance	0.0	44.9	5.7	26.71	0.26	0.000	0.26	0.004	0.03	0.001	0.001	ND
Kurtosis	-0.7	-1.2	-1.1	0.77	0.32	0.351	0.39	1.956	-0.19	8.014	0.069	ND
Skewness	0.1	-0.1	0.2	1.34	1.24	0.956	1.26	1.328	0.30	2.063	-0.757	ND
Range	1.0	23.5	9.6	17.03	1.84	0.037	1.80	0.322	0.87	0.234	0.090	0.00
Minimum	7.6	3.7	3.8	1.27	0.36	0.007	0.40	0.028	0.33	0.036	0.000	0.00
Maximum	8.6	27.2	13.4	18.30	2.20	0.044	2.20	0.350	1.20	0.270	0.090	0.00
Count	83	83	83	18	81	81	81	83	81	83	81	0
Confidence Level(95.0%)	0.0	1.5	0.5	2.57	0.11	0.002	0.11	0.014	0.04	0.007	0.005	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	519.4	503.1	4.0	18.3	16.5	926	137.5	6901	2.8	2520
Standard Error	ND	ND	22.9	23.6	0.3	2.8	1.8	43	9.0	3109	0.2	888
Median	ND	ND	480.0	469.4	3.3	12.0	10.6	847	110.0	210	2.3	170
Mode	ND	ND	480.0	436.0	2.0	14.0	10.5	1220	110.0	140	2.1	1600
Standard Deviation	ND	ND	202.2	208.0	3.0	25.7	16.2	388	81.1	16744	1.0	4780
Sample Variance	ND	ND	40897.0	43261.1	9.1	659.0	261.9	150253	6574.4	280361223	1.0	22852305
Kurtosis	ND	ND	0.9	0.8	3.2	39.3	5.7	0	0.2	10	-0.8	6
Skewness	ND	ND	1.1	1.0	1.7	5.7	2.4	1	1.1	3	0.7	2
Range	0.0	0.0	860.0	896.0	15.0	206.6	75.7	1581	329.0	72972	3.4	19966
Minimum	0.0	0.0	240.0	198.0	0.0	3.4	3.1	299	21.0	28	1.4	34
Maximum	0.0	0.0	1100.0	1094.0	15.0	210.0	78.8	1880	350.0	73000	4.9	20000
Count	0	0	78	78	80	82	81	83	81	29	29	29
Confidence Level(95.0%)	ND	ND	45.6	46.9	0.7	5.6	3.6	85	17.9	6369	0.4	1818

ND = No Data

Provisional MMSD Water Quality Data

2ND STREET - SITE 17
MENOMONEE RIVER
WATER QUALITY DATA - 2010

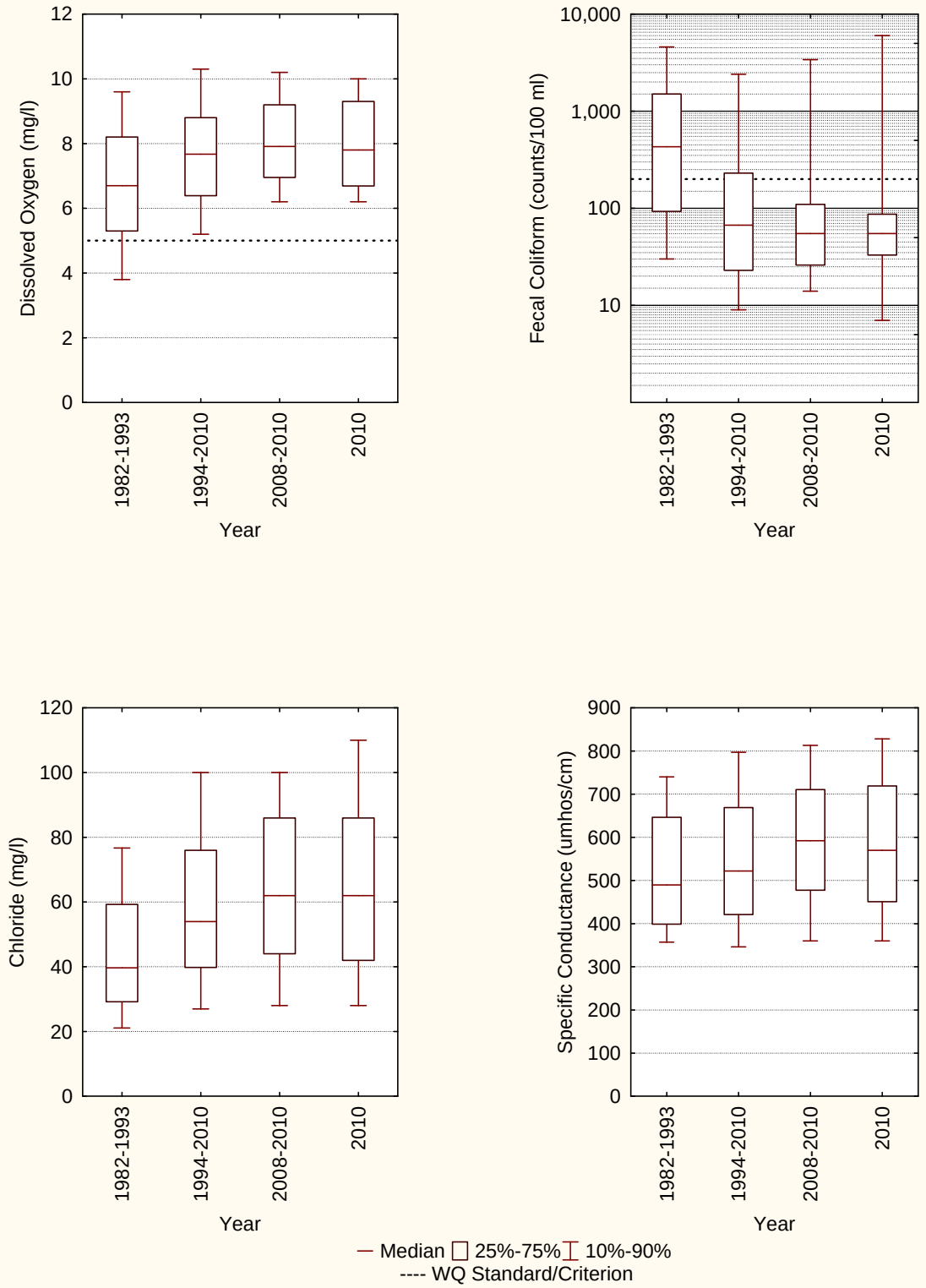
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	60.90	29.21	0.1	5.5	8.0	2.8	1.2	21.0	0.0	1.2	1.2	0.0
Standard Error	3.34	1.97	0.1	0.4	0.9	0.3	0.7	2.1	0.0	0.4	0.6	0.0
Median	66.00	29.00	0.0	5.3	6.8	2.5	0.0	18.0	0.0	0.0	0.0	0.0
Mode	54.00	43.00	0.0	6.1	9.1	2.1	0.0	16.0	0.0	0.0	0.0	0.0
Standard Deviation	17.97	10.59	0.6	2.0	5.1	1.5	3.9	11.1	0.0	2.2	2.8	0.0
Sample Variance	323.10	112.10	0.4	4.2	25.8	2.4	15.0	123.9	0.0	4.8	7.9	0.0
Kurtosis	-1.02	-1.24	29.0	5.6	1.0	6.9	10.9	5.1	ND	3.2	2.5	ND
Skewness	-0.19	-0.16	5.4	2.0	1.1	1.7	3.4	2.0	ND	1.9	2.1	ND
Range	64.00	35.00	3.2	9.8	21.0	8.6	15.0	54.2	0.0	7.7	8.4	0.0
Minimum	27.00	10.00	0.0	3.2	0.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0
Maximum	91.00	45.00	3.2	13.0	21.0	8.6	15.0	61.0	0.0	7.7	8.4	0.0
Count	29	29	29	29	29	29	29	29	29	29	26	3
Confidence Level(95.0%)	6.84	4.03	0.2	0.8	1.9	0.6	1.5	4.2	0.0	0.8	1.1	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	273	217	1.1	9.3	58.3	51.6	7.2	7.0
Standard Error	16	7	0.2	0.8	1.7	1.6	0.2	0.2
Median	280	230	0.0	8.4	63.0	56.0	6.8	6.7
Mode	280	300	0.0	12.0	70.0	66.0	6.6	6.8
Standard Deviation	87	67	1.8	3.9	15.4	14.7	1.8	1.9
Sample Variance	7595	4547	3.2	15.5	235.7	214.7	3.4	3.4
Kurtosis	-1	-1	1.3	0.1	-1.0	-0.8	1.8	1.1
Skewness	0	-1	1.4	0.7	-0.5	-0.5	1.2	1.1
Range	300	232	6.9	15.0	56.0	58.0	9.2	8.2
Minimum	110	68	0.0	4.0	27.0	20.0	3.8	3.8
Maximum	410	300	6.9	19.0	83.0	78.0	13.0	12.0
Count	29	81	83	26	81	79	79	79
Confidence Level(95.0%)	33	15	0.4	1.6	3.4	3.3	0.4	0.4

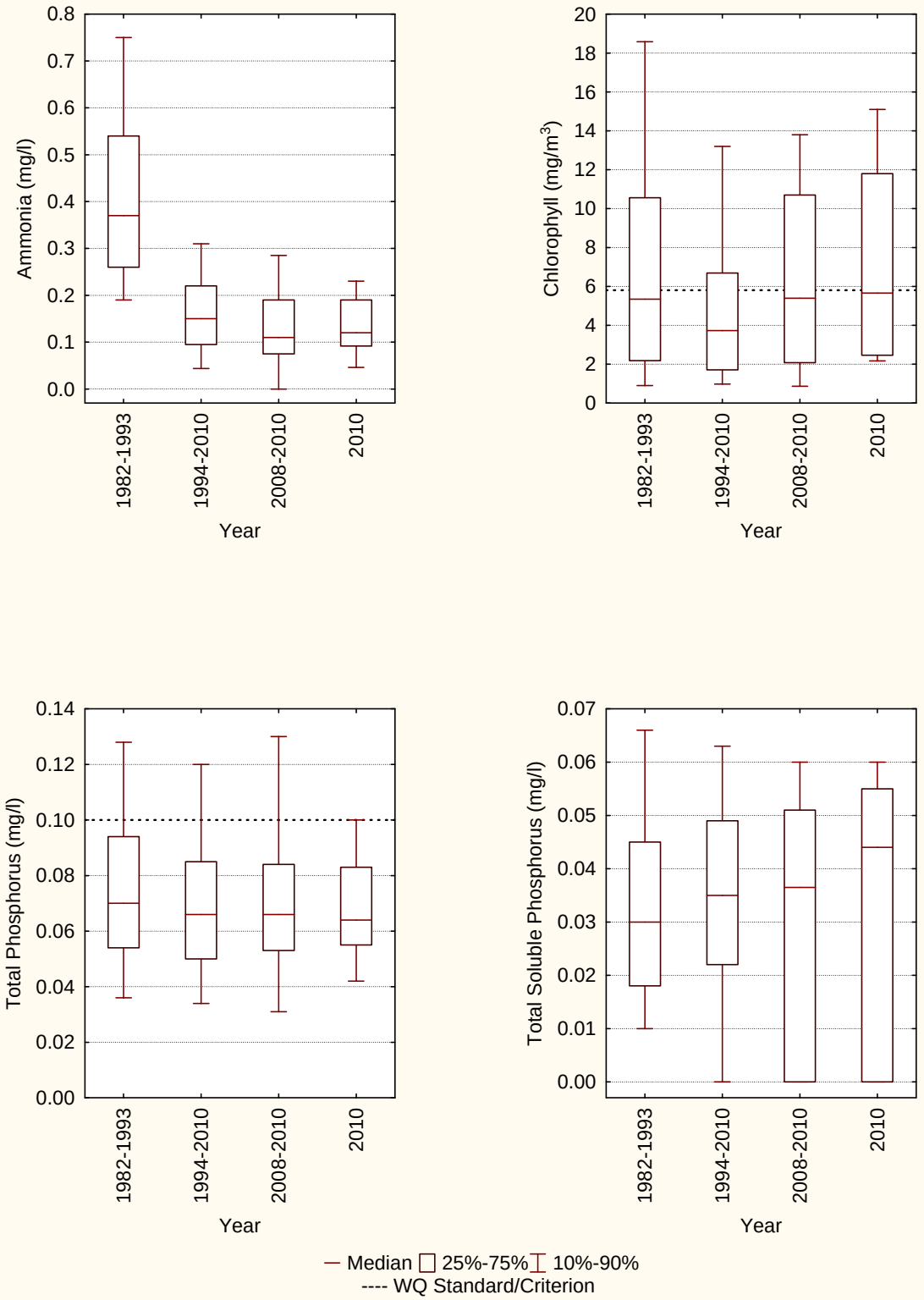
ND = No Data

Provisional MMSD Water Quality Data

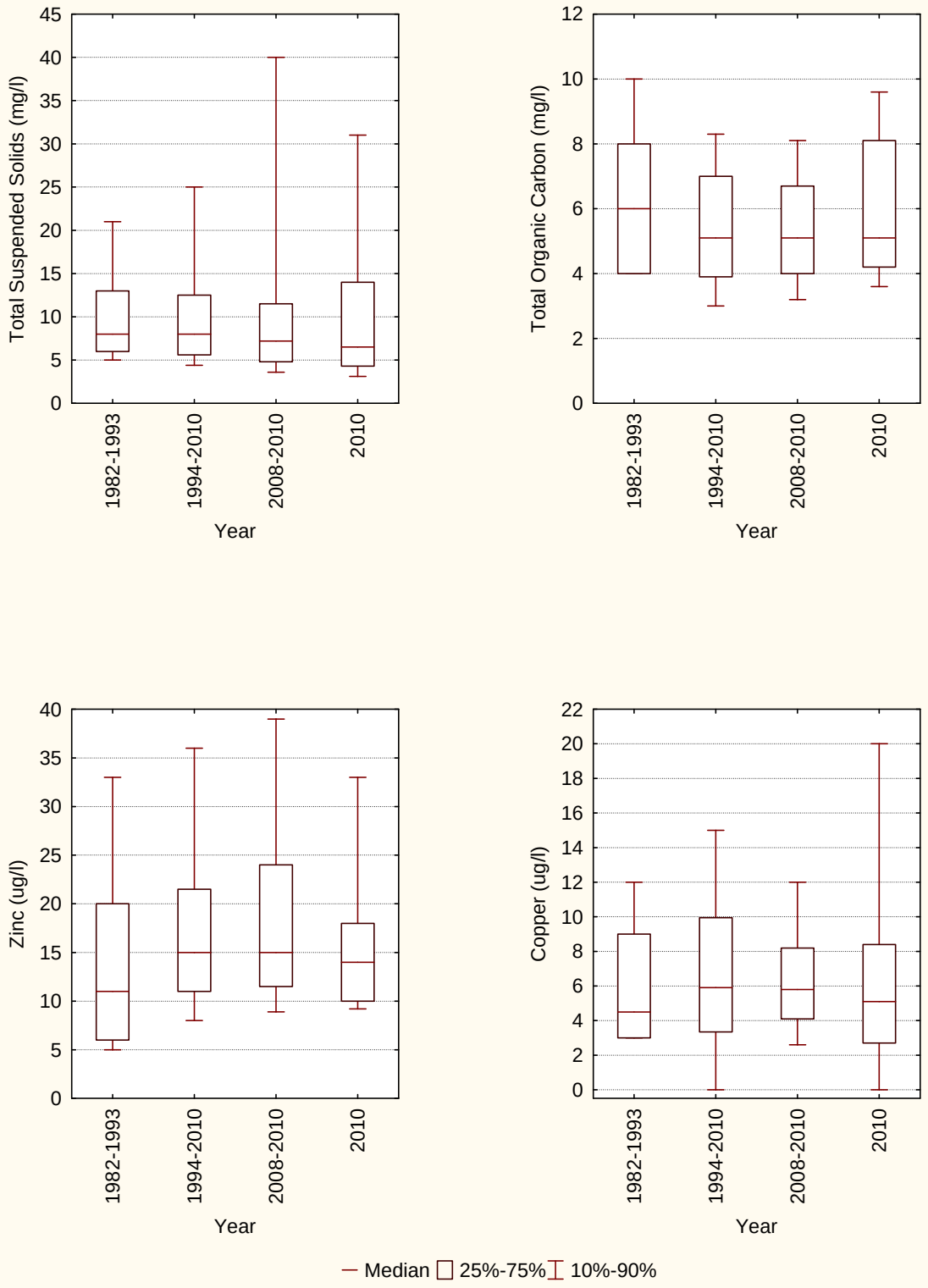
MMSD Water Quality Monitoring Program Data
Kinnickinnic River at Greenfield Ave. Extended, Site RI-18



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at Greenfield Ave. Extended, Site RI-18



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at Greenfield Ave. Extended, Site RI-18



GREENFIELD AVENUE EXTENDED - SITE 18
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	14.5	7.9	7.27	0.74	0.021	0.76	0.133	0.64	0.071	0.033	ND
Standard Error	0.0	0.6	0.2	1.60	0.03	0.002	0.03	0.010	0.03	0.005	0.004	ND
Median	7.9	13.7	7.8	5.66	0.70	0.019	0.72	0.120	0.65	0.064	0.044	ND
Mode	8.0	11.3	7.8	ND	1.10	0.020	1.10	0.200	0.73	0.100	0.000	ND
Standard Deviation	0.2	4.5	1.6	5.06	0.23	0.011	0.23	0.070	0.24	0.038	0.025	ND
Sample Variance	0.0	19.9	2.5	25.56	0.05	0.000	0.05	0.005	0.06	0.001	0.001	ND
Kurtosis	1.1	-0.9	-0.6	-0.63	-0.87	4.309	-0.81	-0.276	-0.30	3.468	-1.569	ND
Skewness	1.2	0.2	0.3	0.80	0.29	1.682	0.27	0.184	-0.21	1.326	-0.330	ND
Range	0.8	15.9	6.3	14.48	0.86	0.063	0.86	0.310	1.10	0.190	0.077	0.00
Minimum	7.7	7.2	5.0	1.92	0.34	0.000	0.34	0.000	0.00	0.000	0.000	0.00
Maximum	8.5	23.1	11.3	16.40	1.20	0.063	1.20	0.310	1.10	0.190	0.077	0.00
Count	51	51	51	10	51	51	51	51	51	51	51	0
Confidence Level(95.0%)	0.1	1.3	0.4	3.62	0.06	0.003	0.06	0.020	0.07	0.011	0.007	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.1	2.9	338.4	320.8	3.3	17.6	19.6	590	66.8	3434	2.0	ND
Standard Error	0.1	0.3	12.4	13.5	0.8	4.7	5.7	26	5.3	2812	0.3	ND
Median	1.2	2.7	330.0	309.0	1.8	6.5	6.5	570	62.0	55	1.7	ND
Mode	1.3	2.5	340.0	397.1	0.0	2.9	5.2	712	73.0	79	1.9	ND
Standard Deviation	0.5	1.2	88.5	96.6	5.4	33.4	40.5	182	38.1	11595	1.1	ND
Sample Variance	0.3	1.4	7837.5	9328.3	28.9	1115.2	1643.7	33260	1448.9	134452320	1.1	ND
Kurtosis	-0.6	2.4	-0.6	-0.9	12.0	13.0	13.7	-1	2.2	16	1.5	ND
Skewness	-0.3	1.0	0.2	0.2	3.4	3.6	3.7	0	1.3	4	1.4	ND
Range	1.7	5.0	370.0	370.4	26.0	160.0	205.6	674	169.0	47995	4.0	0
Minimum	0.2	1.0	160.0	150.1	0.0	0.0	2.4	283	11.0	5	0.7	0
Maximum	1.9	6.0	530.0	520.5	26.0	160.0	208.0	957	180.0	48000	4.7	0
Count	17	16	51	51	51	51	51	51	51	17	17	0
Confidence Level(95.0%)	0.3	0.6	24.9	27.2	1.5	9.4	11.4	51	10.7	5962	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

GREENFIELD AVENUE EXTENDED - SITE 18
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	46.65	22.00	0.2	5.4	7.2	2.0	2.2	17.1	0.0	0.6	1.6	0.0
Standard Error	2.60	1.72	0.2	0.6	1.7	0.5	1.6	2.7	0.0	0.5	0.7	0.0
Median	47.00	20.00	0.0	4.5	5.1	2.4	0.0	14.0	0.0	0.0	0.0	0.0
Mode	52.00	27.00	0.0	4.5	0.0	0.0	0.0	18.0	0.0	0.0	0.0	0.0
Standard Deviation	10.74	7.08	0.9	2.3	7.0	2.0	6.7	11.0	0.0	2.0	3.0	0.0
Sample Variance	115.24	50.13	0.8	5.4	48.4	4.1	44.3	121.1	0.0	4.1	8.8	0.0
Kurtosis	-1.16	-1.50	17.0	3.0	0.5	2.9	9.4	7.2	ND	13.3	0.2	ND
Skewness	-0.09	0.08	4.1	1.6	1.2	1.3	3.1	2.5	ND	3.6	1.4	ND
Range	35.00	20.00	3.6	9.1	23.0	7.8	25.0	44.1	0.0	8.1	7.7	0.0
Minimum	30.00	12.00	0.0	2.9	0.0	0.0	0.0	8.9	0.0	0.0	0.0	0.0
Maximum	65.00	32.00	3.6	12.0	23.0	7.8	25.0	53.0	0.0	8.1	7.7	0.0
Count	17	17	17	17	17	17	17	17	17	17	16	3
Confidence Level(95.0%)	5.52	3.64	0.4	1.2	3.6	1.0	3.4	5.7	0.0	1.0	1.6	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	207	168	0.3	5.9	45.7	39.7	5.9	6.0
Standard Error	14	7	0.1	0.8	1.7	1.4	0.4	0.4
Median	200	170	0.0	5.1	46.0	41.0	5.1	4.8
Mode	260	170	0.0	4.1	34.0	47.0	4.2	4.6
Standard Deviation	57	47	1.0	3.4	12.1	10.0	2.6	2.8
Sample Variance	3235	2223	0.9	11.3	146.7	100.7	6.6	7.7
Kurtosis	-1	0	5.6	5.6	-0.7	-0.6	0.1	1.5
Skewness	0	0	2.6	1.7	0.1	-0.1	1.0	1.4
Range	180	187	3.7	16.0	47.0	41.0	9.6	11.4
Minimum	120	53	0.0	0.0	24.0	19.0	2.4	2.6
Maximum	300	240	3.7	16.0	71.0	60.0	12.0	14.0
Count	17	51	51	16	51	51	51	51
Confidence Level(95.0%)	29	13	0.3	1.8	3.4	2.8	0.7	0.8

ND = No Data

Provisional MMSD Water Quality Data

JONES ISLAND FERRY - SITE 19
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	13.9	8.6	6.33	0.82	0.018	0.84	0.102	0.63	0.063	0.026	ND
Standard Error	0.0	0.7	0.2	1.24	0.04	0.001	0.04	0.007	0.04	0.005	0.003	ND
Median	8.0	13.8	8.5	6.23	0.77	0.016	0.79	0.093	0.63	0.059	0.030	ND
Mode	8.0	11.7	11.0	ND	1.00	0.020	1.10	0.130	1.10	0.000	0.000	ND
Standard Deviation	0.2	5.3	1.7	4.12	0.29	0.009	0.29	0.055	0.27	0.035	0.025	ND
Sample Variance	0.0	27.7	2.8	16.96	0.08	0.000	0.08	0.003	0.07	0.001	0.001	ND
Kurtosis	-0.5	-0.2	0.1	-0.93	0.05	2.360	-0.01	-0.836	-0.13	2.239	-1.829	ND
Skewness	0.3	-0.1	0.5	0.37	0.67	1.158	0.65	0.274	0.08	0.784	0.074	ND
Range	0.9	22.2	7.3	12.25	1.25	0.045	1.25	0.210	1.20	0.170	0.066	0.00
Minimum	7.6	1.6	5.5	0.65	0.35	0.000	0.35	0.000	0.00	0.000	0.000	0.00
Maximum	8.5	23.8	12.8	12.90	1.60	0.045	1.60	0.210	1.20	0.170	0.066	0.00
Count	54	54	54	11	54	54	54	54	54	54	54	0
Confidence Level(95.0%)	0.1	1.4	0.5	2.77	0.08	0.002	0.08	0.015	0.07	0.010	0.007	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.1	2.9	337.6	324.8	2.9	12.8	13.7	574	60.9	2088	2.0	ND
Standard Error	0.1	0.3	12.3	13.1	0.5	2.6	3.2	25	3.9	1484	0.2	ND
Median	1.3	2.5	335.0	329.2	2.0	7.3	6.8	592	64.0	88	1.9	ND
Mode	0.9	2.2	310.0	210.0	0.0	1.0	10.3	608	94.0	40	1.6	ND
Standard Deviation	0.5	1.2	90.3	96.5	3.6	19.2	23.8	185	29.0	6297	1.0	ND
Sample Variance	0.2	1.4	8162.0	9308.8	13.3	370.4	564.9	34409	840.4	39656776	1.1	ND
Kurtosis	-0.3	0.7	-0.1	-0.3	13.7	15.2	13.7	-1	2.4	14	1.2	ND
Skewness	-0.5	0.9	0.1	0.0	3.5	3.8	3.7	0	0.8	4	0.7	ND
Range	1.7	4.5	420.0	423.5	21.0	109.0	124.3	793	160.9	26000	4.4	0
Minimum	0.2	1.0	140.0	130.5	0.0	1.0	1.7	257	9.1	0	0.0	0
Maximum	1.9	5.5	560.0	554.0	21.0	110.0	126.0	1050	170.0	26000	4.4	0
Count	18	17	54	54	54	54	54	54	54	18	18	0
Confidence Level(95.0%)	0.2	0.6	24.7	26.3	1.0	5.3	6.5	51	7.9	3132	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

JONES ISLAND FERRY - SITE 19
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

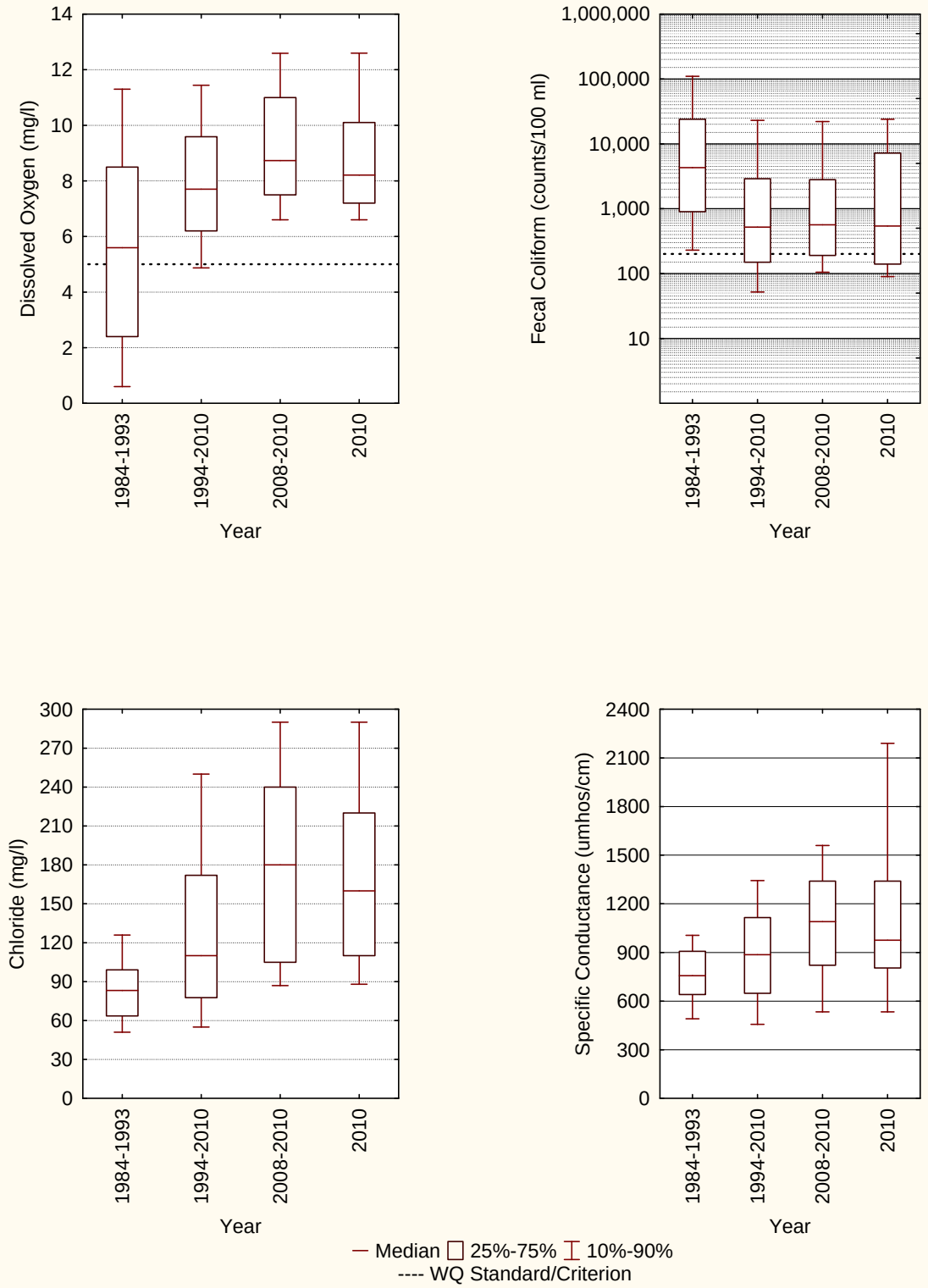
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	48.39	22.39	0.1	4.9	7.0	1.9	1.0	16.6	0.0	1.9	1.7	0.0
Standard Error	2.94	1.83	0.1	0.4	1.3	0.3	0.5	1.8	0.0	0.6	0.8	0.0
Median	46.50	20.50	0.0	4.4	5.2	2.4	0.0	14.5	0.0	0.9	0.0	0.0
Mode	68.00	18.00	0.0	4.4	2.2	0.0	0.0	14.0	0.0	0.0	0.0	0.0
Standard Deviation	12.49	7.78	0.3	1.5	5.6	1.4	2.2	7.8	0.0	2.3	3.2	0.0
Sample Variance	155.90	60.49	0.1	2.3	31.7	2.0	4.9	60.4	0.0	5.5	10.3	0.0
Kurtosis	-0.73	-0.71	14.0	2.0	4.1	0.2	9.1	9.4	ND	-0.2	1.3	ND
Skewness	0.13	0.36	3.7	1.3	2.0	0.0	2.9	2.8	ND	1.0	1.6	ND
Range	43.00	28.00	1.4	6.3	22.0	5.1	8.7	34.4	0.0	6.8	9.7	0.0
Minimum	25.00	10.00	0.0	2.7	2.0	0.0	0.0	9.6	0.0	0.0	0.0	0.0
Maximum	68.00	38.00	1.4	9.0	24.0	5.1	8.7	44.0	0.0	6.8	9.7	0.0
Count	18	18	18	18	18	18	18	18	18	18	17	3
Confidence Level(95.0%)	6.21	3.87	0.2	0.8	2.8	0.7	1.1	3.9	0.0	1.2	1.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	214	177	0.3	5.7	47.7	41.6	6.1	6.1
Standard Error	15	8	0.1	0.8	1.8	1.5	0.4	0.4
Median	200	170	0.0	5.2	43.5	38.5	5.4	5.2
Mode	260	220	0.0	0.0	42.0	37.0	4.6	4.4
Standard Deviation	63	55	0.9	3.3	13.4	11.3	2.6	2.8
Sample Variance	3978	3055	0.8	11.1	178.6	126.7	6.9	8.0
Kurtosis	-1	0	5.6	3.5	-1.2	-1.1	-0.2	0.8
Skewness	0	0	2.7	0.9	0.1	0.0	0.8	1.1
Range	230	246	3.3	15.0	49.0	42.0	9.7	11.5
Minimum	100	54	0.0	0.0	23.0	18.0	2.3	2.5
Maximum	330	300	3.3	15.0	72.0	60.0	12.0	14.0
Count	18	54	54	17	54	54	54	54
Confidence Level(95.0%)	31	15	0.2	1.7	3.6	3.1	0.7	0.8

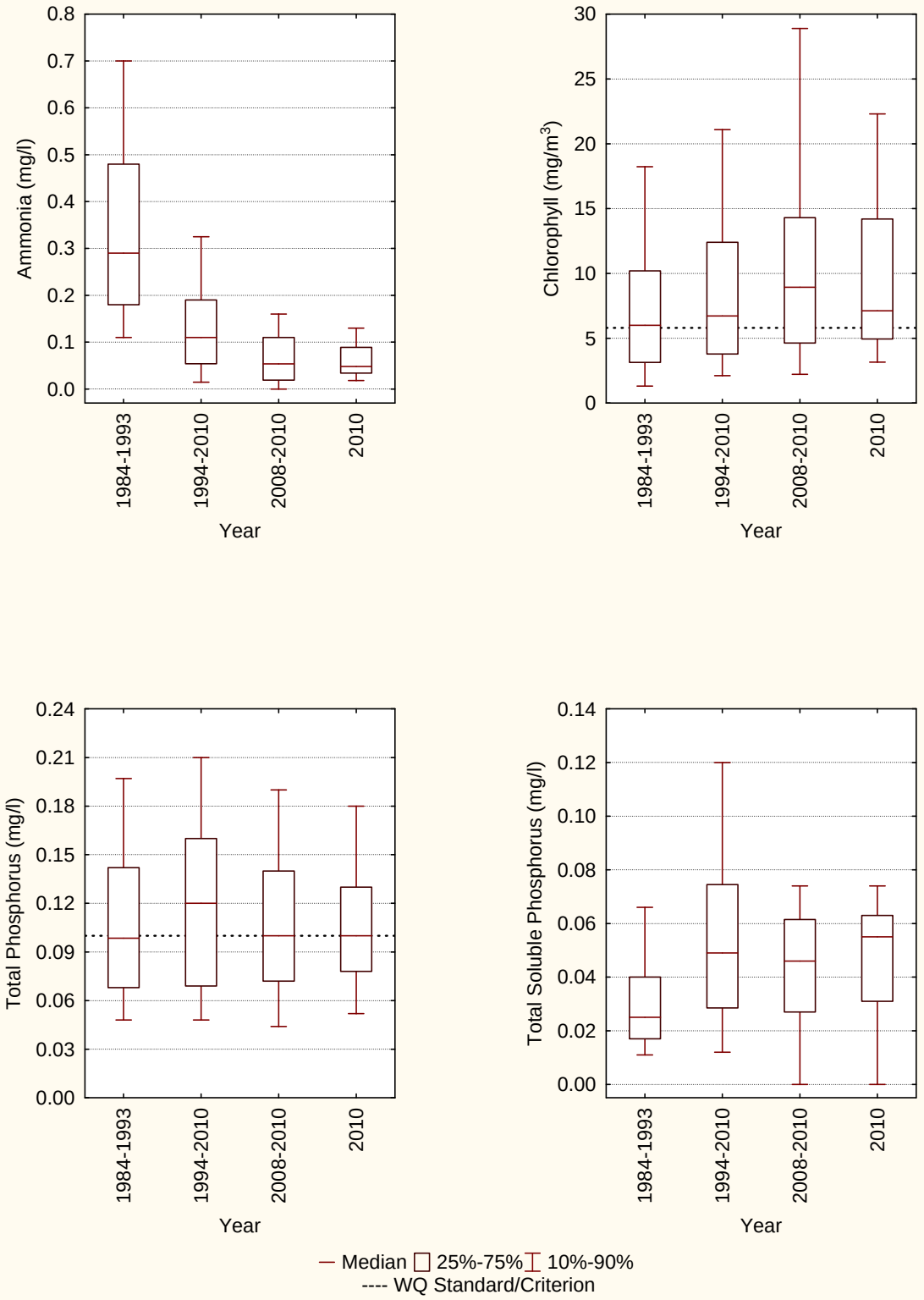
ND = No Data

Provisional MMSD Water Quality Data

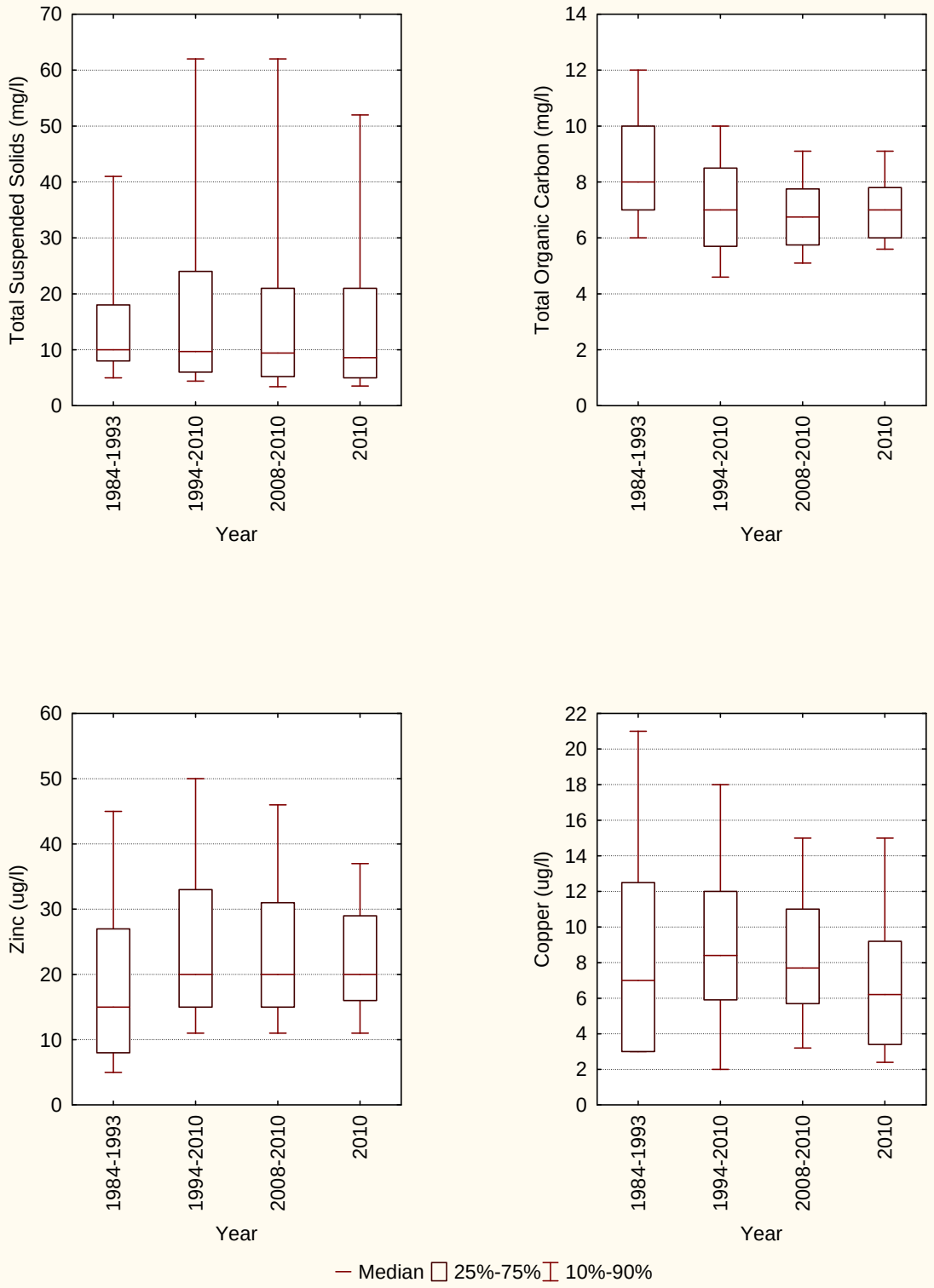
MMSD Water Quality Monitoring Program Data
Menomonee River at 25th St., Site RI-20



MMSD Water Quality Monitoring Program Data
Menomonee River at 25th St., Site RI-20



MMSD Water Quality Monitoring Program Data
Menomonee River at 25th St., Site RI-20



25TH STREET - SITE 20
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	13.8	8.8	14.21	0.55	0.021	0.57	0.067	0.79	0.105	0.046	ND
Standard Error	0.0	1.6	0.4	5.35	0.05	0.001	0.04	0.009	0.07	0.009	0.006	ND
Median	7.9	16.1	8.2	7.12	0.53	0.019	0.55	0.048	0.73	0.100	0.055	ND
Mode	7.8	ND	12.6	ND	0.35	0.020	0.36	0.110	0.89	0.100	0.000	ND
Standard Deviation	0.2	8.6	2.2	21.38	0.23	0.007	0.22	0.047	0.34	0.046	0.028	ND
Sample Variance	0.1	73.2	4.7	457.11	0.05	0.000	0.05	0.002	0.12	0.002	0.001	ND
Kurtosis	1.9	-1.3	-0.6	13.44	1.60	0.795	0.65	1.008	4.90	1.592	-0.662	ND
Skewness	1.0	-0.3	0.7	3.56	0.86	0.934	0.55	1.178	1.94	1.124	-0.546	ND
Range	1.0	26.7	7.4	89.10	1.07	0.030	0.96	0.174	1.56	0.196	0.090	0.00
Minimum	7.6	0.2	5.8	2.50	0.13	0.010	0.14	0.016	0.34	0.044	0.000	0.00
Maximum	8.6	26.9	13.2	91.60	1.20	0.040	1.10	0.190	1.90	0.240	0.090	0.00
Count	27	27	27	16	25	25	25	27	25	27	25	0
Confidence Level(95.0%)	0.1	3.4	0.9	11.39	0.10	0.003	0.09	0.019	0.14	0.018	0.011	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	583.8	568.4	4.4	21.9	16.6	1119	193.8	7082	2.9	4013
Standard Error	ND	ND	46.8	48.3	0.8	7.5	4.9	112	25.7	2716	0.2	1318
Median	ND	ND	510.0	505.5	2.7	8.6	6.7	976	160.0	540	2.7	330
Mode	ND	ND	460.0	ND	10.0	22.0	3.4	ND	220.0	ND	ND	140
Standard Deviation	ND	ND	229.1	236.6	3.9	39.0	24.6	580	128.4	13582	1.0	6848
Sample Variance	ND	ND	52467.9	55967.9	14.9	1521.0	604.3	336802	16499.0	184465391	0.9	46895993
Kurtosis	ND	ND	2.7	2.4	0.3	17.8	8.6	3	4.2	8	-1.1	2
Skewness	ND	ND	1.3	1.2	1.1	4.0	2.9	1	1.9	3	0.6	2
Range	0.0	0.0	1030.0	1090.0	14.0	198.2	106.1	2627	567.0	57948	3.0	21942
Minimum	0.0	0.0	270.0	204.0	0.0	1.8	2.9	283	33.0	52	1.7	58
Maximum	0.0	0.0	1300.0	1294.0	14.0	200.0	109.0	2910	600.0	58000	4.8	22000
Count	0	0	24	24	25	27	25	27	25	25	25	27
Confidence Level(95.0%)	ND	ND	96.7	99.9	1.6	15.4	10.1	230	53.0	5606	0.4	2709

ND = No Data

Provisional MMSD Water Quality Data

25TH STREET - SITE 20
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	62.67	28.07	0.2	5.3	7.1	4.0	1.9	23.0	0.1	0.9	1.5	0.0
Standard Error	3.75	1.93	0.2	0.3	0.9	0.6	0.8	2.2	0.1	0.4	0.6	0.0
Median	66.00	27.00	0.0	5.0	6.2	3.1	0.0	20.0	0.0	0.0	0.0	0.0
Mode	85.00	36.00	0.0	4.6	0.0	4.0	0.0	16.0	0.0	0.0	0.0	0.0
Standard Deviation	19.48	10.04	0.8	1.6	4.6	3.1	4.3	11.5	0.3	2.2	3.1	0.0
Sample Variance	379.38	100.76	0.6	2.6	21.6	9.6	18.8	133.3	0.1	4.9	9.9	0.0
Kurtosis	-1.12	-1.41	11.5	1.4	-0.5	11.9	3.0	1.2	10.8	5.8	1.2	ND
Skewness	0.04	-0.04	3.5	0.9	0.6	3.1	2.1	1.2	3.5	2.5	1.7	ND
Range	71.00	32.00	3.3	7.1	17.0	17.0	15.0	46.5	1.2	8.6	9.2	0.0
Minimum	29.00	11.00	0.0	2.9	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0
Maximum	100.00	43.00	3.3	10.0	17.0	17.0	15.0	54.0	1.2	8.6	9.2	0.0
Count	27	27	27	27	27	27	27	27	27	27	26	3
Confidence Level(95.0%)	7.71	3.97	0.3	0.6	1.8	1.2	1.7	4.6	0.1	0.9	1.3	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	272	206	2.6	10.1	56.1	48.8	7.3	6.9
Standard Error	17	12	0.4	1.1	2.8	2.7	0.4	0.3
Median	270	220	2.7	9.1	56.0	50.0	7.0	6.6
Mode	380	270	0.0	8.2	68.0	47.0	7.8	5.6
Standard Deviation	89	59	2.0	5.6	14.1	13.6	1.8	1.6
Sample Variance	7970	3450	4.1	31.1	197.6	184.6	3.1	2.6
Kurtosis	-1	-1	0.1	8.0	-0.9	-0.9	3.3	1.6
Skewness	0	-1	0.4	2.4	-0.4	-0.4	1.5	1.3
Range	310	213	7.8	26.8	50.0	46.0	7.9	6.1
Minimum	120	67	0.0	4.2	26.0	20.0	5.1	4.9
Maximum	430	280	7.8	31.0	76.0	66.0	13.0	11.0
Count	27	25	27	24	25	25	25	25
Confidence Level(95.0%)	35	24	0.8	2.4	5.8	5.6	0.7	0.7

ND = No Data

Provisional MMSD Water Quality Data

127TH STREET EXTENDED - SITE 21
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	14.4	10.7	9.95	0.43	0.017	0.44	0.040	0.75	0.078	0.036	ND
Standard Error	0.0	1.7	0.6	1.83	0.05	0.003	0.05	0.007	0.07	0.011	0.006	ND
Median	8.0	15.2	10.3	8.15	0.42	0.014	0.44	0.034	0.69	0.063	0.043	ND
Mode	7.9	24.4	6.6	ND	0.57	0.014	0.12	0.000	1.20	0.000	0.000	ND
Standard Deviation	0.2	8.3	3.1	6.86	0.25	0.013	0.26	0.033	0.34	0.056	0.030	ND
Sample Variance	0.1	69.2	9.7	47.08	0.06	0.000	0.07	0.001	0.11	0.003	0.001	ND
Kurtosis	-0.1	-1.4	-0.7	7.41	1.19	0.036	0.82	-0.547	-1.07	-0.572	-0.980	ND
Skewness	0.6	-0.3	0.4	2.50	0.89	0.930	0.75	0.645	0.26	0.462	0.128	ND
Range	0.9	24.5	11.2	27.03	0.99	0.048	0.98	0.110	1.16	0.190	0.092	0.00
Minimum	7.7	0.0	6.0	4.07	0.11	0.000	0.12	0.000	0.24	0.000	0.000	0.00
Maximum	8.6	24.5	17.2	31.10	1.10	0.048	1.10	0.110	1.40	0.190	0.092	0.00
Count	25	25	25	14	23	23	23	25	23	25	23	0
Confidence Level(95.0%)	0.1	3.4	1.3	3.96	0.11	0.006	0.11	0.014	0.15	0.023	0.013	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	577.8	562.6	4.0	15.9	13.7	986	163.0	10957	2.9	2341
Standard Error	ND	ND	36.2	39.0	0.8	3.8	3.7	66	13.7	5941	0.2	731
Median	ND	ND	600.0	597.8	2.4	7.4	4.9	1060	170.0	330	2.5	330
Mode	ND	ND	520.0	ND	6.0	13.0	ND	1100	170.0	120	2.1	870
Standard Deviation	ND	ND	173.4	186.8	4.0	18.8	17.8	329	65.6	28491	1.1	3657
Sample Variance	ND	ND	30063.2	34908.6	16.1	355.1	318.5	108085	4298.9	811753694	1.2	13371464
Kurtosis	ND	ND	1.4	1.3	0.7	2.5	3.1	1	1.7	15	-0.6	0
Skewness	ND	ND	0.0	-0.3	1.3	1.8	2.0	0	0.3	4	0.7	1
Range	0.0	0.0	810.0	857.0	14.0	69.5	63.3	1506	308.0	129984	3.9	10964
Minimum	0.0	0.0	190.0	133.0	0.0	1.5	1.9	264	22.0	16	1.2	36
Maximum	0.0	0.0	1000.0	990.0	14.0	71.0	65.2	1770	330.0	130000	5.1	11000
Count	0	0	23	23	23	25	23	25	23	23	23	25
Confidence Level(95.0%)	ND	ND	75.0	80.8	1.7	7.8	7.7	136	28.4	12321	0.5	1509

ND = No Data

Provisional MMSD Water Quality Data

127TH STREET EXTENDED - SITE 21
MENOMONEE RIVER
WATER QUALITY DATA - 2010

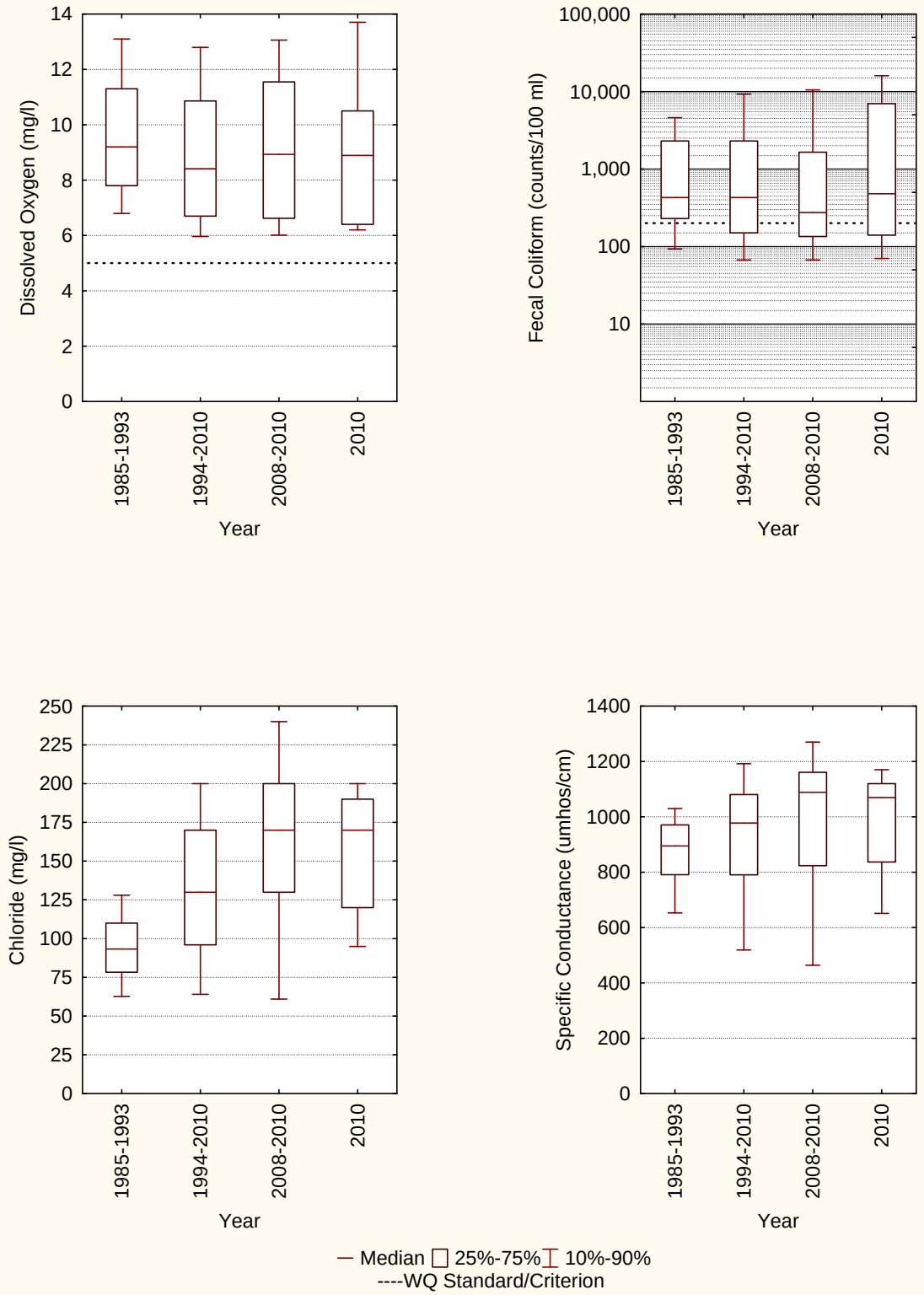
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	68.08	32.29	0.4	4.6	5.0	3.7	3.0	16.4	0.1	1.4	0.9	0.0
Standard Error	3.85	2.09	0.3	0.2	1.1	0.4	2.8	1.4	0.1	0.5	0.5	0.0
Median	70.00	37.00	0.0	4.6	4.3	3.2	0.0	15.0	0.0	0.0	0.0	0.0
Mode	68.00	38.00	0.0	4.2	0.0	4.0	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	19.26	10.46	1.4	0.8	5.2	2.2	14.2	6.9	0.3	2.4	2.4	0.0
Sample Variance	370.83	109.39	2.0	0.7	27.2	4.7	201.4	47.4	0.1	5.9	5.7	0.0
Kurtosis	0.23	0.05	18.2	-0.2	0.8	4.7	24.8	0.8	25.0	1.3	4.3	ND
Skewness	-0.83	-0.84	4.2	0.2	1.1	1.8	5.0	0.2	5.0	1.6	2.4	ND
Range	77.00	40.80	6.7	3.3	19.0	11.0	71.0	33.0	1.6	7.5	7.5	0.0
Minimum	21.00	8.20	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	98.00	49.00	6.7	6.3	19.0	11.0	71.0	33.0	1.6	7.5	7.5	0.0
Count	25	25	25	25	24	25	25	25	25	25	24	3
Confidence Level(95.0%)	7.95	4.32	0.6	0.3	2.2	0.9	5.9	2.8	0.1	1.0	1.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	303	242	1.3	7.2	65.2	57.7	7.5	7.2
Standard Error	18	14	0.4	1.0	3.2	3.2	0.5	0.4
Median	320	260	0.0	6.0	70.0	63.0	6.9	6.7
Mode	370	260	0.0	0.0	71.0	53.0	6.1	5.7
Standard Deviation	90	68	1.8	4.8	15.3	15.4	2.2	2.1
Sample Variance	8119	4572	3.1	23.1	232.9	236.7	4.8	4.4
Kurtosis	0	1	-0.9	-0.6	1.3	1.0	2.2	2.0
Skewness	-1	-1	0.8	0.4	-1.2	-1.1	1.3	1.5
Range	345	290	4.8	16.0	62.0	63.0	9.6	8.3
Minimum	85	60	0.0	0.0	26.0	19.0	4.4	4.7
Maximum	430	350	4.8	16.0	88.0	82.0	14.0	13.0
Count	25	23	25	22	23	23	23	23
Confidence Level(95.0%)	37	29	0.7	2.1	6.6	6.7	0.9	0.9

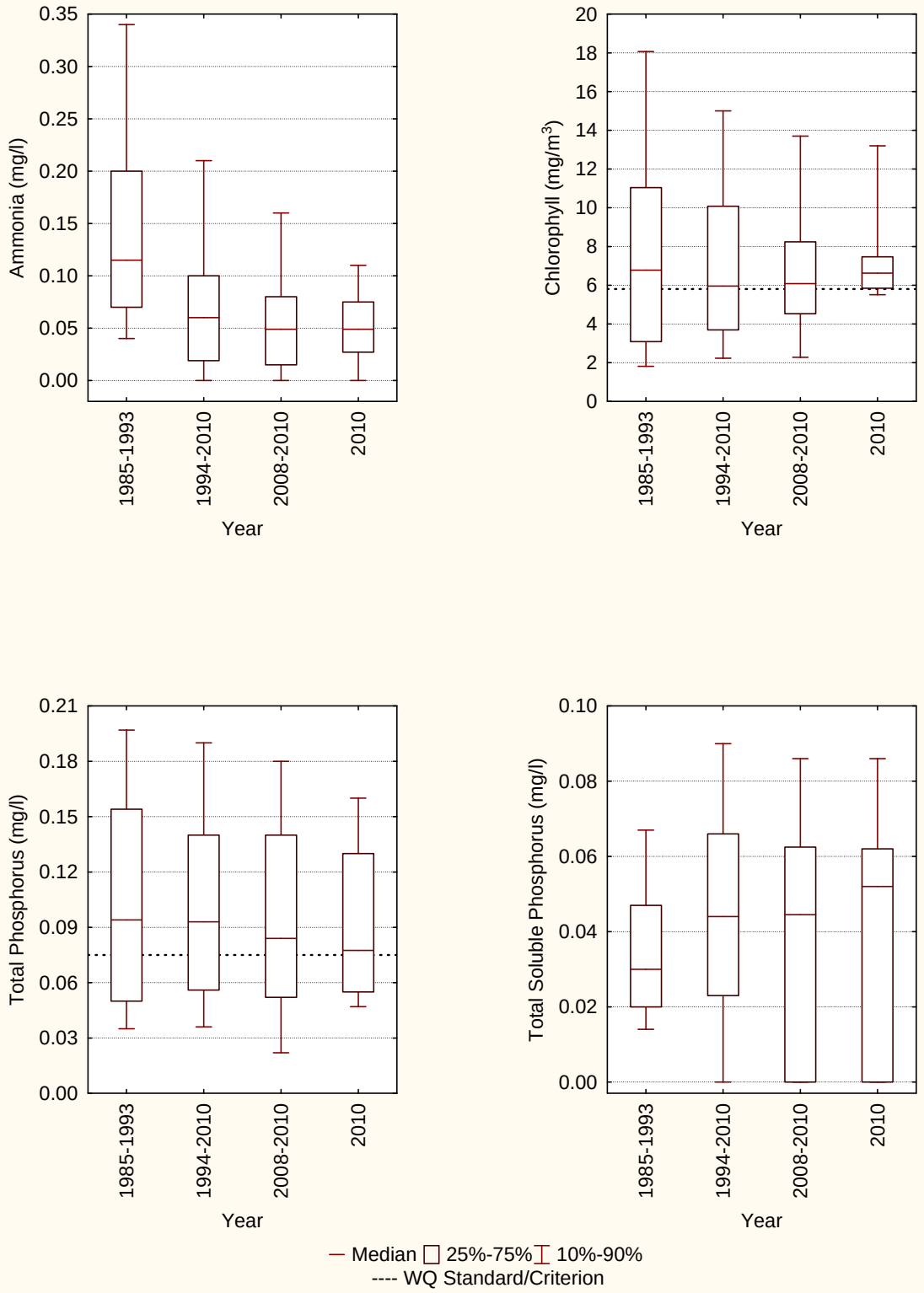
ND = No Data

Provisional MMSD Water Quality Data

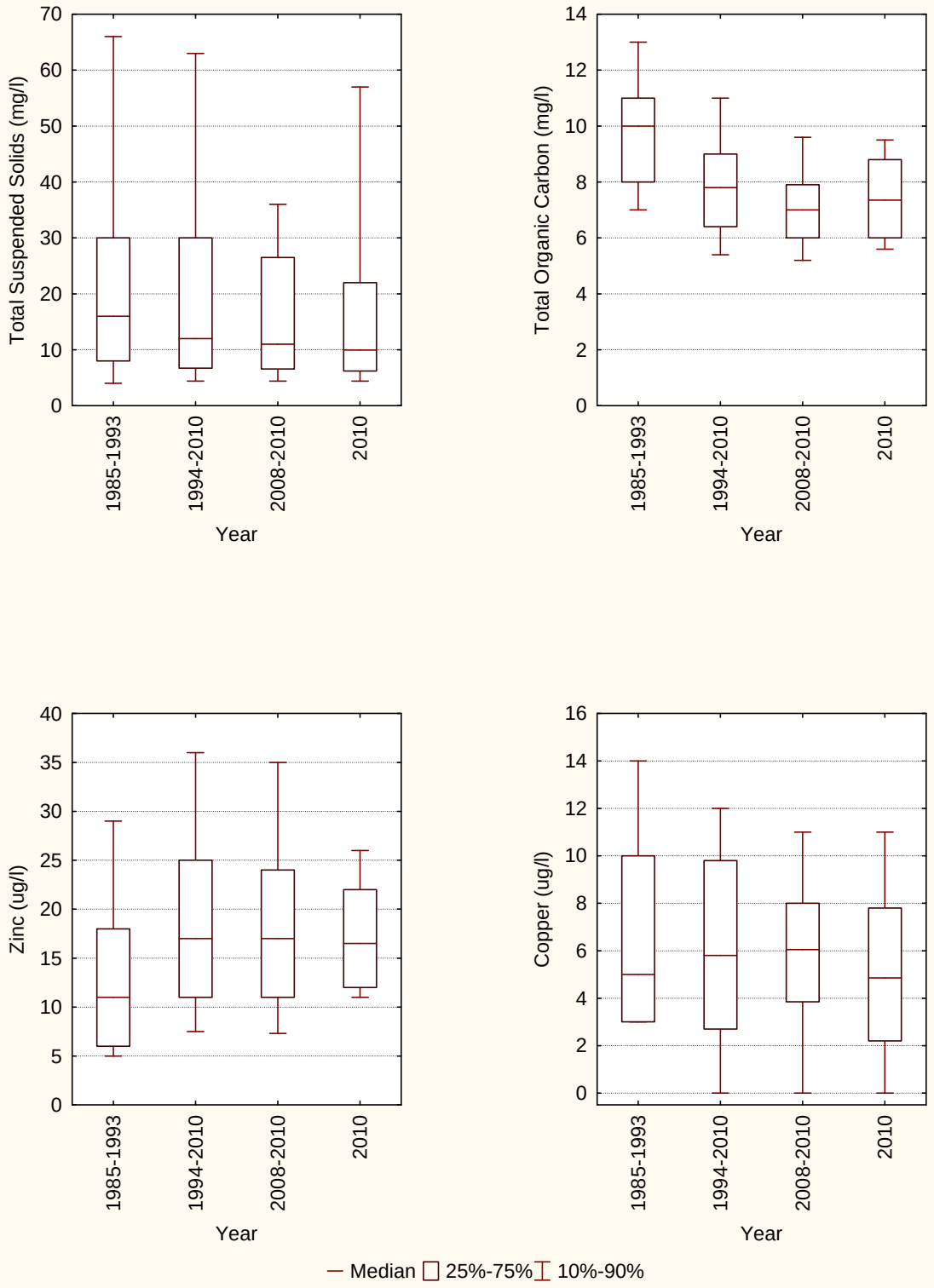
MMSD Water Quality Monitoring Program Data
Menomonee River at Hampton Ave., Site RI-22



MMSD Water Quality Monitoring Program Data
Menomonee River at Hampton Ave., Site RI-22



MMSD Water Quality Monitoring Program Data
Menomonee River at Hampton Ave., Site RI-22



HAMPTON AVENUE - SITE 22
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	13.8	9.0	7.61	0.41	0.019	0.43	0.055	0.77	0.091	0.042	ND
Standard Error	0.1	1.7	0.6	0.89	0.05	0.003	0.06	0.009	0.08	0.011	0.008	ND
Median	7.9	13.4	8.9	6.63	0.42	0.016	0.45	0.049	0.80	0.078	0.052	ND
Mode	7.8	18.7	9.8	ND	0.38	0.016	0.41	0.000	1.00	0.140	0.000	ND
Standard Deviation	0.2	7.8	3.0	3.32	0.23	0.012	0.26	0.045	0.39	0.049	0.037	ND
Sample Variance	0.1	61.1	9.0	11.04	0.05	0.000	0.07	0.002	0.15	0.002	0.001	ND
Kurtosis	1.1	-1.4	-0.6	4.42	3.06	0.280	5.22	2.798	5.51	-0.431	-0.235	ND
Skewness	1.2	-0.1	0.7	2.19	1.08	0.816	1.59	1.326	1.68	0.466	0.399	ND
Range	0.9	24.1	9.8	11.91	1.03	0.049	1.23	0.190	1.86	0.190	0.130	0.00
Minimum	7.6	0.4	5.2	4.89	0.07	0.000	0.07	0.000	0.24	0.000	0.000	0.00
Maximum	8.5	24.4	15.0	16.80	1.10	0.049	1.30	0.190	2.10	0.190	0.130	0.00
Count	22	22	22	14	22	22	22	22	22	22	22	0
Confidence Level(95.0%)	0.1	3.5	1.3	1.92	0.10	0.005	0.11	0.020	0.17	0.022	0.016	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	581.8	562.9	4.0	18.9	14.8	980	158.6	5147	2.9	ND
Standard Error	ND	ND	42.1	45.2	0.8	4.7	2.8	61	14.0	2049	0.2	ND
Median	ND	ND	635.0	623.2	2.3	10.0	11.0	1070	170.0	480	2.7	ND
Mode	ND	ND	660.0	ND	1.6	13.0	12.5	1060	170.0	130	2.1	ND
Standard Deviation	ND	ND	197.2	212.1	3.6	21.9	13.1	288	65.6	9389	0.9	ND
Sample Variance	ND	ND	38901.3	44990.5	12.8	477.7	172.4	83090	4298.0	88153835	0.9	ND
Kurtosis	ND	ND	4.1	3.2	1.7	3.1	2.6	2	3.9	4	-1.0	ND
Skewness	ND	ND	0.9	0.5	1.5	2.0	1.7	0	0.8	2	0.7	ND
Range	0.0	0.0	1010.0	1079.0	14.0	79.4	50.2	1415	338.0	33953	2.9	0
Minimum	0.0	0.0	190.0	108.0	0.0	2.6	2.9	265	22.0	47	1.7	0
Maximum	0.0	0.0	1200.0	1187.0	14.0	82.0	53.1	1680	360.0	34000	4.5	0
Count	0	0	22	22	22	22	22	22	22	21	21	0
Confidence Level(95.0%)	ND	ND	87.4	94.0	1.6	9.7	5.8	128	29.1	4274	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

HAMPTON AVENUE - SITE 22
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	67.41	31.69	0.3	4.6	5.7	3.4	2.6	18.0	0.0	0.7	1.6	0.0
Standard Error	4.06	2.14	0.2	0.2	1.1	0.3	1.8	2.1	0.0	0.3	0.7	0.0
Median	70.50	35.00	0.0	4.8	4.9	3.3	0.0	16.5	0.0	0.0	0.0	0.0
Mode	88.00	39.00	0.0	4.9	0.0	3.8	0.0	11.0	0.0	0.0	0.0	0.0
Standard Deviation	19.02	10.04	0.9	0.8	5.2	1.6	8.5	9.6	0.0	1.4	3.0	0.0
Sample Variance	361.87	100.75	0.9	0.7	27.3	2.6	72.2	93.0	0.0	2.1	9.3	0.0
Kurtosis	0.06	-0.26	8.1	0.2	3.5	2.5	11.2	6.2	ND	5.1	1.5	ND
Skewness	-0.97	-0.93	3.1	-0.9	1.6	0.9	3.4	1.8	ND	2.2	1.7	ND
Range	65.00	35.80	3.3	3.1	22.0	7.6	35.0	51.0	0.0	5.5	9.3	0.0
Minimum	23.00	9.20	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	88.00	45.00	3.3	5.7	22.0	7.6	35.0	51.0	0.0	5.5	9.3	0.0
Count	22	22	22	22	22	22	22	22	22	22	22	3
Confidence Level(95.0%)	8.43	4.45	0.4	0.4	2.3	0.7	3.8	4.3	0.0	0.6	1.4	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	298	231	1.2	8.2	63.3	55.6	7.6	7.3
Standard Error	19	15	0.4	1.1	3.3	3.3	0.4	0.4
Median	320	250	0.0	6.4	68.0	58.0	7.4	7.0
Mode	370	250	0.0	13.0	78.0	66.0	8.8	7.4
Standard Deviation	88	68	1.7	4.9	15.5	15.5	2.0	2.0
Sample Variance	7784	4691	2.9	24.3	241.2	240.2	4.0	3.8
Kurtosis	0	0	-1.0	-1.0	0.2	0.0	1.1	1.4
Skewness	-1	-1	0.9	0.2	-1.1	-1.0	1.0	1.3
Range	305	238	4.7	16.0	53.0	52.0	8.2	7.0
Minimum	95	62	0.0	0.0	26.0	20.0	4.8	5.0
Maximum	400	300	4.7	16.0	79.0	72.0	13.0	12.0
Count	22	22	22	21	22	22	22	22
Confidence Level(95.0%)	39	30	0.8	2.2	6.9	6.9	0.9	0.9

ND = No Data

Provisional MMSD Water Quality Data

BURNHAM SHIP CANAL - SITE 31
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.8	19.4	6.6	8.40	0.89	0.024	0.92	0.170	0.79	0.090	0.049	ND
Standard Error	0.0	1.2	0.5	3.42	0.08	0.001	0.08	0.016	0.04	0.004	0.005	ND
Median	7.8	17.5	6.2	4.22	0.74	0.023	0.77	0.150	0.78	0.092	0.055	ND
Mode	7.8	25.8	10.0	ND	0.54	0.020	0.56	0.310	0.85	0.094	0.000	ND
Standard Deviation	0.2	6.1	2.4	14.51	0.43	0.007	0.43	0.081	0.19	0.023	0.027	ND
Sample Variance	0.0	36.8	5.7	210.45	0.19	0.000	0.18	0.007	0.04	0.001	0.001	ND
Kurtosis	0.2	-1.4	-1.2	13.65	-0.45	1.279	-0.49	-0.056	1.15	4.545	-0.141	ND
Skewness	0.3	0.1	0.1	3.57	0.96	0.987	0.96	0.425	0.75	1.251	-0.875	ND
Range	0.7	19.8	7.7	62.24	1.38	0.030	1.36	0.330	0.86	0.118	0.087	0.00
Minimum	7.5	9.0	2.7	1.06	0.42	0.013	0.44	0.000	0.44	0.052	0.000	0.00
Maximum	8.2	28.8	10.4	63.30	1.80	0.043	1.80	0.330	1.30	0.170	0.087	0.00
Count	27	27	27	18	27	27	27	27	27	27	27	0
Confidence Level(95.0%)	0.1	2.4	0.9	7.21	0.17	0.003	0.17	0.032	0.08	0.009	0.011	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	580.0	571.9	2.7	8.1	8.1	1079	164.0	781	2.4	ND
Standard Error	ND	ND	44.9	44.9	0.4	0.8	0.9	81	17.5	299	0.1	ND
Median	ND	ND	505.0	493.9	2.5	8.4	7.9	946	130.0	200	2.3	ND
Mode	ND	ND	480.0	ND	5.0	13.0	8.5	888	98.0	140	2.1	ND
Standard Deviation	ND	ND	229.0	228.9	1.9	4.3	4.5	422	90.9	1552	0.7	ND
Sample Variance	ND	ND	52440.0	52374.4	3.6	18.6	19.9	178312	8270.8	2408612	0.4	ND
Kurtosis	ND	ND	2.7	2.7	0.5	-0.6	0.5	1	1.0	10	-0.1	ND
Skewness	ND	ND	1.8	1.7	0.7	0.4	1.0	1	1.4	3	0.3	ND
Range	0.0	0.0	890.0	896.0	7.8	15.1	17.1	1437	331.0	6788	2.8	0
Minimum	0.0	0.0	310.0	298.0	0.0	1.9	2.7	613	69.0	12	1.1	0
Maximum	0.0	0.0	1200.0	1194.0	7.8	17.0	19.8	2050	400.0	6800	3.8	0
Count	0	0	26	26	27	27	27	27	27	27	27	0
Confidence Level(95.0%)	ND	ND	92.5	92.4	0.7	1.7	1.8	167	36.0	614	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

BURNHAM SHIP CANAL - SITE 31
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	68.26	32.44	0.1	5.0	10.0	3.2	3.1	18.5	0.0	0.6	0.5	0.0
Standard Error	3.04	1.59	0.1	0.3	1.0	0.4	2.0	1.1	0.0	0.3	0.4	0.0
Median	68.00	33.00	0.0	4.8	9.3	2.7	0.0	19.0	0.0	0.0	0.0	0.0
Mode	74.00	35.00	0.0	5.3	10.0	2.4	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	15.82	8.25	0.5	1.8	4.9	2.3	10.2	5.7	0.0	1.7	1.9	0.0
Sample Variance	250.20	68.03	0.3	3.1	24.4	5.2	104.1	32.0	0.0	3.0	3.5	0.0
Kurtosis	-0.42	-0.94	23.8	9.3	-0.5	13.6	17.2	0.1	ND	6.8	10.8	ND
Skewness	0.05	-0.21	4.8	2.5	0.3	3.4	4.1	0.5	ND	2.7	3.5	ND
Range	56.00	27.00	2.8	9.2	20.0	11.4	49.0	24.3	0.0	6.7	7.4	0.0
Minimum	42.00	18.00	0.0	2.8	0.0	1.6	0.0	7.7	0.0	0.0	0.0	0.0
Maximum	98.00	45.00	2.8	12.0	20.0	13.0	49.0	32.0	0.0	6.7	7.4	0.0
Count	27	27	27	27	27	27	27	27	27	27	27	3
Confidence Level(95.0%)	6.26	3.26	0.2	0.7	2.0	0.9	4.0	2.2	0.0	0.7	0.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	304	236	0.5	8.3	61.5	54.2	7.1	6.9
Standard Error	14	8	0.2	0.6	1.9	1.8	0.3	0.3
Median	310	240	0.0	7.9	63.0	56.0	6.9	6.6
Mode	280	220	0.0	7.9	69.0	63.0	8.0	7.8
Standard Deviation	72	43	1.1	3.2	9.6	9.3	1.4	1.4
Sample Variance	5141	1887	1.3	10.0	92.9	87.3	1.9	2.0
Kurtosis	-1	0	4.0	-0.1	-0.2	-0.6	-0.4	-0.3
Skewness	0	-1	2.3	0.8	-0.7	-0.5	0.5	0.7
Range	250	150	3.8	11.6	34.0	33.0	5.1	5.1
Minimum	180	150	0.0	4.4	42.0	36.0	4.9	4.9
Maximum	430	300	3.8	16.0	76.0	69.0	10.0	10.0
Count	27	27	27	26	27	26	26	27
Confidence Level(95.0%)	28	17	0.4	1.3	3.8	3.8	0.6	0.6

ND = No Data

Provisional MMSD Water Quality Data

BURLEIGH STREET - SITE 32
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	13.3	10.9	10.61	0.44	0.016	0.45	0.054	0.72	0.090	0.044	ND
Standard Error	0.1	1.9	0.7	2.36	0.06	0.002	0.06	0.010	0.07	0.009	0.007	ND
Median	8.0	11.9	10.3	8.53	0.45	0.015	0.46	0.046	0.73	0.083	0.050	ND
Mode	7.9	22.1	12.7	ND	0.50	0.015	1.10	0.000	1.00	0.130	0.000	ND
Standard Deviation	0.3	8.7	3.4	8.51	0.28	0.009	0.28	0.047	0.31	0.044	0.033	ND
Sample Variance	0.1	75.6	11.4	72.39	0.08	0.000	0.08	0.002	0.10	0.002	0.001	ND
Kurtosis	-0.2	-1.3	-0.6	2.64	0.95	-0.410	1.15	0.495	1.99	-0.308	-0.813	ND
Skewness	0.6	-0.1	0.4	1.93	0.87	0.624	0.94	0.986	0.98	0.112	-0.071	ND
Range	1.0	25.8	11.9	26.69	1.05	0.031	1.04	0.160	1.37	0.170	0.110	0.00
Minimum	7.6	-0.2	6.1	3.31	0.05	0.004	0.06	0.000	0.23	0.000	0.000	0.00
Maximum	8.6	25.6	18.0	30.00	1.10	0.035	1.10	0.160	1.60	0.170	0.110	0.00
Count	22	22	22	13	19	19	20	22	20	22	20	0
Confidence Level(95.0%)	0.1	3.9	1.5	5.14	0.13	0.004	0.13	0.021	0.15	0.019	0.016	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	604.0	591.2	3.0	14.2	10.6	1070	189.7	2752	2.7	1834
Standard Error	ND	ND	43.0	45.0	0.6	3.5	2.6	77	16.1	1482	0.2	627
Median	ND	ND	630.0	626.9	2.2	7.3	5.5	1105	180.0	400	2.6	325
Mode	ND	ND	1000.0	648.0	2.0	13.0	ND	1110	180.0	400	2.6	ND
Standard Deviation	ND	ND	192.3	201.2	2.5	16.2	11.6	361	72.2	6627	0.7	2941
Sample Variance	ND	ND	36962.1	40495.0	6.3	262.0	134.2	130445	5212.0	43914677	0.6	8647517
Kurtosis	ND	ND	1.1	0.8	1.0	2.7	3.5	2	1.6	12	0.3	2
Skewness	ND	ND	0.2	0.1	1.2	1.8	2.0	1	0.9	3	0.9	2
Range	0.0	0.0	810.0	821.0	9.4	57.3	39.0	1666	299.0	27944	2.7	9067
Minimum	0.0	0.0	190.0	177.0	0.0	1.7	2.3	274	81.0	56	1.7	33
Maximum	0.0	0.0	1000.0	998.0	9.4	59.0	41.3	1940	380.0	28000	4.4	9100
Count	0	0	20	20	20	22	20	22	20	20	20	22
Confidence Level(95.0%)	ND	ND	90.0	94.2	1.2	7.2	5.4	160	33.8	3101	0.3	1304

ND = No Data

Provisional MMSD Water Quality Data

BURLEIGH STREET - SITE 32
MENOMONEE RIVER
WATER QUALITY DATA - 2010

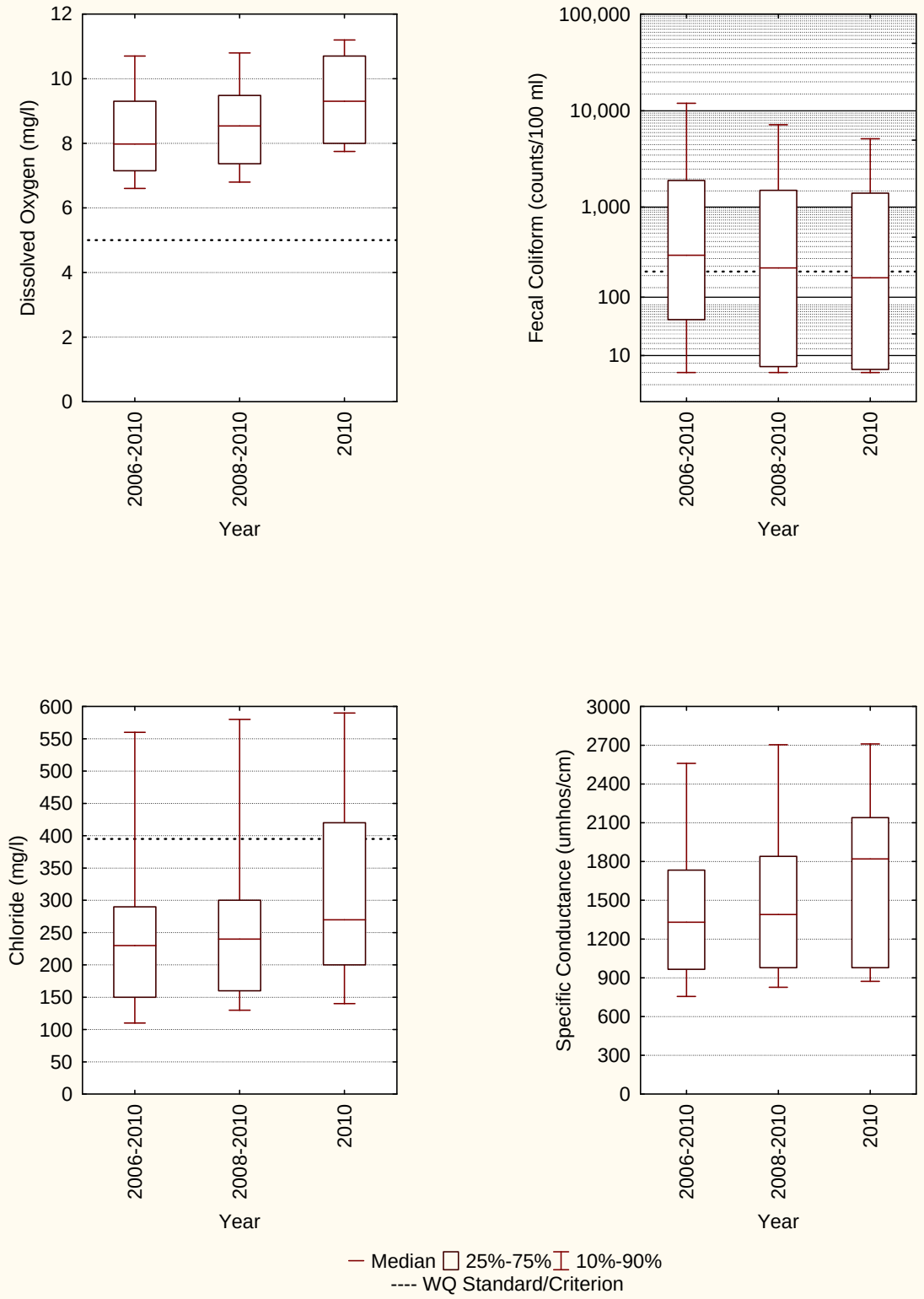
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	69.05	31.56	0.1	4.3	3.5	2.7	0.1	16.4	0.1	0.5	1.3	ND
Standard Error	3.94	2.07	0.1	0.3	0.8	0.2	0.1	1.3	0.1	0.2	0.6	ND
Median	70.00	33.00	0.0	4.4	3.1	3.0	0.0	15.5	0.0	0.0	0.0	ND
Mode	86.00	39.00	0.0	5.1	0.0	3.2	0.0	12.0	0.0	0.0	0.0	ND
Standard Deviation	18.46	9.70	0.4	1.4	3.6	1.1	0.7	6.0	0.3	1.1	2.9	ND
Sample Variance	340.90	94.16	0.1	1.9	13.0	1.2	0.5	36.3	0.1	1.2	8.3	ND
Kurtosis	0.22	0.12	22.0	3.5	-0.2	1.9	22.0	0.2	8.2	2.3	1.7	ND
Skewness	-0.81	-0.65	4.7	-1.4	0.7	-1.2	4.7	0.7	3.1	1.9	1.8	ND
Range	70.00	39.70	1.8	6.5	12.0	4.4	3.2	24.4	1.2	3.5	8.5	0.0
Minimum	24.00	8.30	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0	0.0	0.0
Maximum	94.00	48.00	1.8	6.5	12.0	4.4	3.2	31.0	1.2	3.5	8.5	0.0
Count	22	22	22	22	20	22	22	22	22	22	21	0
Confidence Level(95.0%)	8.19	4.30	0.2	0.6	1.7	0.5	0.3	2.7	0.2	0.5	1.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	302	241	1.2	7.9	65.5	58.0	7.6	7.2
Standard Error	18	12	0.3	1.0	2.7	2.6	0.5	0.4
Median	310	260	0.0	7.3	70.5	60.5	7.2	6.8
Mode	370	280	0.0	4.3	73.0	68.0	5.6	6.8
Standard Deviation	84	53	1.4	4.6	11.9	11.7	2.1	2.0
Sample Variance	7072	2778	2.1	20.9	141.0	137.4	4.3	4.0
Kurtosis	0	-1	-1.2	-0.9	-0.6	-0.7	4.1	1.7
Skewness	-1	-1	0.6	0.0	-0.7	-0.6	1.8	1.5
Range	326	180	4.2	15.0	40.0	39.0	8.5	6.9
Minimum	94	140	0.0	0.0	42.0	37.0	5.5	5.1
Maximum	420	320	4.2	15.0	82.0	76.0	14.0	12.0
Count	22	20	22	20	20	20	20	20
Confidence Level(95.0%)	37	25	0.6	2.1	5.6	5.5	1.0	0.9

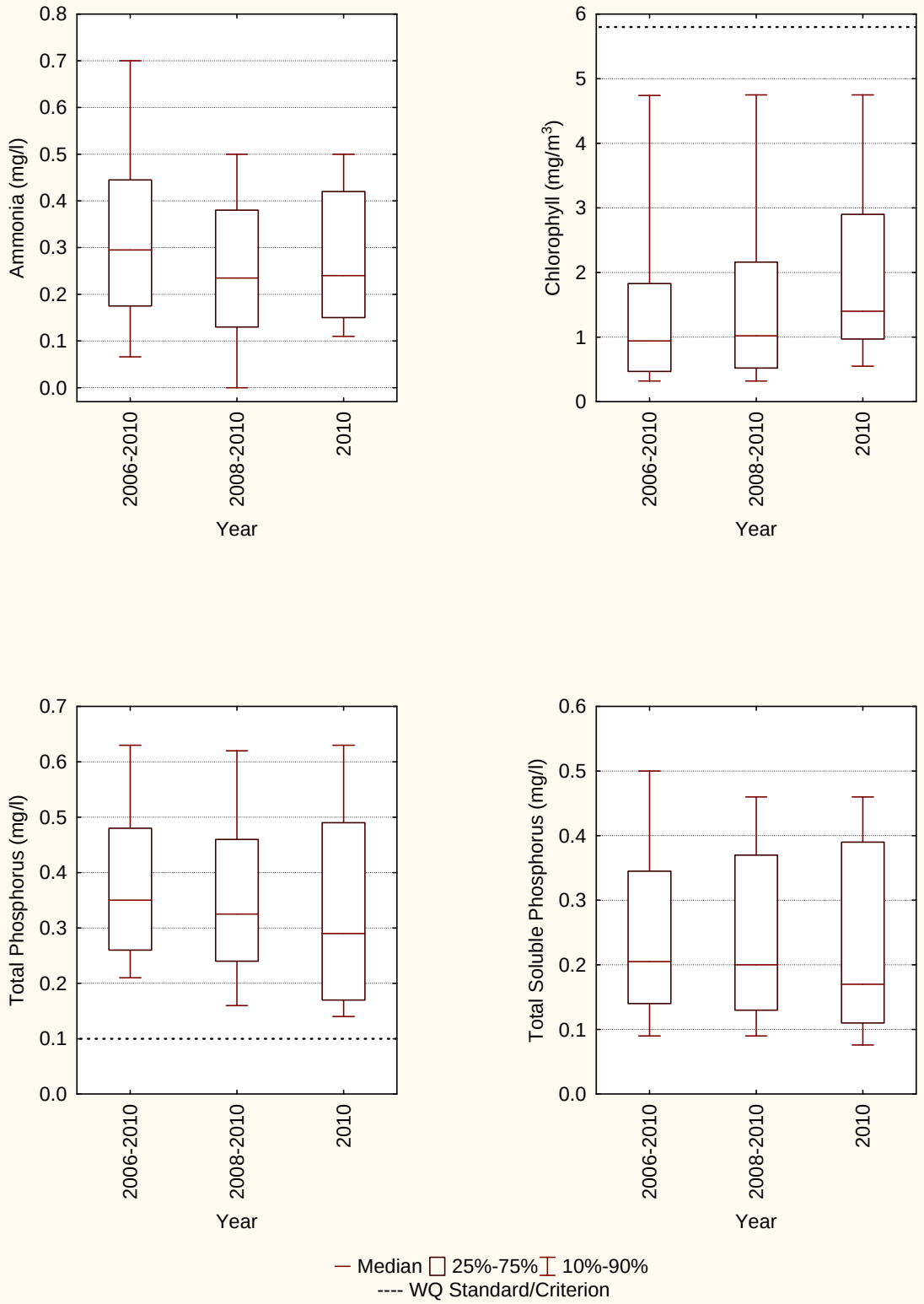
ND = No Data

Provisional MMSD Water Quality Data

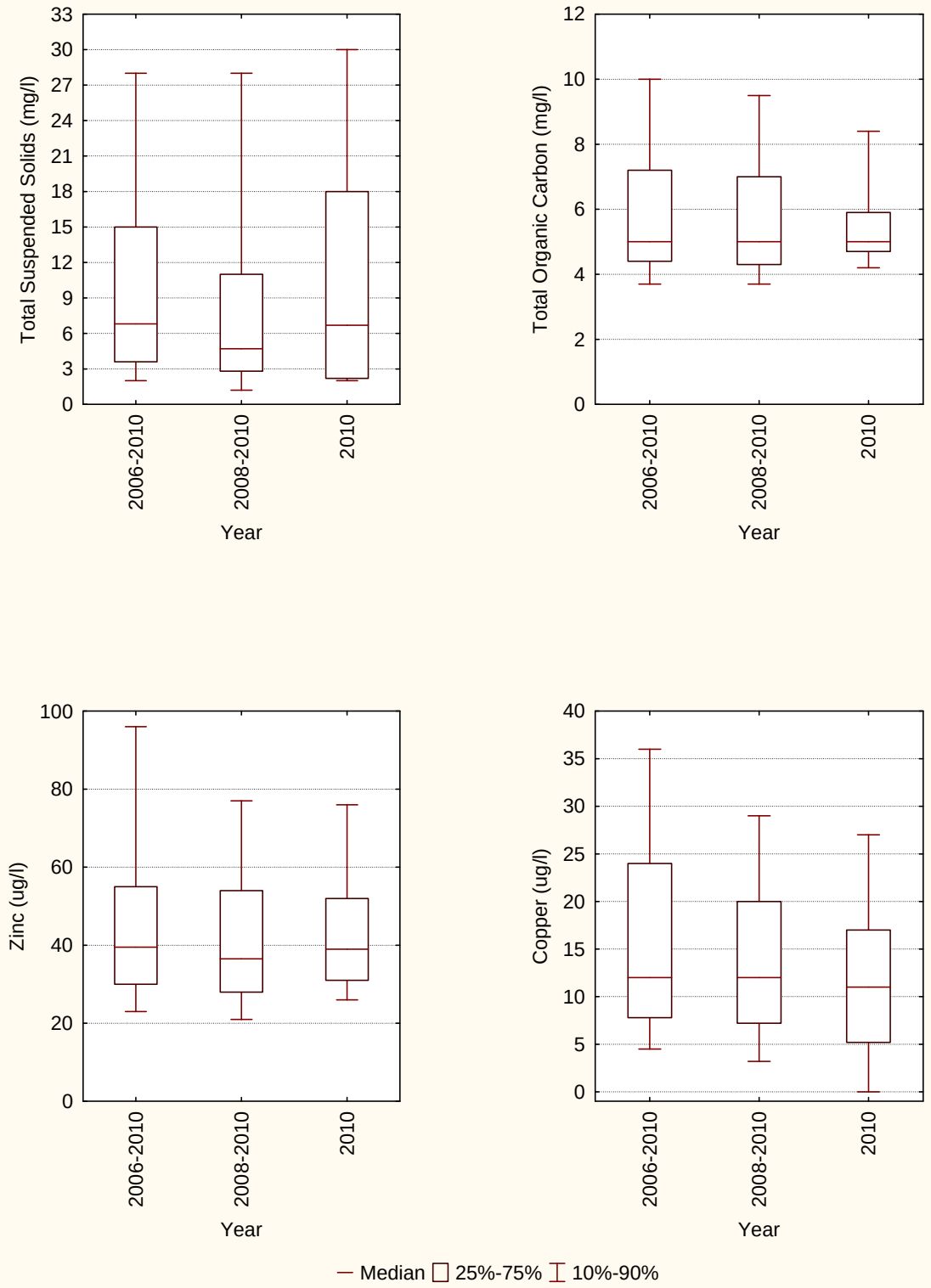
MMSD Water Quality Monitoring Program Data
43rd St. Ditch at Lincoln Ave.,Site RI-33



MMSD Water Quality Monitoring Program Data
43rd St. Ditch at Lincoln Ave., Site RI-33



MMSD Water Quality Monitoring Program Data
43rd St. Ditch at Lincoln Ave., Site RI-33



43RD STREET DITCH - SITE 33
TRIBUTARY TO KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	12.2	9.3	1.90	0.98	0.047	1.02	0.311	0.86	0.386	0.246	ND
Standard Error	0.0	1.3	0.3	0.40	0.08	0.003	0.08	0.049	0.12	0.066	0.040	ND
Median	7.9	11.7	9.3	1.40	0.91	0.044	0.95	0.240	0.70	0.290	0.170	ND
Mode	7.8	10.8	ND	1.46	1.10	0.039	1.20	0.440	0.70	0.160	0.170	ND
Standard Deviation	0.2	6.0	1.5	1.50	0.36	0.013	0.36	0.225	0.56	0.303	0.184	ND
Sample Variance	0.0	36.1	2.4	2.24	0.13	0.000	0.13	0.050	0.32	0.092	0.034	ND
Kurtosis	0.6	-1.2	-1.1	0.40	-0.64	-0.699	-0.85	3.430	5.25	5.433	1.340	ND
Skewness	0.8	0.0	-0.1	1.21	0.37	0.274	0.29	1.685	1.93	2.066	1.291	ND
Range	0.8	19.4	5.1	4.75	1.24	0.047	1.20	0.924	2.70	1.314	0.689	0.00
Minimum	7.7	3.5	6.6	0.22	0.46	0.024	0.50	0.076	0.00	0.086	0.071	0.00
Maximum	8.5	22.9	11.7	4.97	1.70	0.071	1.70	1.000	2.70	1.400	0.760	0.00
Count	21	21	21	14	21	21	21	21	21	21	21	0
Confidence Level(95.0%)	0.1	2.7	0.7	0.86	0.17	0.006	0.16	0.102	0.26	0.138	0.084	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	1057.0	957.4	14.1	96.3	351.2	2037	377.6	1752	1.9	3478
Standard Error	ND	ND	184.8	111.4	10.8	85.2	334.5	435	83.6	938	0.3	2465
Median	ND	ND	1000.0	993.3	2.2	6.7	6.9	1820	270.0	170	2.2	260
Mode	ND	ND	1000.0	ND	0.0	2.2	ND	ND	590.0	0	0.0	190
Standard Deviation	ND	ND	826.4	498.2	49.6	390.6	1532.8	1991	382.9	4194	1.5	11298
Sample Variance	ND	ND	682927.4	248221.1	2459.8	152539.5	2349552.1	3965013	146649.0	17590767	2.1	127650531
Kurtosis	ND	ND	11.7	2.3	20.8	21.0	21.0	16	13.5	13	-1.4	19
Skewness	ND	ND	3.1	1.2	4.5	4.6	4.6	4	3.4	3	-0.1	4
Range	0.0	0.0	3960.0	2166.7	230.0	1800.0	7038.4	9788	1840.0	18000	4.3	51999
Minimum	0.0	0.0	240.0	233.3	0.0	0.0	1.6	412	60.0	0	0.0	1
Maximum	0.0	0.0	4200.0	2400.0	230.0	1800.0	7040.0	10200	1900.0	18000	4.3	52000
Count	0	0	20	20	21	21	21	21	21	20	20	21
Confidence Level(95.0%)	ND	ND	386.8	233.2	22.6	177.8	697.7	906	174.3	1963	0.7	5143

ND = No Data

Provisional MMSD Water Quality Data

43RD STREET DITCH - SITE 33
TRIBUTARY TO KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

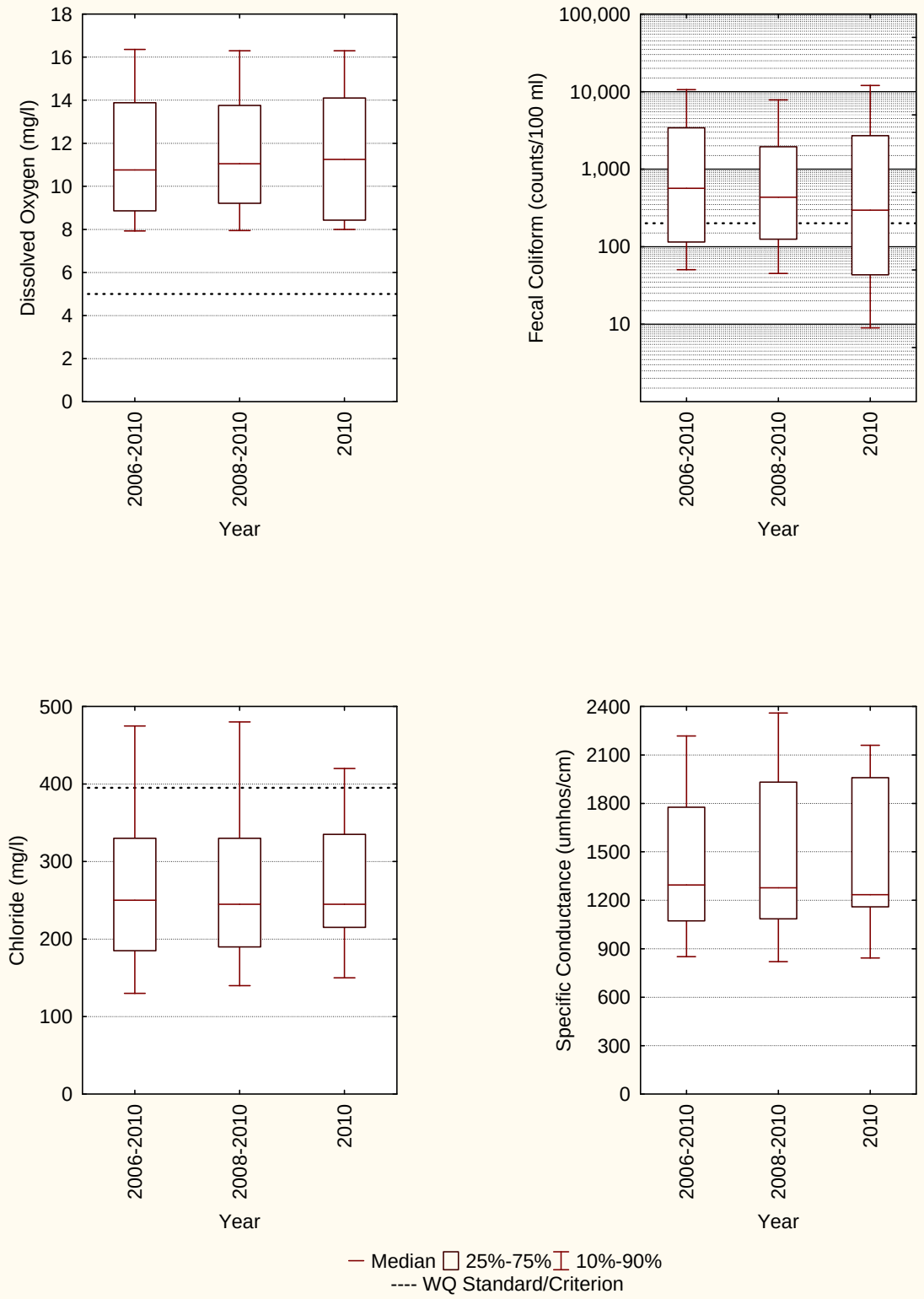
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	90.29	31.36	0.0	9.5	13.7	7.8	1.2	47.8	0.0	0.8	0.9	ND
Standard Error	9.07	3.53	0.0	4.0	2.7	3.5	1.0	6.4	0.0	0.4	0.6	ND
Median	85.00	28.00	0.0	5.1	11.0	4.2	0.0	39.0	0.0	0.0	0.0	ND
Mode	100.00	29.00	0.0	5.8	0.0	5.2	0.0	36.0	0.0	0.0	0.0	ND
Standard Deviation	41.56	16.16	0.1	18.1	12.4	16.2	4.6	29.5	0.0	1.7	2.7	ND
Sample Variance	1727.01	261.09	0.0	328.9	153.1	261.0	21.1	871.9	0.0	2.9	7.1	ND
Kurtosis	8.38	10.29	21.0	20.3	4.8	20.5	19.8	4.5	ND	2.8	7.2	ND
Skewness	2.33	2.71	4.6	4.5	1.8	4.5	4.4	2.1	ND	2.0	2.9	ND
Range	213.00	84.40	0.5	85.6	54.0	75.8	21.0	123.0	0.0	5.4	9.1	0.0
Minimum	27.00	7.60	0.0	2.4	0.0	2.2	0.0	17.0	0.0	0.0	0.0	0.0
Maximum	240.00	92.00	0.5	88.0	54.0	78.0	21.0	140.0	0.0	5.4	9.1	0.0
Count	21	21	21	21	21	21	21	21	21	21	20	0
Confidence Level(95.0%)	18.92	7.36	0.0	8.3	5.6	7.4	2.1	13.4	0.0	0.8	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	356	215	2.6	12.7	57.6	52.3	5.6	5.4
Standard Error	37	12	0.6	1.8	3.7	3.9	0.4	0.4
Median	330	210	2.6	13.0	55.0	49.0	5.0	4.7
Mode	330	190	0.0	0.0	68.0	45.0	5.0	4.4
Standard Deviation	169	54	2.8	8.4	17.0	17.8	1.7	1.8
Sample Variance	28537	2953	7.7	69.9	289.9	317.2	2.9	3.4
Kurtosis	9	0	0.7	0.5	3.7	4.8	0.3	1.0
Skewness	2	-1	0.9	0.5	1.2	1.5	1.2	1.4
Range	872	206	10.0	31.0	84.0	89.0	5.9	6.6
Minimum	98	84	0.0	0.0	26.0	21.0	3.6	3.4
Maximum	970	290	10.0	31.0	110.0	110.0	9.5	10.0
Count	21	21	21	21	21	21	21	21
Confidence Level(95.0%)	77	25	1.3	3.8	7.7	8.1	0.8	0.8

ND = No Data

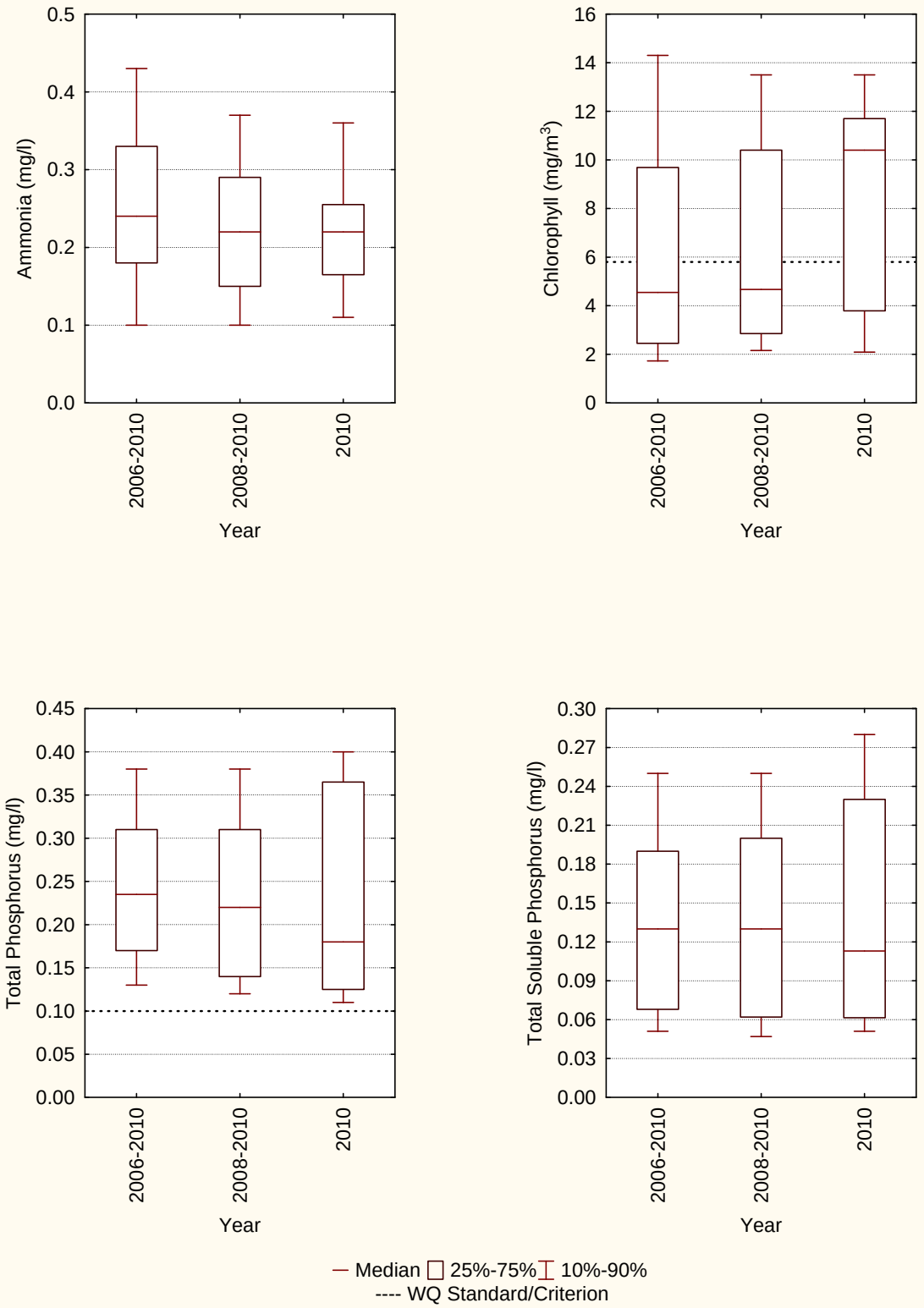
Provisional MMSD Water Quality Data

MMSD Water Quality Monitoring Program Data
Kinnickinnic River at W. Forest Home Ave., near 37th and Montana, Site RI-34

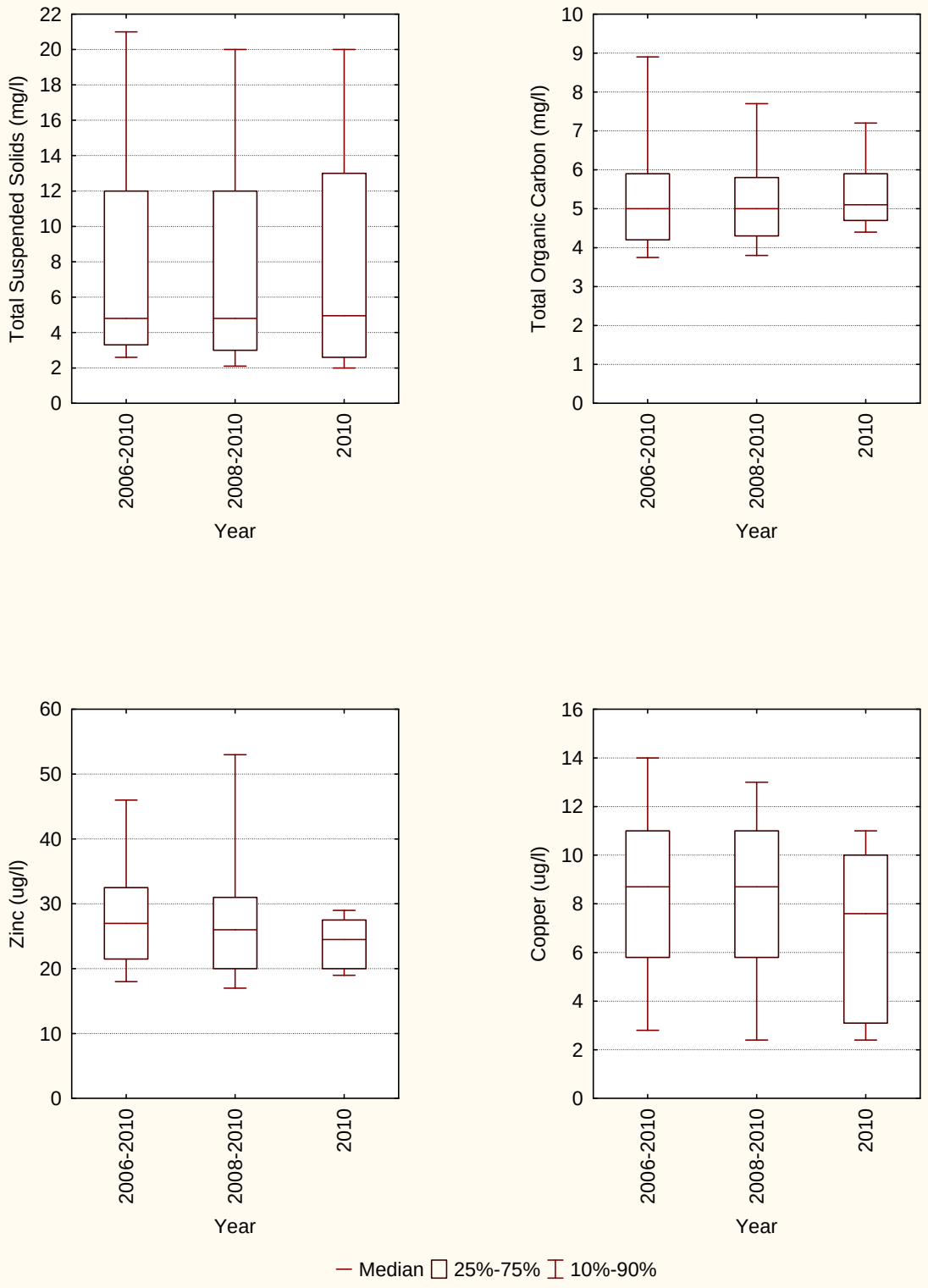


— Median ☐ 25%-75% ⊥ 10%-90%
---- WQ Standard/Criterion

MMSD Water Quality Monitoring Program Data
Kinnickinnic River at W. Forest Home Ave., near 37th and Montana, Site RI-34



MMSD Water Quality Monitoring Program Data
Kinnickinnic River at W. Forest Home Ave., near 37th and Montana, Site RI-34



JACKSON PARK LAGOON - SITE 34
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	14.6	11.7	8.19	0.86	0.036	0.89	0.218	0.81	0.235	0.147	ND
Standard Error	0.1	1.5	0.8	1.56	0.11	0.002	0.11	0.020	0.09	0.031	0.024	ND
Median	7.9	14.5	11.3	10.40	0.76	0.034	0.80	0.220	0.82	0.180	0.113	ND
Mode	7.6	ND	10.7	ND	1.40	0.044	1.60	0.220	ND	0.120	0.060	ND
Standard Deviation	0.3	6.2	3.2	4.67	0.44	0.009	0.44	0.081	0.36	0.124	0.096	ND
Sample Variance	0.1	38.2	10.5	21.84	0.19	0.000	0.20	0.007	0.13	0.015	0.009	ND
Kurtosis	-1.0	0.0	-0.7	-2.13	-1.27	-0.551	-1.22	-0.011	2.57	-1.890	-1.314	ND
Skewness	0.3	-0.3	0.5	-0.20	0.48	0.212	0.51	0.479	1.37	0.298	0.526	ND
Range	0.9	22.3	10.5	11.41	1.25	0.034	1.23	0.280	1.44	0.313	0.273	0.00
Minimum	7.5	1.0	7.6	2.09	0.35	0.020	0.37	0.100	0.36	0.097	0.047	0.00
Maximum	8.4	23.3	18.1	13.50	1.60	0.054	1.60	0.380	1.80	0.410	0.320	0.00
Count	16	16	16	9	16	16	16	16	16	16	16	0
Confidence Level(95.0%)	0.1	3.3	1.7	3.59	0.23	0.005	0.24	0.043	0.19	0.066	0.051	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	787.5	779.0	2.9	8.5	8.8	1437	265.3	4822	2.5	1190
Standard Error	ND	ND	74.2	75.0	0.7	1.7	2.0	137	26.8	3130	0.3	585
Median	ND	ND	695.0	685.8	2.5	5.0	5.6	1235	245.0	295	2.5	245
Mode	ND	ND	1100.0	ND	0.0	12.0	ND	1200	230.0	ND	ND	ND
Standard Deviation	ND	ND	296.8	300.0	2.6	6.9	8.0	549	107.1	12521	1.2	2340
Sample Variance	ND	ND	88100.0	90018.1	6.9	47.1	63.3	301588	11467.7	156764490	1.5	5475838
Kurtosis	ND	ND	0.2	0.2	0.8	-1.1	1.9	0	0.5	13	-0.2	8
Skewness	ND	ND	0.2	0.2	1.1	0.7	1.6	0	0.2	4	-0.1	3
Range	0.0	0.0	1200.0	1208.0	9.2	18.2	26.1	2085	436.0	50000	4.7	8800
Minimum	0.0	0.0	200.0	180.0	0.0	1.8	2.6	365	44.0	0	0.0	0
Maximum	0.0	0.0	1400.0	1388.0	9.2	20.0	28.7	2450	480.0	50000	4.7	8800
Count	0	0	16	16	16	16	16	16	16	16	16	16
Confidence Level(95.0%)	ND	ND	158.2	159.9	1.4	3.7	4.2	293	57.1	6672	0.7	1247

ND = No Data

Provisional MMSD Water Quality Data

JACKSON PARK LAGOON - SITE 34
KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	75.19	30.16	0.1	5.0	6.6	3.8	0.8	24.7	0.0	0.4	0.9	ND
Standard Error	5.31	2.71	0.0	0.4	1.2	0.5	0.5	1.3	0.0	0.3	0.6	ND
Median	73.00	27.50	0.0	5.2	7.6	2.9	0.0	24.5	0.0	0.0	0.0	ND
Mode	58.00	46.00	0.0	6.3	11.0	2.7	0.0	27.0	0.0	0.0	0.0	ND
Standard Deviation	21.24	10.82	0.2	1.6	4.2	1.9	1.9	5.1	0.0	1.0	2.5	ND
Sample Variance	450.96	117.14	0.0	2.7	17.7	3.6	3.5	25.7	0.0	1.0	6.2	ND
Kurtosis	1.44	0.09	5.4	-1.1	-1.0	3.6	3.9	1.8	ND	8.2	5.8	ND
Skewness	-0.67	-0.13	2.6	0.2	0.2	1.8	2.2	1.0	ND	2.9	2.6	ND
Range	88.00	39.40	0.6	5.0	14.0	7.4	5.8	19.0	0.0	3.6	8.2	0.0
Minimum	22.00	6.60	0.0	2.9	0.0	1.8	0.0	19.0	0.0	0.0	0.0	0.0
Maximum	110.00	46.00	0.6	7.9	14.0	9.2	5.8	38.0	0.0	3.6	8.2	0.0
Count	16	16	16	16	13	16	16	16	16	16	16	0
Confidence Level(95.0%)	11.32	5.77	0.1	0.9	2.5	1.0	1.0	2.7	0.0	0.5	1.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	311	218	1.8	9.5	56.8	51.4	5.4	5.0
Standard Error	24	13	0.5	1.0	3.2	3.2	0.2	0.2
Median	290	220	1.2	8.8	56.0	50.0	5.1	4.7
Mode	270	220	0.0	12.0	67.0	49.0	5.2	4.1
Standard Deviation	97	54	2.0	4.1	12.7	12.7	1.0	1.0
Sample Variance	9453	2872	3.9	17.1	161.4	161.3	1.0	0.9
Kurtosis	1	4	-1.6	0.3	3.3	3.1	1.0	1.6
Skewness	0	-1	0.4	0.9	-1.0	-0.9	1.2	1.4
Range	387	245	5.2	14.5	58.0	58.0	3.5	3.4
Minimum	83	65	0.0	4.5	22.0	17.0	4.2	3.8
Maximum	470	310	5.2	19.0	80.0	75.0	7.7	7.2
Count	16	16	16	16	16	16	16	16
Confidence Level(95.0%)	52	29	1.1	2.2	6.8	6.8	0.5	0.5

ND = No Data

Provisional MMSD Water Quality Data

WILSON PARK CREEK - SITE 35
TRIBUTARY TO KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	11.5	11.5	2.73	0.22	0.017	0.24	0.036	0.47	0.087	0.034	ND
Standard Error	0.1	1.7	0.7	0.70	0.05	0.004	0.06	0.012	0.06	0.014	0.011	ND
Median	8.1	10.9	12.0	1.88	0.13	0.010	0.13	0.019	0.47	0.076	0.032	ND
Mode	8.0	ND	ND	ND	0.05	0.000	ND	0.000	0.00	0.100	0.000	ND
Standard Deviation	0.4	7.7	3.0	2.52	0.23	0.019	0.25	0.053	0.27	0.064	0.049	ND
Sample Variance	0.1	60.0	8.9	6.36	0.05	0.000	0.06	0.003	0.08	0.004	0.002	ND
Kurtosis	0.0	-1.0	-0.8	2.89	1.27	2.169	0.83	9.915	0.18	9.584	8.892	ND
Skewness	-0.5	0.2	-0.1	1.84	1.42	1.526	1.32	2.868	0.21	2.678	2.620	ND
Range	1.4	23.7	11.1	8.35	0.83	0.071	0.86	0.230	1.10	0.320	0.210	0.00
Minimum	7.3	-0.3	6.1	0.81	0.00	0.000	0.00	0.000	0.00	0.000	0.000	0.00
Maximum	8.7	23.4	17.2	9.16	0.83	0.071	0.86	0.230	1.10	0.320	0.210	0.00
Count	20	20	20	13	20	20	20	20	20	20	20	0
Confidence Level(95.0%)	0.2	3.6	1.4	1.52	0.11	0.009	0.12	0.025	0.13	0.030	0.023	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	817.9	811.2	3.5	8.8	8.9	2188	454.3	2600	2.8	2472
Standard Error	ND	ND	75.1	75.0	1.2	2.6	2.4	719	195.4	1191	0.2	1250
Median	ND	ND	770.0	766.4	1.7	3.8	4.2	1430	250.0	460	2.7	685
Mode	ND	ND	1000.0	ND	0.0	12.0	ND	ND	280.0	460	2.7	870
Standard Deviation	ND	ND	327.2	326.8	5.4	11.8	10.8	3214	873.8	5325	0.8	5590
Sample Variance	ND	ND	107028.7	106775.7	29.4	138.3	117.0	10331924	763487.7	28360291	0.6	31246372
Kurtosis	ND	ND	0.7	0.6	11.5	7.7	2.7	18	18.4	10	-0.1	16
Skewness	ND	ND	0.9	0.8	3.2	2.6	1.9	4	4.2	3	0.2	4
Range	0.0	0.0	1320.0	1333.0	24.0	50.0	37.0	15123	4044.0	21967	2.8	24972
Minimum	0.0	0.0	280.0	255.0	0.0	0.0	1.1	477	56.0	33	1.5	28
Maximum	0.0	0.0	1600.0	1588.0	24.0	50.0	38.1	15600	4100.0	22000	4.3	25000
Count	0	0	19	19	20	20	20	20	20	20	20	20
Confidence Level(95.0%)	ND	ND	157.7	157.5	2.5	5.5	5.1	1504	408.9	2492	0.4	2616

ND = No Data

Provisional MMSD Water Quality Data

WILSON PARK CREEK - SITE 35
TRIBUTARY TO KINNICKINNIC RIVER
WATER QUALITY DATA - 2010

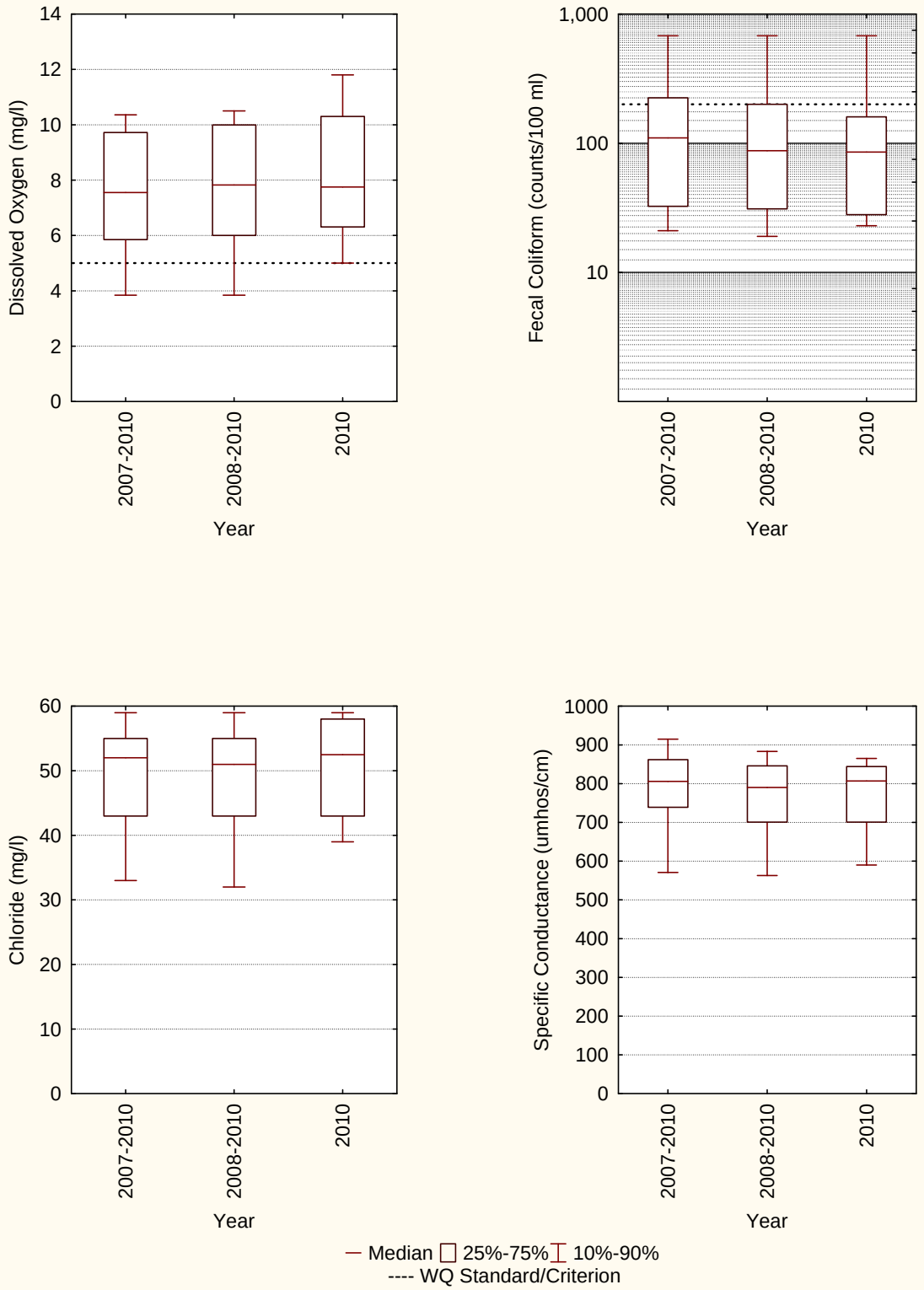
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	77.85	35.78	0.0	6.5	4.9	3.2	0.4	27.0	0.0	0.3	0.7	ND
Standard Error	4.29	1.96	0.0	0.9	1.2	0.5	0.3	7.0	0.0	0.2	0.5	ND
Median	78.00	37.00	0.0	5.5	3.2	3.2	0.0	18.5	0.0	0.0	0.0	ND
Mode	94.00	35.00	0.0	6.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0	ND
Standard Deviation	19.19	8.78	0.1	3.9	5.0	2.0	1.3	31.3	0.0	0.9	2.1	ND
Sample Variance	368.13	77.05	0.0	15.1	24.6	4.1	1.7	976.6	0.0	0.8	4.5	ND
Kurtosis	1.82	3.03	20.0	5.5	0.0	1.0	7.8	13.9	ND	10.0	6.9	ND
Skewness	-0.35	-1.45	4.5	2.2	0.9	0.5	3.0	3.5	ND	3.2	2.8	ND
Range	92.00	37.40	0.6	16.1	16.0	7.8	4.7	140.6	0.0	3.5	7.3	0.0
Minimum	28.00	9.60	0.0	2.9	0.0	0.0	0.0	9.4	0.0	0.0	0.0	0.0
Maximum	120.00	47.00	0.6	19.0	16.0	7.8	4.7	150.0	0.0	3.5	7.3	0.0
Count	20	20	20	20	17	20	20	20	20	20	19	0
Confidence Level(95.0%)	8.98	4.11	0.1	1.8	2.5	0.9	0.6	14.6	0.0	0.4	1.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	341	233	5.7	17.0	64.3	52.0	12.5	11.9
Standard Error	18	10	1.5	5.0	3.4	2.5	3.6	3.5
Median	345	240	3.7	9.7	60.5	54.0	6.2	6.2
Mode	400	220	0.0	0.0	67.0	55.0	6.2	5.9
Standard Deviation	79	44	6.7	22.5	15.0	11.0	15.9	15.5
Sample Variance	6237	1958	45.5	507.2	224.9	120.6	252.1	239.1
Kurtosis	3	5	-1.0	3.5	1.6	2.3	5.1	5.1
Skewness	-1	-1	0.9	1.9	0.2	-0.7	2.4	2.4
Range	350	218	17.0	85.0	71.0	52.0	59.2	57.4
Minimum	110	92	0.0	0.0	29.0	22.0	2.8	2.6
Maximum	460	310	17.0	85.0	100.0	74.0	62.0	60.0
Count	20	20	20	20	20	20	20	20
Confidence Level(95.0%)	37	21	3.2	10.5	7.0	5.1	7.4	7.2

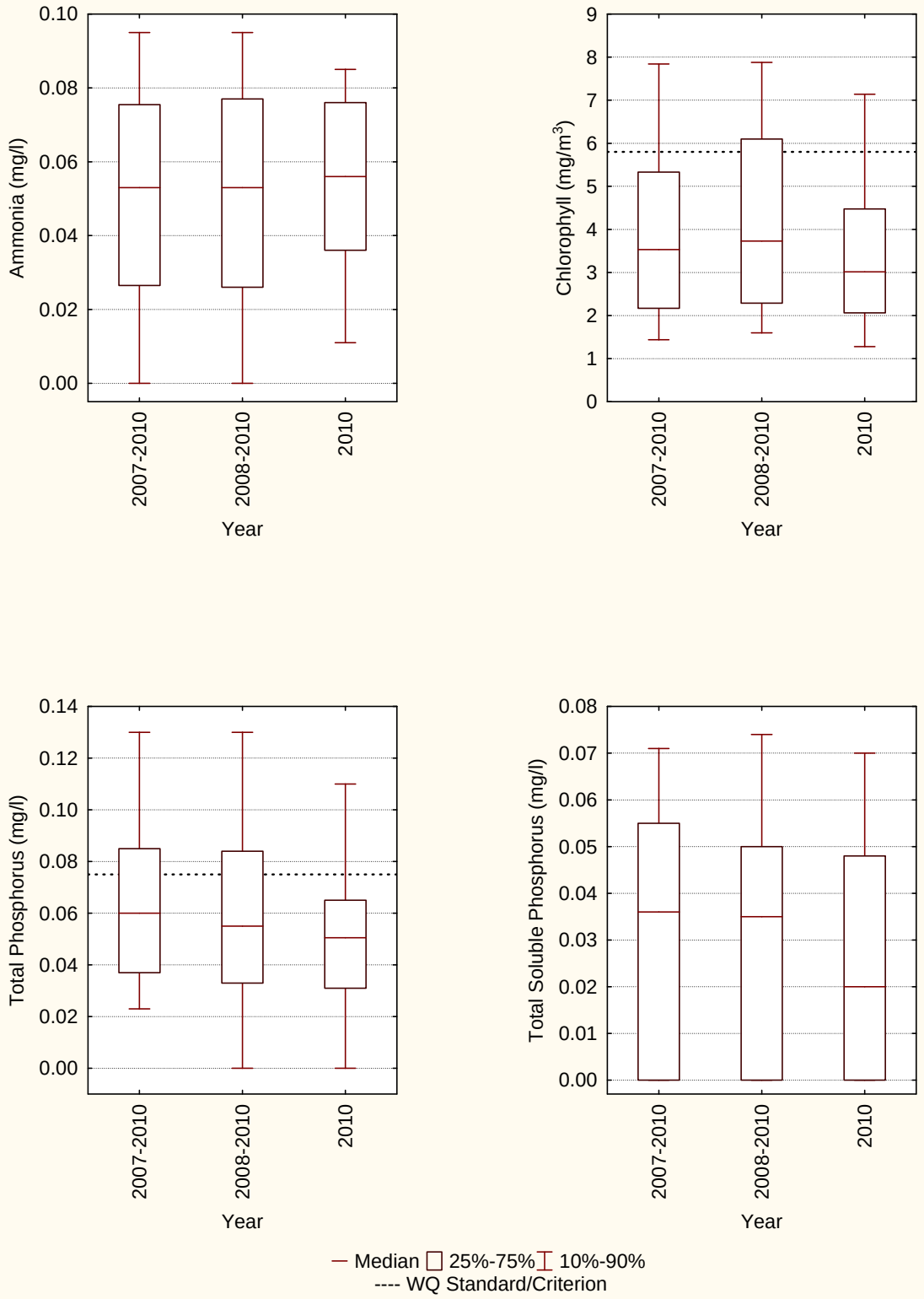
ND = No Data

Provisional MMSD Water Quality Data

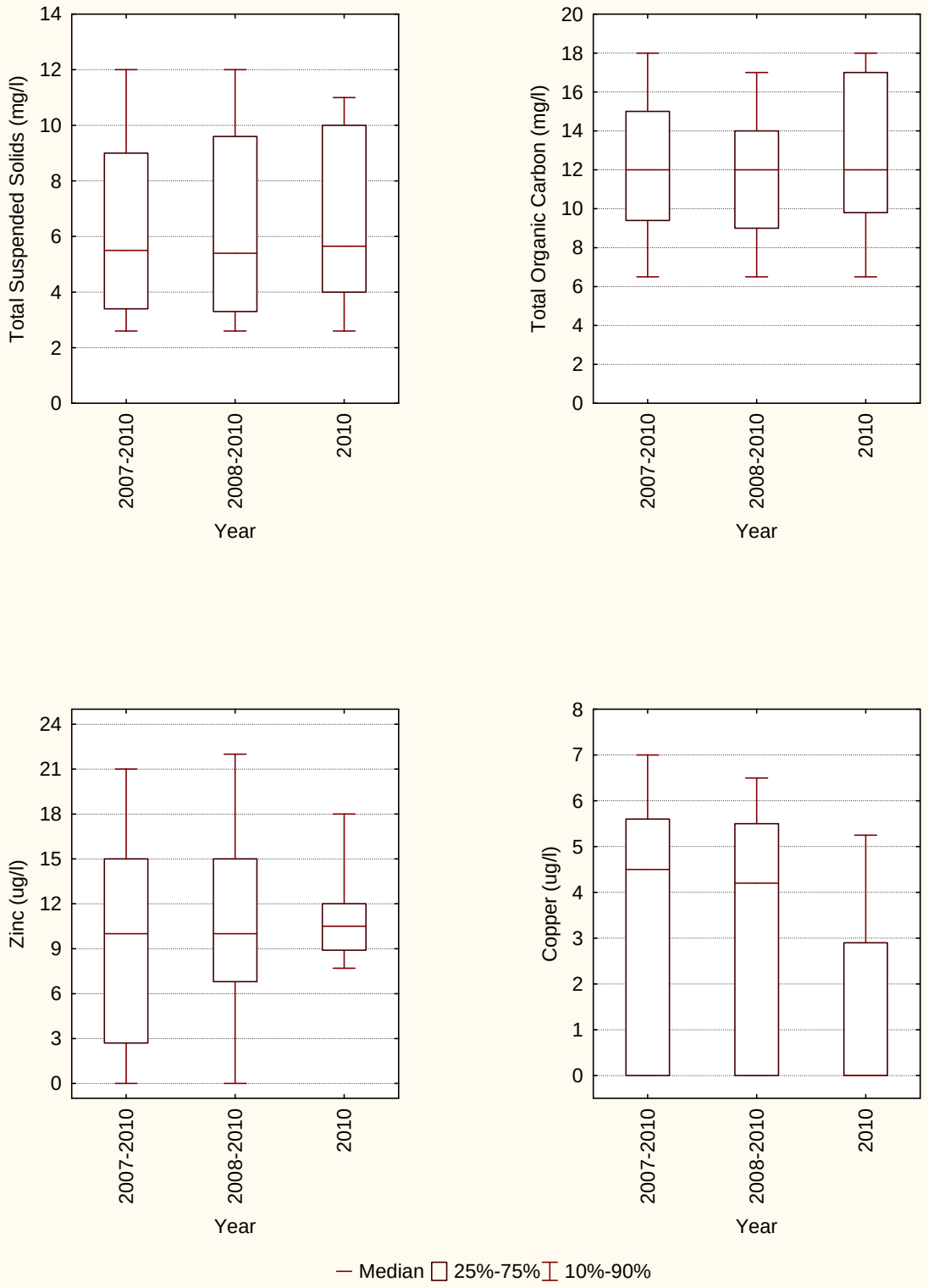
MMSD Water Quality Monitoring Program Data
Menomonee River at Hwy 145 N. of Freistadt Rd., Site RI-36



MMSD Water Quality Monitoring Program Data
Menomonee River at Hwy 145 N. of Freistadt Rd., Site RI-36



MMSD Water Quality Monitoring Program Data
Menomonee River at Hwy 145 N. of Freistadt Rd., Site RI-36



HWY 145, NORTH OF FREISTADT ROAD - SITE 36
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.5	8.8	8.1	3.48	1.48	0.023	1.50	0.054	0.86	0.053	0.028	ND
Standard Error	0.0	1.5	0.6	0.48	0.09	0.003	0.08	0.006	0.08	0.008	0.006	ND
Median	7.6	8.1	7.8	3.02	1.40	0.020	1.45	0.056	0.81	0.051	0.020	ND
Mode	7.6	12.8	9.1	ND	1.40	0.011	1.20	0.036	0.80	0.000	0.000	ND
Standard Deviation	0.2	6.9	2.5	1.93	0.41	0.012	0.39	0.028	0.37	0.040	0.030	ND
Sample Variance	0.0	47.8	6.4	3.72	0.17	0.000	0.15	0.001	0.14	0.002	0.001	ND
Kurtosis	0.2	-1.2	-0.7	0.34	-0.61	-0.592	-0.40	-0.597	0.02	0.057	-1.451	ND
Skewness	-0.4	0.3	0.4	0.85	-0.06	0.702	-0.13	-0.434	-0.29	0.609	0.438	ND
Range	0.8	20.8	8.7	6.67	1.54	0.041	1.52	0.100	1.50	0.140	0.078	0.00
Minimum	7.1	-0.2	4.1	0.90	0.66	0.009	0.68	0.000	0.00	0.000	0.000	0.00
Maximum	7.9	20.6	12.8	7.57	2.20	0.049	2.20	0.100	1.50	0.140	0.078	0.00
Count	22	22	21	16	22	22	22	22	22	22	22	0
Confidence Level(95.0%)	0.1	3.1	1.1	1.03	0.18	0.005	0.17	0.013	0.16	0.018	0.013	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	461.0	454.5	2.2	6.6	4.7	770	49.5	251	1.9	284
Standard Error	ND	ND	18.9	19.2	0.3	0.8	0.5	24	2.0	108	0.1	121
Median	ND	ND	480.0	477.4	1.9	5.7	3.7	807	52.5	86	1.9	87
Mode	ND	ND	480.0	ND	0.0	10.0	ND	844	53.0	23	1.4	13
Standard Deviation	ND	ND	86.6	87.9	1.6	3.7	2.3	111	9.2	507	0.6	566
Sample Variance	ND	ND	7499.0	7726.3	2.5	13.7	5.3	12269	83.9	256664	0.4	319875
Kurtosis	ND	ND	3.1	3.1	3.4	-0.5	1.1	1	-0.6	14	0.2	14
Skewness	ND	ND	-1.4	-1.5	1.4	0.6	1.3	-1	-0.6	4	0.6	4
Range	0.0	0.0	390.0	390.0	7.0	13.8	8.6	390	32.0	2293	2.5	2587
Minimum	0.0	0.0	200.0	190.0	0.0	1.2	2.0	489	30.0	7	0.8	13
Maximum	0.0	0.0	590.0	580.0	7.0	15.0	10.6	879	62.0	2300	3.4	2600
Count	0	0	21	21	22	22	22	22	22	22	22	22
Confidence Level(95.0%)	ND	ND	39.4	40.0	0.7	1.6	1.0	49	4.1	225	0.3	251

ND = No Data

Provisional MMSD Water Quality Data

HWY 145, NORTH OF FREISTADT ROAD - SITE 36
MENOMONEE RIVER
WATER QUALITY DATA - 2010

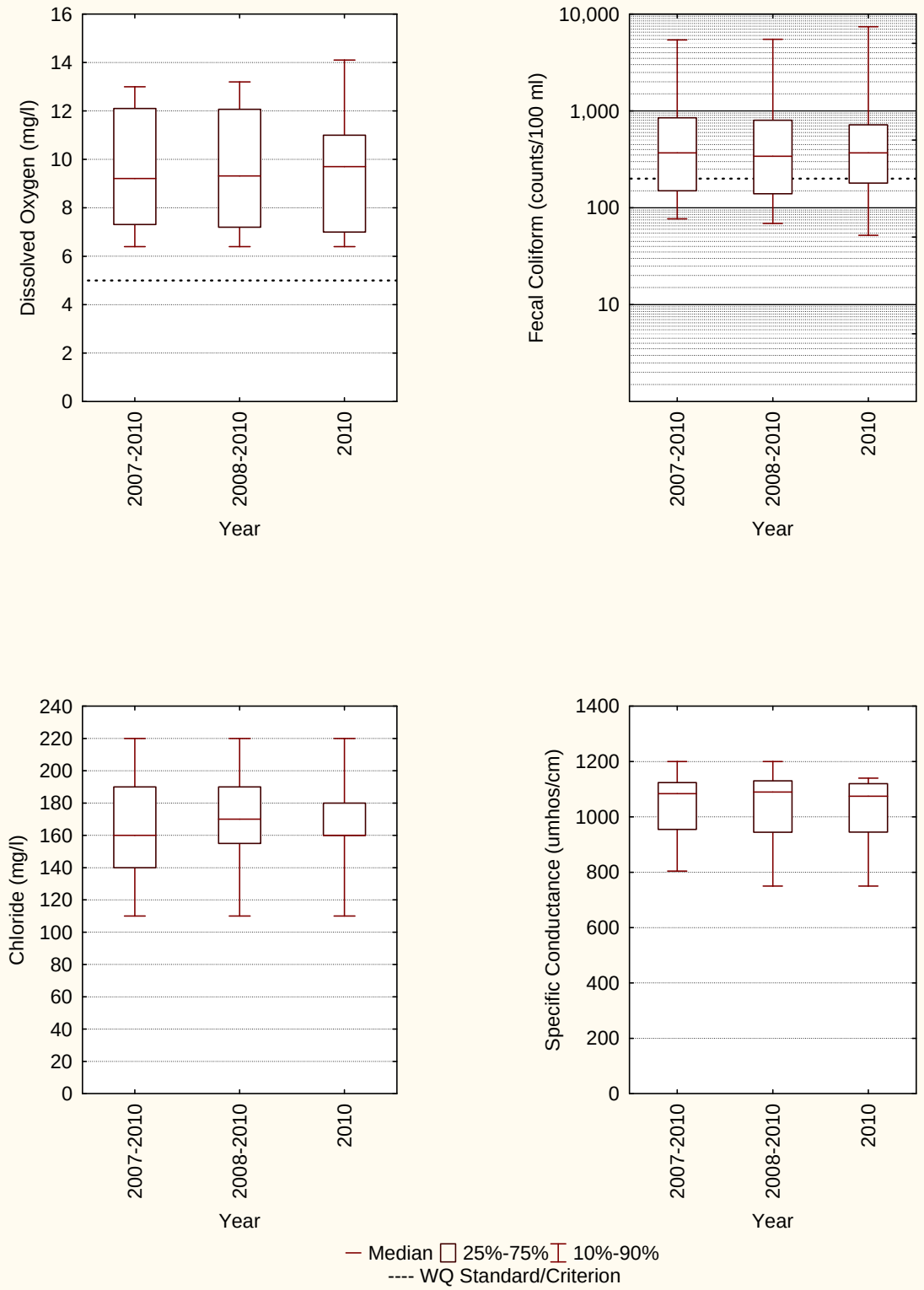
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	78.59	37.64	0.1	4.6	1.5	2.6	0.0	12.3	0.1	1.0	0.3	ND
Standard Error	2.31	1.41	0.1	0.4	0.5	0.3	0.0	1.4	0.1	0.4	0.3	ND
Median	78.00	39.50	0.0	4.1	0.0	2.5	0.0	10.5	0.0	0.0	0.0	ND
Mode	78.00	40.00	0.0	4.1	0.0	2.5	0.0	11.0	0.0	0.0	0.0	ND
Standard Deviation	10.85	6.62	0.6	2.0	2.3	1.3	0.0	6.5	0.3	2.1	1.3	ND
Sample Variance	117.78	43.86	0.3	4.1	5.4	1.7	0.0	42.0	0.1	4.4	1.7	ND
Kurtosis	0.36	-0.20	19.6	8.0	0.9	1.4	ND	10.3	22.0	2.7	19.0	ND
Skewness	-0.63	-0.71	4.4	2.4	1.4	0.2	ND	3.0	4.7	1.9	4.4	ND
Range	43.00	24.00	2.6	9.6	7.4	5.8	0.0	30.2	1.6	7.3	5.7	0.0
Minimum	53.00	23.00	0.0	2.4	0.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0
Maximum	96.00	47.00	2.6	12.0	7.4	5.8	0.0	37.0	1.6	7.3	5.7	0.0
Count	22	22	22	22	20	22	22	22	22	22	19	0
Confidence Level(95.0%)	4.81	2.94	0.2	0.9	1.1	0.6	0.0	2.9	0.2	0.9	0.6	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	351	297	0.2	5.6	83.0	71.5	12.0	11.8
Standard Error	11	11	0.2	0.9	2.5	2.8	1.0	1.0
Median	360	310	0.0	4.8	85.0	74.0	12.0	11.0
Mode	420	290	0.0	0.0	90.0	66.0	12.0	11.0
Standard Deviation	53	51	0.8	4.4	11.9	12.6	4.7	4.7
Sample Variance	2856	2554	0.6	19.1	142.0	159.3	22.4	21.9
Kurtosis	0	1	8.3	-0.6	2.1	0.7	-1.2	-1.0
Skewness	-1	-1	3.1	0.4	-1.3	-1.0	0.0	0.1
Range	190	180	2.8	14.0	49.0	45.0	14.7	15.8
Minimum	230	180	0.0	0.0	51.0	41.0	4.3	4.2
Maximum	420	360	2.8	14.0	100.0	86.0	19.0	20.0
Count	22	22	22	22	22	21	21	21
Confidence Level(95.0%)	24	22	0.3	1.9	5.3	5.7	2.2	2.1

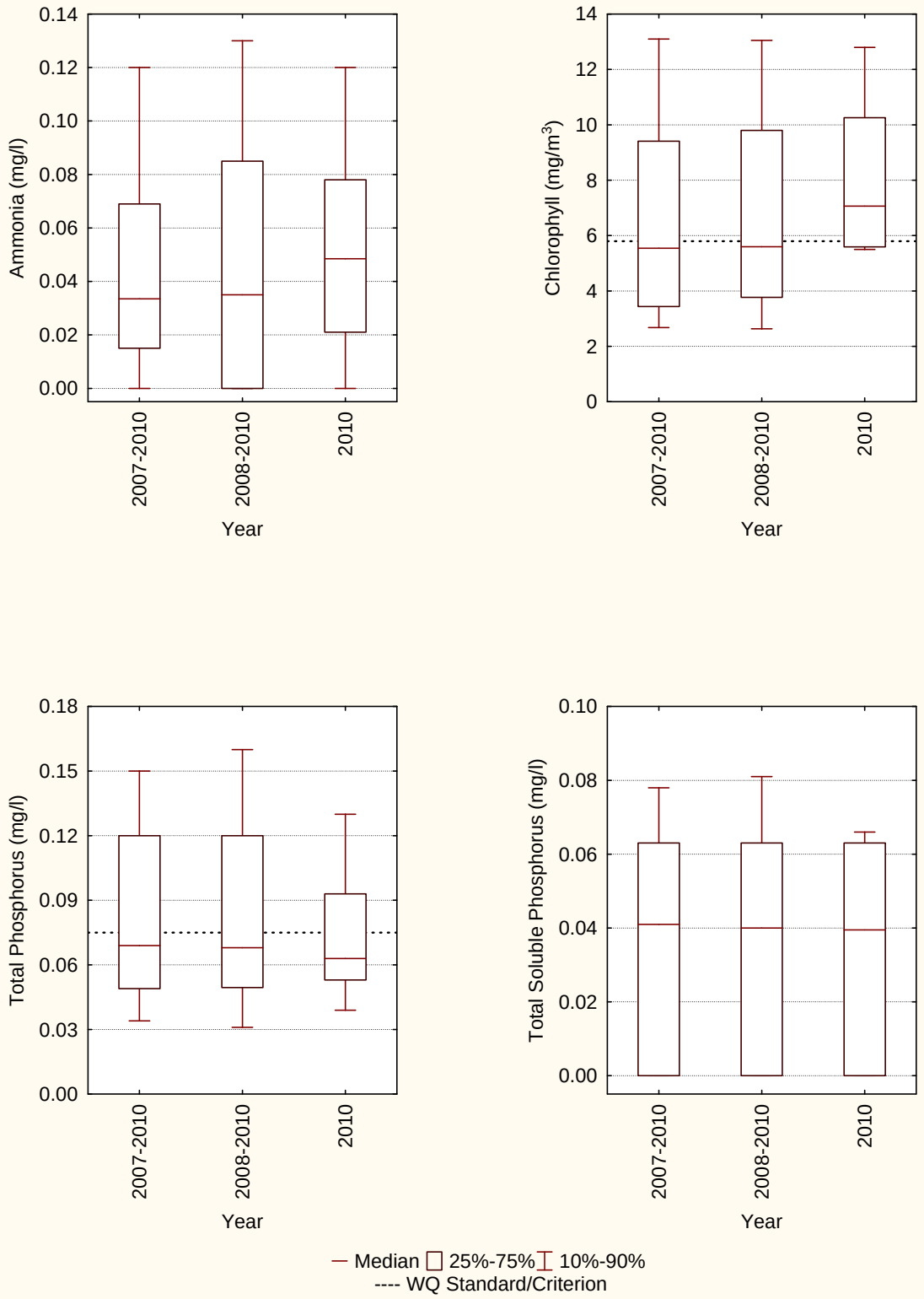
ND = No Data

Provisional MMSD Water Quality Data

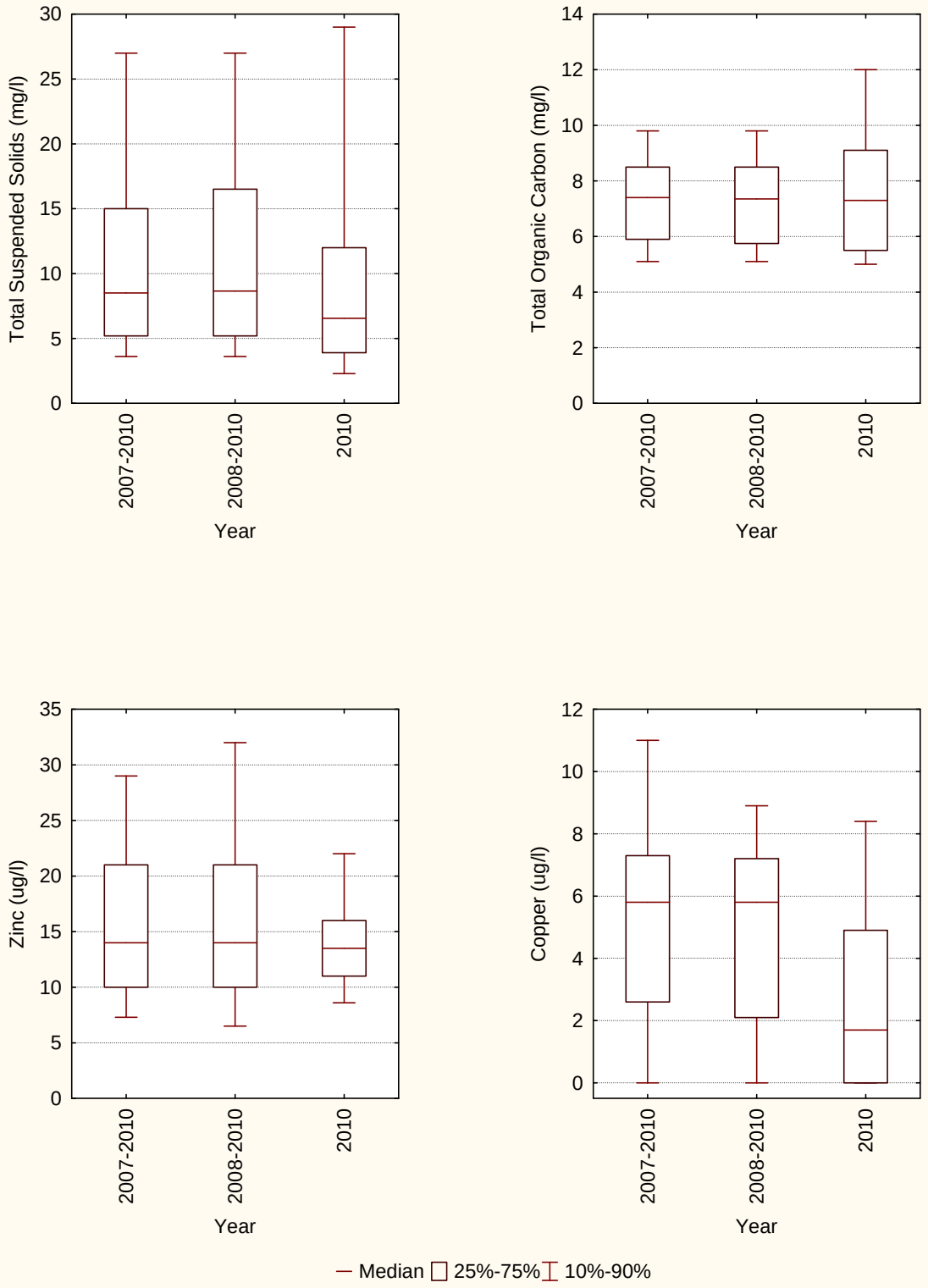
MMSD Water Quality Monitoring Program Data
Menomonee River at Good Hope Rd., Site RI-37



MMSD Water Quality Monitoring Program Data
Menomonee River at Good Hope Rd., Site RI-37



MMSD Water Quality Monitoring Program Data
Menomonee River at Good Hope Rd., Site RI-37



GOOD HOPE ROAD, EAST OF 124TH STREET - SITE 37
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	12.8	9.6	8.05	0.49	0.017	0.51	0.052	0.66	0.073	0.031	ND
Standard Error	0.0	1.7	0.6	0.94	0.06	0.003	0.06	0.009	0.08	0.010	0.007	ND
Median	8.0	10.7	9.7	7.07	0.48	0.014	0.51	0.049	0.75	0.063	0.040	ND
Mode	7.9	ND	10.0	ND	0.48	0.014	0.56	0.000	0.84	0.054	0.000	ND
Standard Deviation	0.2	7.4	2.6	3.24	0.27	0.012	0.27	0.040	0.32	0.040	0.030	ND
Sample Variance	0.0	55.1	6.9	10.52	0.07	0.000	0.07	0.002	0.10	0.002	0.001	ND
Kurtosis	-0.3	-1.4	-0.8	-0.32	4.23	0.029	3.77	-0.585	-0.16	1.984	-1.836	ND
Skewness	0.4	0.1	0.5	0.87	1.49	0.850	1.34	0.518	-0.19	1.036	0.071	ND
Range	0.6	22.3	8.1	10.27	1.17	0.043	1.16	0.130	1.30	0.180	0.076	0.00
Minimum	7.7	1.7	6.4	4.13	0.13	0.000	0.14	0.000	0.00	0.000	0.000	0.00
Maximum	8.3	23.9	14.5	14.40	1.30	0.043	1.30	0.130	1.30	0.180	0.076	0.00
Count	18	18	18	12	18	18	18	18	18	18	18	0
Confidence Level(95.0%)	0.1	3.7	1.3	2.06	0.13	0.006	0.13	0.020	0.16	0.020	0.015	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	599.4	588.4	2.7	11.1	9.1	1050	166.8	2224	2.6	1339
Standard Error	ND	ND	38.5	39.9	0.6	3.1	2.3	59	12.1	1220	0.2	649
Median	ND	ND	620.0	615.9	1.7	6.6	6.0	1075	160.0	370	2.6	390
Mode	ND	ND	630.0	ND	0.0	8.0	ND	1120	160.0	310	2.5	220
Standard Deviation	ND	ND	163.2	169.1	2.6	13.3	9.6	249	51.5	5029	0.8	2754
Sample Variance	ND	ND	26629.1	28608.7	6.9	178.2	92.0	61969	2657.0	25290170	0.6	7583644
Kurtosis	ND	ND	5.2	4.6	2.1	8.5	8.3	6	4.7	11	0.2	9
Skewness	ND	ND	1.3	1.1	1.3	2.8	2.7	1	1.1	3	0.8	3
Range	0.0	0.0	820.0	841.0	10.0	55.8	39.1	1276	257.0	19958	2.7	10952
Minimum	0.0	0.0	280.0	251.0	0.0	1.2	2.9	544	63.0	42	1.6	48
Maximum	0.0	0.0	1100.0	1092.0	10.0	57.0	42.0	1820	320.0	20000	4.3	11000
Count	0	0	18	18	18	18	18	18	18	17	17	18
Confidence Level(95.0%)	ND	ND	81.1	84.1	1.3	6.6	4.8	124	25.6	2586	0.4	1369

ND = No Data

Provisional MMSD Water Quality Data

GOOD HOPE ROAD, EAST OF 124TH STREET - SITE 37
MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	73.06	35.06	0.1	4.5	2.9	2.6	0.0	14.5	0.2	1.6	0.4	ND
Standard Error	3.47	1.88	0.1	0.3	0.8	0.2	0.0	1.4	0.1	0.6	0.4	ND
Median	72.00	37.50	0.0	4.8	1.7	2.6	0.0	13.5	0.0	0.0	0.0	ND
Mode	70.00	38.00	0.0	5.3	0.0	2.9	0.0	11.0	0.0	0.0	0.0	ND
Standard Deviation	14.74	7.99	0.5	1.4	3.3	0.9	0.0	6.1	0.5	2.6	1.5	ND
Sample Variance	217.23	63.82	0.2	1.8	11.1	0.8	0.0	36.9	0.3	6.7	2.1	ND
Kurtosis	1.68	1.82	18.0	0.6	-0.9	3.7	ND	3.0	6.0	1.3	17.0	ND
Skewness	-1.18	-1.14	4.2	0.3	0.7	-1.3	ND	1.5	2.7	1.5	4.1	ND
Range	59.00	34.00	2.1	5.6	9.1	3.8	0.0	25.5	1.7	7.8	6.0	0.0
Minimum	34.00	14.00	0.0	2.1	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0
Maximum	93.00	48.00	2.1	7.7	9.1	3.8	0.0	32.0	1.7	7.8	6.0	0.0
Count	18	18	18	18	16	18	18	18	18	18	17	0
Confidence Level(95.0%)	7.33	3.97	0.2	0.7	1.8	0.4	0.0	3.0	0.3	1.3	0.7	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	327	255	0.7	6.8	68.6	60.8	7.8	7.5
Standard Error	16	11	0.3	1.0	2.5	2.6	0.6	0.6
Median	335	270	0.0	5.3	70.0	64.0	7.3	7.1
Mode	370	280	0.0	12.0	70.0	68.0	9.1	13.0
Standard Deviation	69	45	1.4	4.3	10.3	10.7	2.6	2.5
Sample Variance	4798	1991	1.9	18.3	106.5	114.7	6.6	6.4
Kurtosis	2	3	0.7	-0.7	3.2	2.0	0.5	0.6
Skewness	-1	-2	1.6	0.3	-1.6	-1.4	0.9	1.0
Range	280	180	3.6	14.0	41.0	43.0	9.2	8.4
Minimum	140	130	0.0	0.0	39.0	32.0	4.8	4.6
Maximum	420	310	3.6	14.0	80.0	75.0	14.0	13.0
Count	18	18	18	18	17	17	18	18
Confidence Level(95.0%)	34	22	0.7	2.1	5.3	5.5	1.3	1.3

ND = No Data

Provisional MMSD Water Quality Data

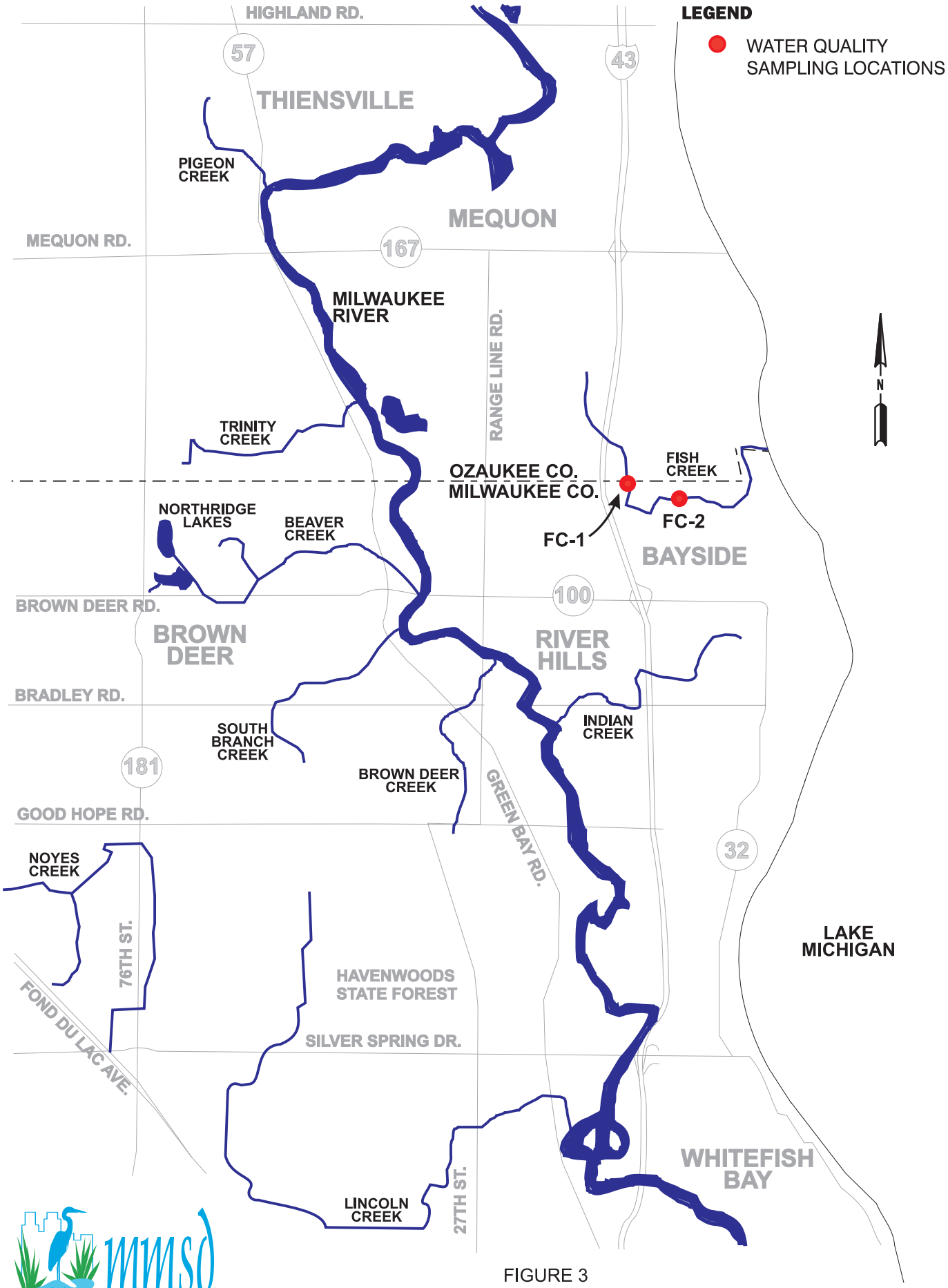


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FIGURE 3
FISH CREEK (FC) SURVEY
WATER QUALITY SAMPLING LOCATIONS
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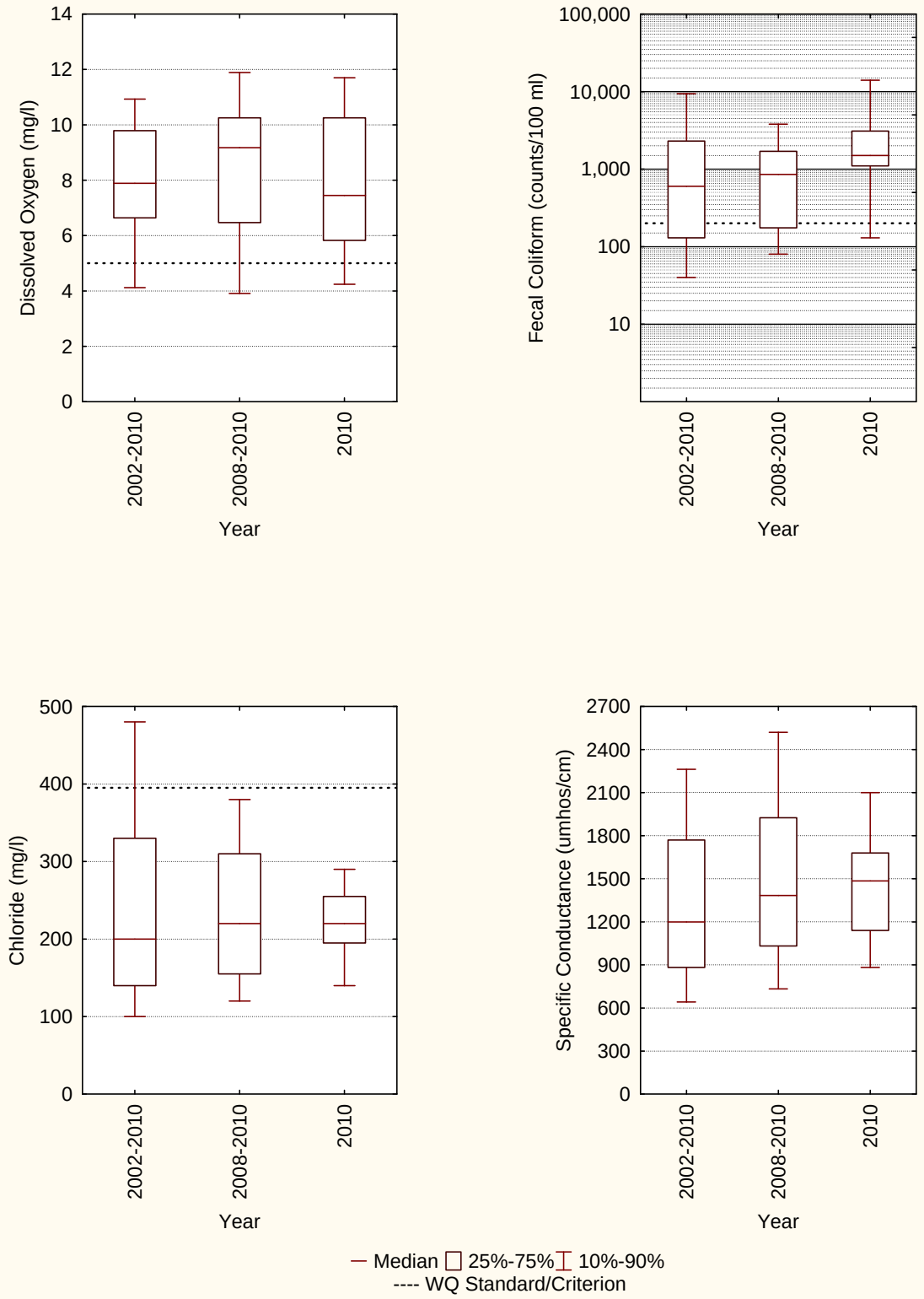
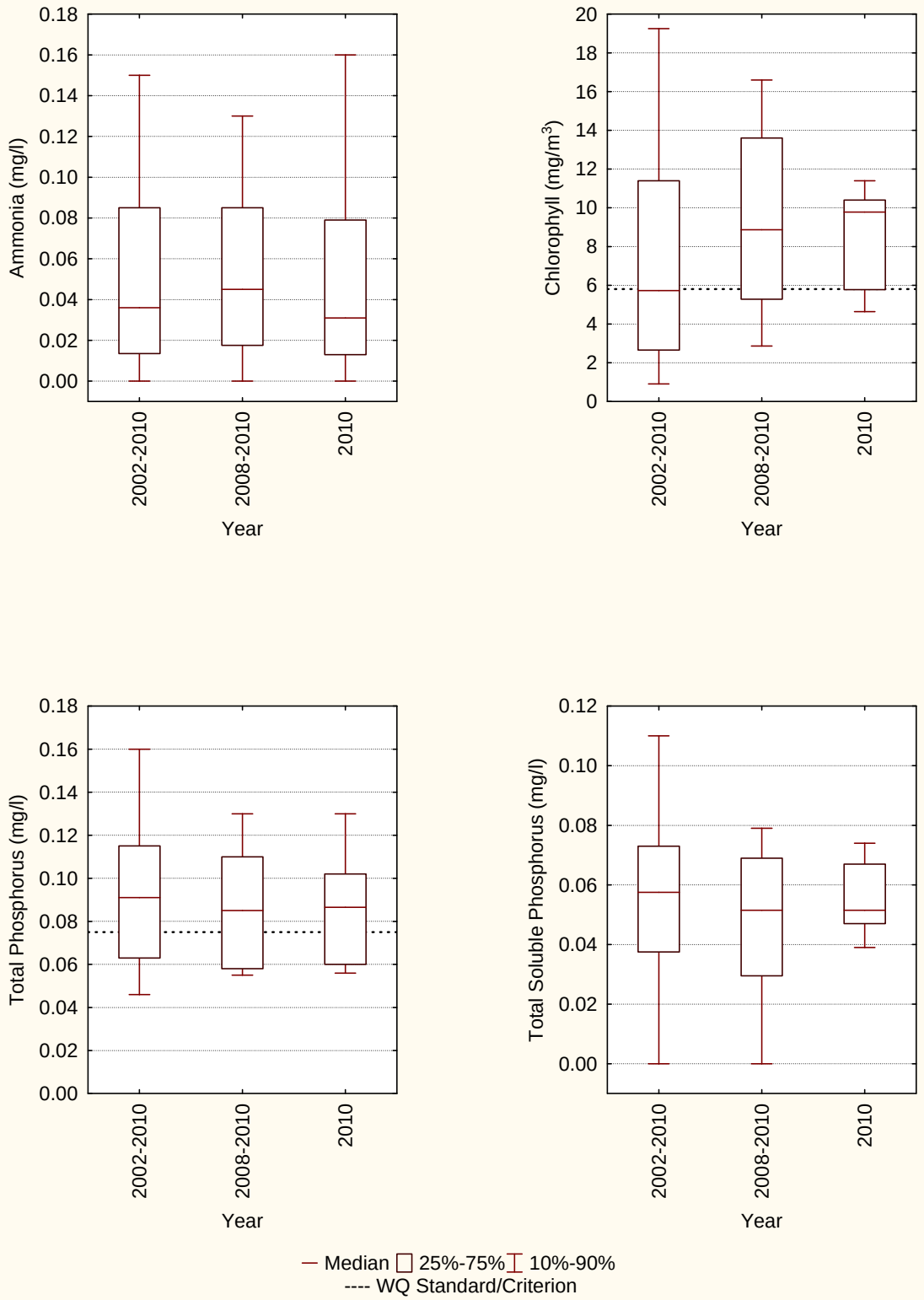
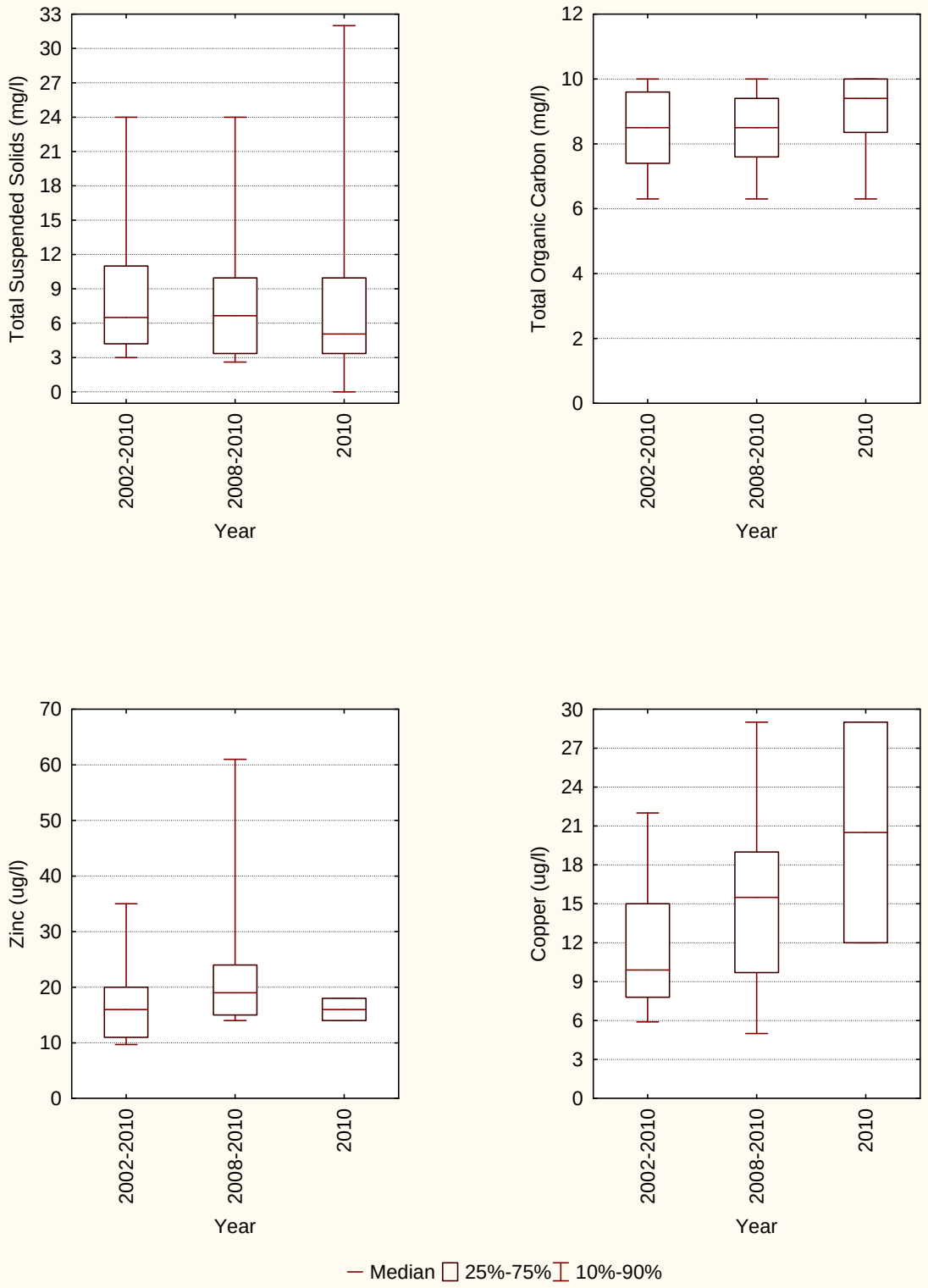
MMSD Water Quality Monitoring Program Data
Fish Creek at Port Washington Rd. and Katherine Ln., Site FC-01



MMSD Water Quality Monitoring Program Data
Fish Creek at Port Washington Rd. and Katherine Ln., Site FC-01



MMSD Water Quality Monitoring Program Data
Fish Creek at Port Washington Rd. and Katherine Ln., Site FC-01



PORT WASHINGTON ROAD AND KATHERINE LANE - SITE 1
FISH CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	14.7	7.9	8.40	0.30	0.012	0.32	0.051	0.88	0.085	0.056	ND
Standard Error	0.1	2.0	0.9	1.34	0.06	0.002	0.06	0.019	0.13	0.009	0.004	ND
Median	7.8	14.4	7.5	9.78	0.23	0.010	0.23	0.031	0.72	0.087	0.052	ND
Mode	7.7	ND	ND	ND	0.47	ND	ND	0.000	ND	0.056	0.067	ND
Standard Deviation	0.2	5.6	2.7	3.00	0.17	0.007	0.17	0.054	0.38	0.026	0.012	ND
Sample Variance	0.0	31.3	7.2	8.99	0.03	0.000	0.03	0.003	0.15	0.001	0.000	ND
Kurtosis	1.8	-2.2	-1.3	-2.62	-1.80	-1.004	-1.75	1.636	0.19	-0.644	-1.388	ND
Skewness	-1.0	0.1	0.1	-0.52	0.59	0.774	0.63	1.310	1.07	0.456	0.335	ND
Range	0.7	13.8	7.5	6.76	0.42	0.018	0.43	0.160	1.08	0.074	0.035	0.00
Minimum	7.3	8.2	4.2	4.64	0.13	0.005	0.14	0.000	0.52	0.056	0.039	0.00
Maximum	8.0	22.0	11.7	11.40	0.55	0.023	0.57	0.160	1.60	0.130	0.074	0.00
Count	8	8	8	5	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.2	4.7	2.2	3.72	0.14	0.006	0.14	0.045	0.32	0.022	0.010	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	680.0	671.4	2.9	8.6	8.4	1449	221.3	3191	3.2	1865
Standard Error	ND	ND	45.0	46.7	1.0	3.6	4.6	139	16.6	1591	0.2	1037
Median	ND	ND	705.0	703.4	2.0	5.1	3.9	1485	220.0	1500	3.2	1025
Mode	ND	ND	ND	ND	2.0	ND	ND	ND	220.0	ND	ND	ND
Standard Deviation	ND	ND	127.2	132.0	2.8	10.1	13.1	392	47.0	4499	0.6	2933
Sample Variance	ND	ND	16171.4	17416.3	8.0	101.4	171.9	153840	2212.5	20243470	0.3	8603646
Kurtosis	ND	ND	-1.0	-1.1	3.7	5.4	7.8	0	0.2	7	2.1	7
Skewness	ND	ND	-0.1	-0.3	1.8	2.2	2.8	0	-0.2	3	-0.4	2
Range	0.0	0.0	360.0	371.0	9.1	32.0	39.1	1217	150.0	13870	2.0	8825
Minimum	0.0	0.0	510.0	488.0	0.0	0.0	1.6	883	140.0	130	2.1	75
Maximum	0.0	0.0	870.0	859.0	9.1	32.0	40.7	2100	290.0	14000	4.1	8900
Count	0	0	8	8	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	ND	ND	106.3	110.3	2.4	8.4	11.0	328	39.3	3761	0.5	2452

ND = No Data

Provisional MMSD Water Quality Data

PORT WASHINGTON ROAD AND KATHERINE LANE - SITE 1
FISH CREEK
WATER QUALITY DATA - 2010

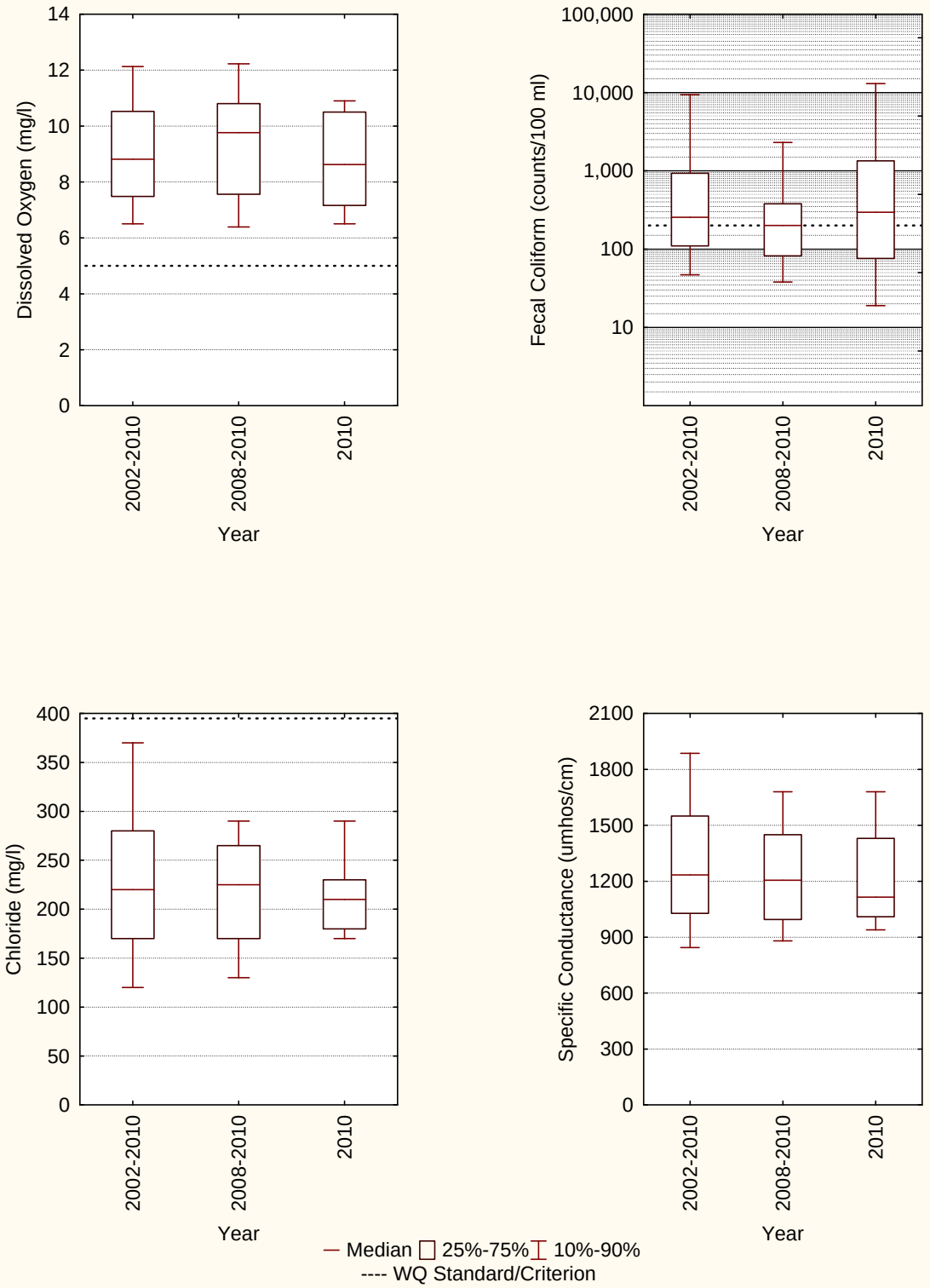
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	55.50	27.00	0.2	3.6	20.5	3.2	0.0	16.0	0.0	0.0	8.3	0.0
Standard Error	0.50	2.00	0.2	0.6	8.5	0.3	0.0	2.0	0.0	0.0	0.8	0.0
Median	55.50	27.00	0.2	3.6	20.5	3.2	0.0	16.0	0.0	0.0	8.3	0.0
Mode	ND	ND	ND	ND	ND	ND	0.0	ND	0.0	0.0	ND	0.0
Standard Deviation	0.71	2.83	0.3	0.8	12.0	0.4	0.0	2.8	0.0	0.0	1.1	0.0
Sample Variance	0.50	8.00	0.1	0.6	144.5	0.2	0.0	8.0	0.0	0.0	1.3	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	1.00	4.00	0.5	1.1	17.0	0.6	0.0	4.0	0.0	0.0	1.6	0.0
Minimum	55.00	25.00	0.0	3.0	12.0	2.9	0.0	14.0	0.0	0.0	7.5	0.0
Maximum	56.00	29.00	0.5	4.1	29.0	3.5	0.0	18.0	0.0	0.0	9.1	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	6.35	25.41	2.9	7.0	108.0	3.8	0.0	25.4	0.0	0.0	10.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	250	240	0.8	5.8	67.4	58.5	9.0	8.7
Standard Error	10	18	0.5	0.6	4.3	4.3	0.5	0.4
Median	250	245	0.0	5.5	68.5	58.5	9.4	9.0
Mode	ND	250	0.0	ND	70.0	57.0	10.0	9.1
Standard Deviation	14	52	1.5	1.6	12.2	12.2	1.3	1.2
Sample Variance	200	2657	2.3	2.6	148.8	147.7	1.7	1.4
Kurtosis	ND	1	3.4	2.7	1.9	1.5	2.0	3.8
Skewness	ND	-1	2.0	1.4	-0.3	-0.4	-1.5	-1.7
Range	20	170	4.1	5.2	43.0	42.0	3.7	3.8
Minimum	240	140	0.0	4.0	45.0	36.0	6.3	6.1
Maximum	260	310	4.1	9.2	88.0	78.0	10.0	9.9
Count	2	8	8	8	8	8	8	8
Confidence Level(95.0%)	127	43	1.3	1.4	10.2	10.2	1.1	1.0

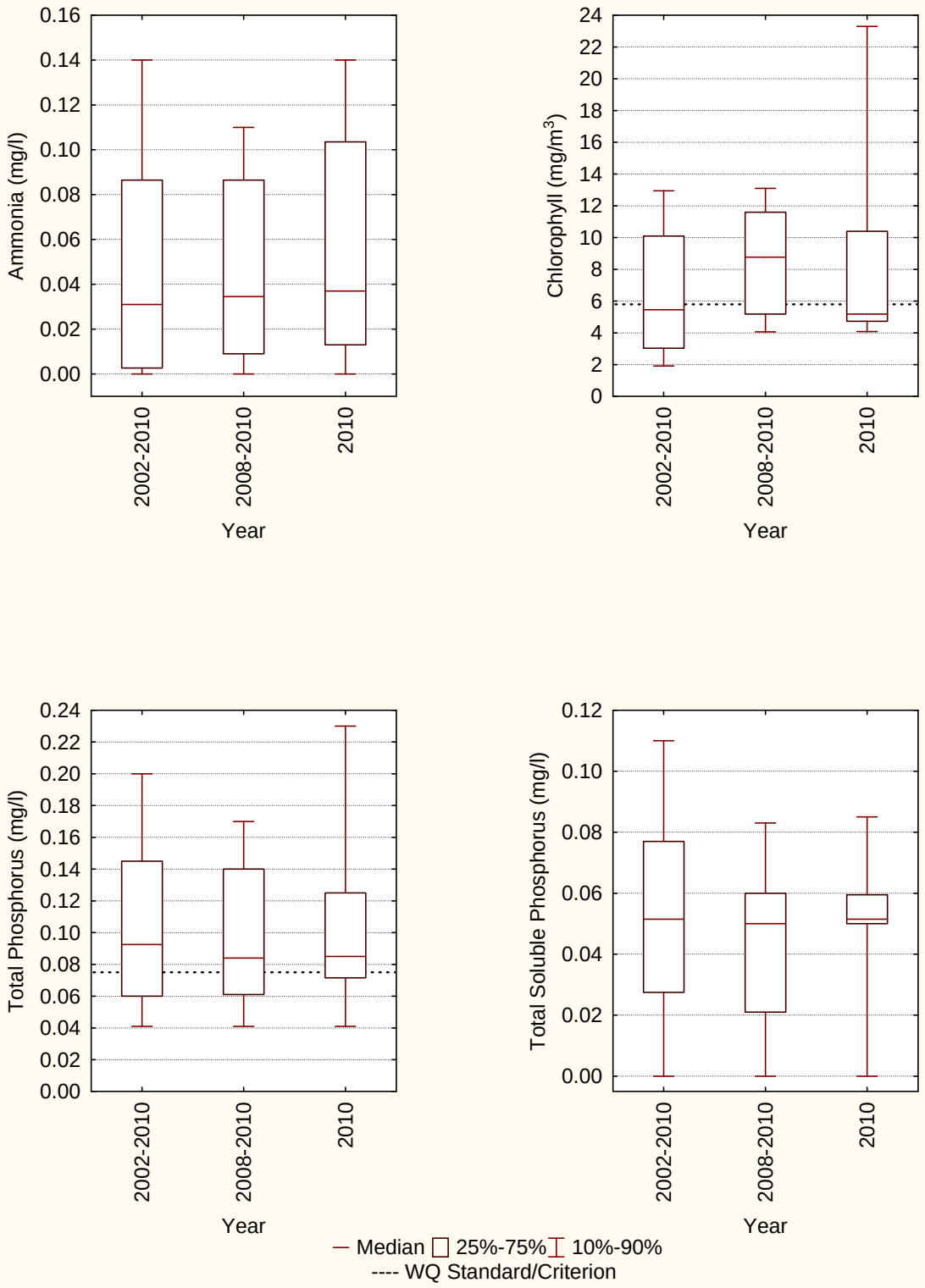
ND = No Data

Provisional MMSD Water Quality Data

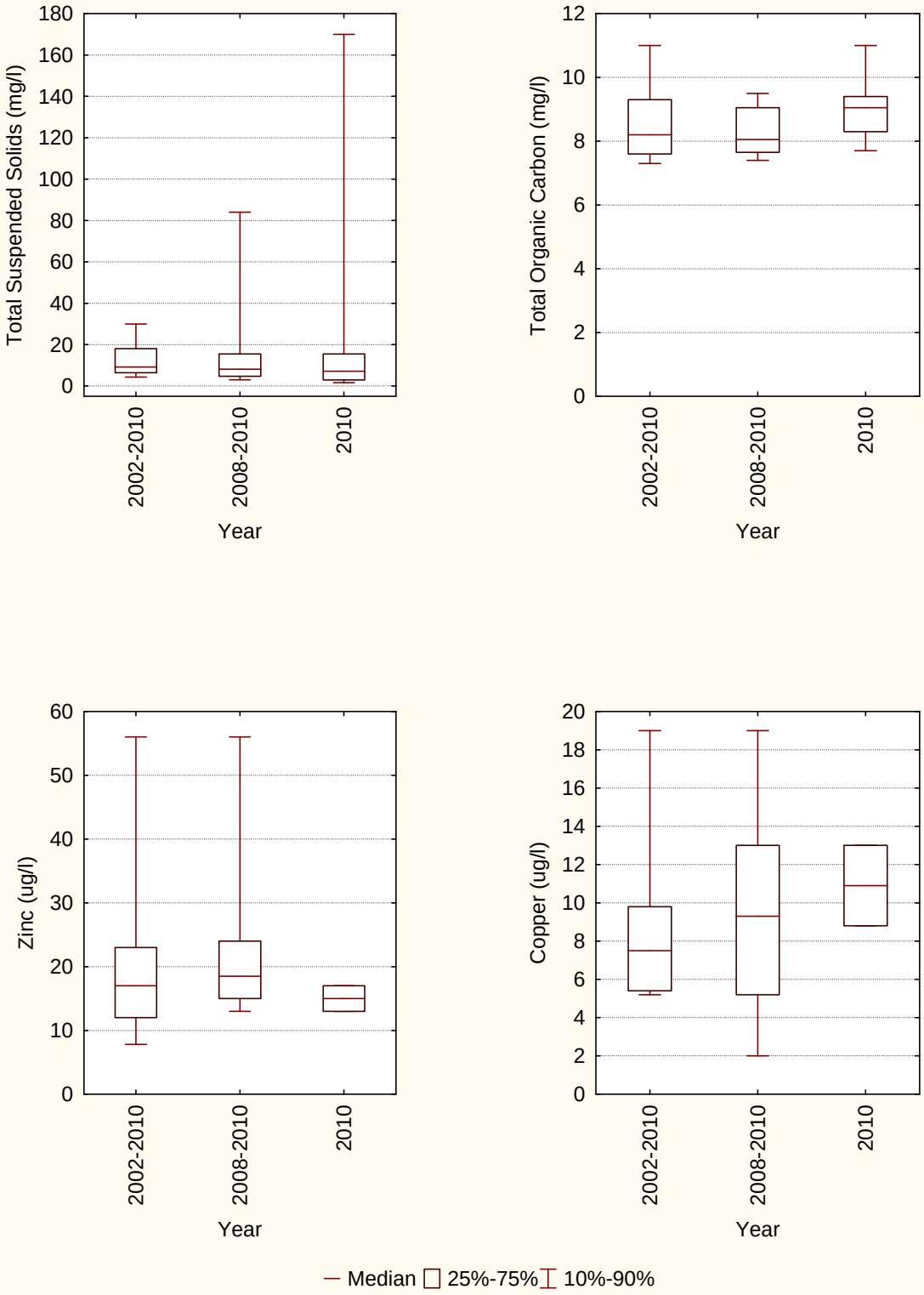
MMSD Water Quality Monitoring Program Data
Fish Creek at Ravine Baye Rd., Site FC-02



MMSD Water Quality Monitoring Program Data
Fish Creek at Ravine Baye Rd., Site FC-02



MMSD Water Quality Monitoring Program Data
Fish Creek at Ravine Baye Rd., Site FC-02



RAVINE BAYE ROAD - SITE 2
FISH CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	14.1	8.7	9.54	0.21	0.014	0.22	0.056	0.95	0.104	0.051	ND
Standard Error	0.1	2.3	0.6	3.62	0.04	0.004	0.04	0.019	0.15	0.021	0.008	ND
Median	7.9	13.5	8.6	5.18	0.25	0.011	0.27	0.037	0.92	0.085	0.052	ND
Mode	7.9	22.2	ND	ND	0.27	ND	ND	0.000	ND	ND	0.051	ND
Standard Deviation	0.3	6.4	1.7	8.09	0.12	0.010	0.13	0.053	0.41	0.058	0.024	ND
Sample Variance	0.1	41.3	3.1	65.51	0.01	0.000	0.02	0.003	0.17	0.003	0.001	ND
Kurtosis	-0.1	-1.7	-1.8	2.97	-1.41	0.132	-1.53	-1.335	-1.24	3.205	3.820	ND
Skewness	-0.4	0.1	0.0	1.77	-0.39	0.933	-0.40	0.542	0.26	1.624	-1.275	ND
Range	0.8	16.6	4.4	19.22	0.33	0.029	0.35	0.140	1.14	0.189	0.085	0.00
Minimum	7.4	5.6	6.5	4.08	0.03	0.004	0.03	0.000	0.46	0.041	0.000	0.00
Maximum	8.2	22.2	10.9	23.30	0.36	0.033	0.38	0.140	1.60	0.230	0.085	0.00
Count	8	8	8	5	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.2	5.4	1.5	10.05	0.10	0.009	0.11	0.044	0.35	0.049	0.020	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	671.3	643.4	5.2	27.9	23.8	1216	212.5	2055	2.5	1352
Standard Error	ND	ND	47.0	50.2	3.3	20.4	14.1	96	14.0	1586	0.3	984
Median	ND	ND	645.0	620.5	2.2	7.2	9.8	1115	210.0	295	2.5	240
Mode	ND	ND	ND	ND	ND	1.6	ND	ND	210.0	ND	ND	ND
Standard Deviation	ND	ND	132.8	141.9	9.3	57.7	39.8	273	39.6	4485	0.9	2784
Sample Variance	ND	ND	17641.1	20129.5	86.3	3330.6	1585.5	74491	1564.3	20118939	0.8	7748953
Kurtosis	ND	ND	3.6	4.0	7.7	7.8	7.3	-1	1.2	7	0.3	7
Skewness	ND	ND	1.6	1.8	2.7	2.8	2.7	1	1.0	3	0.7	3
Range	0.0	0.0	450.0	461.4	28.0	168.4	117.9	741	120.0	12981	2.8	8091
Minimum	0.0	0.0	510.0	497.0	0.0	1.6	3.2	939	170.0	19	1.3	9
Maximum	0.0	0.0	960.0	958.4	28.0	170.0	121.0	1680	290.0	13000	4.1	8100
Count	0	0	8	8	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	ND	ND	111.0	118.6	7.8	48.2	33.3	228	33.1	3750	0.7	2327

ND = No Data

Provisional MMSD Water Quality Data

RAVINE BAYE ROAD - SITE 2
FISH CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	55.00	26.00	0.0	3.8	10.9	3.0	0.0	15.0	0.0	0.0	2.5	0.0
Standard Error	15.00	9.00	0.0	0.2	2.1	0.5	0.0	2.0	0.0	0.0	2.5	0.0
Median	55.00	26.00	0.0	3.8	10.9	3.0	0.0	15.0	0.0	0.0	2.5	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	0.0	ND	0.0
Standard Deviation	21.21	12.73	0.0	0.2	3.0	0.7	0.0	2.8	0.0	0.0	3.5	0.0
Sample Variance	450.00	162.00	0.0	0.0	8.8	0.5	0.0	8.0	0.0	0.0	12.5	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	30.00	18.00	0.0	0.3	4.2	1.0	0.0	4.0	0.0	0.0	5.0	0.0
Minimum	40.00	17.00	0.0	3.6	8.8	2.5	0.0	13.0	0.0	0.0	0.0	0.0
Maximum	70.00	35.00	0.0	3.9	13.0	3.5	0.0	17.0	0.0	0.0	5.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	190.59	114.36	0.0	1.9	26.7	6.4	0.0	25.4	0.0	0.0	31.8	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	245	249	1.3	6.3	70.3	61.1	9.0	8.7
Standard Error	75	26	0.7	0.8	6.5	6.7	0.4	0.3
Median	245	260	0.0	5.5	70.5	62.0	9.1	8.9
Mode	ND	260	0.0	5.2	ND	62.0	9.3	9.3
Standard Deviation	106	75	1.9	2.3	18.5	18.9	1.0	0.9
Sample Variance	11250	5613	3.6	5.3	341.4	356.7	1.0	0.9
Kurtosis	ND	-1	0.5	1.6	-1.2	-1.2	1.3	-0.7
Skewness	ND	0	1.3	1.4	0.1	0.0	0.8	-0.3
Range	150	220	4.9	7.2	51.0	51.0	3.3	2.8
Minimum	170	140	0.0	3.8	46.0	36.0	7.7	7.2
Maximum	320	360	4.9	11.0	97.0	87.0	11.0	10.0
Count	2	8	8	8	8	8	8	8
Confidence Level(95.0%)	953	63	1.6	1.9	15.4	15.8	0.8	0.8

ND = No Data

Provisional MMSD Water Quality Data

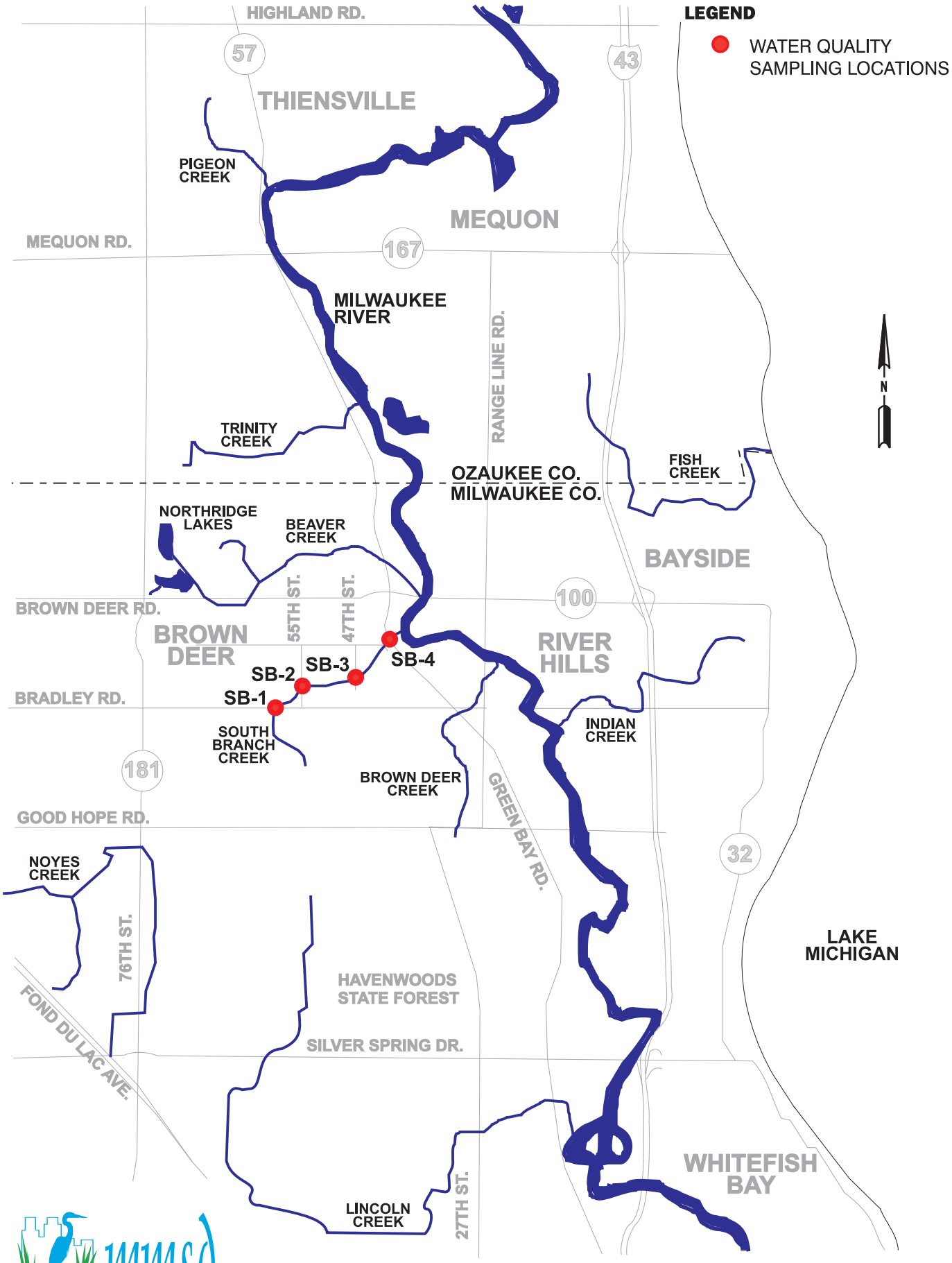


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FIGURE 4

SOUTH BRANCH CREEK (SB) SURVEY
WATER QUALITY SAMPLING LOCATIONS

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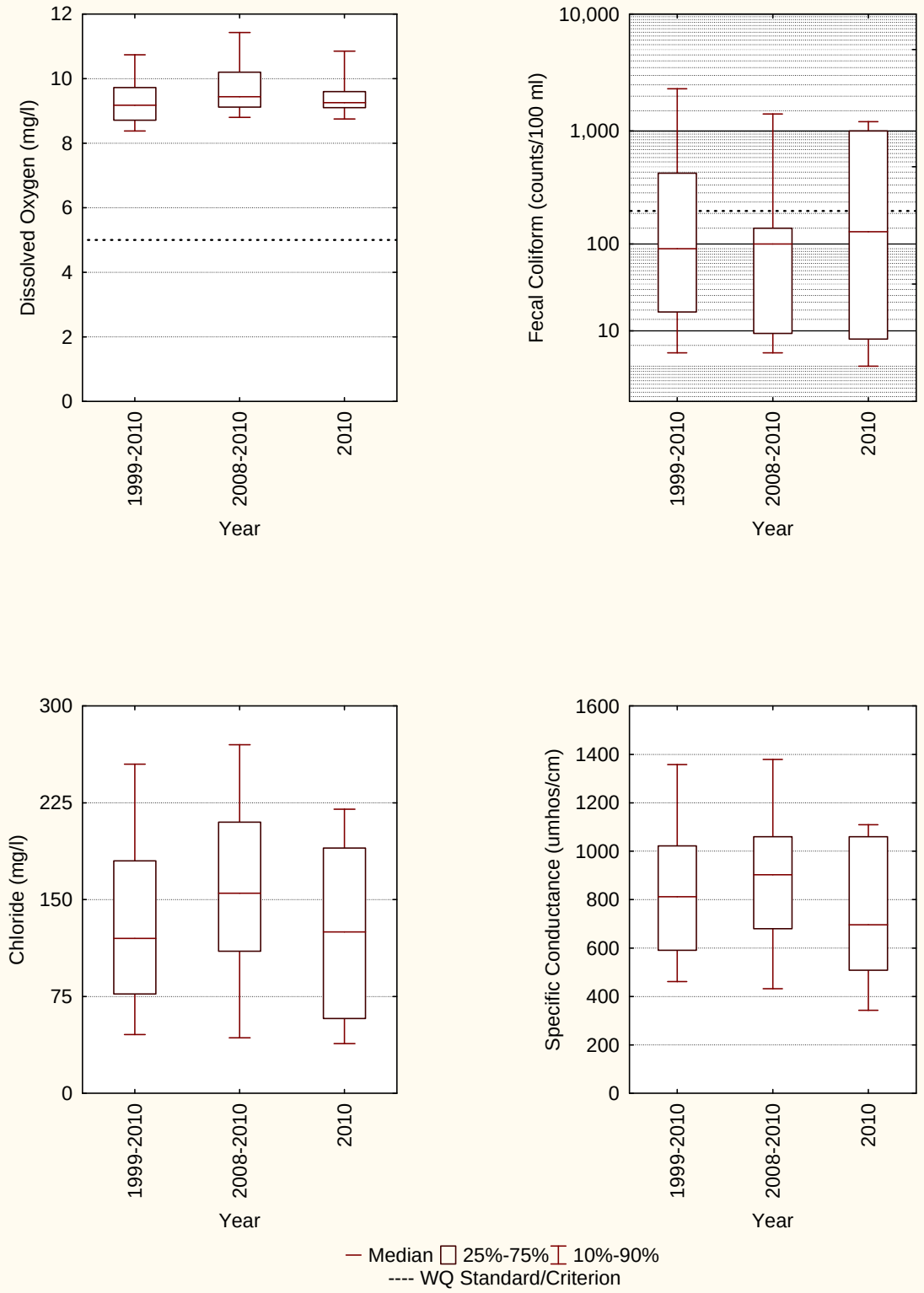
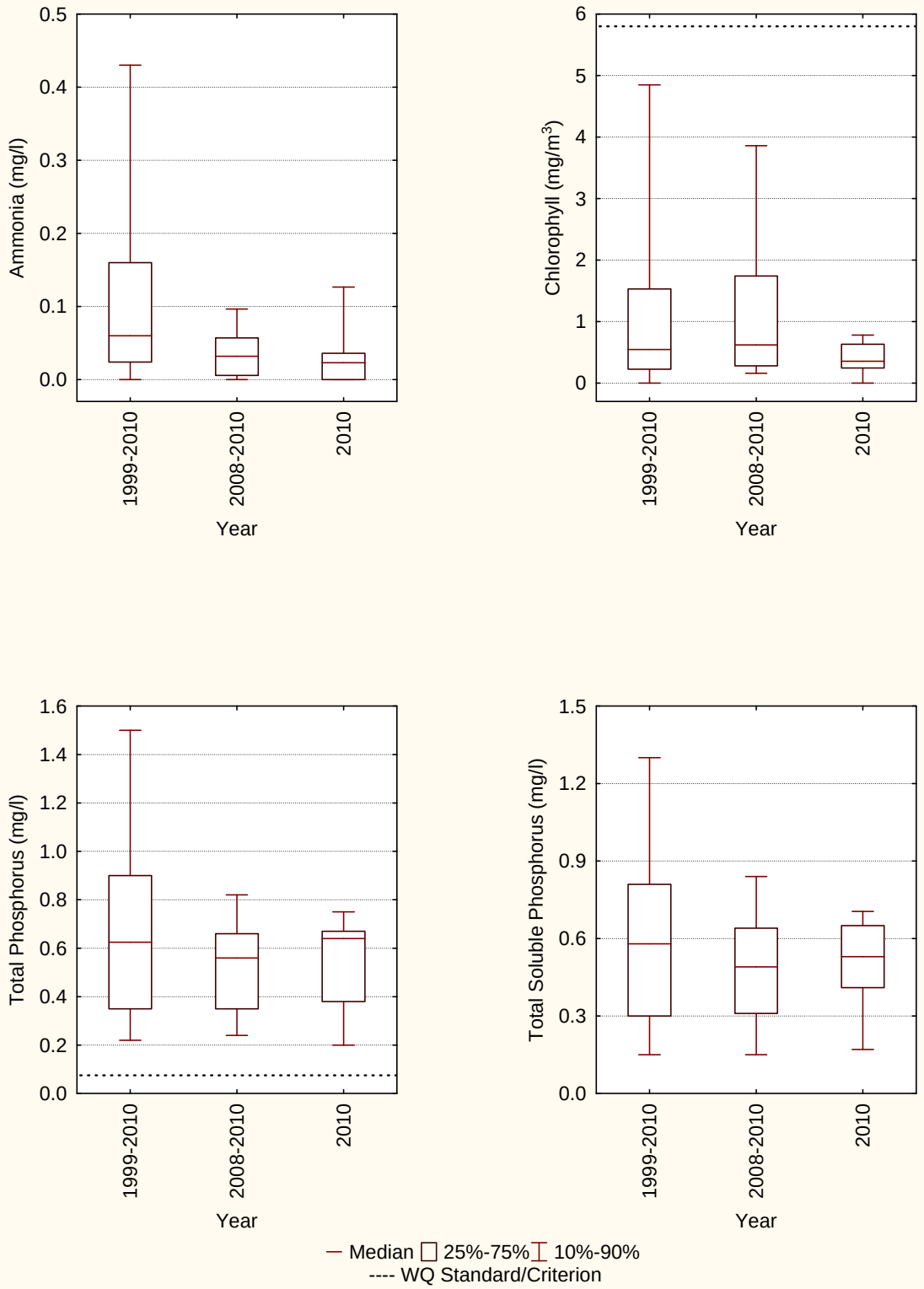
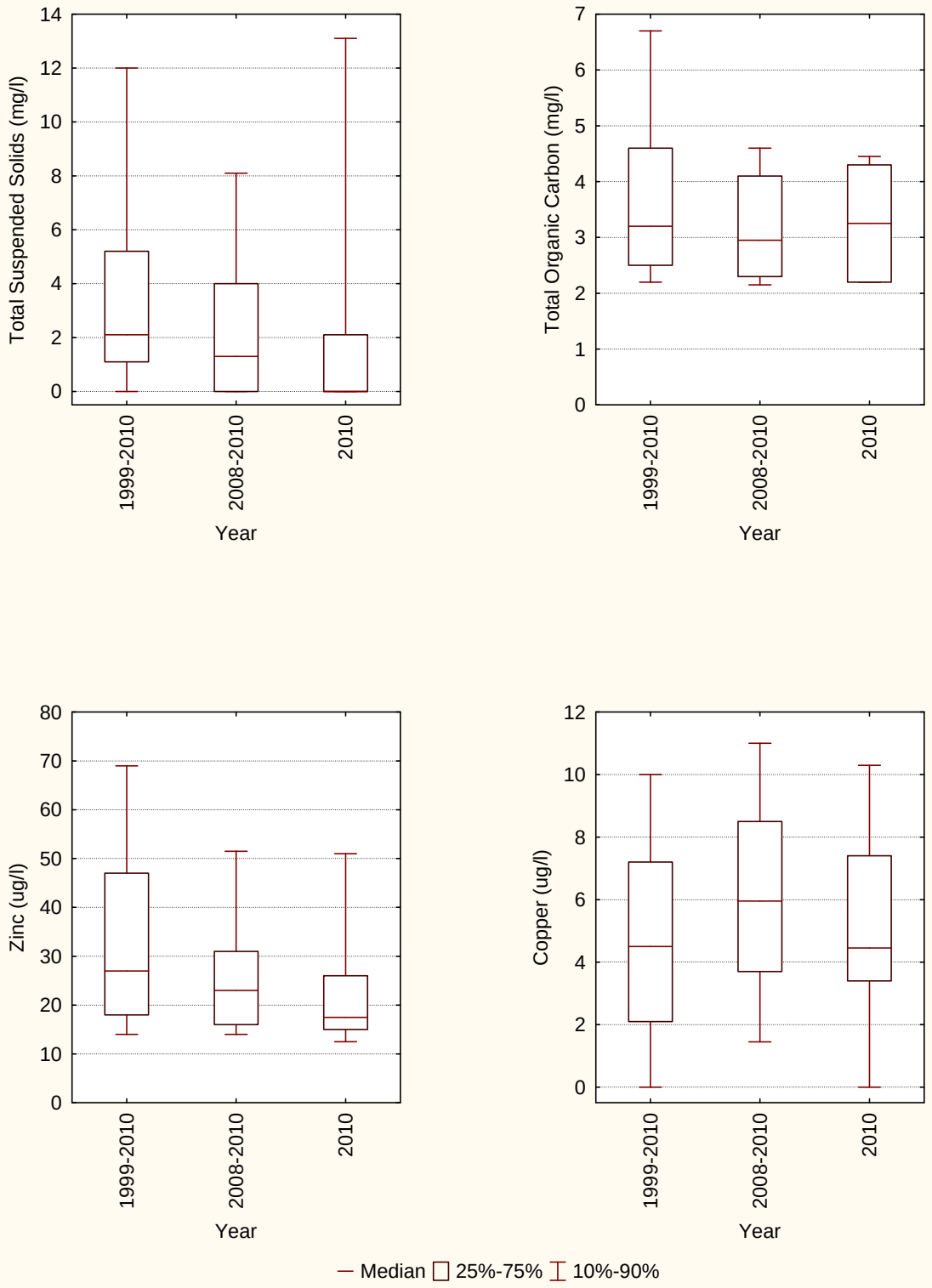
MMSD Water Quality Monitoring Program Data
Southbranch Creek at Bradley Rd., Site SB-01



MMSD Water Quality Monitoring Program Data
Southbranch Creek at Bradley Rd., Site SB-01



MMSD Water Quality Monitoring Program Data
Southbranch Creek at Bradley Rd., Site SB-01



BRADLEY RD., WEST OF EDGEWORTH DR. - SITE 1
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	15.6	9.5	0.41	0.72	0.014	0.74	0.037	0.90	0.532	0.494	ND
Standard Error	0.0	1.2	0.2	0.09	0.06	0.003	0.06	0.016	0.48	0.070	0.065	ND
Median	8.1	16.6	9.3	0.36	0.76	0.010	0.77	0.023	0.44	0.640	0.530	ND
Mode	8.0	ND	ND	ND	ND	0.010	ND	0.000	0.56	0.670	ND	ND
Standard Deviation	0.1	3.8	0.8	0.26	0.18	0.010	0.18	0.052	1.52	0.220	0.206	ND
Sample Variance	0.0	14.1	0.6	0.07	0.03	0.000	0.03	0.003	2.31	0.048	0.043	ND
Kurtosis	-1.0	0.5	1.1	-0.76	0.79	2.878	0.59	3.094	8.42	-0.437	0.223	ND
Skewness	0.0	-1.2	1.4	0.07	-0.80	1.673	-0.73	1.823	2.83	-0.725	-0.886	ND
Range	0.3	11.3	2.4	0.78	0.61	0.033	0.60	0.160	5.10	0.700	0.659	0.00
Minimum	7.9	8.5	8.7	0.00	0.36	0.005	0.38	0.000	0.00	0.120	0.081	0.00
Maximum	8.2	19.8	11.1	0.78	0.97	0.038	0.98	0.160	5.10	0.820	0.740	0.00
Count	10	10	10	8	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	0.1	2.7	0.6	0.22	0.13	0.007	0.13	0.037	1.09	0.157	0.148	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	403.0	400.1	0.7	2.9	3.3	749	127.5	372	1.9	ND
Standard Error	ND	ND	50.6	52.0	0.5	2.1	2.4	95	22.2	190	0.4	ND
Median	ND	ND	380.0	380.0	0.0	0.0	0.9	696	125.0	130	2.1	ND
Mode	ND	ND	ND	ND	0.0	0.0	ND	1060	ND	130	2.1	ND
Standard Deviation	ND	ND	160.0	164.4	1.6	6.6	7.3	300	70.1	504	1.1	ND
Sample Variance	ND	ND	25601.1	27020.2	2.7	43.1	53.2	89976	4919.8	253755	1.2	ND
Kurtosis	ND	ND	-0.5	-0.4	7.9	8.3	8.9	-1	-1.4	-1	-0.1	ND
Skewness	ND	ND	0.3	0.2	2.7	2.8	3.0	0	0.0	1	-0.8	ND
Range	0.0	0.0	500.0	521.0	5.2	21.0	22.4	891	199.0	1200	3.1	0
Minimum	0.0	0.0	160.0	139.0	0.0	0.0	0.3	269	31.0	0	0.0	0
Maximum	0.0	0.0	660.0	660.0	5.2	21.0	22.7	1160	230.0	1200	3.1	0
Count	0	0	10	10	10	10	9	10	10	7	7	0
Confidence Level(95.0%)	ND	ND	114.5	117.6	1.2	4.7	5.6	215	50.2	466	1.0	ND

ND = No Data

Provisional MMSD Water Quality Data

BRADLEY RD., WEST OF EDGEWORTH DR. - SITE 1
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

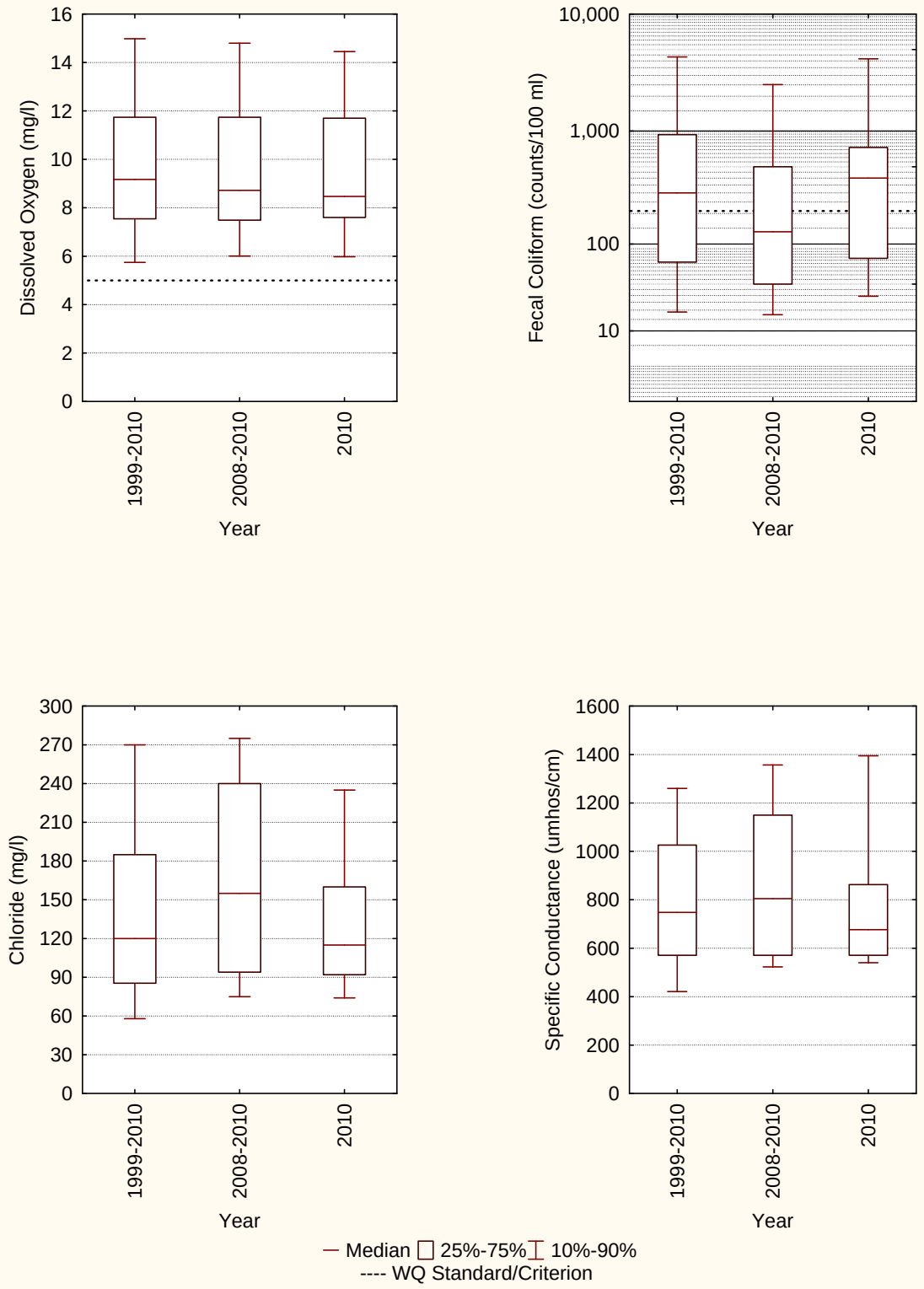
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	44.20	17.14	0.1	3.1	4.9	0.8	0.4	24.3	0.0	0.3	2.1	0.0
Standard Error	5.58	2.45	0.1	0.5	1.1	0.3	0.4	5.5	0.0	0.3	1.1	0.0
Median	44.00	16.00	0.0	2.8	4.5	0.0	0.0	17.5	0.0	0.0	0.0	0.0
Mode	ND	23.00	0.0	4.2	0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0
Standard Deviation	17.64	7.74	0.2	1.4	3.6	1.0	1.2	17.5	0.0	0.9	3.5	0.0
Sample Variance	311.07	59.84	0.0	2.1	13.1	1.1	1.4	307.6	0.0	0.8	12.0	0.0
Kurtosis	0.12	0.66	10.0	1.8	-0.5	-1.9	10.0	6.8	ND	10.0	-0.5	ND
Skewness	0.00	0.31	3.2	-0.6	0.3	0.6	3.2	2.5	ND	3.2	1.2	ND
Range	61.00	27.60	0.6	5.4	11.0	2.4	3.7	61.0	0.0	2.9	8.2	0.0
Minimum	14.00	4.40	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0
Maximum	75.00	32.00	0.6	5.4	11.0	2.4	3.7	71.0	0.0	2.9	8.2	0.0
Count	10	10	10	10	10	10	10	10	10	10	10	2
Confidence Level(95.0%)	12.62	5.53	0.1	1.0	2.6	0.7	0.8	12.5	0.0	0.7	2.5	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	181	142	1.0	4.4	37.4	34.4	3.2	3.4
Standard Error	24	16	0.5	0.6	3.7	3.8	0.3	0.3
Median	175	145	0.0	3.8	38.5	35.0	3.3	3.3
Mode	170	170	0.0	7.6	38.0	35.0	2.2	ND
Standard Deviation	77	51	1.6	1.8	11.7	12.0	1.0	0.9
Sample Variance	5853	2591	2.6	3.1	138.0	143.7	1.0	0.8
Kurtosis	0	2	0.0	0.9	1.3	1.9	-2.0	-1.6
Skewness	0	-1	1.3	1.4	-0.7	-0.7	0.1	0.3
Range	267	198	4.0	5.2	43.0	45.1	2.4	2.4
Minimum	53	32	0.0	2.4	13.0	8.9	2.2	2.3
Maximum	320	230	4.0	7.6	56.0	54.0	4.6	4.7
Count	10	10	10	10	10	10	10	10
Confidence Level(95.0%)	55	36	1.2	1.3	8.4	8.6	0.7	0.6

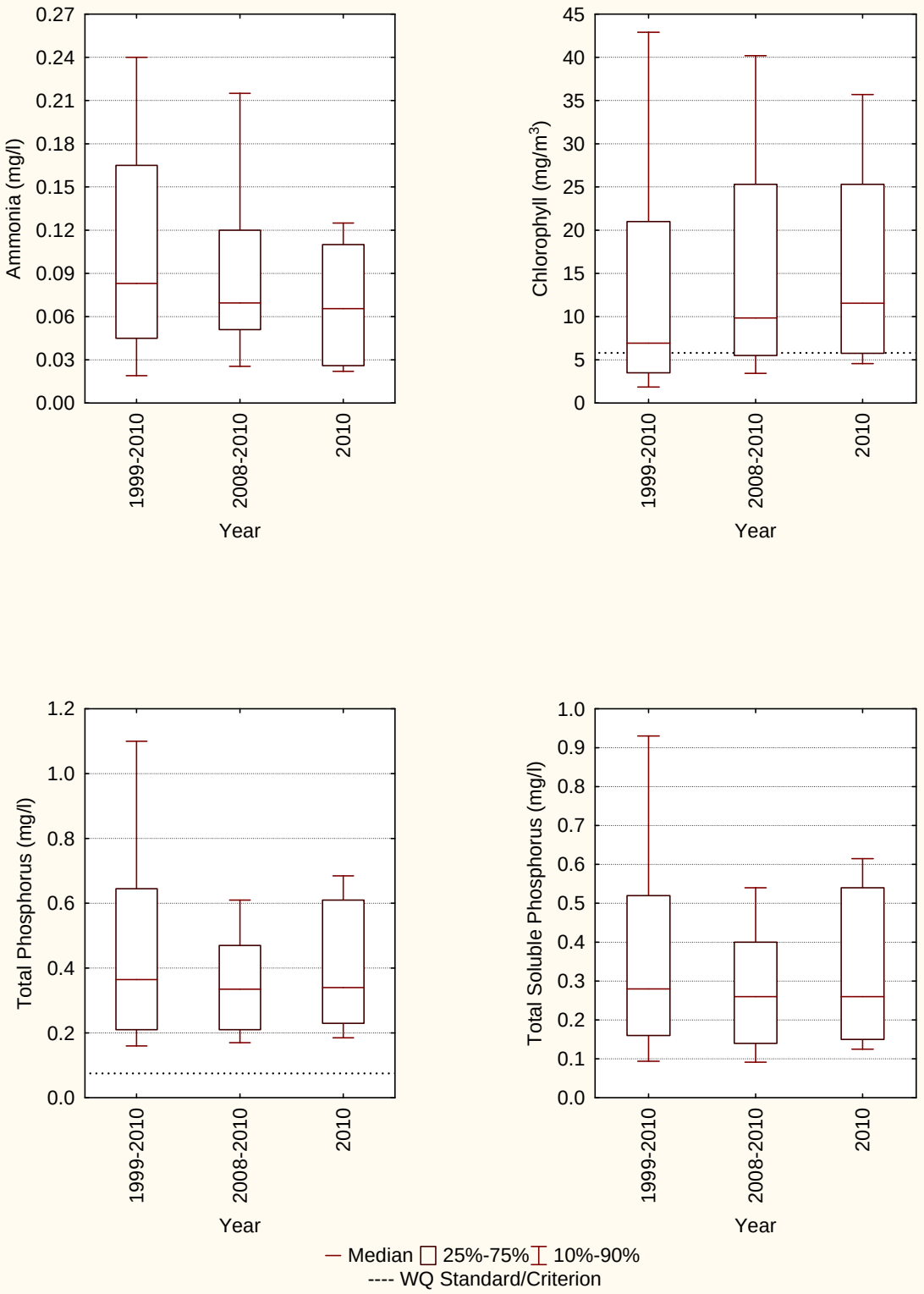
ND = No Data

Provisional MMSD Water Quality Data

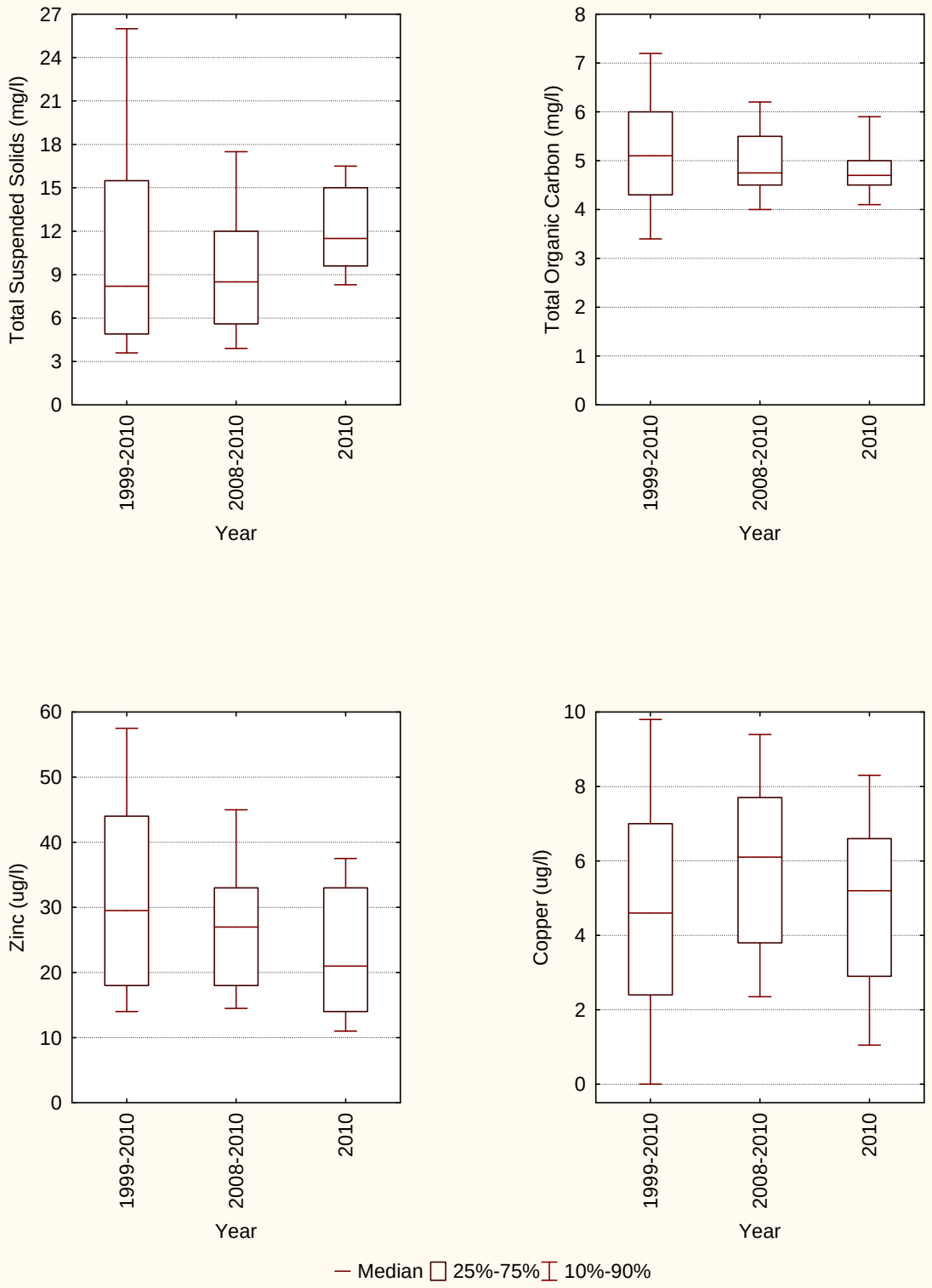
MMSD Water Quality Monitoring Program Data
Southbranch Creek at 55th St., Site SB-02



MMSD Water Quality Monitoring Program Data
Southbranch Creek at 55th St., Site SB-02



MMSD Water Quality Monitoring Program Data
Southbranch Creek at 55th St., Site SB-02



55TH ST., NORTH OF BRADLEY RD. - SITE 2
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.4	19.8	9.5	15.69	0.24	0.019	0.26	0.068	0.74	0.399	0.326	ND
Standard Error	0.1	1.9	1.0	4.18	0.04	0.003	0.04	0.013	0.07	0.063	0.063	ND
Median	8.3	20.9	8.5	11.55	0.26	0.021	0.28	0.066	0.74	0.340	0.260	ND
Mode	8.0	25.2	ND	ND	0.35	ND	0.15	ND	0.74	0.610	0.260	ND
Standard Deviation	0.4	6.0	3.2	11.82	0.13	0.009	0.14	0.041	0.23	0.199	0.199	ND
Sample Variance	0.2	36.4	10.1	139.82	0.02	0.000	0.02	0.002	0.05	0.040	0.040	ND
Kurtosis	-1.6	-1.3	0.6	-0.79	-1.31	-1.708	-1.41	-1.440	1.15	-0.688	-0.695	ND
Skewness	0.5	-0.5	1.0	0.85	-0.09	-0.256	-0.08	0.321	0.71	0.704	0.776	ND
Range	1.1	17.0	10.2	31.13	0.39	0.023	0.42	0.111	0.82	0.590	0.580	0.00
Minimum	8.0	9.9	5.8	4.57	0.05	0.007	0.05	0.019	0.38	0.170	0.110	0.00
Maximum	9.1	26.8	16.0	35.70	0.44	0.030	0.47	0.130	1.20	0.760	0.690	0.00
Count	10	10	10	8	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	0.3	4.3	2.3	9.89	0.09	0.006	0.10	0.029	0.16	0.142	0.142	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	426.0	413.8	3.9	12.2	10.2	802	134.8	1057	2.5	ND
Standard Error	ND	ND	43.6	43.4	0.4	1.0	1.0	115	20.1	525	0.3	ND
Median	ND	ND	375.0	362.7	4.0	11.5	11.1	677	115.0	390	2.6	ND
Mode	ND	ND	ND	ND	ND	15.0	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	137.8	137.1	1.2	3.3	3.2	364	63.7	1661	0.8	ND
Sample Variance	ND	ND	18982.2	18808.8	1.5	11.0	9.9	132267	4059.7	2760352	0.6	ND
Kurtosis	ND	ND	2.2	2.3	-1.3	-1.5	-0.2	5	2.1	2	-1.0	ND
Skewness	ND	ND	1.5	1.6	0.1	0.1	-0.4	2	1.4	2	0.1	ND
Range	0.0	0.0	450.0	446.3	3.6	9.7	10.6	1190	214.0	4581	2.4	0
Minimum	0.0	0.0	290.0	282.7	2.2	7.3	4.5	540	66.0	19	1.3	0
Maximum	0.0	0.0	740.0	729.0	5.8	17.0	15.1	1730	280.0	4600	3.7	0
Count	0	0	10	10	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	ND	ND	98.6	98.1	0.9	2.4	2.3	260	45.6	1189	0.6	ND

ND = No Data

Provisional MMSD Water Quality Data

55TH ST., NORTH OF BRADLEY RD. - SITE 2
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	43.40	18.20	0.1	3.9	4.9	2.0	0.3	23.4	0.3	0.0	1.5	0.0
Standard Error	4.59	2.38	0.1	0.6	0.9	0.4	0.3	3.4	0.2	0.0	1.0	0.0
Median	39.50	16.00	0.0	3.6	5.2	1.9	0.0	21.0	0.0	0.0	0.0	0.0
Mode	29.00	15.00	0.0	ND	5.2	0.0	0.0	21.0	0.0	0.0	0.0	0.0
Standard Deviation	14.51	7.52	0.2	1.9	2.7	1.3	0.8	10.7	0.7	0.0	3.2	0.0
Sample Variance	210.49	56.62	0.0	3.4	7.3	1.6	0.7	113.6	0.5	0.0	10.0	0.0
Kurtosis	3.29	4.55	10.0	4.1	-0.2	-0.3	10.0	-1.3	3.2	ND	1.9	ND
Skewness	1.67	2.00	3.2	1.8	-0.4	-0.3	3.2	0.3	2.0	ND	1.8	ND
Range	49.00	26.00	0.5	6.5	8.9	3.9	2.6	31.0	1.9	0.0	8.3	0.0
Minimum	29.00	11.00	0.0	1.9	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0
Maximum	78.00	37.00	0.5	8.4	8.9	3.9	2.6	41.0	1.9	0.0	8.3	0.0
Count	10	10	10	10	10	10	10	10	10	10	10	2
Confidence Level(95.0%)	10.38	5.38	0.1	1.3	1.9	0.9	0.6	7.6	0.5	0.0	2.3	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	183	132	3.2	8.1	36.4	31.6	4.8	4.7
Standard Error	22	12	0.3	0.6	2.9	3.0	0.2	0.2
Median	165	130	3.0	7.6	35.0	30.5	4.7	4.7
Mode	120	150	4.4	11.0	ND	ND	4.5	ND
Standard Deviation	68	38	1.0	1.9	9.2	9.5	0.7	0.6
Sample Variance	4668	1424	1.0	3.7	84.9	89.8	0.5	0.4
Kurtosis	4	0	-1.3	-1.1	1.1	1.3	1.8	2.5
Skewness	2	0	0.6	0.5	1.0	1.0	1.0	1.0
Range	230	120	2.7	5.4	31.0	32.0	2.5	2.4
Minimum	120	80	2.0	5.6	25.0	20.0	3.8	3.7
Maximum	350	200	4.7	11.0	56.0	52.0	6.3	6.1
Count	10	10	10	10	10	10	10	10
Confidence Level(95.0%)	49	27	0.7	1.4	6.6	6.8	0.5	0.5

ND = No Data

Provisional MMSD Water Quality Data

47TH ST., SOUTH OF CHURCHILL LN. - SITE 3
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.6	19.4	11.8	12.92	0.23	0.013	0.24	0.034	0.57	0.315	0.272	ND
Standard Error	0.1	2.0	1.1	2.01	0.04	0.002	0.04	0.010	0.07	0.048	0.050	ND
Median	8.6	20.8	11.3	12.30	0.25	0.013	0.26	0.034	0.56	0.250	0.210	ND
Mode	8.8	ND	ND	ND	0.28	0.018	0.13	0.000	0.77	0.250	0.120	ND
Standard Deviation	0.3	6.4	3.4	5.68	0.12	0.006	0.12	0.031	0.21	0.150	0.159	ND
Sample Variance	0.1	41.4	11.4	32.22	0.01	0.000	0.01	0.001	0.04	0.023	0.025	ND
Kurtosis	-1.4	-1.3	3.7	-0.77	-1.02	-1.987	-1.13	0.186	-0.70	-0.759	-0.337	ND
Skewness	-0.1	-0.6	1.7	0.29	-0.12	-0.109	-0.14	0.672	0.07	0.706	0.873	ND
Range	0.9	16.7	11.6	16.79	0.36	0.016	0.38	0.097	0.65	0.450	0.460	0.00
Minimum	8.1	9.5	8.4	4.71	0.04	0.004	0.04	0.000	0.25	0.140	0.120	0.00
Maximum	9.0	26.2	20.0	21.50	0.40	0.020	0.42	0.097	0.90	0.590	0.580	0.00
Count	10	10	10	8	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	0.2	4.6	2.4	4.75	0.08	0.004	0.09	0.023	0.15	0.108	0.114	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	428.0	422.0	2.1	6.0	4.9	795	142.5	2962	3.1	ND
Standard Error	ND	ND	50.3	50.7	0.5	1.9	1.4	95	19.9	1431	0.2	ND
Median	ND	ND	350.0	347.0	2.2	5.2	3.7	662	130.0	925	3.0	ND
Mode	ND	ND	350.0	ND	0.0	ND	ND	ND	130.0	ND	ND	ND
Standard Deviation	ND	ND	159.0	160.4	1.6	6.0	4.5	299	63.0	4527	0.6	ND
Sample Variance	ND	ND	25284.4	25732.7	2.7	36.2	20.3	89349	3974.9	20490462	0.4	ND
Kurtosis	ND	ND	4.8	4.7	2.4	6.9	5.7	4	4.5	7	0.1	ND
Skewness	ND	ND	2.1	2.1	1.0	2.4	2.2	2	1.9	3	0.1	ND
Range	0.0	0.0	540.0	542.2	5.8	22.0	15.3	996	216.0	14900	2.2	0
Minimum	0.0	0.0	290.0	283.8	0.0	0.0	1.3	544	84.0	100	2.0	0
Maximum	0.0	0.0	830.0	826.0	5.8	22.0	16.6	1540	300.0	15000	4.2	0
Count	0	0	10	10	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	ND	ND	113.7	114.8	1.2	4.3	3.2	214	45.1	3238	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

47TH ST., SOUTH OF CHURCHILL LN. - SITE 3
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

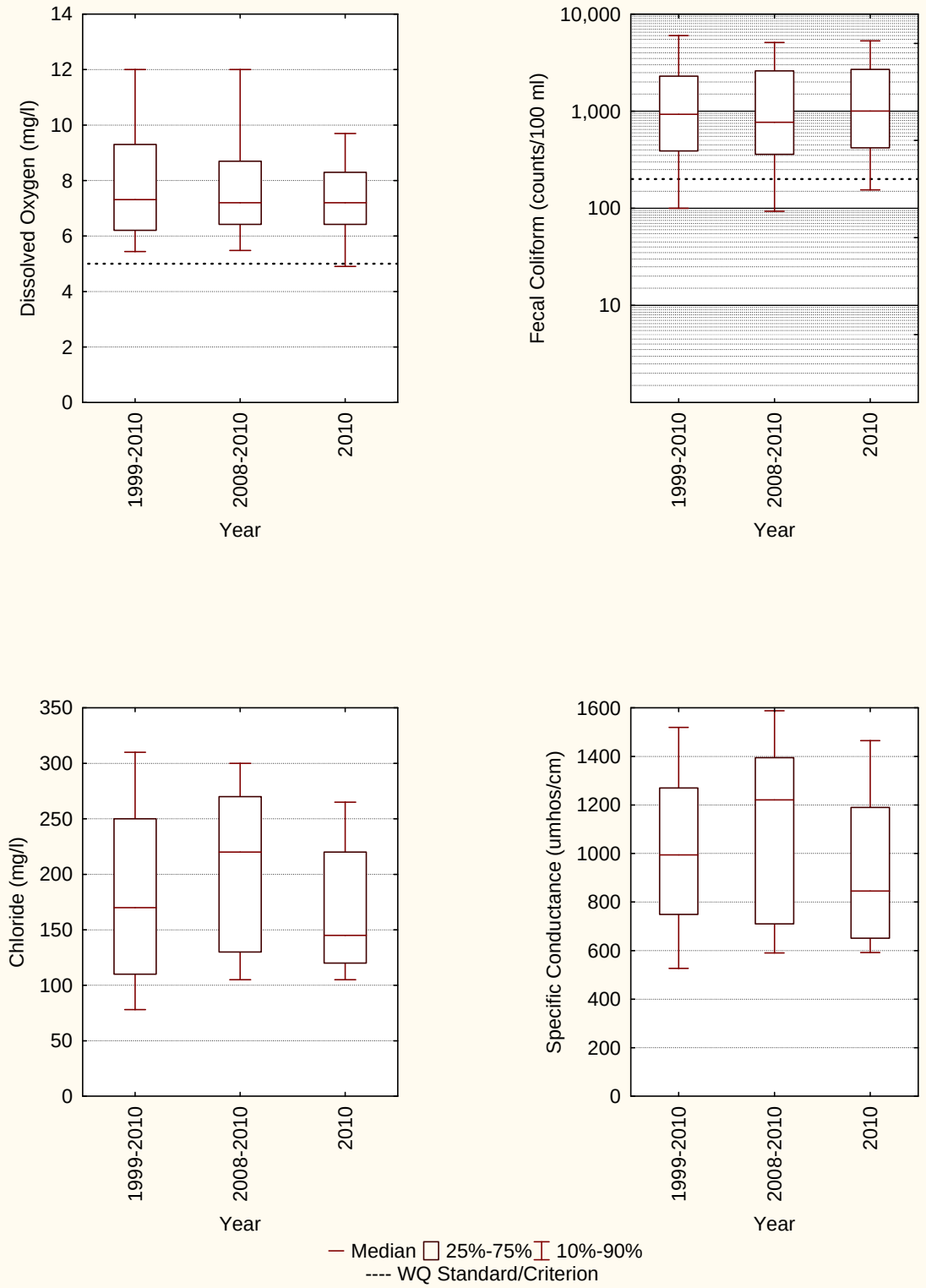
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	42.80	17.50	0.1	3.1	3.8	1.2	0.0	16.8	0.0	0.0	2.8	0.0
Standard Error	4.50	2.40	0.1	0.3	0.8	0.4	0.0	2.5	0.0	0.0	1.2	0.0
Median	40.00	15.50	0.0	2.8	4.2	0.9	0.0	14.0	0.0	0.0	0.0	0.0
Mode	ND	12.00	0.0	4.8	0.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0
Standard Deviation	14.23	7.58	0.2	1.0	2.4	1.3	0.0	7.9	0.0	0.0	3.8	0.0
Sample Variance	202.62	57.39	0.0	0.9	5.7	1.8	0.0	62.4	0.0	0.0	14.4	0.0
Kurtosis	4.18	5.47	10.0	0.0	0.2	-1.7	ND	3.7	ND	ND	-1.6	ND
Skewness	1.88	2.21	3.2	1.1	-0.5	0.4	ND	1.8	ND	ND	0.7	ND
Range	48.00	25.00	0.6	2.6	7.7	3.3	0.0	27.0	0.0	0.0	8.7	0.0
Minimum	30.00	12.00	0.0	2.2	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0
Maximum	78.00	37.00	0.6	4.8	7.7	3.3	0.0	36.0	0.0	0.0	8.7	0.0
Count	10	10	10	10	10	10	10	10	10	10	10	2
Confidence Level(95.0%)	10.18	5.42	0.1	0.7	1.7	1.0	0.0	5.7	0.0	0.0	2.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	179	133	2.1	6.7	37.0	31.9	5.0	4.8
Standard Error	21	11	0.6	0.5	2.7	2.7	0.2	0.2
Median	165	130	2.4	6.4	36.5	31.5	4.9	4.9
Mode	180	150	0.0	ND	40.0	24.0	4.7	4.9
Standard Deviation	67	36	1.9	1.5	8.4	8.7	0.6	0.6
Sample Variance	4543	1281	3.6	2.3	70.4	75.0	0.4	0.4
Kurtosis	5	0	-2.1	-0.7	1.0	0.7	0.4	-0.4
Skewness	2	1	-0.1	0.5	1.0	0.9	0.0	-0.4
Range	230	108	4.3	4.7	27.0	28.0	2.2	2.0
Minimum	120	92	0.0	4.7	28.0	22.0	3.8	3.8
Maximum	350	200	4.3	9.4	55.0	50.0	6.0	5.8
Count	10	10	10	10	10	10	10	10
Confidence Level(95.0%)	48	26	1.4	1.1	6.0	6.2	0.5	0.5

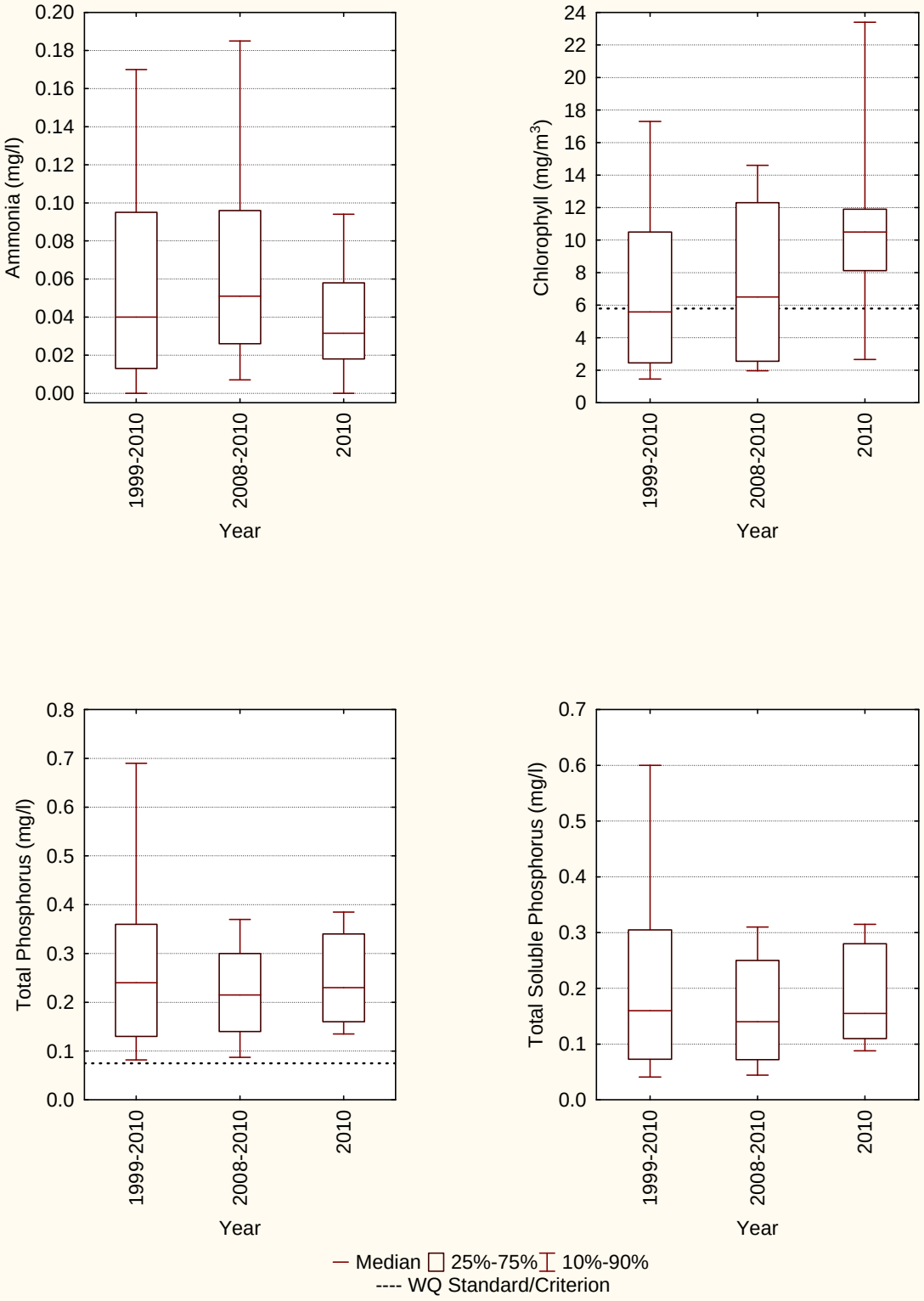
ND = No Data

Provisional MMSD Water Quality Data

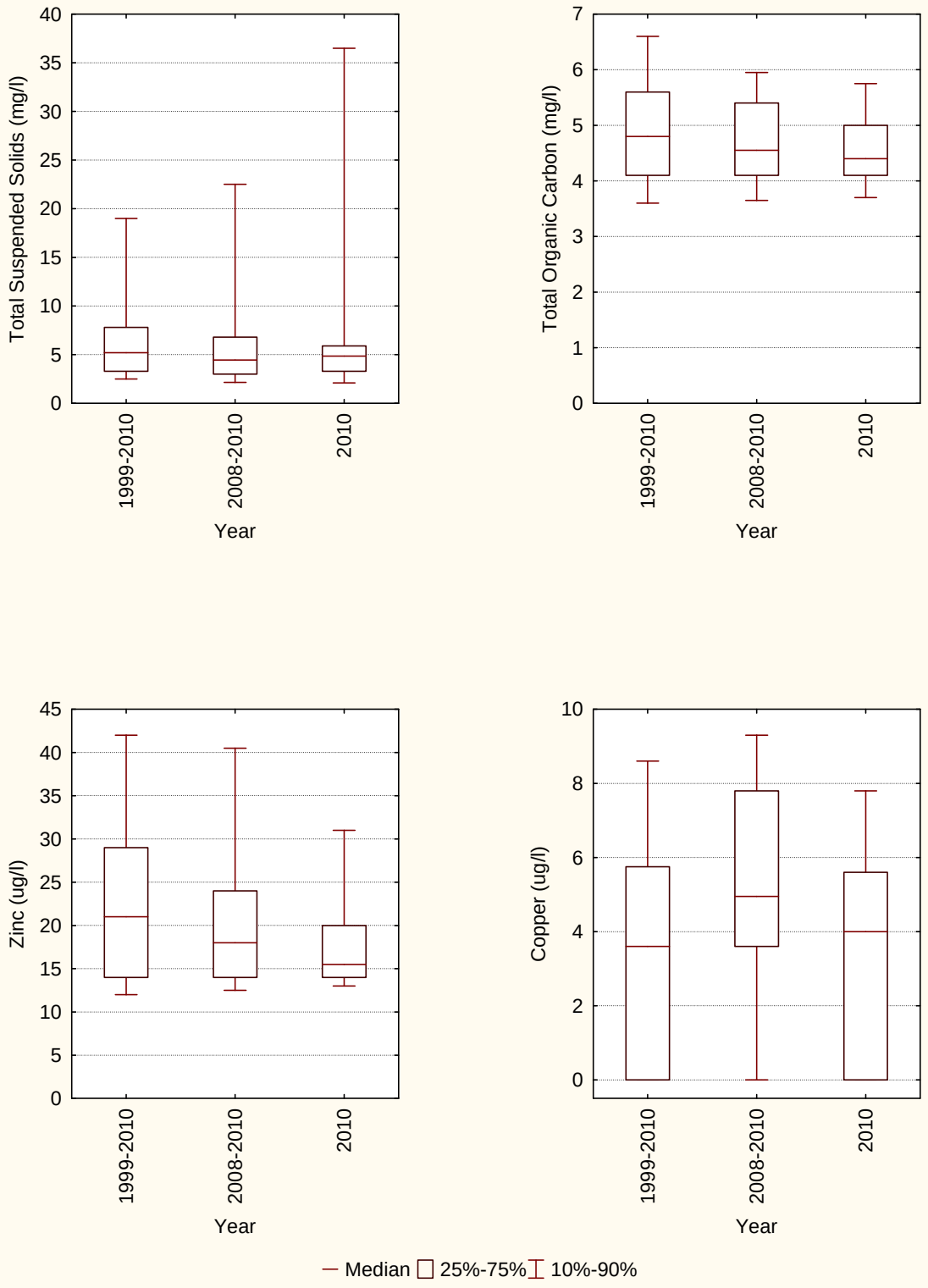
MMSD Water Quality Monitoring Program Data
Southbranch Creek at Green Bay Ct., Site SB-04



MMSD Water Quality Monitoring Program Data
Southbranch Creek at Green Bay Ct., Site SB-04



MMSD Water Quality Monitoring Program Data
Southbranch Creek at Green Bay Ct., Site SB-04



GREEN BAY CT., N. OF GREEN BAY RD. AND TEUTONIA AVE. - SITE 4
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	17.4	7.3	10.89	0.25	0.014	0.26	0.040	0.51	0.247	0.186	ND
Standard Error	0.1	1.8	0.6	2.11	0.04	0.002	0.04	0.011	0.05	0.030	0.030	ND
Median	7.7	18.1	7.2	10.50	0.28	0.014	0.29	0.032	0.50	0.230	0.155	ND
Mode	7.7	ND	7.2	ND	0.33	0.023	ND	0.000	0.39	0.210	0.110	ND
Standard Deviation	0.2	5.6	1.8	5.96	0.13	0.007	0.13	0.035	0.17	0.096	0.095	ND
Sample Variance	0.1	31.4	3.3	35.49	0.02	0.000	0.02	0.001	0.03	0.009	0.009	ND
Kurtosis	2.9	-1.3	1.6	3.13	-1.02	-1.365	-0.95	0.444	-0.57	-1.165	-1.422	ND
Skewness	1.2	-0.4	-0.1	1.19	-0.48	-0.051	-0.45	0.856	0.40	0.419	0.428	ND
Range	0.8	15.1	6.9	20.74	0.38	0.019	0.40	0.110	0.54	0.270	0.274	0.00
Minimum	7.4	9.1	3.8	2.66	0.04	0.004	0.05	0.000	0.27	0.130	0.066	0.00
Maximum	8.2	24.2	10.7	23.40	0.42	0.023	0.44	0.110	0.81	0.400	0.340	0.00
Count	10	10	10	8	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	0.2	4.0	1.3	4.98	0.09	0.005	0.09	0.025	0.12	0.069	0.068	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	514.0	503.4	3.2	10.6	14.0	950	170.0	1911	3.0	ND
Standard Error	ND	ND	48.6	50.6	1.5	5.1	7.1	114	20.9	672	0.2	ND
Median	ND	ND	480.0	467.6	2.2	4.9	4.5	846	145.0	1005	3.0	ND
Mode	ND	ND	ND	ND	ND	ND	ND	ND	220.0	ND	ND	ND
Standard Deviation	ND	ND	153.6	159.9	4.6	16.0	22.3	359	66.2	2127	0.6	ND
Sample Variance	ND	ND	23604.4	25583.4	21.1	256.5	498.0	128963	4377.8	4522254	0.3	ND
Kurtosis	ND	ND	-1.3	-1.3	9.1	7.5	4.8	1	0.7	2	-0.9	ND
Skewness	ND	ND	0.4	0.4	3.0	2.7	2.3	1	1.1	2	-0.2	ND
Range	0.0	0.0	430.0	470.7	16.0	52.1	68.0	1164	210.0	6700	1.8	0
Minimum	0.0	0.0	350.0	306.0	0.0	1.9	2.3	536	100.0	100	2.0	0
Maximum	0.0	0.0	780.0	776.7	16.0	54.0	70.3	1700	310.0	6800	3.8	0
Count	0	0	10	10	10	10	10	10	10	10	10	0
Confidence Level(95.0%)	ND	ND	109.9	114.4	3.3	11.5	16.0	257	47.3	1521	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

GREEN BAY CT., N. OF GREEN BAY RD. AND TEUTONIA AVE. - SITE 4
SOUTHBRANCH CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	54.20	22.00	0.1	3.9	3.6	2.1	1.3	18.6	0.1	0.0	2.0	0.0
Standard Error	6.15	2.97	0.1	0.4	1.0	0.3	1.1	2.7	0.1	0.0	1.0	0.0
Median	54.50	21.00	0.0	3.4	4.0	2.1	0.0	15.5	0.0	0.0	0.0	0.0
Mode	65.00	15.00	0.0	ND	0.0	1.7	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	19.46	9.39	0.4	1.3	3.1	1.0	3.5	8.4	0.3	0.0	3.3	0.0
Sample Variance	378.62	88.22	0.1	1.7	9.9	1.0	12.0	70.5	0.1	0.0	10.6	0.0
Kurtosis	0.27	1.70	10.0	0.3	0.2	1.9	8.9	6.9	10.0	ND	-1.0	ND
Skewness	0.79	1.21	3.2	1.0	0.5	-0.7	3.0	2.5	3.2	ND	1.1	ND
Range	62.00	31.00	1.2	4.1	9.8	3.7	11.0	28.0	1.0	0.0	7.2	0.0
Minimum	32.00	12.00	0.0	2.4	0.0	0.0	0.0	13.0	0.0	0.0	0.0	0.0
Maximum	94.00	43.00	1.2	6.5	9.8	3.7	11.0	41.0	1.0	0.0	7.2	0.0
Count	10	10	10	10	10	10	10	10	10	10	10	2
Confidence Level(95.0%)	13.92	6.72	0.3	0.9	2.2	0.7	2.5	6.0	0.2	0.0	2.3	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	226	165	1.4	5.8	45.0	40.4	4.6	4.5
Standard Error	28	19	0.5	0.6	4.3	4.5	0.2	0.2
Median	225	160	1.1	5.4	43.0	39.5	4.4	4.2
Mode	270	220	0.0	4.6	54.0	50.0	4.2	4.0
Standard Deviation	87	59	1.7	1.8	13.7	14.2	0.8	0.6
Sample Variance	7649	3441	2.7	3.1	188.7	202.0	0.6	0.4
Kurtosis	1	-2	-0.2	1.7	-0.2	-0.5	-0.1	-0.2
Skewness	1	0	0.8	1.3	0.5	0.3	0.5	0.7
Range	280	173	4.7	5.9	46.0	47.0	2.6	2.1
Minimum	130	77	0.0	3.8	25.0	19.0	3.4	3.6
Maximum	410	250	4.7	9.7	71.0	66.0	6.0	5.7
Count	10	10	10	10	10	10	10	10
Confidence Level(95.0%)	63	42	1.2	1.3	9.8	10.2	0.6	0.5

ND = No Data

Provisional MMSD Water Quality Data

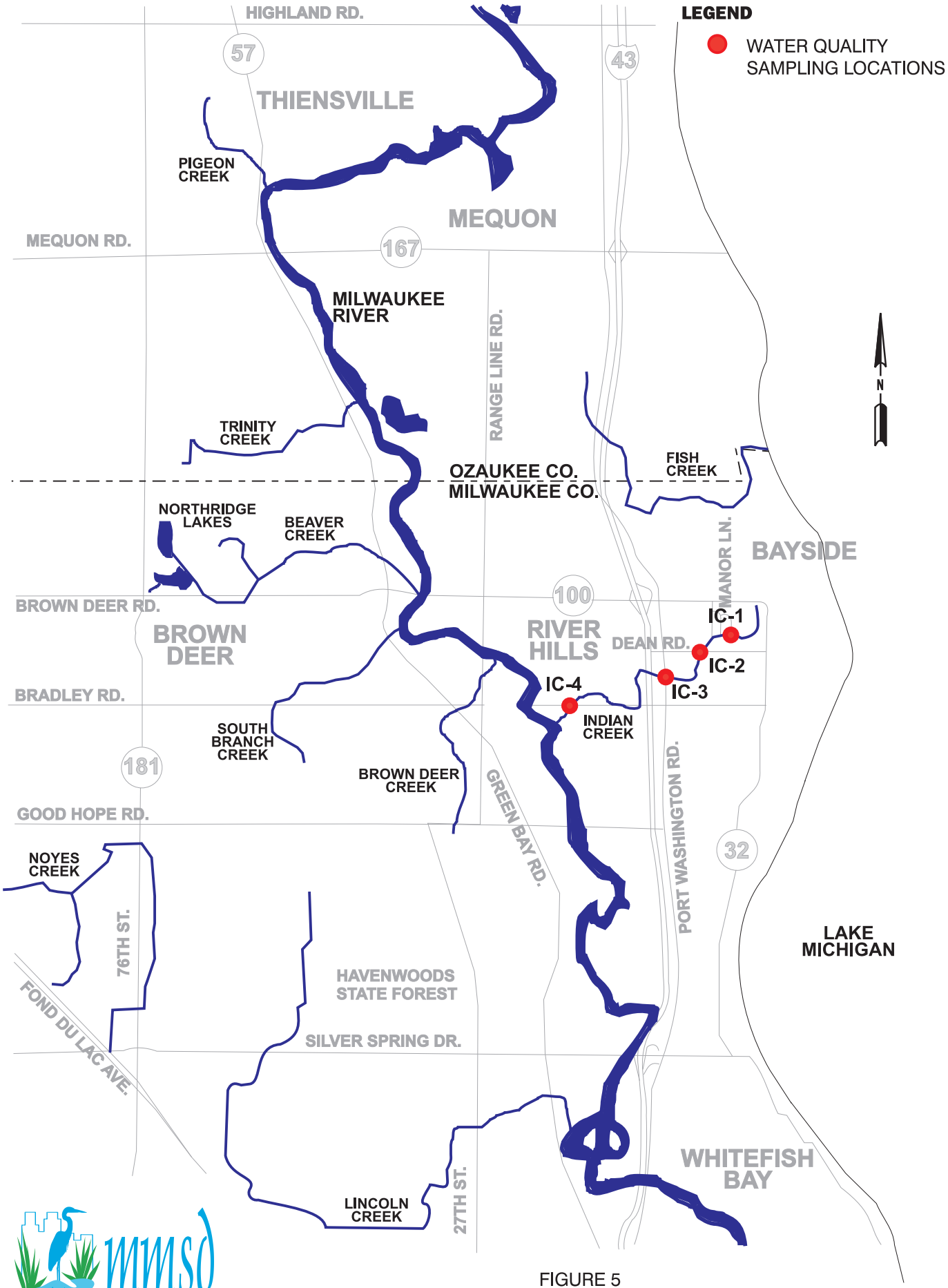


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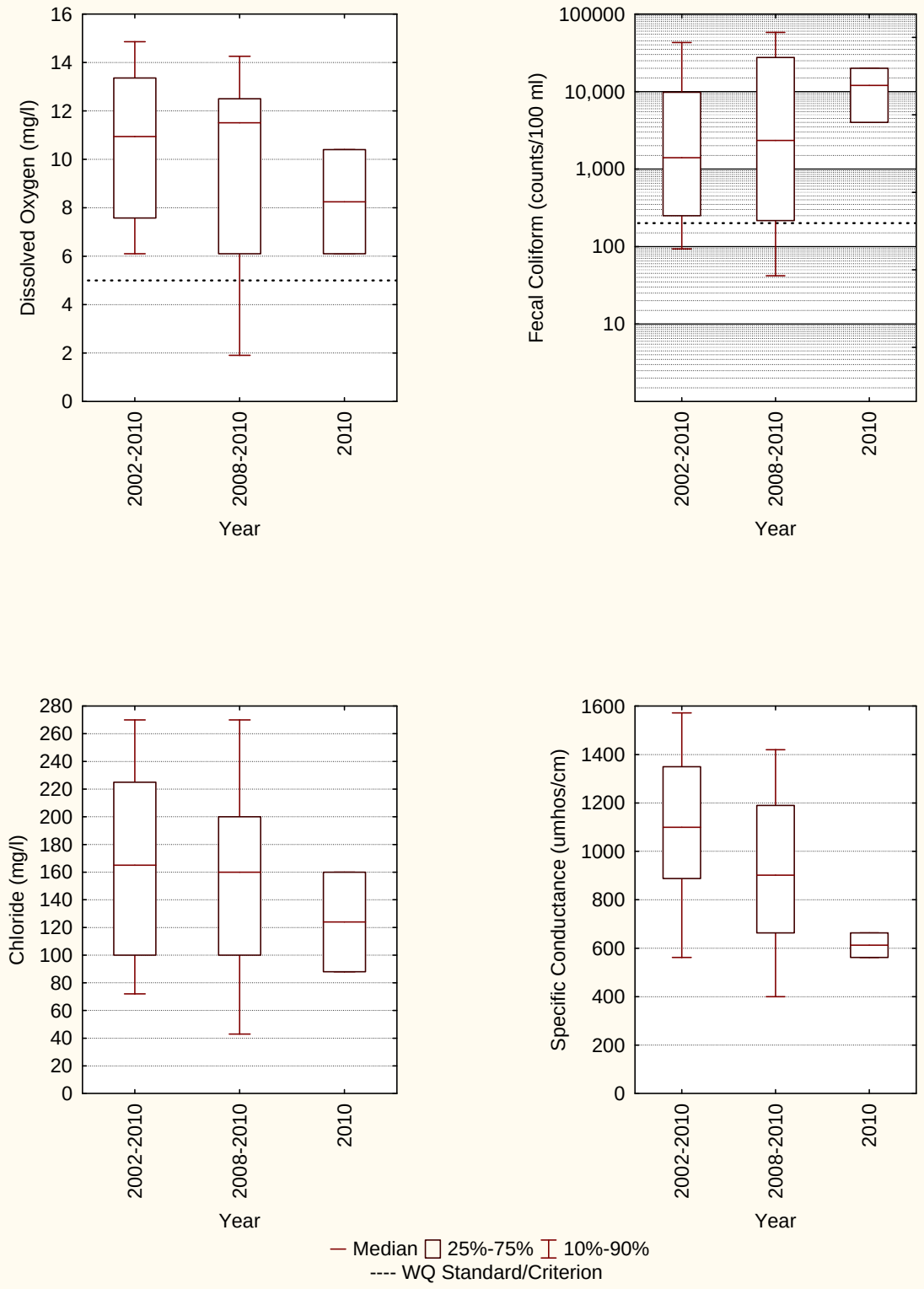
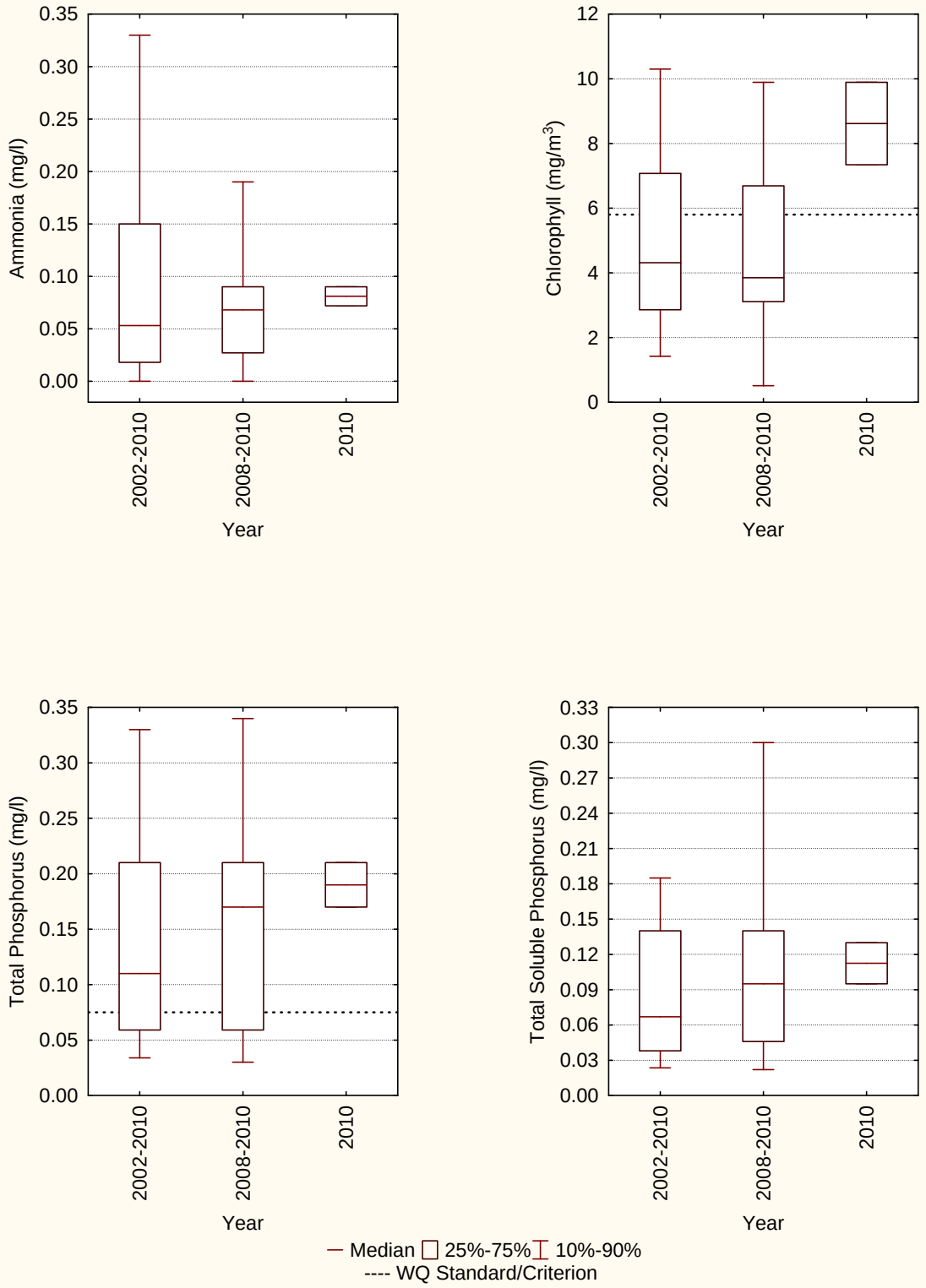
FIGURE 5
INDIAN CREEK (IC) SURVEY
WATER QUALITY SAMPLING LOCATIONS
11/16/07
02-034 pg6 REPORT

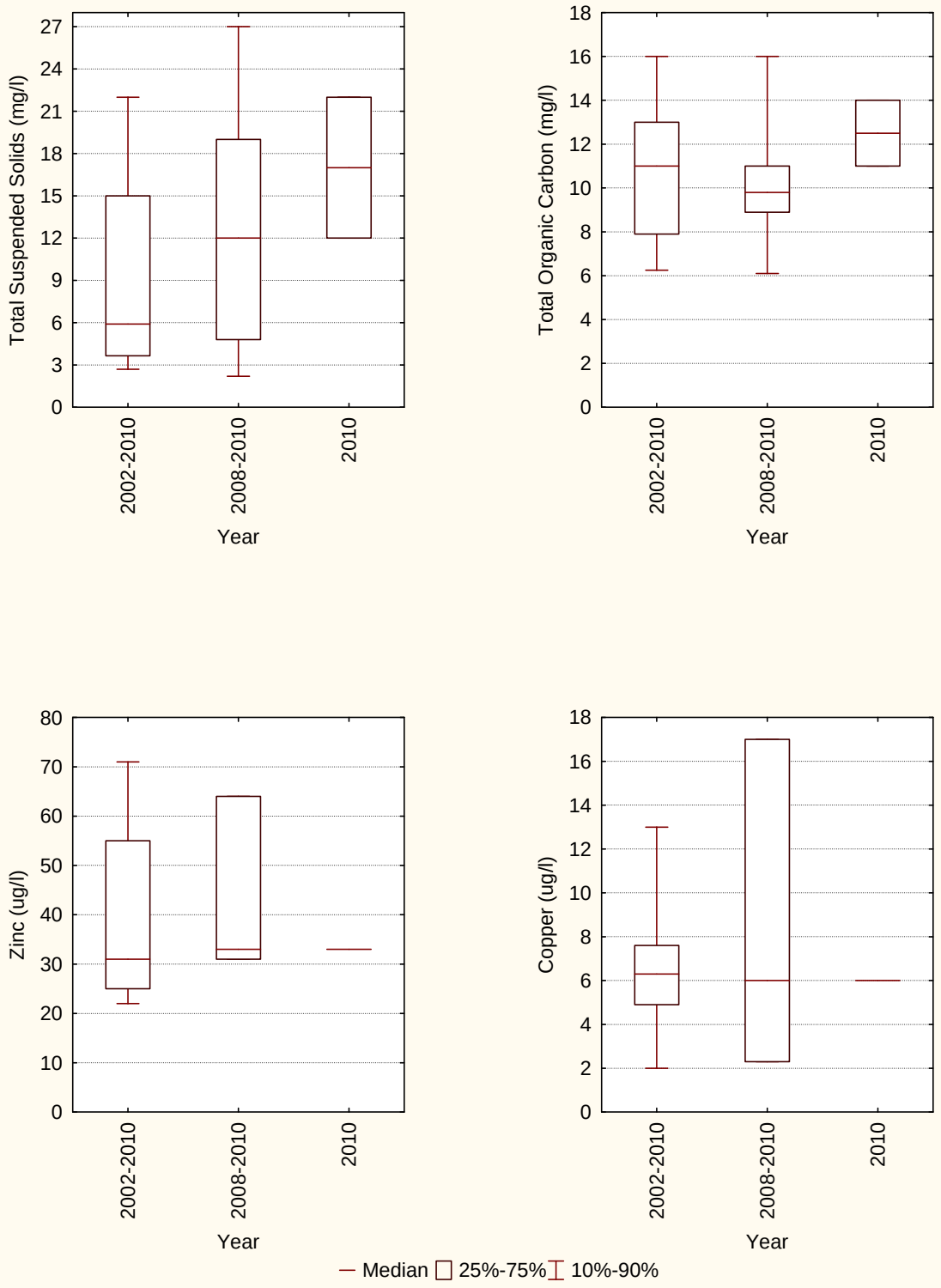
MMSD Water Quality Monitoring Program Data
Indian Creek at Manor Ln., Site IC-01



MMSD Water Quality Monitoring Program Data
Indian Creek at Manor Ln., Site IC-01



MMSD Water Quality Monitoring Program Data
Indian Creek at Manor Ln., Site IC-01



MANOR LANE - SITE 1
INDIAN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	15.5	8.3	8.62	0.41	0.026	0.44	0.081	1.50	0.190	0.113	ND
Standard Error	0.1	7.2	2.2	1.28	0.01	0.002	0.01	0.009	0.30	0.020	0.018	ND
Median	7.7	15.5	8.3	8.62	0.41	0.026	0.44	0.081	1.50	0.190	0.113	ND
Mode	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	0.1	10.1	3.0	1.80	0.01	0.002	0.01	0.013	0.42	0.028	0.025	ND
Sample Variance	0.0	103.0	9.2	3.25	0.00	0.000	0.00	0.000	0.18	0.001	0.001	ND
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	0.1	14.4	4.3	2.55	0.02	0.003	0.02	0.018	0.60	0.040	0.035	0.00
Minimum	7.6	8.4	6.1	7.34	0.40	0.024	0.43	0.072	1.20	0.170	0.095	0.00
Maximum	7.7	22.7	10.4	9.89	0.42	0.027	0.45	0.090	1.80	0.210	0.130	0.00
Count	2	2	2	2	2	2	2	2	2	2	2	0
Confidence Level(95.0%)	0.6	91.2	27.3	16.20	0.13	0.019	0.13	0.114	3.81	0.254	0.222	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	415.0	398.0	5.2	17.0	17.4	613	124.0	12000	4.0	8900
Standard Error	ND	ND	95.0	100.0	1.2	5.0	7.5	51	36.0	8000	0.3	3100
Median	ND	ND	415.0	398.0	5.2	17.0	17.4	613	124.0	12000	4.0	8900
Mode	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	134.4	141.4	1.6	7.1	10.7	71	50.9	11314	0.5	4384
Sample Variance	ND	ND	18050.0	20000.0	2.6	50.0	113.9	5101	2592.0	128000000	0.2	19220000
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	0.0	0.0	190.0	200.0	2.3	10.0	15.1	101	72.0	16000	0.7	6200
Minimum	0.0	0.0	320.0	298.0	4.0	12.0	9.8	562	88.0	4000	3.6	5800
Maximum	0.0	0.0	510.0	498.0	6.3	22.0	24.9	663	160.0	20000	4.3	12000
Count	0	0	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	ND	ND	1207.1	1270.6	14.6	63.5	95.9	642	457.4	101650	4.4	39389

ND=No Data

Provisional MMSD Water Quality Data

MANOR LANE - SITE 1
INDIAN CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	45.00	17.00	0.0	4.8	6.0	2.5	0.0	33.0	0.0	0.0	8.1	0.0
Standard Error	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Median	45.00	17.00	0.0	4.8	6.0	2.5	0.0	33.0	0.0	0.0	8.1	0.0
Mode	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample Variance	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	45.00	17.00	0.0	4.8	6.0	2.5	0.0	33.0	0.0	0.0	8.1	0.0
Maximum	45.00	17.00	0.0	4.8	6.0	2.5	0.0	33.0	0.0	0.0	8.1	0.0
Count	1	1	1	1	1	1	1	1	1	1	1	1
Confidence Level(95.0%)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	180	145	4.6	11.0	49.5	37.0	12.5	11.5
Standard Error	0	25	0.0	1.0	9.5	8.0	1.5	1.5
Median	180	145	4.6	11.0	49.5	37.0	12.5	11.5
Mode	ND	ND	4.6	ND	ND	ND	ND	ND
Standard Deviation	ND	35	0.0	1.4	13.4	11.3	2.1	2.1
Sample Variance	ND	1250	0.0	2.0	180.5	128.0	4.5	4.5
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND
Range	0	50	0.0	2.0	19.0	16.0	3.0	3.0
Minimum	180	120	4.6	10.0	40.0	29.0	11.0	10.0
Maximum	180	170	4.6	12.0	59.0	45.0	14.0	13.0
Count	1	2	2	2	2	2	2	2
Confidence Level(95.0%)	ND	318	0.0	12.7	120.7	101.6	19.1	19.1

ND=No Data

Provisional MMSD Water Quality Data

DEAN ROAD - SITE 2
INDIAN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.4	15.7	6.6	7.30	0.13	0.025	0.15	0.186	1.26	0.272	0.156	ND
Standard Error	0.1	2.7	1.0	1.97	0.03	0.008	0.04	0.091	0.29	0.087	0.052	ND
Median	7.3	17.7	6.3	7.45	0.11	0.022	0.16	0.089	0.95	0.130	0.100	ND
Mode	7.3	ND	ND	ND	ND	ND	0.16	ND	ND	0.110	ND	ND
Standard Deviation	0.2	7.2	2.6	4.40	0.09	0.020	0.10	0.241	0.76	0.230	0.137	ND
Sample Variance	0.0	51.5	6.9	19.39	0.01	0.000	0.01	0.058	0.57	0.053	0.019	ND
Kurtosis	-0.5	-2.4	0.0	-0.67	2.51	-1.458	0.35	3.803	1.43	0.315	-0.691	ND
Skewness	0.9	-0.1	-0.6	0.53	1.54	0.570	0.90	1.977	1.28	1.110	0.741	ND
Range	0.5	16.0	7.5	10.87	0.26	0.050	0.28	0.673	2.16	0.616	0.380	0.00
Minimum	7.2	7.9	2.1	2.73	0.05	0.003	0.05	0.017	0.54	0.074	0.000	0.00
Maximum	7.7	23.8	9.6	13.60	0.31	0.053	0.33	0.690	2.70	0.690	0.380	0.00
Count	7	7	7	5	7	7	7	7	7	7	7	0
Confidence Level(95.0%)	0.2	6.6	2.4	5.47	0.08	0.019	0.09	0.223	0.70	0.213	0.127	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	784.3	777.6	2.8	6.7	7.4	1479	291.0	3925	2.5	3462
Standard Error	ND	ND	183.4	184.5	0.5	1.3	1.7	380	104.0	3361	0.5	2939
Median	ND	ND	840.0	833.5	2.9	6.5	6.6	1320	240.0	290	2.5	210
Mode	ND	ND	ND	ND	3.5	ND	ND	ND	240.0	ND	ND	ND
Standard Deviation	ND	ND	485.2	488.2	1.3	3.5	4.4	1006	275.1	8891	1.2	7777
Sample Variance	ND	ND	235461.9	238360.5	1.6	12.3	19.7	1012329	75693.0	79057422	1.5	60482080
Kurtosis	ND	ND	-0.3	-0.3	-0.8	-1.4	0.7	1	4.7	7	0.1	7
Skewness	ND	ND	0.6	0.6	-0.3	-0.3	1.1	1	2.1	3	0.1	3
Range	0.0	0.0	1360.0	1367.8	3.5	9.0	12.7	2872	802.0	23995	3.7	20999
Minimum	0.0	0.0	240.0	230.2	1.1	2.0	2.9	508	78.0	5	0.7	1
Maximum	0.0	0.0	1600.0	1598.0	4.6	11.0	15.5	3380	880.0	24000	4.4	21000
Count	0	0	7	7	7	7	7	7	7	7	7	7
Confidence Level(95.0%)	ND	ND	448.8	451.5	1.2	3.2	4.1	931	254.4	8223	1.1	7193

ND=No Data

Provisional MMSD Water Quality Data

DEAN ROAD - SITE 2
INDIAN CREEK
WATER QUALITY DATA - 2010

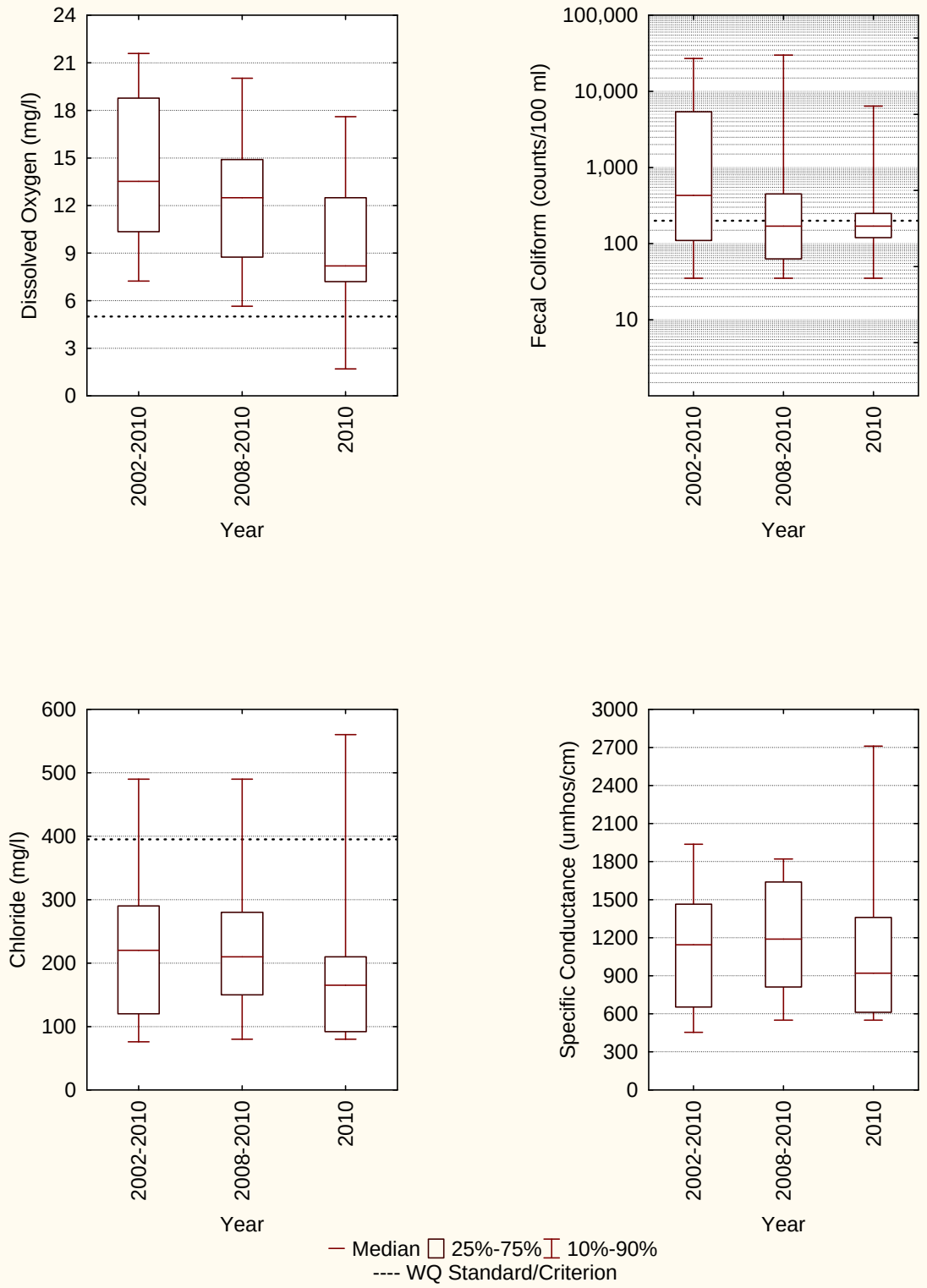
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	51.50	23.75	1.5	3.4	5.5	4.8	19.0	21.5	0.0	0.0	2.9	0.0
Standard Error	24.50	14.25	1.5	0.3	5.5	2.7	19.0	5.5	0.0	0.0	2.9	0.0
Median	51.50	23.75	1.5	3.4	5.5	4.8	19.0	21.5	0.0	0.0	2.9	0.0
Mode	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.0	ND	0.0
Standard Deviation	34.65	20.15	2.1	0.4	7.8	3.8	26.9	7.8	0.0	0.0	4.1	0.0
Sample Variance	1200.50	406.13	4.5	0.1	60.5	14.6	722.0	60.5	0.0	0.0	16.8	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	49.00	28.50	3.0	0.5	11.0	5.4	38.0	11.0	0.0	0.0	5.8	0.0
Minimum	27.00	9.50	0.0	3.1	0.0	2.1	0.0	16.0	0.0	0.0	0.0	0.0
Maximum	76.00	38.00	3.0	3.6	11.0	7.5	38.0	27.0	0.0	0.0	5.8	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	311.30	181.06	19.1	3.2	69.9	34.3	241.4	69.9	0.0	0.0	36.8	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	230	216	3.1	9.8	66.1	54.7	11.5	10.6
Standard Error	120	41	0.9	1.0	10.4	10.3	0.7	0.7
Median	230	260	3.0	9.3	75.0	63.0	12.0	10.0
Mode	ND	ND	0.0	ND	ND	ND	13.0	12.0
Standard Deviation	170	107	2.5	2.8	27.4	27.1	2.0	1.7
Sample Variance	28800	11488	6.0	7.7	751.8	736.2	3.9	3.0
Kurtosis	ND	-2	-1.2	0.0	-2.0	-2.0	-2.1	-1.5
Skewness	ND	0	-0.1	0.0	-0.3	-0.2	-0.1	0.1
Range	240	254	6.2	8.5	67.0	67.0	4.9	4.8
Minimum	110	76	0.0	5.5	28.0	19.0	9.1	8.2
Maximum	350	330	6.2	14.0	95.0	86.0	14.0	13.0
Count	2	7	7	7	7	7	7	7
Confidence Level(95.0%)	1525	99	2.3	2.6	25.4	25.1	1.8	1.6

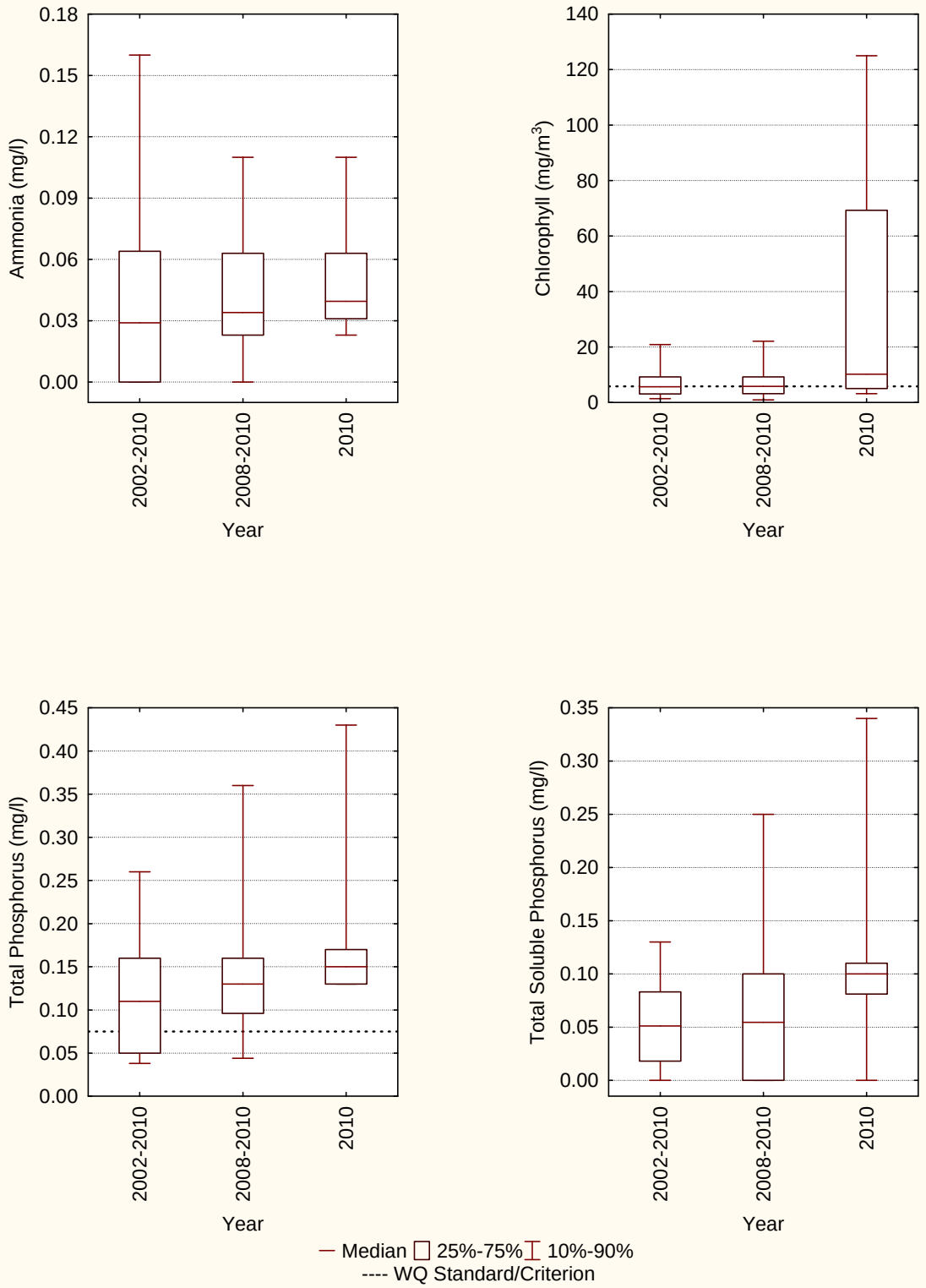
ND=No Data

Provisional MMSD Water Quality Data

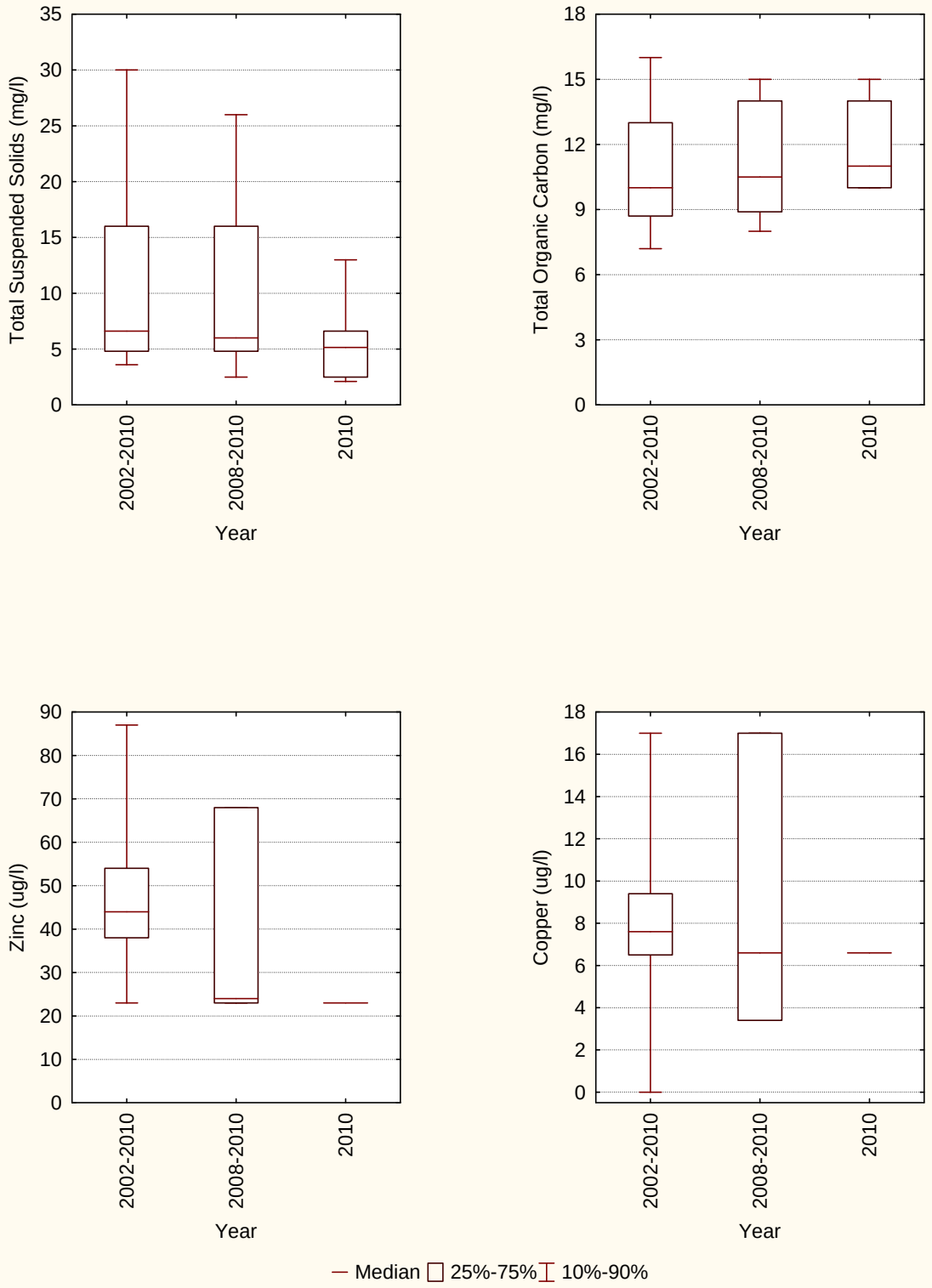
MMSD Water Quality Monitoring Program Data
Indian Creek at Port Washington Rd., Site IC-03



MMSD Water Quality Monitoring Program Data
Indian Creek at Port Washington Rd., Site IC-03



MMSD Water Quality Monitoring Program Data
Indian Creek at Port Washington Rd., Site IC-03



PORT WASHINGTON ROAD - SITE 3
INDIAN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	14.7	9.2	37.17	0.14	0.018	0.15	0.051	1.08	0.202	0.126	ND
Standard Error	0.1	3.0	2.2	29.36	0.03	0.007	0.03	0.013	0.23	0.057	0.057	ND
Median	7.5	14.5	8.2	10.25	0.12	0.010	0.13	0.040	0.79	0.150	0.100	ND
Mode	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.130	ND	ND
Standard Deviation	0.3	7.2	5.4	58.71	0.08	0.018	0.08	0.032	0.57	0.129	0.127	ND
Sample Variance	0.1	52.2	28.9	3447.06	0.01	0.000	0.01	0.001	0.33	0.017	0.016	ND
Kurtosis	-1.9	-2.1	0.7	3.89	5.18	4.299	4.20	2.540	-1.56	4.662	3.242	ND
Skewness	0.4	0.1	0.3	1.97	2.23	2.067	1.99	1.612	0.92	2.145	1.552	ND
Range	0.8	17.6	15.9	121.81	0.20	0.046	0.21	0.087	1.32	0.300	0.340	0.00
Minimum	7.2	6.6	1.7	3.19	0.09	0.007	0.10	0.023	0.58	0.130	0.000	0.00
Maximum	8.0	24.2	17.6	125.00	0.29	0.053	0.31	0.110	1.90	0.430	0.340	0.00
Count	6	6	6	4	6	6	6	6	6	5	5	0
Confidence Level(95.0%)	0.3	7.6	5.6	93.42	0.08	0.019	0.08	0.033	0.60	0.160	0.158	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	640.0	634.3	1.7	5.8	7.4	1179	212.0	1395	2.4	4371
Standard Error	ND	ND	170.9	171.1	0.8	1.6	1.9	329	72.5	1252	0.4	2741
Median	ND	ND	540.0	531.5	1.2	5.2	6.5	921	165.0	170	2.2	97
Mode	ND	ND	310.0	ND	0.0	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	418.7	419.1	1.9	4.0	4.6	806	177.7	2799	0.8	6714
Sample Variance	ND	ND	175320.0	175647.6	3.6	16.0	21.6	650148	31560.0	7834225	0.7	45075467
Kurtosis	ND	ND	2.0	1.9	-2.3	2.1	0.5	3	4.4	5	2.8	-2
Skewness	ND	ND	1.4	1.4	0.4	1.4	0.9	2	2.0	2	1.4	1
Range	0.0	0.0	1090.0	1089.6	4.2	10.9	12.7	2160	480.0	6365	2.3	13994
Minimum	0.0	0.0	310.0	303.8	0.0	2.1	2.5	550	80.0	35	1.5	6
Maximum	0.0	0.0	1400.0	1393.4	4.2	13.0	15.2	2710	560.0	6400	3.8	14000
Count	0	0	6	6	6	6	6	6	6	5	5	6
Confidence Level(95.0%)	ND	ND	439.4	439.8	2.0	4.2	4.9	846	186.4	3475	1.0	7046

ND=No Data

Provisional MMSD Water Quality Data

PORT WASHINGTON ROAD - SITE 3
INDIAN CREEK
WATER QUALITY DATA - 2010

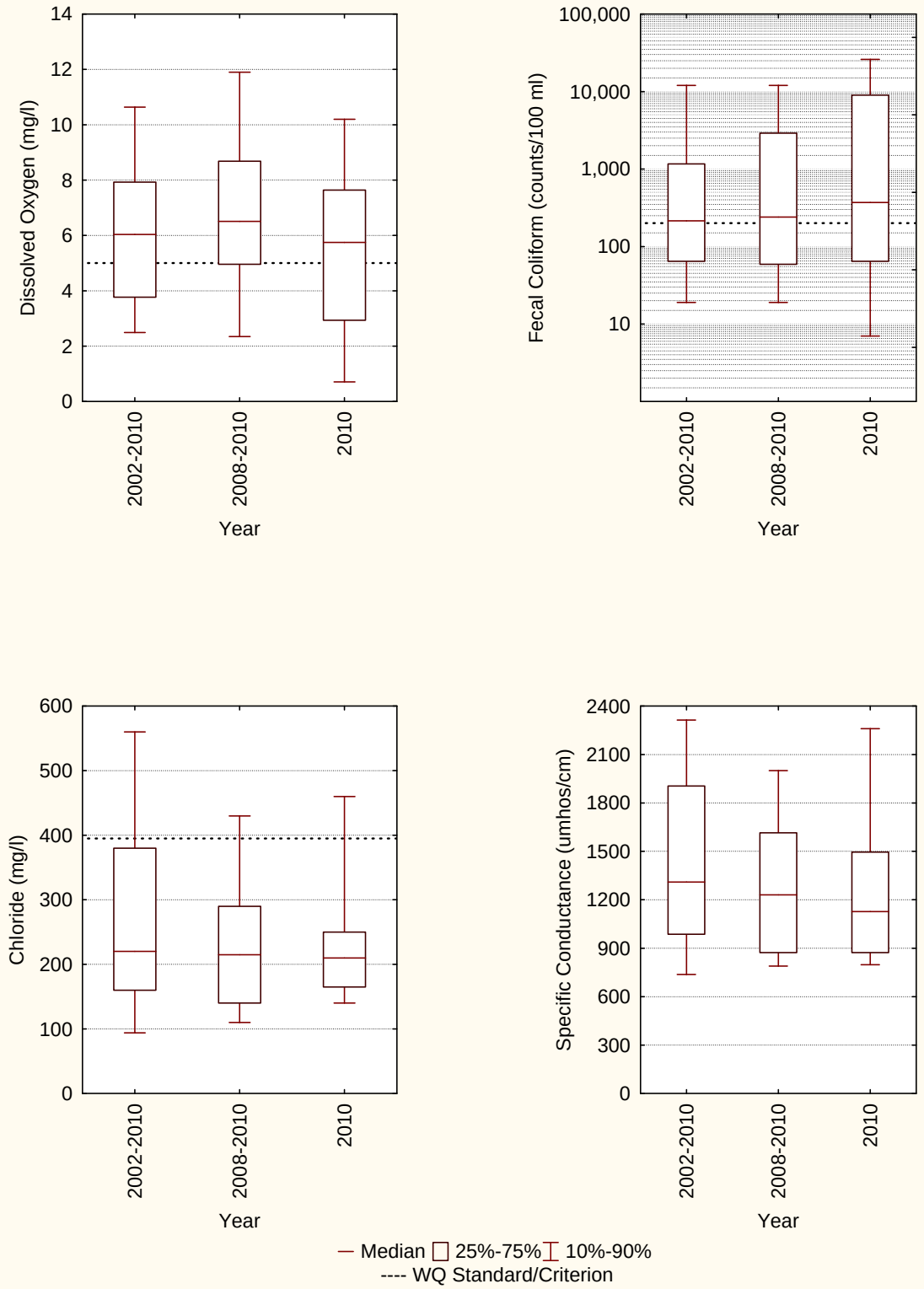
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	29.00	10.00	0.0	2.7	6.6	2.0	0.0	23.0	0.0	0.0	0.0	0.0
Standard Error	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Median	29.00	10.00	0.0	2.7	6.6	2.0	0.0	23.0	0.0	0.0	0.0	0.0
Mode	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample Variance	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	29.00	10.00	0.0	2.7	6.6	2.0	0.0	23.0	0.0	0.0	0.0	0.0
Maximum	29.00	10.00	0.0	2.7	6.6	2.0	0.0	23.0	0.0	0.0	0.0	0.0
Count	1	1	1	1	1	1	1	1	1	1	1	1
Confidence Level(95.0%)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	110	213	2.3	9.5	65.5	53.8	12.0	10.7
Standard Error	0	44	1.0	1.9	12.1	11.7	1.0	0.9
Median	110	200	2.1	8.1	58.0	48.0	11.0	9.7
Mode	ND	ND	0.0	ND	ND	ND	10.0	ND
Standard Deviation	ND	109	2.5	4.6	29.7	28.8	2.3	1.9
Sample Variance	ND	11787	6.5	21.3	881.1	826.6	5.5	3.8
Kurtosis	ND	-2	-3.2	-1.9	-1.3	-1.7	-2.6	2.7
Skewness	ND	0	0.0	0.6	0.6	0.5	0.6	1.7
Range	0	250	4.9	10.7	74.0	69.0	5.0	4.6
Minimum	110	100	0.0	5.3	36.0	26.0	10.0	9.4
Maximum	110	350	4.9	16.0	110.0	95.0	15.0	14.0
Count	1	6	6	6	6	6	5	5
Confidence Level(95.0%)	ND	114	2.7	4.8	31.2	30.2	2.9	2.4

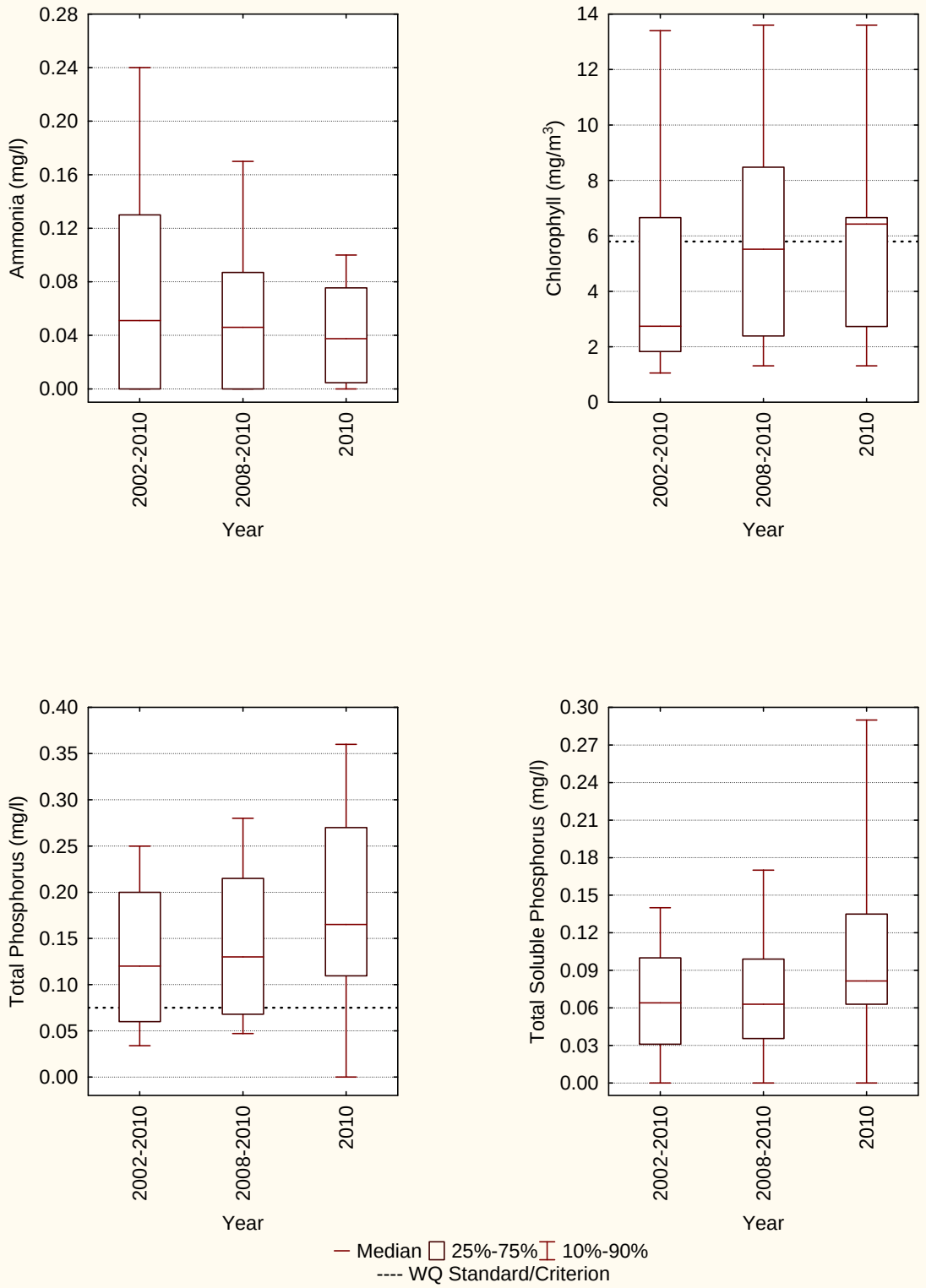
ND=No Data

Provisional MMSD Water Quality Data

MMSD Water Quality Monitoring Program Data
Indian Creek at Bradley Rd., Site IC-04



MMSD Water Quality Monitoring Program Data
Indian Creek at Bradley Rd., Site IC-04



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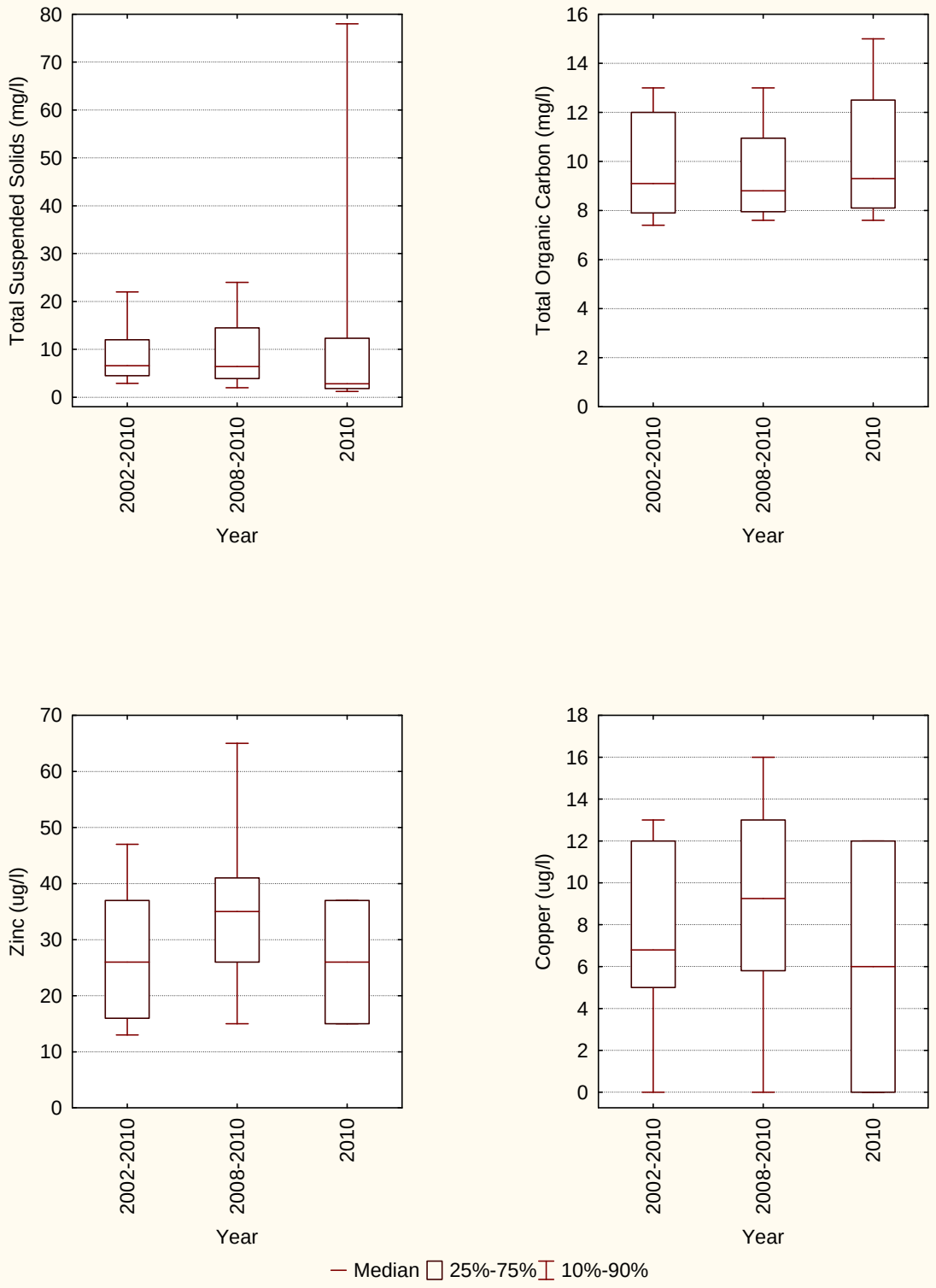
Indian Creek at Bradley Rd., Site IC-04



BRADLEY ROAD - SITE 4
INDIAN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.5	14.4	5.4	6.15	0.13	0.021	0.15	0.042	0.95	0.181	0.106	ND
Standard Error	0.2	2.2	1.2	2.13	0.04	0.008	0.04	0.015	0.20	0.041	0.031	ND
Median	7.7	13.9	5.8	6.43	0.11	0.010	0.12	0.038	0.83	0.165	0.082	ND
Mode	7.8	ND	ND	ND	ND	ND	ND	0.000	1.80	ND	ND	ND
Standard Deviation	0.4	6.3	3.3	4.77	0.10	0.024	0.12	0.041	0.56	0.116	0.088	ND
Sample Variance	0.2	40.1	10.9	22.74	0.01	0.001	0.02	0.002	0.31	0.013	0.008	ND
Kurtosis	0.6	-1.9	-0.6	1.11	-1.11	3.142	-1.04	-2.099	-0.60	-0.549	2.507	ND
Skewness	-1.3	0.2	-0.4	1.00	0.43	1.743	0.54	0.238	0.96	0.040	1.423	ND
Range	1.2	15.6	9.5	12.29	0.28	0.073	0.35	0.100	1.38	0.360	0.290	0.00
Minimum	6.7	7.3	0.7	1.31	0.00	0.000	0.00	0.000	0.42	0.000	0.000	0.00
Maximum	7.9	22.9	10.2	13.60	0.28	0.073	0.35	0.100	1.80	0.360	0.290	0.00
Count	8	8	8	5	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.4	5.3	2.8	5.92	0.09	0.020	0.10	0.035	0.47	0.097	0.074	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	658.8	644.6	2.4	14.1	19.4	1256	231.3	5610	2.7	3072
Standard Error	ND	ND	89.1	91.6	0.8	9.3	8.9	176	36.0	3286	0.4	1607
Median	ND	ND	605.0	567.7	1.7	2.8	8.7	1127	210.0	370	2.5	495
Mode	ND	ND	ND	ND	1.7	ND	ND	ND	210.0	ND	ND	ND
Standard Deviation	ND	ND	252.1	259.2	2.3	26.4	25.1	498	101.8	9294	1.3	4545
Sample Variance	ND	ND	63555.4	67169.2	5.3	697.1	630.7	248210	10355.4	86369158	1.6	20661290
Kurtosis	ND	ND	-0.3	-0.5	2.5	6.9	2.8	1	4.3	3	-1.3	1
Skewness	ND	ND	0.7	0.7	1.6	2.6	1.8	1	1.9	2	0.0	1
Range	0.0	0.0	750.0	749.6	7.2	76.8	70.2	1462	320.0	25993	3.6	11996
Minimum	0.0	0.0	350.0	348.0	0.0	1.2	3.3	798	140.0	7	0.8	4
Maximum	0.0	0.0	1100.0	1097.6	7.2	78.0	73.5	2260	460.0	26000	4.4	12000
Count	0	0	8	8	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	ND	ND	210.8	216.7	1.9	22.1	21.0	417	85.1	7770	1.1	3800

ND=No Data

Provisional MMSD Water Quality Data

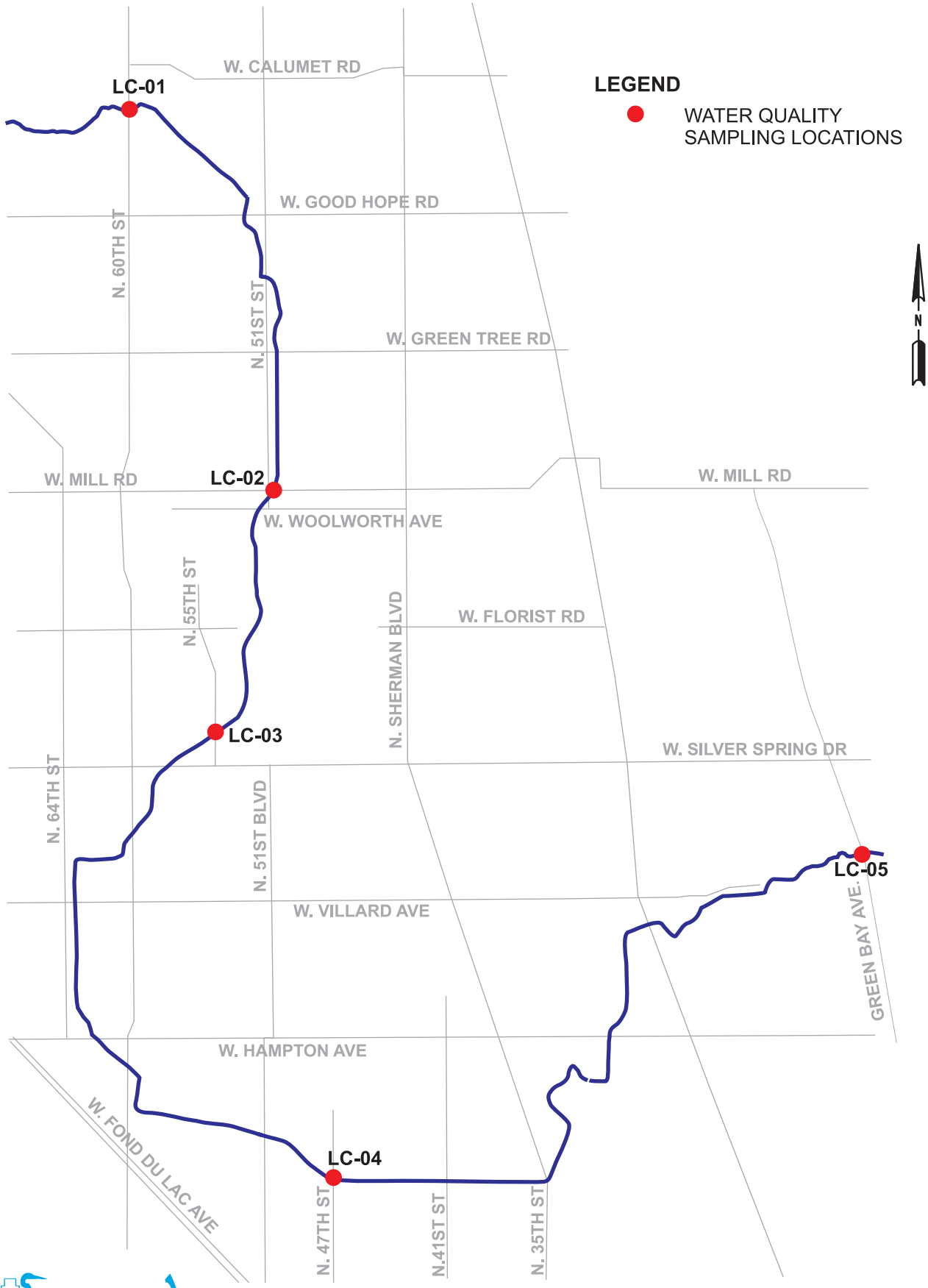
BRADLEY ROAD - SITE 4
INDIAN CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	52.00	25.00	0.3	4.3	6.0	3.1	1.6	26.0	0.0	0.0	0.0	0.0
Standard Error	18.00	12.00	0.3	1.1	6.0	1.0	1.6	11.0	0.0	0.0	0.0	0.0
Median	52.00	25.00	0.3	4.3	6.0	3.1	1.6	26.0	0.0	0.0	0.0	0.0
Mode	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.0	ND	0.0
Standard Deviation	25.46	16.97	0.4	1.6	8.5	1.4	2.3	15.6	0.0	0.0	ND	0.0
Sample Variance	648.00	288.00	0.1	2.4	72.0	2.0	5.1	242.0	0.0	0.0	ND	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	36.00	24.00	0.5	2.2	12.0	2.0	3.2	22.0	0.0	0.0	0.0	0.0
Minimum	34.00	13.00	0.0	3.2	0.0	2.1	0.0	15.0	0.0	0.0	0.0	0.0
Maximum	70.00	37.00	0.5	5.4	12.0	4.1	3.2	37.0	0.0	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	1	2
Confidence Level(95.0%)	228.71	152.47	3.2	14.0	76.2	12.7	20.3	139.8	0.0	0.0	ND	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	235	213	2.8	8.6	63.1	52.9	10.3	9.6
Standard Error	95	29	1.2	1.4	6.2	6.8	1.0	0.8
Median	235	215	1.6	6.4	63.5	52.5	9.3	8.9
Mode	ND	270	0.0	5.2	44.0	65.0	ND	ND
Standard Deviation	134	83	3.4	4.0	17.5	19.3	2.7	2.1
Sample Variance	18050	6821	11.7	16.1	307.0	373.6	7.3	4.5
Kurtosis	ND	-2	-0.8	-1.5	-2.1	-2.1	-0.7	-1.2
Skewness	ND	0	0.8	0.8	0.1	0.1	0.8	0.6
Range	190	200	8.8	9.8	43.0	48.0	7.4	5.8
Minimum	140	110	0.0	5.2	44.0	31.0	7.6	7.2
Maximum	330	310	8.8	15.0	87.0	79.0	15.0	13.0
Count	2	8	8	8	8	8	8	8
Confidence Level(95.0%)	1207	69	2.9	3.4	14.6	16.2	2.3	1.8

ND=No Data

Provisional MMSD Water Quality Data



Preserving The Environment • Improving Water Quality

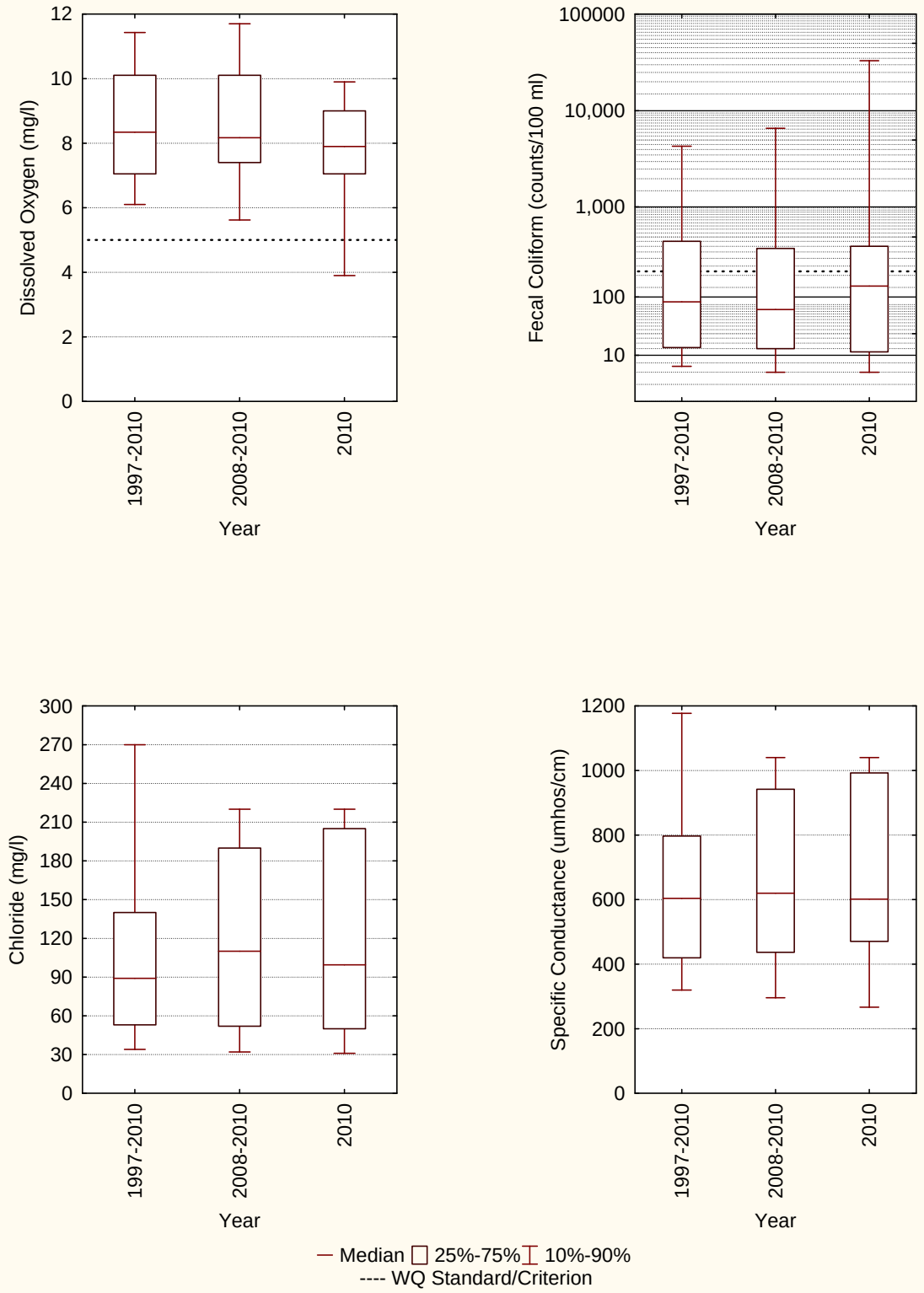
FIGURE 6

LINCOLN CREEK (LC) SURVEY
WATER QUALITY SAMPLING LOCATIONS

11/21/07

02-034 pg7 REPORT

MMSD Water Quality Monitoring Program Data
Lincoln Creek at 60th St., Site LC-01



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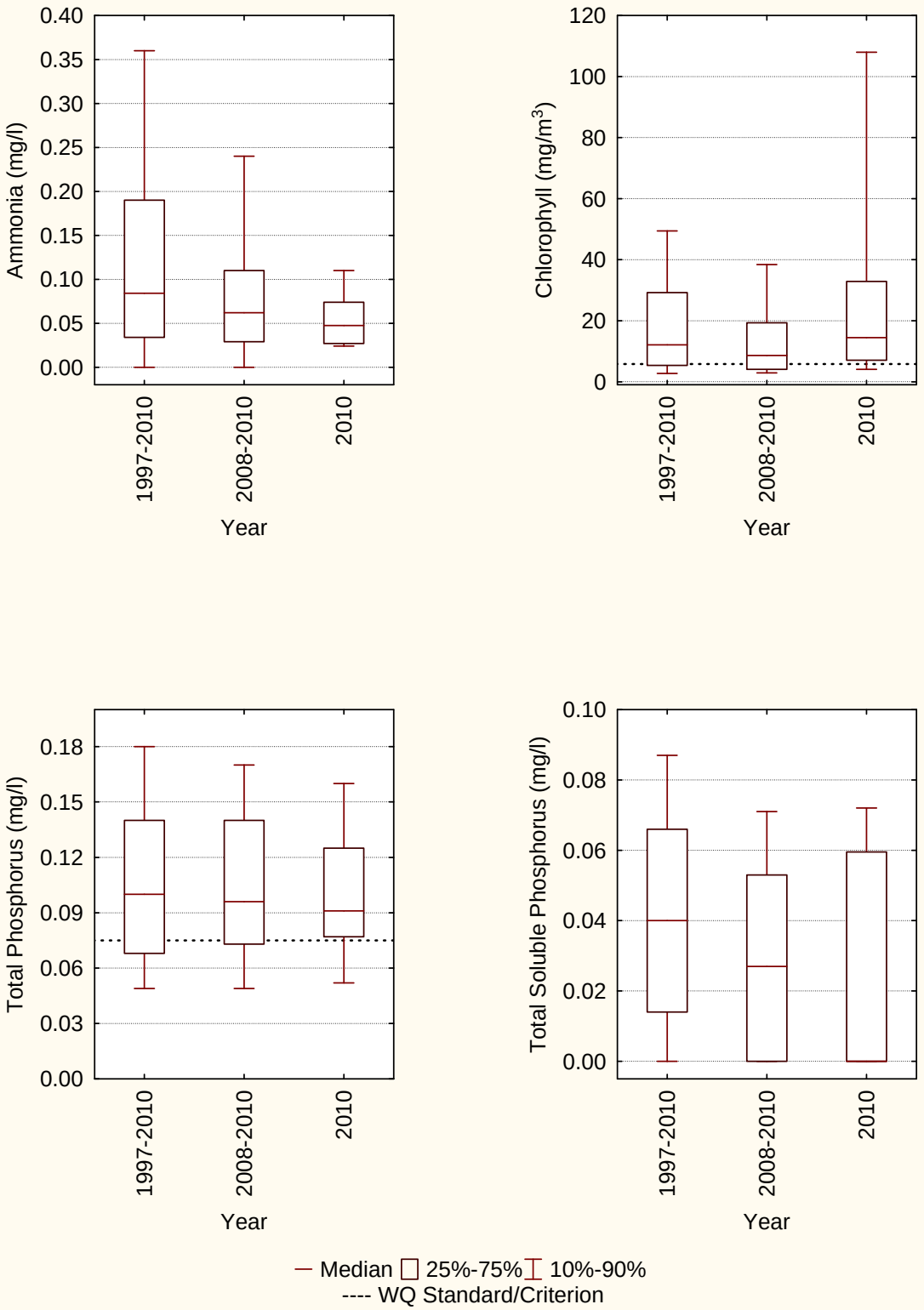
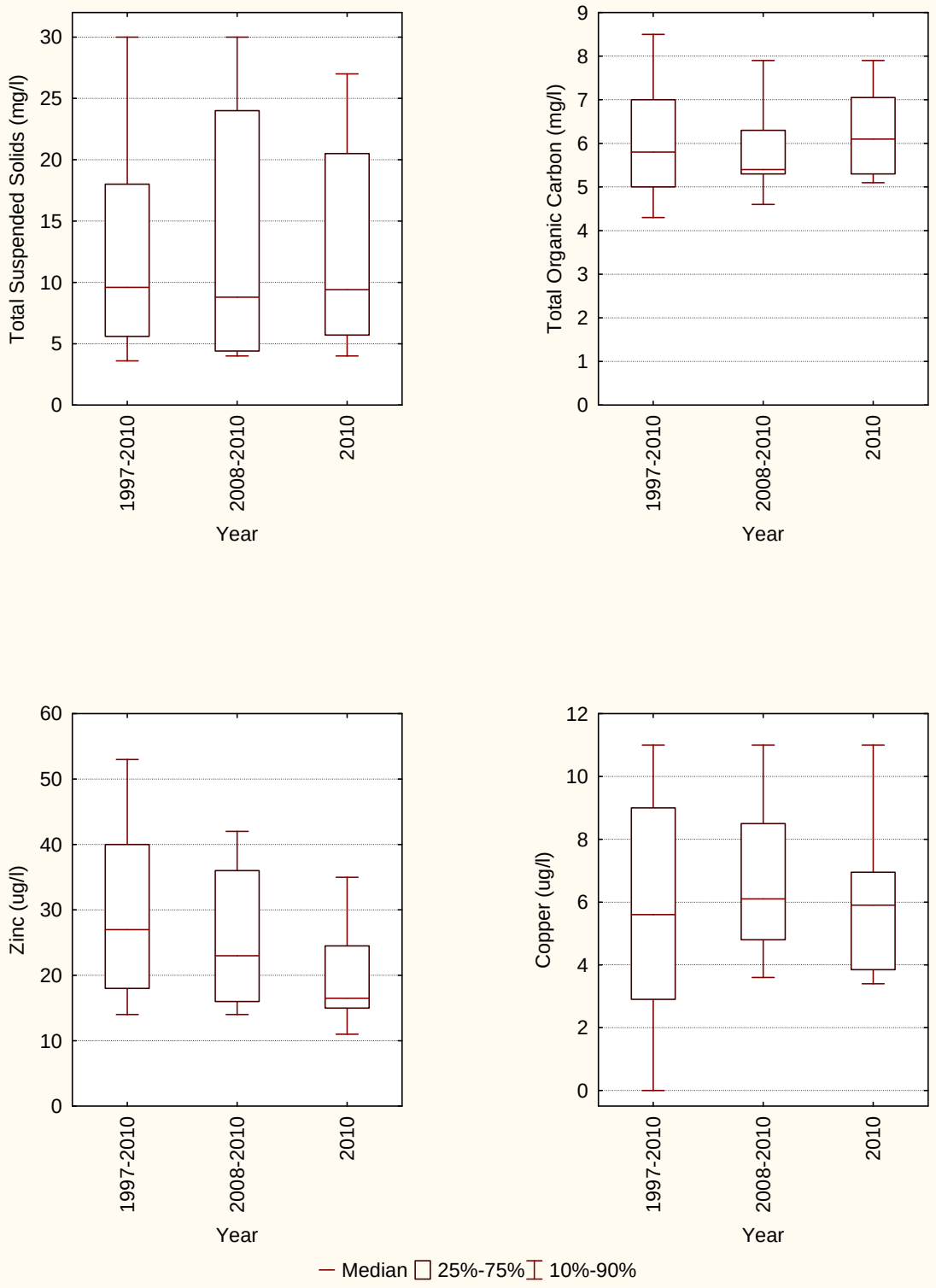
Lincoln Creek at 60th St., Site LC-01



MMSD Water Quality Monitoring Program Data
Lincoln Creek at 60th St., Site LC-01



60TH STREET, NORTH OF GOOD HOPE ROAD - SITE 1
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	17.3	7.6	27.62	0.17	0.019	0.19	0.121	0.83	0.099	0.026	ND
Standard Error	0.1	1.9	0.7	12.42	0.04	0.008	0.04	0.071	0.14	0.011	0.012	ND
Median	7.9	19.0	7.9	14.45	0.13	0.009	0.14	0.048	0.66	0.091	0.000	ND
Mode	7.9	ND	7.8	ND	0.13	0.006	0.14	ND	0.66	0.077	0.000	ND
Standard Deviation	0.3	6.7	2.4	35.14	0.13	0.026	0.14	0.247	0.47	0.037	0.041	ND
Sample Variance	0.1	44.5	5.5	1234.60	0.02	0.001	0.02	0.061	0.22	0.001	0.002	ND
Kurtosis	-1.5	-1.0	1.1	4.69	2.57	10.059	0.88	11.611	4.79	-0.628	0.870	ND
Skewness	-0.4	-0.5	-1.1	2.15	1.58	3.083	1.28	3.388	2.19	0.539	1.360	ND
Range	0.9	20.1	8.3	103.91	0.44	0.096	0.44	0.878	1.65	0.111	0.120	0.00
Minimum	7.2	4.8	2.5	4.09	0.05	0.004	0.06	0.022	0.45	0.049	0.000	0.00
Maximum	8.1	24.9	10.8	108.00	0.49	0.100	0.50	0.900	2.10	0.160	0.120	0.00
Count	12	12	12	8	12	12	12	12	12	12	12	0
Confidence Level(95.0%)	0.2	4.2	1.5	29.38	0.08	0.017	0.09	0.157	0.30	0.024	0.026	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	380.1	367.4	5.1	12.7	10.6	698	119.8	14525	2.1	ND
Standard Error	ND	ND	58.2	59.8	0.9	2.8	3.1	112	25.1	11728	0.5	ND
Median	ND	ND	330.0	316.8	4.7	9.4	6.4	602	99.5	135	2.1	ND
Mode	ND	ND	250.0	ND	ND	9.4	ND	1040	220.0	0	0.0	ND
Standard Deviation	ND	ND	201.5	207.1	3.2	9.5	10.8	389	86.8	40629	1.6	ND
Sample Variance	ND	ND	40583.7	42910.1	10.1	90.9	116.8	151194	7531.8	1650688885	2.4	ND
Kurtosis	ND	ND	0.8	0.7	1.0	-0.7	2.2	1	-0.9	10	0.3	ND
Skewness	ND	ND	0.9	0.8	0.6	0.8	1.7	1	0.6	3	0.6	ND
Range	0.0	0.0	729.0	750.0	12.0	28.9	35.0	1401	268.0	140000	5.1	0
Minimum	0.0	0.0	91.0	64.0	0.0	1.1	2.0	169	12.0	0	0.0	0
Maximum	0.0	0.0	820.0	814.0	12.0	30.0	37.0	1570	280.0	140000	5.1	0
Count	0	0	12	12	12	12	12	12	12	12	12	0
Confidence Level(95.0%)	ND	ND	128.0	131.6	2.0	6.1	6.9	247	55.1	25814	1.0	ND

ND = No Data

Provisional MMSD Water Quality Data

60TH STREET, NORTH OF GOOD HOPE ROAD - SITE 1
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	41.08	15.83	0.3	3.4	5.8	3.2	2.5	22.2	0.0	0.5	0.0	0.0
Standard Error	4.47	1.91	0.3	0.4	0.9	0.9	2.2	4.2	0.0	0.5	0.0	0.0
Median	43.50	14.50	0.0	3.2	5.9	2.5	0.0	16.5	0.0	0.0	0.0	0.0
Mode	54.00	23.00	0.0	3.2	6.6	0.0	0.0	16.0	0.0	0.0	0.0	0.0
Standard Deviation	15.48	6.62	1.1	1.3	3.1	3.1	7.8	14.6	0.0	1.7	0.0	0.0
Sample Variance	239.54	43.89	1.2	1.6	9.6	9.9	60.3	213.7	0.0	2.9	0.0	0.0
Kurtosis	-0.89	-1.00	12.0	1.0	0.5	6.1	11.7	5.8	ND	12.0	ND	ND
Skewness	-0.27	-0.08	3.5	1.0	0.2	2.2	3.4	2.3	ND	3.5	ND	ND
Range	50.00	20.80	3.8	4.3	11.0	12.0	27.0	53.4	0.0	5.9	0.0	0.0
Minimum	15.00	5.20	0.0	1.9	0.0	0.0	0.0	9.6	0.0	0.0	0.0	0.0
Maximum	65.00	26.00	3.8	6.2	11.0	12.0	27.0	63.0	0.0	5.9	0.0	0.0
Count	12	12	12	12	12	12	12	12	12	12	12	3
Confidence Level(95.0%)	9.83	4.21	0.7	0.8	2.0	2.0	4.9	9.3	0.0	1.1	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	169	132	3.2	11.5	38.2	32.1	6.2	5.7
Standard Error	19	16	0.6	1.9	3.6	3.6	0.3	0.2
Median	170	130	3.4	9.8	36.0	30.5	6.1	5.5
Mode	170	180	3.4	11.0	47.0	ND	5.3	5.5
Standard Deviation	66	54	2.0	6.3	12.5	12.4	1.2	0.8
Sample Variance	4370	2926	3.9	40.2	156.3	153.4	1.3	0.7
Kurtosis	-1	-1	0.6	6.7	-0.6	-0.8	-0.7	-0.2
Skewness	0	0	-0.1	2.4	-0.1	0.1	0.5	0.1
Range	212	174	7.1	23.6	41.0	40.0	3.7	2.8
Minimum	58	46	0.0	5.4	18.0	13.0	4.6	4.2
Maximum	270	220	7.1	29.0	59.0	53.0	8.3	7.0
Count	12	12	12	11	12	12	12	12
Confidence Level(95.0%)	42	34	1.3	4.3	7.9	7.9	0.7	0.5

ND = No Data

Provisional MMSD Water Quality Data

51ST STREET AND WOOLWORTH AVENUE - SITE 2
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	15.0	7.1	6.53	0.21	0.010	0.22	0.026	0.46	0.092	0.055	ND
Standard Error	0.1	1.9	0.8	1.80	0.04	0.002	0.04	0.011	0.04	0.010	0.011	ND
Median	7.6	18.5	7.2	4.01	0.16	0.009	0.18	0.015	0.43	0.092	0.060	ND
Mode	7.6	19.3	ND	ND	ND	ND	0.45	0.000	ND	0.140	0.000	ND
Standard Deviation	0.2	6.5	2.7	5.10	0.15	0.007	0.15	0.038	0.14	0.035	0.039	ND
Sample Variance	0.1	42.7	7.3	25.96	0.02	0.000	0.02	0.001	0.02	0.001	0.002	ND
Kurtosis	0.4	-1.3	2.1	1.94	-1.36	-0.265	-1.43	5.365	-1.23	-1.232	-1.297	ND
Skewness	0.3	-0.5	-1.2	1.55	0.59	0.549	0.53	2.173	0.40	0.044	-0.443	ND
Range	0.8	19.4	10.0	14.93	0.39	0.023	0.40	0.130	0.39	0.101	0.100	0.00
Minimum	7.2	3.3	0.6	2.17	0.05	0.000	0.05	0.000	0.28	0.039	0.000	0.00
Maximum	8.0	22.7	10.6	17.10	0.44	0.023	0.45	0.130	0.67	0.140	0.100	0.00
Count	12	12	12	8	12	12	12	12	12	12	12	0
Confidence Level(95.0%)	0.1	4.1	1.7	4.26	0.09	0.004	0.10	0.024	0.09	0.022	0.025	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	490.4	484.9	1.5	5.5	5.6	904	149.4	7431	3.0	ND
Standard Error	ND	ND	75.6	77.1	0.6	1.9	1.9	138	26.1	4962	0.3	ND
Median	ND	ND	525.0	523.5	0.7	2.1	2.1	956	155.0	1250	3.1	ND
Mode	ND	ND	ND	ND	0.0	1.6	ND	ND	46.0	1200	3.1	ND
Standard Deviation	ND	ND	262.0	267.1	2.0	6.6	6.7	480	90.4	17190	1.1	ND
Sample Variance	ND	ND	68638.4	71346.2	3.9	43.1	44.4	229957	8173.5	295482394	1.2	ND
Kurtosis	ND	ND	-1.1	-1.1	2.0	2.1	0.7	-1	-1.1	10	1.0	ND
Skewness	ND	ND	-0.3	-0.3	1.4	1.7	1.5	0	0.0	3	-0.7	ND
Range	0.0	0.0	805.0	819.4	6.4	20.0	18.8	1494	284.0	59995	4.1	0
Minimum	0.0	0.0	55.0	39.0	0.0	1.0	1.3	216	16.0	5	0.7	0
Maximum	0.0	0.0	860.0	858.4	6.4	21.0	20.1	1710	300.0	60000	4.8	0
Count	0	0	12	12	12	12	12	12	12	12	12	0
Confidence Level(95.0%)	ND	ND	166.5	169.7	1.3	4.2	4.2	305	57.4	10922	0.7	ND

ND = No Data

Provisional MMSD Water Quality Data

51ST STREET AND WOOLWORTH AVENUE - SITE 2
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	56.92	22.37	0.0	3.4	5.6	3.0	0.7	16.4	0.1	0.7	1.2	0.0
Standard Error	7.98	3.47	0.0	0.1	1.0	0.4	0.6	2.2	0.1	0.5	0.8	0.0
Median	62.50	24.00	0.0	3.4	5.6	2.7	0.0	15.0	0.0	0.0	0.0	0.0
Mode	ND	24.00	0.0	4.0	0.0	2.7	0.0	16.0	0.0	0.0	0.0	0.0
Standard Deviation	27.64	12.01	0.1	0.4	3.6	1.4	2.0	7.2	0.3	1.7	2.8	0.0
Sample Variance	764.08	144.22	0.0	0.2	12.8	1.9	3.8	52.5	0.1	2.8	7.6	0.0
Kurtosis	-0.12	-1.47	12.0	-1.4	-0.1	0.6	8.9	5.9	12.0	7.5	4.4	ND
Skewness	0.03	-0.18	3.5	0.3	0.0	1.2	2.9	2.2	3.5	2.7	2.3	ND
Range	94.00	32.80	0.5	1.1	12.0	4.3	6.6	26.3	1.1	5.5	8.4	0.0
Minimum	16.00	5.20	0.0	2.9	0.0	1.6	0.0	9.7	0.0	0.0	0.0	0.0
Maximum	110.00	38.00	0.5	4.0	12.0	5.9	6.6	36.0	1.1	5.5	8.4	0.0
Count	12	12	12	12	12	12	12	11	12	12	12	3
Confidence Level(95.0%)	17.56	7.63	0.1	0.3	2.3	0.9	1.2	4.9	0.2	1.1	1.8	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	233	183	1.1	4.8	49.0	43.4	5.4	5.2
Standard Error	34	26	0.5	1.1	6.0	6.1	0.2	0.2
Median	260	215	0.0	4.2	55.5	50.5	5.4	5.4
Mode	260	230	0.0	0.0	59.0	54.0	5.3	5.4
Standard Deviation	117	91	1.7	3.7	20.8	21.0	0.7	0.6
Sample Variance	13574	8204	2.9	13.7	434.5	440.5	0.5	0.4
Kurtosis	-1	-1	-0.8	-1.1	-1.2	-1.2	0.6	-0.7
Skewness	0	0	1.1	0.0	-0.5	-0.4	-0.5	-0.4
Range	359	283	4.2	10.0	61.0	61.8	2.4	1.9
Minimum	61	37	0.0	0.0	14.0	9.2	4.0	4.2
Maximum	420	320	4.2	10.0	75.0	71.0	6.4	6.1
Count	12	12	12	11	12	12	12	12
Confidence Level(95.0%)	74	58	1.1	2.5	13.2	13.3	0.4	0.4

ND = No Data

Provisional MMSD Water Quality Data

55TH STREET AND THURSTON AVENUE - SITE 3
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.5	14.5	9.5	9.06	0.19	0.010	0.20	0.082	0.39	0.027	0.014	ND
Standard Error	0.1	1.6	0.7	2.55	0.04	0.002	0.04	0.032	0.06	0.014	0.008	ND
Median	7.5	18.1	9.4	8.18	0.19	0.007	0.19	0.050	0.34	0.000	0.000	ND
Mode	7.5	18.1	ND	ND	0.39	ND	0.19	0.000	0.34	0.000	0.000	ND
Standard Deviation	0.2	5.7	2.5	7.22	0.13	0.008	0.13	0.110	0.20	0.049	0.027	ND
Sample Variance	0.0	32.6	6.3	52.11	0.02	0.000	0.02	0.012	0.04	0.002	0.001	ND
Kurtosis	1.0	-1.5	0.1	3.15	-1.03	-0.046	-1.06	7.254	4.46	0.419	1.636	ND
Skewness	-1.2	-0.4	0.7	1.66	0.42	1.222	0.45	2.523	2.05	1.461	1.681	ND
Range	0.7	17.4	8.2	22.14	0.36	0.024	0.39	0.400	0.71	0.130	0.078	0.00
Minimum	7.0	5.1	6.6	2.56	0.03	0.004	0.03	0.000	0.21	0.000	0.000	0.00
Maximum	7.7	22.5	14.8	24.70	0.39	0.027	0.42	0.400	0.92	0.130	0.078	0.00
Count	12	12	12	8	12	12	12	12	12	12	12	0
Confidence Level(95.0%)	0.1	3.6	1.6	6.04	0.08	0.005	0.08	0.070	0.13	0.031	0.017	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	667.6	660.9	1.3	6.7	7.2	1150	161.6	4531	2.8	ND
Standard Error	ND	ND	97.2	99.2	0.6	2.3	2.4	171	25.7	2981	0.3	ND
Median	ND	ND	730.0	727.0	0.0	2.7	3.4	1250	180.0	460	2.7	ND
Mode	ND	ND	720.0	ND	0.0	23.0	ND	ND	170.0	ND	ND	ND
Standard Deviation	ND	ND	336.6	343.5	2.0	8.1	8.3	593	89.0	9887	0.9	ND
Sample Variance	ND	ND	113311.9	118018.5	4.2	65.7	68.9	351484	7928.3	97761109	0.8	ND
Kurtosis	ND	ND	-0.9	-0.9	1.3	1.3	4.3	-1	-1.1	8	-0.6	ND
Skewness	ND	ND	-0.6	-0.6	1.5	1.7	2.1	-1	-0.6	3	0.8	ND
Range	0.0	0.0	1029.0	1050.5	6.0	21.5	27.5	1639	256.0	32930	2.7	0
Minimum	0.0	0.0	71.0	48.0	0.0	1.5	1.9	191	14.0	70	1.8	0
Maximum	0.0	0.0	1100.0	1098.5	6.0	23.0	29.4	1830	270.0	33000	4.5	0
Count	0	0	12	12	12	12	12	12	12	11	11	0
Confidence Level(95.0%)	ND	ND	213.9	218.3	1.3	5.1	5.3	377	56.6	6642	0.6	ND

ND = No Data

Provisional MMSD Water Quality Data

55TH STREET AND THURSTON AVENUE - SITE 3
LINCOLN CREEK
WATER QUALITY DATA - 2010

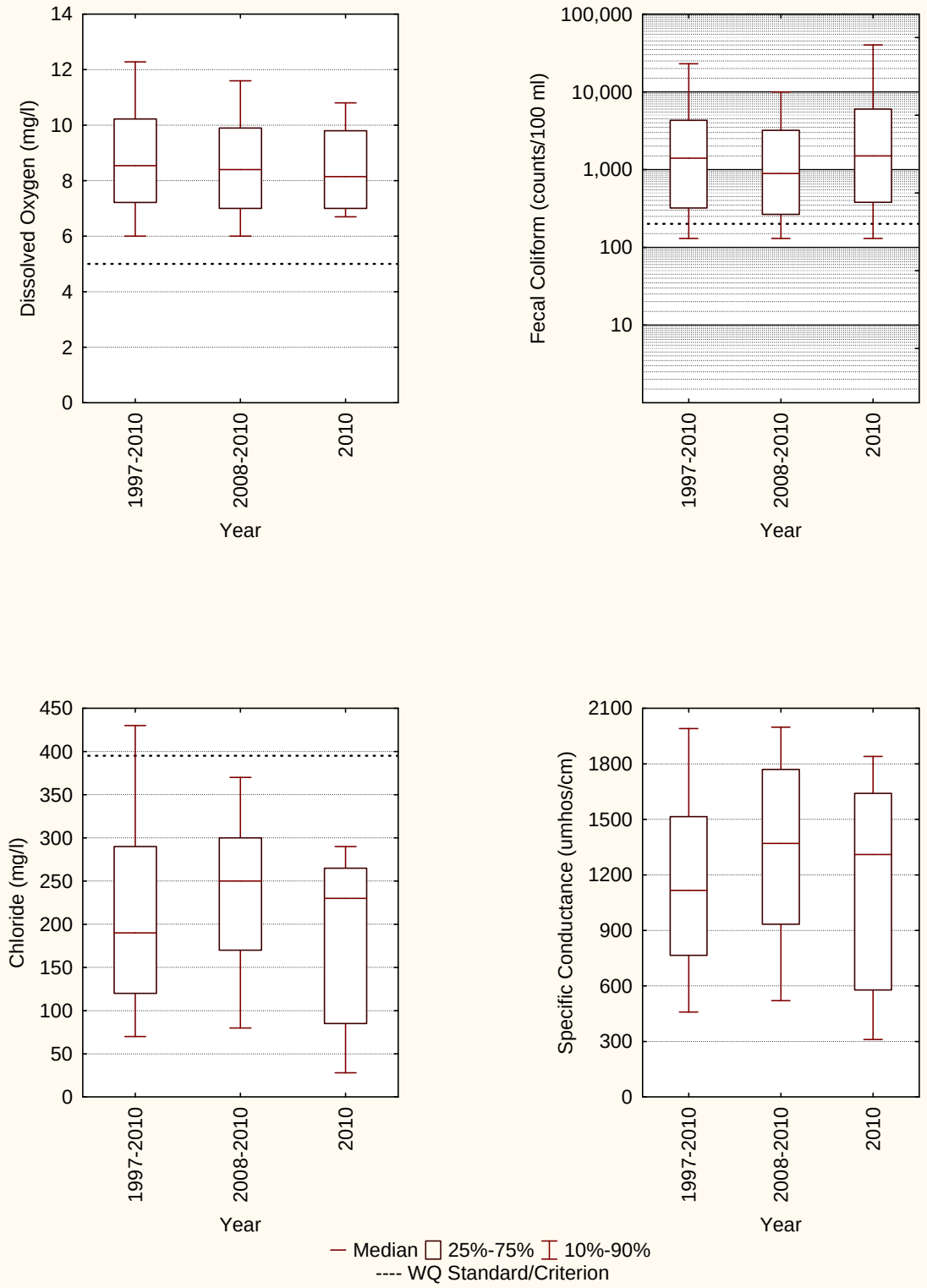
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	86.75	35.93	0.1	4.2	4.6	2.4	0.4	15.2	0.3	0.6	0.7	0.0
Standard Error	12.82	5.77	0.1	0.9	1.0	0.6	0.3	2.3	0.3	0.6	0.7	0.0
Median	95.50	40.00	0.0	3.1	4.3	2.2	0.0	13.0	0.0	0.0	0.0	0.0
Mode	130.00	ND	0.0	2.8	0.0	2.2	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	44.40	20.00	0.3	3.2	3.4	2.1	1.0	7.8	0.9	1.9	2.4	0.0
Sample Variance	1971.66	400.06	0.1	10.2	11.4	4.2	1.0	60.9	0.8	3.6	5.7	0.0
Kurtosis	-1.02	-1.20	2.7	10.2	1.4	3.2	3.4	-0.2	8.1	12.0	12.0	ND
Skewness	-0.73	-0.62	2.0	3.1	0.7	1.5	2.2	1.1	2.8	3.5	3.5	ND
Range	114.00	53.10	0.9	11.7	12.0	7.6	2.9	22.7	2.9	6.6	8.3	0.0
Minimum	16.00	4.90	0.0	2.3	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0
Maximum	130.00	58.00	0.9	14.0	12.0	7.6	2.9	30.0	2.9	6.6	8.3	0.0
Count	12	12	11	12	11	12	12	12	12	12	12	3
Confidence Level(95.0%)	28.21	12.71	0.2	2.0	2.3	1.3	0.6	5.0	0.6	1.2	1.5	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	368	254	1.0	4.0	62.7	58.3	4.3	4.2
Standard Error	57	38	0.6	1.4	8.3	8.4	0.2	0.2
Median	405	295	0.0	4.2	71.0	66.5	4.2	4.1
Mode	520	360	0.0	0.0	ND	92.0	5.2	5.0
Standard Deviation	196	130	1.9	4.7	28.6	29.0	0.8	0.7
Sample Variance	38582	16909	3.8	22.0	819.0	841.1	0.6	0.5
Kurtosis	-1	-1	0.9	-0.6	-0.8	-0.9	-1.6	-1.4
Skewness	-1	-1	1.6	0.8	-0.7	-0.7	0.0	0.2
Range	520	354	5.3	13.0	83.0	82.8	2.1	2.0
Minimum	60	36	0.0	0.0	14.0	9.2	3.2	3.3
Maximum	580	390	5.3	13.0	97.0	92.0	5.3	5.3
Count	12	12	12	11	12	12	12	12
Confidence Level(95.0%)	125	83	1.2	3.1	18.2	18.4	0.5	0.4

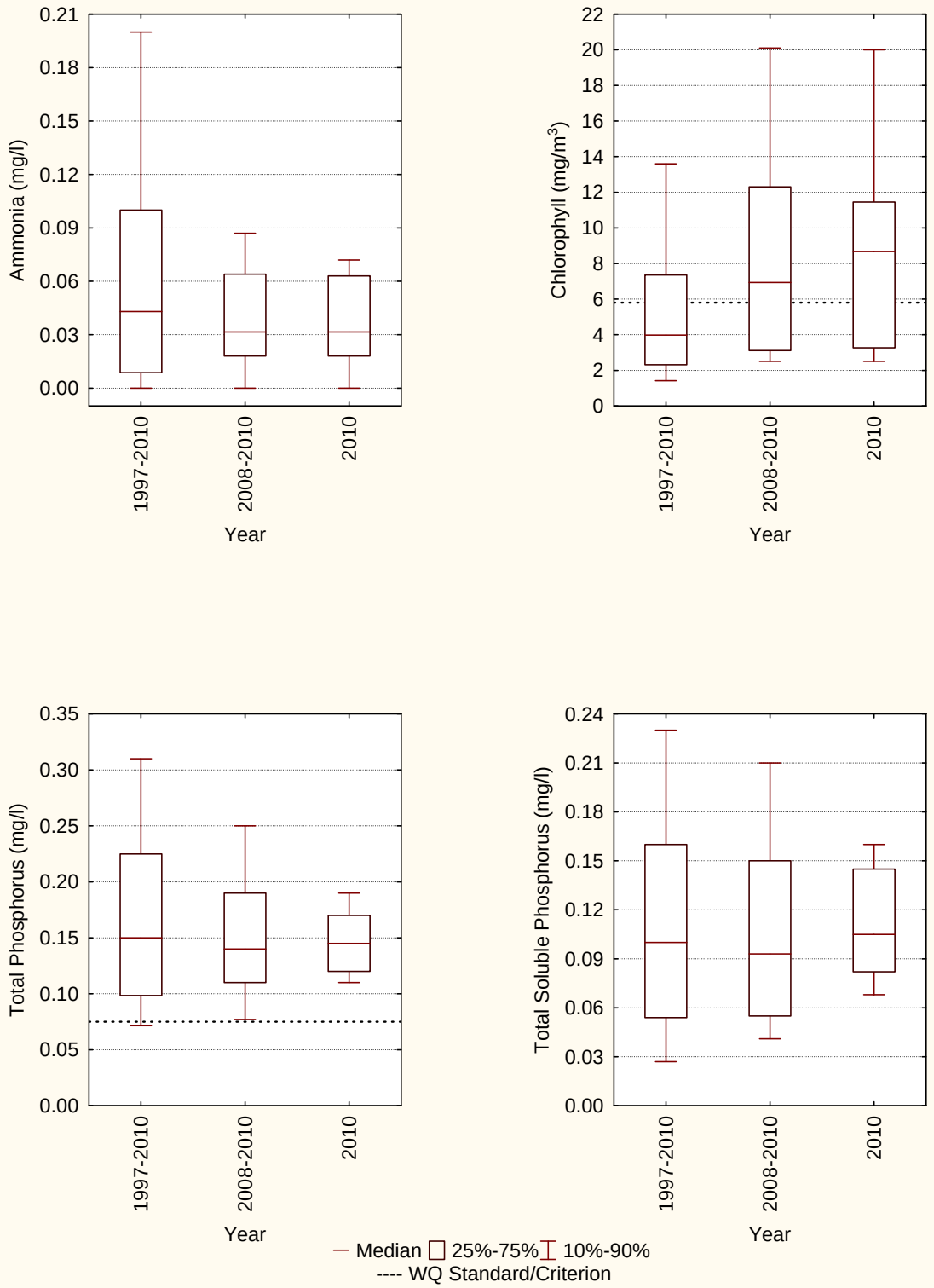
ND = No Data

Provisional MMSD Water Quality Data

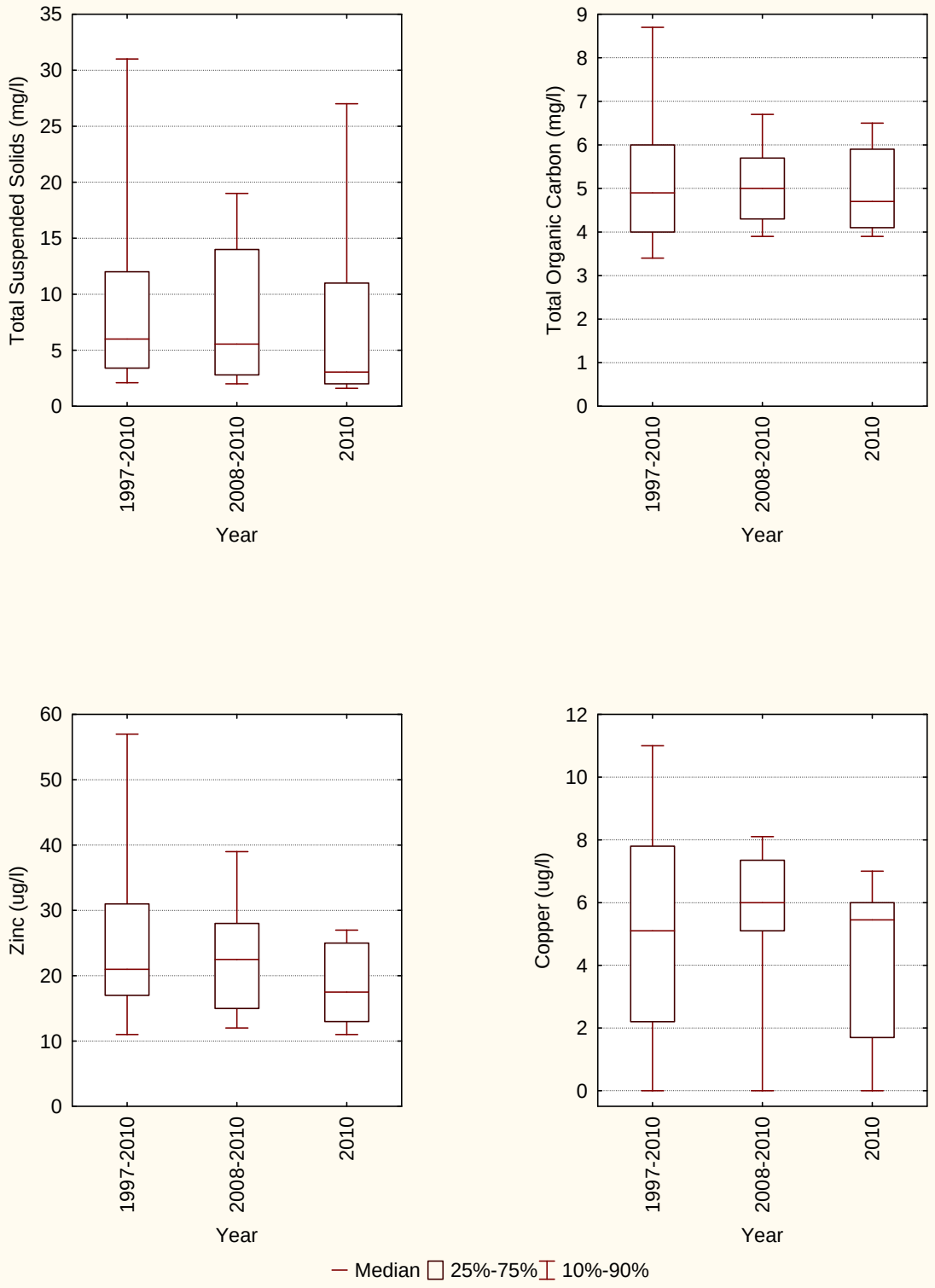
MMSD Water Quality Monitoring Program Data
Lincoln Creek at 47th St. and Congress, Site LC-04



MMSD Water Quality Monitoring Program Data
Lincoln Creek at 47th St. and Congress, Site LC-04



MMSD Water Quality Monitoring Program Data
Lincoln Creek at 47th St. and Congress, Site LC-04



47TH STREET AND CONGRESS STREET - SITE 4
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	16.7	8.5	8.66	0.45	0.016	0.47	0.050	0.46	0.150	0.114	ND
Standard Error	0.1	1.8	0.4	2.11	0.07	0.003	0.07	0.020	0.05	0.011	0.012	ND
Median	7.8	19.7	8.2	8.67	0.52	0.016	0.54	0.032	0.43	0.145	0.105	ND
Mode	7.7	ND	ND	ND	ND	0.024	ND	0.000	0.31	0.140	ND	ND
Standard Deviation	0.3	6.7	1.7	5.96	0.25	0.009	0.25	0.073	0.17	0.040	0.043	ND
Sample Variance	0.1	44.7	2.8	35.48	0.06	0.000	0.06	0.005	0.03	0.002	0.002	ND
Kurtosis	2.9	-1.1	-1.0	0.54	-1.00	-0.946	-0.96	10.410	-0.31	0.790	-0.252	ND
Skewness	-1.4	-0.7	0.3	0.86	-0.57	-0.387	-0.58	3.059	0.93	0.536	0.590	ND
Range	1.1	19.3	5.4	17.49	0.74	0.028	0.77	0.290	0.49	0.158	0.144	0.00
Minimum	7.0	4.2	6.2	2.51	0.03	0.000	0.03	0.000	0.29	0.082	0.056	0.00
Maximum	8.1	23.5	11.6	20.00	0.77	0.028	0.80	0.290	0.78	0.240	0.200	0.00
Count	14	14	14	8	12	12	12	14	12	14	12	0
Confidence Level(95.0%)	0.2	3.9	1.0	4.98	0.16	0.006	0.16	0.042	0.11	0.023	0.027	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	650.0	643.4	1.9	8.4	7.5	1131	191.3	11278	3.2	5718
Standard Error	ND	ND	95.6	97.5	0.6	2.8	2.7	154	31.2	6093	0.2	2691
Median	ND	ND	745.0	743.5	1.4	3.1	2.5	1310	230.0	1500	3.2	1285
Mode	ND	ND	980.0	ND	0.0	ND	ND	ND	240.0	ND	ND	1800
Standard Deviation	ND	ND	331.3	337.8	2.0	10.7	9.4	576	108.0	22798	0.9	10070
Sample Variance	ND	ND	109781.8	114110.5	4.0	113.6	88.8	331517	11654.0	519765587	0.9	101395481
Kurtosis	ND	ND	-1.4	-1.3	1.1	2.3	4.3	-1	-1.1	7	-0.6	8
Skewness	ND	ND	-0.5	-0.6	1.3	1.8	2.0	0	-0.4	3	0.4	3
Range	0.0	0.0	860.0	883.8	6.0	34.0	31.2	1674	323.0	79930	3.1	36983
Minimum	0.0	0.0	140.0	113.0	0.0	1.0	1.5	226	27.0	70	1.8	17
Maximum	0.0	0.0	1000.0	996.8	6.0	35.0	32.7	1900	350.0	80000	4.9	37000
Count	0	0	12	12	12	14	12	14	12	14	14	14
Confidence Level(95.0%)	ND	ND	210.5	214.6	1.3	6.2	6.0	332	68.6	13163	0.5	5814

ND = No Data

Provisional MMSD Water Quality Data

47TH STREET AND CONGRESS STREET - SITE 4
LINCOLN CREEK
WATER QUALITY DATA - 2010

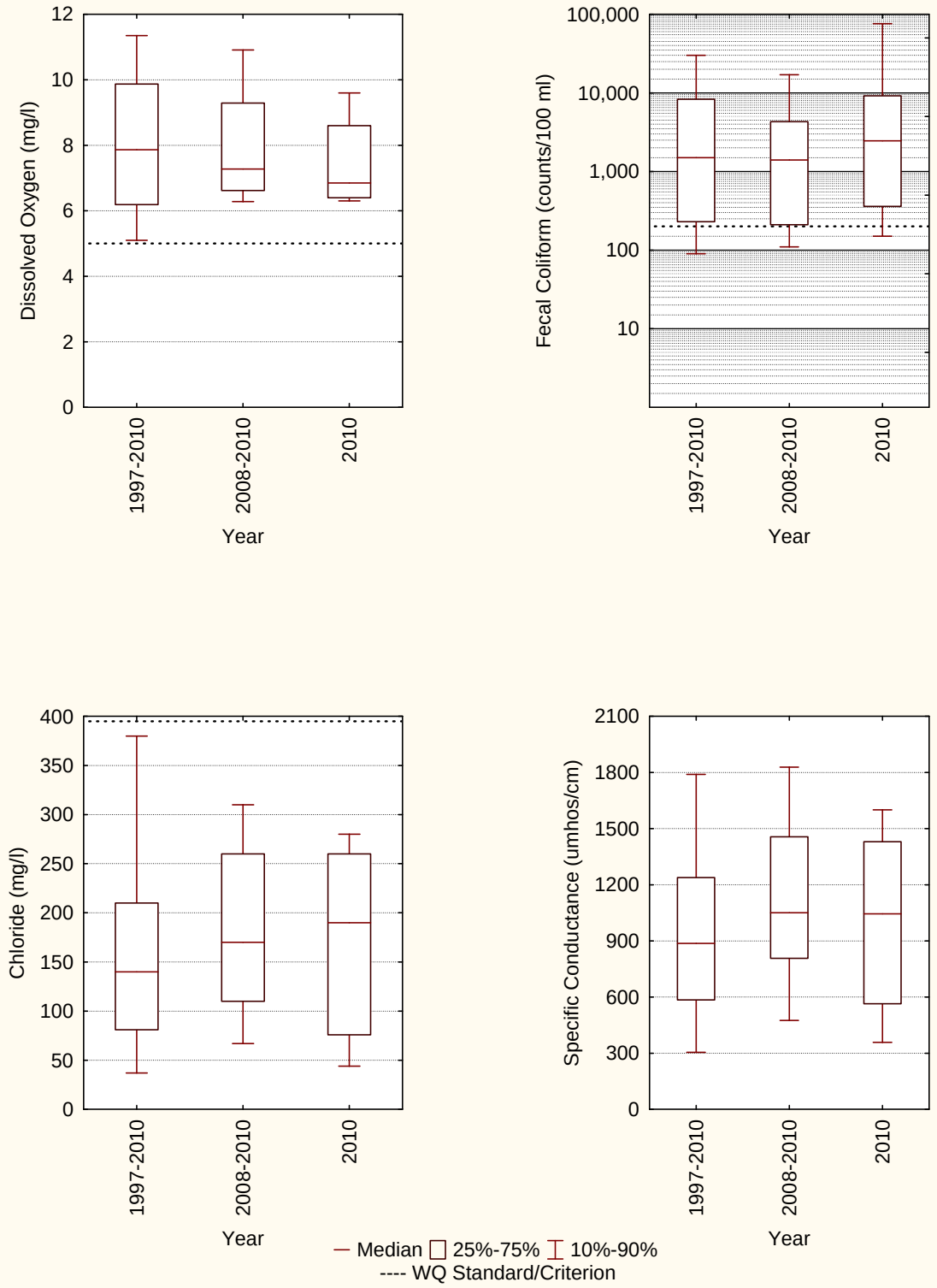
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	64.43	27.19	0.0	3.8	4.2	4.8	0.7	19.1	0.0	0.9	0.7	0.0
Standard Error	7.74	3.75	0.0	0.3	0.8	1.6	0.5	2.0	0.0	0.6	0.7	0.0
Median	71.00	30.50	0.0	3.8	5.5	2.9	0.0	17.5	0.0	0.0	0.0	0.0
Mode	87.00	14.00	0.0	3.5	0.0	1.7	0.0	25.0	0.0	0.0	0.0	0.0
Standard Deviation	28.97	14.05	0.1	1.0	2.7	6.0	1.8	7.4	0.0	2.3	2.7	0.0
Sample Variance	839.34	197.27	0.0	1.0	7.5	35.9	3.3	54.2	0.0	5.2	7.2	0.0
Kurtosis	-0.29	-1.27	14.0	-0.2	-0.9	5.5	7.6	-1.2	ND	3.9	13.0	ND
Skewness	-0.07	-0.26	3.7	0.5	-0.8	2.5	2.8	0.4	ND	2.3	3.6	ND
Range	106.00	43.70	0.6	3.4	7.2	20.3	6.3	23.0	0.0	6.6	9.7	0.0
Minimum	14.00	4.30	0.0	2.4	0.0	1.7	0.0	10.0	0.0	0.0	0.0	0.0
Maximum	120.00	48.00	0.6	5.8	7.2	22.0	6.3	33.0	0.0	6.6	9.7	0.0
Count	14	14	14	14	12	14	14	14	14	14	13	3
Confidence Level(95.0%)	16.73	8.11	0.1	0.6	1.7	3.5	1.1	4.3	0.0	1.3	1.6	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	271	198	1.5	6.0	52.5	47.3	5.2	5.0
Standard Error	34	25	0.6	1.6	5.8	6.1	0.5	0.4
Median	300	235	0.0	5.7	59.5	55.0	4.7	4.5
Mode	ND	260	0.0	0.0	ND	ND	4.3	4.3
Standard Deviation	127	88	2.2	5.2	20.0	21.0	1.7	1.4
Sample Variance	16018	7751	5.0	26.7	399.5	441.7	2.9	2.0
Kurtosis	-1	-1	0.2	-0.4	-0.7	-0.7	4.1	2.7
Skewness	0	-1	1.2	0.6	-0.7	-0.7	1.9	1.6
Range	437	288	6.5	15.0	63.0	65.9	6.1	5.0
Minimum	53	32	0.0	0.0	14.0	7.1	3.6	3.6
Maximum	490	320	6.5	15.0	77.0	73.0	9.7	8.6
Count	14	12	14	11	12	12	12	12
Confidence Level(95.0%)	73	56	1.3	3.5	12.7	13.4	1.1	0.9

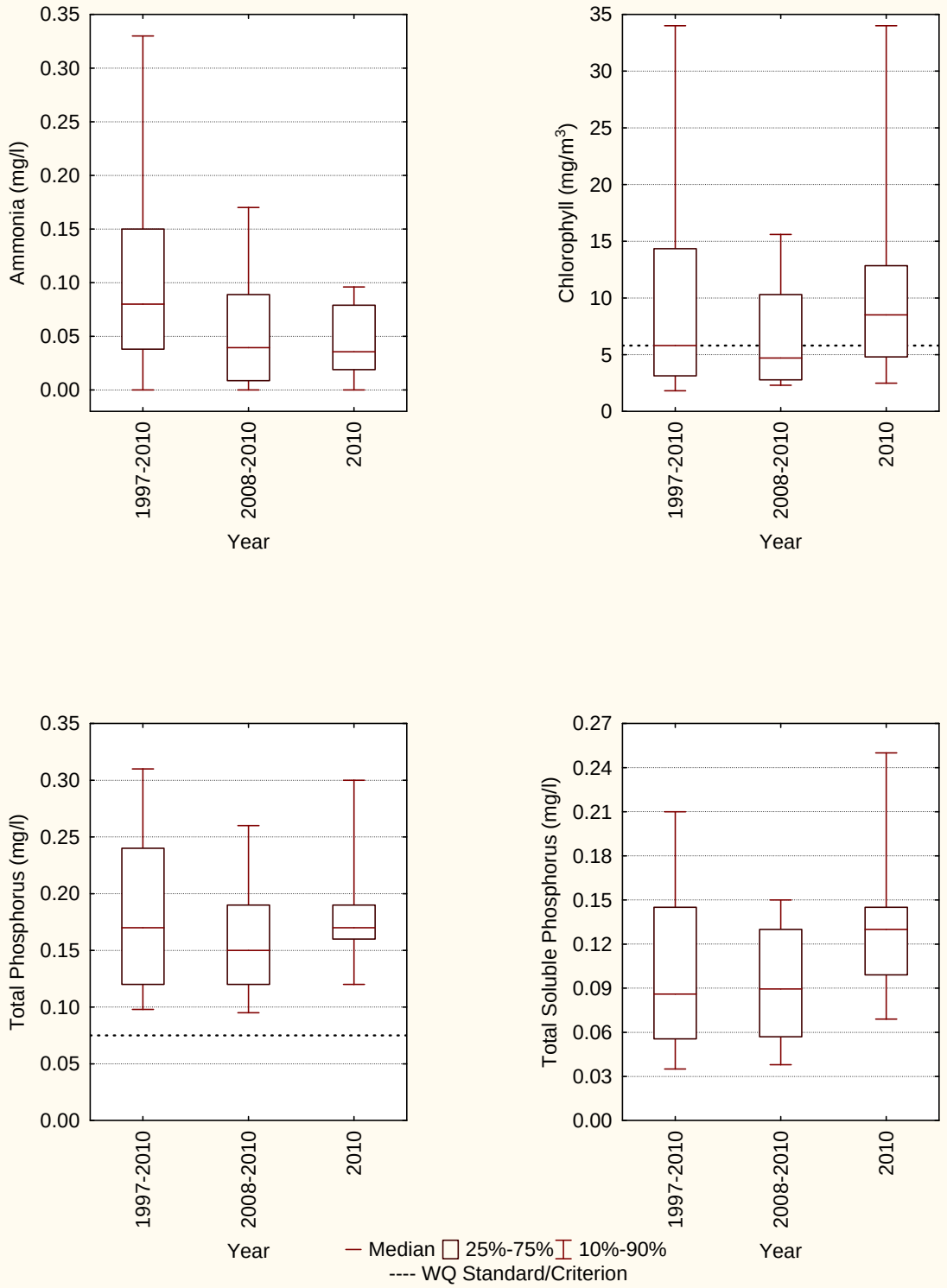
ND = No Data

Provisional MMSD Water Quality Data

MMSD Water Quality Monitoring Program Data
Lincoln Creek at Green Bay Ave., Site LC-05



MMSD Water Quality Monitoring Program Data
Lincoln Creek at Green Bay Ave., Site LC-05



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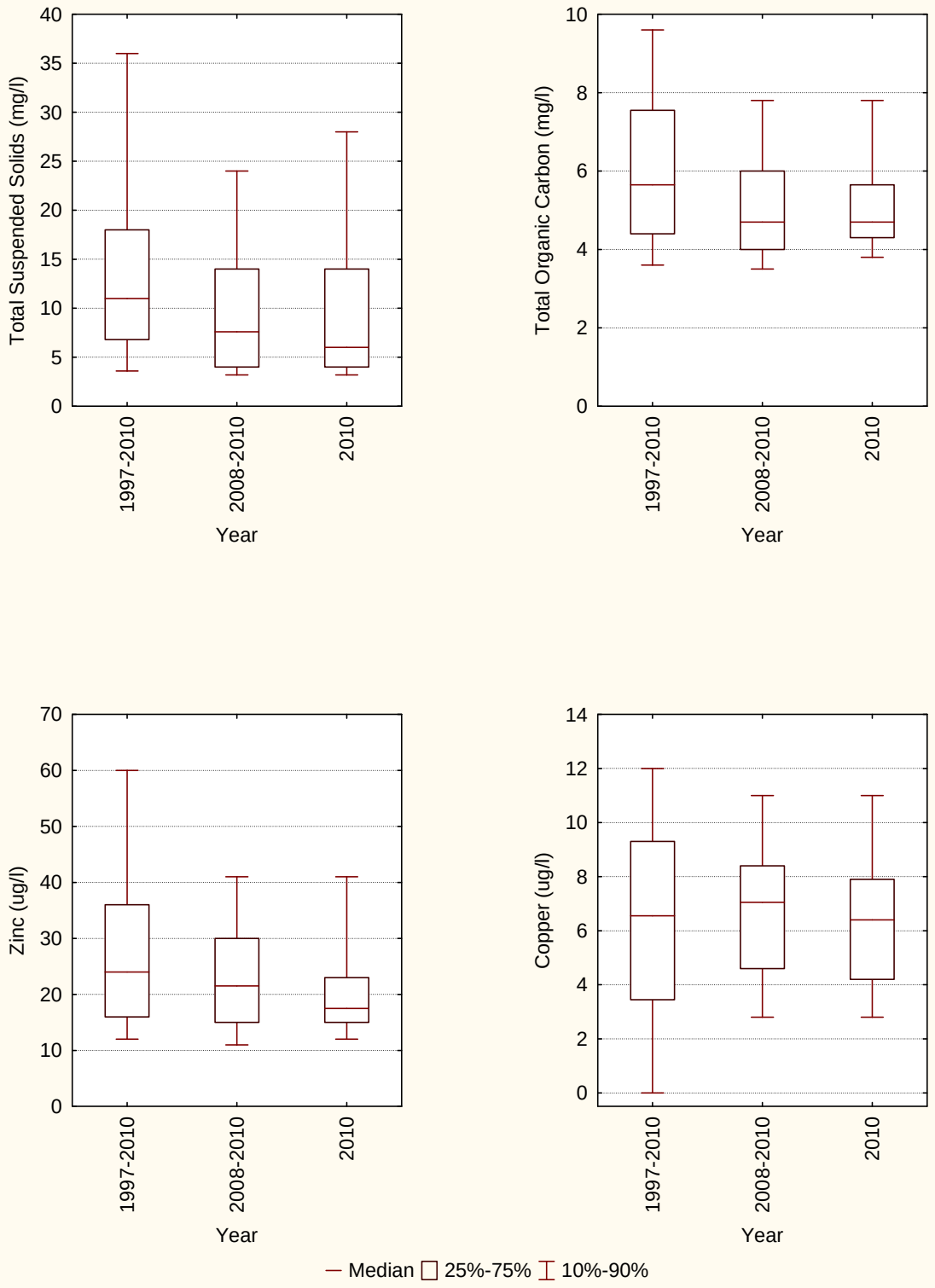
Lincoln Creek at Green Bay Ave., Site LC-05



GREEN BAY AVENUE - SITE 5
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	17.0	7.4	11.10	0.40	0.022	0.42	0.051	0.47	0.184	0.137	ND
Standard Error	0.1	1.7	0.4	3.54	0.06	0.003	0.06	0.013	0.06	0.017	0.018	ND
Median	7.7	20.1	6.9	8.52	0.41	0.021	0.43	0.036	0.47	0.170	0.130	ND
Mode	7.6	ND	6.4	ND	ND	0.026	0.46	0.000	ND	0.170	0.130	ND
Standard Deviation	0.2	6.4	1.5	10.02	0.21	0.011	0.21	0.048	0.19	0.065	0.062	ND
Sample Variance	0.1	40.6	2.2	100.50	0.04	0.000	0.05	0.002	0.04	0.004	0.004	ND
Kurtosis	-0.1	-1.1	-0.6	4.77	0.00	5.005	-0.20	2.913	3.40	1.902	0.875	ND
Skewness	-0.5	-0.7	0.6	2.03	0.27	1.888	0.23	1.534	1.48	1.389	1.105	ND
Range	0.8	18.4	5.0	31.51	0.69	0.041	0.70	0.180	0.73	0.241	0.199	0.00
Minimum	7.2	5.0	5.1	2.49	0.12	0.010	0.13	0.000	0.24	0.099	0.061	0.00
Maximum	8.0	23.4	10.1	34.00	0.81	0.051	0.83	0.180	0.97	0.340	0.260	0.00
Count	14	14	14	8	12	12	12	14	12	14	12	0
Confidence Level(95.0%)	0.1	3.7	0.9	8.38	0.13	0.007	0.14	0.028	0.12	0.038	0.039	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	548.3	537.9	3.1	11.2	9.7	1005	173.8	14990	3.4	7472
Standard Error	ND	ND	69.8	71.8	1.0	2.8	2.8	125	28.1	8015	0.2	3841
Median	ND	ND	590.0	586.0	2.2	6.0	5.0	1045	190.0	2450	3.4	1210
Mode	ND	ND	ND	ND	1.2	4.0	ND	ND	ND	2700	3.4	ND
Standard Deviation	ND	ND	241.7	248.9	3.5	10.4	9.6	467	97.2	29990	0.9	14371
Sample Variance	ND	ND	58433.3	61937.2	12.1	107.3	92.3	217729	9448.5	899404492	0.9	206511996
Kurtosis	ND	ND	-1.4	-1.3	6.8	1.4	-1.0	-1	-1.4	4	-0.7	8
Skewness	ND	ND	-0.4	-0.4	2.4	1.4	0.9	0	-0.2	2	0.4	3
Range	0.0	0.0	650.0	679.4	13.0	33.9	25.8	1419	280.0	92860	2.8	51950
Minimum	0.0	0.0	180.0	144.0	0.0	2.1	0.1	281	30.0	140	2.1	50
Maximum	0.0	0.0	830.0	823.4	13.0	36.0	25.9	1700	310.0	93000	5.0	52000
Count	0	0	12	12	12	14	12	14	12	14	14	14
Confidence Level(95.0%)	ND	ND	153.6	158.1	2.2	6.0	6.1	269	61.8	17316	0.5	8297

ND = No Data

Provisional MMSD Water Quality Data

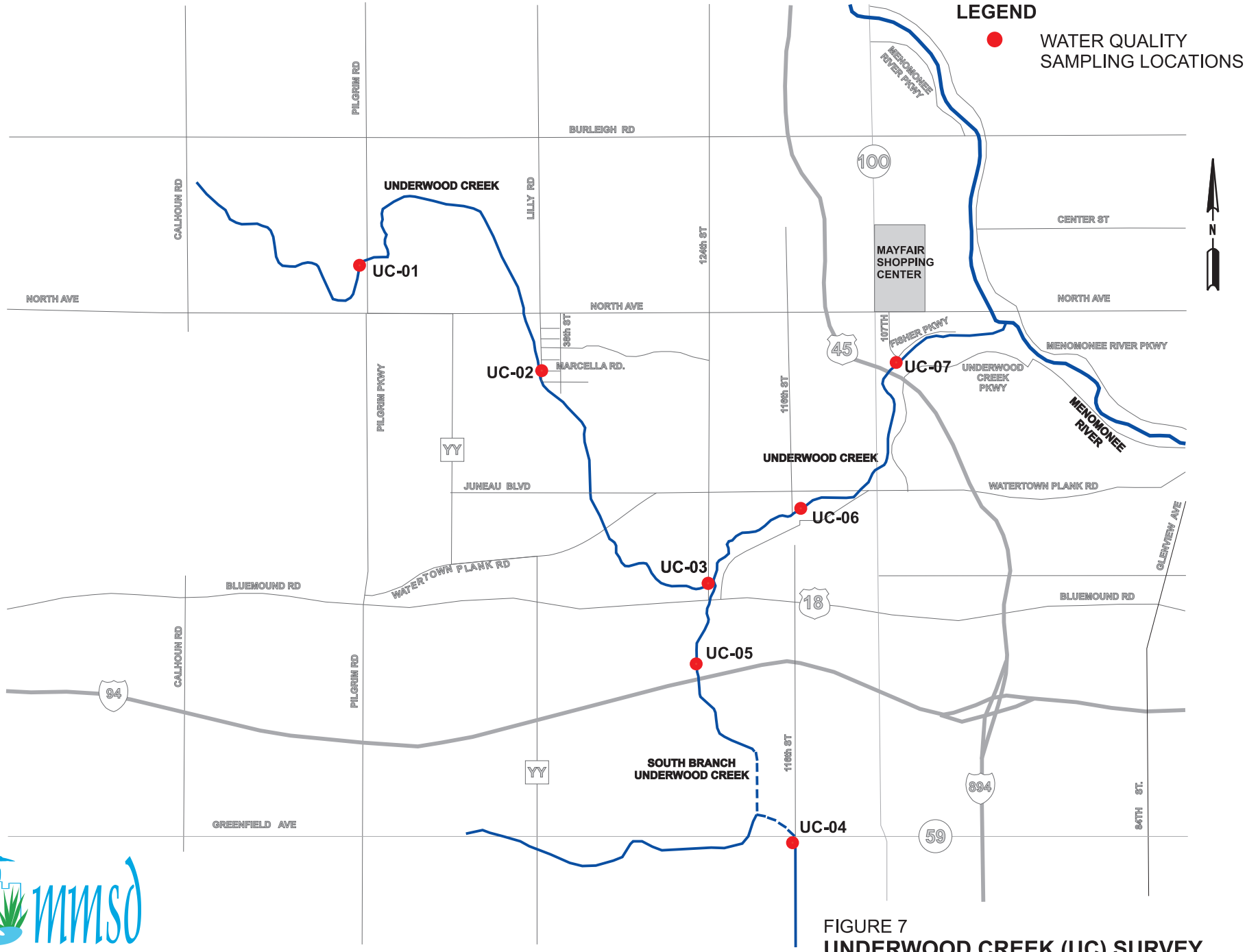
GREEN BAY AVENUE - SITE 5
LINCOLN CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	55.93	22.69	0.0	4.4	6.3	3.5	2.2	20.9	0.0	0.8	1.1	0.0
Standard Error	5.51	2.83	0.0	0.3	1.0	0.4	1.2	2.8	0.0	0.6	0.8	0.0
Median	61.50	23.50	0.0	4.1	6.4	3.3	0.0	17.5	0.0	0.0	0.0	0.0
Mode	63.00	ND	0.0	3.8	2.8	3.4	0.0	41.0	0.0	0.0	0.0	0.0
Standard Deviation	20.61	10.61	0.1	1.3	3.7	1.5	4.6	10.4	0.0	2.1	2.8	0.0
Sample Variance	424.69	112.51	0.0	1.6	14.0	2.1	21.4	107.4	0.0	4.6	8.1	0.0
Kurtosis	-0.10	-0.67	14.0	-0.6	1.2	2.5	6.3	0.3	ND	4.3	4.8	ND
Skewness	-0.25	0.11	3.7	0.2	0.7	1.5	2.5	1.2	ND	2.4	2.4	ND
Range	76.00	35.90	0.6	4.5	15.0	5.5	16.0	32.3	0.0	6.5	8.9	0.0
Minimum	18.00	6.10	0.0	2.2	0.0	1.7	0.0	8.7	0.0	0.0	0.0	0.0
Maximum	94.00	42.00	0.6	6.7	15.0	7.2	16.0	41.0	0.0	6.5	8.9	0.0
Count	14	14	14	14	14	14	14	14	14	14	13	3
Confidence Level(95.0%)	11.90	6.12	0.1	0.7	2.2	0.8	2.7	6.0	0.0	1.2	1.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	234	170	2.2	6.9	45.6	40.1	5.6	5.3
Standard Error	25	20	0.9	1.9	4.3	4.7	0.7	0.6
Median	250	190	0.0	5.1	49.5	45.0	4.7	4.6
Mode	240	190	0.0	0.0	ND	54.0	ND	4.4
Standard Deviation	95	69	3.4	6.4	14.8	16.3	2.6	2.0
Sample Variance	8948	4814	11.4	41.1	218.6	264.7	6.6	4.2
Kurtosis	0	0	0.7	2.4	-0.2	-0.4	6.8	5.8
Skewness	0	0	1.4	1.5	-0.6	-0.7	2.5	2.3
Range	340	239	9.6	22.0	51.0	54.6	9.3	7.4
Minimum	70	41	0.0	0.0	16.0	8.4	3.7	3.6
Maximum	410	280	9.6	22.0	67.0	63.0	13.0	11.0
Count	14	12	14	11	12	12	12	12
Confidence Level(95.0%)	55	44	1.9	4.3	9.4	10.3	1.6	1.3

ND = No Data

Provisional MMSD Water Quality Data



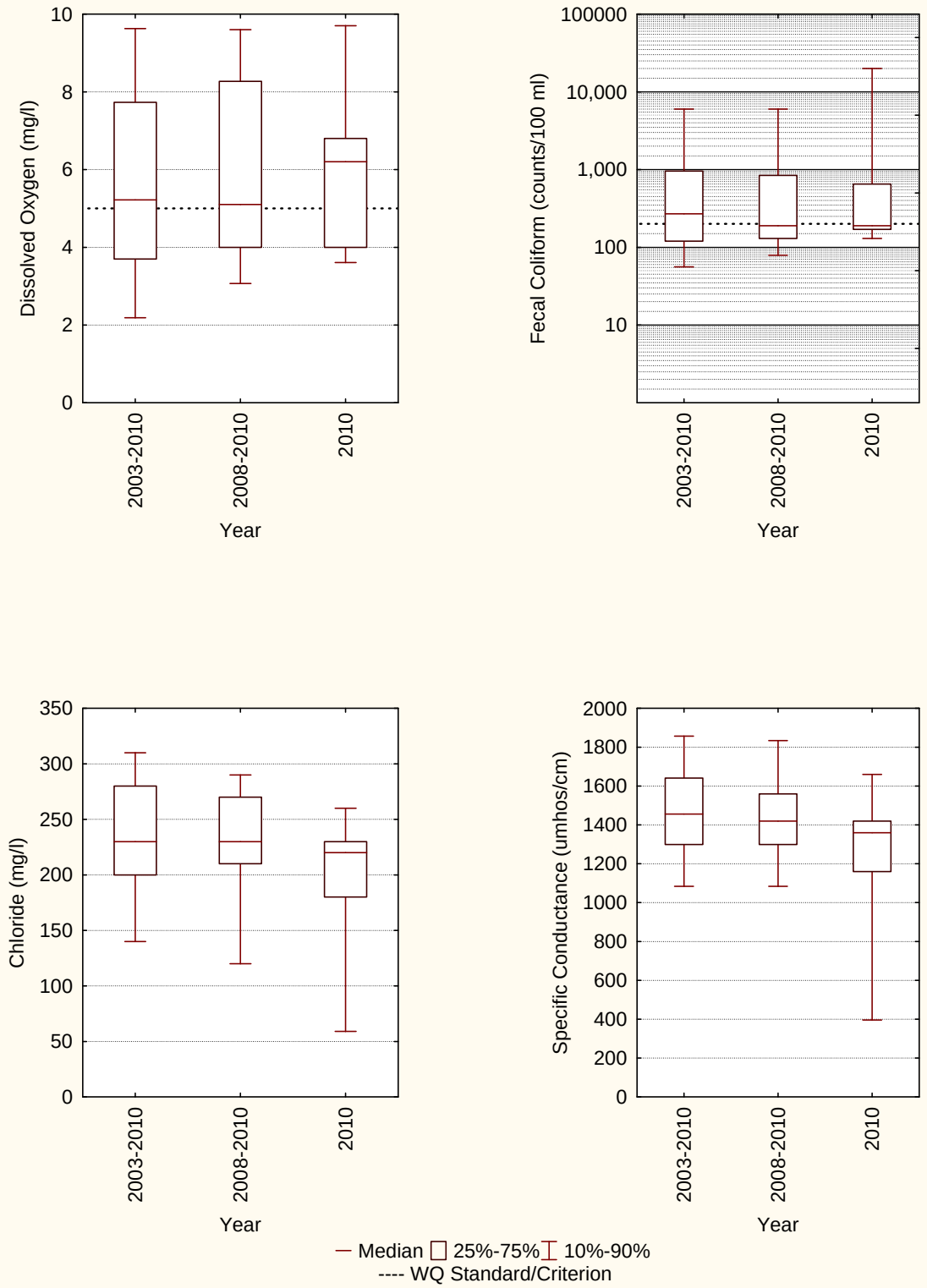
Preserving The Environment • Improving Water Quality

FIGURE 7
UNDERWOOD CREEK (UC) SURVEY WATER QUALITY SAMPLING LOCATIONS

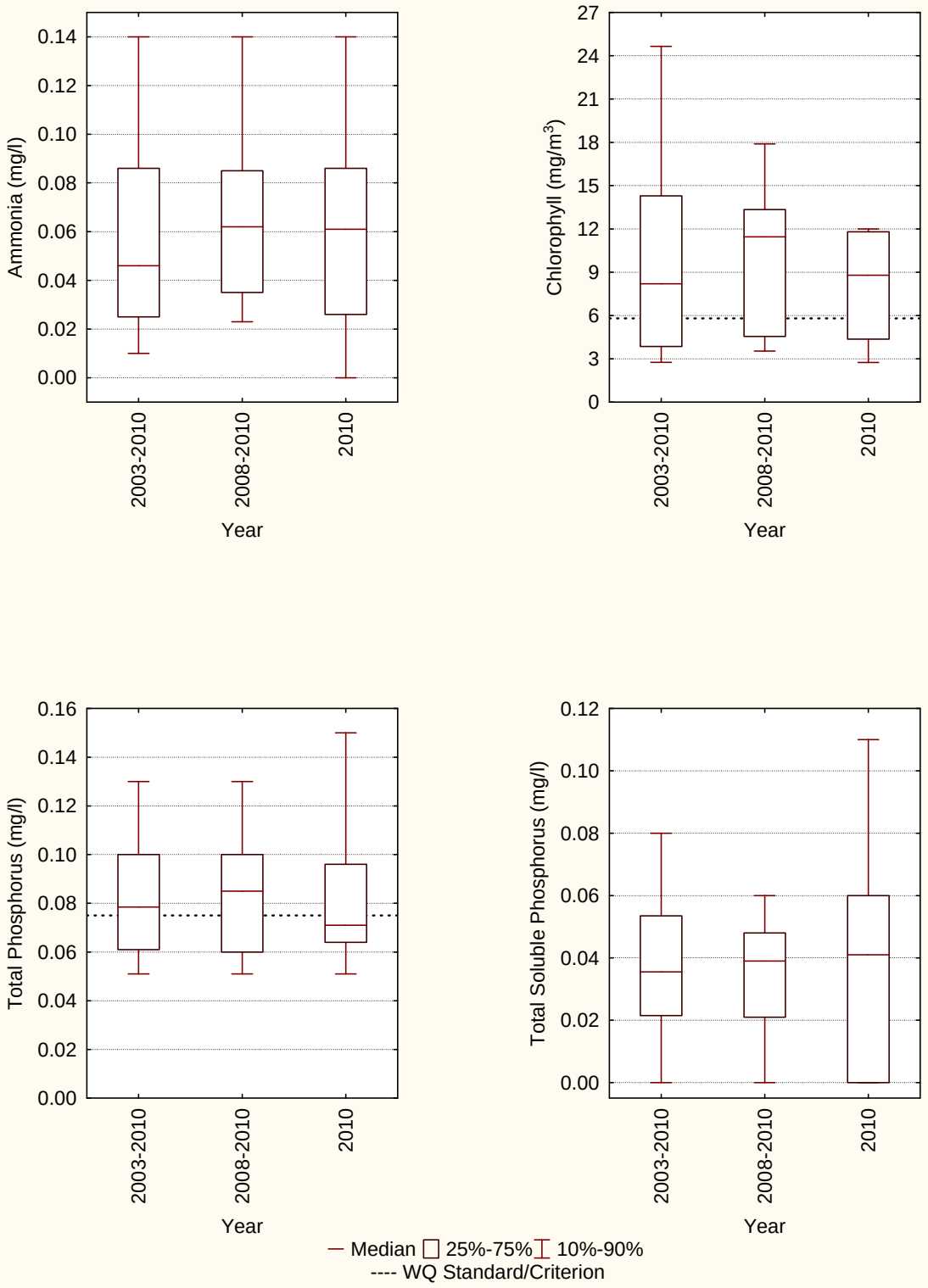
11/21/07

03-144-UC REPORT

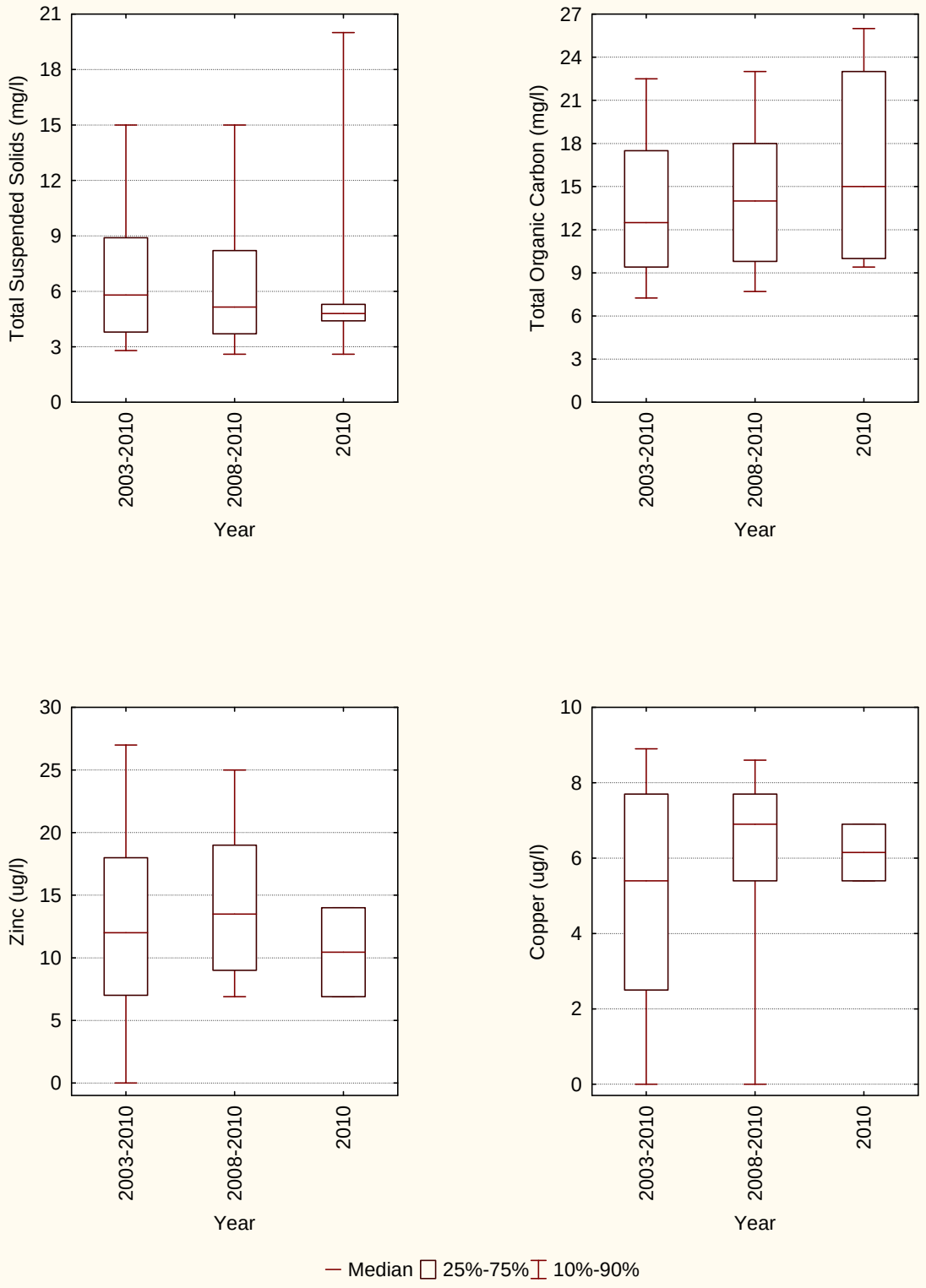
MMSD Water Quality Program Data
Underwood Creek at Wirth Park, Site UC-01



MMSD Water Quality Program Data
Underwood Creek at Wirth Park, Site UC-01



MMSD Water Quality Program Data
Underwood Creek at Wirth Park, Site UC-01



WIRTH PARK - SITE 1
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.3	15.7	6.1	8.08	0.32	0.028	0.35	0.060	1.06	0.085	0.038	ND
Standard Error	0.0	1.8	0.8	2.25	0.07	0.007	0.07	0.015	0.17	0.011	0.014	ND
Median	7.3	17.3	6.2	8.79	0.25	0.022	0.30	0.061	1.20	0.071	0.041	ND
Mode	7.4	ND	ND	ND	ND	ND	ND	ND	1.20	ND	0.000	ND
Standard Deviation	0.1	5.5	2.3	4.49	0.21	0.022	0.22	0.045	0.52	0.034	0.041	ND
Sample Variance	0.0	30.0	5.3	20.19	0.04	0.000	0.05	0.002	0.27	0.001	0.002	ND
Kurtosis	-0.5	-1.1	-0.9	-3.55	-1.07	1.700	-1.24	-0.500	-0.99	0.328	-0.811	ND
Skewness	-0.6	-0.5	0.6	-0.42	0.53	1.402	0.33	0.548	0.23	1.236	0.598	ND
Range	0.4	16.0	6.1	9.25	0.58	0.070	0.60	0.140	1.48	0.099	0.110	0.00
Minimum	7.0	6.5	3.6	2.75	0.05	0.006	0.06	0.000	0.42	0.051	0.000	0.00
Maximum	7.4	22.5	9.7	12.00	0.63	0.075	0.66	0.140	1.90	0.150	0.110	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.1	4.2	1.8	7.15	0.16	0.017	0.17	0.035	0.40	0.026	0.031	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	775.6	769.3	2.2	6.3	4.9	1254	194.3	2521	2.6	3859
Standard Error	ND	ND	71.3	72.7	0.7	1.8	1.1	119	21.7	2186	0.2	3519
Median	ND	ND	840.0	835.2	1.6	4.8	3.3	1360	220.0	190	2.3	200
Mode	ND	ND	ND	ND	1.4	4.4	ND	ND	230.0	ND	ND	130
Standard Deviation	ND	ND	213.8	218.0	2.1	5.3	3.3	358	65.1	6559	0.7	10558
Sample Variance	ND	ND	45727.8	47539.1	4.4	28.3	11.1	127909	4236.5	43025111	0.5	111469711
Kurtosis	ND	ND	3.6	3.8	5.8	7.4	2.1	5	1.3	9	4.9	9
Skewness	ND	ND	-1.7	-1.8	2.2	2.6	1.6	-2	-1.4	3	2.1	3
Range	0.0	0.0	720.0	735.0	7.4	17.4	9.8	1264	201.0	19870	2.2	31880
Minimum	0.0	0.0	280.0	260.0	0.0	2.6	2.4	396	59.0	130	2.1	120
Maximum	0.0	0.0	1000.0	995.0	7.4	20.0	12.2	1660	260.0	20000	4.3	32000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	164.4	167.6	1.6	4.1	2.6	275	50.0	5042	0.5	8116

ND = No Data

Provisional MMSD Water Quality Data

WIRTH PARK - SITE 1
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

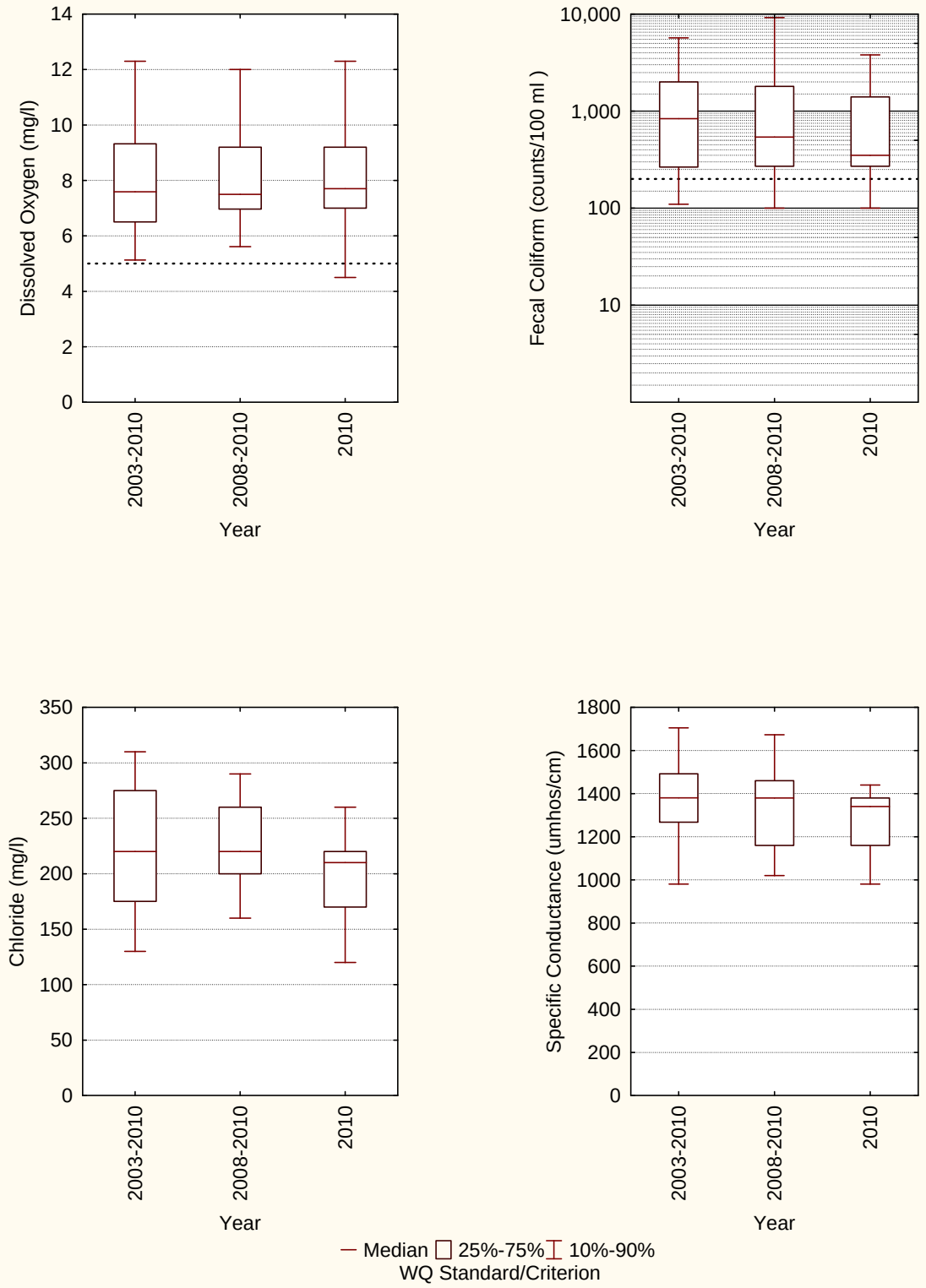
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	62.00	25.00	0.0	2.8	6.2	2.1	0.0	10.5	0.0	0.0	0.0	0.0
Standard Error	38.00	16.00	0.0	0.1	0.8	0.3	0.0	3.6	0.0	0.0	0.0	0.0
Median	62.00	25.00	0.0	2.8	6.2	2.1	0.0	10.5	0.0	0.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	0.0	0.0	0.0
Standard Deviation	53.74	22.63	0.0	0.1	1.1	0.5	0.0	5.0	0.0	0.0	0.0	0.0
Sample Variance	2888.00	512.00	0.0	0.0	1.1	0.2	0.0	25.2	0.0	0.0	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	76.00	32.00	0.0	0.2	1.5	0.7	0.0	7.1	0.0	0.0	0.0	0.0
Minimum	24.00	9.00	0.0	2.7	5.4	1.7	0.0	6.9	0.0	0.0	0.0	0.0
Maximum	100.00	41.00	0.0	2.9	6.9	2.4	0.0	14.0	0.0	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	482.84	203.30	0.0	1.3	9.5	4.4	0.0	45.1	0.0	0.0	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	259	261	0.8	7.6	80.2	64.2	16.5	16.0
Standard Error	161	26	0.5	1.4	7.6	6.5	2.3	2.4
Median	259	270	0.0	5.5	83.0	72.0	15.0	14.0
Mode	ND	270	0.0	7.7	83.0	73.0	ND	ND
Standard Deviation	228	78	1.6	4.2	22.7	19.5	6.9	7.1
Sample Variance	51842	6061	2.7	17.4	513.9	380.9	47.8	50.1
Kurtosis	ND	7	4.7	0.9	5.9	7.3	-1.9	-1.7
Skewness	ND	-3	2.2	1.4	-2.2	-2.6	0.3	0.4
Range	322	250	4.7	11.7	76.0	64.0	16.6	17.7
Minimum	98	60	0.0	4.3	24.0	14.0	9.4	9.3
Maximum	420	310	4.7	16.0	100.0	78.0	26.0	27.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	2046	60	1.3	3.2	17.4	15.0	5.3	5.4

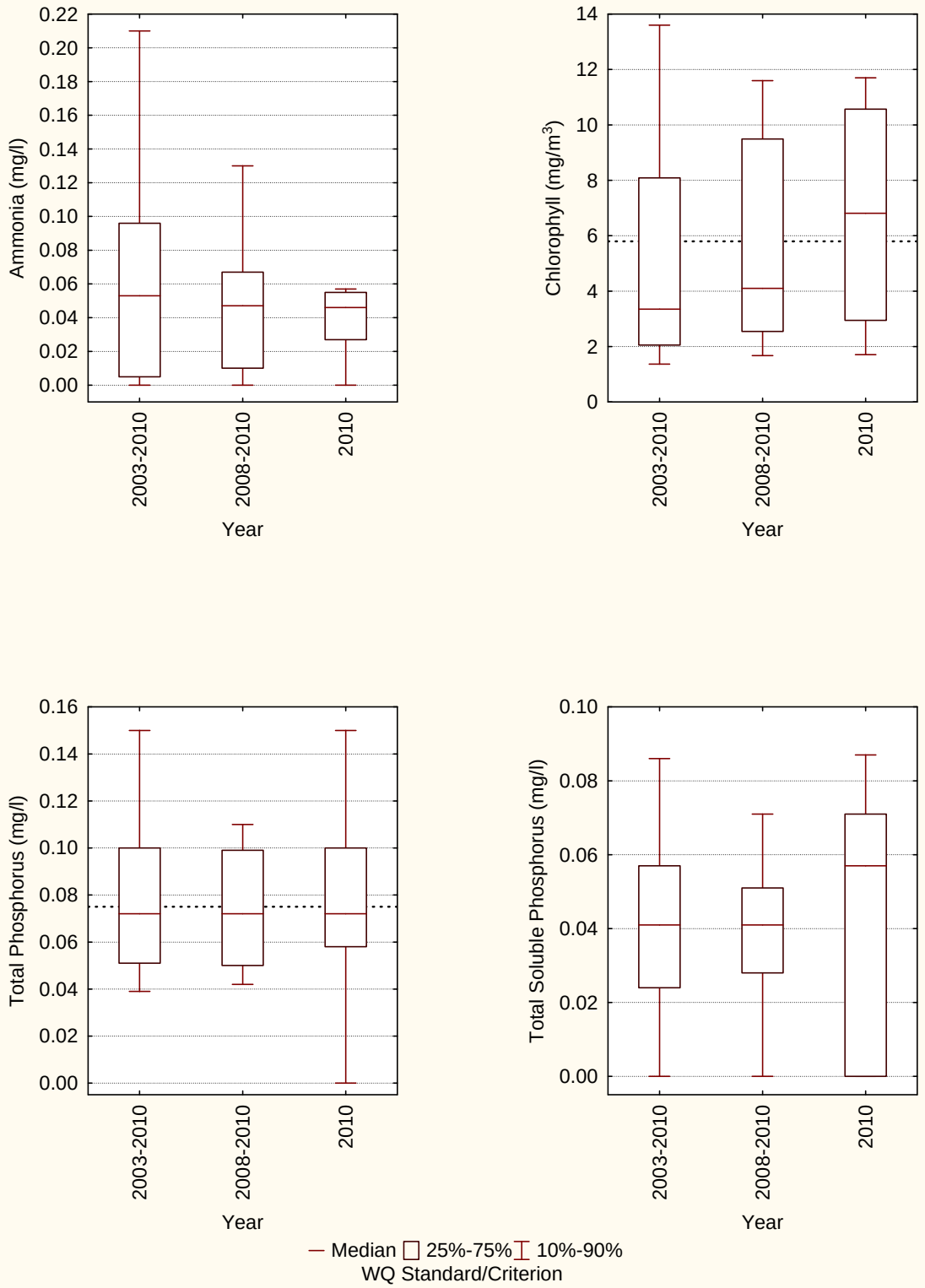
ND = No Data

Provisional MMSD Water Quality Data

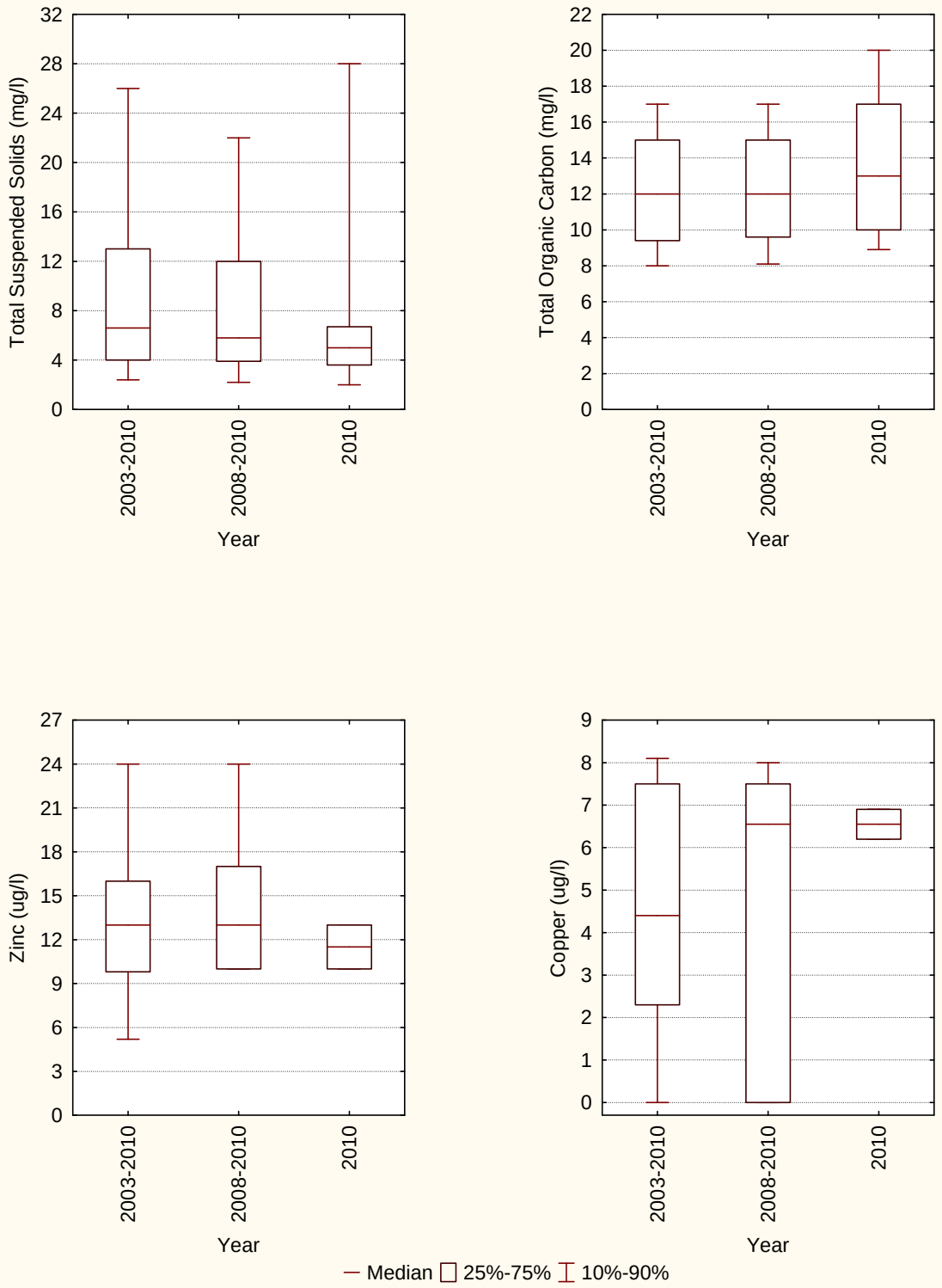
MMSD Water Quality Program Data
Underwood Creek at Marcella St., Site UC-02



MMSD Water Quality Program Data
Underwood Creek at Marcella St., Site UC-02



MMSD Water Quality Program Data
Underwood Creek at Marcella St., Site UC-02



MARCELLA STREET - SITE 2
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	15.8	8.0	6.76	0.39	0.015	0.40	0.035	0.98	0.078	0.044	ND
Standard Error	0.1	1.9	0.7	2.30	0.07	0.004	0.07	0.008	0.13	0.014	0.012	ND
Median	7.9	17.0	7.7	6.81	0.43	0.013	0.43	0.046	0.99	0.072	0.057	ND
Mode	7.9	ND	ND	ND	ND	ND	0.43	0.000	0.99	ND	0.000	ND
Standard Deviation	0.2	5.7	2.2	4.61	0.22	0.011	0.22	0.023	0.40	0.042	0.035	ND
Sample Variance	0.0	32.3	4.8	21.25	0.05	0.000	0.05	0.001	0.16	0.002	0.001	ND
Kurtosis	0.2	-0.7	1.3	-3.59	-0.93	-0.246	-0.97	-0.937	-0.78	1.084	-1.761	ND
Skewness	-1.2	-0.7	0.6	-0.04	-0.55	0.902	-0.53	-0.775	-0.39	-0.149	-0.420	ND
Range	0.4	16.2	7.8	9.99	0.62	0.030	0.63	0.057	1.14	0.150	0.087	0.00
Minimum	7.6	5.6	4.5	1.71	0.03	0.004	0.03	0.000	0.36	0.000	0.000	0.00
Maximum	8.0	21.8	12.3	11.70	0.64	0.034	0.66	0.057	1.50	0.150	0.087	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.1	4.4	1.7	7.33	0.17	0.008	0.17	0.018	0.31	0.032	0.027	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	794.4	786.1	2.2	8.4	5.4	1282	196.7	1021	2.7	3076
Standard Error	ND	ND	31.2	32.9	0.9	2.9	1.1	51	13.3	401	0.2	2379
Median	ND	ND	800.0	798.0	1.3	5.0	3.9	1340	210.0	350	2.5	410
Mode	ND	ND	900.0	ND	1.7	ND	ND	1380	170.0	ND	ND	ND
Standard Deviation	ND	ND	93.7	98.8	2.6	8.8	3.2	154	40.0	1204	0.5	7136
Sample Variance	ND	ND	8777.8	9766.4	6.6	77.1	10.5	23694	1600.0	1449236	0.3	50922869
Kurtosis	ND	ND	-1.6	-1.7	1.6	2.7	4.2	0	0.9	3	-1.2	9
Skewness	ND	ND	-0.4	-0.4	1.6	1.8	1.9	-1	-0.5	2	0.2	3
Range	0.0	0.0	240.0	239.8	7.6	26.0	10.6	459	140.0	3700	1.6	21912
Minimum	0.0	0.0	660.0	655.2	0.0	2.0	2.5	981	120.0	100	2.0	88
Maximum	0.0	0.0	900.0	895.0	7.6	28.0	13.1	1440	260.0	3800	3.6	22000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	72.0	76.0	2.0	6.8	2.5	118	30.7	925	0.4	5485

ND = No Data

Provisional MMSD Water Quality Data

MARCELLA STREET - SITE 2
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	83.00	34.50	0.0	3.6	6.6	2.5	0.0	11.5	0.0	1.5	0.0	0.0
Standard Error	17.00	7.50	0.0	0.4	0.3	0.0	0.0	1.5	0.0	1.5	0.0	0.0
Median	83.00	34.50	0.0	3.6	6.6	2.5	0.0	11.5	0.0	1.5	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	ND	0.0	0.0
Standard Deviation	24.04	10.61	0.0	0.6	0.5	0.1	0.0	2.1	0.0	2.1	0.0	0.0
Sample Variance	578.00	112.50	0.0	0.3	0.2	0.0	0.0	4.5	0.0	4.5	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	34.00	15.00	0.0	0.8	0.7	0.1	0.0	3.0	0.0	3.0	0.0	0.0
Minimum	66.00	27.00	0.0	3.2	6.2	2.4	0.0	10.0	0.0	0.0	0.0	0.0
Maximum	100.00	42.00	0.0	4.0	6.9	2.5	0.0	13.0	0.0	3.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	216.01	95.30	0.0	5.1	4.4	0.6	0.0	19.1	0.0	19.1	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	350	298	0.6	5.2	86.1	72.4	13.8	13.7
Standard Error	70	15	0.4	1.5	4.1	3.7	1.4	1.4
Median	350	320	0.0	4.7	87.0	75.0	13.0	13.0
Mode	ND	320	0.0	0.0	ND	78.0	ND	ND
Standard Deviation	99	44	1.3	4.5	12.4	11.2	4.1	4.3
Sample Variance	9800	1944	1.6	20.5	152.6	125.8	17.0	18.6
Kurtosis	ND	5	1.5	2.3	4.4	5.4	-1.5	-1.0
Skewness	ND	-2	1.7	1.2	-1.7	-2.1	0.3	0.4
Range	140	140	3.2	15.0	43.0	39.0	11.1	12.4
Minimum	280	190	0.0	0.0	57.0	45.0	8.9	8.6
Maximum	420	330	3.2	15.0	100.0	84.0	20.0	21.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	889	34	1.0	3.5	9.5	8.6	3.2	3.3

ND = No Data

Provisional MMSD Water Quality Data

124TH STREET AND BLUEMOUND ROAD - SITE 3
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	15.9	9.6	7.57	0.33	0.012	0.34	0.050	0.72	0.038	0.024	ND
Standard Error	0.1	1.6	0.6	1.90	0.06	0.002	0.06	0.030	0.13	0.013	0.010	ND
Median	7.9	16.9	9.4	6.88	0.36	0.012	0.36	0.021	0.80	0.042	0.000	ND
Mode	7.9	ND	8.7	ND	0.36	ND	ND	0.000	0.86	0.000	0.000	ND
Standard Deviation	0.3	4.9	1.9	3.80	0.18	0.007	0.19	0.089	0.39	0.040	0.029	ND
Sample Variance	0.1	24.0	3.7	14.42	0.03	0.000	0.04	0.008	0.15	0.002	0.001	ND
Kurtosis	5.8	-1.6	0.7	0.83	-1.24	-0.722	-1.20	7.606	0.34	-1.937	-1.554	ND
Skewness	2.2	-0.3	0.7	0.95	0.00	0.518	0.04	2.697	-0.40	0.303	0.591	ND
Range	1.0	13.3	6.5	8.86	0.49	0.020	0.51	0.280	1.30	0.091	0.072	0.00
Minimum	7.7	8.5	6.8	3.84	0.09	0.004	0.09	0.000	0.00	0.000	0.000	0.00
Maximum	8.7	21.8	13.3	12.70	0.58	0.024	0.60	0.280	1.30	0.091	0.072	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	3.8	1.5	6.04	0.14	0.005	0.14	0.068	0.30	0.031	0.022	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	856.7	852.4	1.1	4.3	4.7	1408	216.7	4212	2.7	2885
Standard Error	ND	ND	42.1	42.9	0.5	1.1	0.7	75	15.3	3726	0.3	2393
Median	ND	ND	890.0	888.4	1.2	3.2	4.1	1530	230.0	390	2.6	360
Mode	ND	ND	980.0	ND	0.0	ND	ND	1530	210.0	ND	ND	ND
Standard Deviation	ND	ND	126.3	128.7	1.4	3.3	2.0	226	45.8	11179	0.9	7180
Sample Variance	ND	ND	15950.0	16568.5	1.9	11.0	4.2	51076	2100.0	124975822	0.7	51558592
Kurtosis	ND	ND	-1.0	-0.9	2.9	3.7	3.5	2	-0.2	9	2.5	9
Skewness	ND	ND	-0.7	-0.8	1.5	1.8	1.8	-1	-0.7	3	1.0	3
Range	0.0	0.0	340.0	349.5	4.2	10.8	6.5	688	140.0	33976	3.2	21959
Minimum	0.0	0.0	640.0	628.0	0.0	1.2	2.9	922	140.0	24	1.4	41
Maximum	0.0	0.0	980.0	977.5	4.2	12.0	9.4	1610	280.0	34000	4.5	22000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	97.1	98.9	1.1	2.6	1.6	174	35.2	8593	0.7	5519

ND = No Data

Provisional MMSD Water Quality Data

124TH STREET AND BLUEMOUND ROAD - SITE 3
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

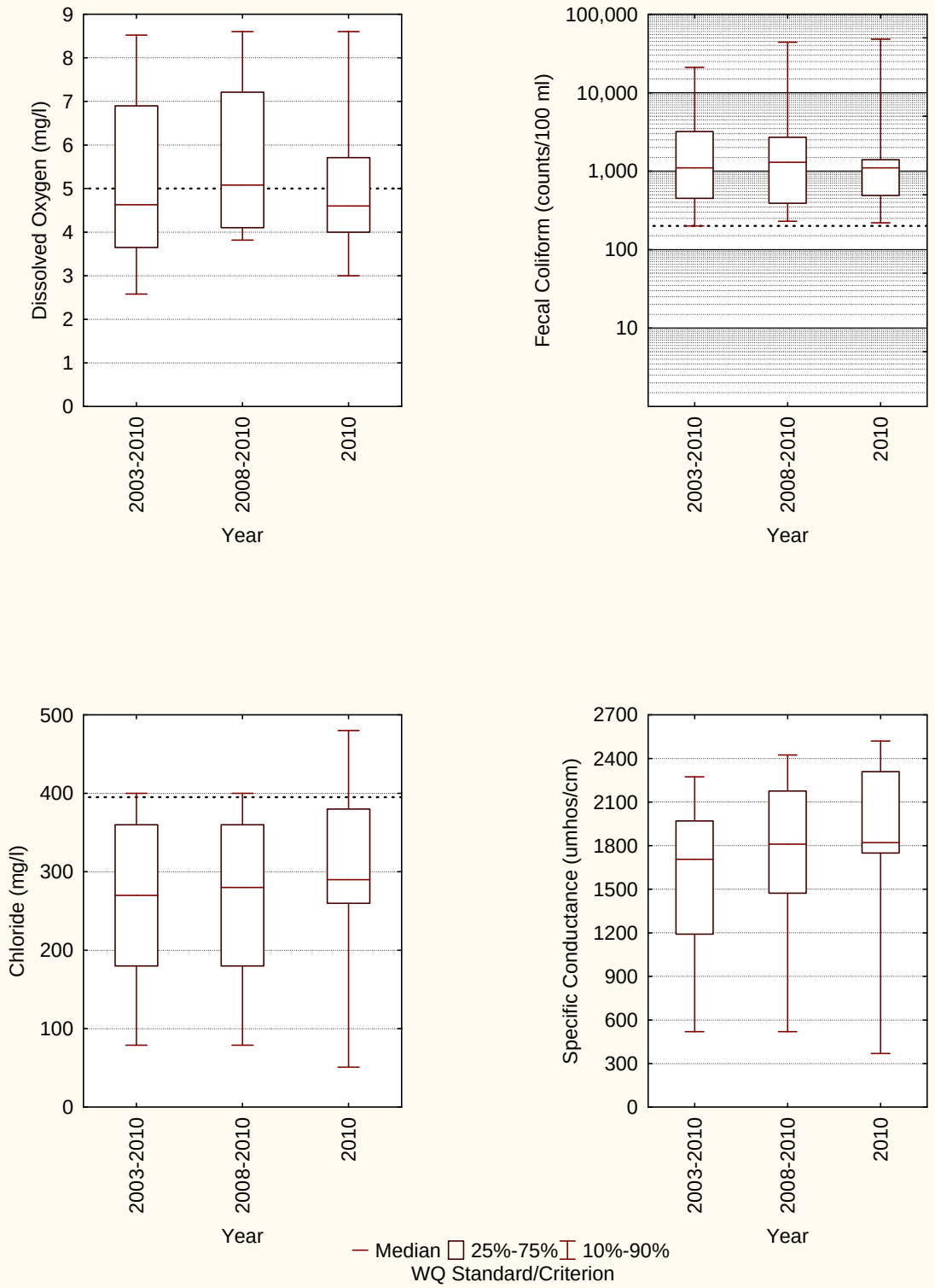
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	88.00	37.00	0.0	3.5	6.2	2.8	0.0	11.2	0.0	1.0	0.0	0.0
Standard Error	22.00	10.00	0.0	0.7	0.4	0.8	0.0	1.9	0.0	1.0	0.0	0.0
Median	88.00	37.00	0.0	3.5	6.2	2.8	0.0	11.2	0.0	1.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	ND	0.0	0.0
Standard Deviation	31.11	14.14	0.0	1.0	0.6	1.1	0.0	2.6	0.0	1.3	0.0	0.0
Sample Variance	968.00	200.00	0.0	1.0	0.4	1.1	0.0	6.8	0.0	1.8	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	44.00	20.00	0.0	1.4	0.9	1.5	0.0	3.7	0.0	1.9	0.0	0.0
Minimum	66.00	27.00	0.0	2.8	5.7	2.0	0.0	9.3	0.0	0.0	0.0	0.0
Maximum	110.00	47.00	0.0	4.2	6.6	3.5	0.0	13.0	0.0	1.9	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	279.54	127.06	0.0	8.9	5.7	9.5	0.0	23.5	0.0	12.1	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	375	307	0.3	3.5	85.0	73.8	10.9	10.7
Standard Error	95	15	0.3	1.1	4.0	4.3	1.7	1.7
Median	375	320	0.0	4.2	87.0	77.0	11.1	10.9
Mode	ND	300	0.0	0.0	87.0	74.0	ND	14.0
Standard Deviation	134	46	0.9	3.2	11.9	12.1	4.8	4.7
Sample Variance	18050	2075	0.9	10.3	140.5	145.6	22.7	22.5
Kurtosis	ND	4	9.0	1.1	5.6	3.8	-1.5	-1.3
Skewness	ND	-2	3.0	0.7	-2.0	-1.8	0.1	0.2
Range	190	160	2.8	10.0	43.0	38.0	13.4	13.6
Minimum	280	200	0.0	0.0	56.0	47.0	4.6	4.4
Maximum	470	360	2.8	10.0	99.0	85.0	18.0	18.0
Count	2	9	9	9	9	8	8	8
Confidence Level(95.0%)	1207	35	0.7	2.5	9.1	10.1	4.0	4.0

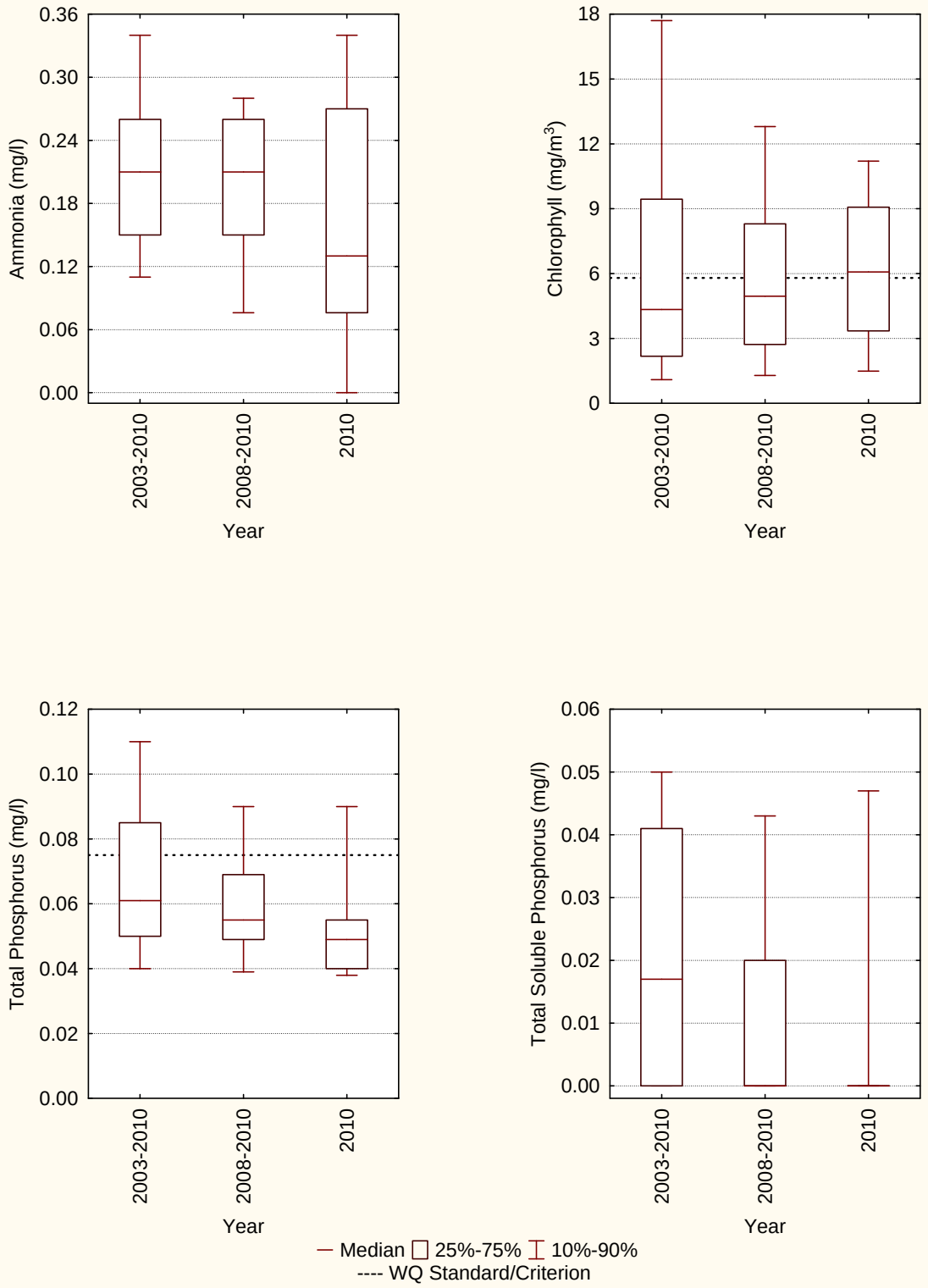
ND = No Data

Provisional MMSD Water Quality Data

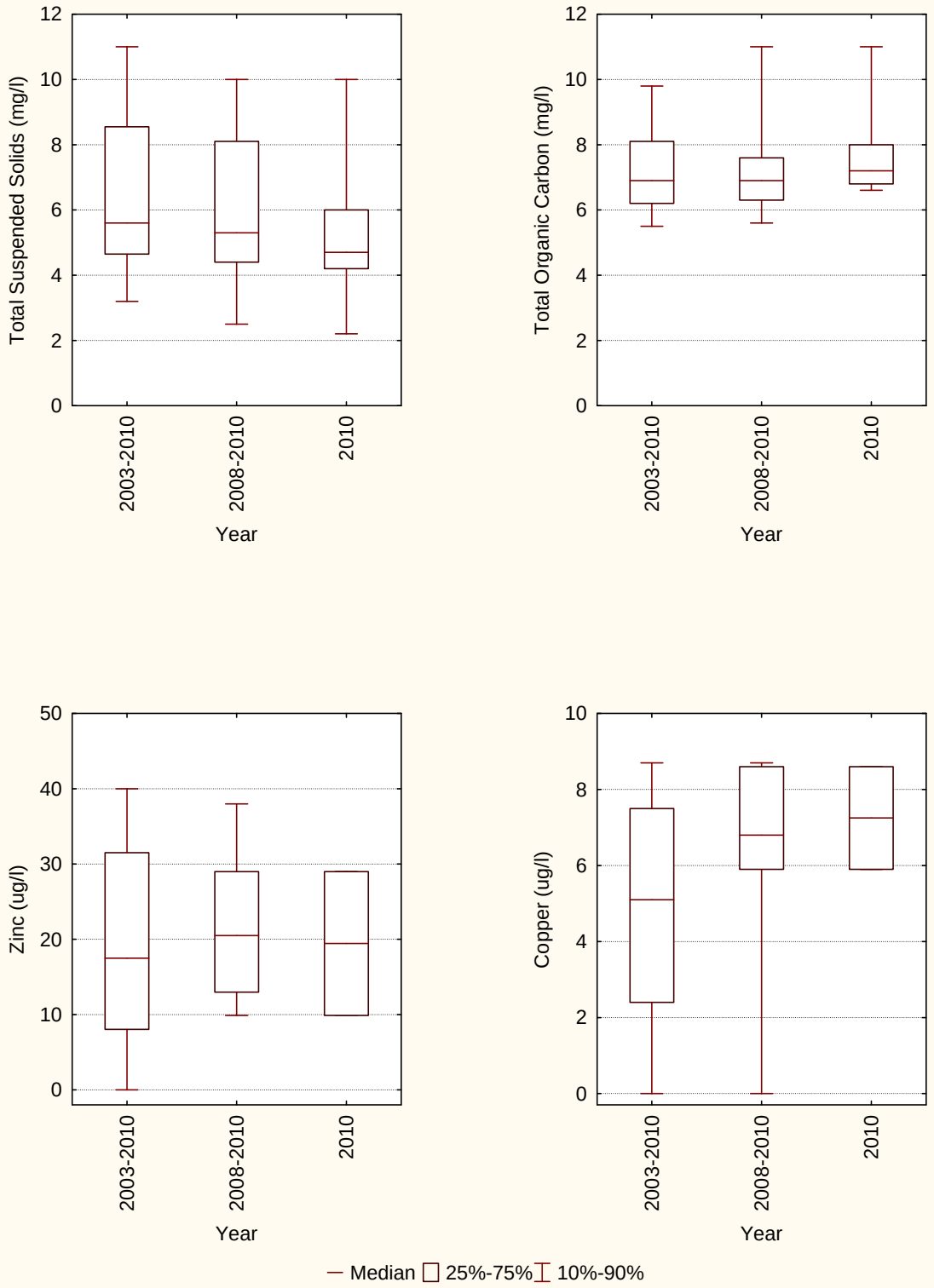
MMSD Water Quality Monitoring Program Data
Underwood Creek at 116th St. and Greenfield, Site UC-04



MMSD Water Quality Monitoring Program Data
Underwood Creek at 116th St. and Greenfield, Site UC-04



MMSD Water Quality Monitoring Program Data
Underwood Creek at 116th St. and Greenfield, Site UC-04



116TH STREET AND GREENFIELD AVENUE - SITE 4
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.4	15.6	5.1	6.21	0.49	0.039	0.53	0.161	0.62	0.051	0.005	ND
Standard Error	0.1	1.8	0.6	2.01	0.06	0.006	0.06	0.041	0.07	0.005	0.005	ND
Median	7.4	16.5	4.6	6.08	0.50	0.035	0.52	0.130	0.68	0.049	0.000	ND
Mode	7.4	ND	ND	ND	0.65	ND	0.52	0.270	0.28	0.055	0.000	ND
Standard Deviation	0.2	5.5	1.7	4.03	0.17	0.018	0.17	0.122	0.21	0.016	0.016	ND
Sample Variance	0.0	30.6	3.0	16.24	0.03	0.000	0.03	0.015	0.04	0.000	0.000	ND
Kurtosis	0.6	-1.4	0.8	0.63	0.69	-0.317	0.87	-1.603	-0.13	4.782	9.000	ND
Skewness	-0.8	-0.4	1.1	0.19	-0.80	0.775	-0.92	0.094	-1.01	2.021	3.000	ND
Range	0.6	14.7	5.6	9.71	0.56	0.055	0.54	0.340	0.58	0.052	0.047	0.00
Minimum	7.0	7.1	3.0	1.49	0.15	0.018	0.19	0.000	0.28	0.038	0.000	0.00
Maximum	7.6	21.8	8.6	11.20	0.71	0.073	0.73	0.340	0.86	0.090	0.047	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.1	4.3	1.3	6.41	0.13	0.014	0.13	0.094	0.16	0.012	0.012	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	1048.9	1043.8	1.8	5.1	7.5	1818	300.1	6300	3.1	4173
Standard Error	ND	ND	128.7	129.2	0.4	0.8	0.9	215	41.6	5219	0.2	3356
Median	ND	ND	1000.0	995.4	1.8	4.7	7.9	1820	290.0	1100	3.0	990
Mode	ND	ND	1000.0	ND	1.9	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	386.1	387.6	1.1	2.4	2.8	645	124.9	15656	0.7	10069
Sample Variance	ND	ND	149036.1	150202.2	1.2	5.6	8.0	415382	15587.6	245116325	0.5	101389650
Kurtosis	ND	ND	1.7	1.7	0.4	1.4	-0.4	3	1.2	9	3.8	9
Skewness	ND	ND	-1.0	-1.0	0.2	1.0	-0.1	-1	-0.6	3	1.7	3
Range	0.0	0.0	1260.0	1267.8	3.6	7.8	8.6	2151	429.0	47780	2.3	30790
Minimum	0.0	0.0	240.0	230.0	0.0	2.2	3.4	369	51.0	220	2.3	210
Maximum	0.0	0.0	1500.0	1497.8	3.6	10.0	12.0	2520	480.0	48000	4.7	31000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	296.7	297.9	0.8	1.8	2.2	495	96.0	12034	0.5	7740

ND = No Data

Provisional MMSD Water Quality Data

116TH STREET AND GREENFIELD AVENUE - SITE 4
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	88.00	30.20	0.0	2.9	7.3	2.7	0.0	19.5	0.6	0.0	0.0	0.0
Standard Error	62.00	22.80	0.0	0.4	1.4	0.7	0.0	9.6	0.6	0.0	0.0	0.0
Median	88.00	30.20	0.0	2.9	7.3	2.7	0.0	19.5	0.6	0.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	ND	0.0	0.0	0.0
Standard Deviation	87.68	32.24	0.0	0.5	1.9	1.0	0.0	13.5	0.8	0.0	0.0	0.0
Sample Variance	7688.00	1039.68	0.0	0.2	3.6	1.0	0.0	182.4	0.7	0.0	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	124.00	45.60	0.0	0.7	2.7	1.4	0.0	19.1	1.2	0.0	0.0	0.0
Minimum	26.00	7.40	0.0	2.5	5.9	2.0	0.0	9.9	0.0	0.0	0.0	0.0
Maximum	150.00	53.00	0.0	3.2	8.6	3.4	0.0	29.0	1.2	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	787.78	289.70	0.0	4.4	17.2	8.9	0.0	121.3	7.6	0.0	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	338	309	1.2	10.4	79.9	72.0	7.8	7.0
Standard Error	243	33	0.5	1.2	7.7	7.5	0.5	0.2
Median	338	340	0.0	12.0	85.0	78.0	7.2	6.9
Mode	ND	340	0.0	12.0	85.0	ND	7.2	ND
Standard Deviation	343	99	1.5	3.7	23.2	22.6	1.4	0.6
Sample Variance	117613	9725	2.3	13.8	536.6	512.5	2.0	0.4
Kurtosis	ND	6	-1.6	-1.2	6.1	6.4	3.2	-0.7
Skewness	ND	-2	0.6	-0.5	-2.3	-2.4	1.8	0.5
Range	485	327	3.7	10.4	78.0	74.0	4.4	1.9
Minimum	95	63	0.0	4.6	22.0	15.0	6.6	6.2
Maximum	580	390	3.7	15.0	100.0	89.0	11.0	8.1
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	3081	76	1.2	2.9	17.8	17.4	1.1	0.5

ND = No Data

Provisional MMSD Water Quality Data

PARKWAY IN KRUEGER PARK - SITE 5
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.8	15.5	10.3	6.53	0.72	0.041	0.76	0.102	0.47	0.243	0.201	ND
Standard Error	0.0	1.4	0.6	0.84	0.06	0.005	0.06	0.022	0.06	0.025	0.023	ND
Median	7.7	16.2	10.3	6.91	0.71	0.036	0.73	0.110	0.42	0.210	0.180	ND
Mode	7.7	19.0	ND	ND	ND	ND	ND	0.110	ND	ND	0.150	ND
Standard Deviation	0.1	4.1	1.8	1.68	0.18	0.015	0.18	0.066	0.18	0.075	0.068	ND
Sample Variance	0.0	16.7	3.1	2.84	0.03	0.000	0.03	0.004	0.03	0.006	0.005	ND
Kurtosis	-0.2	-1.8	1.9	-0.03	-0.67	-1.351	-0.60	1.401	-1.06	-0.150	-1.066	ND
Skewness	0.7	-0.4	1.0	-1.00	0.03	-0.117	-0.11	1.040	0.13	1.065	0.452	ND
Range	0.4	10.4	6.1	3.77	0.55	0.043	0.54	0.218	0.53	0.210	0.190	0.00
Minimum	7.6	10.0	7.9	4.26	0.43	0.017	0.46	0.022	0.21	0.170	0.110	0.00
Maximum	8.0	20.4	14.0	8.03	0.98	0.060	1.00	0.240	0.74	0.380	0.300	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.1	3.1	1.3	2.68	0.14	0.012	0.14	0.051	0.14	0.058	0.052	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	843.3	840.2	1.5	3.1	4.5	1458	254.0	3360	2.9	1878
Standard Error	ND	ND	69.1	69.5	0.3	0.6	0.9	134	26.1	2142	0.3	1164
Median	ND	ND	960.0	955.6	1.4	3.1	3.5	1640	280.0	550	2.7	530
Mode	ND	ND	980.0	ND	2.0	ND	ND	ND	300.0	ND	ND	ND
Standard Deviation	ND	ND	207.4	208.5	0.8	1.8	2.6	402	78.4	6426	0.8	3491
Sample Variance	ND	ND	43000.0	43456.0	0.7	3.4	6.9	161284	6144.0	41299654	0.6	12186842
Kurtosis	ND	ND	2.6	2.7	1.5	1.9	6.3	2	1.9	8	-0.5	8
Skewness	ND	ND	-1.8	-1.8	0.1	0.5	2.5	-2	-1.5	3	0.6	3
Range	0.0	0.0	600.0	606.8	3.0	6.8	8.3	1232	254.0	19913	2.4	10904
Minimum	0.0	0.0	380.0	373.2	0.0	0.0	2.8	578	86.0	87	1.9	96
Maximum	0.0	0.0	980.0	980.0	3.0	6.8	11.1	1810	340.0	20000	4.3	11000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	159.4	160.2	0.6	1.4	2.0	309	60.3	4940	0.6	2683

ND = No Data

Provisional MMSD Water Quality Data

PARKWAY IN KRUEGER PARK - SITE 5
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	69.00	25.00	0.0	4.0	7.8	2.5	0.0	15.4	0.0	1.2	0.0	0.0
Standard Error	31.00	13.00	0.0	0.6	1.7	0.3	0.0	5.7	0.0	1.2	0.0	0.0
Median	69.00	25.00	0.0	4.0	7.8	2.5	0.0	15.4	0.0	1.2	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	ND	0.0	0.0
Standard Deviation	43.84	18.38	0.0	0.8	2.3	0.4	0.0	8.0	0.0	1.6	0.0	0.0
Sample Variance	1922.00	338.00	0.0	0.7	5.4	0.2	0.0	63.8	0.0	2.6	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	62.00	26.00	0.0	1.2	3.3	0.6	0.0	11.3	0.0	2.3	0.0	0.0
Minimum	38.00	12.00	0.0	3.4	6.1	2.2	0.0	9.7	0.0	0.0	0.0	0.0
Maximum	100.00	38.00	0.0	4.6	9.4	2.8	0.0	21.0	0.0	2.3	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	393.89	165.18	0.0	7.6	21.0	3.8	0.0	71.8	0.0	14.6	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	275	246	0.8	7.8	65.3	60.5	4.6	4.5
Standard Error	135	21	0.5	1.5	5.3	5.4	0.5	0.4
Median	275	270	0.0	7.6	69.0	63.5	4.2	4.2
Mode	ND	280	0.0	12.0	68.0	63.0	ND	4.2
Standard Deviation	191	64	1.6	4.6	14.9	15.4	1.4	1.3
Sample Variance	36450	4074	2.6	21.0	221.4	236.3	2.1	1.7
Kurtosis	ND	4	0.7	-0.9	6.2	6.3	2.5	1.9
Skewness	ND	-2	1.6	-0.2	-2.3	-2.4	1.7	1.6
Range	270	202	3.7	14.0	49.0	51.0	4.5	4.1
Minimum	140	98	0.0	0.0	30.0	24.0	3.3	3.2
Maximum	410	300	3.7	14.0	79.0	75.0	7.8	7.3
Count	2	9	9	9	8	8	9	9
Confidence Level(95.0%)	1715	49	1.2	3.5	12.4	12.9	1.1	1.0

ND = No Data

Provisional MMSD Water Quality Data

115TH STREET, SOUTH OF WATERTOWN PLANK ROAD - SITE 6
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	17.1	16.4	11.22	0.32	0.021	0.33	0.016	0.71	0.116	0.058	ND
Standard Error	0.1	1.6	1.4	1.74	0.06	0.003	0.06	0.008	0.14	0.026	0.020	ND
Median	8.3	17.2	16.1	11.85	0.30	0.020	0.32	0.014	0.80	0.091	0.049	ND
Mode	8.4	ND	ND	ND	0.30	0.020	ND	0.000	ND	ND	0.000	ND
Standard Deviation	0.2	4.9	4.3	3.47	0.19	0.009	0.19	0.023	0.41	0.079	0.059	ND
Sample Variance	0.0	24.4	18.8	12.05	0.03	0.000	0.04	0.001	0.17	0.006	0.003	ND
Kurtosis	-1.0	-1.5	-0.4	-1.52	-0.65	4.653	-0.70	5.214	-0.27	0.587	5.120	ND
Skewness	-0.6	-0.4	-0.3	-0.72	0.04	1.752	0.01	2.125	-0.48	1.278	1.969	ND
Range	0.6	13.1	13.4	7.63	0.58	0.034	0.59	0.072	1.30	0.227	0.200	0.00
Minimum	7.9	9.1	9.0	6.77	0.05	0.009	0.05	0.000	0.00	0.043	0.000	0.00
Maximum	8.5	22.2	22.4	14.40	0.62	0.043	0.64	0.072	1.30	0.270	0.200	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	3.8	3.3	5.52	0.14	0.007	0.14	0.018	0.32	0.060	0.045	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	888.9	876.2	4.0	12.7	5.8	1482	227.8	5870	2.8	4577
Standard Error	ND	ND	66.9	63.5	1.4	6.3	1.0	89	19.0	5151	0.3	3579
Median	ND	ND	930.0	922.0	2.8	7.4	3.9	1520	240.0	320	2.5	780
Mode	ND	ND	1000.0	ND	ND	ND	ND	ND	260.0	ND	ND	ND
Standard Deviation	ND	ND	200.7	190.4	4.2	18.9	3.1	267	57.0	15454	0.8	10736
Sample Variance	ND	ND	40286.1	36267.7	18.0	356.0	9.9	71142	3244.4	238831625	0.7	115267800
Kurtosis	ND	ND	0.9	ND	4.1	8.0	-2.2	4	0.0	9	3.0	9
Skewness	ND	ND	-0.6	-0.9	1.9	2.8	0.3	-2	-1.0	3	1.7	3
Range	0.0	0.0	700.0	645.0	14.0	60.2	7.3	886	170.0	46880	2.6	32890
Minimum	0.0	0.0	500.0	493.0	0.0	1.8	2.5	864	120.0	120	2.1	110
Maximum	0.0	0.0	1200.0	1138.0	14.0	62.0	9.9	1750	290.0	47000	4.7	33000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	154.3	146.4	3.3	14.5	2.4	205	43.8	11879	0.6	8253

ND = No Data

Provisional MMSD Water Quality Data

115TH STREET, SOUTH OF WATERTOWN PLANK ROAD - SITE 6
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

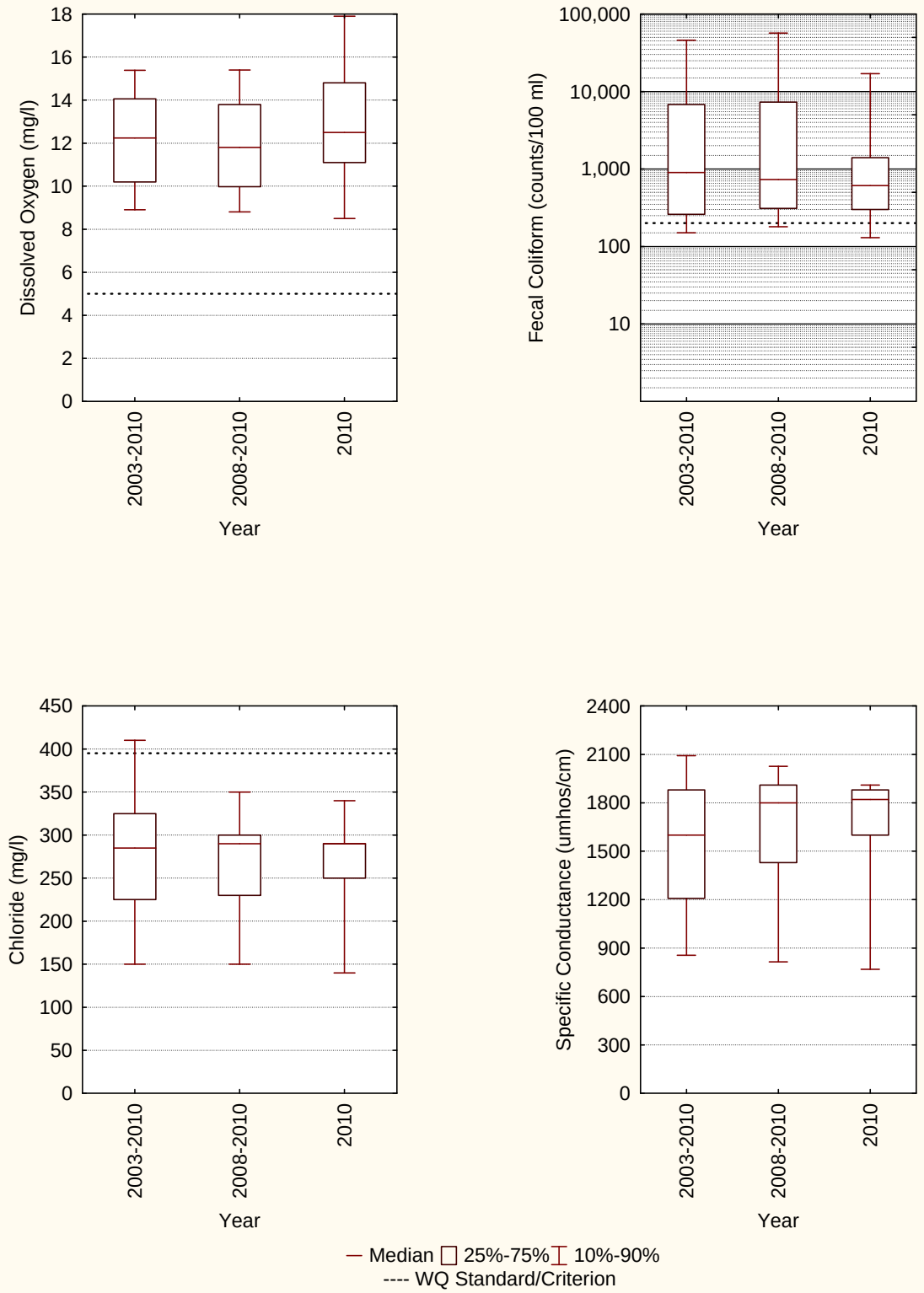
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	88.50	35.00	0.0	3.3	7.0	2.8	0.0	14.0	0.0	3.1	0.0	0.0
Standard Error	31.50	13.00	0.0	0.6	0.0	0.2	0.0	1.0	0.0	0.8	0.0	0.0
Median	88.50	35.00	0.0	3.3	7.0	2.8	0.0	14.0	0.0	3.1	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	ND	0.0	0.0
Standard Deviation	44.55	18.38	0.0	0.8	0.1	0.3	0.0	1.4	0.0	1.1	0.0	0.0
Sample Variance	1984.50	338.00	0.0	0.7	0.0	0.1	0.0	2.0	0.0	1.1	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	63.00	26.00	0.0	1.2	0.1	0.4	0.0	2.0	0.0	1.5	0.0	0.0
Minimum	57.00	22.00	0.0	2.7	6.9	2.6	0.0	13.0	0.0	2.3	0.0	0.0
Maximum	120.00	48.00	0.0	3.9	7.0	3.0	0.0	15.0	0.0	3.8	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	400.25	165.18	0.0	7.6	0.6	2.5	0.0	12.7	0.0	9.5	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	370	284	1.1	9.4	75.2	66.3	8.8	8.2
Standard Error	140	16	0.8	2.2	4.6	4.1	1.3	1.3
Median	370	310	0.0	7.8	79.0	69.0	7.6	6.8
Mode	ND	310	0.0	ND	ND	ND	ND	ND
Standard Deviation	198	49	2.3	6.6	13.8	12.4	4.0	4.0
Sample Variance	39200	2403	5.5	43.6	190.2	152.8	15.7	15.7
Kurtosis	ND	4	3.8	4.2	0.7	2.5	-0.5	0.2
Skewness	ND	-2	2.1	2.0	-0.8	-1.5	0.8	1.0
Range	280	150	6.6	21.0	44.0	41.0	11.7	11.9
Minimum	230	170	0.0	4.0	48.0	39.0	4.3	4.1
Maximum	510	320	6.6	25.0	92.0	80.0	16.0	16.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	1779	38	1.8	5.1	10.6	9.5	3.0	3.0

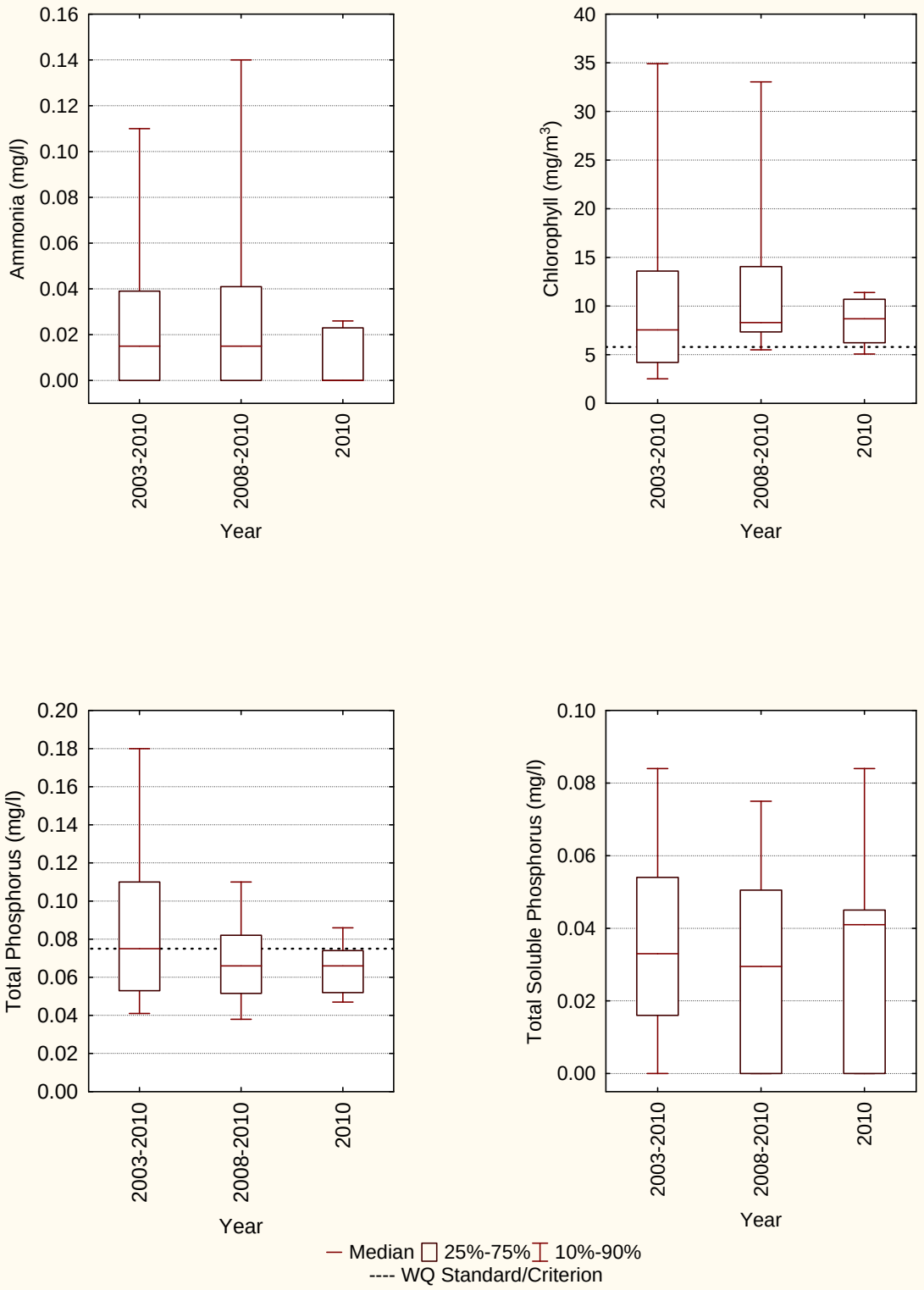
ND = No Data

Provisional MMSD Water Quality Data

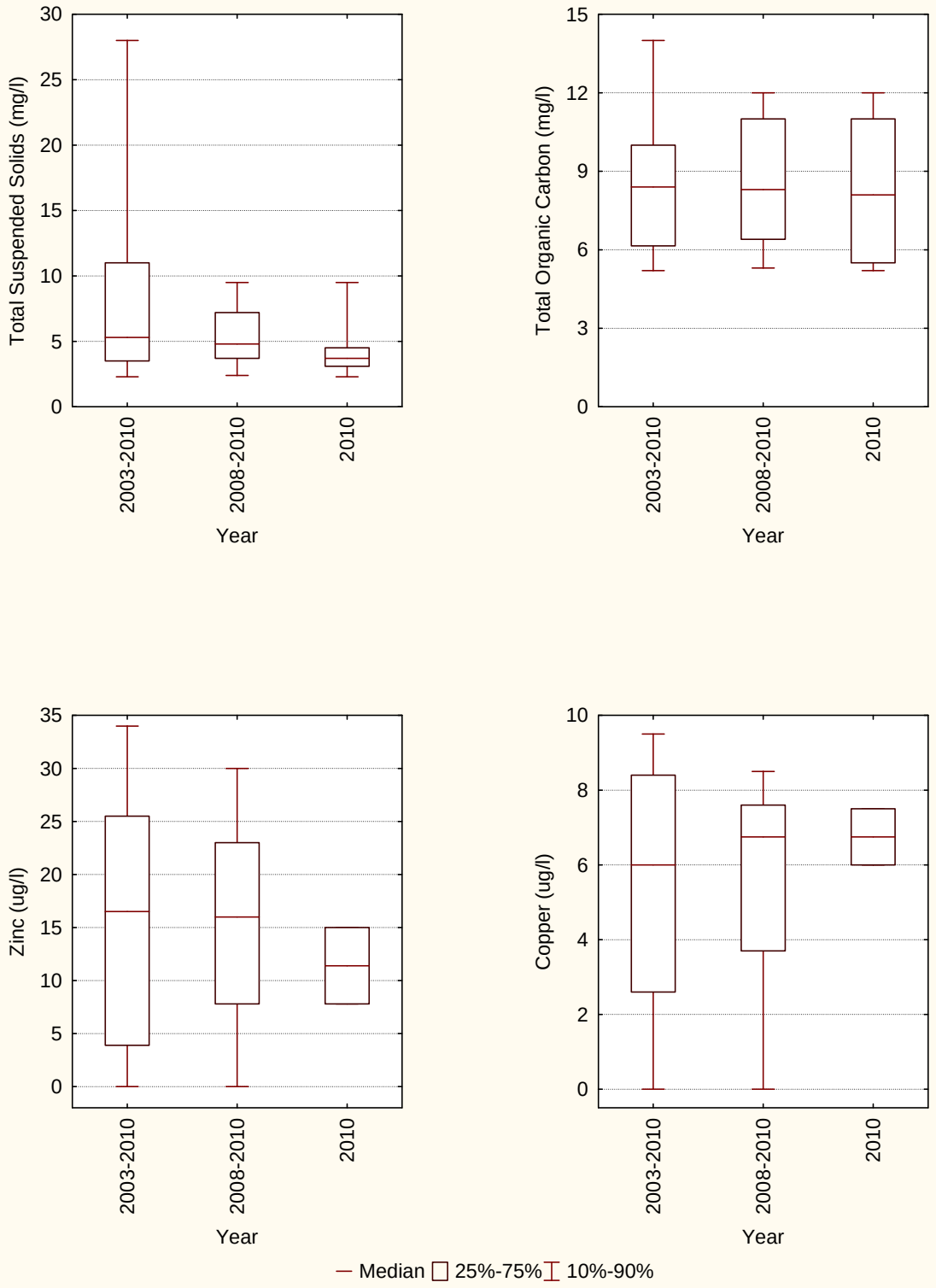
MMSD Water Quality Program Data
Underwood Creek at 107th St. and Fisher Pkwy., Site UC-07



MMSD Water Quality Program Data
Underwood Creek at 107th St. and Fisher Pkwy., Site UC-07



MMSD Water Quality Program Data
Underwood Creek at 107th St. and Fisher Pkwy., Site UC-07



107TH STREET AND FISHER PARKWAY - SITE 7
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.3	17.5	12.9	8.47	0.27	0.014	0.29	0.008	0.58	0.065	0.030	ND
Standard Error	0.1	1.8	1.0	1.40	0.07	0.003	0.07	0.004	0.12	0.004	0.010	ND
Median	8.3	18.5	12.5	8.70	0.17	0.017	0.19	0.000	0.53	0.066	0.041	ND
Mode	8.3	ND	ND	ND	ND	0.017	ND	0.000	ND	0.066	0.000	ND
Standard Deviation	0.2	5.4	2.9	2.81	0.21	0.009	0.21	0.012	0.35	0.013	0.031	ND
Sample Variance	0.1	28.7	8.4	7.88	0.04	0.000	0.05	0.000	0.12	0.000	0.001	ND
Kurtosis	-0.7	-1.3	-0.4	-2.00	-0.96	-0.502	-1.06	-1.645	0.38	-0.993	-1.041	ND
Skewness	0.5	-0.5	0.2	-0.35	0.74	-0.791	0.66	0.872	0.13	0.035	0.393	ND
Range	0.7	14.7	9.4	6.33	0.55	0.024	0.57	0.026	1.20	0.039	0.084	0.00
Minimum	8.0	8.4	8.5	5.07	0.06	0.000	0.06	0.000	0.00	0.047	0.000	0.00
Maximum	8.7	23.1	17.9	11.40	0.61	0.024	0.63	0.026	1.20	0.086	0.084	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	4.1	2.2	4.47	0.16	0.007	0.16	0.009	0.27	0.010	0.024	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	977.8	973.3	2.0	4.5	3.4	1655	267.8	2494	2.9	2683
Standard Error	ND	ND	72.7	73.0	0.4	0.8	0.8	119	19.0	1822	0.2	2046
Median	ND	ND	1100.0	1090.5	1.9	3.7	3.0	1820	290.0	610	2.8	550
Mode	ND	ND	1100.0	ND	1.9	ND	ND	1880	290.0	ND	ND	1300
Standard Deviation	ND	ND	218.2	218.9	1.1	2.4	2.3	358	57.0	5465	0.6	6138
Sample Variance	ND	ND	47619.4	47905.2	1.2	6.0	5.4	127899	3244.4	29870203	0.4	37669075
Kurtosis	ND	ND	3.1	3.2	0.9	1.2	7.2	6	3.0	9	1.9	9
Skewness	ND	ND	-1.7	-1.7	-0.2	1.4	2.6	-2	-1.5	3	1.2	3
Range	0.0	0.0	720.0	723.1	3.8	7.2	8.0	1141	200.0	16870	2.1	18920
Minimum	0.0	0.0	480.0	472.4	0.0	2.3	1.4	769	140.0	130	2.1	80
Maximum	0.0	0.0	1200.0	1195.5	3.8	9.5	9.4	1910	340.0	17000	4.2	19000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	167.7	168.2	0.8	1.9	1.8	275	43.8	4201	0.5	4718

ND = No Data

Provisional MMSD Water Quality Data

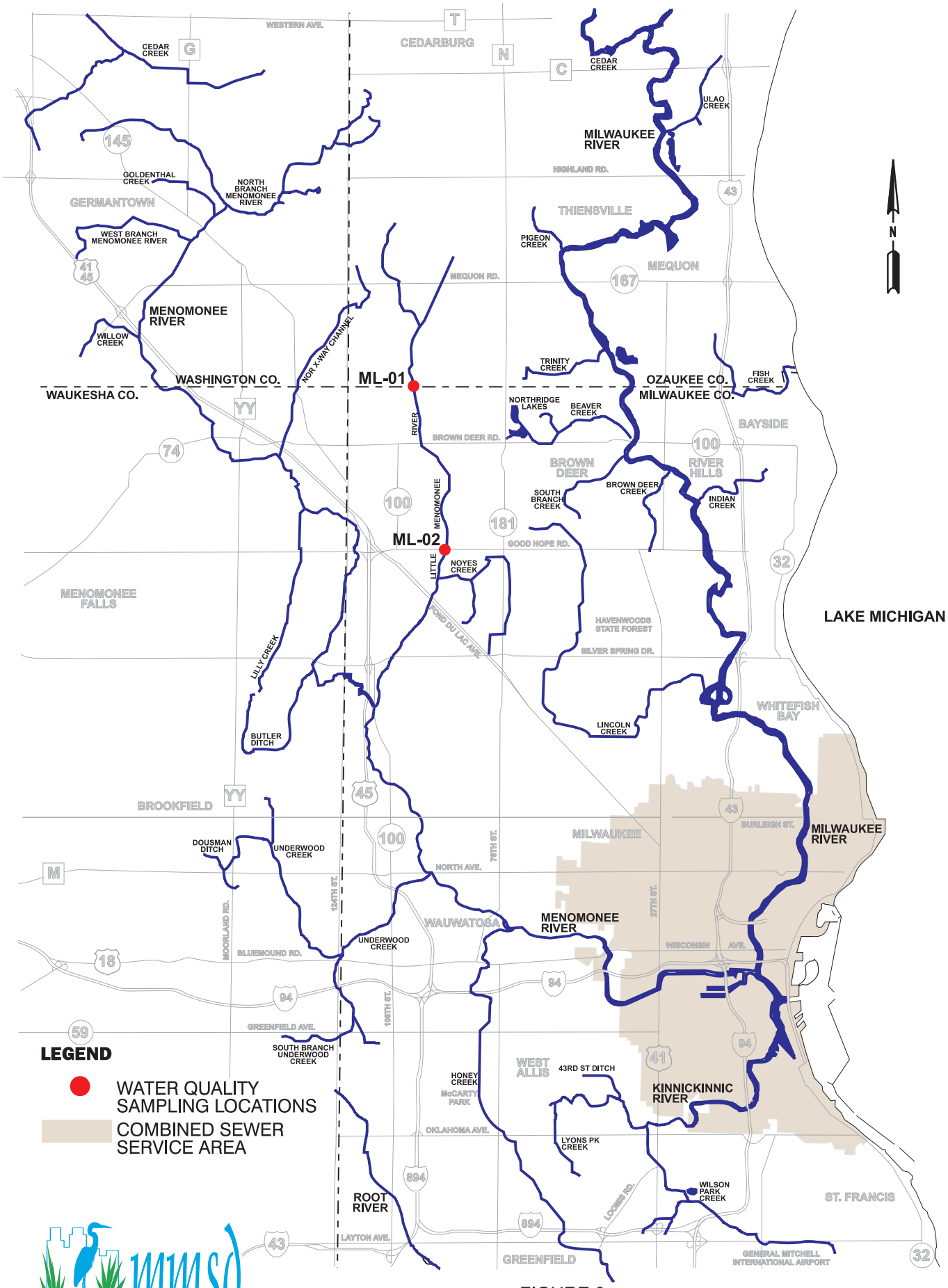
107TH STREET AND FISHER PARKWAY - SITE 7
UNDERWOOD CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	78.00	33.00	0.0	4.9	6.8	3.7	0.0	11.4	0.0	0.0	0.0	0.0
Standard Error	32.00	15.00	0.0	1.3	0.8	0.6	0.0	3.6	0.0	0.0	0.0	0.0
Median	78.00	33.00	0.0	4.9	6.8	3.7	0.0	11.4	0.0	0.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	0.0	0.0	0.0
Standard Deviation	45.25	21.21	0.0	1.8	1.1	0.8	0.0	5.1	0.0	0.0	0.0	0.0
Sample Variance	2048.00	450.00	0.0	3.4	1.1	0.7	0.0	25.9	0.0	0.0	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	64.00	30.00	0.0	2.6	1.5	1.2	0.0	7.2	0.0	0.0	0.0	0.0
Minimum	46.00	18.00	0.0	3.6	6.0	3.1	0.0	7.8	0.0	0.0	0.0	0.0
Maximum	110.00	48.00	0.0	6.2	7.5	4.3	0.0	15.0	0.0	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	406.60	190.59	0.0	16.5	9.5	7.6	0.0	45.7	0.0	0.0	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	330	287	1.5	9.4	75.3	66.8	8.4	8.0
Standard Error	140	19	0.5	1.4	4.7	4.5	0.9	0.9
Median	330	300	2.2	8.1	77.0	70.0	8.1	7.6
Mode	ND	300	0.0	14.0	77.0	69.0	11.0	ND
Standard Deviation	198	57	1.6	4.3	14.1	13.4	2.6	2.7
Sample Variance	39200	3250	2.4	18.1	199.0	179.7	7.0	7.2
Kurtosis	ND	7	-1.6	-1.4	6.3	7.7	-1.8	-1.6
Skewness	ND	-3	0.2	0.5	-2.3	-2.7	0.0	0.1
Range	280	190	4.0	11.5	49.0	46.0	6.8	7.2
Minimum	190	140	0.0	4.5	40.0	32.0	5.2	4.8
Maximum	470	330	4.0	16.0	89.0	78.0	12.0	12.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	1779	44	1.2	3.3	10.8	10.3	2.0	2.1

ND = No Data

Provisional MMSD Water Quality Data



mmsd

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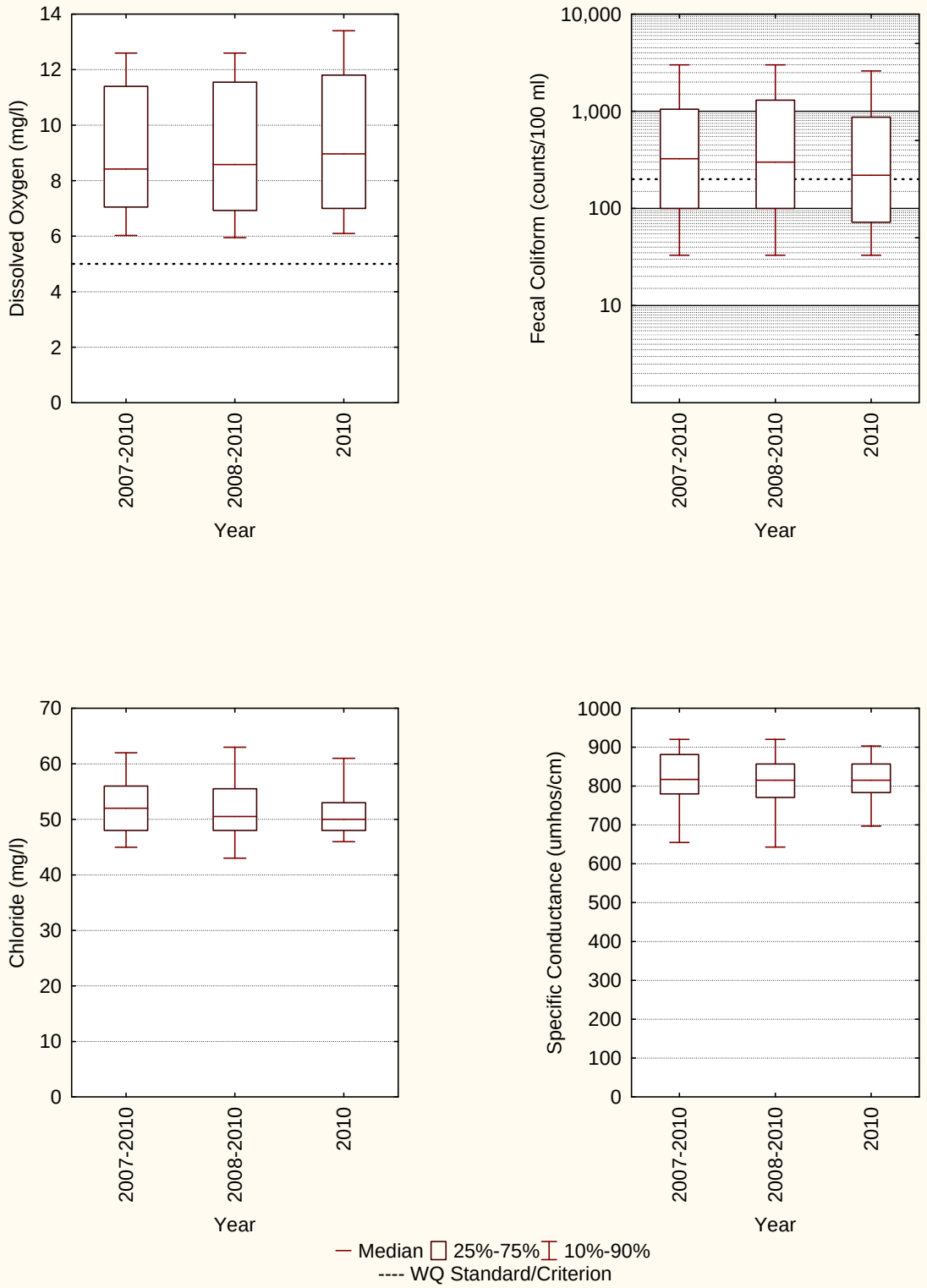
FIGURE 8

LITTLE MENOMONEE RIVER (ML) SURVEY WATER QUALITY SAMPLING LOCATIONS

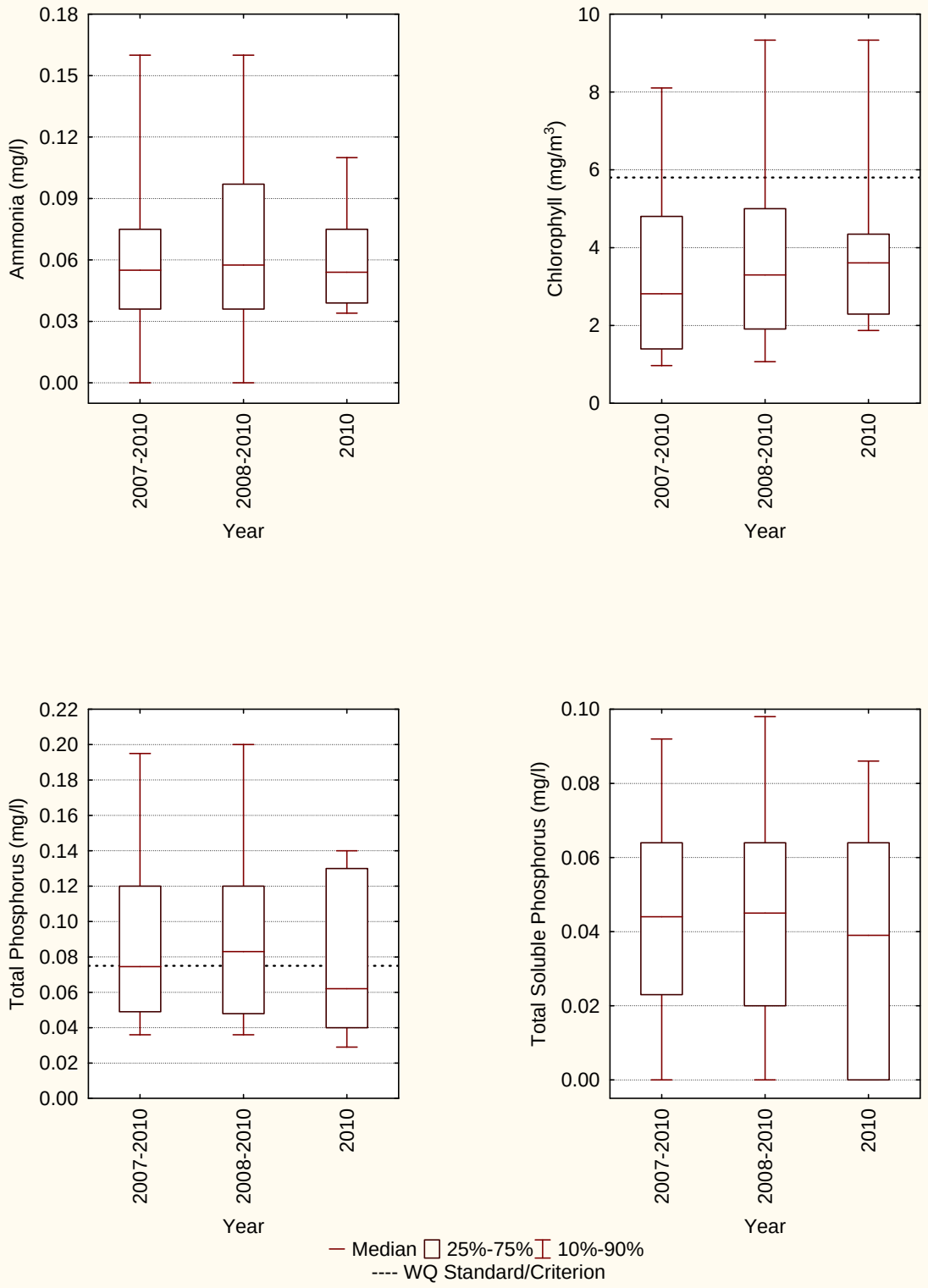
10/24/07

02-034(ML)REPORT

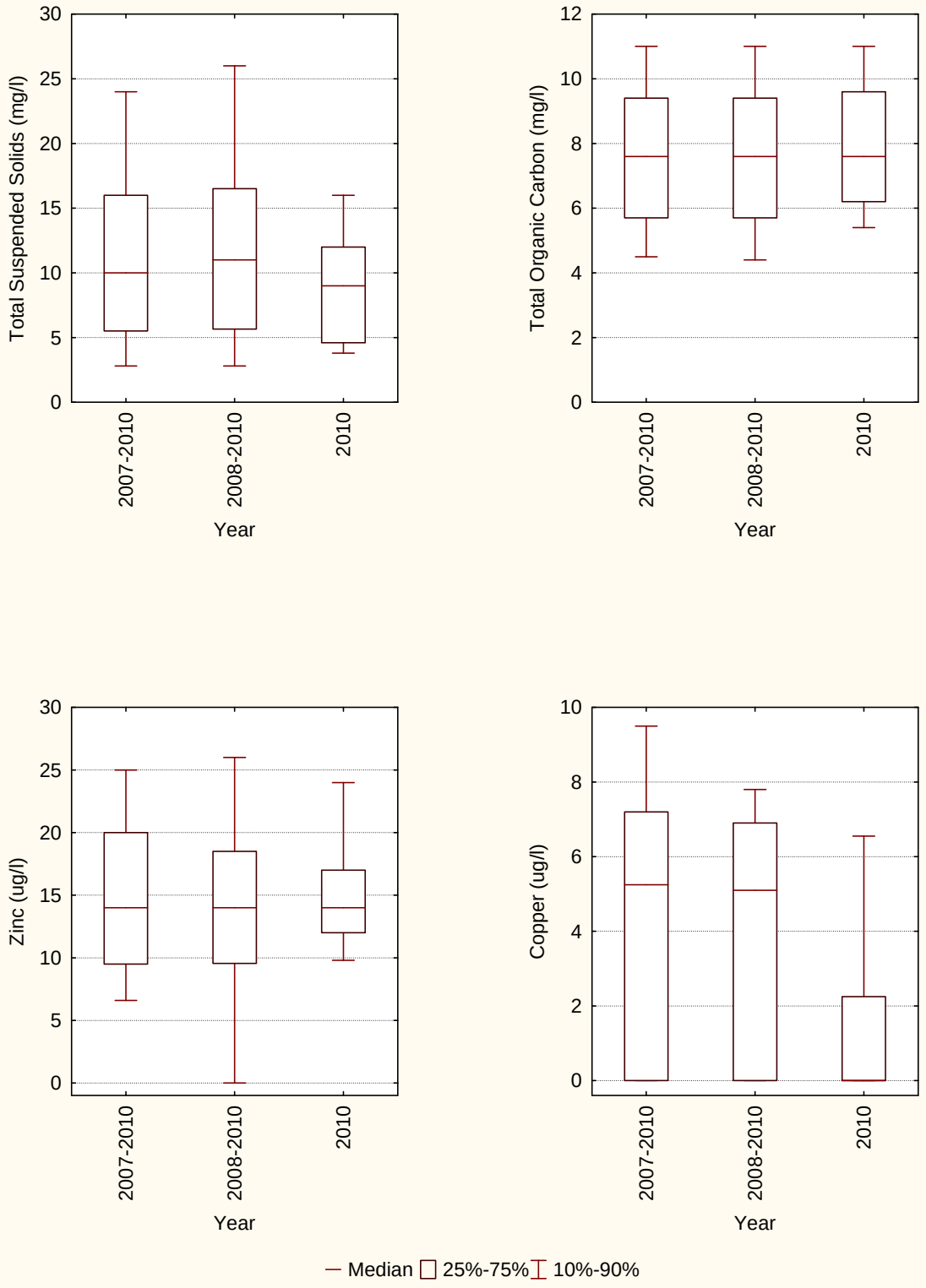
MMSD Water Quality Monitoring Program Data
Little Menomonee River at County Line Rd., Site ML-01



MMSD Water Quality Monitoring Program Data
Little Menomonee River at County Line Rd., Site ML-01



MMSD Water Quality Monitoring Program Data
Little Menomonee River at County Line Rd., Site ML-01



COUNTY LINE ROAD - SITE 1
LITTLE MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	8.9	9.3	4.31	1.99	0.023	2.01	0.063	0.76	0.082	0.042	ND
Standard Error	0.0	1.4	0.6	0.71	0.10	0.003	0.10	0.008	0.07	0.012	0.008	ND
Median	7.6	8.6	9.0	3.61	1.90	0.020	1.90	0.054	0.62	0.062	0.039	ND
Mode	7.6	ND	6.1	ND	1.80	0.020	2.00	0.110	1.20	0.130	0.000	ND
Standard Deviation	0.2	6.6	2.9	2.83	0.49	0.014	0.49	0.038	0.34	0.059	0.039	ND
Sample Variance	0.0	43.5	8.4	7.98	0.24	0.000	0.24	0.001	0.12	0.003	0.001	ND
Kurtosis	0.1	-1.1	-1.4	2.58	5.97	2.253	5.46	0.909	0.87	1.159	0.173	ND
Skewness	0.5	0.3	0.2	1.67	1.94	1.557	1.87	0.974	1.01	1.054	0.719	ND
Range	0.7	20.1	9.0	10.60	2.30	0.051	2.30	0.160	1.37	0.240	0.140	0.00
Minimum	7.4	0.4	5.0	1.20	1.40	0.009	1.40	0.000	0.33	0.000	0.000	0.00
Maximum	8.1	20.5	14.0	11.80	3.70	0.060	3.70	0.160	1.70	0.240	0.140	0.00
Count	23	23	22	16	23	23	23	23	23	23	23	0
Confidence Level(95.0%)	0.1	2.9	1.3	1.51	0.21	0.006	0.21	0.017	0.15	0.025	0.017	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	507.3	496.8	2.7	10.3	9.0	809	51.8	2126	2.4	861
Standard Error	ND	ND	13.3	14.1	0.4	1.8	1.5	15	1.8	1223	0.2	381
Median	ND	ND	505.0	491.5	2.5	9.0	7.7	815	50.0	220	2.3	330
Mode	ND	ND	510.0	ND	3.0	12.0	10.8	818	49.0	33	1.5	340
Standard Deviation	ND	ND	62.3	66.0	1.9	8.6	7.2	71	8.6	5867	0.8	1827
Sample Variance	ND	ND	3887.4	4357.0	3.8	74.7	52.0	5077	74.7	34424429	0.7	3338768
Kurtosis	ND	ND	4.9	4.2	2.7	10.7	10.1	1	7.7	12	0.5	16
Skewness	ND	ND	1.3	1.0	1.4	2.9	2.8	-1	2.1	3	0.8	4
Range	0.0	0.0	320.0	337.0	8.3	42.2	34.0	273	48.0	24986	3.3	8586
Minimum	0.0	0.0	390.0	366.0	0.0	1.8	2.9	643	35.0	14	1.1	14
Maximum	0.0	0.0	710.0	703.0	8.3	44.0	36.9	916	83.0	25000	4.4	8600
Count	0	0	22	22	23	23	23	23	23	23	23	23
Confidence Level(95.0%)	ND	ND	27.6	29.3	0.8	3.7	3.1	31	3.7	2537	0.4	790

ND = No Data

Provisional MMSD Water Quality Data

COUNTY LINE ROAD - SITE 1
LITTLE MENOMONEE RIVER
WATER QUALITY DATA - 2010

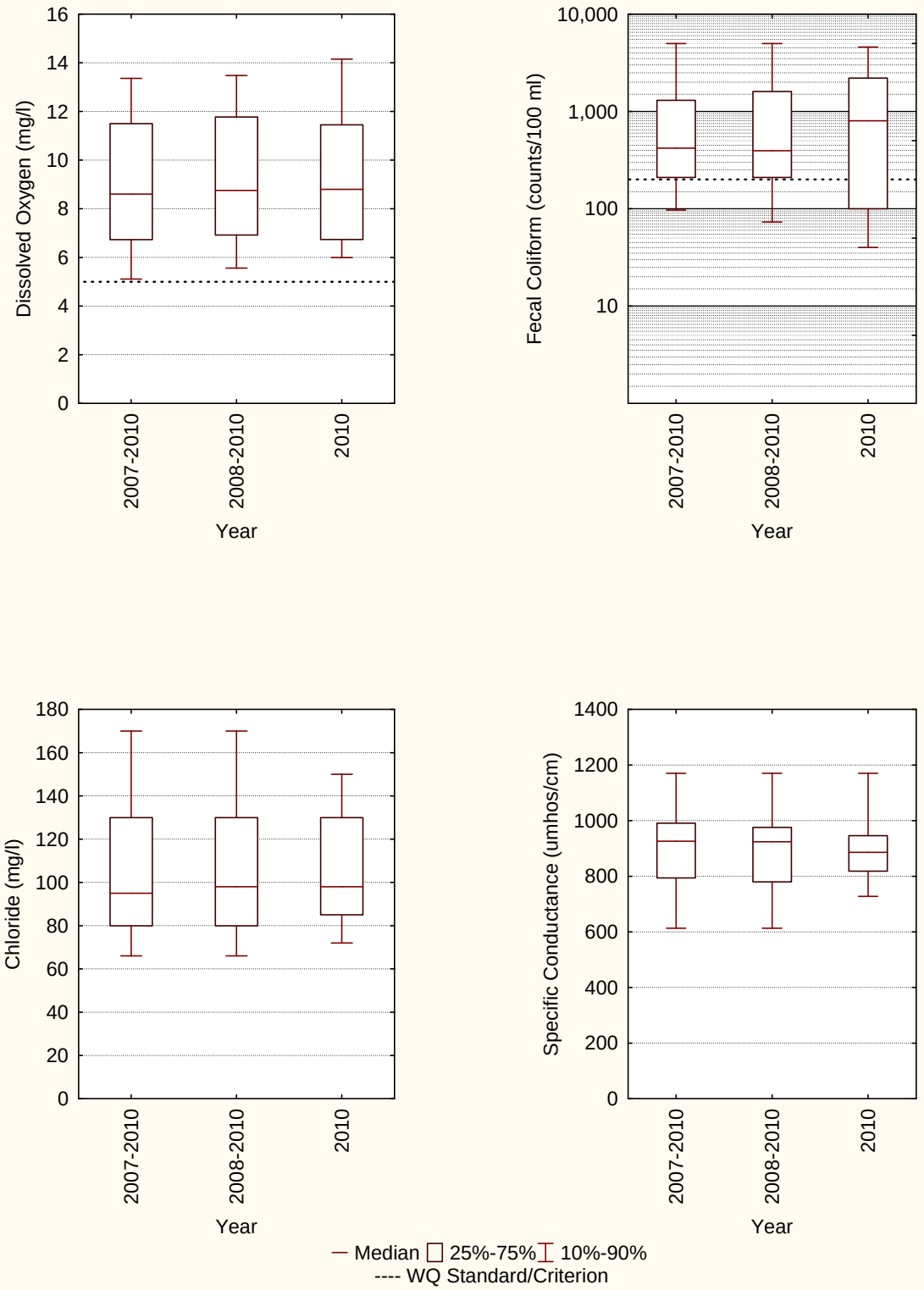
VARIABLE	***CA***	***MG***	***CD***	***CR***	***CU***	***NI***	***PB***	***ZN***	***AG***	***AS***	***SE***	***HG***
units	*mg/L*	*mg/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
STATISTICS												
Mean	87.09	37.70	0.1	4.8	1.6	3.0	0.2	15.4	0.0	0.7	1.2	ND
Standard Error	2.21	1.22	0.1	0.4	0.6	0.3	0.2	1.1	0.0	0.3	0.6	ND
Median	89.00	39.00	0.0	4.2	0.0	2.9	0.0	14.0	0.0	0.0	0.0	ND
Mode	95.00	40.00	0.0	3.8	0.0	1.9	0.0	17.0	0.0	0.0	0.0	ND
Standard Deviation	10.59	5.87	0.4	2.0	2.9	1.4	1.0	5.5	0.0	1.5	2.8	ND
Sample Variance	112.08	34.40	0.1	3.8	8.2	1.9	1.0	30.4	0.0	2.1	7.9	ND
Kurtosis	0.96	0.60	15.3	8.4	0.8	6.8	23.0	1.2	ND	2.0	2.2	ND
Skewness	-1.07	-0.81	3.9	2.6	1.5	2.2	4.8	1.2	ND	1.8	2.0	ND
Range	41.00	24.00	1.6	9.3	8.3	6.3	4.8	21.8	0.0	4.7	8.1	0.0
Minimum	59.00	24.00	0.0	2.7	0.0	1.6	0.0	8.2	0.0	0.0	0.0	0.0
Maximum	100.00	48.00	1.6	12.0	8.3	7.9	4.8	30.0	0.0	4.7	8.1	0.0
Count	23	23	23	23	20	23	23	23	23	23	23	0
Confidence Level(95.0%)	4.58	2.54	0.2	0.8	1.3	0.6	0.4	2.4	0.0	0.6	1.2	ND

VARIABLE	***HARD***	***TALK***	***BOD5***	***BOD20***	***TC***	***TNIC***	***TNOC***	***TNDOC***
units	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
STATISTICS								
Mean	374	283	0.8	5.0	75.0	67.2	7.9	7.6
Standard Error	11	7	0.4	0.4	1.7	1.8	0.5	0.5
Median	390	290	0.0	4.4	77.0	69.0	7.6	7.3
Mode	400	290	0.0	7.1	80.0	69.0	11.0	11.0
Standard Deviation	51	35	1.9	1.8	8.0	8.7	2.5	2.5
Sample Variance	2553	1196	3.6	3.3	64.3	75.2	6.0	6.2
Kurtosis	1	2	6.6	0.6	2.8	1.5	-0.6	0.3
Skewness	-1	-1	2.6	1.2	-1.4	-1.1	0.5	0.9
Range	200	150	7.4	6.5	37.0	39.0	9.3	9.8
Minimum	250	190	0.0	2.7	51.0	44.0	3.7	4.2
Maximum	450	340	7.4	9.2	88.0	83.0	13.0	14.0
Count	23	23	23	23	23	23	23	23
Confidence Level(95.0%)	22	15	0.8	0.8	3.5	3.7	1.1	1.1

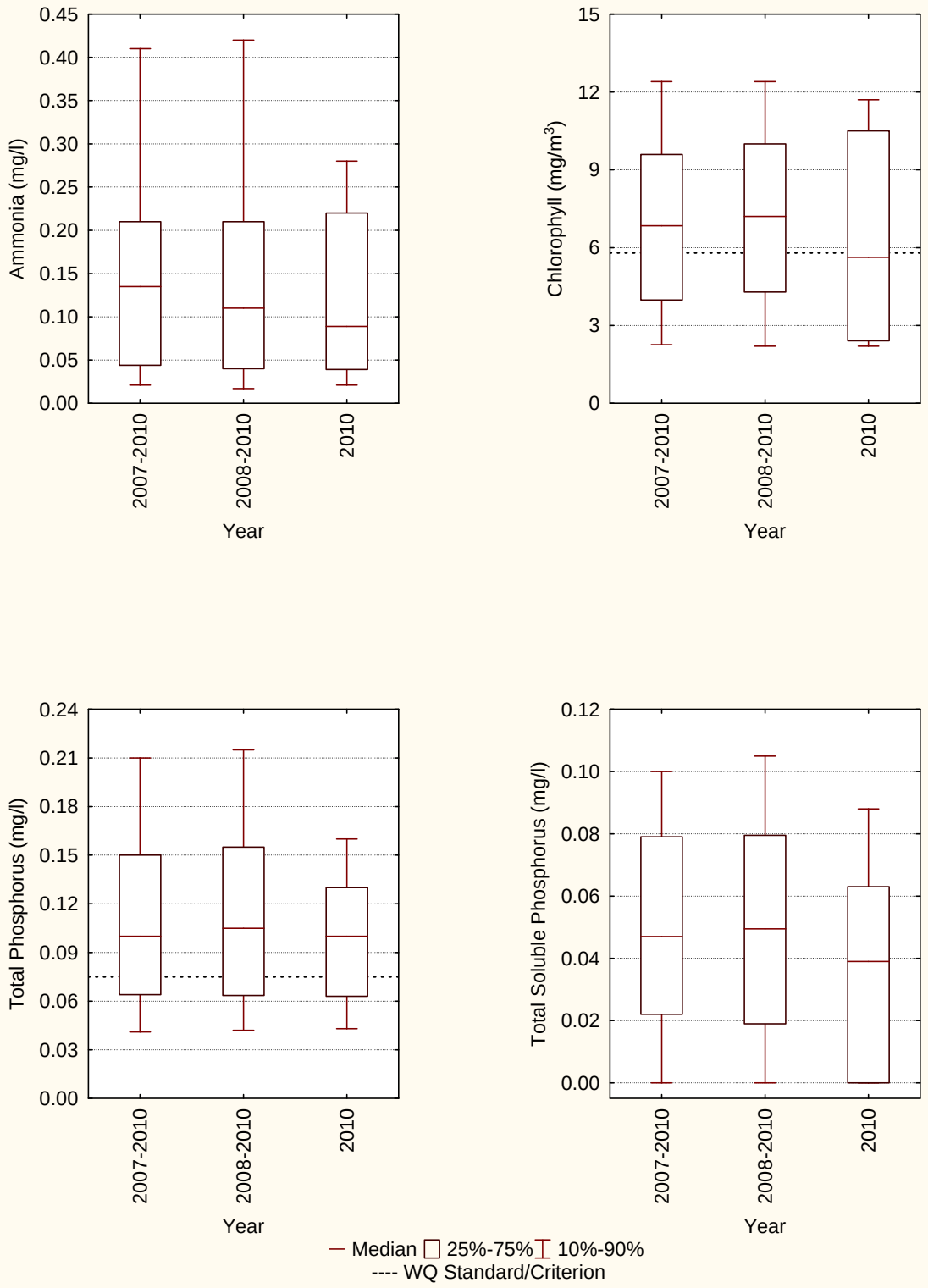
ND = No Data

Provisional MMSD Water Quality Data

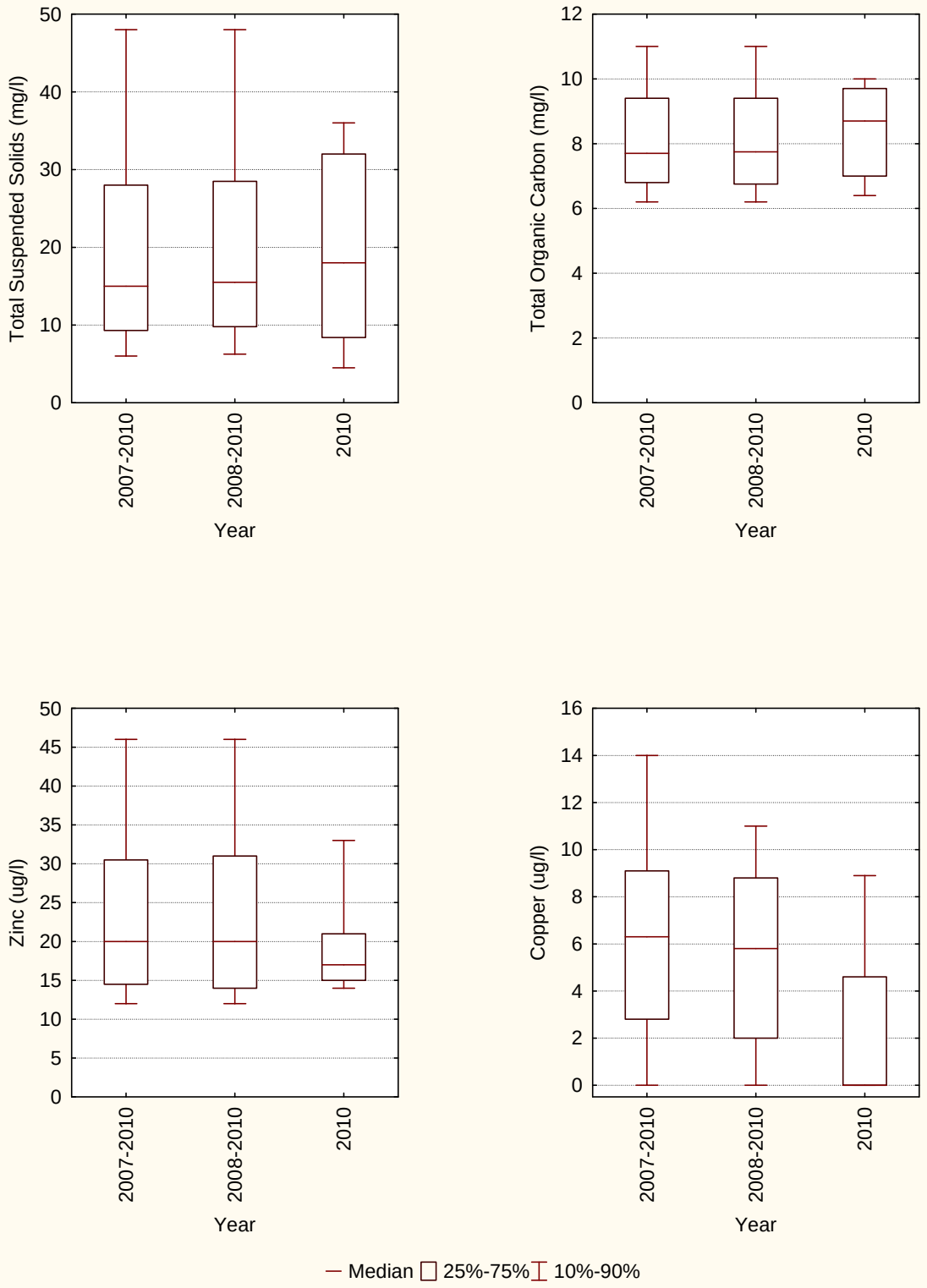
MMSD Water Quality Monitoring Program Data
Little Menomonee River at Granville Rd. and Good Hope Rd., Site ML-02



MMSD Water Quality Monitoring Program Data
Little Menomonee River at Granville Rd. and Good Hope Rd., Site ML-02



MMSD Water Quality Monitoring Program Data
Little Menomonee River at Granville Rd. and Good Hope Rd., Site ML-02



GRANVILLE ROAD - SITE 2
LITTLE MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	11.2	9.4	6.51	0.66	0.024	0.69	0.174	1.00	0.103	0.038	ND
Standard Error	0.0	1.9	0.7	1.05	0.13	0.003	0.13	0.051	0.09	0.014	0.008	ND
Median	7.7	9.0	8.8	5.63	0.31	0.023	0.34	0.089	0.88	0.100	0.039	ND
Mode	7.6	ND	6.0	ND	1.70	0.021	0.34	0.140	0.64	0.130	0.000	ND
Standard Deviation	0.2	8.5	3.1	4.06	0.59	0.016	0.59	0.235	0.43	0.064	0.037	ND
Sample Variance	0.0	72.3	9.8	16.50	0.35	0.000	0.35	0.055	0.18	0.004	0.001	ND
Kurtosis	1.0	-1.4	-0.4	-1.75	-1.30	8.179	-1.21	4.962	1.75	1.926	-1.490	ND
Skewness	0.5	0.2	0.8	0.07	0.61	2.347	0.62	2.310	1.43	0.846	0.281	ND
Range	0.7	24.1	10.4	11.24	1.63	0.074	1.72	0.860	1.59	0.280	0.097	0.00
Minimum	7.4	-0.1	5.8	0.66	0.07	0.006	0.08	0.000	0.61	0.000	0.000	0.00
Maximum	8.1	24.0	16.2	11.90	1.70	0.080	1.80	0.860	2.20	0.280	0.097	0.00
Count	21	21	20	15	21	21	21	21	21	21	21	0
Confidence Level(95.0%)	0.1	3.9	1.5	2.25	0.27	0.007	0.27	0.107	0.19	0.029	0.017	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	535.5	514.4	5.1	21.4	17.0	941	118.9	2940	2.7	1282
Standard Error	ND	ND	32.7	32.0	0.9	3.6	2.9	77	16.4	1732	0.2	459
Median	ND	ND	540.0	515.5	4.0	18.0	15.2	886	98.0	800	2.9	440
Mode	ND	ND	530.0	514.0	5.0	ND	ND	ND	150.0	2200	3.3	1200
Standard Deviation	ND	ND	146.1	143.1	4.3	16.7	13.4	352	74.9	7936	0.9	2105
Sample Variance	ND	ND	21341.8	20488.0	18.9	279.1	180.8	124234	5615.3	62984079	0.7	4429044
Kurtosis	ND	ND	2.8	3.1	0.5	2.2	-0.5	10	8.7	19	-0.3	10
Skewness	ND	ND	0.3	0.1	1.1	1.4	0.8	3	2.7	4	0.0	3
Range	0.0	0.0	730.0	728.0	16.0	66.7	45.7	1904	356.0	36986	3.4	9090
Minimum	0.0	0.0	190.0	158.0	0.0	3.3	0.1	346	34.0	14	1.1	10
Maximum	0.0	0.0	920.0	886.0	16.0	70.0	45.8	2250	390.0	37000	4.6	9100
Count	0	0	20	20	21	21	21	21	21	21	21	21
Confidence Level(95.0%)	ND	ND	68.4	67.0	2.0	7.6	6.1	160	34.1	3613	0.4	958

ND = No Data

Provisional MMSD Water Quality Data

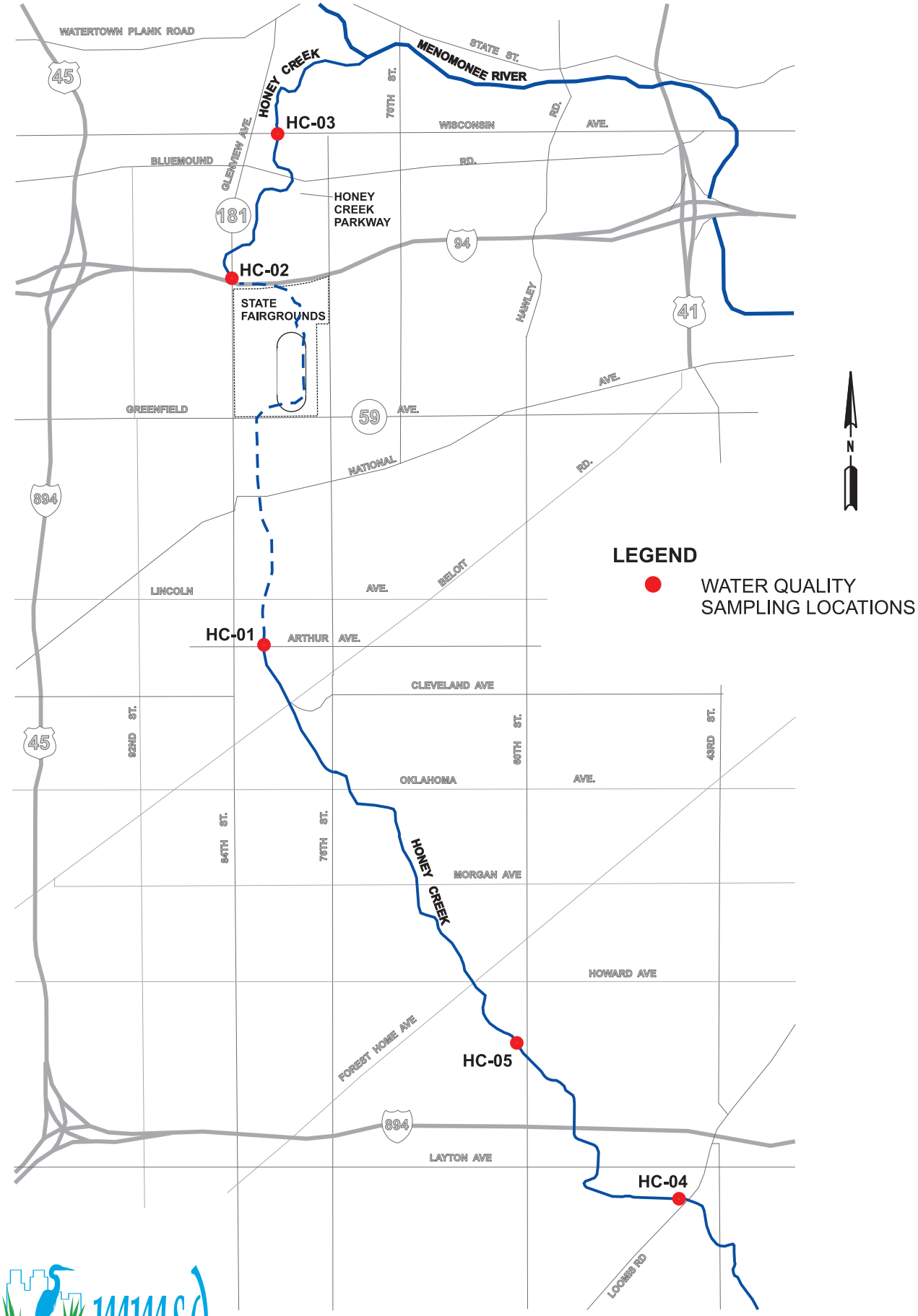
GRANVILLE ROAD - SITE 2
LITTLE MENOMONEE RIVER
WATER QUALITY DATA - 2010

VARIABLE	***CA***	***MG***	***CD***	***CR***	***CU***	***NI***	***PB***	***ZN***	***AG***	***AS***	***SE***	***HG***
units	*mg/L*	*mg/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
STATISTICS												
Mean	76.14	34.37	0.1	5.1	2.7	3.1	0.0	20.0	0.1	0.7	0.7	ND
Standard Error	4.25	1.99	0.1	0.2	0.9	0.2	0.0	1.8	0.1	0.3	0.5	ND
Median	78.00	38.00	0.0	5.0	0.0	3.0	0.0	17.0	0.0	0.0	0.0	ND
Mode	110.00	39.00	0.0	4.8	0.0	3.6	0.0	16.0	0.0	0.0	0.0	ND
Standard Deviation	19.48	9.10	0.3	0.9	3.8	0.7	0.0	8.0	0.3	1.6	2.3	ND
Sample Variance	379.43	82.78	0.1	0.8	14.7	0.5	0.0	64.3	0.1	2.5	5.3	ND
Kurtosis	1.38	2.26	14.5	-1.0	3.1	0.0	ND	2.1	21.0	3.3	7.1	ND
Skewness	-0.56	-1.35	3.7	-0.2	1.7	0.5	ND	1.7	4.6	2.1	2.9	ND
Range	85.00	39.20	1.4	3.0	14.0	2.7	0.0	29.0	1.2	5.2	7.7	0.0
Minimum	25.00	7.80	0.0	3.4	0.0	2.0	0.0	12.0	0.0	0.0	0.0	0.0
Maximum	110.00	47.00	1.4	6.4	14.0	4.7	0.0	41.0	1.2	5.2	7.7	0.0
Count	21	21	21	21	19	21	21	21	21	21	20	0
Confidence Level(95.0%)	8.87	4.14	0.1	0.4	1.8	0.3	0.0	3.7	0.1	0.7	1.1	ND

VARIABLE	***HARD***	***TALK***	***BOD5***	***BOD20***	***TC***	***TNIC***	***TNOC***	***TNDOC***
units	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
STATISTICS								
Mean	332	250	2.3	7.9	68.1	59.9	8.3	8.0
Standard Error	18	13	0.6	0.8	3.0	2.9	0.4	0.4
Median	350	280	2.2	7.1	73.0	66.0	8.7	7.9
Mode	260	290	0.0	4.8	74.0	68.0	7.0	6.9
Standard Deviation	84	57	2.8	3.6	13.9	13.4	1.7	1.7
Sample Variance	6987	3286	7.7	13.2	191.8	179.6	3.0	2.8
Kurtosis	2	3	1.6	0.7	4.3	3.2	-0.7	-1.0
Skewness	-1	-2	1.3	1.1	-2.0	-1.8	0.4	0.5
Range	366	223	10.0	13.7	56.0	53.0	6.5	5.1
Minimum	94	77	0.0	3.3	24.0	19.0	5.5	5.9
Maximum	460	300	10.0	17.0	80.0	72.0	12.0	11.0
Count	21	21	21	21	21	21	21	21
Confidence Level(95.0%)	38	26	1.3	1.7	6.3	6.1	0.8	0.8

ND = No Data

Provisional MMSD Water Quality Data



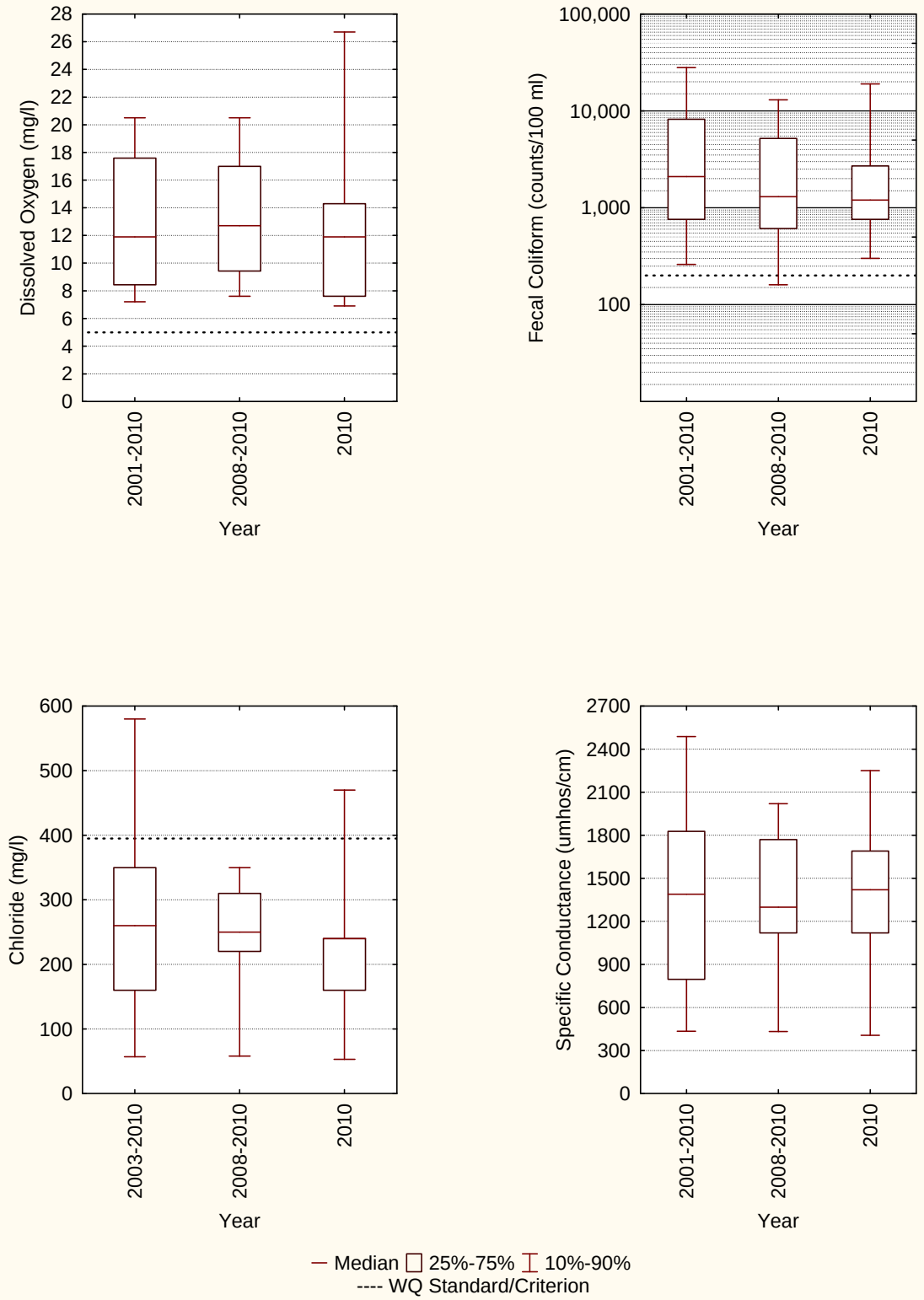
Preserving The Environment •
Improving Water Quality

FIGURE 9
HONEY CREEK (HC) SURVEY
WATER QUALITY SAMPLING LOCATIONS

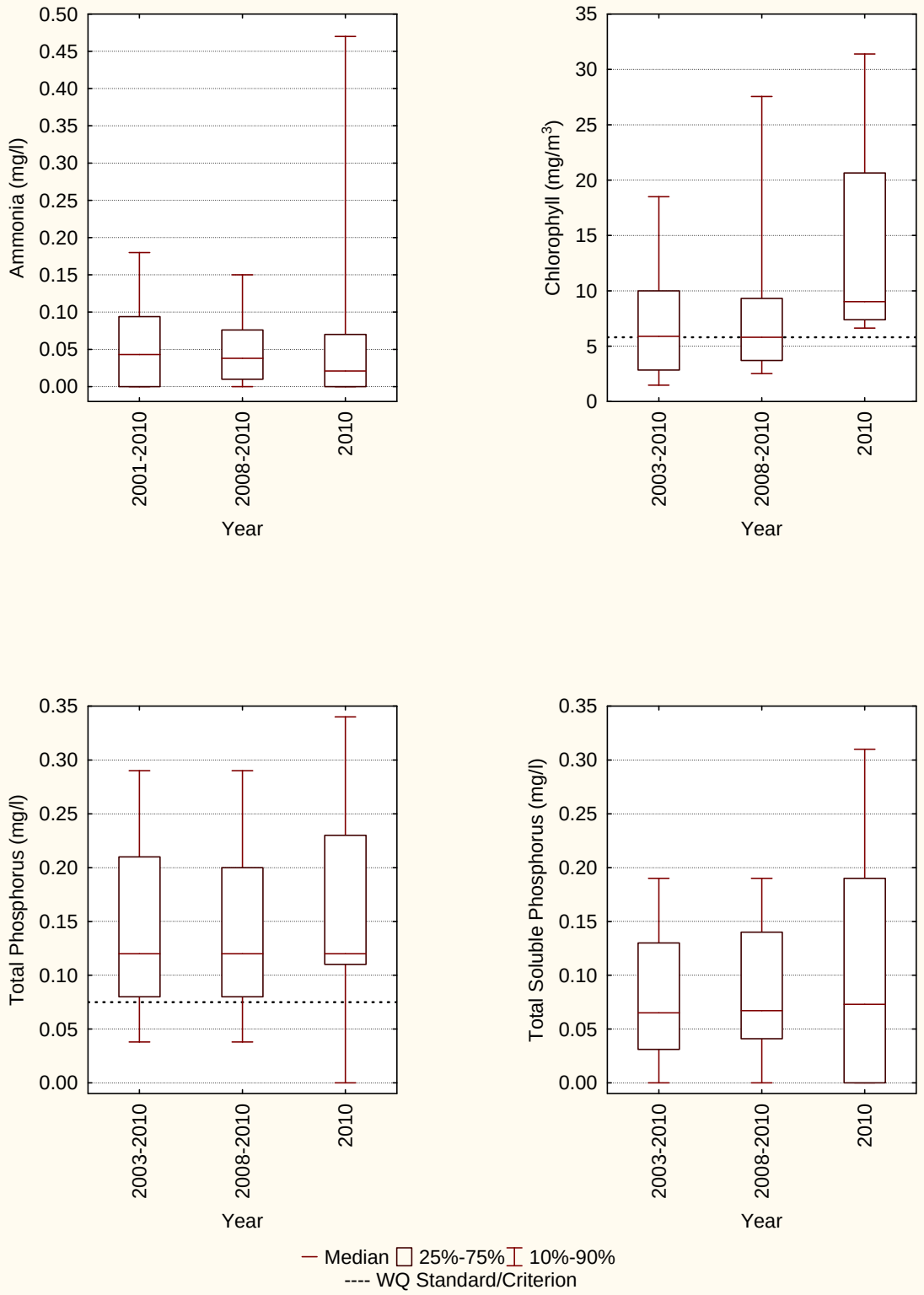
11/21/07
REPORT

03-144-HC-9A

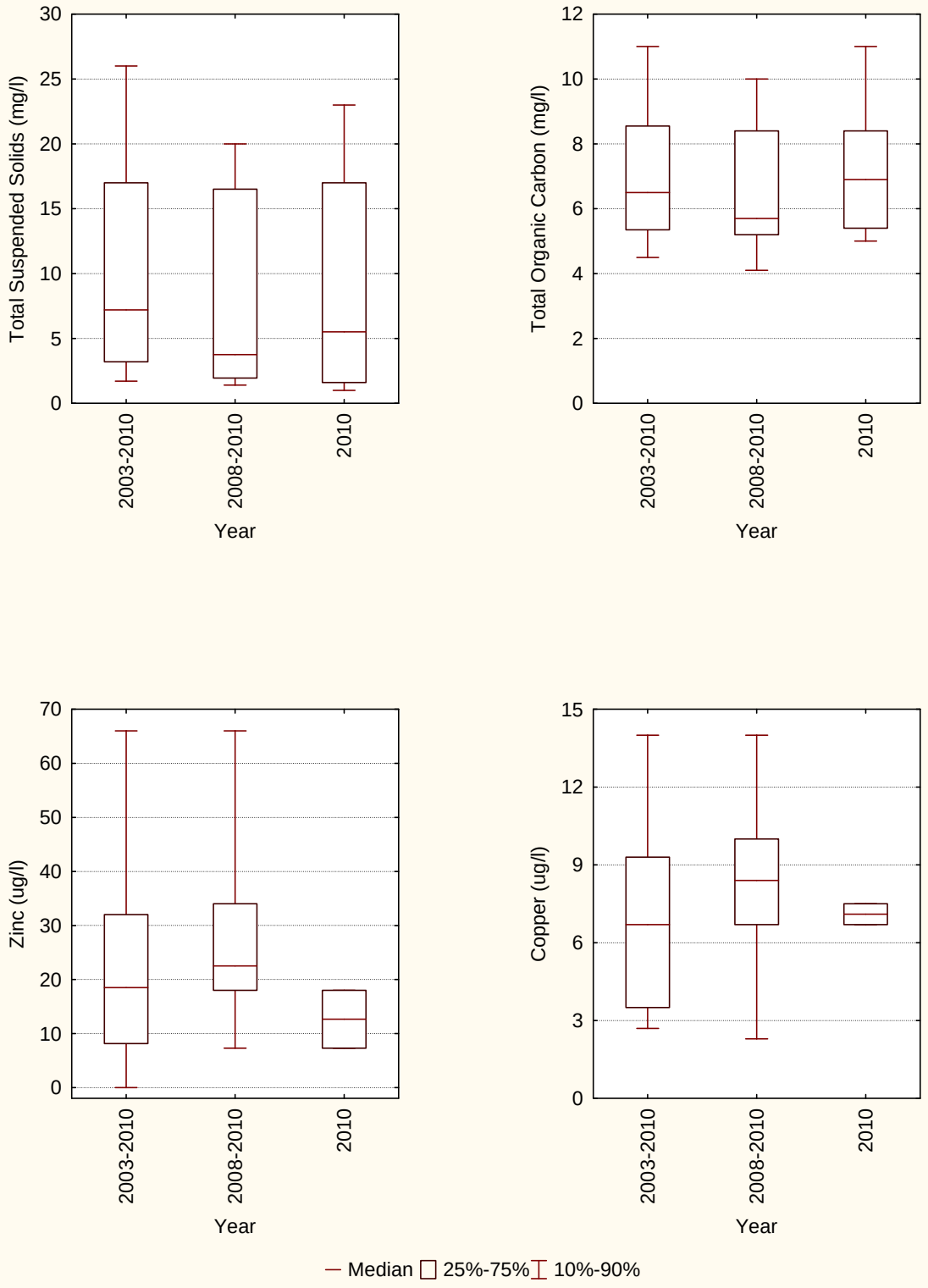
MMSD Water Quality Monitoring Program Data
Honey Creek at Arthur Ave., Site HC-01



MMSD Water Quality Monitoring Program Data
Honey Creek at Arthur Ave., Site HC-01



MMSD Water Quality Monitoring Program Data
Honey Creek at Arthur Ave., Site HC-01



81ST STREET AND ARTHUR AVENUE (MCCARTY PARK) - SITE 1
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	17.1	13.0	14.02	0.30	0.017	0.32	0.100	0.87	0.156	0.101	ND
Standard Error	0.1	2.3	2.1	5.83	0.10	0.006	0.11	0.054	0.16	0.041	0.036	ND
Median	8.2	19.1	11.9	9.02	0.25	0.015	0.28	0.021	0.74	0.120	0.073	ND
Mode	8.4	ND	ND	ND	ND	0.000	ND	0.000	ND	0.000	0.000	ND
Standard Deviation	0.4	6.8	6.3	11.66	0.31	0.017	0.32	0.161	0.49	0.124	0.108	ND
Sample Variance	0.2	45.9	40.3	136.06	0.09	0.000	0.10	0.026	0.24	0.015	0.012	ND
Kurtosis	1.7	-1.7	2.0	3.74	0.39	1.287	0.54	3.237	-0.55	-0.887	0.059	ND
Skewness	-1.4	-0.4	1.4	1.92	1.09	1.085	1.10	1.929	0.90	0.353	0.928	ND
Range	1.2	17.3	19.8	24.77	0.90	0.052	0.96	0.470	1.30	0.340	0.310	0.00
Minimum	7.2	6.5	6.9	6.63	0.00	0.000	0.00	0.000	0.40	0.000	0.000	0.00
Maximum	8.4	23.8	26.7	31.40	0.90	0.052	0.96	0.470	1.70	0.340	0.310	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.3	5.2	4.9	18.56	0.24	0.013	0.25	0.124	0.38	0.096	0.083	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	698.9	690.5	3.5	8.4	7.8	1316	221.2	3617	3.2	2478
Standard Error	ND	ND	112.8	115.0	1.2	2.8	2.7	206	42.4	1986	0.2	1152
Median	ND	ND	630.0	629.0	1.8	5.5	4.9	1420	240.0	1200	3.1	1100
Mode	ND	ND	ND	ND	0.0	ND	ND	ND	240.0	1200	3.1	ND
Standard Deviation	ND	ND	338.5	345.1	3.7	8.5	8.0	618	127.2	5959	0.5	3457
Sample Variance	ND	ND	114611.1	119083.1	13.9	73.1	63.4	381591	16189.9	35507900	0.3	11952344
Kurtosis	ND	ND	-0.2	-0.3	-0.6	-1.1	-0.8	-1	1.0	7	0.8	5
Skewness	ND	ND	0.3	0.3	0.9	0.8	0.9	0	0.5	3	0.8	2
Range	0.0	0.0	1050.0	1066.4	10.0	22.0	20.9	1844	417.0	18700	1.8	10840
Minimum	0.0	0.0	250.0	232.0	0.0	1.0	1.2	406	53.0	300	2.5	160
Maximum	0.0	0.0	1300.0	1298.4	10.0	23.0	22.1	2250	470.0	19000	4.3	11000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	260.2	265.3	2.9	6.6	6.1	475	97.8	4580	0.4	2657

ND = No Data

Provisional MMSD Water Quality Data

81ST STREET AND ARTHUR AVENUE (MCCARTY PARK) - SITE 1
HONEY CREEK
WATER QUALITY DATA - 2010

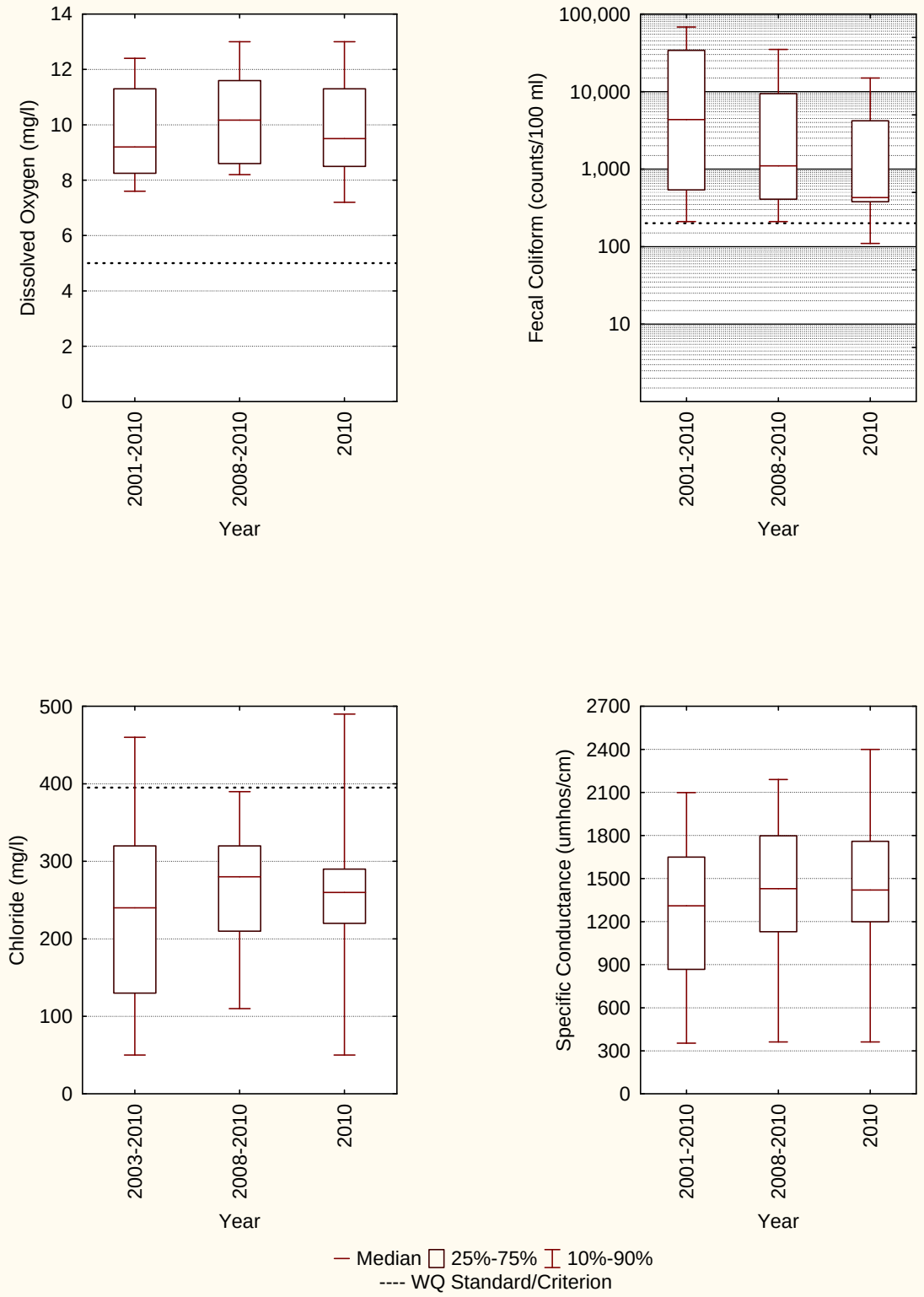
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	47.00	23.00	0.0	3.8	7.1	1.9	0.0	12.7	0.0	1.4	0.0	0.0
Standard Error	21.00	14.00	0.0	0.9	0.4	0.3	0.0	5.4	0.0	1.4	0.0	0.0
Median	47.00	23.00	0.0	3.8	7.1	1.9	0.0	12.7	0.0	1.4	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	ND	0.0	0.0
Standard Deviation	29.70	19.80	0.0	1.3	0.6	0.4	0.0	7.6	0.0	2.0	0.0	0.0
Sample Variance	882.00	392.00	0.0	1.6	0.3	0.2	0.0	57.2	0.0	3.9	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	42.00	28.00	0.0	1.8	0.8	0.6	0.0	10.7	0.0	2.8	0.0	0.0
Minimum	26.00	9.00	0.0	2.9	6.7	1.6	0.0	7.3	0.0	0.0	0.0	0.0
Maximum	68.00	37.00	0.0	4.7	7.5	2.2	0.0	18.0	0.0	2.8	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	266.83	177.89	0.0	11.4	5.1	3.8	0.0	68.0	0.0	17.8	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	210	209	3.0	12.3	49.4	42.2	7.2	6.6
Standard Error	110	27	0.8	2.2	5.9	6.0	0.7	0.8
Median	210	220	3.5	11.0	55.0	47.0	6.9	5.4
Mode	ND	230	0.0	20.0	55.0	ND	ND	ND
Standard Deviation	156	80	2.5	6.5	17.6	18.1	2.0	2.4
Sample Variance	24200	6396	6.4	42.7	310.8	325.9	4.2	5.6
Kurtosis	ND	0	-0.9	-2.1	-0.8	-0.7	-0.4	-0.4
Skewness	ND	0	0.1	0.0	-0.1	-0.1	0.6	1.0
Range	220	251	7.2	15.9	53.0	55.0	6.0	6.7
Minimum	100	69	0.0	4.1	25.0	17.0	5.0	4.3
Maximum	320	320	7.2	20.0	78.0	72.0	11.0	11.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	1398	61	2.0	5.0	13.6	13.9	1.6	1.8

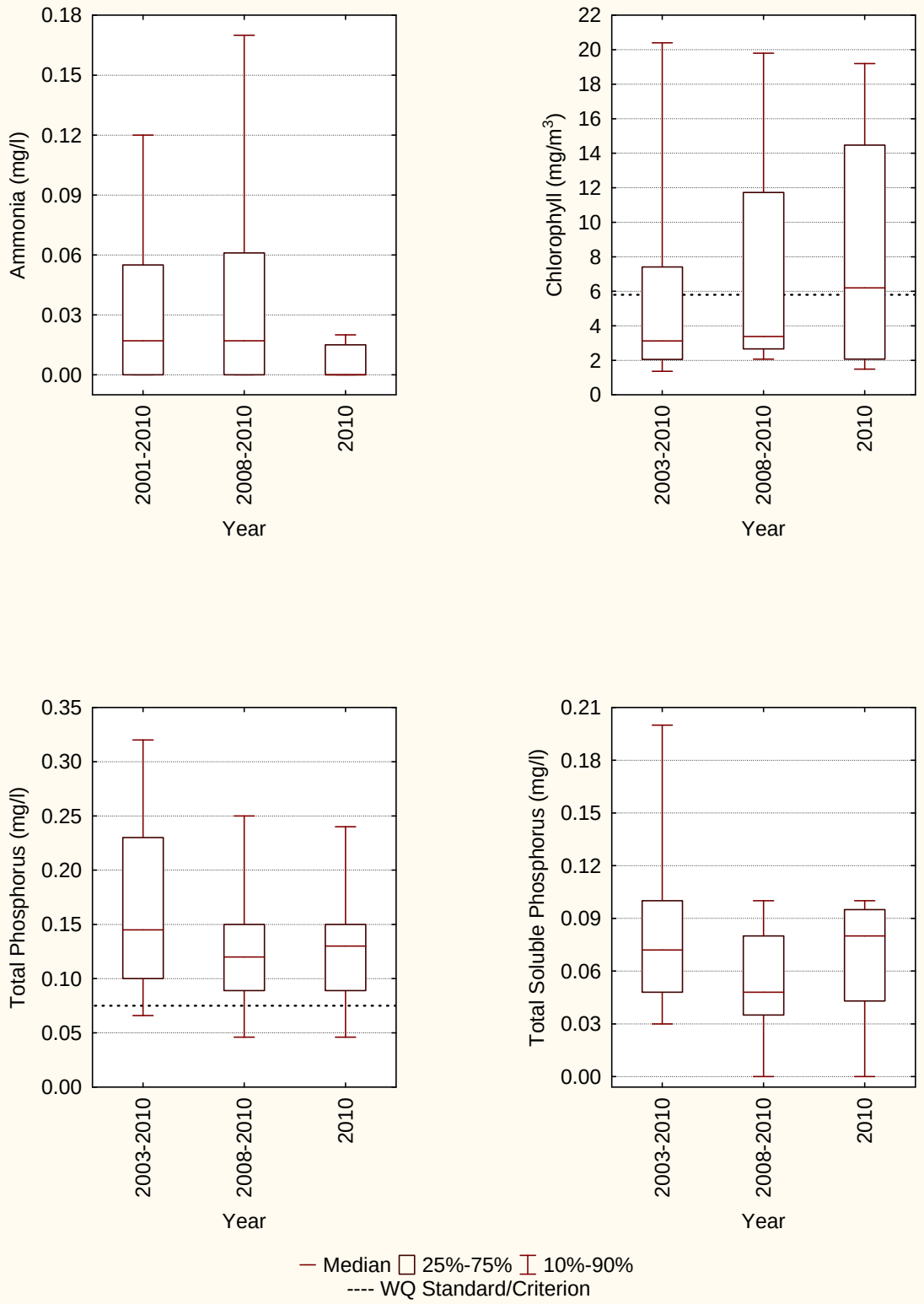
ND = No Data

Provisional MMSD Water Quality Data

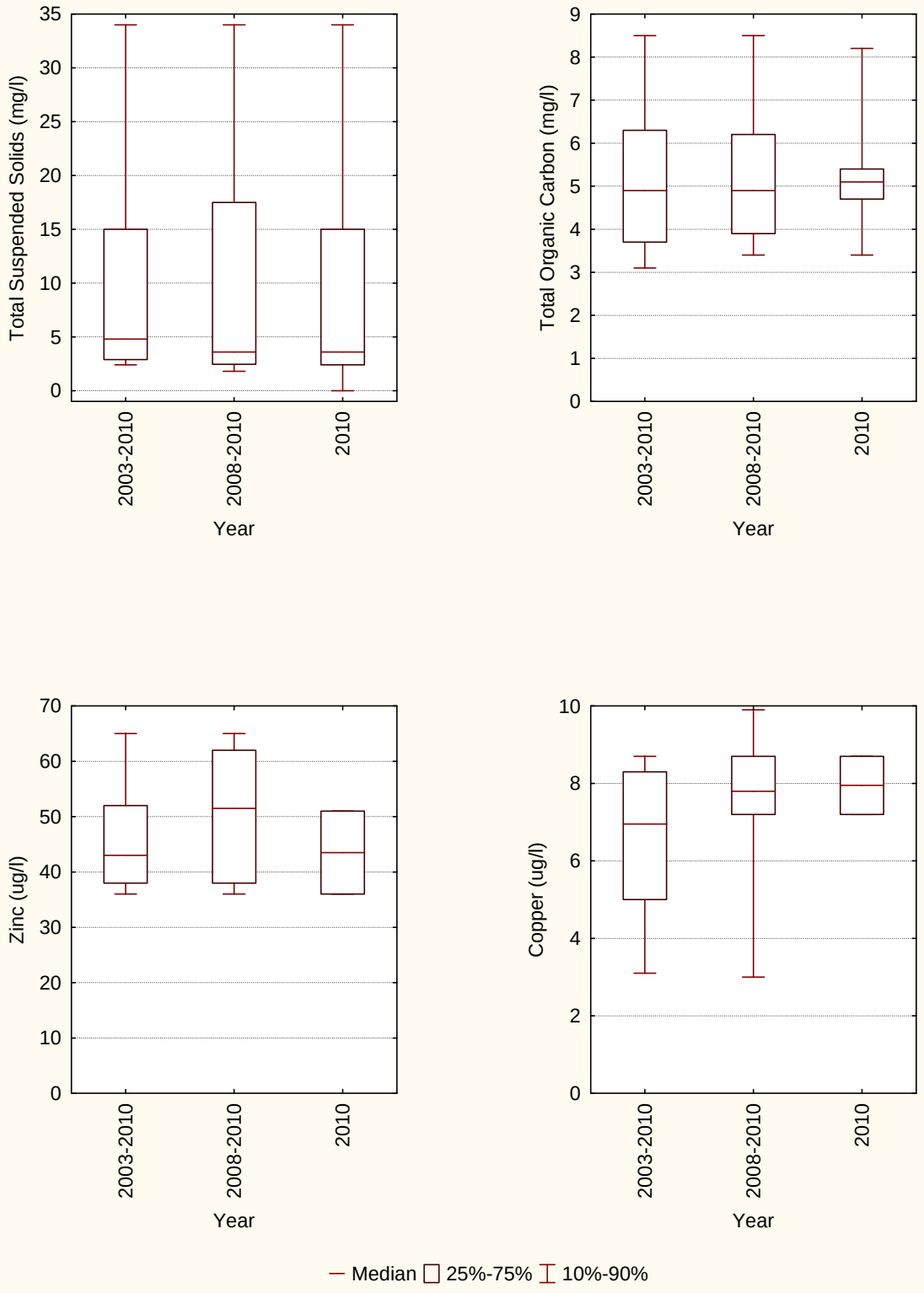
MMSD Water Quality Monitoring Program Data
Honey Creek at 84th St., Site HC-02



MMSD Water Quality Monitoring Program Data
Honey Creek at 84th St., Site HC-02



MMSD Water Quality Monitoring Program Data
Honey Creek at 84th St., Site HC-02



84TH STREET AND O'CONNER STREET - SITE 2
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	16.5	10.0	8.27	0.86	0.013	0.86	0.007	0.53	0.126	0.064	ND
Standard Error	0.1	1.7	0.7	4.08	0.14	0.004	0.13	0.003	0.12	0.021	0.014	ND
Median	8.1	16.2	9.5	6.20	0.82	0.011	0.82	0.000	0.50	0.130	0.080	ND
Mode	8.0	ND	ND	ND	1.10	ND	1.10	0.000	ND	0.150	0.000	ND
Standard Deviation	0.2	5.1	2.0	8.15	0.41	0.011	0.40	0.009	0.37	0.063	0.041	ND
Sample Variance	0.1	26.0	3.9	66.44	0.16	0.000	0.16	0.000	0.14	0.004	0.002	ND
Kurtosis	1.1	-1.8	-1.2	-0.37	-0.66	-0.811	-0.59	-2.113	4.39	-0.134	-0.780	ND
Skewness	-0.7	-0.3	0.2	1.01	-0.35	0.609	-0.39	0.434	1.51	0.403	-0.919	ND
Range	0.8	13.0	5.8	17.71	1.24	0.032	1.24	0.020	1.40	0.194	0.100	0.00
Minimum	7.6	9.2	7.2	1.49	0.16	0.000	0.16	0.000	0.00	0.046	0.000	0.00
Maximum	8.4	22.2	13.0	19.20	1.40	0.032	1.40	0.020	1.40	0.240	0.100	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	3.9	1.5	12.97	0.31	0.008	0.31	0.007	0.29	0.048	0.031	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	842.2	832.0	3.5	10.2	4.9	1467	263.3	3492	3.0	1898
Standard Error	ND	ND	100.9	101.7	1.1	4.2	2.2	194	39.9	1761	0.2	1178
Median	ND	ND	820.0	817.6	2.7	3.6	3.2	1420	260.0	430	2.6	580
Mode	ND	ND	ND	ND	1.0	2.4	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	302.7	305.1	3.3	12.6	6.6	583	119.6	5283	0.7	3535
Sample Variance	ND	ND	91644.4	93094.0	10.7	159.6	42.9	339472	14300.0	27909869	0.5	12496453
Kurtosis	ND	ND	1.2	1.3	0.6	0.1	8.6	1	1.7	2	-1.1	7
Skewness	ND	ND	-0.6	-0.6	1.2	1.3	2.9	0	0.2	2	0.5	3
Range	0.0	0.0	1060.0	1071.3	10.0	34.0	20.8	2038	440.0	14890	2.1	10969
Minimum	0.0	0.0	240.0	225.0	0.0	0.0	1.4	362	50.0	110	2.0	31
Maximum	0.0	0.0	1300.0	1296.3	10.0	34.0	22.2	2400	490.0	15000	4.2	11000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	232.7	234.5	2.5	9.7	5.0	448	91.9	4061	0.6	2717

ND = No Data

Provisional MMSD Water Quality Data

84TH STREET AND O'CONNER STREET - SITE 2
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	***CA***	***MG***	***CD***	***CR***	***CU***	***NI***	***PB***	***ZN***	***AG***	***AS***	***SE***	***HG***
units	*mg/L*	*mg/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
STATISTICS												
Mean	54.00	27.00	0.0	3.4	8.0	2.7	0.0	43.5	0.0	0.0	0.0	0.0
Standard Error	32.00	19.00	0.0	0.4	0.8	0.0	0.0	7.5	0.0	0.0	0.0	0.0
Median	54.00	27.00	0.0	3.4	8.0	2.7	0.0	43.5	0.0	0.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	2.7	0.0	ND	0.0	0.0	0.0	0.0
Standard Deviation	45.25	26.87	0.0	0.6	1.1	0.0	0.0	10.6	0.0	0.0	0.0	0.0
Sample Variance	2048.00	722.00	0.0	0.3	1.1	0.0	0.0	112.5	0.0	0.0	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	64.00	38.00	0.0	0.8	1.5	0.0	0.0	15.0	0.0	0.0	0.0	0.0
Minimum	22.00	8.00	0.0	3.0	7.2	2.7	0.0	36.0	0.0	0.0	0.0	0.0
Maximum	86.00	46.00	0.0	3.8	8.7	2.7	0.0	51.0	0.0	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	406.60	241.42	0.0	5.1	9.5	0.0	0.0	95.3	0.0	0.0	0.0	0.0

VARIABLE	***HARD***	***TALK***	***BOD5***	***BOD20***	***TC***	***TNIC***	***TNOC***	***TNDOC***
units	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
STATISTICS								
Mean	249	245	1.0	4.3	62.4	57.2	5.4	5.0
Standard Error	161	27	0.5	1.9	6.3	6.5	0.5	0.6
Median	249	250	0.0	0.0	62.0	58.0	5.1	4.6
Mode	ND	ND	0.0	0.0	ND	ND	5.4	5.0
Standard Deviation	228	80	1.5	5.6	18.9	19.4	1.5	1.7
Sample Variance	51842	6449	2.2	31.2	357.8	376.9	2.3	2.7
Kurtosis	ND	4	-0.6	-0.3	2.5	2.9	0.3	0.0
Skewness	ND	-2	1.1	0.9	-1.2	-1.3	0.9	0.9
Range	322	271	3.7	15.0	65.0	67.0	4.8	4.9
Minimum	88	59	0.0	0.0	21.0	14.0	3.4	3.0
Maximum	410	330	3.7	15.0	86.0	81.0	8.2	7.9
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	2046	62	1.2	4.3	14.5	14.9	1.2	1.3

ND = No Data

Provisional MMSD Water Quality Data

80TH STREET AND WISCONSIN AVENUE - SITE 3
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	16.3	11.6	8.67	0.66	0.014	0.66	0.009	0.49	0.093	0.056	ND
Standard Error	0.1	1.8	0.9	1.93	0.14	0.003	0.14	0.004	0.10	0.016	0.012	ND
Median	8.2	17.0	11.0	8.92	0.66	0.010	0.67	0.000	0.51	0.110	0.066	ND
Mode	8.2	ND	ND	ND	1.20	0.010	1.20	0.000	ND	0.130	0.000	ND
Standard Deviation	0.2	5.5	2.8	3.86	0.42	0.009	0.42	0.012	0.30	0.047	0.035	ND
Sample Variance	0.0	30.8	7.7	14.91	0.18	0.000	0.18	0.000	0.09	0.002	0.001	ND
Kurtosis	0.0	-1.7	2.7	-3.42	-1.35	-0.172	-1.34	1.870	2.06	0.621	-0.228	ND
Skewness	0.6	-0.3	1.4	-0.22	-0.03	0.820	-0.07	1.430	0.53	-1.170	-0.814	ND
Range	0.7	14.2	9.6	8.36	1.12	0.027	1.12	0.036	1.10	0.140	0.100	0.00
Minimum	7.9	8.3	8.2	4.24	0.08	0.003	0.08	0.000	0.00	0.000	0.000	0.00
Maximum	8.6	22.5	17.8	12.60	1.20	0.030	1.20	0.036	1.10	0.140	0.100	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	4.3	2.1	6.14	0.33	0.007	0.32	0.010	0.23	0.036	0.027	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	866.7	862.4	1.3	4.3	5.1	1550	275.1	3548	3.1	2068
Standard Error	ND	ND	103.0	104.0	0.4	1.6	2.1	191	37.9	2227	0.2	1264
Median	ND	ND	860.0	856.4	1.4	3.6	2.9	1640	280.0	1100	3.0	820
Mode	ND	ND	1100.0	ND	0.0	ND	ND	ND	280.0	ND	ND	820
Standard Deviation	ND	ND	309.1	312.0	1.1	4.8	6.4	572	113.8	6680	0.7	3793
Sample Variance	ND	ND	95525.0	97341.5	1.3	23.0	41.4	327000	12955.1	44618319	0.5	14388844
Kurtosis	ND	ND	1.8	1.9	-0.8	5.2	6.8	2	2.7	8	0.4	8
Skewness	ND	ND	-0.9	-1.0	0.3	2.1	2.6	-1	-0.3	3	0.3	3
Range	0.0	0.0	1080.0	1090.2	3.2	16.0	20.1	1990	434.0	20910	2.4	11870
Minimum	0.0	0.0	220.0	204.0	0.0	0.0	1.4	330	46.0	90	2.0	130
Maximum	0.0	0.0	1300.0	1294.2	3.2	16.0	21.5	2320	480.0	21000	4.3	12000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	237.6	239.8	0.9	3.7	4.9	440	87.5	5134	0.5	2916

ND = No Data

Provisional MMSD Water Quality Data

80TH STREET AND WISCONSIN AVENUE - SITE 3
HONEY CREEK
WATER QUALITY DATA - 2010

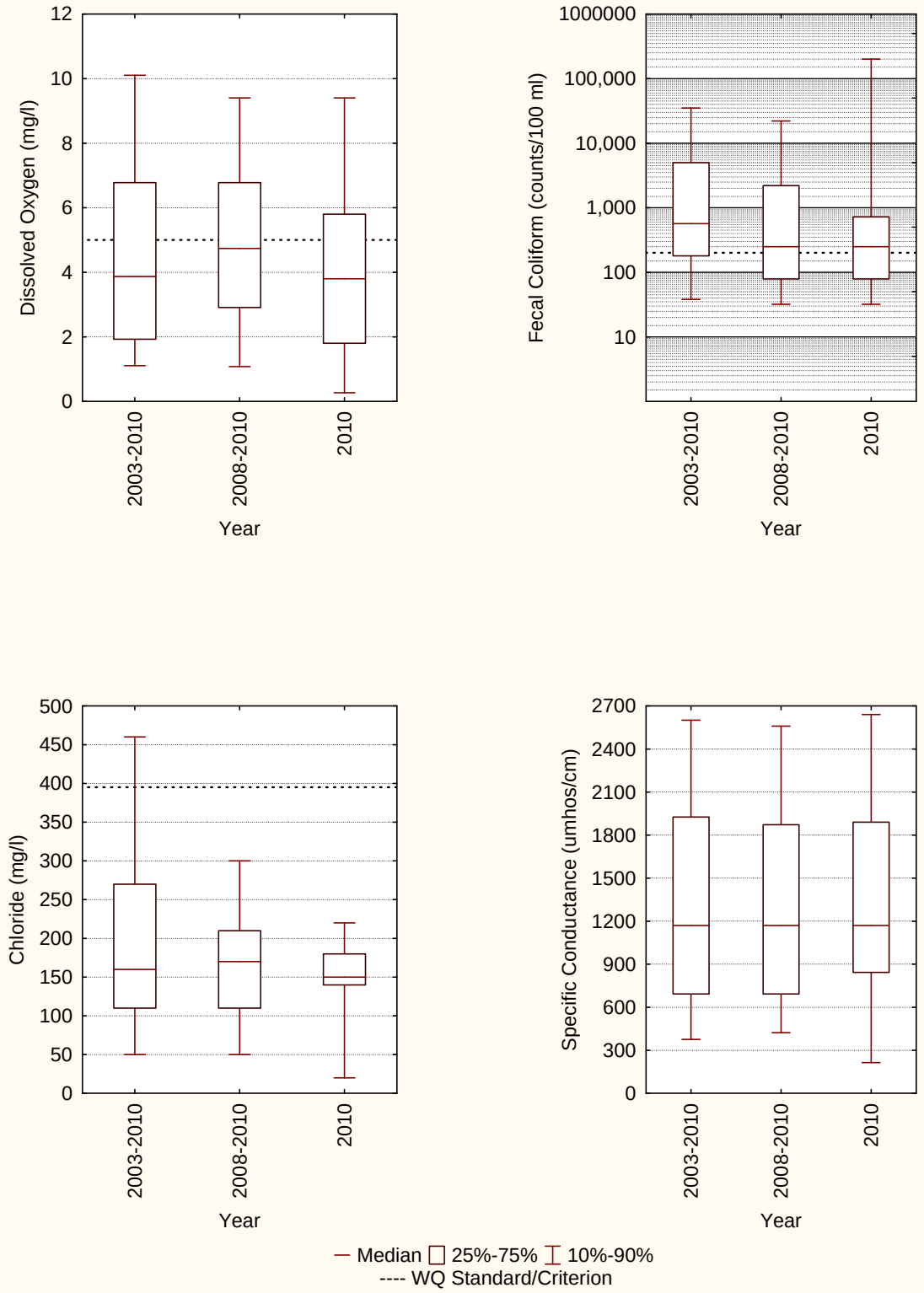
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	55.50	26.95	0.0	3.4	8.3	2.4	0.0	32.0	0.0	0.0	0.0	0.0
Standard Error	35.50	20.05	0.0	0.2	0.7	0.1	0.0	5.0	0.0	0.0	0.0	0.0
Median	55.50	26.95	0.0	3.4	8.3	2.4	0.0	32.0	0.0	0.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	0.0	0.0	0.0
Standard Deviation	50.20	28.35	0.0	0.3	0.9	0.2	0.0	7.1	0.0	0.0	0.0	0.0
Sample Variance	2520.50	804.01	0.0	0.1	0.8	0.0	0.0	50.0	0.0	0.0	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	71.00	40.10	0.0	0.4	1.3	0.3	0.0	10.0	0.0	0.0	0.0	0.0
Minimum	20.00	6.90	0.0	3.2	7.6	2.2	0.0	27.0	0.0	0.0	0.0	0.0
Maximum	91.00	47.00	0.0	3.6	8.9	2.5	0.0	37.0	0.0	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	451.07	254.76	0.0	2.5	8.3	1.9	0.0	63.5	0.0	0.0	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	250	248	1.0	5.9	62.3	56.9	5.6	5.3
Standard Error	171	27	0.5	1.9	5.7	6.0	0.5	0.6
Median	250	260	0.0	4.5	66.0	61.0	5.0	4.8
Mode	ND	230	0.0	0.0	58.0	ND	ND	ND
Standard Deviation	241	82	1.6	5.8	17.2	18.1	1.6	1.7
Sample Variance	58141	6670	2.7	34.2	297.3	327.9	2.6	2.8
Kurtosis	ND	5	0.0	-0.8	4.7	5.1	-0.7	-0.7
Skewness	ND	-2	1.2	0.6	-1.9	-2.0	0.7	0.8
Range	341	279	4.2	16.0	59.0	62.0	4.5	4.6
Minimum	79	51	0.0	0.0	21.0	13.0	3.7	3.4
Maximum	420	330	4.2	16.0	80.0	75.0	8.2	8.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	2166	63	1.3	4.5	13.3	13.9	1.2	1.3

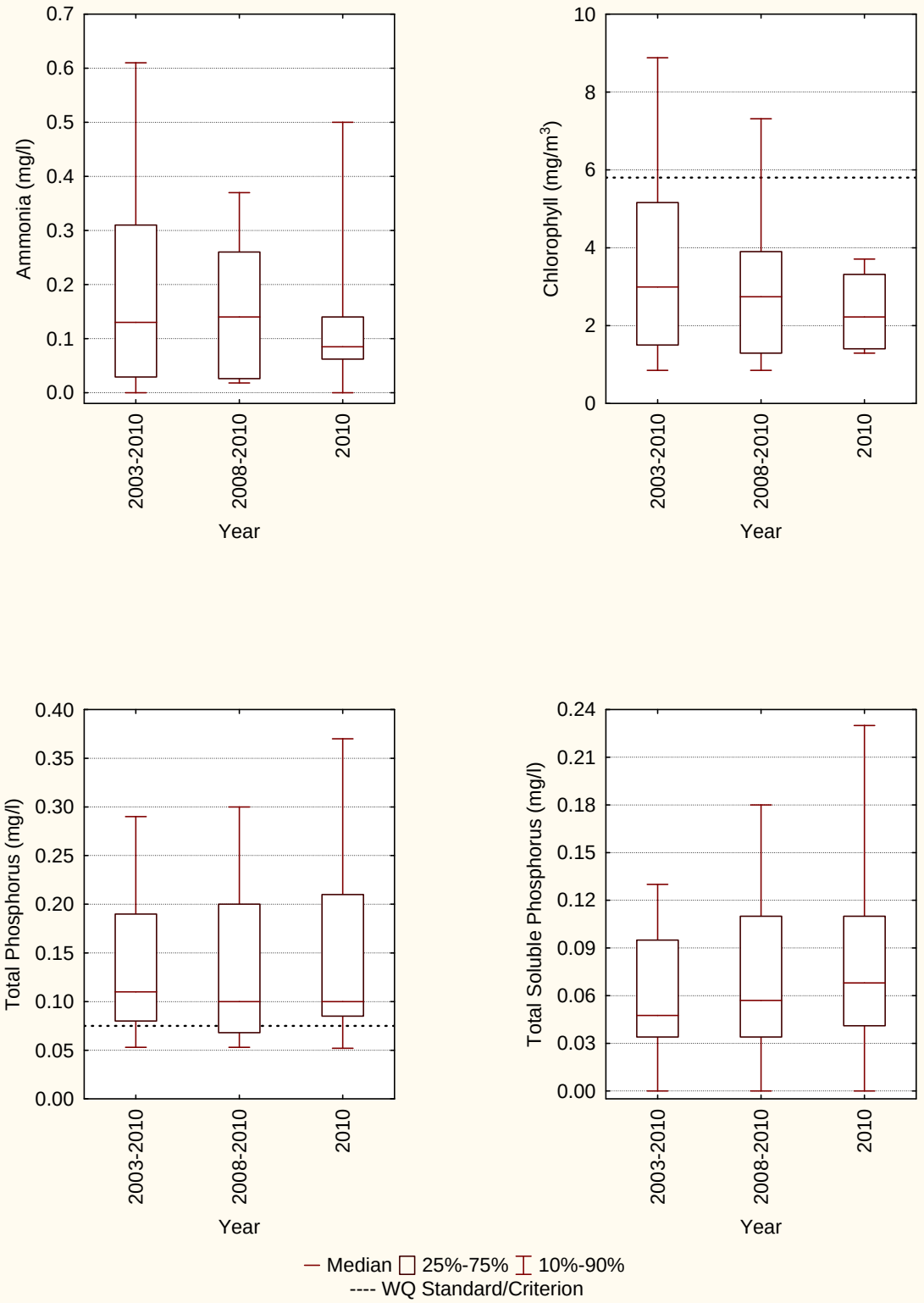
ND = No Data

Provisional MMSD Water Quality Data

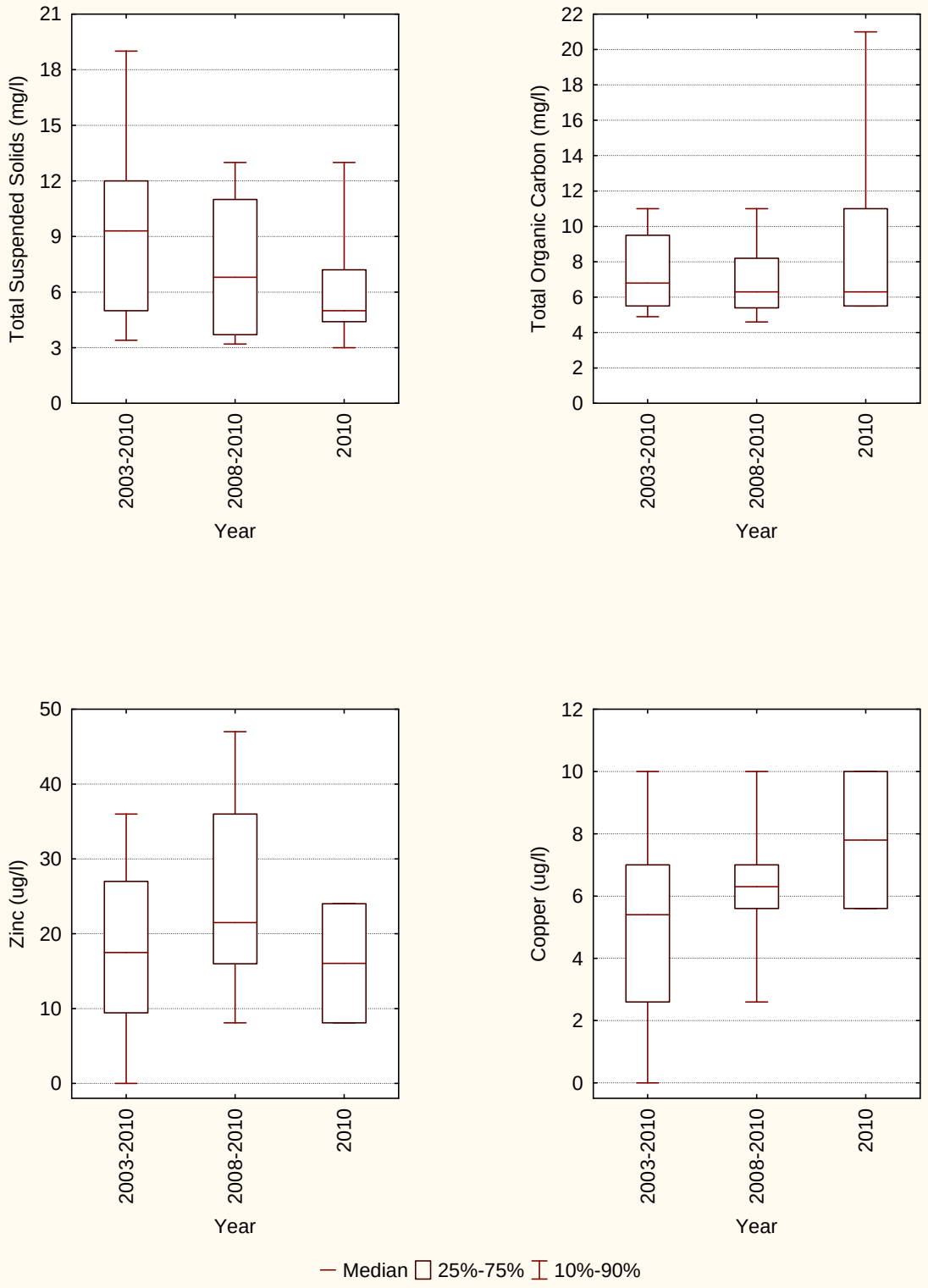
MMSD Water Quality Monitoring Program Data
Honey Creek at Loomis Rd., Site HC-04



MMSD Water Quality Monitoring Program Data
Honey Creek at Loomis Rd., Site HC-04



MMSD Water Quality Monitoring Program Data
Honey Creek at Loomis Rd., Site HC-04



45TH STREET AND LOOMIS ROAD - SITE 4
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.4	16.0	4.1	2.36	0.54	0.020	0.55	0.143	0.74	0.161	0.084	ND
Standard Error	0.1	1.8	1.0	0.58	0.20	0.004	0.19	0.052	0.08	0.037	0.024	ND
Median	7.5	16.8	3.8	2.22	0.25	0.021	0.27	0.085	0.65	0.100	0.068	ND
Mode	7.5	ND	ND	ND	ND	ND	ND	0.140	ND	ND	0.000	ND
Standard Deviation	0.3	5.4	2.9	1.15	0.59	0.011	0.58	0.156	0.24	0.112	0.073	ND
Sample Variance	0.1	29.6	8.4	1.33	0.35	0.000	0.34	0.024	0.06	0.012	0.005	ND
Kurtosis	0.4	-1.6	-0.2	-3.63	-1.69	0.919	-1.70	3.241	-1.62	-0.154	0.763	ND
Skewness	-0.9	-0.3	0.4	0.36	0.68	0.455	0.66	1.764	0.43	1.018	0.837	ND
Range	1.0	14.2	9.1	2.42	1.40	0.037	1.40	0.500	0.63	0.318	0.230	0.00
Minimum	6.8	7.7	0.3	1.29	0.00	0.005	0.00	0.000	0.47	0.052	0.000	0.00
Maximum	7.8	21.9	9.4	3.71	1.40	0.042	1.40	0.500	1.10	0.370	0.230	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	4.2	2.2	1.83	0.45	0.009	0.45	0.120	0.18	0.086	0.056	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	508.9	502.5	2.3	6.4	7.0	1359	147.9	22630	2.6	27127
Standard Error	ND	ND	60.1	60.9	0.5	1.1	1.2	279	20.5	22172	0.4	26610
Median	ND	ND	570.0	566.3	2.0	5.0	6.6	1170	150.0	250	2.4	180
Mode	ND	ND	ND	ND	ND	ND	ND	ND	150.0	250	2.4	ND
Standard Deviation	ND	ND	180.2	182.6	1.6	3.3	3.6	837	61.5	66517	1.2	79831
Sample Variance	ND	ND	32461.1	33352.8	2.6	10.7	12.6	700106	3780.1	4424561779	1.4	6372977302
Kurtosis	ND	ND	0.9	0.9	-0.1	0.9	-0.2	-1	1.4	9	3.5	9
Skewness	ND	ND	-0.8	-0.8	0.7	1.2	0.9	1	-1.1	3	1.8	3
Range	0.0	0.0	610.0	618.4	5.0	10.0	10.1	2426	200.0	199968	3.8	240000
Minimum	0.0	0.0	150.0	137.0	0.0	3.0	3.2	214	20.0	32	1.5	0
Maximum	0.0	0.0	760.0	755.4	5.0	13.0	13.3	2640	220.0	200000	5.3	240000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	138.5	140.4	1.2	2.5	2.7	643	47.3	51130	0.9	61363

ND = No Data

Provisional MMSD Water Quality Data

45TH STREET AND LOOMIS ROAD - SITE 4
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	30.00	12.85	0.0	2.7	7.8	2.0	0.0	16.1	0.0	1.1	0.0	0.0
Standard Error	15.00	7.15	0.0	0.3	2.2	0.0	0.0	8.0	0.0	1.1	0.0	0.0
Median	30.00	12.85	0.0	2.7	7.8	2.0	0.0	16.1	0.0	1.1	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	ND	0.0	0.0
Standard Deviation	21.21	10.11	0.0	0.4	3.1	0.1	0.0	11.2	0.0	1.6	0.0	0.0
Sample Variance	450.00	102.25	0.0	0.1	9.7	0.0	0.0	126.4	0.0	2.4	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	30.00	14.30	0.0	0.5	4.4	0.1	0.0	15.9	0.0	2.2	0.0	0.0
Minimum	15.00	5.70	0.0	2.4	5.6	1.9	0.0	8.1	0.0	0.0	0.0	0.0
Maximum	45.00	20.00	0.0	2.9	10.0	2.0	0.0	24.0	0.0	2.2	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	190.59	90.85	0.0	3.2	28.0	0.6	0.0	101.0	0.0	14.0	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	125	231	3.1	12.6	63.1	54.0	8.9	8.4
Standard Error	65	40	1.4	3.2	8.7	9.7	1.8	1.6
Median	125	220	0.0	9.4	58.0	51.0	6.3	6.1
Mode	ND	370	0.0	ND	46.0	ND	5.5	5.6
Standard Deviation	92	120	4.3	9.7	26.1	29.2	5.3	4.9
Sample Variance	8450	14319	18.1	94.7	678.6	853.2	27.9	23.8
Kurtosis	ND	-1	-1.1	-0.4	-1.1	-1.3	3.0	4.1
Skewness	ND	0	0.9	0.6	0.0	-0.1	1.8	2.0
Range	130	324	10.0	30.0	77.0	82.8	15.5	14.7
Minimum	60	46	0.0	0.0	21.0	8.2	5.5	5.3
Maximum	190	370	10.0	30.0	98.0	91.0	21.0	20.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	826	92	3.3	7.5	20.0	22.5	4.1	3.8

ND = No Data

Provisional MMSD Water Quality Data

MARCY LANE AND 61ST STREET - SITE 5
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	15.7	9.2	6.37	0.45	0.022	0.47	0.049	0.58	0.103	0.062	ND
Standard Error	0.1	2.0	1.3	1.53	0.12	0.007	0.12	0.018	0.09	0.016	0.018	ND
Median	7.9	17.1	8.1	6.92	0.52	0.013	0.56	0.027	0.59	0.110	0.069	ND
Mode	8.2	ND	ND	ND	ND	ND	ND	0.000	ND	0.170	0.000	ND
Standard Deviation	0.3	6.1	3.9	3.07	0.35	0.022	0.36	0.055	0.28	0.048	0.054	ND
Sample Variance	0.1	37.6	14.9	9.39	0.12	0.000	0.13	0.003	0.08	0.002	0.003	ND
Kurtosis	-0.4	-1.6	1.1	-2.36	-1.57	1.595	-1.55	0.694	1.77	-1.573	-1.660	ND
Skewness	-0.6	-0.4	1.5	-0.61	0.25	1.535	0.24	1.258	-0.79	0.290	0.037	ND
Range	0.8	15.6	11.3	6.55	0.89	0.068	0.92	0.160	1.00	0.124	0.140	0.00
Minimum	7.4	6.7	5.7	2.54	0.06	0.000	0.06	0.000	0.00	0.046	0.000	0.00
Maximum	8.2	22.3	17.0	9.09	0.95	0.068	0.98	0.160	1.00	0.170	0.140	0.00
Count	9	9	9	4	9	9	9	9	9	9	9	0
Confidence Level(95.0%)	0.2	4.7	3.0	4.88	0.27	0.017	0.28	0.042	0.22	0.037	0.042	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	676.7	671.0	1.4	5.7	6.4	1216	214.4	4119	3.1	4132
Standard Error	ND	ND	80.9	81.4	0.4	1.2	1.6	142	27.6	2387	0.2	2464
Median	ND	ND	670.0	666.5	1.4	5.5	4.4	1200	220.0	1200	3.1	1300
Mode	ND	ND	840.0	ND	0.0	2.2	ND	ND	220.0	1200	3.1	ND
Standard Deviation	ND	ND	242.8	244.3	1.3	3.5	4.9	426	82.9	7162	0.7	7391
Sample Variance	ND	ND	58950.0	59664.6	1.8	12.6	23.9	181681	6877.8	51296336	0.5	54633500
Kurtosis	ND	ND	0.9	1.0	0.2	1.0	4.8	1	1.2	6	0.3	5
Skewness	ND	ND	-0.1	-0.1	0.7	1.1	2.2	-1	-0.6	2	0.5	2
Range	0.0	0.0	860.0	869.9	4.0	10.8	15.6	1508	290.0	21870	2.2	21975
Minimum	0.0	0.0	240.0	227.0	0.0	2.2	2.6	372	50.0	130	2.1	25
Maximum	0.0	0.0	1100.0	1096.9	4.0	13.0	18.2	1880	340.0	22000	4.3	22000
Count	0	0	9	9	9	9	9	9	9	9	9	9
Confidence Level(95.0%)	ND	ND	186.6	187.8	1.0	2.7	3.8	328	63.7	5505	0.5	5682

ND = No Data

Provisional MMSD Water Quality Data

MARCY LANE AND 61ST STREET - SITE 5
HONEY CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	42.50	20.70	0.0	3.0	7.5	2.3	0.0	12.9	0.0	0.0	0.0	0.0
Standard Error	19.50	12.30	0.0	0.1	1.2	0.1	0.0	4.2	0.0	0.0	0.0	0.0
Median	42.50	20.70	0.0	3.0	7.5	2.3	0.0	12.9	0.0	0.0	0.0	0.0
Mode	ND	ND	0.0	ND	ND	ND	0.0	ND	0.0	0.0	0.0	0.0
Standard Deviation	27.58	17.39	0.0	0.2	1.6	0.1	0.0	5.9	0.0	0.0	0.0	0.0
Sample Variance	760.50	302.58	0.0	0.0	2.6	0.0	0.0	34.4	0.0	0.0	0.0	0.0
Kurtosis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Skewness	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Range	39.00	24.60	0.0	0.3	2.3	0.2	0.0	8.3	0.0	0.0	0.0	0.0
Minimum	23.00	8.40	0.0	2.8	6.3	2.2	0.0	8.7	0.0	0.0	0.0	0.0
Maximum	62.00	33.00	0.0	3.1	8.6	2.4	0.0	17.0	0.0	0.0	0.0	0.0
Count	2	2	2	2	2	2	2	2	2	2	2	2
Confidence Level(95.0%)	247.77	156.29	0.0	1.9	14.6	1.3	0.0	52.7	0.0	0.0	0.0	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	191	236	1.2	8.6	63.3	55.9	7.5	7.1
Standard Error	99	29	0.7	1.8	6.9	7.1	0.6	0.5
Median	191	240	0.0	7.2	65.0	58.0	6.8	6.7
Mode	ND	320	0.0	4.6	ND	58.0	6.8	ND
Standard Deviation	140	86	2.1	5.5	20.6	21.3	1.8	1.6
Sample Variance	19602	7443	4.3	30.5	425.5	455.6	3.4	2.7
Kurtosis	ND	1	2.0	4.8	-0.2	0.4	0.6	-0.1
Skewness	ND	-1	1.6	2.1	-0.4	-0.6	1.2	1.0
Range	198	274	5.8	17.4	66.0	70.0	5.6	4.7
Minimum	92	66	0.0	4.6	26.0	15.0	5.4	5.3
Maximum	290	340	5.8	22.0	92.0	85.0	11.0	10.0
Count	2	9	9	9	9	9	9	9
Confidence Level(95.0%)	1258	66	1.6	4.2	15.9	16.4	1.4	1.3

ND = No Data

Provisional MMSD Water Quality Data

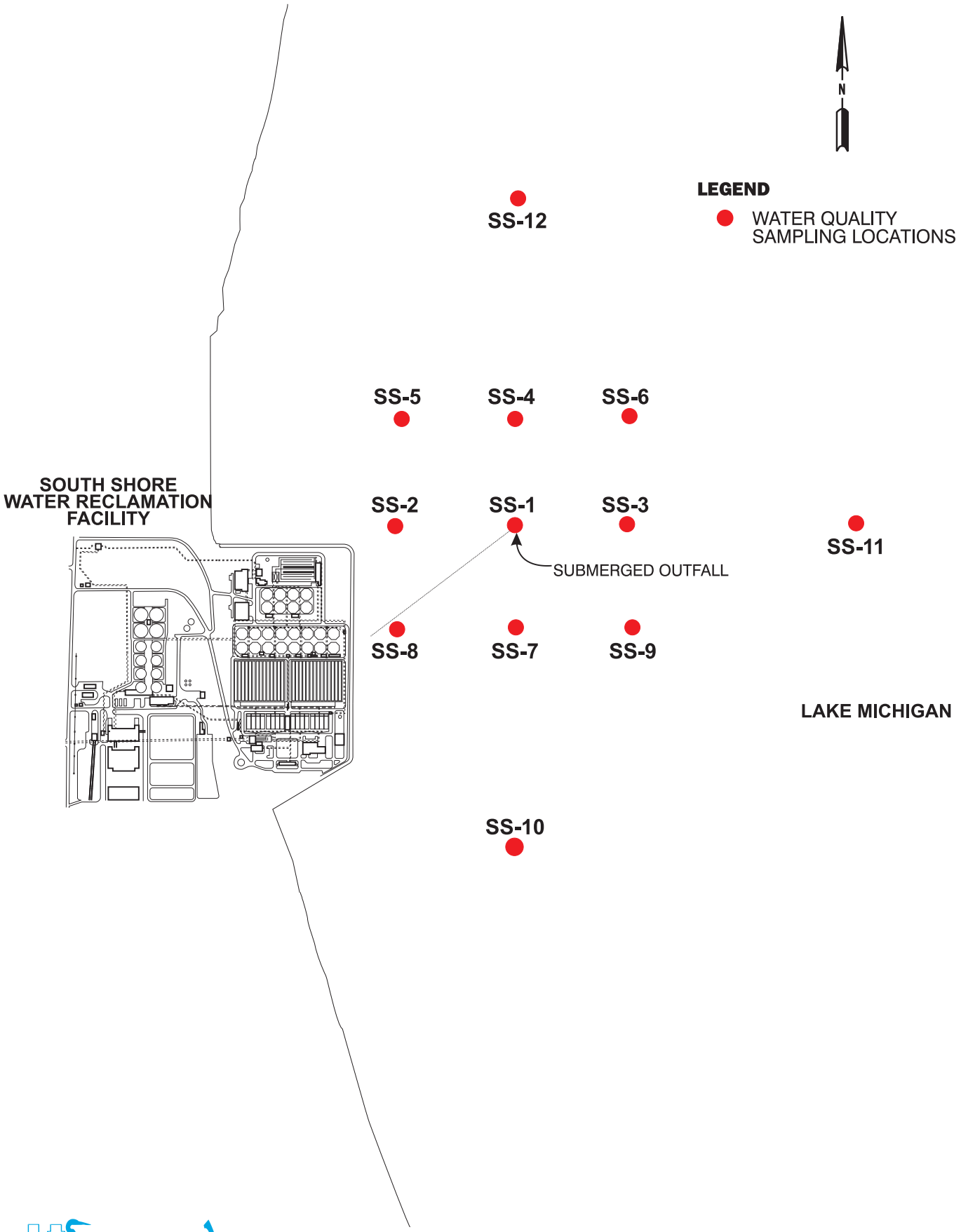


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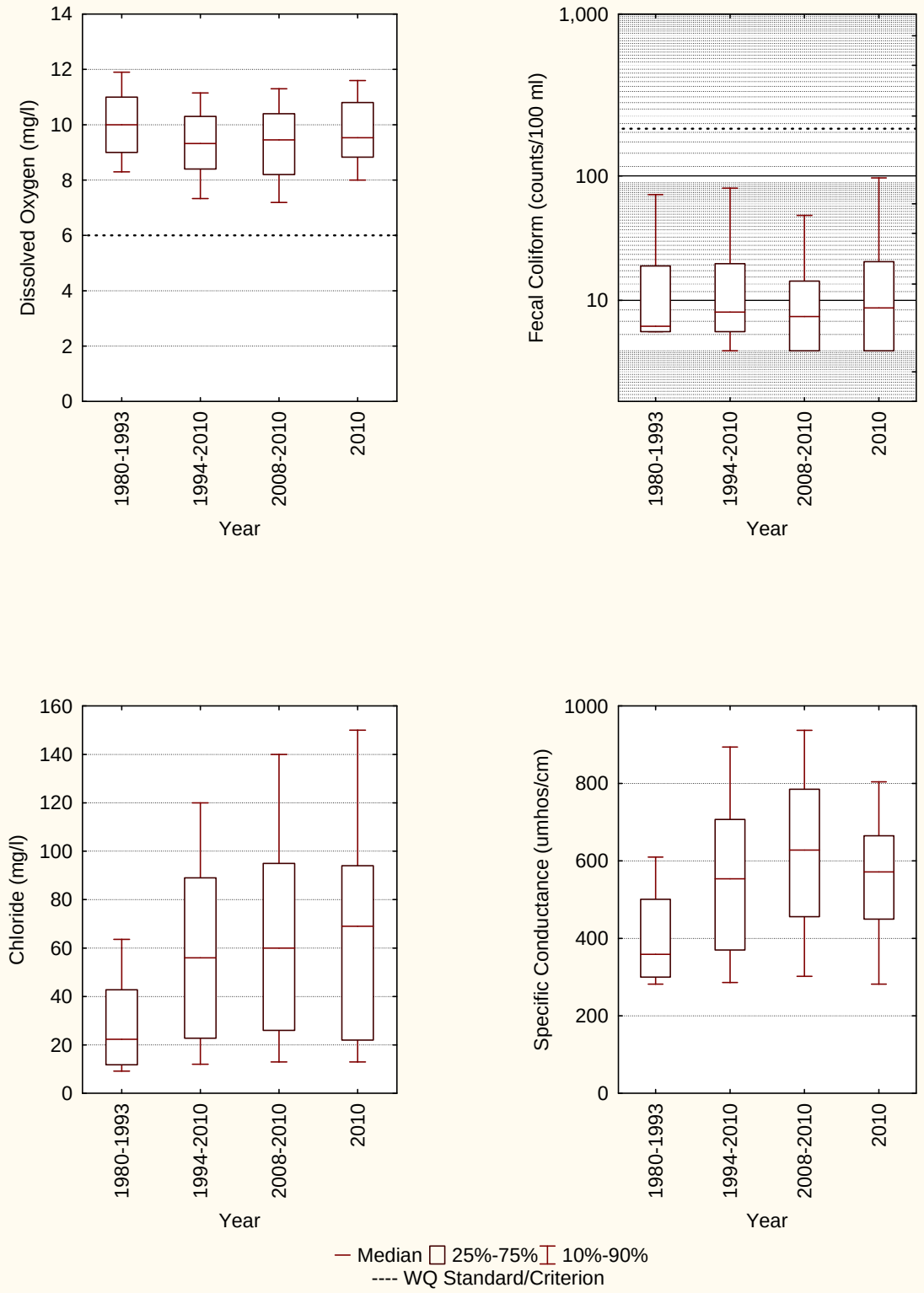
FIGURE 10

SOUTH SHORE (SS) SURVEY
WATER QUALITY SAMPLING LOCATIONS

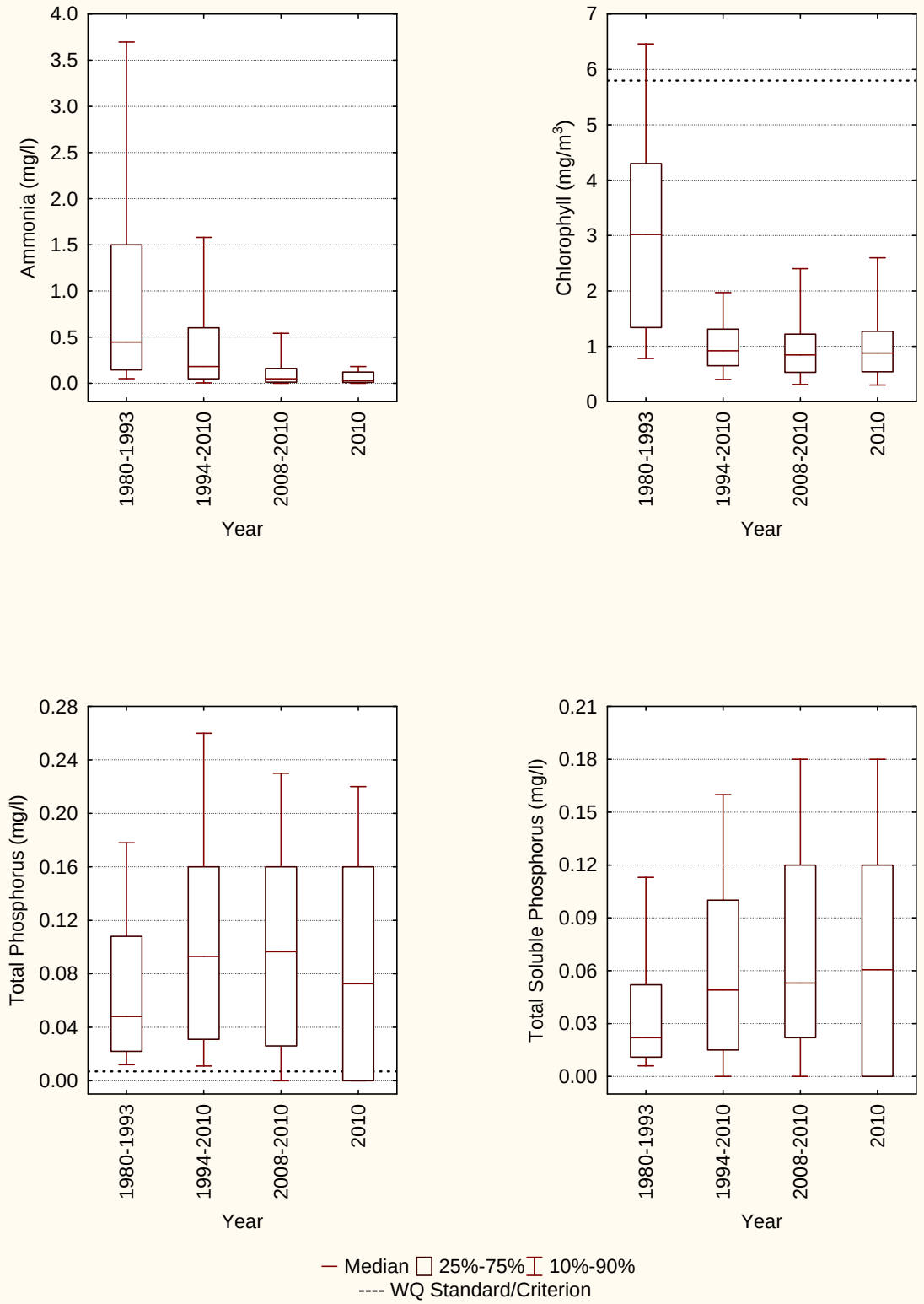
7/28/09

02-034 pg2 REPORT

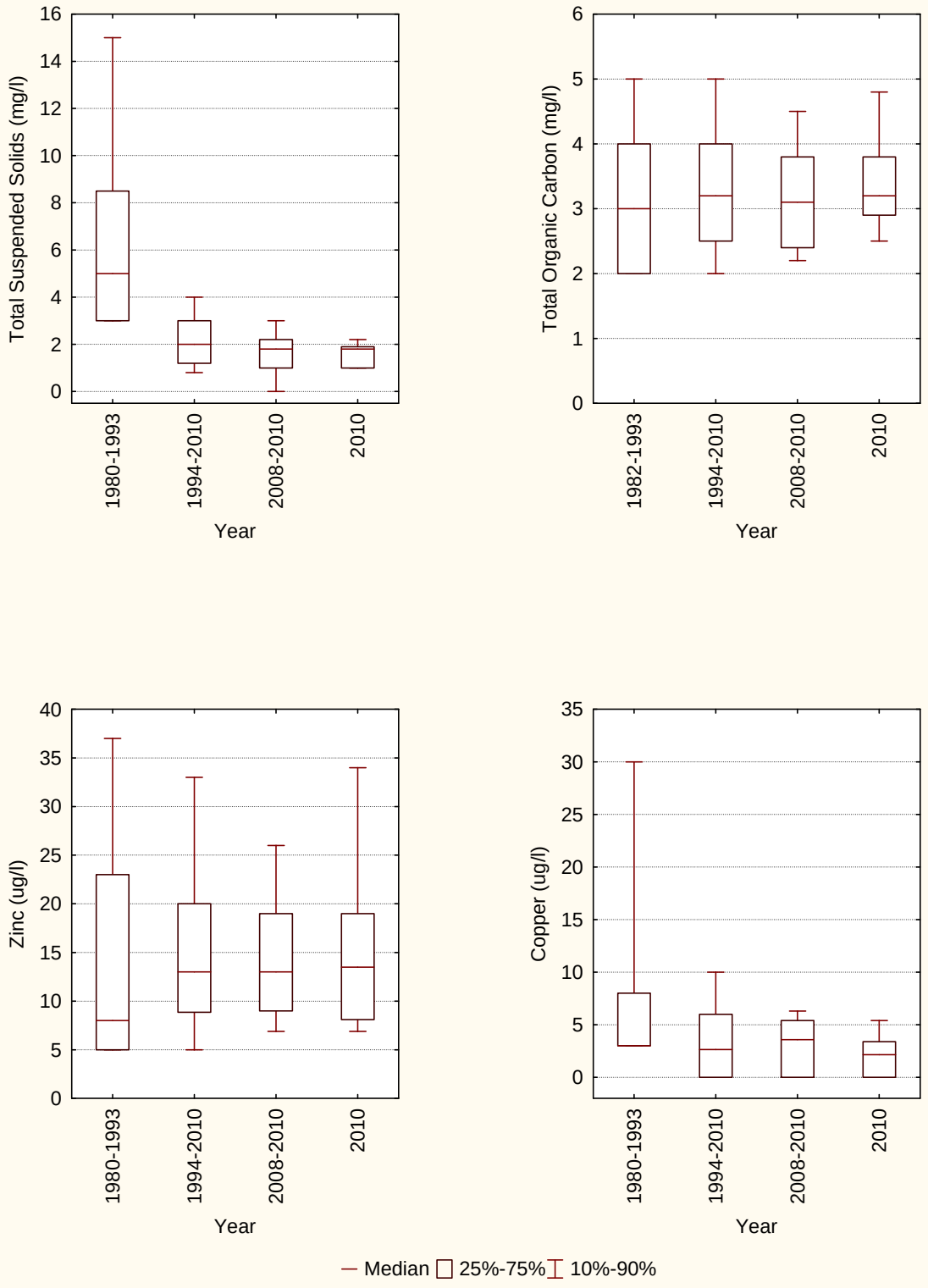
MMSD Water Quality Monitoring Program Data
South Shore, Site SS-01



MMSD Water Quality Monitoring Program Data
South Shore, Site SS-01



MMSD Water Quality Monitoring Program Data
South Shore, Site SS-01



SOUTH SHORE - SITE 1
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	12.6	9.9	1.05	2.18	0.031	2.16	0.098	0.57	0.101	0.077	3.22
Standard Error	0.1	0.6	0.2	0.13	0.22	0.006	0.22	0.029	0.07	0.015	0.013	0.21
Median	7.4	13.1	9.5	0.88	1.90	0.012	1.95	0.027	0.49	0.073	0.061	3.25
Mode	7.4	9.2	8.0	0.29	1.90	0.012	1.90	0.000	0.00	0.000	0.000	2.40
Standard Deviation	0.4	3.9	1.5	0.72	1.40	0.035	1.41	0.185	0.45	0.099	0.085	1.38
Sample Variance	0.2	14.9	2.4	0.52	1.97	0.001	1.99	0.034	0.20	0.010	0.007	1.92
Kurtosis	1.5	-0.5	2.3	0.90	-1.02	0.624	-0.96	14.860	1.55	0.640	1.119	-0.84
Skewness	1.4	-0.4	0.8	1.29	0.33	1.401	0.36	3.619	1.04	0.997	1.177	0.22
Range	1.8	14.6	8.7	2.49	4.77	0.116	4.86	1.000	2.00	0.380	0.320	5.30
Minimum	7.0	4.6	6.5	0.27	0.33	0.004	0.34	0.000	0.00	0.000	0.000	0.60
Maximum	8.8	19.2	15.2	2.76	5.10	0.120	5.20	1.000	2.00	0.380	0.320	5.90
Count	42	42	42	33	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.2	0.5	0.26	0.45	0.011	0.44	0.058	0.14	0.031	0.027	0.43

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	4.3	11.1	300.0	298.5	0.7	1.5	1.1	567	71.2	29	0.9	ND
Standard Error	0.4	0.2	34.8	34.7	0.2	0.2	0.1	30	8.0	14	0.2	ND
Median	3.9	11.0	295.0	293.6	1.0	1.8	1.0	572	69.0	8	0.9	ND
Mode	6.8	12.0	390.0	ND	0.0	1.0	0.9	590	12.0	0	0.0	ND
Standard Deviation	1.6	0.9	130.1	129.9	0.7	0.6	0.4	192	51.7	51	0.8	ND
Sample Variance	2.4	0.7	16923.1	16867.0	0.5	0.4	0.1	36908	2672.6	2647	0.6	ND
Kurtosis	-0.7	-1.9	-0.7	-0.7	-1.2	1.2	-0.8	0	0.0	6	-1.2	ND
Skewness	0.6	0.0	0.4	0.4	0.2	-1.0	0.4	0	0.8	2	0.3	ND
Range	4.7	2.0	430.0	428.1	2.0	2.4	1.4	688	198.0	180	2.3	0
Minimum	2.1	10.0	110.0	110.0	0.0	0.0	0.5	274	12.0	0	0.0	0
Maximum	6.8	12.0	540.0	538.1	2.0	2.4	1.9	962	210.0	180	2.3	0
Count	14	13	14	14	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	0.9	0.5	75.1	75.0	0.4	0.4	0.1	60	16.1	30	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 1
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	43.12	16.55	0.0	3.8	2.6	2.9	0.0	15.4	0.1	0.7	1.0	ND
Standard Error	1.28	0.67	0.0	0.2	0.6	0.4	0.0	1.7	0.0	0.2	0.4	ND
Median	43.50	16.50	0.0	3.5	2.2	2.5	0.0	13.5	0.0	0.0	0.0	ND
Mode	36.00	13.00	0.0	3.4	0.0	0.0	0.0	15.0	0.0	0.0	0.0	ND
Standard Deviation	8.27	4.32	0.0	1.4	3.6	2.4	0.0	10.9	0.3	1.4	2.3	ND
Sample Variance	68.40	18.69	0.0	1.9	12.9	5.6	0.0	119.3	0.1	1.9	5.4	ND
Kurtosis	-0.82	-0.59	ND	0.3	4.4	2.1	ND	1.2	10.7	0.4	2.4	ND
Skewness	0.41	0.53	ND	0.8	2.1	1.2	ND	1.2	3.5	1.5	2.0	ND
Range	28.00	15.00	0.0	5.7	15.0	10.0	0.0	45.0	1.3	4.2	7.4	0.0
Minimum	32.00	11.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	60.00	26.00	0.0	7.7	15.0	10.0	0.0	45.0	1.3	4.2	7.4	0.0
Count	42	42	42	42	42	42	42	42	42	42	39	0
Confidence Level(95.0%)	2.58	1.35	0.0	0.4	1.1	0.7	0.0	3.4	0.1	0.4	0.8	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	177	135	1.4	4.5	36.3	32.9	3.4	ND
Standard Error	6	4	0.4	0.4	1.1	1.0	0.1	ND
Median	180	135	1.1	4.9	36.5	33.5	3.2	ND
Mode	140	110	0.0	6.4	32.0	34.0	3.2	ND
Standard Deviation	39	27	1.5	1.4	7.0	6.5	0.8	ND
Sample Variance	1506	708	2.2	2.0	49.0	42.2	0.6	ND
Kurtosis	-1	-1	-2.2	-1.4	-0.4	-0.4	-0.4	ND
Skewness	0	1	0.1	-0.3	0.6	0.6	0.7	ND
Range	140	90	3.4	4.1	29.0	27.0	3.0	0.0
Minimum	120	100	0.0	2.3	25.0	22.0	2.2	0.0
Maximum	260	190	3.4	6.4	54.0	49.0	5.2	0.0
Count	42	42	14	14	42	42	42	0
Confidence Level(95.0%)	12	8	0.8	0.8	2.2	2.0	0.2	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 2
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	12.5	11.0	1.28	0.67	0.008	0.66	0.011	0.21	0.007	0.007	1.80
Standard Error	0.1	0.6	0.2	0.34	0.10	0.001	0.09	0.003	0.04	0.004	0.004	0.11
Median	8.1	12.9	10.7	0.90	0.45	0.006	0.42	0.000	0.23	0.000	0.000	1.75
Mode	8.1	12.8	10.7	ND	0.27	0.007	0.27	0.000	0.00	0.000	0.000	1.10
Standard Deviation	0.4	4.1	1.3	1.13	0.59	0.006	0.58	0.021	0.24	0.025	0.024	0.70
Sample Variance	0.1	17.0	1.7	1.29	0.35	0.000	0.34	0.000	0.06	0.001	0.001	0.49
Kurtosis	0.3	-0.5	5.5	3.23	9.85	26.000	10.29	12.259	3.63	20.369	12.304	1.88
Skewness	-0.3	-0.4	1.7	1.70	2.80	4.714	2.85	3.204	1.53	4.291	3.554	1.24
Range	1.6	15.5	7.8	3.78	3.05	0.040	3.04	0.110	1.10	0.140	0.110	3.00
Minimum	7.2	3.8	8.5	0.32	0.25	0.003	0.26	0.000	0.00	0.000	0.000	1.00
Maximum	8.8	19.3	16.3	4.10	3.30	0.043	3.30	0.110	1.10	0.140	0.110	4.00
Count	42	42	42	11	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.4	0.76	0.19	0.002	0.18	0.007	0.07	0.008	0.007	0.22

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.2	9.8	191.4	190.3	0.3	1.1	1.1	366	22.6	230	0.7	ND
Standard Error	0.9	0.5	8.2	8.3	0.1	0.3	0.1	18	2.9	206	0.3	ND
Median	4.6	9.6	185.0	183.6	0.0	1.2	1.0	316	16.0	2	0.2	ND
Mode	4.6	9.5	170.0	210.0	0.0	0.0	1.7	284	12.0	0	0.0	ND
Standard Deviation	3.4	1.9	30.6	30.9	0.5	1.0	0.5	115	18.6	771	1.1	ND
Sample Variance	11.4	3.5	936.3	956.1	0.3	1.0	0.3	13295	347.4	593881	1.2	ND
Kurtosis	-2.0	5.4	-1.2	-1.2	1.8	-1.1	0.7	2	11.6	14	1.8	ND
Skewness	0.2	-1.5	0.4	0.4	1.8	0.3	1.0	2	3.1	4	1.6	ND
Range	8.9	8.4	90.0	90.9	1.5	2.8	2.3	460	100.0	2900	3.5	0
Minimum	2.1	4.6	150.0	148.1	0.0	0.0	0.4	273	10.0	0	0.0	0
Maximum	11.0	13.0	240.0	239.0	1.5	2.8	2.7	733	110.0	2900	3.5	0
Count	14	13	14	14	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	1.9	1.1	17.7	17.9	0.3	0.6	0.2	36	5.8	445	0.6	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 2
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	35.21	12.57	0.0	3.4	2.3	1.2	0.1	10.2	0.0	0.5	0.6	ND
Standard Error	0.68	0.37	0.0	0.3	0.9	0.5	0.1	1.3	0.0	0.4	0.6	ND
Median	34.00	12.00	0.0	3.6	1.1	0.0	0.0	8.9	0.0	0.0	0.0	ND
Mode	34.00	12.00	0.0	3.6	0.0	0.0	0.0	8.0	0.0	0.0	0.0	ND
Standard Deviation	2.55	1.40	0.0	1.0	3.3	1.7	0.5	4.9	0.0	1.4	2.3	ND
Sample Variance	6.49	1.96	0.0	0.9	10.9	2.9	0.3	23.9	0.0	2.1	5.3	ND
Kurtosis	-0.76	-0.74	ND	0.3	5.5	1.6	14.0	0.1	ND	9.2	14.0	ND
Skewness	0.60	0.72	ND	0.3	2.1	1.3	3.7	0.0	ND	3.0	3.7	ND
Range	8.00	4.00	0.0	3.6	12.0	5.5	1.9	18.0	0.0	5.1	8.6	0.0
Minimum	32.00	11.00	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	40.00	15.00	0.0	5.5	12.0	5.5	1.9	18.0	0.0	5.1	8.6	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.47	0.81	0.0	0.6	1.9	1.0	0.3	2.8	0.0	0.8	1.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	139	117	ND	ND	30.0	27.3	2.7	ND
Standard Error	3	2	ND	ND	0.6	0.5	0.1	ND
Median	135	110	ND	ND	28.5	26.0	2.5	ND
Mode	130	110	ND	ND	28.0	25.0	2.4	ND
Standard Deviation	12	12	ND	ND	3.6	3.3	0.4	ND
Sample Variance	152	154	ND	ND	13.0	10.8	0.2	ND
Kurtosis	-1	4	ND	ND	1.5	1.4	-0.2	ND
Skewness	1	2	ND	ND	1.3	1.3	0.8	ND
Range	40	60	0.0	0.0	15.0	14.0	1.6	0.0
Minimum	120	100	0.0	0.0	25.0	23.0	2.2	0.0
Maximum	160	160	0.0	0.0	40.0	37.0	3.8	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	7	4	ND	ND	1.1	1.0	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 3
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	11.9	11.3	1.09	0.39	0.004	0.39	0.004	0.15	0.000	0.000	1.60
Standard Error	0.0	0.7	0.2	0.25	0.03	0.000	0.03	0.001	0.04	0.000	0.000	0.06
Median	8.2	12.3	10.8	0.85	0.33	0.004	0.33	0.000	0.00	0.000	0.000	1.65
Mode	8.0	13.8	10.5	ND	0.24	0.000	0.33	0.000	0.00	0.000	0.000	1.30
Standard Deviation	0.3	4.3	1.5	0.81	0.18	0.003	0.17	0.008	0.26	0.000	0.000	0.42
Sample Variance	0.1	18.5	2.2	0.66	0.03	0.000	0.03	0.000	0.07	0.000	0.000	0.17
Kurtosis	0.1	-0.5	4.7	-0.57	3.66	0.577	4.14	2.732	6.50	ND	ND	0.02
Skewness	-0.3	-0.3	2.0	0.84	1.84	0.356	1.95	1.918	2.43	ND	ND	0.23
Range	1.1	16.2	7.4	2.26	0.79	0.012	0.78	0.031	1.10	0.000	0.000	1.99
Minimum	7.5	3.0	9.2	0.22	0.21	0.000	0.22	0.000	0.00	0.000	0.000	0.61
Maximum	8.6	19.2	16.6	2.48	1.00	0.012	1.00	0.031	1.10	0.000	0.000	2.60
Count	42	42	42	11	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.5	0.55	0.06	0.001	0.05	0.002	0.08	0.000	0.000	0.13

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.4	11.9	168.1	167.2	0.0	0.9	0.9	316	14.1	2	0.2	ND
Standard Error	1.1	0.4	12.3	12.3	0.0	0.2	0.1	8	0.7	1	0.1	ND
Median	6.9	12.0	170.0	169.4	0.0	1.0	0.7	296	12.0	0	0.0	ND
Mode	12.0	13.0	200.0	ND	0.0	0.0	0.4	279	12.0	0	0.0	ND
Standard Deviation	4.0	1.6	45.9	45.9	0.0	0.8	0.5	54	4.8	3	0.4	ND
Sample Variance	15.7	2.5	2102.9	2106.7	0.0	0.7	0.3	2968	22.6	8	0.1	ND
Kurtosis	-1.7	9.0	1.1	1.0	ND	-0.2	1.2	6	0.7	1	-0.1	ND
Skewness	0.3	-2.8	-1.1	-1.0	ND	0.4	1.2	2	1.3	1	1.3	ND
Range	11.0	6.0	165.0	164.0	0.0	2.7	2.2	253	18.7	8	0.9	0
Minimum	2.0	7.0	65.0	65.0	0.0	0.0	0.4	273	9.3	0	0.0	0
Maximum	13.0	13.0	230.0	229.0	0.0	2.7	2.6	526	28.0	8	0.9	0
Count	14	13	14	14	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	2.3	1.0	26.5	26.5	0.0	0.5	0.2	17	1.5	2	0.2	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 3
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.14	11.86	0.0	4.1	1.4	1.4	0.0	6.3	0.0	0.3	0.5	ND
Standard Error	0.47	0.31	0.0	1.0	0.4	0.5	0.0	2.0	0.0	0.2	0.5	ND
Median	34.00	11.50	0.0	3.0	1.4	0.0	0.0	4.0	0.0	0.0	0.0	ND
Mode	34.00	11.00	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.75	1.17	0.0	3.8	1.4	1.9	0.0	7.6	0.0	0.8	1.9	ND
Sample Variance	3.05	1.36	0.0	14.1	2.1	3.8	0.0	58.2	0.0	0.7	3.6	ND
Kurtosis	0.17	3.06	ND	13.1	-1.4	1.0	ND	0.6	ND	3.8	14.0	ND
Skewness	0.86	1.67	ND	3.6	0.4	1.4	ND	1.1	ND	2.3	3.7	ND
Range	6.00	4.00	0.0	14.7	3.8	5.8	0.0	24.0	0.0	2.3	7.1	0.0
Minimum	32.00	11.00	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	38.00	15.00	0.0	17.0	3.8	5.8	0.0	24.0	0.0	2.3	7.1	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.01	0.67	0.0	2.2	0.8	1.1	0.0	4.4	0.0	0.5	1.1	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	134	111	ND	ND	28.3	25.7	2.6	ND
Standard Error	3	1	ND	ND	0.3	0.2	0.1	ND
Median	130	110	ND	ND	28.0	25.0	2.4	ND
Mode	130	110	ND	ND	28.0	25.0	2.2	ND
Standard Deviation	10	5	ND	ND	1.9	1.6	0.5	ND
Sample Variance	102	26	ND	ND	3.5	2.6	0.2	ND
Kurtosis	3	9	ND	ND	0.5	1.2	11.0	ND
Skewness	1	2	ND	ND	0.7	0.7	2.7	ND
Range	40	30	0.0	0.0	8.0	8.0	2.6	0.0
Minimum	120	100	0.0	0.0	25.0	22.0	2.2	0.0
Maximum	160	130	0.0	0.0	33.0	30.0	4.8	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	6	2	ND	ND	0.6	0.5	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 4
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	12.0	11.1	1.07	0.56	0.007	0.55	0.009	0.13	0.007	0.004	1.71
Standard Error	0.0	0.7	0.2	0.33	0.08	0.001	0.07	0.003	0.03	0.003	0.002	0.07
Median	8.0	12.5	10.8	0.59	0.39	0.005	0.38	0.000	0.00	0.000	0.000	1.65
Mode	8.2	12.3	10.5	0.39	0.32	0.005	0.32	0.000	0.00	0.000	0.000	1.60
Standard Deviation	0.3	4.3	1.4	1.03	0.47	0.005	0.46	0.018	0.21	0.021	0.015	0.48
Sample Variance	0.1	18.2	2.0	1.07	0.22	0.000	0.21	0.000	0.04	0.000	0.000	0.23
Kurtosis	0.4	-0.6	6.3	0.34	13.14	10.426	14.24	10.036	1.91	7.046	12.141	1.14
Skewness	-0.1	-0.4	1.9	1.34	3.27	2.952	3.40	2.861	1.53	2.831	3.631	0.46
Range	1.3	16.1	8.2	2.65	2.55	0.027	2.54	0.088	0.83	0.084	0.068	2.52
Minimum	7.4	3.0	8.9	0.27	0.25	0.003	0.26	0.000	0.00	0.000	0.000	0.58
Maximum	8.7	19.1	17.1	2.92	2.80	0.030	2.80	0.088	0.83	0.084	0.068	3.10
Count	42	42	42	10	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.4	0.74	0.15	0.002	0.14	0.005	0.06	0.007	0.005	0.15

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.1	11.3	190.0	189.0	0.2	1.0	1.0	337	17.8	83	0.6	ND
Standard Error	1.0	0.1	8.1	8.2	0.1	0.3	0.1	12	1.5	62	0.3	ND
Median	5.5	11.0	190.0	190.0	0.0	1.1	0.9	306	14.5	2	0.2	ND
Mode	12.0	11.0	190.0	190.0	0.0	0.0	0.6	282	12.0	0	0.0	ND
Standard Deviation	3.6	0.5	29.2	29.7	0.5	1.0	0.4	78	9.8	232	1.0	ND
Sample Variance	13.3	0.2	850.0	881.7	0.2	1.0	0.2	6008	95.7	53879	0.9	ND
Kurtosis	-1.7	-1.4	-0.5	-0.6	0.7	2.5	-0.3	2	7.1	11	1.9	ND
Skewness	0.4	0.9	0.1	0.1	1.6	1.2	0.6	2	2.4	3	1.7	ND
Range	9.0	1.0	100.0	101.6	1.2	3.6	1.7	279	49.5	850	2.9	0
Minimum	3.0	11.0	140.0	138.4	0.0	0.0	0.3	275	9.5	0	0.0	0
Maximum	12.0	12.0	240.0	240.0	1.2	3.6	2.0	554	59.0	850	2.9	0
Count	14	13	13	13	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	2.1	0.3	17.6	17.9	0.3	0.6	0.1	24	3.0	134	0.6	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 4
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	35.00	12.07	0.0	3.2	2.6	1.1	0.0	8.0	0.0	0.8	1.2	ND
Standard Error	0.68	0.34	0.0	0.5	0.9	0.4	0.0	1.0	0.0	0.4	0.8	ND
Median	34.50	12.00	0.0	3.3	2.4	0.0	0.0	8.6	0.0	0.0	0.0	ND
Mode	33.00	12.00	0.0	4.1	0.0	0.0	0.0	9.6	0.0	0.0	0.0	ND
Standard Deviation	2.54	1.27	0.0	1.8	3.4	1.4	0.0	3.9	0.0	1.7	3.1	ND
Sample Variance	6.46	1.61	0.0	3.3	11.3	2.1	0.0	15.1	0.0	2.7	9.5	ND
Kurtosis	-0.39	-0.73	ND	1.9	7.4	-0.5	ND	1.5	ND	1.4	5.0	ND
Skewness	0.75	0.37	ND	0.1	2.4	0.9	ND	-1.1	ND	1.7	2.5	ND
Range	8.00	4.00	0.0	7.4	13.0	4.1	0.0	14.0	0.0	4.5	9.8	0.0
Minimum	32.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	40.00	14.00	0.0	7.4	13.0	4.1	0.0	14.0	0.0	4.5	9.8	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.47	0.73	0.0	1.1	1.9	0.8	0.0	2.2	0.0	1.0	1.8	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	139	113	ND	ND	28.9	26.2	2.6	ND
Standard Error	3	1	ND	ND	0.4	0.3	0.1	ND
Median	140	110	ND	ND	28.0	25.5	2.5	ND
Mode	140	110	ND	ND	28.0	25.0	2.4	ND
Standard Deviation	12	8	ND	ND	2.4	2.1	0.4	ND
Sample Variance	136	65	ND	ND	5.5	4.6	0.2	ND
Kurtosis	0	11	ND	ND	2.4	1.4	0.5	ND
Skewness	1	3	ND	ND	1.3	1.0	1.1	ND
Range	40	50	0.0	0.0	12.0	11.0	1.6	0.0
Minimum	120	100	0.0	0.0	25.0	22.0	2.1	0.0
Maximum	160	150	0.0	0.0	37.0	33.0	3.7	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	7	3	ND	ND	0.7	0.7	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 5
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.3	11.2	ND	0.48	0.007	0.47	0.005	0.13	0.003	0.001	1.69
Standard Error	0.0	0.6	0.2	ND	0.03	0.001	0.03	0.001	0.03	0.002	0.001	0.07
Median	8.1	12.9	11.1	ND	0.40	0.006	0.39	0.000	0.00	0.000	0.000	1.75
Mode	8.1	13.8	12.3	ND	0.33	0.005	0.33	0.000	0.00	0.000	0.000	1.20
Standard Deviation	0.2	4.2	1.3	ND	0.21	0.004	0.21	0.008	0.17	0.011	0.006	0.42
Sample Variance	0.1	17.5	1.6	ND	0.05	0.000	0.05	0.000	0.03	0.000	0.000	0.18
Kurtosis	0.7	-0.6	2.2	ND	0.68	-0.196	1.35	-0.276	-1.00	15.623	42.000	-1.04
Skewness	-0.1	-0.4	1.2	ND	1.21	1.034	1.40	1.111	0.74	4.010	6.481	-0.35
Range	1.2	15.7	6.2	0.00	0.73	0.012	0.83	0.024	0.51	0.051	0.041	1.63
Minimum	7.5	3.7	9.4	0.00	0.27	0.003	0.27	0.000	0.00	0.000	0.000	0.67
Maximum	8.7	19.4	15.6	0.00	1.00	0.015	1.10	0.024	0.51	0.051	0.041	2.30
Count	42	42	42	0	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.4	ND	0.07	0.001	0.07	0.002	0.05	0.003	0.002	0.13

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.2	9.6	184.6	183.3	0.2	1.4	1.0	334	17.5	37	0.5	ND
Standard Error	0.8	0.2	8.5	8.6	0.1	0.2	0.1	9	1.1	30	0.2	ND
Median	5.5	9.5	170.0	170.0	0.0	1.4	1.1	312	14.0	0	0.0	ND
Mode	9.5	9.5	170.0	ND	0.0	0.0	1.1	284	12.0	0	0.0	ND
Standard Deviation	2.9	0.7	30.7	30.9	0.5	0.8	0.4	60	7.4	112	0.8	ND
Sample Variance	8.3	0.6	943.6	954.4	0.2	0.6	0.2	3554	54.1	12437	0.7	ND
Kurtosis	-2.0	0.7	-0.4	-0.4	1.4	0.2	-0.5	3	1.4	13	1.7	ND
Skewness	0.1	0.6	0.8	0.8	1.7	-0.3	0.5	2	1.3	4	1.6	ND
Range	7.1	2.7	100.0	100.3	1.4	2.5	1.6	263	28.0	420	2.6	0
Minimum	2.5	8.3	140.0	138.3	0.0	0.0	0.4	279	10.0	0	0.0	0
Maximum	9.6	11.0	240.0	238.6	1.4	2.5	2.0	542	38.0	420	2.6	0
Count	14	13	13	13	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	1.7	0.5	18.6	18.7	0.3	0.4	0.1	19	2.3	64	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 5
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.86	12.29	0.0	3.4	1.8	1.5	0.0	8.7	0.0	0.5	0.6	ND
Standard Error	0.64	0.34	0.0	0.2	0.9	0.4	0.0	1.8	0.0	0.3	0.6	ND
Median	34.50	12.00	0.0	3.4	0.0	2.0	0.0	7.7	0.0	0.0	0.0	ND
Mode	35.00	12.00	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	2.38	1.27	0.0	0.8	3.5	1.4	0.0	6.8	0.0	1.2	2.2	ND
Sample Variance	5.67	1.60	0.0	0.7	12.6	1.8	0.0	46.1	0.0	1.4	4.7	ND
Kurtosis	0.00	0.09	ND	-0.8	8.5	0.0	ND	2.5	ND	5.2	13.0	ND
Skewness	0.80	0.96	ND	-0.2	2.8	0.4	ND	1.0	ND	2.5	3.6	ND
Range	8.00	4.00	0.0	2.6	13.0	4.5	0.0	26.0	0.0	3.8	7.8	0.0
Minimum	32.00	11.00	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	40.00	15.00	0.0	4.5	13.0	4.5	0.0	26.0	0.0	3.8	7.8	0.0
Count	14	14	14	14	14	14	14	14	14	14	13	0
Confidence Level(95.0%)	1.37	0.73	0.0	0.5	2.0	0.8	0.0	3.9	0.0	0.7	1.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	139	114	ND	ND	29.3	26.6	2.7	ND
Standard Error	3	1	ND	ND	0.4	0.3	0.1	ND
Median	140	110	ND	ND	28.5	26.0	2.5	ND
Mode	130	110	ND	ND	28.0	25.0	2.4	ND
Standard Deviation	11	8	ND	ND	2.4	2.3	0.3	ND
Sample Variance	121	64	ND	ND	5.7	5.1	0.1	ND
Kurtosis	0	0	ND	ND	-0.4	-0.5	-0.8	ND
Skewness	0	1	ND	ND	0.6	0.6	0.7	ND
Range	40	30	0.0	0.0	9.0	8.0	1.1	0.0
Minimum	120	100	0.0	0.0	25.0	23.0	2.2	0.0
Maximum	160	130	0.0	0.0	34.0	31.0	3.3	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	6	2	ND	ND	0.7	0.7	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 6
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	11.8	11.3	ND	0.38	0.004	0.38	0.004	0.11	0.000	0.000	1.64
Standard Error	0.0	0.7	0.2	ND	0.02	0.000	0.02	0.001	0.03	0.000	0.000	0.06
Median	8.1	12.4	10.8	ND	0.33	0.004	0.34	0.000	0.00	0.000	0.000	1.65
Mode	8.0	13.8	10.6	ND	0.32	0.000	0.32	0.000	0.00	0.000	0.000	1.40
Standard Deviation	0.2	4.4	1.3	ND	0.14	0.003	0.14	0.007	0.19	0.000	0.000	0.38
Sample Variance	0.1	19.5	1.8	ND	0.02	0.000	0.02	0.000	0.04	0.000	0.000	0.15
Kurtosis	-0.2	-0.6	2.7	ND	7.02	-0.205	7.79	1.558	3.06	ND	ND	0.59
Skewness	0.1	-0.3	1.4	ND	2.17	0.078	2.29	1.699	1.80	ND	ND	0.28
Range	1.0	16.3	6.8	0.00	0.74	0.010	0.75	0.023	0.74	0.000	0.000	1.94
Minimum	7.6	2.9	9.3	0.00	0.22	0.000	0.22	0.000	0.00	0.000	0.000	0.66
Maximum	8.6	19.2	16.1	0.00	0.96	0.010	0.97	0.023	0.74	0.000	0.000	2.60
Count	42	42	42	0	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.4	0.4	ND	0.05	0.001	0.04	0.002	0.06	0.000	0.000	0.12

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.1	12.0	173.8	172.7	0.3	1.0	1.0	303	13.5	1	0.1	ND
Standard Error	1.1	0.1	7.1	7.2	0.1	0.2	0.1	5	0.6	0	0.1	ND
Median	5.6	12.0	170.0	168.9	0.0	1.2	0.8	294	12.0	0	0.0	ND
Mode	12.0	12.0	160.0	ND	0.0	0.0	0.6	285	12.0	0	0.0	ND
Standard Deviation	4.0	0.3	25.7	25.8	0.5	0.9	0.7	33	4.0	1	0.2	ND
Sample Variance	16.3	0.1	659.0	667.8	0.3	0.9	0.5	1060	15.6	2	0.0	ND
Kurtosis	-1.9	9.0	0.5	0.3	-0.8	-0.3	6.2	7	2.8	1	0.5	ND
Skewness	0.3	2.7	0.9	0.9	1.1	0.4	2.2	2	1.7	2	1.6	ND
Range	9.4	1.3	90.0	89.2	1.3	3.0	3.5	167	17.1	3	0.5	0
Minimum	2.6	11.7	140.0	138.9	0.0	0.0	0.3	273	9.9	0	0.0	0
Maximum	12.0	13.0	230.0	228.1	1.3	3.0	3.9	440	27.0	3	0.5	0
Count	14	13	13	13	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	2.3	0.2	15.5	15.6	0.3	0.5	0.2	10	1.2	1	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 6
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.07	11.86	0.0	2.8	2.0	0.7	0.0	7.3	0.1	0.2	0.0	ND
Standard Error	0.49	0.27	0.0	0.4	0.7	0.3	0.0	1.2	0.1	0.2	0.0	ND
Median	34.00	12.00	0.0	2.8	2.3	0.0	0.0	7.9	0.0	0.0	0.0	ND
Mode	34.00	12.00	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.82	1.03	0.0	1.5	2.5	1.2	0.0	4.6	0.3	0.7	0.0	ND
Sample Variance	3.30	1.05	0.0	2.1	6.4	1.4	0.0	21.5	0.1	0.4	0.0	ND
Kurtosis	3.43	7.18	ND	0.3	4.0	0.9	ND	0.2	14.0	14.0	ND	ND
Skewness	1.58	2.31	ND	-0.7	1.8	1.5	ND	-0.2	3.7	3.7	ND	ND
Range	7.00	4.00	0.0	4.8	9.1	3.5	0.0	16.0	1.1	2.5	0.0	0.0
Minimum	32.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	39.00	15.00	0.0	4.8	9.1	3.5	0.0	16.0	1.1	2.5	0.0	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.05	0.59	0.0	0.8	1.5	0.7	0.0	2.7	0.2	0.4	0.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	134	110	ND	ND	28.3	25.6	2.6	ND
Standard Error	3	1	ND	ND	0.3	0.2	0.1	ND
Median	130	110	ND	ND	28.0	25.0	2.5	ND
Mode	130	110	ND	ND	28.0	25.0	2.4	ND
Standard Deviation	10	4	ND	ND	1.7	1.6	0.3	ND
Sample Variance	102	19	ND	ND	3.0	2.4	0.1	ND
Kurtosis	3	11	ND	ND	2.3	1.4	1.7	ND
Skewness	1	2	ND	ND	1.2	0.8	1.4	ND
Range	40	30	0.0	0.0	9.0	8.0	1.5	0.0
Minimum	120	100	0.0	0.0	25.0	22.0	2.1	0.0
Maximum	160	130	0.0	0.0	34.0	30.0	3.6	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	6	1	ND	ND	0.5	0.5	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 7
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.7	11.0	1.07	0.50	0.008	0.51	0.021	0.20	0.003	0.002	1.78
Standard Error	0.0	0.5	0.2	0.13	0.04	0.002	0.04	0.008	0.03	0.001	0.001	0.06
Median	8.1	12.9	10.9	0.84	0.38	0.005	0.38	0.000	0.00	0.000	0.000	1.70
Mode	8.2	8.8	10.9	0.81	0.38	0.000	0.31	0.000	0.00	0.000	0.000	1.40
Standard Deviation	0.3	4.2	1.5	0.81	0.34	0.013	0.34	0.066	0.28	0.011	0.010	0.53
Sample Variance	0.1	17.3	2.3	0.65	0.11	0.000	0.12	0.004	0.08	0.000	0.000	0.28
Kurtosis	0.1	-0.8	6.6	1.64	6.79	33.728	6.10	42.587	13.26	15.599	24.773	0.61
Skewness	-0.4	-0.3	2.1	1.45	2.48	5.486	2.36	6.114	2.84	4.003	4.930	0.74
Range	1.5	17.2	9.1	3.11	1.70	0.097	1.70	0.510	1.80	0.062	0.061	2.70
Minimum	7.3	3.5	8.1	0.16	0.20	0.000	0.20	0.000	0.00	0.000	0.000	0.70
Maximum	8.8	20.7	17.2	3.27	1.90	0.097	1.90	0.510	1.80	0.062	0.061	3.40
Count	72	75	75	37	72	72	75	75	75	74	74	75
Confidence Level(95.0%)	0.1	1.0	0.3	0.27	0.08	0.003	0.08	0.015	0.06	0.003	0.002	0.12

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.8	10.5	180.1	179.3	0.2	0.9	1.1	344	17.9	20	0.5	ND
Standard Error	0.7	0.2	14.9	15.0	0.1	0.2	0.1	9	1.1	16	0.1	ND
Median	6.0	10.8	180.0	178.8	0.0	1.1	0.9	317	15.0	0	0.0	ND
Mode	11.0	11.0	190.0	190.0	0.0	0.0	0.5	293	11.0	0	0.0	ND
Standard Deviation	3.7	1.2	55.9	56.1	0.4	0.8	0.7	77	9.5	79	0.7	ND
Sample Variance	13.7	1.3	3120.3	3145.3	0.2	0.6	0.4	6005	91.2	6313	0.4	ND
Kurtosis	-1.7	11.9	5.4	5.4	4.5	-2.1	2.6	3	6.5	24	3.1	ND
Skewness	0.2	-2.9	-1.4	-1.4	2.4	-0.1	1.6	2	2.3	5	1.7	ND
Range	10.5	6.0	248.0	248.6	1.3	1.9	3.1	339	49.7	400	2.6	0
Minimum	1.5	6.0	22.0	20.3	0.0	0.0	0.3	271	9.3	0	0.0	0
Maximum	12.0	12.0	270.0	268.9	1.3	1.9	3.4	610	59.0	400	2.6	0
Count	25	22	14	14	14	14	75	75	75	25	25	0
Confidence Level(95.0%)	1.5	0.5	32.3	32.4	0.2	0.5	0.2	18	2.2	33	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 7
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.60	12.28	0.0	3.2	2.2	0.8	0.0	6.4	0.1	0.6	1.0	ND
Standard Error	0.44	0.25	0.0	0.4	0.7	0.3	0.0	0.9	0.1	0.3	0.5	ND
Median	34.00	12.00	0.0	2.7	0.0	0.0	0.0	7.3	0.0	0.0	0.0	ND
Mode	34.00	12.00	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	2.20	1.24	0.0	1.9	3.4	1.4	0.0	4.6	0.4	1.4	2.5	ND
Sample Variance	4.83	1.54	0.0	3.6	11.5	2.0	0.0	20.8	0.1	2.1	6.2	ND
Kurtosis	-0.59	-0.05	ND	6.0	7.9	1.8	ND	-0.8	11.1	4.0	3.9	ND
Skewness	0.48	0.83	ND	1.7	2.5	1.7	ND	-0.3	3.4	2.3	2.2	ND
Range	8.00	4.00	0.0	9.9	15.0	4.7	0.0	15.0	1.5	4.9	8.9	0.0
Minimum	31.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	39.00	15.00	0.0	9.9	15.0	4.7	0.0	15.0	1.5	4.9	8.9	0.0
Count	25	25	25	25	25	25	25	25	25	25	25	0
Confidence Level(95.0%)	0.91	0.51	0.0	0.8	1.4	0.6	0.0	1.9	0.2	0.6	1.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	137	115	ND	ND	29.2	26.6	2.7	ND
Standard Error	2	2	ND	ND	0.5	0.4	0.1	ND
Median	130	110	ND	ND	28.0	26.0	2.5	ND
Mode	130	110	ND	ND	27.0	25.0	2.5	ND
Standard Deviation	11	10	ND	ND	3.2	2.9	0.4	ND
Sample Variance	121	99	ND	ND	10.5	8.5	0.2	ND
Kurtosis	0	6	ND	ND	1.3	1.7	1.1	ND
Skewness	1	2	ND	ND	1.1	1.0	1.1	ND
Range	40	50	0.0	0.0	15.0	15.0	1.8	0.0
Minimum	120	100	0.0	0.0	24.0	21.0	2.2	0.0
Maximum	160	150	0.0	0.0	39.0	36.0	4.0	0.0
Count	25	42	0	0	42	42	42	0
Confidence Level(95.0%)	5	3	ND	ND	1.0	0.9	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 8
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.3	11.2	ND	0.50	0.006	0.51	0.012	0.18	0.003	0.001	1.73
Standard Error	0.0	0.7	0.2	ND	0.05	0.001	0.05	0.003	0.04	0.002	0.001	0.08
Median	8.1	13.1	11.0	ND	0.36	0.005	0.39	0.000	0.00	0.000	0.000	1.80
Mode	8.1	12.8	10.3	ND	0.36	0.006	0.36	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.3	4.2	1.4	ND	0.32	0.004	0.32	0.018	0.23	0.013	0.007	0.51
Sample Variance	0.1	17.9	2.0	ND	0.10	0.000	0.10	0.000	0.05	0.000	0.000	0.26
Kurtosis	0.9	-0.5	8.8	ND	3.72	8.184	4.48	3.102	1.22	38.394	42.000	-0.71
Skewness	0.1	-0.5	2.4	ND	2.02	2.341	2.09	1.813	1.28	6.105	6.481	0.30
Range	1.5	15.5	8.0	0.00	1.35	0.023	1.45	0.073	0.86	0.082	0.045	2.00
Minimum	7.4	3.4	9.6	0.00	0.25	0.000	0.25	0.000	0.00	0.000	0.000	1.00
Maximum	8.9	18.9	17.6	0.00	1.60	0.023	1.70	0.073	0.86	0.082	0.045	3.00
Count	42	42	42	0	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.4	ND	0.10	0.001	0.10	0.006	0.07	0.004	0.002	0.16

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	5.6	9.4	191.4	190.2	0.3	1.2	1.2	334	18.8	48	0.6	ND
Standard Error	0.8	0.1	9.2	9.2	0.1	0.3	0.1	11	1.8	43	0.2	ND
Median	5.2	9.5	180.0	180.0	0.0	1.2	1.0	302	13.0	2	0.2	ND
Mode	9.5	9.0	180.0	180.0	0.0	0.0	0.6	284	11.0	0	0.0	ND
Standard Deviation	3.0	0.4	34.4	34.5	0.5	1.1	0.7	70	11.7	159	0.8	ND
Sample Variance	9.1	0.1	1182.4	1188.9	0.3	1.3	0.4	4862	137.7	25386	0.7	ND
Kurtosis	-1.8	-1.1	-0.4	-0.4	-0.8	0.2	0.7	4	10.3	14	3.7	ND
Skewness	0.3	0.4	0.8	0.8	1.1	0.6	1.3	2	2.8	4	1.9	ND
Range	7.5	1.0	110.0	110.7	1.3	3.7	2.5	324	63.0	600	2.8	0
Minimum	2.0	9.0	150.0	147.7	0.0	0.0	0.5	270	10.0	0	0.0	0
Maximum	9.5	10.0	260.0	258.4	1.3	3.7	2.9	594	73.0	600	2.8	0
Count	14	13	14	14	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	1.7	0.2	19.9	19.9	0.3	0.6	0.2	22	3.7	92	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 8
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	35.00	12.50	0.0	3.0	2.7	0.8	0.5	6.9	0.1	0.6	1.1	ND
Standard Error	0.77	0.36	0.0	0.3	0.9	0.3	0.3	1.2	0.1	0.3	0.7	ND
Median	34.00	12.00	0.0	3.1	2.4	0.0	0.0	9.3	0.0	0.0	0.0	ND
Mode	33.00	12.00	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	2.88	1.34	0.2	1.2	3.4	1.1	1.3	4.6	0.3	1.2	2.7	ND
Sample Variance	8.31	1.81	0.0	1.4	11.8	1.2	1.7	21.2	0.1	1.4	7.1	ND
Kurtosis	0.12	-0.14	14.0	2.3	6.4	-1.4	3.9	-1.1	14.0	1.1	3.9	ND
Skewness	1.06	0.89	3.7	-1.0	2.3	0.8	2.3	-1.0	3.7	1.7	2.3	ND
Range	9.00	4.00	0.6	4.8	13.0	2.5	3.7	11.0	1.2	3.2	7.7	0.0
Minimum	32.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	41.00	15.00	0.6	4.8	13.0	2.5	3.7	11.0	1.2	3.2	7.7	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.66	0.78	0.1	0.7	2.0	0.6	0.7	2.7	0.2	0.7	1.5	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	137	115	ND	ND	29.6	26.8	2.7	ND
Standard Error	4	1	ND	ND	0.4	0.4	0.1	ND
Median	130	110	ND	ND	28.0	26.0	2.6	ND
Mode	130	110	ND	ND	28.0	25.0	2.6	ND
Standard Deviation	14	9	ND	ND	2.9	2.6	0.4	ND
Sample Variance	207	74	ND	ND	8.3	6.7	0.2	ND
Kurtosis	1	1	ND	ND	-0.5	-0.3	-0.3	ND
Skewness	1	1	ND	ND	0.8	0.8	0.6	ND
Range	50	40	0.0	0.0	11.0	10.0	1.6	0.0
Minimum	120	100	0.0	0.0	25.0	23.0	2.1	0.0
Maximum	170	140	0.0	0.0	36.0	33.0	3.7	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	8	3	ND	ND	0.9	0.8	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 9
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	11.8	11.4	ND	0.39	0.004	0.39	0.004	0.10	0.002	0.000	1.69
Standard Error	0.0	0.7	0.2	ND	0.03	0.000	0.03	0.001	0.02	0.001	0.000	0.06
Median	8.1	12.2	10.9	ND	0.32	0.004	0.33	0.000	0.00	0.000	0.000	1.80
Mode	8.1	13.8	10.4	ND	0.36	0.000	0.33	0.000	0.00	0.000	0.000	1.40
Standard Deviation	0.3	4.2	1.6	ND	0.18	0.003	0.18	0.007	0.15	0.008	0.000	0.41
Sample Variance	0.1	17.8	2.6	ND	0.03	0.000	0.03	0.000	0.02	0.000	0.000	0.17
Kurtosis	1.2	-0.5	6.6	ND	4.16	3.239	4.59	0.417	-0.66	18.313	ND	-0.58
Skewness	0.2	-0.3	2.3	ND	2.04	0.804	2.13	1.443	1.04	4.409	ND	-0.20
Range	1.4	15.9	8.4	0.00	0.76	0.014	0.77	0.021	0.45	0.039	0.000	1.68
Minimum	7.5	3.3	9.6	0.00	0.22	0.000	0.22	0.000	0.00	0.000	0.000	0.72
Maximum	8.9	19.2	18.0	0.00	0.98	0.014	0.99	0.021	0.45	0.039	0.000	2.40
Count	42	42	42	0	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.5	ND	0.06	0.001	0.05	0.002	0.05	0.003	0.000	0.13

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.1	12.2	167.9	166.9	0.1	0.9	0.9	313	14.4	1	0.1	ND
Standard Error	0.9	0.2	7.8	7.8	0.1	0.2	0.1	8	0.9	0	0.1	ND
Median	6.6	12.0	160.0	159.5	0.0	1.2	0.7	291	12.0	0	0.0	ND
Mode	12.0	12.0	160.0	ND	0.0	0.0	0.5	282	11.0	0	0.0	ND
Standard Deviation	3.5	0.6	29.1	29.2	0.3	0.8	0.5	51	6.1	2	0.2	ND
Sample Variance	12.5	0.4	848.9	852.1	0.1	0.6	0.2	2626	37.8	2	0.0	ND
Kurtosis	-1.4	6.0	2.2	2.1	14.0	-1.7	1.9	5	1.6	6	5.2	ND
Skewness	0.5	2.5	0.9	0.9	3.7	-0.3	1.5	2	1.7	3	2.5	ND
Range	9.1	2.2	120.0	120.2	1.1	2.0	2.1	240	21.7	5	0.7	0
Minimum	2.9	11.7	120.0	118.4	0.0	0.0	0.4	272	9.3	0	0.0	0
Maximum	12.0	13.9	240.0	238.6	1.1	2.0	2.5	512	31.0	5	0.7	0
Count	14	13	14	14	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	2.0	0.4	16.8	16.9	0.2	0.4	0.2	16	1.9	1	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 9
WATER QUALITY DATA - 2010

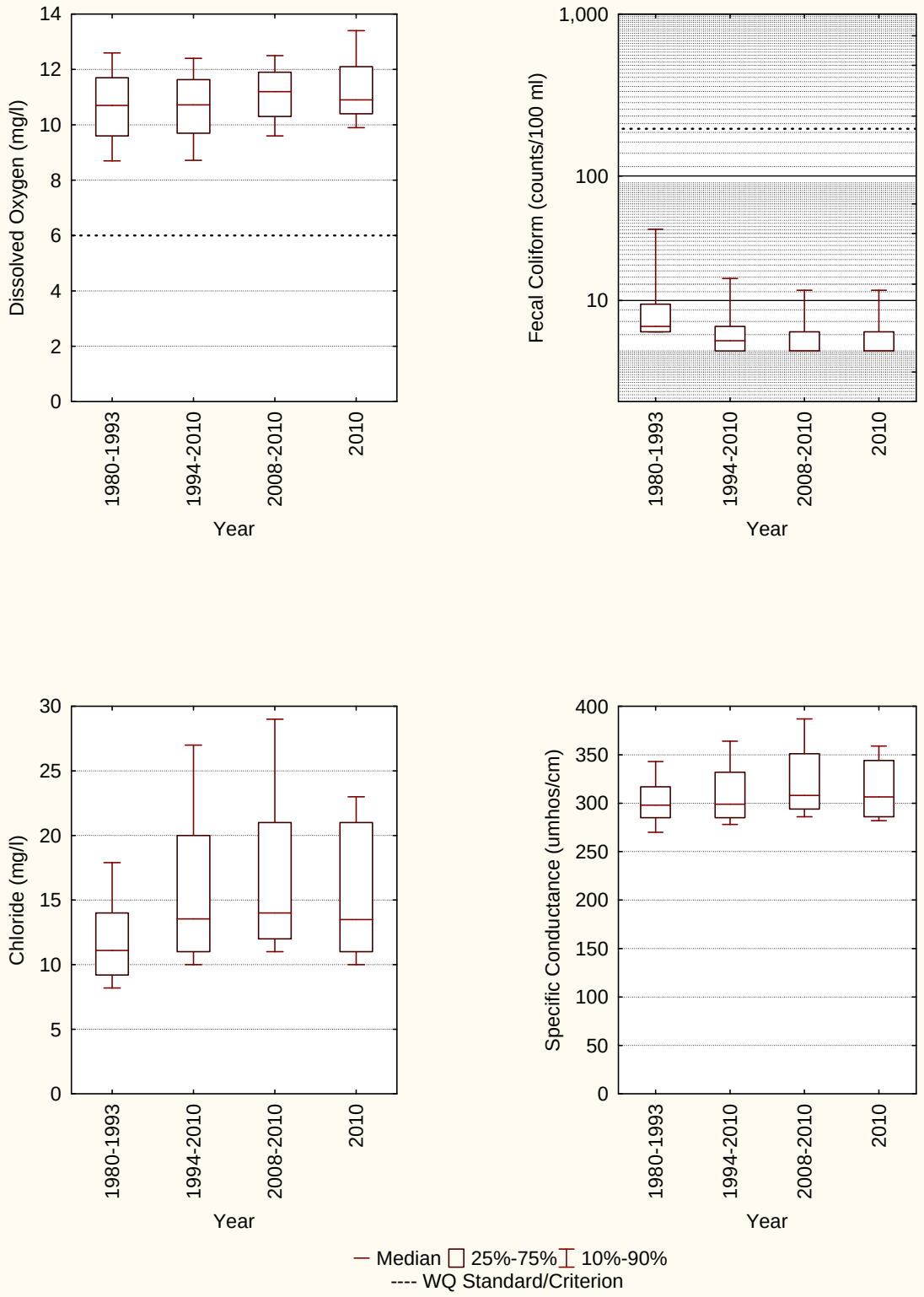
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.00	12.00	0.0	3.3	1.3	0.8	0.2	9.9	0.1	0.6	1.3	ND
Standard Error	0.54	0.33	0.0	0.3	0.5	0.3	0.2	2.0	0.1	0.3	0.7	ND
Median	33.50	12.00	0.0	2.9	0.0	0.0	0.0	8.2	0.0	0.0	0.0	ND
Mode	34.00	11.00	0.0	2.2	0.0	0.0	0.0	7.4	0.0	0.0	0.0	ND
Standard Deviation	2.04	1.24	0.0	1.1	1.8	1.2	0.6	7.5	0.3	1.3	2.7	ND
Sample Variance	4.15	1.54	0.0	1.3	3.2	1.4	0.3	56.2	0.1	1.7	7.2	ND
Kurtosis	1.65	1.54	ND	0.5	-1.0	-0.8	14.0	3.4	14.0	5.7	1.8	ND
Skewness	1.40	1.41	ND	1.1	0.9	0.9	3.7	1.4	3.7	2.4	1.8	ND
Range	7.00	4.00	0.0	3.7	4.7	3.1	2.2	30.0	1.2	4.4	7.9	0.0
Minimum	32.00	11.00	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	39.00	15.00	0.0	5.9	4.7	3.1	2.2	30.0	1.2	4.4	7.9	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.18	0.72	0.0	0.7	1.0	0.7	0.3	4.3	0.2	0.7	1.5	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	134	111	ND	ND	28.4	25.9	2.6	ND
Standard Error	3	1	ND	ND	0.3	0.3	0.1	ND
Median	130	110	ND	ND	28.0	25.0	2.5	ND
Mode	130	110	ND	ND	28.0	25.0	2.4	ND
Standard Deviation	11	6	ND	ND	2.0	1.9	0.3	ND
Sample Variance	117	37	ND	ND	3.8	3.6	0.1	ND
Kurtosis	2	3	ND	ND	0.3	0.4	1.8	ND
Skewness	1	1	ND	ND	0.7	0.8	1.5	ND
Range	40	30	0.0	0.0	8.0	8.0	1.3	0.0
Minimum	120	100	0.0	0.0	25.0	22.0	2.2	0.0
Maximum	160	130	0.0	0.0	33.0	30.0	3.5	0.0
Count	14	42	0	0	42	42	42	0
Confidence Level(95.0%)	6	2	ND	ND	0.6	0.6	0.1	ND

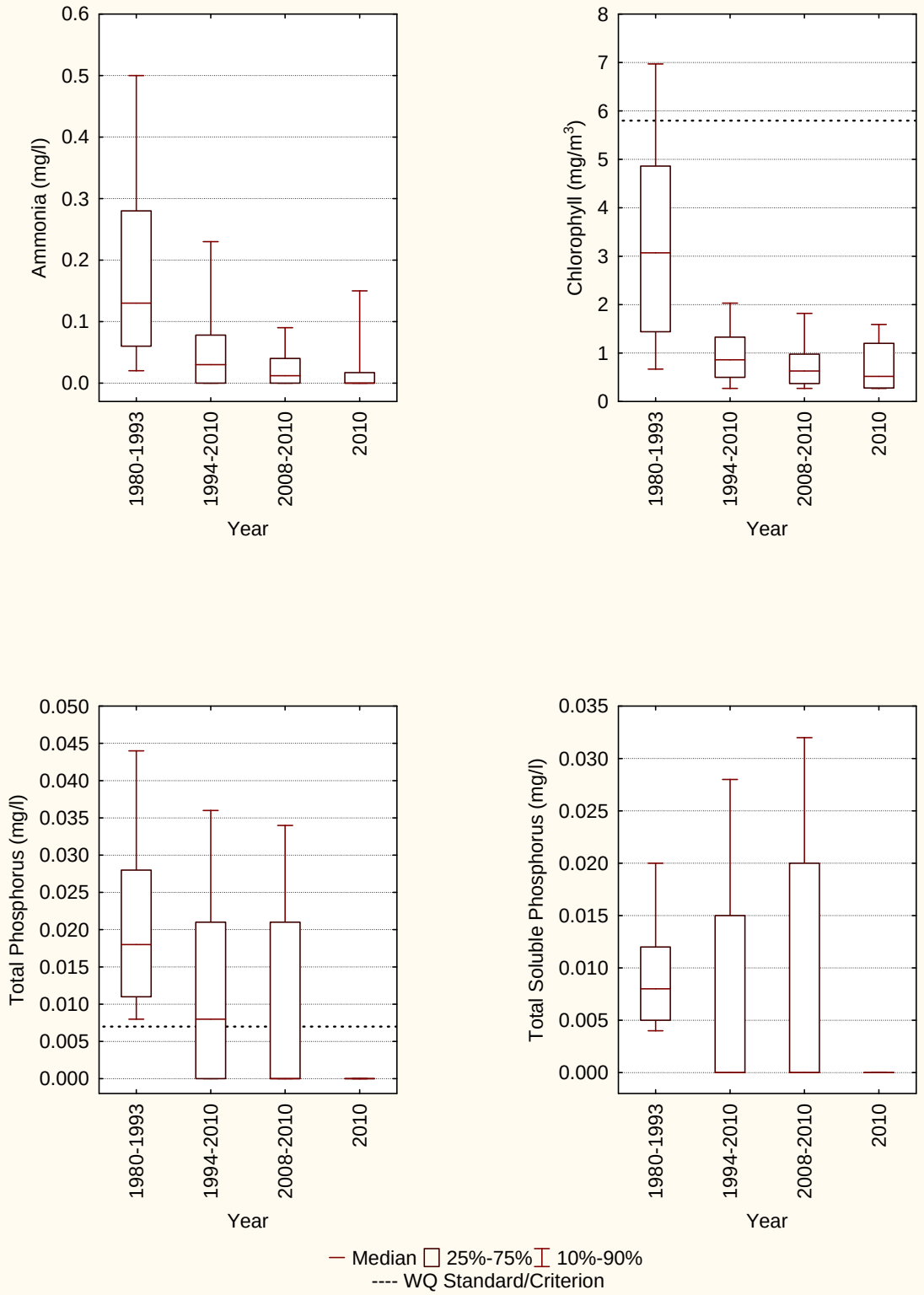
ND = No Data

Provisional MMSD Water Quality Data

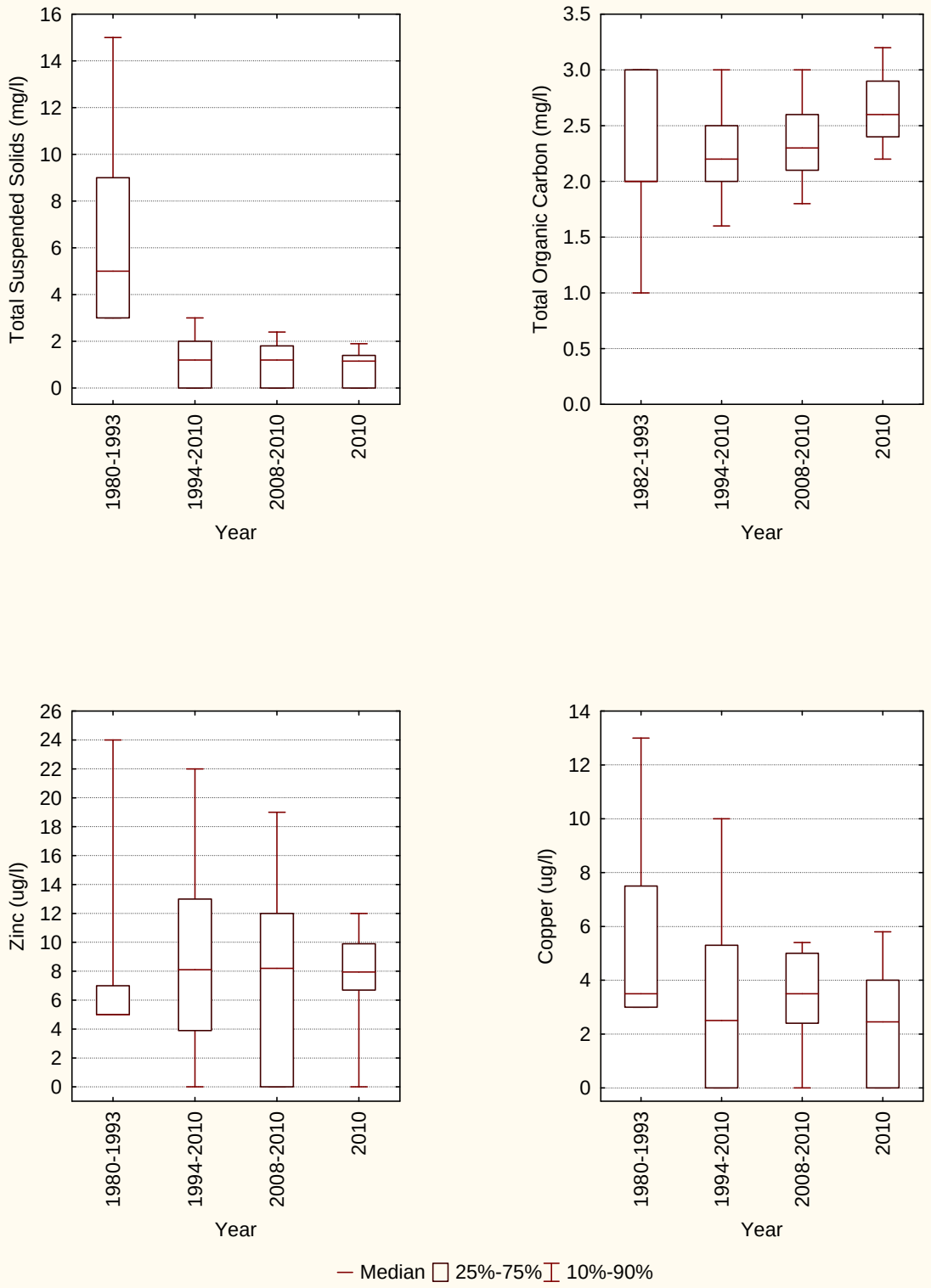
MMSD Water Quality Monitoring Program Data
South Shore, Site SS-10



MMSD Water Quality Monitoring Program Data
South Shore, Site SS-10



MMSD Water Quality Monitoring Program Data
South Shore, Site SS-10



SOUTH SHORE - SITE 10
WATER QUALITY DATA 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	12.2	11.3	0.82	0.42	0.008	0.49	0.027	0.19	0.003	0.001	1.69
Standard Error	0.0	0.7	0.2	0.23	0.02	0.002	0.05	0.009	0.03	0.002	0.001	0.07
Median	8.1	13.2	10.9	0.52	0.37	0.005	0.38	0.000	0.24	0.000	0.000	1.65
Mode	8.1	11.3	10.4	ND	0.38	0.000	0.38	0.000	0.00	0.000	0.000	2.00
Standard Deviation	0.2	4.3	1.5	0.77	0.15	0.011	0.32	0.059	0.22	0.012	0.006	0.48
Sample Variance	0.1	18.6	2.1	0.59	0.02	0.000	0.10	0.003	0.05	0.000	0.000	0.23
Kurtosis	0.5	-0.6	2.8	2.91	-0.09	6.200	12.79	5.123	2.41	12.363	42.000	0.19
Skewness	0.7	-0.4	1.5	1.72	0.69	2.625	3.22	2.481	1.24	3.642	6.481	0.54
Range	1.0	15.9	7.0	2.51	0.64	0.043	1.81	0.240	1.00	0.057	0.039	2.26
Minimum	7.7	3.2	9.2	0.19	0.19	0.000	0.19	0.000	0.00	0.000	0.000	0.74
Maximum	8.7	19.1	16.1	2.70	0.83	0.043	2.00	0.240	1.00	0.057	0.039	3.00
Count	42	42	42	11	39	39	42	42	42	42	42	42
Confidence Level(95.0%)	0.1	1.3	0.5	0.51	0.05	0.004	0.10	0.018	0.07	0.004	0.002	0.15

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.6	10.5	187.1	186.3	0.3	0.8	0.9	317	16.9	9	0.3	ND
Standard Error	1.0	0.2	10.2	10.2	0.1	0.2	0.1	6	1.3	7	0.2	ND
Median	10.0	10.5	175.0	174.1	0.0	1.2	0.8	307	13.5	0	0.0	ND
Mode	10.0	11.0	170.0	170.0	0.0	0.0	0.5	297	13.0	0	0.0	ND
Standard Deviation	3.7	0.7	38.3	38.0	0.5	0.8	0.5	36	8.4	26	0.6	ND
Sample Variance	13.4	0.5	1468.1	1445.0	0.3	0.6	0.2	1273	70.0	660	0.3	ND
Kurtosis	-2.1	1.0	3.3	3.4	-0.7	-1.9	0.5	0	5.6	13	4.1	ND
Skewness	-0.3	0.3	1.7	1.7	1.1	-0.1	0.9	1	2.1	4	2.0	ND
Range	9.0	2.8	150.0	148.6	1.3	1.9	2.0	140	40.6	97	2.0	0
Minimum	3.0	9.2	140.0	140.0	0.0	0.0	0.3	271	9.4	0	0.0	0
Maximum	12.0	12.0	290.0	288.6	1.3	1.9	2.3	411	50.0	97	2.0	0
Count	14	13	14	14	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	2.1	0.4	22.1	21.9	0.3	0.5	0.1	11	2.6	15	0.3	ND

ND = No Data

Provisional MMSD Water Quality data

SOUTH SHORE - SITE 10
WATER QUALITY DATA 2010

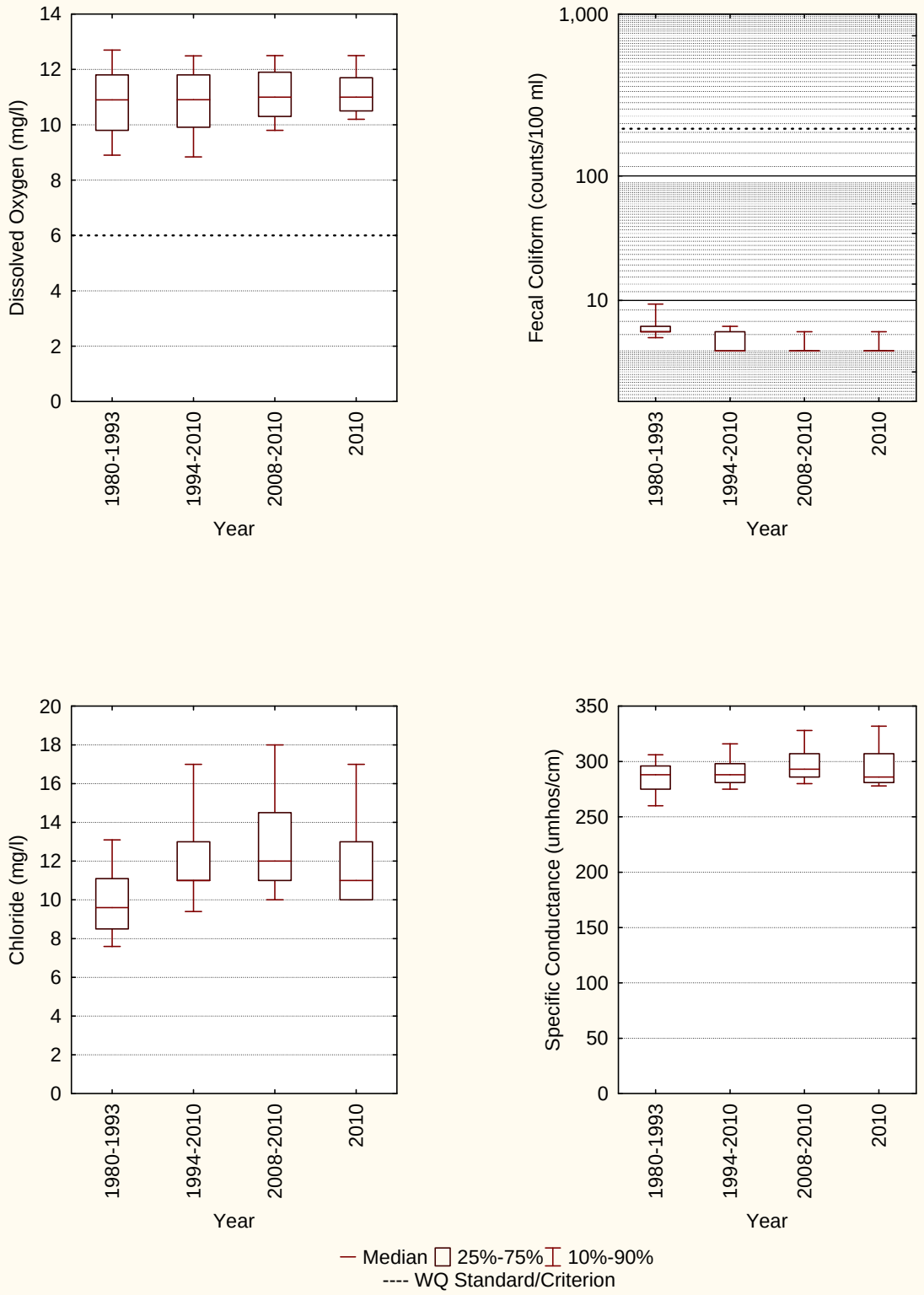
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.71	12.36	0.0	3.2	2.8	1.3	0.0	7.9	0.1	0.1	0.6	ND
Standard Error	0.67	0.34	0.0	0.3	0.9	0.4	0.0	1.7	0.1	0.1	0.6	ND
Median	34.50	12.00	0.0	3.0	2.5	0.8	0.0	8.0	0.0	0.0	0.0	ND
Mode	35.00	12.00	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	2.52	1.28	0.0	1.1	3.5	1.6	0.0	6.3	0.3	0.5	2.1	ND
Sample Variance	6.37	1.63	0.0	1.2	12.0	2.7	0.0	39.1	0.1	0.2	4.3	ND
Kurtosis	1.85	4.76	ND	2.4	5.7	1.0	ND	3.9	14.0	14.0	14.0	ND
Skewness	1.04	1.79	ND	1.4	2.1	1.1	ND	1.3	3.7	3.7	3.7	ND
Range	10.00	5.00	0.0	4.0	13.0	5.3	0.0	25.0	1.1	1.8	7.8	0.0
Minimum	31.00	11.00	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	41.00	16.00	0.0	6.1	13.0	5.3	0.0	25.0	1.1	1.8	7.8	0.0
Count	14	14	14	14	14	14	14	14	14	14	14	0
Confidence Level(95.0%)	1.46	0.74	0.0	0.6	2.0	0.9	0.0	3.6	0.2	0.3	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	137	113	0.0	3.3	29.4	26.6	2.7	ND
Standard Error	4	1	0.0	0.2	0.4	0.4	0.1	ND
Median	135	110	0.0	3.2	28.5	26.0	2.6	ND
Mode	130	110	0.0	4.1	28.0	25.0	2.6	ND
Standard Deviation	13	7	0.0	0.9	2.9	2.7	0.4	ND
Sample Variance	176	56	0.0	0.8	8.4	7.1	0.2	ND
Kurtosis	2	3	ND	-1.4	3.3	4.6	0.1	ND
Skewness	1	1	ND	0.1	1.5	1.8	0.8	ND
Range	50	40	0.0	2.7	15.0	14.0	1.6	0.0
Minimum	120	100	0.0	2.0	25.0	23.0	2.1	0.0
Maximum	170	140	0.0	4.7	40.0	37.0	3.7	0.0
Count	14	42	14	14	42	42	42	0
Confidence Level(95.0%)	8	2	0.0	0.5	0.9	0.8	0.1	ND

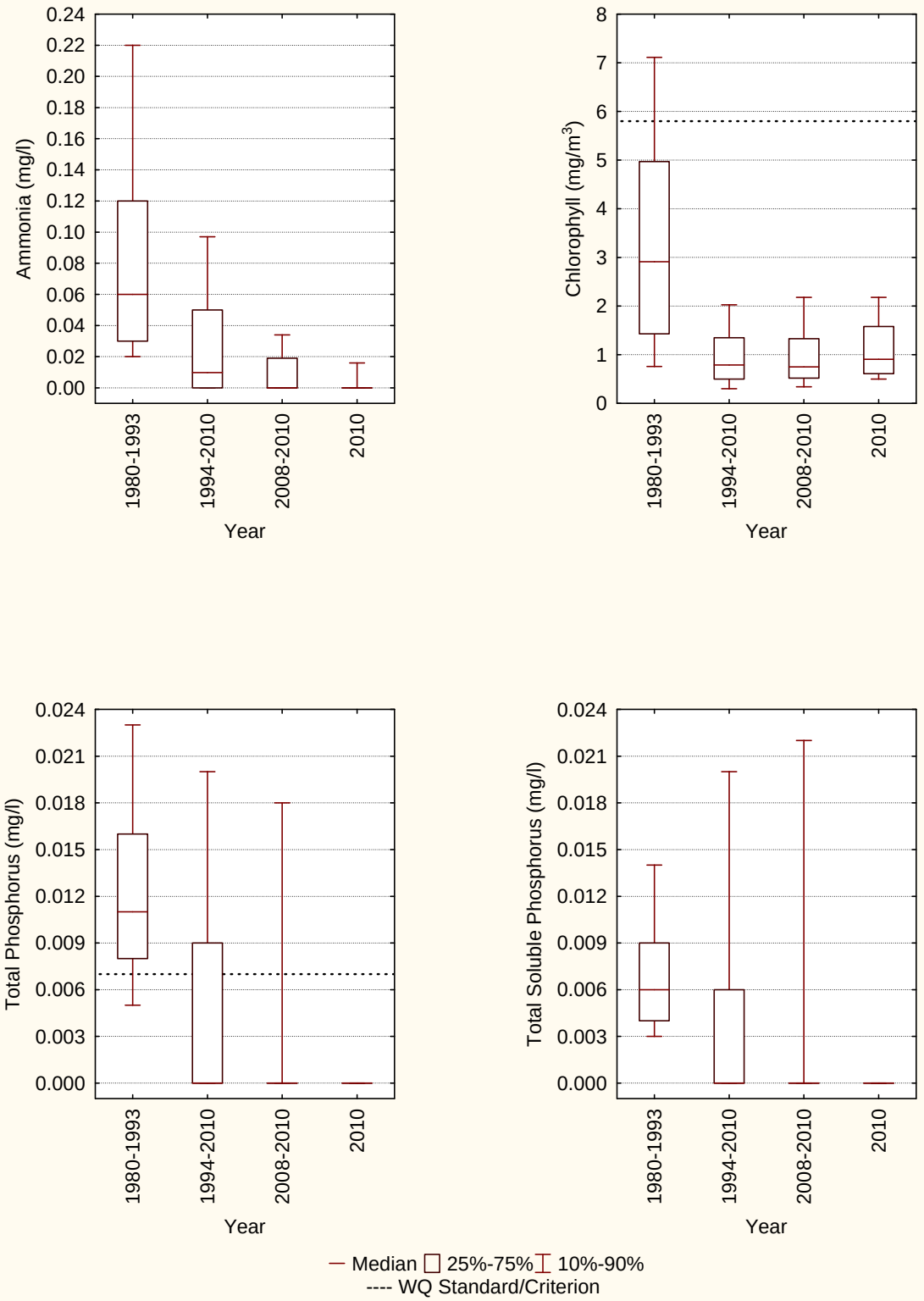
ND = No Data

Provisional MMSD Water Quality data

MMSD Water Quality Monitoring Program Data
South Shore, Site SS-11

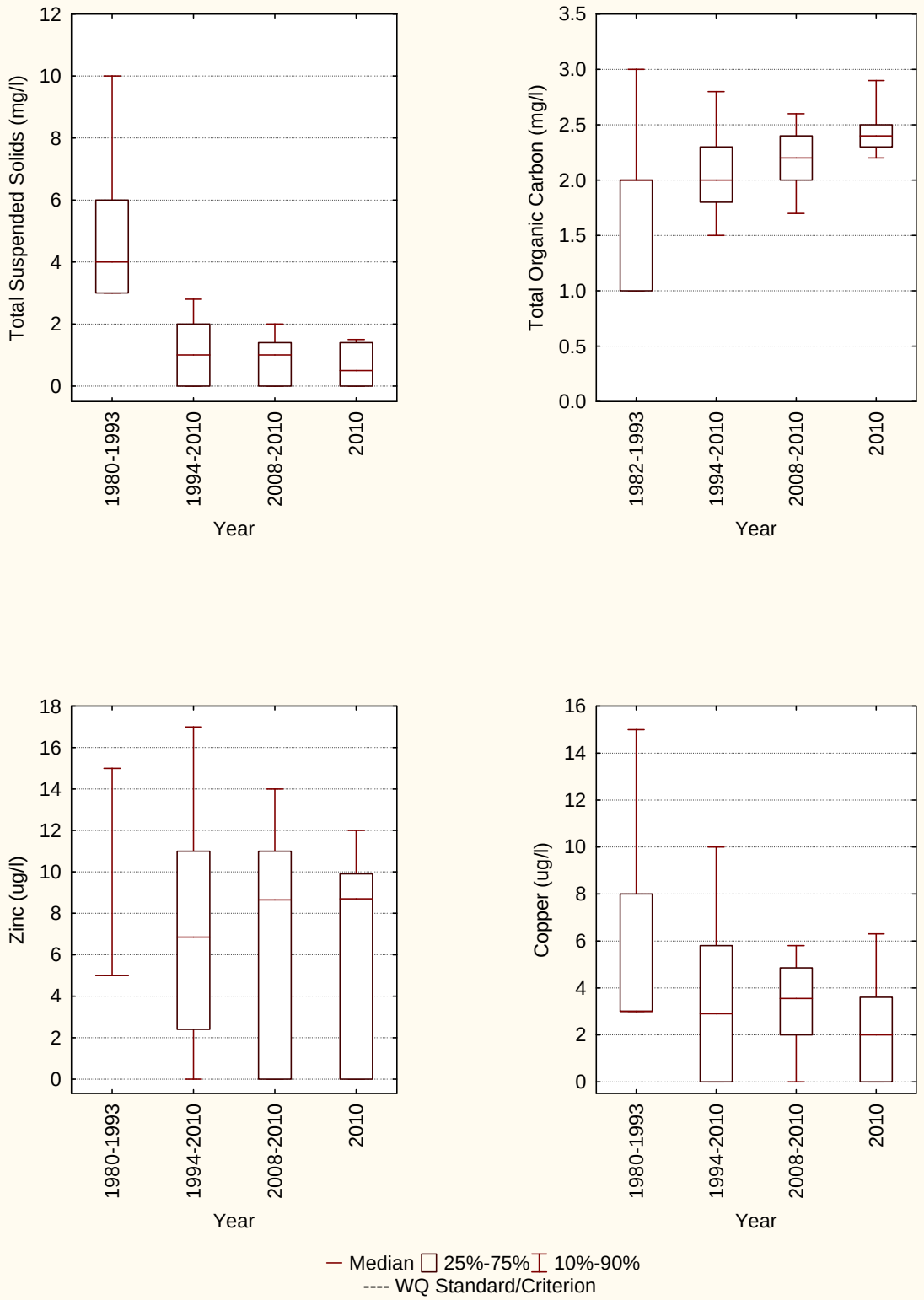


MMSD Water Quality Monitoring Program Data
South Shore, Site SS-11



— Median ☐ 25%-75% ⊥ 10%-90%
---- WQ Standard/Criterion

MMSD Water Quality Monitoring Program Data
South Shore, Site SS-11



SOUTH SHORE - SITE 11
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	12.2	11.3	1.14	0.31	0.004	0.32	0.005	0.14	0.000	0.001	1.67
Standard Error	0.0	0.5	0.1	0.11	0.01	0.000	0.01	0.002	0.04	0.000	0.000	0.05
Median	8.2	12.3	11.0	0.91	0.30	0.004	0.31	0.000	0.00	0.000	0.000	1.60
Mode	8.1	14.0	11.3	0.51	0.24	0.000	0.32	0.000	0.00	0.000	0.000	1.60
Standard Deviation	0.2	4.3	1.1	0.71	0.09	0.002	0.07	0.015	0.30	0.000	0.003	0.42
Sample Variance	0.0	18.7	1.3	0.50	0.01	0.000	0.01	0.000	0.09	0.000	0.000	0.18
Kurtosis	-0.6	-0.8	4.0	0.63	2.55	-0.376	0.06	25.526	28.25	ND	34.608	-0.45
Skewness	0.2	-0.2	1.7	1.07	-0.51	-0.881	0.76	4.770	4.62	ND	5.721	-0.03
Range	1.0	17.1	6.3	2.83	0.53	0.007	0.32	0.100	2.20	0.000	0.020	1.86
Minimum	7.7	2.8	9.8	0.29	0.00	0.000	0.22	0.000	0.00	0.000	0.000	0.64
Maximum	8.7	19.9	16.1	3.12	0.53	0.007	0.54	0.100	2.20	0.000	0.020	2.50
Count	72	75	75	38	72	72	75	75	75	75	75	75
Confidence Level(95.0%)	0.0	1.0	0.3	0.23	0.02	0.000	0.02	0.003	0.07	0.000	0.001	0.10

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.7	12.7	170.8	170.1	0.2	0.7	0.8	297	12.3	4	0.2	ND
Standard Error	0.8	0.2	4.7	4.7	0.1	0.2	0.1	3	0.3	4	0.1	ND
Median	6.8	12.5	170.0	168.5	0.0	0.5	0.7	286	11.0	0	0.0	ND
Mode	14.0	12.0	160.0	160.0	0.0	0.0	0.6	278	11.0	0	0.0	ND
Standard Deviation	3.8	0.7	17.1	17.1	0.4	0.7	0.5	28	2.7	18	0.4	ND
Sample Variance	14.2	0.5	291.0	292.3	0.2	0.5	0.2	794	7.2	323	0.2	ND
Kurtosis	-1.1	-0.5	-0.6	-0.6	0.6	-1.8	2.7	18	0.0	25	13.7	ND
Skewness	0.6	0.5	0.7	0.7	1.6	0.3	1.6	3	1.1	5	3.6	ND
Range	11.0	2.5	50.0	51.4	1.1	1.9	2.3	197	9.8	90	2.0	0
Minimum	3.0	11.5	150.0	148.6	0.0	0.0	0.3	273	9.2	0	0.0	0
Maximum	14.0	14.0	200.0	200.0	1.1	1.9	2.6	470	19.0	90	2.0	0
Count	25	22	13	13	14	14	75	75	75	25	25	0
Confidence Level(95.0%)	1.6	0.3	10.3	10.3	0.3	0.4	0.1	6	0.6	7	0.2	ND

ND = No Data

Provisional MMSD Water Quality Data

SOUTH SHORE - SITE 11
WATER QUALITY DATA - 2010

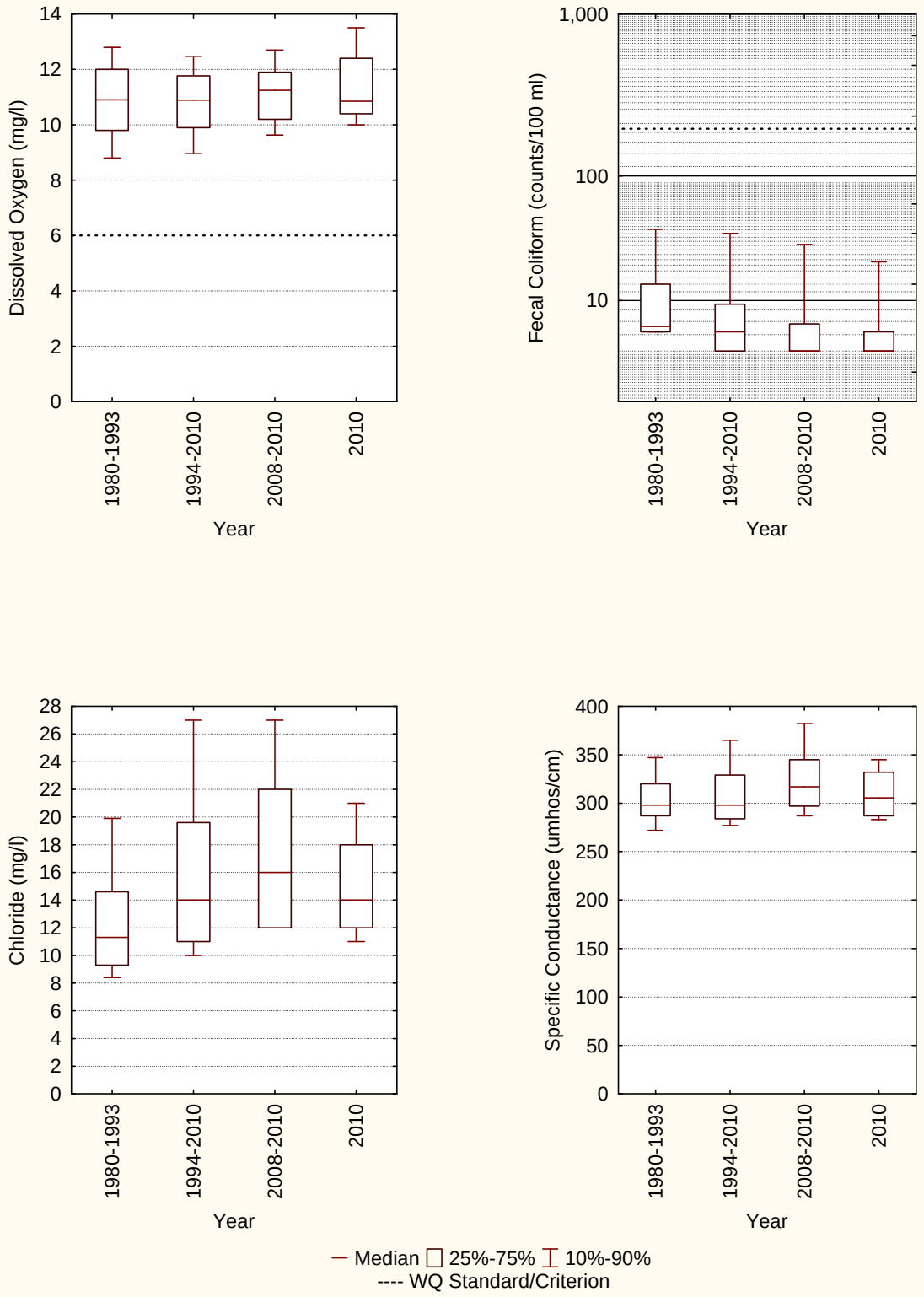
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	33.44	11.68	0.0	3.3	2.7	0.8	0.0	6.8	0.1	0.7	1.0	ND
Standard Error	0.33	0.17	0.0	0.3	0.7	0.2	0.0	1.1	0.1	0.3	0.6	ND
Median	33.00	12.00	0.0	2.9	2.0	0.0	0.0	8.7	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.64	0.85	0.0	1.3	3.4	1.2	0.0	5.4	0.4	1.3	2.8	ND
Sample Variance	2.67	0.73	0.0	1.7	11.7	1.5	0.0	28.8	0.1	1.6	7.7	ND
Kurtosis	-0.56	-0.82	ND	2.0	4.2	0.7	ND	-0.6	9.6	1.9	4.9	ND
Skewness	-0.16	0.26	ND	1.6	1.9	1.3	ND	0.0	3.3	1.7	2.5	ND
Range	6.00	3.00	0.0	5.0	14.0	4.0	0.0	19.0	1.3	4.1	9.5	0.0
Minimum	30.00	10.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	13.00	0.0	7.0	14.0	4.0	0.0	19.0	1.3	4.1	9.5	0.0
Count	25	25	25	25	25	25	25	25	25	25	23	0
Confidence Level(95.0%)	0.67	0.35	0.0	0.5	1.4	0.5	0.0	2.2	0.1	0.5	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	130	111	0.0	2.2	28.3	25.7	2.5	ND
Standard Error	1	0	0.0	0.3	0.3	0.3	0.0	ND
Median	130	110	0.0	2.5	28.0	25.0	2.4	ND
Mode	130	110	0.0	0.0	28.0	25.0	2.4	ND
Standard Deviation	7	3	0.0	1.0	2.1	2.1	0.3	ND
Sample Variance	50	7	0.0	1.0	4.3	4.3	0.1	ND
Kurtosis	-1	10	ND	1.9	11.3	14.3	0.1	ND
Skewness	0	3	ND	-1.6	2.5	3.0	0.9	ND
Range	20	10	0.0	3.2	13.0	13.0	1.0	0.0
Minimum	120	110	0.0	0.0	25.0	23.0	2.1	0.0
Maximum	140	120	0.0	3.2	38.0	36.0	3.1	0.0
Count	25	42	14	14	42	42	42	0
Confidence Level(95.0%)	3	1	0.0	0.6	0.6	0.6	0.1	ND

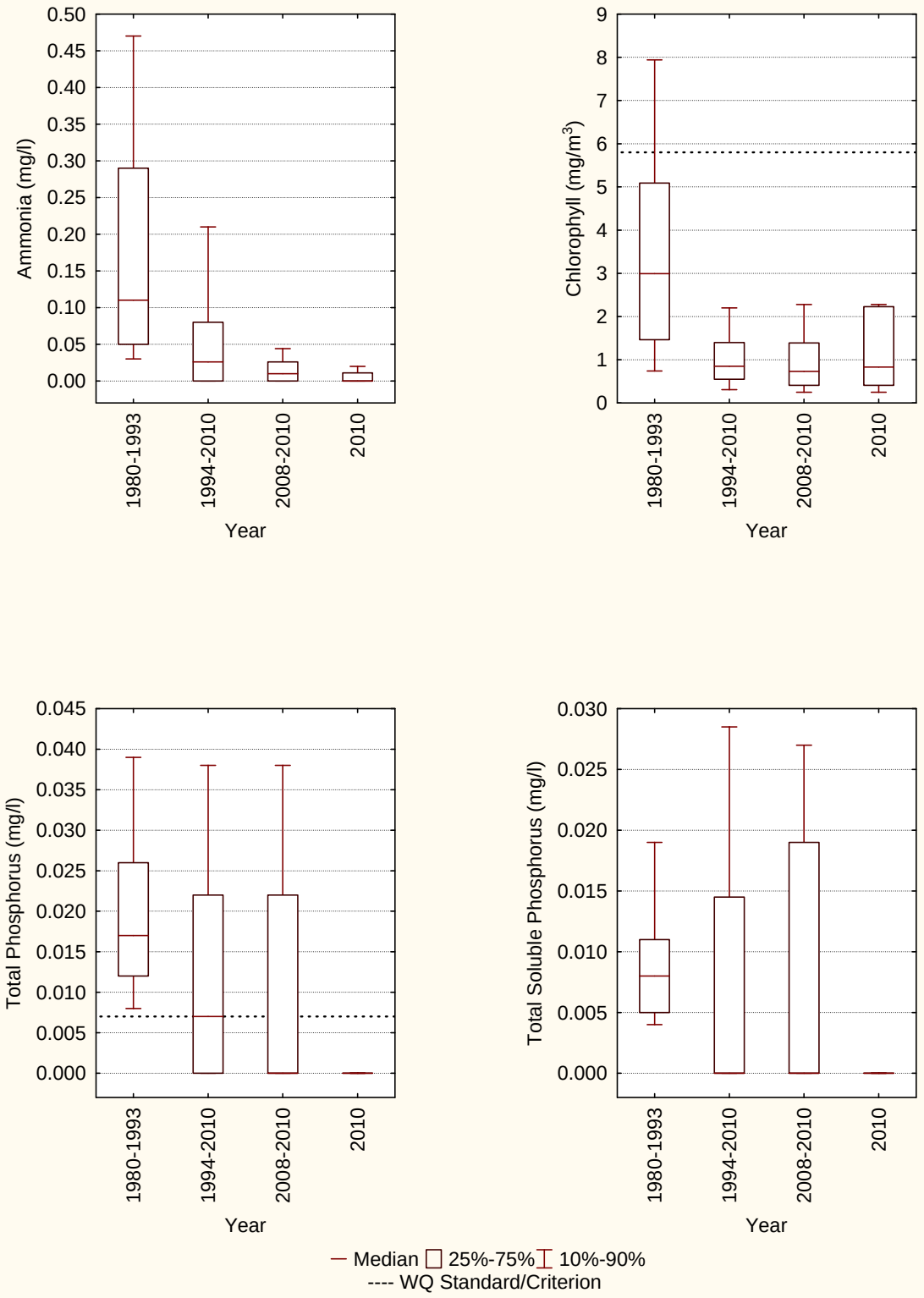
ND = No Data

Provisional MMSD Water Quality Data

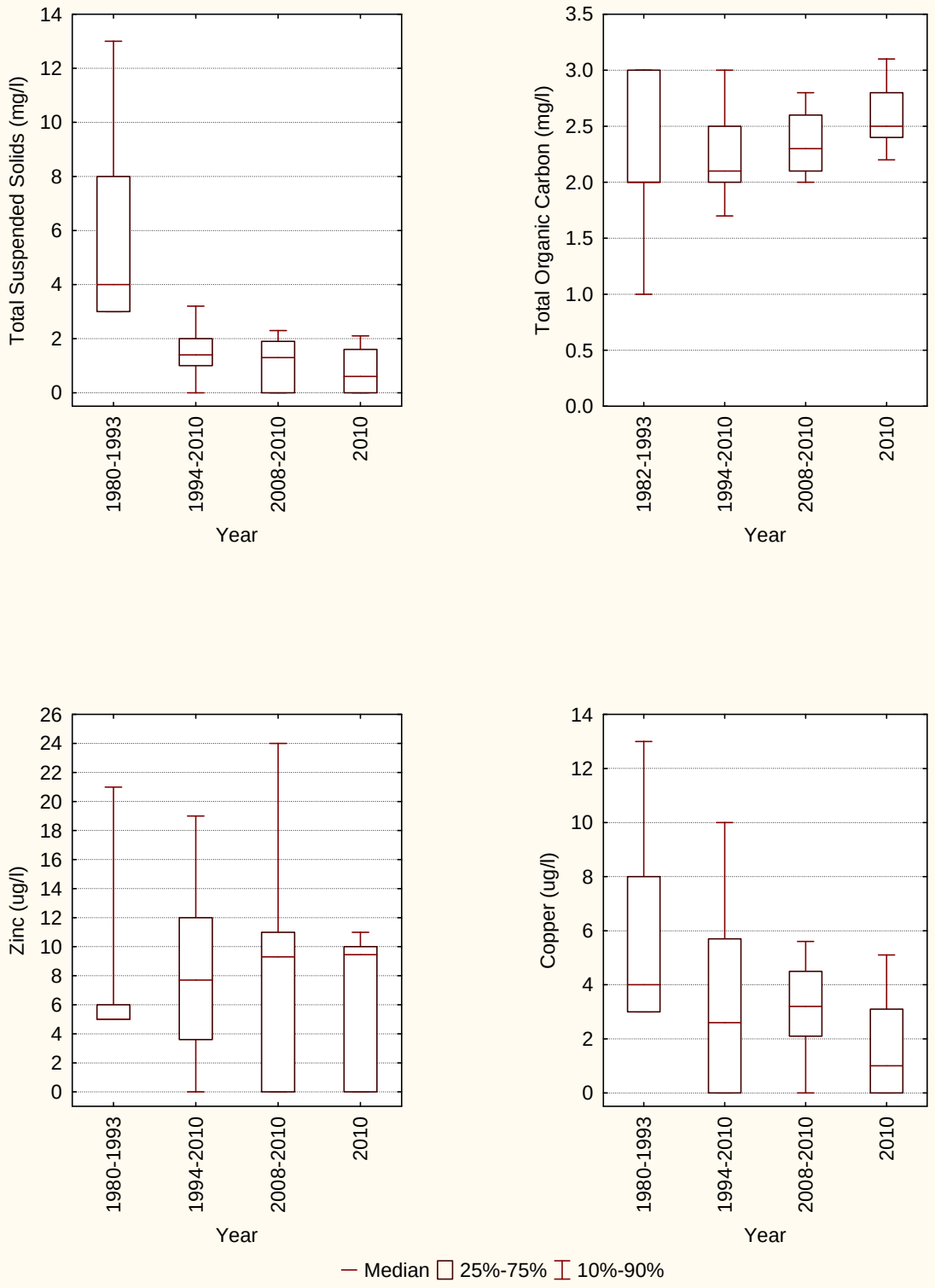
MMSD Water Quality Monitoring Program Data
South Shore, Site SS-12



MMSD Water Quality Monitoring Program Data
South Shore, Site SS-12



MMSD Water Quality Monitoring Program Data
South Shore, Site SS-12



SOUTH SHORE - SITE 12
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.0	11.3	1.35	0.44	0.005	0.43	0.006	0.19	0.003	0.000	1.73
Standard Error	0.0	0.7	0.2	0.33	0.02	0.000	0.02	0.001	0.04	0.002	0.000	0.07
Median	8.1	12.6	10.9	0.83	0.40	0.005	0.40	0.000	0.00	0.000	0.000	1.75
Mode	7.8	13.7	12.4	ND	0.46	0.005	0.32	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	4.3	1.3	1.08	0.14	0.002	0.14	0.009	0.25	0.013	0.000	0.43
Sample Variance	0.1	18.9	1.7	1.17	0.02	0.000	0.02	0.000	0.06	0.000	0.000	0.19
Kurtosis	-0.7	-0.5	1.3	-0.69	-0.36	0.672	-0.15	0.021	5.48	23.090	ND	-0.23
Skewness	0.3	-0.4	1.2	0.64	0.80	0.696	0.93	1.153	1.97	4.791	ND	0.24
Range	0.9	16.3	5.9	3.27	0.52	0.012	0.53	0.029	1.20	0.071	0.000	1.84
Minimum	7.6	3.0	9.7	0.18	0.25	0.000	0.25	0.000	0.00	0.000	0.000	0.76
Maximum	8.5	19.3	15.6	3.45	0.77	0.012	0.78	0.029	1.20	0.071	0.000	2.60
Count	42	42	42	11	39	39	42	42	41	42	42	42
Confidence Level(95.0%)	0.1	1.4	0.4	0.73	0.05	0.001	0.04	0.003	0.08	0.004	0.000	0.13

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.9	11.3	178.5	177.6	0.1	0.8	1.0	313	15.3	5	0.3	ND
Standard Error	0.9	0.1	6.2	6.4	0.1	0.2	0.1	4	0.6	3	0.1	ND
Median	5.9	11.0	180.0	180.0	0.0	0.6	0.9	306	14.0	0	0.0	ND
Mode	11.0	11.0	200.0	200.0	0.0	0.0	0.4	295	12.0	0	0.0	ND
Standard Deviation	3.5	0.5	22.3	23.0	0.3	0.9	0.5	29	4.2	12	0.6	ND
Sample Variance	12.0	0.2	497.4	527.0	0.1	0.8	0.2	834	17.3	153	0.3	ND
Kurtosis	-1.7	-1.4	-1.3	-1.3	14.0	-1.7	2.6	1	0.2	6	2.0	ND
Skewness	0.4	0.7	-0.5	-0.5	3.7	0.3	1.4	1	0.9	3	1.8	ND
Range	9.0	1.3	60.0	61.8	1.2	2.2	2.3	127	17.0	42	1.6	0
Minimum	3.0	10.7	140.0	138.2	0.0	0.0	0.4	277	10.0	0	0.0	0
Maximum	12.0	12.0	200.0	200.0	1.2	2.2	2.8	404	27.0	42	1.6	0
Count	14	13	13	13	14	14	42	42	42	14	14	0
Confidence Level(95.0%)	2.0	0.3	13.5	13.9	0.2	0.5	0.2	9	1.3	7	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

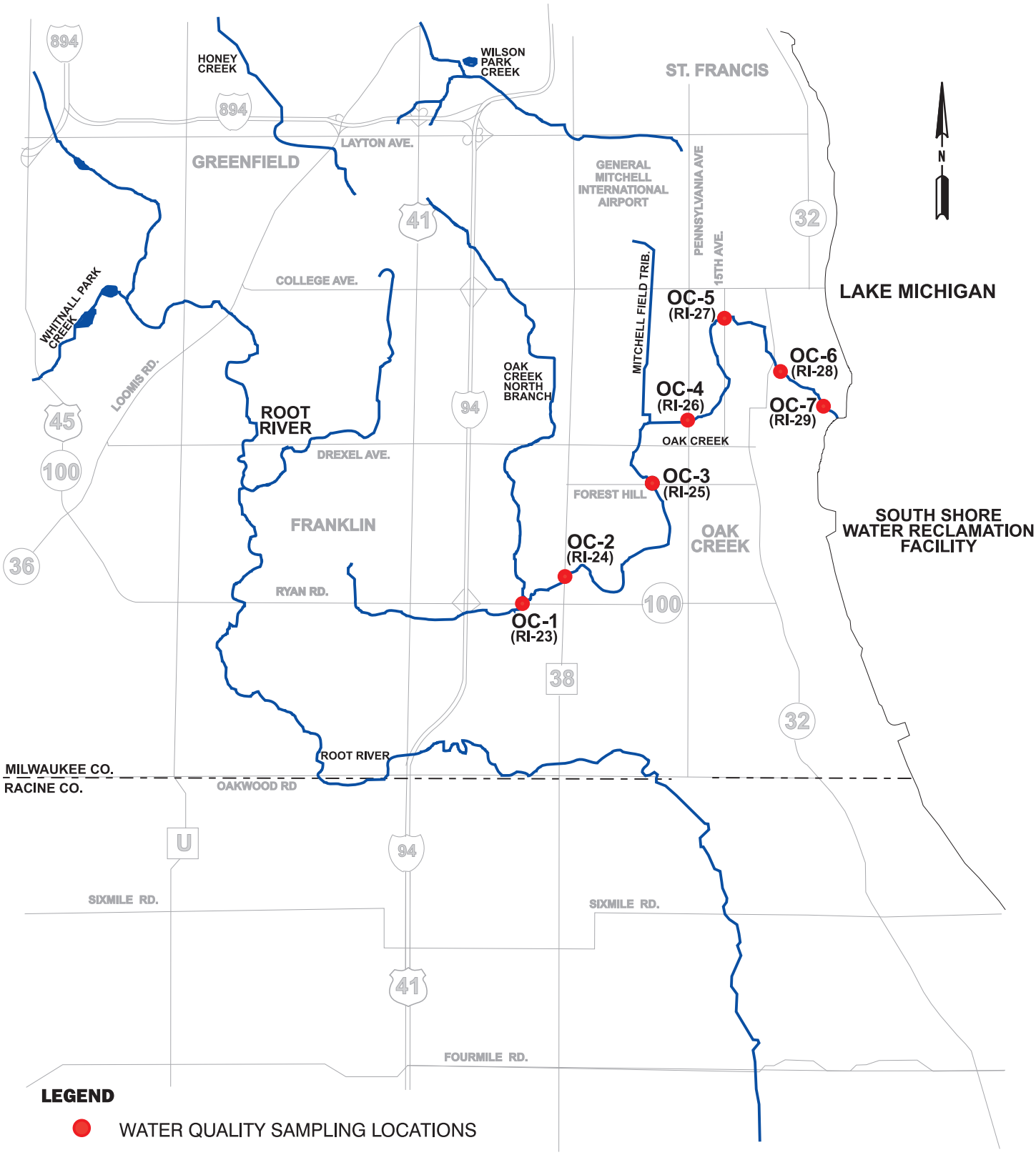
SOUTH SHORE - SITE 12
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.29	11.93	0.0	3.4	2.4	1.0	0.0	6.9	0.1	0.6	0.5	ND
Standard Error	0.49	0.22	0.0	0.3	1.1	0.3	0.0	1.2	0.1	0.4	0.5	ND
Median	34.00	12.00	0.0	3.5	1.0	0.9	0.0	9.5	0.0	0.0	0.0	ND
Mode	34.00	12.00	0.0	ND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.82	0.83	0.0	1.0	4.0	1.0	0.0	4.6	0.3	1.7	1.7	ND
Sample Variance	3.30	0.69	0.0	0.9	16.0	1.1	0.0	21.2	0.1	2.8	2.8	ND
Kurtosis	-1.34	-1.51	ND	-0.6	8.6	-2.0	ND	-1.1	14.0	8.4	13.0	ND
Skewness	0.22	0.14	ND	0.4	2.7	0.2	ND	-0.9	3.7	2.9	3.6	ND
Range	5.00	2.00	0.0	3.3	15.0	2.5	0.0	11.0	1.0	5.9	6.0	0.0
Minimum	32.00	11.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	37.00	13.00	0.0	5.3	15.0	2.5	0.0	11.0	1.0	5.9	6.0	0.0
Count	14	14	14	14	14	14	14	14	14	14	13	0
Confidence Level(95.0%)	1.05	0.48	0.0	0.6	2.3	0.6	0.0	2.7	0.2	1.0	1.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	135	113	0.0	3.0	28.7	26.1	2.6	ND
Standard Error	3	1	0.0	0.1	0.3	0.3	0.1	ND
Median	135	110	0.0	3.0	28.0	26.0	2.5	ND
Mode	130	110	0.0	3.0	28.0	25.0	2.4	ND
Standard Deviation	9	6	0.0	0.5	2.0	1.8	0.5	ND
Sample Variance	88	36	0.0	0.2	4.0	3.3	0.2	ND
Kurtosis	-1	9	ND	-0.5	2.2	0.9	6.2	ND
Skewness	0	3	ND	0.3	1.2	1.0	-0.9	ND
Range	30	30	0.0	1.6	10.0	8.0	3.1	0.0
Minimum	120	110	0.0	2.3	25.0	23.0	0.7	0.0
Maximum	150	140	0.0	3.9	35.0	31.0	3.8	0.0
Count	14	42	14	14	42	42	42	0
Confidence Level(95.0%)	5	2	0.0	0.3	0.6	0.6	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data



LEGEND

● WATER QUALITY SAMPLING LOCATIONS

(RI-23) PRIOR TO 1998, SAMPLE LOCATIONS USED "RI" DESIGNATION

Preserving The Environment • Improving Water Quality

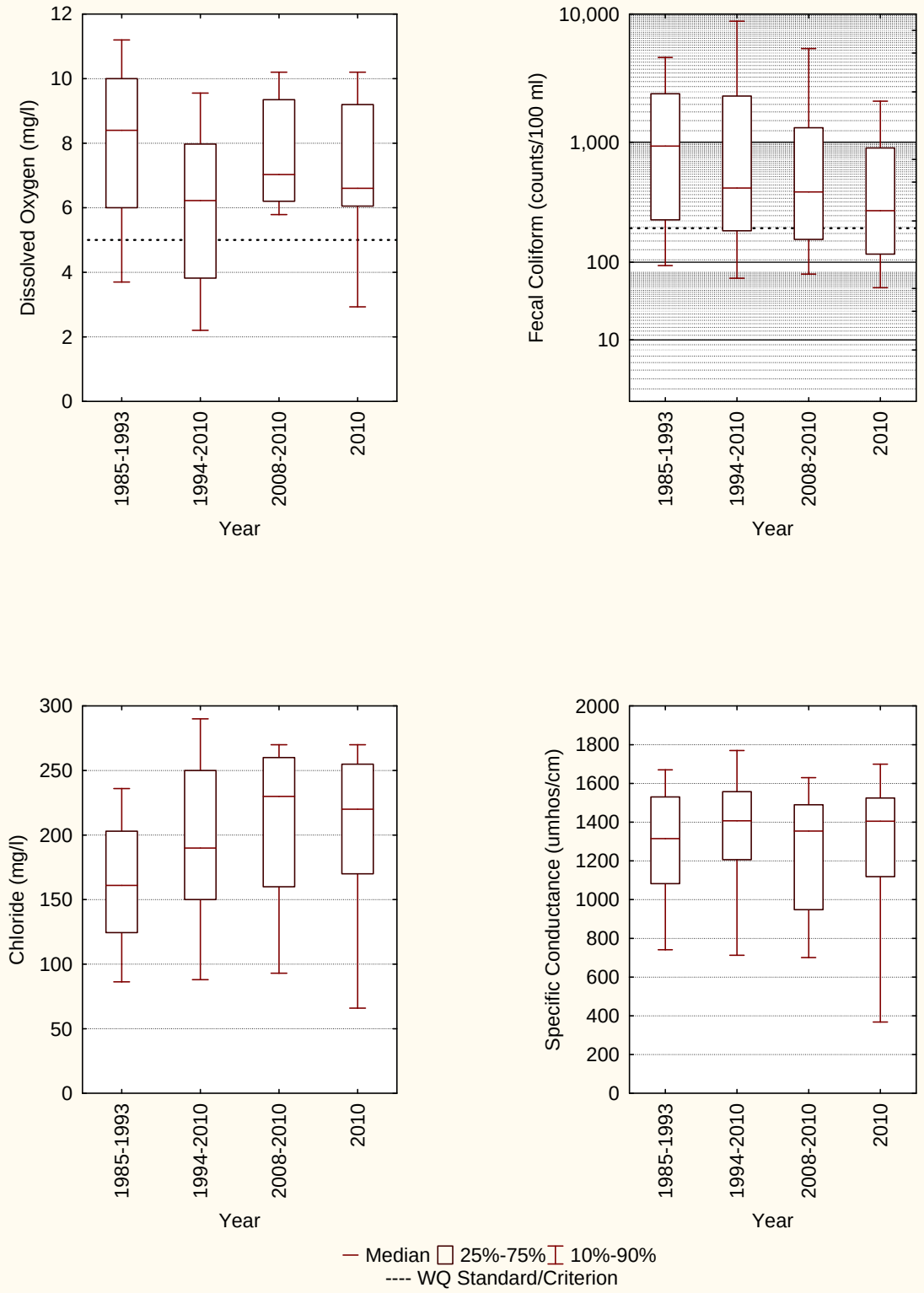
FIGURE 11

OAK CREEK (OC) SURVEY
WATER QUALITY SAMPLING LOCATIONS

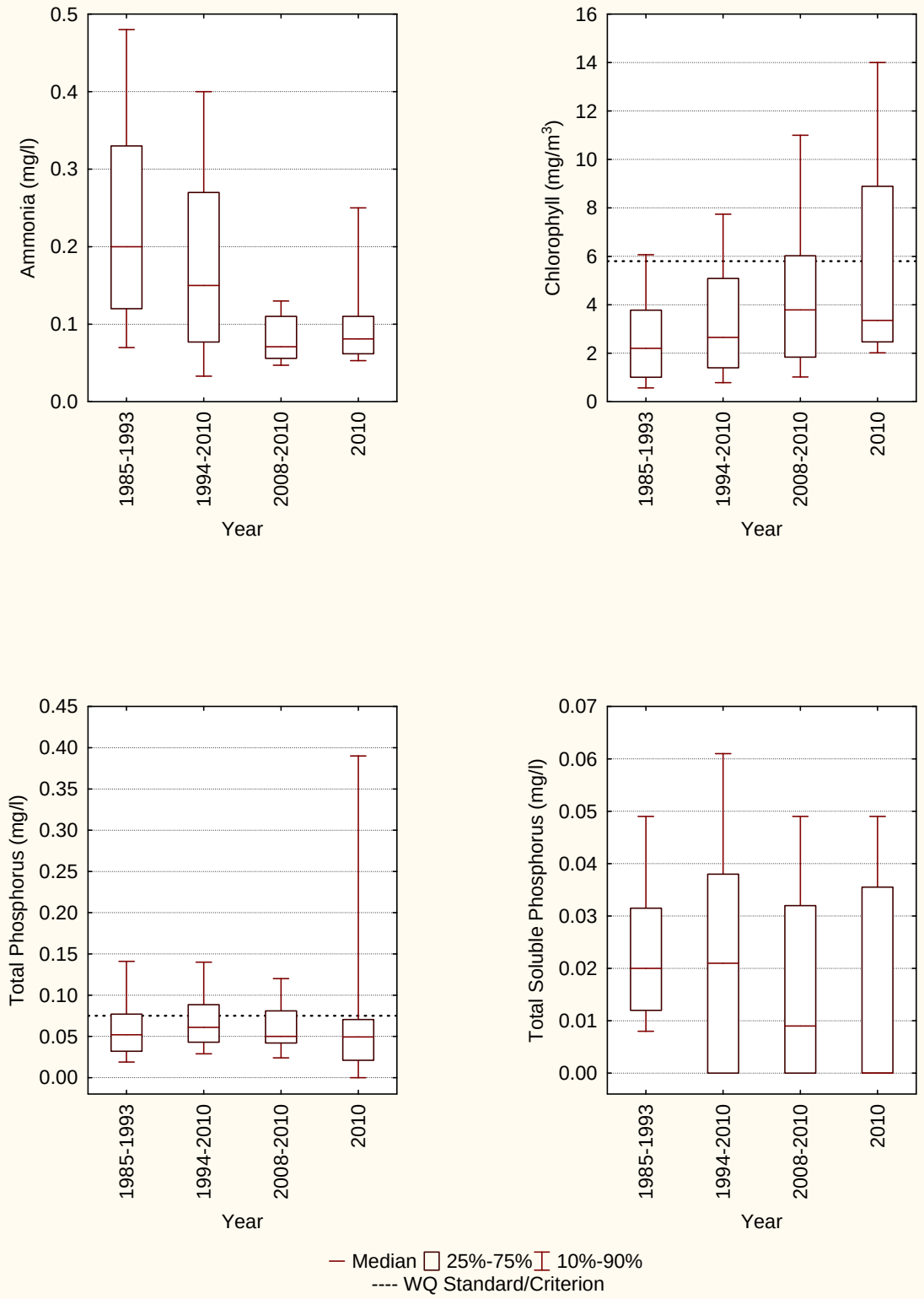
7/28/09

02-034 pg10 REPORT

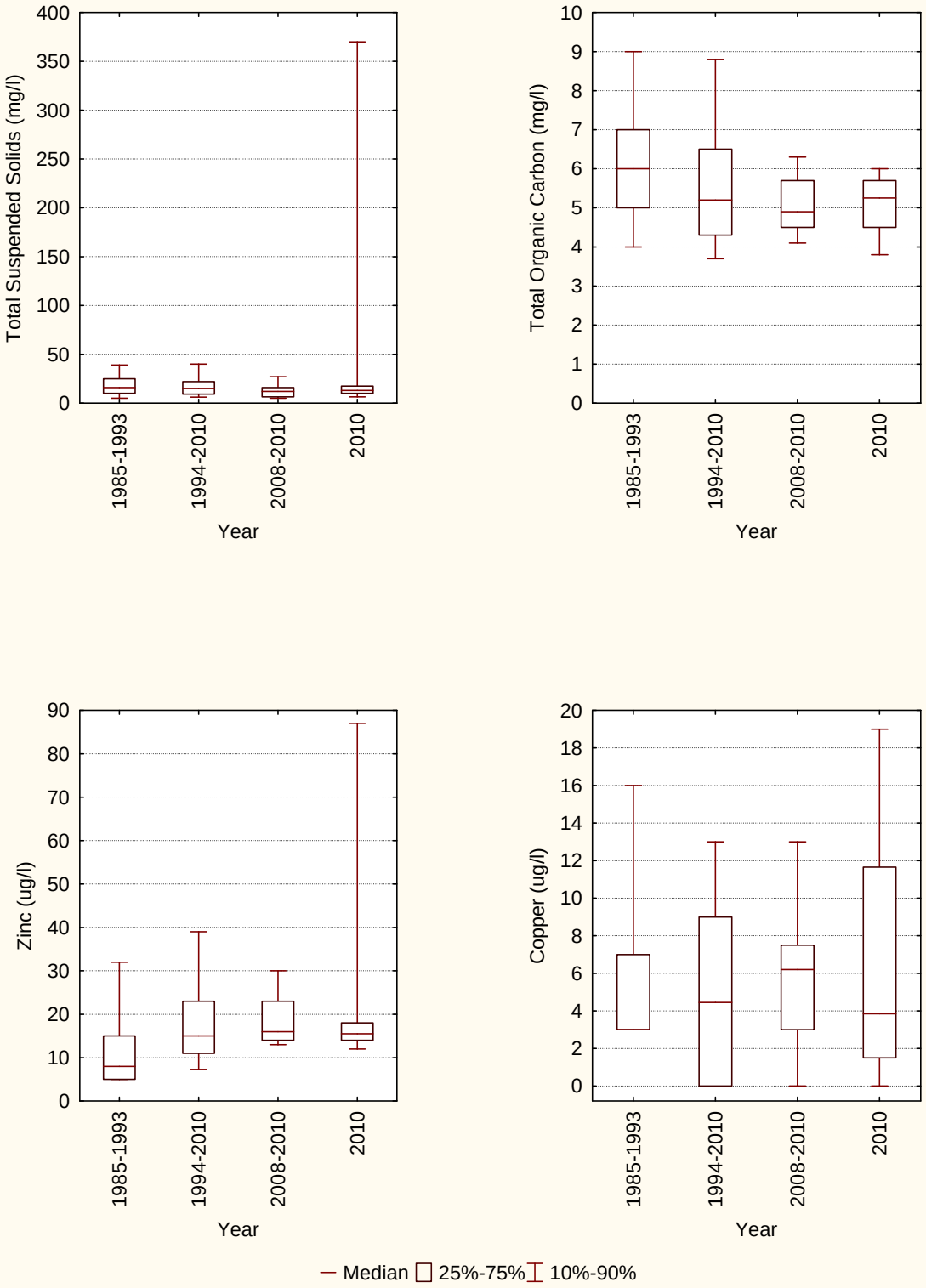
MMSD Water Quality Monitoring Program Data
Oak Creek at Ryan Rd., Site OC-01



MMSD Water Quality Monitoring Program Data
Oak Creek at Ryan Rd., Site OC-01



MMSD Water Quality Monitoring Program Data
Oak Creek at Ryan Rd., Site OC-01



RYAN ROAD - SITE 1
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.5	14.1	7.1	5.68	0.53	0.021	0.56	0.101	0.65	0.084	0.015	ND
Standard Error	0.1	1.9	0.8	2.80	0.07	0.007	0.06	0.023	0.16	0.045	0.008	ND
Median	7.5	15.3	6.6	3.36	0.55	0.014	0.55	0.081	0.51	0.050	0.000	ND
Mode	7.7	ND	ND	ND	ND	0.012	ND	ND	ND	0.000	0.000	ND
Standard Deviation	0.2	5.5	2.4	5.59	0.18	0.020	0.18	0.064	0.44	0.127	0.021	ND
Sample Variance	0.0	30.0	5.6	31.27	0.03	0.000	0.03	0.004	0.19	0.016	0.000	ND
Kurtosis	0.4	-0.3	0.1	3.67	-1.08	4.665	-0.77	5.277	6.64	6.871	-1.371	ND
Skewness	-0.6	-0.8	-0.3	1.90	0.17	1.983	0.29	2.204	2.50	2.550	0.872	ND
Range	0.7	15.5	7.3	11.98	0.51	0.067	0.52	0.197	1.39	0.390	0.049	0.00
Minimum	7.1	4.3	2.9	2.02	0.28	0.000	0.30	0.053	0.31	0.000	0.000	0.00
Maximum	7.8	19.8	10.2	14.00	0.79	0.067	0.82	0.250	1.70	0.390	0.049	0.00
Count	8	8	8	4	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.2	4.6	2.0	8.90	0.15	0.017	0.15	0.054	0.37	0.106	0.018	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	786.3	729.1	10.4	57.2	43.0	1271	203.3	594	2.5	ND
Standard Error	ND	ND	58.2	78.0	7.9	44.7	29.7	151	23.9	247	0.2	ND
Median	ND	ND	770.0	754.0	2.5	13.0	14.4	1405	220.0	280	2.4	ND
Mode	ND	ND	730.0	ND	1.8	14.0	11.8	1480	ND	ND	ND	ND
Standard Deviation	ND	ND	164.5	220.6	22.5	126.5	84.1	428	67.5	700	0.6	ND
Sample Variance	ND	ND	27055.4	48657.7	504.9	15994.0	7070.6	183483	4553.1	489627	0.3	ND
Kurtosis	ND	ND	0.7	-0.5	8.0	8.0	8.0	2	1.6	3	-1.2	ND
Skewness	ND	ND	-0.6	-0.7	2.8	2.8	2.8	-2	-1.3	2	0.1	ND
Range	0.0	0.0	520.0	626.0	64.2	363.5	243.4	1332	204.0	2044	1.6	0
Minimum	0.0	0.0	480.0	360.0	1.8	6.5	7.6	368	66.0	56	1.7	0
Maximum	0.0	0.0	1000.0	986.0	66.0	370.0	251.0	1700	270.0	2100	3.3	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	137.5	184.4	18.8	105.7	70.3	358	56.4	585	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

RYAN ROAD - SITE 1
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	80.88	38.38	0.1	6.3	6.6	5.0	2.3	24.3	0.0	1.6	1.0	ND
Standard Error	7.71	4.11	0.1	1.7	2.5	1.3	1.5	9.0	0.0	0.9	1.0	ND
Median	88.50	41.50	0.0	4.9	3.9	3.9	0.0	15.5	0.0	0.0	0.0	ND
Mode	ND	ND	0.0	ND	0.0	ND	0.0	15.0	0.0	0.0	0.0	ND
Standard Deviation	21.80	11.62	0.3	4.8	7.2	3.7	4.4	25.4	0.0	2.5	2.9	ND
Sample Variance	475.27	135.13	0.1	23.4	51.2	13.8	19.1	647.6	0.0	6.1	8.2	ND
Kurtosis	2.33	0.90	8.0	6.9	-0.3	6.9	1.3	7.8	ND	-0.5	8.0	ND
Skewness	-1.62	-1.12	2.8	2.6	1.1	2.6	1.6	2.8	ND	1.1	2.8	ND
Range	65.00	36.00	0.7	14.5	19.0	11.3	11.0	75.0	0.0	5.9	8.1	0.0
Minimum	35.00	16.00	0.0	3.5	0.0	2.7	0.0	12.0	0.0	0.0	0.0	0.0
Maximum	100.00	52.00	0.7	18.0	19.0	14.0	11.0	87.0	0.0	5.9	8.1	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	18.23	9.72	0.2	4.0	6.0	3.1	3.7	21.3	0.0	2.1	2.4	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	363	245	0.6	6.3	64.4	59.4	5.1	5.0
Standard Error	37	32	0.6	1.7	6.8	6.9	0.3	0.2
Median	395	280	0.0	4.6	73.5	67.5	5.3	5.0
Mode	ND	280	0.0	4.2	74.0	ND	5.7	4.9
Standard Deviation	106	90	1.7	4.8	19.2	19.6	0.8	0.7
Sample Variance	11136	8122	2.9	23.0	366.8	383.7	0.6	0.5
Kurtosis	2	5	8.0	7.4	3.6	3.6	-1.0	0.2
Skewness	-1	-2	2.8	2.7	-1.9	-1.9	-0.6	-0.7
Range	330	264	4.8	14.5	57.0	58.0	2.2	2.1
Minimum	150	36	0.0	3.5	22.0	16.0	3.8	3.7
Maximum	480	300	4.8	18.0	79.0	74.0	6.0	5.8
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	88	75	1.4	4.0	16.0	16.4	0.7	0.6

ND = No Data

Provisional MMSD Water Quality Data

HIGHWAY 38 - SITE 2
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	14.3	8.1	7.05	0.32	0.019	0.34	0.051	0.64	0.091	0.026	ND
Standard Error	0.0	2.3	0.8	3.03	0.06	0.006	0.07	0.026	0.14	0.029	0.010	ND
Median	7.8	15.9	7.4	5.72	0.35	0.014	0.38	0.029	0.58	0.082	0.024	ND
Mode	7.8	ND	ND	ND	0.53	ND	0.55	0.000	ND	0.083	0.000	ND
Standard Deviation	0.1	6.4	2.2	6.06	0.18	0.016	0.19	0.075	0.38	0.082	0.028	ND
Sample Variance	0.0	41.1	4.9	36.77	0.03	0.000	0.04	0.006	0.15	0.007	0.001	ND
Kurtosis	-1.1	1.2	0.2	-1.01	-1.72	5.451	-1.87	6.529	4.25	5.282	-2.652	ND
Skewness	-0.3	-1.2	1.0	0.86	-0.21	2.235	-0.26	2.473	1.82	2.023	0.065	ND
Range	0.4	19.4	6.6	13.23	0.45	0.049	0.47	0.230	1.28	0.280	0.058	0.00
Minimum	7.5	1.7	5.7	1.77	0.08	0.008	0.08	0.000	0.22	0.000	0.000	0.00
Maximum	7.9	21.1	12.3	15.00	0.53	0.057	0.55	0.230	1.50	0.280	0.058	0.00
Count	8	8	8	4	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.1	5.4	1.9	9.65	0.15	0.014	0.16	0.063	0.32	0.069	0.023	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	693.8	658.9	5.7	34.9	32.7	1160	211.3	666	2.6	ND
Standard Error	ND	ND	43.8	56.4	3.9	25.1	21.2	99	14.8	243	0.2	ND
Median	ND	ND	680.0	670.4	2.4	12.5	12.8	1195	210.0	435	2.6	ND
Mode	ND	ND	680.0	ND	0.0	ND	ND	ND	210.0	ND	ND	ND
Standard Deviation	ND	ND	123.9	159.6	11.1	71.0	59.9	280	41.9	687	0.4	ND
Sample Variance	ND	ND	15341.1	25467.6	123.4	5042.5	3582.3	78504	1755.4	471484	0.2	ND
Kurtosis	ND	ND	2.8	1.0	7.7	7.8	7.7	1	1.2	2	-0.4	ND
Skewness	ND	ND	1.1	0.2	2.7	2.8	2.8	-1	0.6	2	0.1	ND
Range	0.0	0.0	430.0	535.5	33.0	207.5	175.0	932	140.0	2000	1.3	0
Minimum	0.0	0.0	520.0	410.0	0.0	2.5	5.0	638	150.0	100	2.0	0
Maximum	0.0	0.0	950.0	945.5	33.0	210.0	180.0	1570	290.0	2100	3.3	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	103.5	133.4	9.3	59.4	50.0	234	35.0	574	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

HIGHWAY 38 - SITE 2
OAK CREEK
WATER QUALITY DATA - 2010

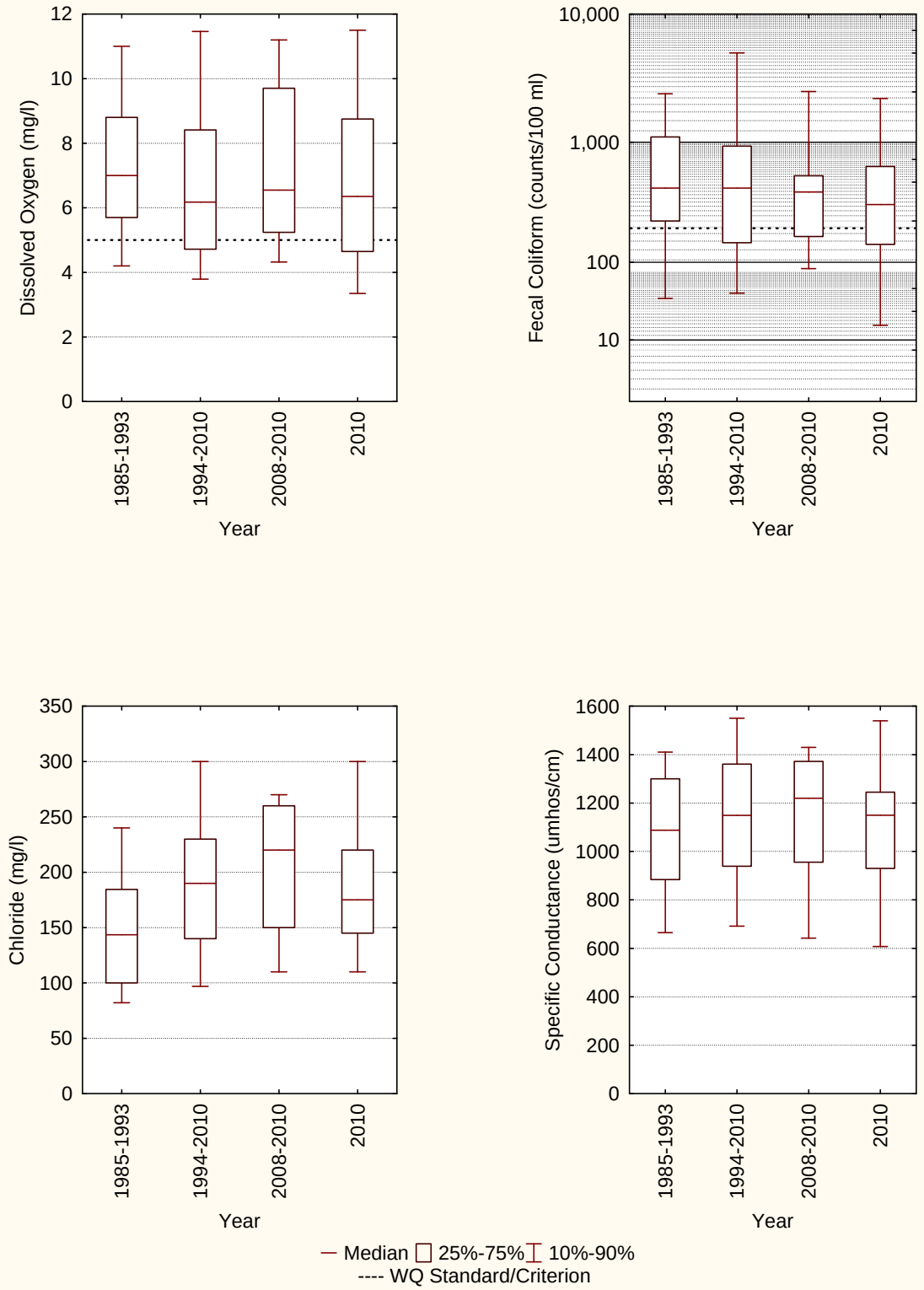
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	69.13	31.63	0.1	6.3	9.1	4.6	1.3	24.1	0.0	1.6	0.9	ND
Standard Error	5.69	2.83	0.1	1.4	3.6	1.0	1.0	7.6	0.0	0.9	0.9	ND
Median	73.00	33.00	0.0	5.4	6.6	3.8	0.0	14.5	0.0	0.0	0.0	ND
Mode	73.00	41.00	0.0	3.4	13.0	ND	0.0	14.0	0.0	0.0	0.0	ND
Standard Deviation	16.08	8.02	0.2	4.0	10.2	2.9	2.9	21.4	0.0	2.5	2.7	ND
Sample Variance	258.70	64.27	0.0	15.7	105.0	8.3	8.7	457.1	0.0	6.4	7.0	ND
Kurtosis	1.04	-0.29	8.0	3.4	2.8	4.0	7.0	4.7	ND	2.8	8.0	ND
Skewness	-0.81	-0.55	2.8	1.8	1.6	1.9	2.6	2.1	ND	1.7	2.8	ND
Range	53.00	23.00	0.6	12.0	31.0	8.9	8.4	64.4	0.0	7.0	7.5	0.0
Minimum	39.00	18.00	0.0	3.0	0.0	2.1	0.0	8.6	0.0	0.0	0.0	0.0
Maximum	92.00	41.00	0.6	15.0	31.0	11.0	8.4	73.0	0.0	7.0	7.5	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	13.45	6.70	0.2	3.3	8.6	2.4	2.5	17.9	0.0	2.1	2.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	303	223	0.5	5.9	61.0	54.8	6.2	6.2
Standard Error	26	28	0.5	1.0	6.0	5.9	0.2	0.3
Median	320	245	0.0	4.9	65.5	59.5	6.3	6.1
Mode	320	270	0.0	ND	75.0	ND	5.9	ND
Standard Deviation	72	78	1.4	2.9	16.9	16.6	0.7	0.7
Sample Variance	5221	6112	2.0	8.7	284.0	274.8	0.4	0.5
Kurtosis	1	3	8.0	7.0	2.0	2.2	0.8	0.3
Skewness	-1	-2	2.8	2.6	-1.5	-1.6	-0.1	0.4
Range	230	246	4.0	8.9	49.0	49.0	2.2	2.3
Minimum	170	54	0.0	4.1	26.0	20.0	5.1	5.1
Maximum	400	300	4.0	13.0	75.0	69.0	7.3	7.4
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	60	65	1.2	2.5	14.1	13.9	0.5	0.6

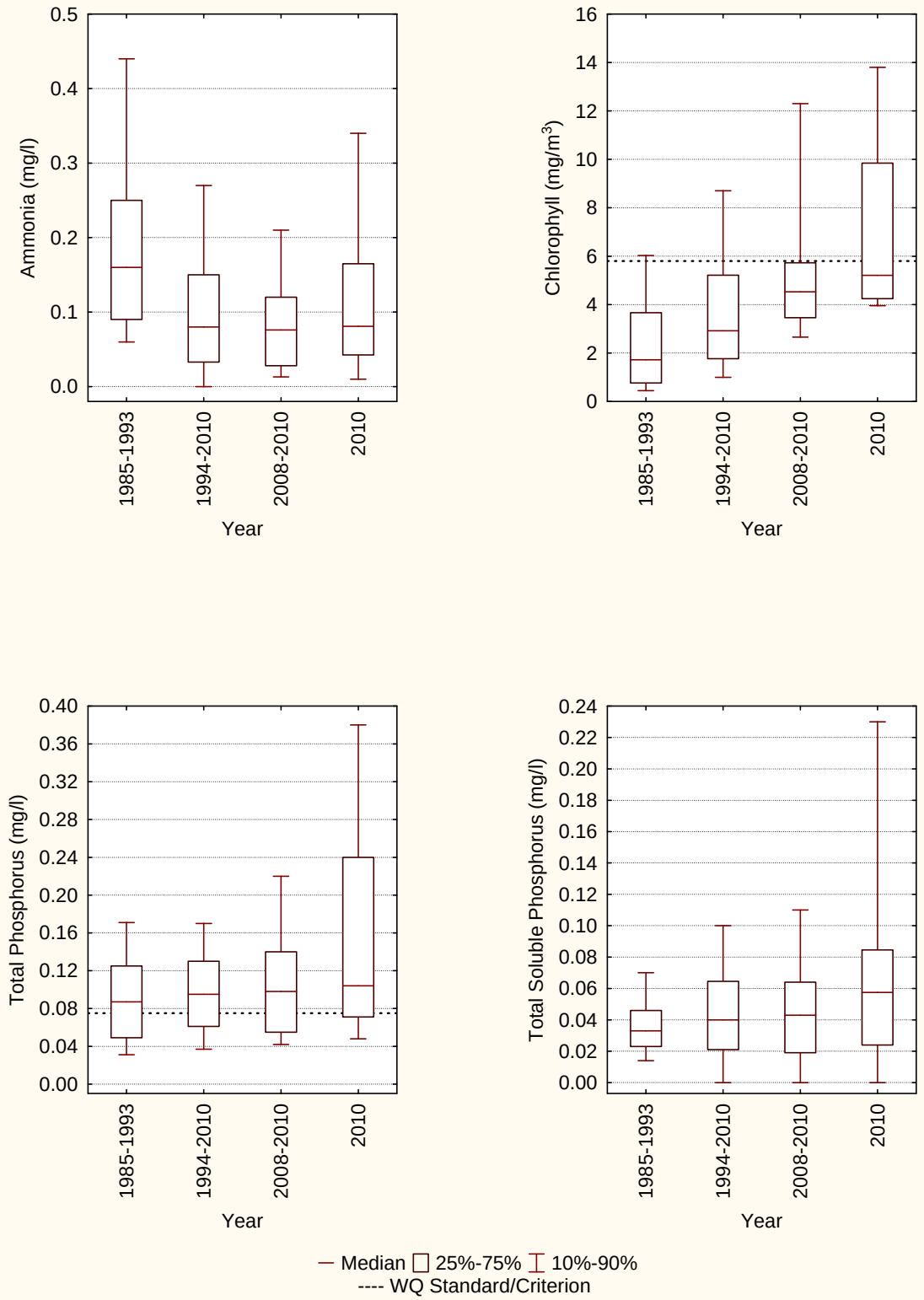
ND = No Data

Provisional MMSD Water Quality Data

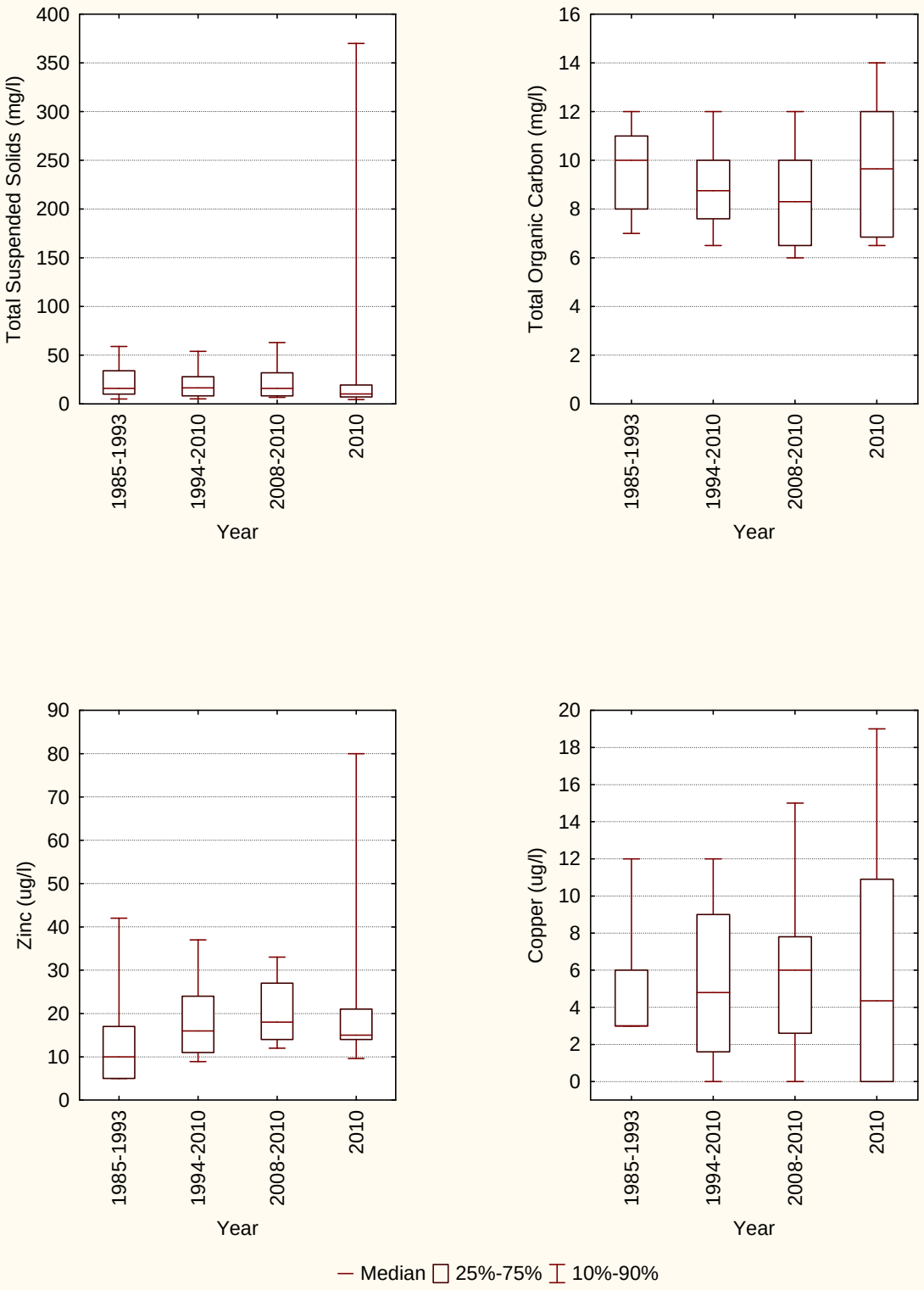
MMSD Water Quality Monitoring Program Data
Oak Creek at Forest Hill Rd., Site OC-03



MMSD Water Quality Monitoring Program Data
Oak Creek at Forest Hill Rd., Site OC-03



MMSD Water Quality Monitoring Program Data
Oak Creek at Forest Hill Rd., Site OC-03



FOREST HILL ROAD - SITE 3
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	14.7	6.8	7.05	0.23	0.023	0.25	0.116	1.02	0.157	0.070	ND
Standard Error	0.0	2.4	1.0	2.29	0.05	0.007	0.06	0.039	0.19	0.044	0.026	ND
Median	7.7	16.0	6.4	5.21	0.22	0.019	0.24	0.081	0.87	0.104	0.058	ND
Mode	7.7	ND	ND	ND	ND	ND	0.07	ND	ND	ND	0.000	ND
Standard Deviation	0.1	6.7	2.8	4.58	0.15	0.020	0.16	0.109	0.55	0.125	0.073	ND
Sample Variance	0.0	45.2	7.8	20.94	0.02	0.000	0.03	0.012	0.30	0.016	0.005	ND
Kurtosis	0.0	0.8	-0.5	3.34	-1.32	6.038	-1.67	1.807	-0.77	-0.017	3.647	ND
Skewness	-0.6	-1.0	0.5	1.82	0.30	2.345	0.20	1.463	0.62	1.223	1.671	ND
Range	0.4	20.6	8.2	9.84	0.41	0.063	0.42	0.330	1.57	0.332	0.230	0.00
Minimum	7.4	1.7	3.4	3.96	0.06	0.008	0.07	0.010	0.33	0.048	0.000	0.00
Maximum	7.8	22.3	11.5	13.80	0.47	0.071	0.49	0.340	1.90	0.380	0.230	0.00
Count	8	8	8	4	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.1	5.6	2.3	7.28	0.13	0.017	0.14	0.091	0.46	0.104	0.061	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	675.0	619.0	9.4	56.0	45.1	1100	186.3	552	2.4	ND
Standard Error	ND	ND	45.3	58.0	7.1	44.9	33.0	99	21.5	254	0.2	ND
Median	ND	ND	705.0	630.3	2.3	10.3	11.7	1150	175.0	315	2.5	ND
Mode	ND	ND	ND	ND	ND	ND	ND	1220	150.0	ND	ND	ND
Standard Deviation	ND	ND	128.2	164.1	20.1	127.0	93.4	281	60.9	719	0.6	ND
Sample Variance	ND	ND	16428.6	26929.8	403.0	16128.5	8728.0	78947	3712.5	516802	0.4	ND
Kurtosis	ND	ND	-0.5	-0.7	7.9	7.9	7.9	1	0.4	5	1.3	ND
Skewness	ND	ND	0.0	0.0	2.8	2.8	2.8	0	0.8	2	-0.6	ND
Range	0.0	0.0	390.0	503.3	58.0	365.5	269.5	932	190.0	2181	2.1	0
Minimum	0.0	0.0	490.0	370.0	1.0	4.5	6.6	608	110.0	19	1.3	0
Maximum	0.0	0.0	880.0	873.3	59.0	370.0	276.0	1540	300.0	2200	3.3	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	107.2	137.2	16.8	106.2	78.1	235	50.9	601	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

FOREST HILL ROAD - SITE 3
OAK CREEK
WATER QUALITY DATA - 2010

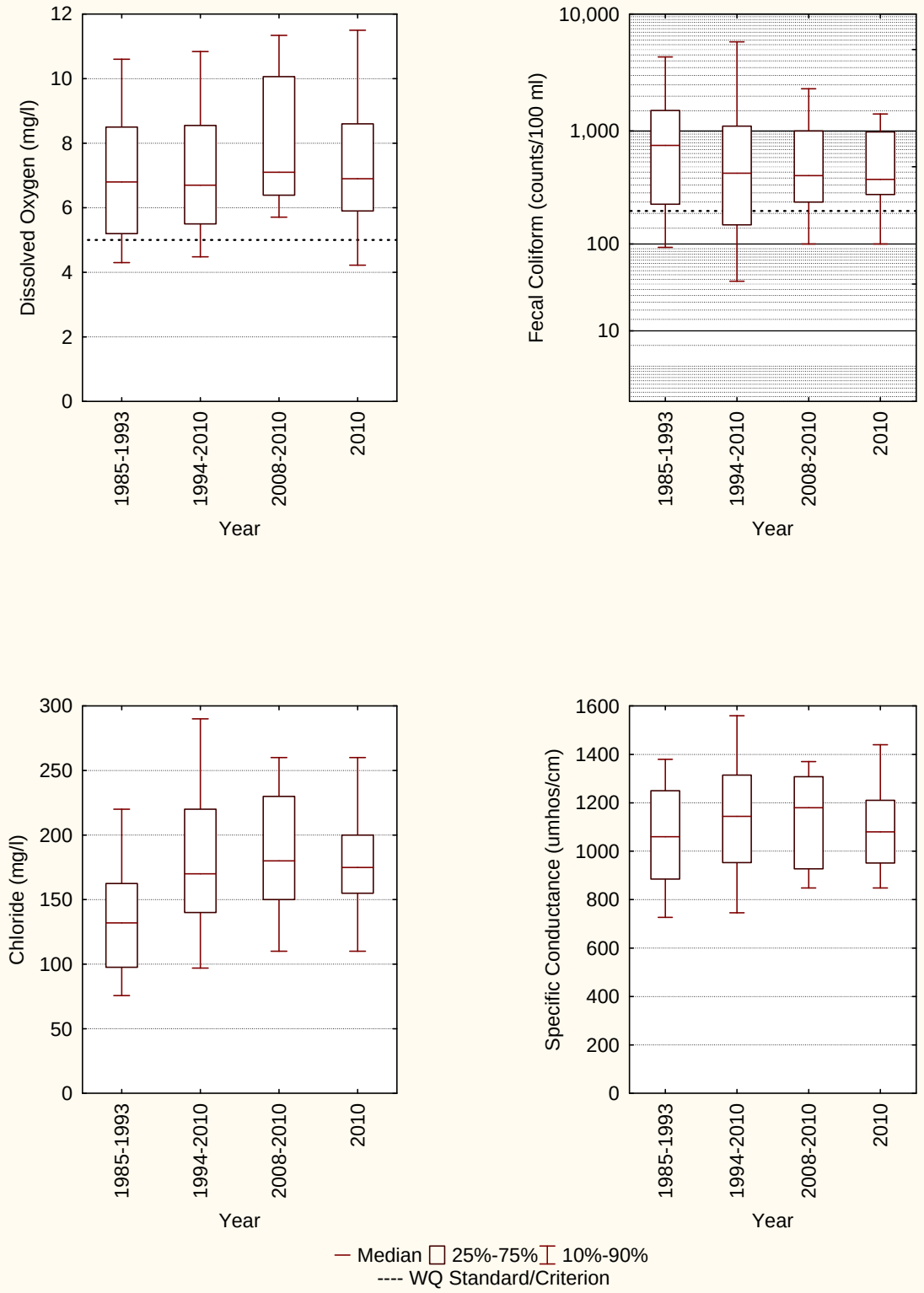
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	70.75	31.13	0.1	6.2	6.2	5.0	1.8	23.7	0.0	1.4	0.9	ND
Standard Error	5.55	2.60	0.1	1.8	2.6	1.3	1.2	8.2	0.0	1.0	0.9	ND
Median	75.50	33.50	0.0	4.3	4.4	3.7	0.0	15.0	0.0	0.0	0.0	ND
Mode	82.00	34.00	0.0	ND	0.0	3.7	0.0	15.0	0.0	0.0	0.0	ND
Standard Deviation	15.71	7.36	0.2	5.0	7.3	3.7	3.4	23.1	0.0	2.7	2.6	ND
Sample Variance	246.79	54.13	0.0	25.2	52.7	14.0	11.7	534.7	0.0	7.2	6.8	ND
Kurtosis	1.01	-0.41	8.0	5.8	-0.3	6.8	0.4	7.2	ND	1.1	8.0	ND
Skewness	-1.46	-0.93	2.8	2.4	1.0	2.6	1.5	2.7	ND	1.6	2.8	ND
Range	43.00	20.00	0.6	14.7	19.0	11.5	8.1	70.4	0.0	6.7	7.4	0.0
Minimum	40.00	19.00	0.0	3.3	0.0	2.5	0.0	9.6	0.0	0.0	0.0	0.0
Maximum	83.00	39.00	0.6	18.0	19.0	14.0	8.1	80.0	0.0	6.7	7.4	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	13.13	6.15	0.2	4.2	6.1	3.1	2.9	19.3	0.0	2.3	2.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	305	228	1.1	7.2	66.0	56.4	9.7	9.6
Standard Error	24	29	0.6	1.1	6.9	6.3	1.0	1.1
Median	330	265	0.0	5.9	72.5	62.5	9.7	9.6
Mode	330	270	0.0	5.3	69.0	68.0	6.5	12.0
Standard Deviation	68	83	1.7	3.2	19.6	17.8	2.9	3.0
Sample Variance	4657	6943	2.9	10.1	382.6	315.1	8.5	9.3
Kurtosis	0	4	0.7	2.7	2.2	3.0	-1.8	-1.7
Skewness	-1	-2	1.3	1.8	-1.6	-1.8	0.2	0.1
Range	190	248	4.5	9.2	56.0	51.0	7.5	8.2
Minimum	180	42	0.0	4.8	25.0	18.0	6.5	5.8
Maximum	370	290	4.5	14.0	81.0	69.0	14.0	14.0
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	57	70	1.4	2.7	16.4	14.8	2.4	2.5

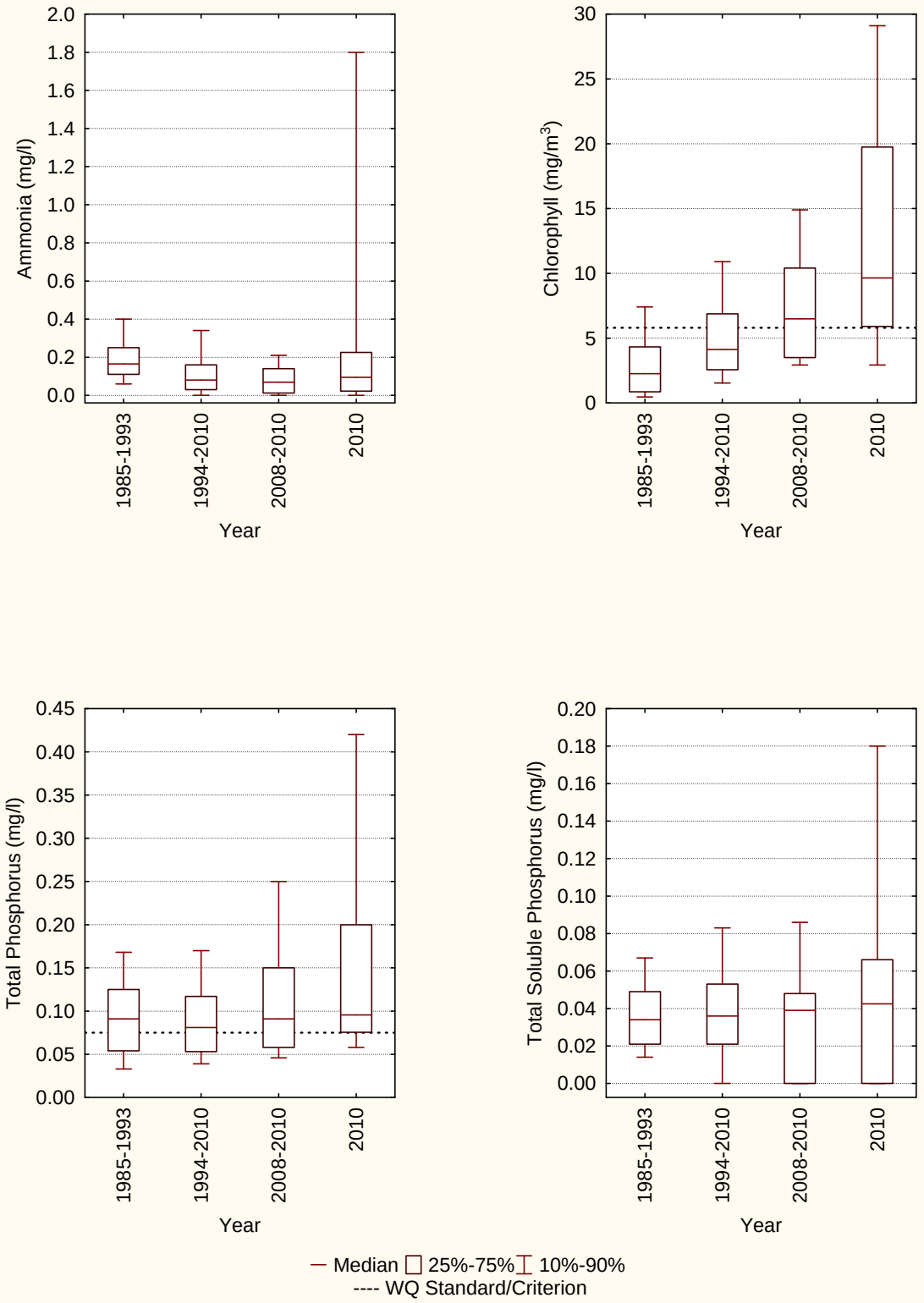
ND = No Data

Provisional MMSD Water Quality Data

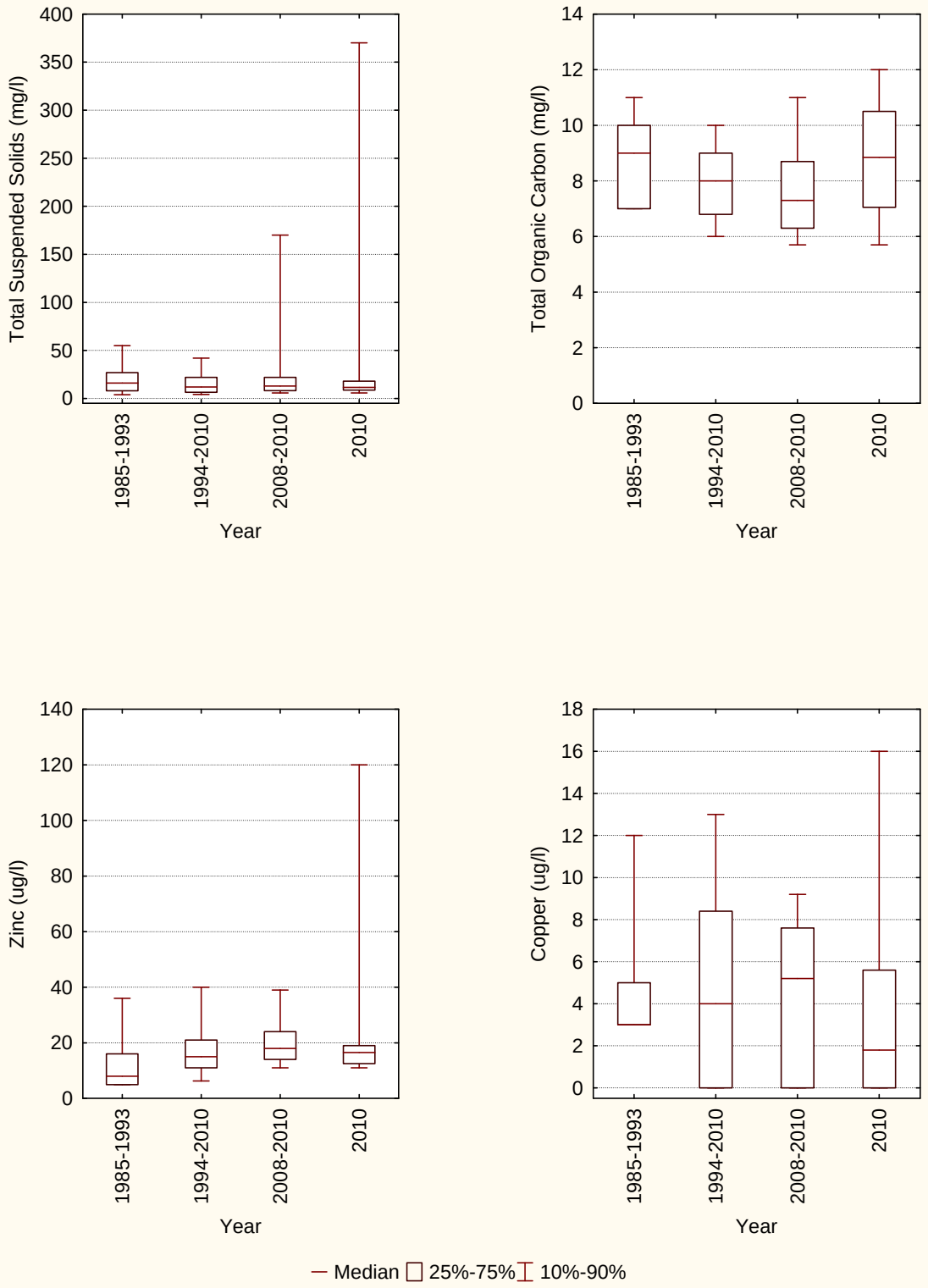
MMSD Water Quality Monitoring Program Data
Oak Creek at Pennsylvania Ave., Site OC-04



MMSD Water Quality Monitoring Program Data
Oak Creek at Pennsylvania Ave., Site OC-04



MMSD Water Quality Monitoring Program Data
Oak Creek at Pennsylvania Ave., Site OC-04



PENNSYLVANIA AVENUE - SITE 4
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	14.8	7.3	12.83	0.29	0.026	0.31	0.310	1.32	0.153	0.050	ND
Standard Error	0.0	2.2	0.8	5.66	0.06	0.007	0.07	0.215	0.33	0.044	0.021	ND
Median	7.7	16.1	6.9	9.65	0.24	0.019	0.25	0.095	1.10	0.096	0.043	ND
Mode	7.7	ND	ND	ND	0.48	ND	ND	ND	ND	ND	0.000	ND
Standard Deviation	0.1	6.3	2.2	11.32	0.16	0.020	0.18	0.609	0.93	0.124	0.061	ND
Sample Variance	0.0	39.2	5.0	128.12	0.03	0.000	0.03	0.371	0.86	0.015	0.004	ND
Kurtosis	0.2	0.9	0.7	2.75	-1.57	2.377	-1.52	7.436	-0.38	2.796	2.881	ND
Skewness	0.7	-1.1	0.7	1.50	-0.03	1.531	0.07	2.700	0.92	1.773	1.612	ND
Range	0.4	18.9	7.3	26.18	0.42	0.061	0.49	1.800	2.59	0.362	0.180	0.00
Minimum	7.5	2.6	4.2	2.92	0.06	0.007	0.06	0.000	0.31	0.058	0.000	0.00
Maximum	7.9	21.5	11.5	29.10	0.48	0.068	0.55	1.800	2.90	0.420	0.180	0.00
Count	8	8	8	4	7	8	7	8	8	8	8	0
Confidence Level(95.0%)	0.1	5.2	1.9	18.01	0.15	0.017	0.17	0.509	0.78	0.104	0.051	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	670.0	613.5	8.9	56.5	39.8	1096	178.8	598	2.6	ND
Standard Error	ND	ND	43.3	44.5	6.0	44.8	27.6	67	15.5	163	0.1	ND
Median	ND	ND	655.0	605.0	3.2	11.5	11.3	1080	175.0	380	2.6	ND
Mode	ND	ND	ND	ND	ND	ND	ND	1080	200.0	320	2.5	ND
Standard Deviation	ND	ND	122.4	125.9	17.0	126.8	78.2	191	43.9	462	0.4	ND
Sample Variance	ND	ND	14971.4	15839.6	290.5ND714286	16066.4	6112.6	36373	1926.8	213079	0.1	ND
Kurtosis	ND	ND	-1.2	-0.8	7.9	8.0	7.9	0	1.3	-1	-0.5	ND
Skewness	ND	ND	0.0	0.3	2.8	2.8	2.8	1	0.4	1	-0.3	ND
Range	0.0	0.0	340.0	366.0	49.4	364.2	226.3	592	150.0	1300	1.1	0
Minimum	0.0	0.0	490.0	450.0	1.6	5.8	6.7	848	110.0	100	2.0	0
Maximum	0.0	0.0	830.0	816.0	51.0	370.0	233.0	1440	260.0	1400	3.1	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	102.3	105.2	14.3	106.0	65.4	159	36.7	386	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

PENNSYLVANIA AVENUE - SITE 4
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	73.00	32.13	0.1	6.1	3.9	4.7	2.8	28.4	0.0	1.8	0.0	ND
Standard Error	5.24	2.56	0.1	1.9	2.0	1.5	1.8	13.1	0.0	1.0	0.0	ND
Median	77.50	33.50	0.0	4.2	1.8	3.2	0.0	16.5	0.0	0.0	0.0	ND
Mode	ND	32.00	0.0	4.2	0.0	3.0	0.0	19.0	0.0	0.0	0.0	ND
Standard Deviation	14.83	7.24	0.2	5.3	5.6	4.2	5.1	37.2	0.0	2.8	0.0	ND
Sample Variance	220.00	52.41	0.0	28.0	31.1	17.8	26.2	1380.6	0.0	8.1	0.0	ND
Kurtosis	-0.49	-0.38	8.0	7.5	3.2	7.5	0.3	7.8	ND	0.8	ND	ND
Skewness	-0.91	-0.78	2.8	2.7	1.8	2.7	1.5	2.8	ND	1.4	ND	ND
Range	40.00	21.00	0.6	15.6	16.0	12.9	12.0	109.0	0.0	7.3	0.0	0.0
Minimum	50.00	20.00	0.0	3.4	0.0	2.1	0.0	11.0	0.0	0.0	0.0	0.0
Maximum	90.00	41.00	0.6	19.0	16.0	15.0	12.0	120.0	0.0	7.3	0.0	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	12.40	6.05	0.2	4.4	4.7	3.5	4.3	31.1	0.0	2.4	0.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	314	237	1.5	9.2	66.0	57.4	8.8	8.4
Standard Error	23	28	1.1	2.1	6.0	5.9	0.8	0.8
Median	335	260	0.0	6.1	72.5	63.0	8.9	7.9
Mode	350	260	0.0	ND	ND	63.0	ND	ND
Standard Deviation	66	80	3.2	5.8	17.1	16.7	2.2	2.2
Sample Variance	4313	6361	10.1	34.1	290.9	277.7	4.6	5.0
Kurtosis	-1	2	6.0	1.5	0.9	1.4	-1.0	-1.0
Skewness	-1	-2	2.4	1.6	-1.4	-1.5	0.0	0.5
Range	180	228	9.0	16.0	47.0	47.0	6.3	6.4
Minimum	210	72	0.0	5.0	33.0	24.0	5.7	5.6
Maximum	390	300	9.0	21.0	80.0	71.0	12.0	12.0
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	55	67	2.7	4.9	14.3	13.9	1.8	1.9

ND = No Data

Provisional MMSD Water Quality Data

15TH AVENUE - SITE 5
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.7	14.6	8.0	9.72	0.40	0.022	0.42	0.076	0.82	0.109	0.032	ND
Standard Error	0.1	2.1	0.7	2.25	0.05	0.005	0.06	0.028	0.14	0.027	0.018	ND
Median	7.6	16.0	7.1	9.91	0.44	0.015	0.46	0.046	0.71	0.068	0.000	ND
Mode	7.6	ND	ND	ND	ND	0.010	0.55	0.000	ND	ND	0.000	ND
Standard Deviation	0.2	6.0	1.9	4.49	0.15	0.014	0.16	0.080	0.40	0.078	0.051	ND
Sample Variance	0.0	36.3	3.6	20.19	0.02	0.000	0.02	0.006	0.16	0.006	0.003	ND
Kurtosis	0.4	1.3	-0.1	1.30	0.09	-1.530	-0.42	-0.700	1.21	-0.080	2.141	ND
Skewness	1.0	-1.3	1.0	-0.25	-1.04	0.681	-0.89	0.897	1.00	1.156	1.625	ND
Range	0.5	18.5	5.4	10.95	0.41	0.034	0.42	0.210	1.29	0.211	0.140	0.00
Minimum	7.5	2.5	6.1	4.05	0.12	0.010	0.14	0.000	0.31	0.039	0.000	0.00
Maximum	8.0	21.0	11.5	15.00	0.53	0.044	0.56	0.210	1.60	0.250	0.140	0.00
Count	8	8	8	4	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.1	5.0	1.6	7.15	0.12	0.012	0.13	0.067	0.33	0.065	0.043	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	658.8	630.5	6.6	28.3	22.7	1105	178.8	814	2.8	ND
Standard Error	ND	ND	45.7	53.7	4.2	18.9	12.4	79	17.6	222	0.1	ND
Median	ND	ND	650.0	637.0	2.1	8.9	9.2	1105	175.0	705	2.8	ND
Mode	ND	ND	ND	ND	2.0	ND	ND	ND	150.0	ND	ND	ND
Standard Deviation	ND	ND	129.3	151.9	11.9	53.4	35.2	224	49.7	628	0.4	ND
Sample Variance	ND	ND	16726.8	23085.6	141.7	2855.9	1238.9	50164	2469.6	394855	0.2	ND
Kurtosis	ND	ND	-0.2	-1.1	7.9	7.8	7.6	0	2.4	-1	-1.4	ND
Skewness	ND	ND	0.0	0.0	2.8	2.8	2.7	0	1.0	1	-0.3	ND
Range	0.0	0.0	410.0	424.9	34.6	154.9	103.6	689	170.0	1640	1.1	0
Minimum	0.0	0.0	450.0	430.0	1.4	5.1	5.4	781	110.0	160	2.2	0
Maximum	0.0	0.0	860.0	854.9	36.0	160.0	109.0	1470	280.0	1800	3.3	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	108.1	127.0	10.0	44.7	29.4	187	41.5	525	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

15TH AVENUE - SITE 5
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	75.25	32.00	0.1	6.0	4.8	4.1	0.8	19.0	0.0	1.3	0.7	ND
Standard Error	7.14	3.25	0.1	0.8	2.1	0.6	0.6	5.0	0.0	0.9	0.7	ND
Median	82.50	34.50	0.0	5.3	3.3	3.3	0.0	13.5	0.0	0.0	0.0	ND
Mode	ND	ND	0.0	4.2	0.0	3.0	0.0	12.0	0.0	0.0	0.0	ND
Standard Deviation	20.20	9.20	0.2	2.4	5.9	1.6	1.6	14.3	0.0	2.4	1.9	ND
Sample Variance	407.93	84.57	0.0	5.7	34.3	2.5	2.5	203.1	0.0	6.0	3.5	ND
Kurtosis	-0.07	-0.44	8.0	-0.7	2.1	0.7	4.7	6.4	ND	0.3	8.0	ND
Skewness	-1.16	-0.97	2.8	0.7	1.4	1.4	2.2	2.5	ND	1.5	2.8	ND
Range	56.00	25.00	0.6	6.9	17.0	4.3	4.4	44.1	0.0	5.7	5.3	0.0
Minimum	40.00	17.00	0.0	3.1	0.0	2.8	0.0	8.9	0.0	0.0	0.0	0.0
Maximum	96.00	42.00	0.6	10.0	17.0	7.1	4.4	53.0	0.0	5.7	5.3	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	16.89	7.69	0.2	2.0	4.9	1.3	1.3	11.9	0.0	2.0	1.6	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	320	247	1.1	6.9	67.8	60.3	7.7	7.4
Standard Error	31	29	0.7	1.3	6.9	6.7	0.7	0.7
Median	350	280	0.0	5.7	75.5	66.0	6.8	6.5
Mode	ND	280	0.0	ND	ND	ND	ND	ND
Standard Deviation	87	81	2.1	3.8	19.5	19.0	2.1	1.9
Sample Variance	7600	6507	4.3	14.5	378.8	359.9	4.3	3.7
Kurtosis	0	1	3.2	6.6	0.6	0.7	-1.3	-1.7
Skewness	-1	-2	2.0	2.5	-1.4	-1.4	0.6	0.5
Range	240	225	5.6	11.6	53.0	52.0	5.8	4.9
Minimum	170	85	0.0	4.4	31.0	24.0	5.2	5.1
Maximum	410	310	5.6	16.0	84.0	76.0	11.0	10.0
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	73	67	1.7	3.2	16.3	15.9	1.7	1.6

ND = No Data

Provisional MMSD Water Quality Data

PARKWAY (E. of HWY 32) - SITE 6
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	14.5	9.2	13.20	0.35	0.019	0.37	0.064	0.67	0.087	0.023	ND
Standard Error	0.1	2.1	0.6	6.48	0.06	0.005	0.06	0.026	0.13	0.026	0.016	ND
Median	7.9	15.6	8.7	8.15	0.40	0.013	0.43	0.039	0.57	0.049	0.000	ND
Mode	7.7	ND	8.5	ND	ND	ND	0.51	0.000	0.57	ND	0.000	ND
Standard Deviation	0.4	5.9	1.7	12.95	0.17	0.014	0.18	0.074	0.36	0.075	0.045	ND
Sample Variance	0.1	35.1	3.0	167.79	0.03	0.000	0.03	0.005	0.13	0.006	0.002	ND
Kurtosis	6.1	1.2	0.1	3.06	-1.12	-2.089	-1.31	0.045	-0.23	-0.795	2.579	ND
Skewness	2.4	-1.2	1.0	1.75	-0.71	0.482	-0.63	1.115	0.61	0.812	1.848	ND
Range	1.1	18.2	5.1	27.90	0.44	0.032	0.46	0.200	1.09	0.210	0.120	0.00
Minimum	7.7	2.8	7.2	4.30	0.08	0.006	0.09	0.000	0.21	0.000	0.000	0.00
Maximum	8.8	21.0	12.3	32.20	0.52	0.037	0.55	0.200	1.30	0.210	0.120	0.00
Count	8	8	8	4	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.3	5.0	1.4	20.61	0.14	0.012	0.15	0.062	0.30	0.063	0.038	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	671.3	649.0	5.0	22.3	17.4	1146	181.3	576	2.6	ND
Standard Error	ND	ND	58.5	67.0	3.2	15.5	8.9	98	18.2	201	0.1	ND
Median	ND	ND	685.0	673.4	1.7	6.0	7.4	1145	170.0	395	2.6	ND
Mode	ND	ND	740.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	ND	ND	165.5	189.6	9.0	43.9	25.1	278	51.4	570	0.4	ND
Sample Variance	ND	ND	27383.9	35943.1	81.0	1931.0	631.9	77266	2641.1	324655	0.2	ND
Kurtosis	ND	ND	-1.1	-1.3	7.5	7.6	6.9	-1	0.8	1	-1.0	ND
Skewness	ND	ND	-0.1	-0.3	2.7	2.7	2.6	0	1.0	1	0.5	ND
Range	0.0	0.0	460.0	496.5	27.0	128.0	74.1	804	160.0	1570	1.1	0
Minimum	0.0	0.0	420.0	380.0	0.0	2.0	4.2	726	120.0	130	2.1	0
Maximum	0.0	0.0	880.0	876.5	27.0	130.0	78.2	1530	280.0	1700	3.2	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	138.3	158.5	7.5	36.7	21.0	232	43.0	476	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

PARKWAY (E. of HWY 32) - SITE 6
OAK CREEK
WATER QUALITY DATA - 2010

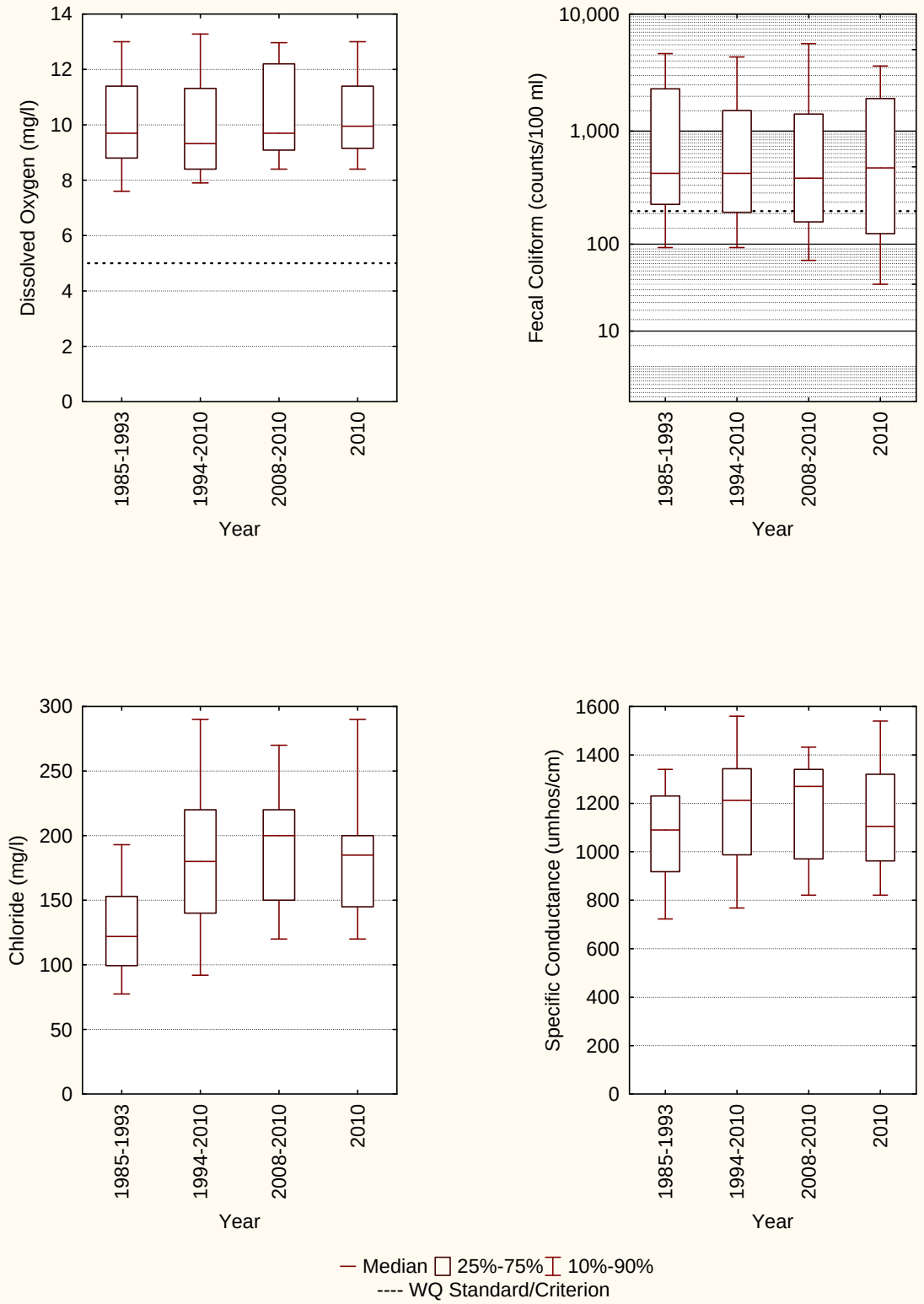
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	80.00	33.63	0.1	4.8	3.6	3.2	0.6	18.4	0.0	1.1	0.8	ND
Standard Error	8.59	3.78	0.1	1.0	1.3	0.7	0.6	5.4	0.0	0.7	0.8	ND
Median	89.00	36.00	0.0	3.8	3.1	3.2	0.0	13.5	0.0	0.0	0.0	ND
Mode	ND	ND	0.0	ND	0.0	ND	0.0	15.0	0.0	0.0	0.0	ND
Standard Deviation	24.29	10.70	0.2	2.7	3.7	1.9	1.8	15.2	0.0	2.1	2.3	ND
Sample Variance	590.00	114.55	0.0	7.3	13.4	3.8	3.1	232.1	0.0	4.2	5.3	ND
Kurtosis	-0.06	-0.47	8.0	4.6	-1.2	1.8	8.0	5.5	ND	0.0	8.0	ND
Skewness	-0.94	-0.73	2.8	2.1	0.5	0.4	2.8	2.3	ND	1.4	2.8	ND
Range	72.00	31.00	0.6	8.1	9.5	6.8	5.0	46.1	0.0	4.6	6.5	0.0
Minimum	38.00	16.00	0.0	2.9	0.0	0.0	0.0	7.9	0.0	0.0	0.0	0.0
Maximum	110.00	47.00	0.6	11.0	9.5	6.8	5.0	54.0	0.0	4.6	6.5	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	20.31	8.95	0.2	2.3	3.1	1.6	1.5	12.7	0.0	1.7	1.9	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	338	254	0.7	6.3	68.1	61.4	6.9	6.7
Standard Error	37	31	0.7	1.3	7.4	7.2	0.7	0.7
Median	370	285	0.0	5.3	76.0	67.5	6.3	6.0
Mode	400	290	0.0	5.5	82.0	78.0	5.8	ND
Standard Deviation	106	87	1.9	3.7	20.8	20.4	2.0	1.8
Sample Variance	11164	7648	3.8	13.6	433.8	415.1	3.8	3.4
Kurtosis	0	1	8.0	6.2	0.8	0.8	-1.3	-1.2
Skewness	-1	-2	2.8	2.4	-1.5	-1.4	0.2	0.4
Range	310	251	5.5	11.1	56.0	56.0	5.5	5.2
Minimum	160	79	0.0	3.9	28.0	22.0	4.1	4.2
Maximum	470	330	5.5	15.0	84.0	78.0	9.6	9.4
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	88	73	1.6	3.1	17.4	17.0	1.6	1.5

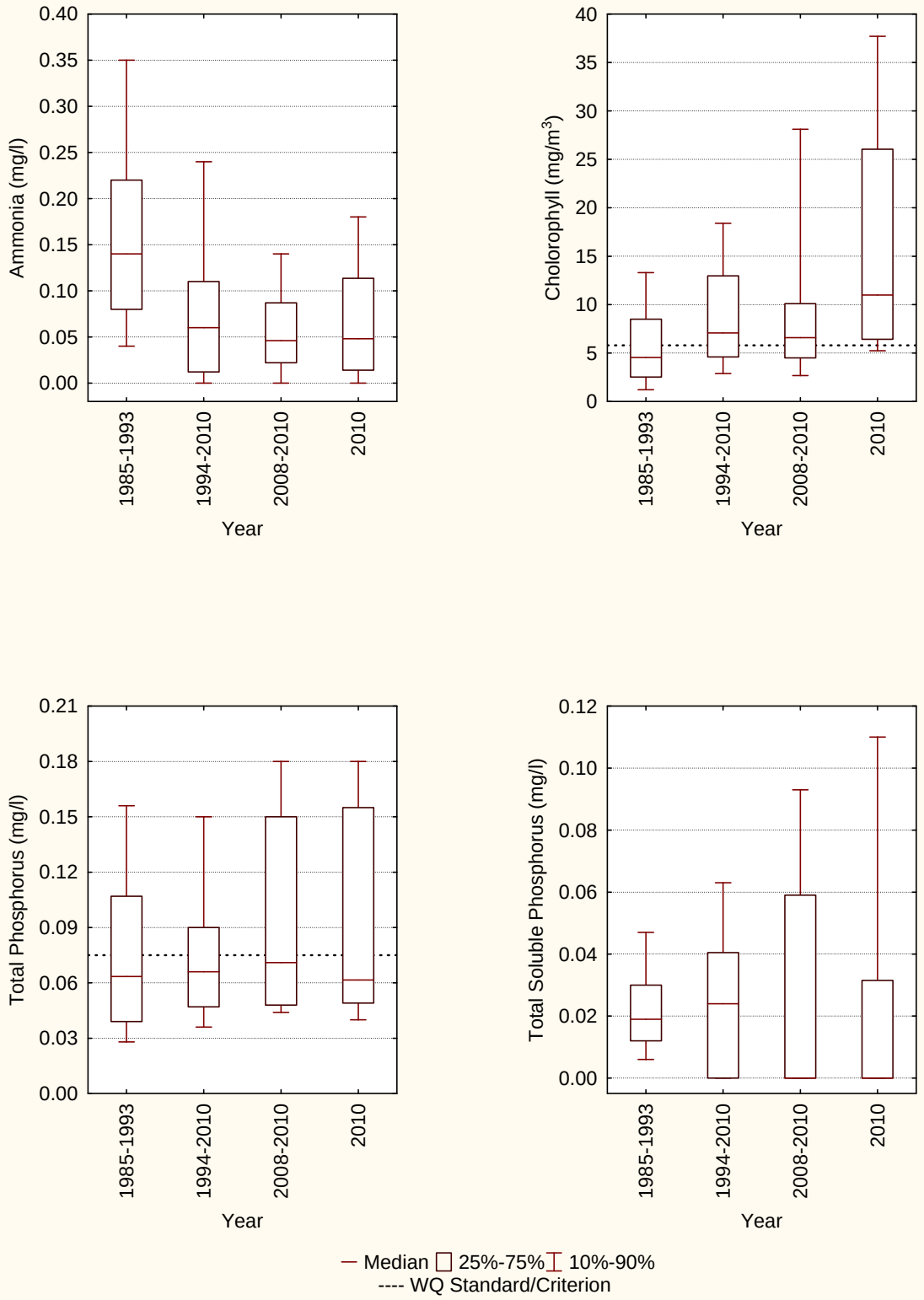
ND = No Data

Provisional MMSD Water Quality Data

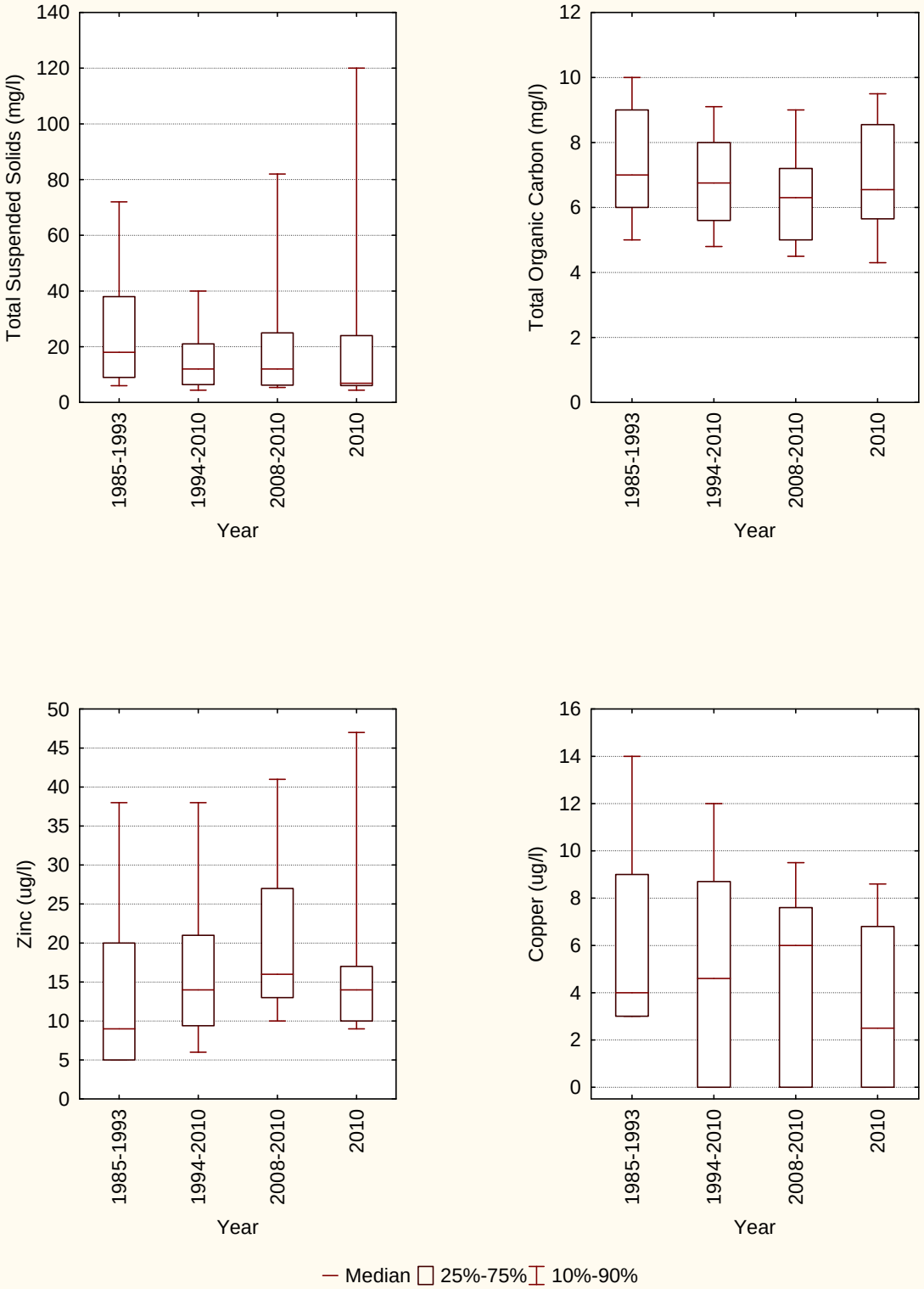
MMSD Water Quality Monitoring Program Data
Oak Creek at Oak Creek Pkwy., Site OC-07



MMSD Water Quality Monitoring Program Data
Oak Creek at Oak Creek Pkwy., Site OC-07



MMSD Water Quality Monitoring Program Data
Oak Creek at Oak Creek Pkwy., Site OC-07



PARKWAY (E. of LAKE DR. EXTENDED) - SITE 7
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.0	15.1	10.3	16.23	0.36	0.020	0.38	0.066	0.74	0.094	0.022	ND
Standard Error	0.1	2.2	0.6	7.41	0.06	0.005	0.06	0.023	0.14	0.021	0.015	ND
Median	8.1	16.3	10.0	11.00	0.41	0.013	0.43	0.048	0.62	0.062	0.000	ND
Mode	8.1	ND	ND	ND	0.49	0.035	ND	0.000	ND	0.180	0.000	ND
Standard Deviation	0.2	6.2	1.6	14.83	0.17	0.014	0.18	0.065	0.38	0.060	0.042	ND
Sample Variance	0.0	38.0	2.6	219.91	0.03	0.000	0.03	0.004	0.15	0.004	0.002	ND
Kurtosis	0.7	1.5	-0.4	2.53	-0.87	-1.942	-0.98	-0.416	-0.71	-1.440	2.312	ND
Skewness	0.7	-1.2	0.7	1.62	-0.72	0.602	-0.64	0.831	0.77	0.812	1.805	ND
Range	0.6	19.2	4.6	32.46	0.47	0.034	0.50	0.180	1.06	0.140	0.110	0.00
Minimum	7.8	2.8	8.4	5.24	0.09	0.008	0.10	0.000	0.34	0.040	0.000	0.00
Maximum	8.4	22.0	13.0	37.70	0.56	0.041	0.60	0.180	1.40	0.180	0.110	0.00
Count	8	8	8	4	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	0.2	5.2	1.3	23.60	0.14	0.012	0.15	0.055	0.32	0.050	0.035	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	665.0	640.2	5.7	24.8	24.2	1142	183.8	1081	2.7	ND
Standard Error	ND	ND	55.1	60.8	3.3	14.0	11.2	87	18.5	460	0.2	ND
Median	ND	ND	650.0	631.5	2.0	6.9	11.9	1105	185.0	480	2.7	ND
Mode	ND	ND	ND	ND	ND	ND	ND	1080	190.0	ND	ND	ND
Standard Deviation	ND	ND	155.7	172.0	9.2	39.5	31.8	245	52.4	1301	0.7	ND
Sample Variance	ND	ND	24257.1	29601.0	85.3	1559.8	1011.9	60236	2741.1	1691613	0.5	ND
Kurtosis	ND	ND	-0.2	-1.1	6.8	6.8	6.8	-1	1.9	1	-1.2	ND
Skewness	ND	ND	-0.1	0.1	2.6	2.6	2.6	0	1.1	1	-0.2	ND
Range	0.0	0.0	490.0	489.4	28.0	115.6	94.0	719	170.0	3560	2.0	0
Minimum	0.0	0.0	410.0	403.4	0.0	4.4	7.0	821	120.0	40	1.6	0
Maximum	0.0	0.0	900.0	892.8	28.0	120.0	101.0	1540	290.0	3600	3.6	0
Count	0	0	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	ND	ND	130.2	143.8	7.7	33.0	26.6	205	43.8	1087	0.6	ND

ND = No Data

Provisional MMSD Water Quality Data

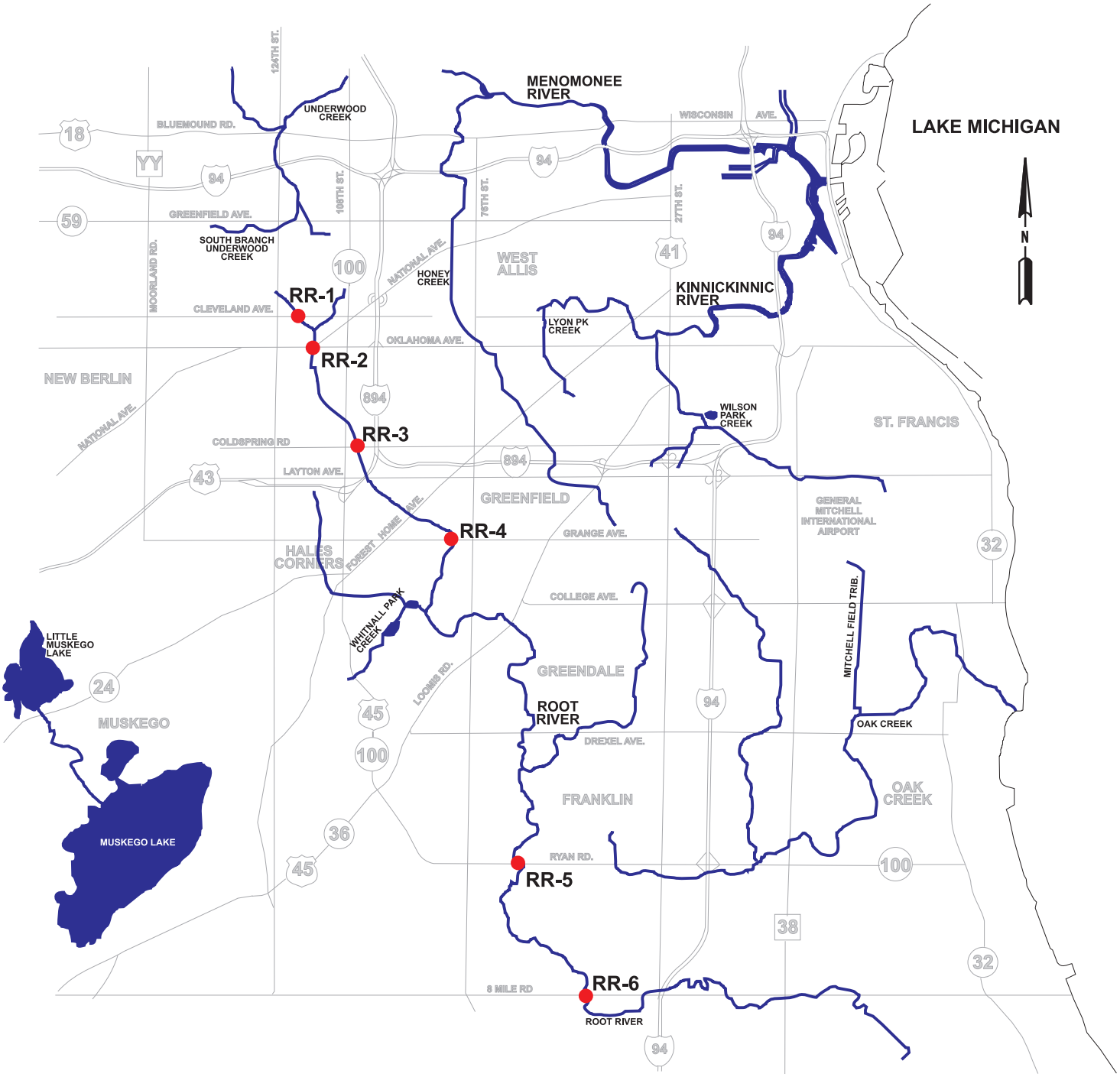
PARKWAY (E. of LAKE DR. EXTENDED) - SITE 7
OAK CREEK
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	78.38	33.25	0.1	5.0	3.4	3.1	1.0	17.3	0.0	0.0	1.1	ND
Standard Error	7.60	3.38	0.1	0.8	1.3	0.7	0.6	4.4	0.0	0.0	1.1	ND
Median	88.50	36.00	0.0	4.5	2.5	2.9	0.0	14.0	0.0	0.0	0.0	ND
Mode	90.00	36.00	0.0	4.5	0.0	ND	0.0	10.0	0.0	0.0	0.0	ND
Standard Deviation	21.49	9.56	0.2	2.2	3.8	1.8	1.8	12.4	0.0	0.0	3.0	ND
Sample Variance	461.70	91.36	0.0	4.7	14.1	3.4	3.2	154.8	0.0	0.0	8.8	ND
Kurtosis	-0.10	-0.60	8.0	4.9	-2.3	1.9	1.2	6.5	ND	ND	8.0	ND
Skewness	-1.18	-0.83	2.8	2.0	0.2	0.3	1.6	2.5	ND	ND	2.8	ND
Range	59.00	26.00	0.6	6.9	8.6	6.5	4.5	38.0	0.0	0.0	8.4	0.0
Minimum	41.00	18.00	0.0	3.1	0.0	0.0	0.0	9.0	0.0	0.0	0.0	0.0
Maximum	100.00	44.00	0.6	10.0	8.6	6.5	4.5	47.0	0.0	0.0	8.4	0.0
Count	8	8	8	8	8	8	8	8	8	8	8	0
Confidence Level(95.0%)	17.96	7.99	0.2	1.8	3.1	1.5	1.5	10.4	0.0	0.0	2.5	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	333	248	0.8	6.4	66.9	60.1	6.9	6.6
Standard Error	33	28	0.8	1.4	6.7	6.6	0.6	0.6
Median	365	275	0.0	5.3	74.0	65.0	6.6	6.1
Mode	ND	280	0.0	4.2	82.0	74.0	ND	5.4
Standard Deviation	93	79	2.2	4.0	18.8	18.6	1.8	1.8
Sample Variance	8621	6171	5.0	15.8	354.1	346.1	3.4	3.1
Kurtosis	0	1	8.0	6.9	0.4	0.5	-1.3	-1.3
Skewness	-1	-1	2.8	2.6	-1.3	-1.3	0.2	0.3
Range	250	225	6.3	11.9	50.0	51.0	5.2	4.9
Minimum	180	95	0.0	4.1	32.0	25.0	4.3	4.2
Maximum	430	320	6.3	16.0	82.0	76.0	9.5	9.1
Count	8	8	8	8	8	8	8	8
Confidence Level(95.0%)	78	66	1.9	3.3	15.7	15.6	1.5	1.5

ND = No Data

Provisional MMSD Water Quality Data



LEGEND

● WATER QUALITY SAMPLING LOCATIONS

Preserving The Environment • Improving Water Quality

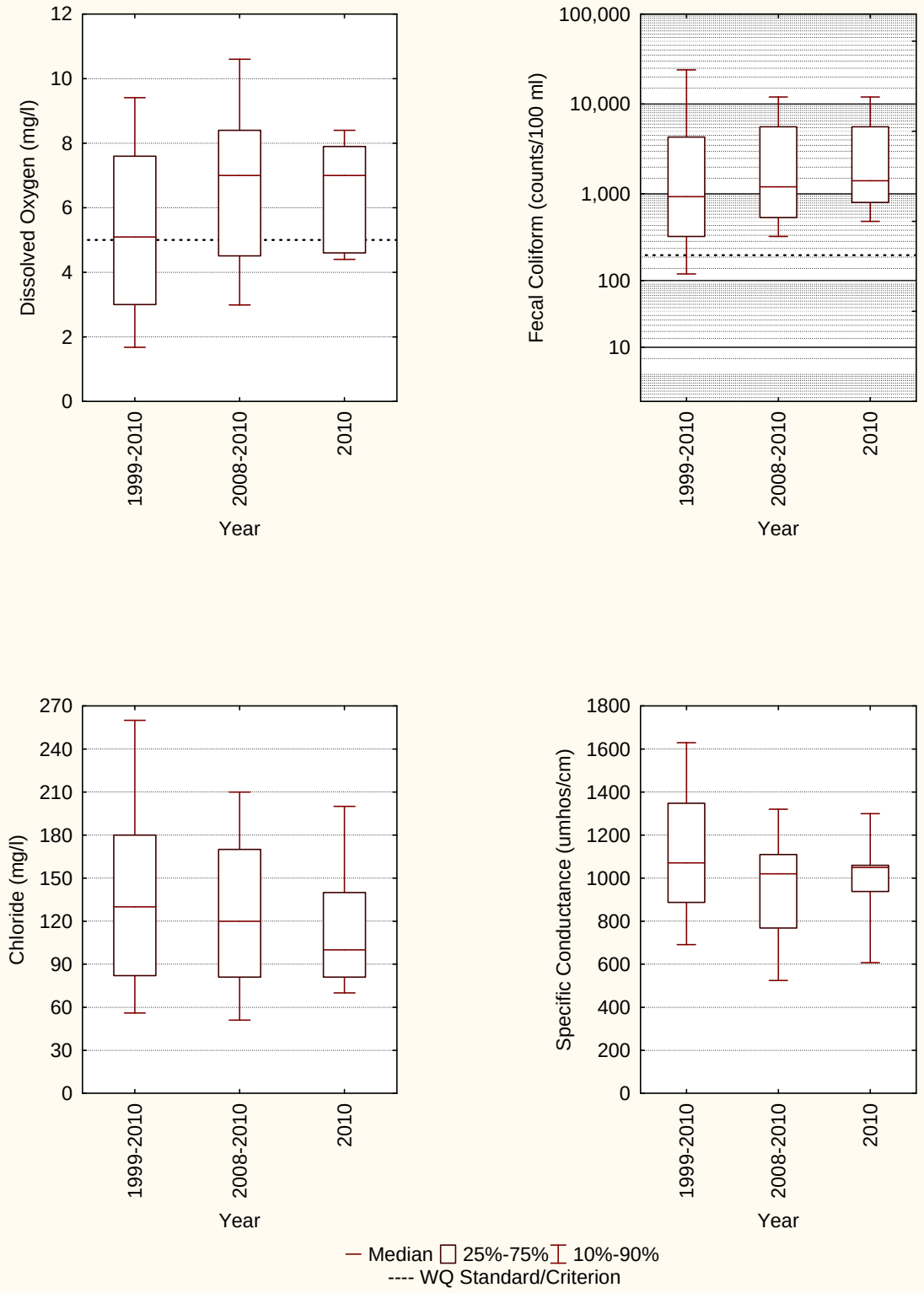
FIGURE 12

ROOT RIVER (RR) SURVEY
WATER QUALITY SAMPLING LOCATIONS

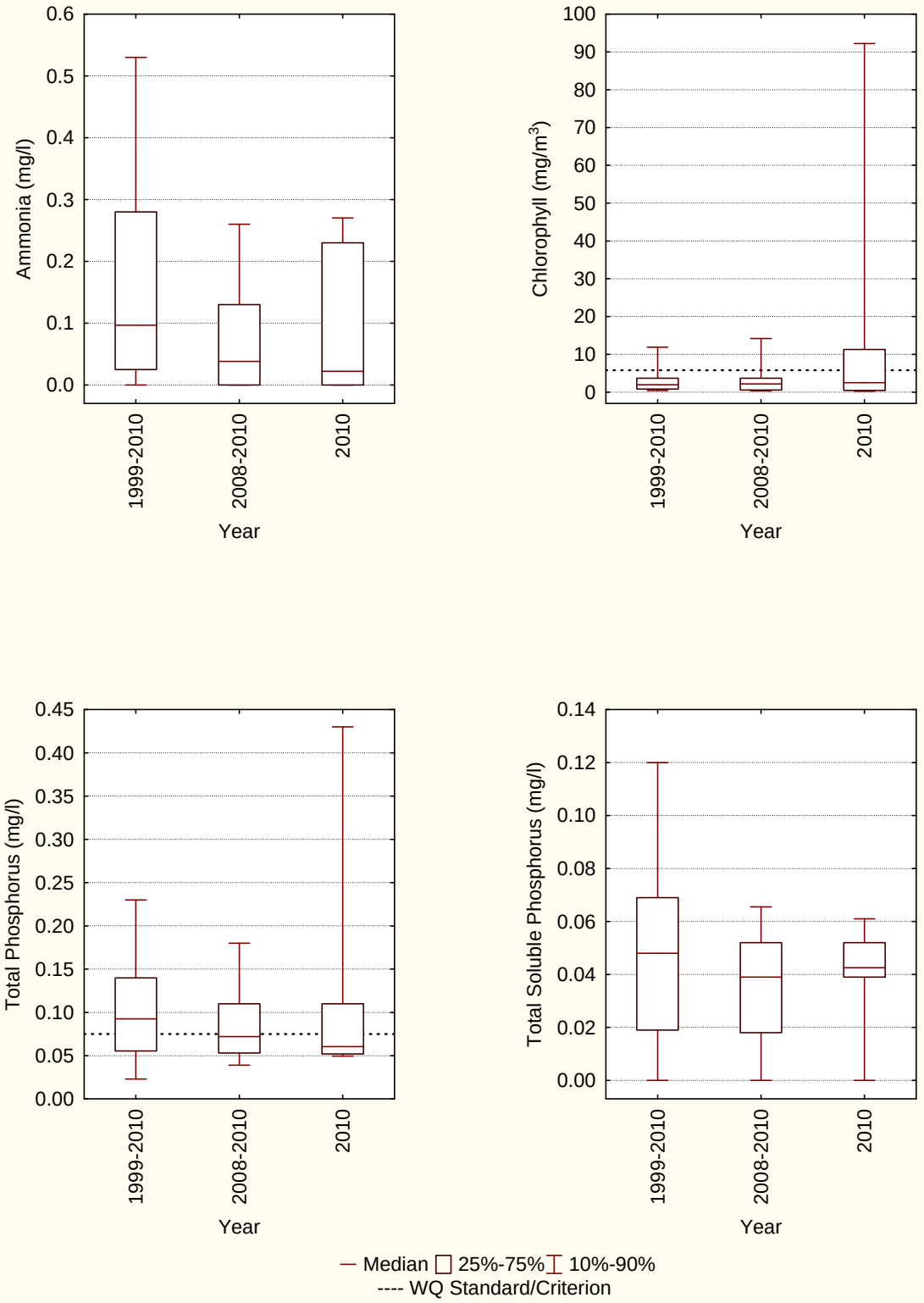
11/16/07

02-034 pg9 REPORT

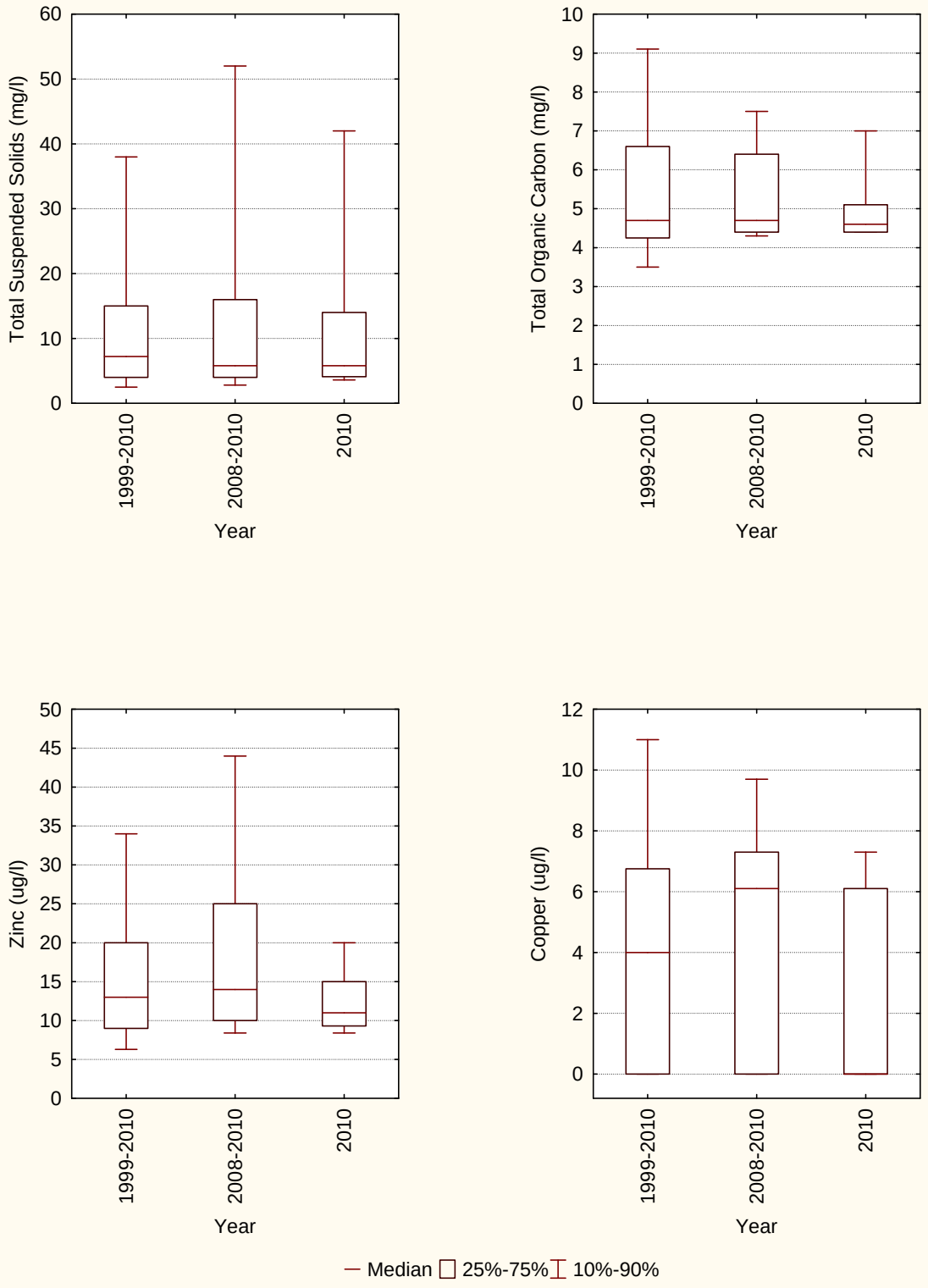
MMSD Water Quality Monitoring Program Data
Root River at Cleveland Ave., Site RR-01



MMSD Water Quality Monitoring Program Data
Root River at Cleveland Ave., Site RR-01



MMSD Water Quality Monitoring Program Data
Root River at Cleveland Ave., Site RR-01



CLEVELAND AVENUE, EAST OF 124TH STREET - SITE 1
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.8	17.6	6.4	15.71	0.39	0.019	0.41	0.086	0.89	0.139	0.039	ND
Standard Error	0.1	1.3	0.6	12.83	0.09	0.005	0.09	0.035	0.37	0.064	0.007	ND
Median	7.9	19.7	7.0	2.49	0.28	0.014	0.30	0.022	0.41	0.061	0.043	ND
Mode	7.9	ND	7.9	ND	ND	0.007	0.69	0.000	0.32	0.059	0.000	ND
Standard Deviation	0.2	4.2	2.1	33.95	0.29	0.018	0.30	0.115	1.21	0.203	0.022	ND
Sample Variance	0.0	17.6	4.3	1152.35	0.08	0.000	0.09	0.013	1.47	0.041	0.000	ND
Kurtosis	0.5	-0.5	0.0	6.71	-1.43	3.148	-1.64	-0.792	2.90	9.295	0.380	ND
Skewness	-1.0	-0.8	-0.6	2.58	0.44	1.840	0.37	1.058	1.93	3.018	-1.178	ND
Range	0.6	12.4	7.1	91.94	0.81	0.057	0.81	0.280	3.80	0.662	0.062	0.00
Minimum	7.4	9.5	2.3	0.26	0.05	0.006	0.06	0.000	0.00	0.048	0.000	0.00
Maximum	8.0	21.9	9.3	92.20	0.86	0.063	0.86	0.280	3.80	0.710	0.062	0.00
Count	11	11	11	7	11	11	11	11	11	10	10	0
Confidence Level(95.0%)	0.1	2.8	1.4	31.40	0.20	0.012	0.20	0.078	0.82	0.145	0.016	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	630.9	538.7	16.4	92.3	52.1	999	116.7	7421	3.3	ND
Standard Error	ND	ND	64.2	41.1	14.4	82.8	45.1	71	14.1	4969	0.2	ND
Median	ND	ND	560.0	553.4	1.2	5.8	4.9	1050	100.0	1400	3.1	ND
Mode	ND	ND	600.0	ND	1.0	ND	ND	1060	120.0	1600	3.2	ND
Standard Deviation	ND	ND	213.0	136.2	47.7	274.8	149.7	234	46.7	16479	0.7	ND
Sample Variance	ND	ND	45389.1	18556.5	2272.1	75494.7	22417.4	54839	2182.0	271566429	0.5	ND
Kurtosis	ND	ND	5.5	0.4	10.9	11.0	10.9	0	0.1	10	1.1	ND
Skewness	ND	ND	2.1	-0.5	3.3	3.3	3.3	-1	1.0	3	0.8	ND
Range	0.0	0.0	810.0	456.4	160.0	917.7	500.0	745	133.0	55870	2.6	0
Minimum	0.0	0.0	390.0	280.0	0.0	2.3	3.0	575	67.0	130	2.1	0
Maximum	0.0	0.0	1200.0	736.4	160.0	920.0	503.0	1320	200.0	56000	4.7	0
Count	0	0	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	ND	ND	143.1	91.5	32.0	184.6	100.6	157	31.4	11071	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

CLEVELAND AVENUE, EAST OF 124TH STREET - SITE 1
ROOT RIVER
WATER QUALITY DATA - 2010

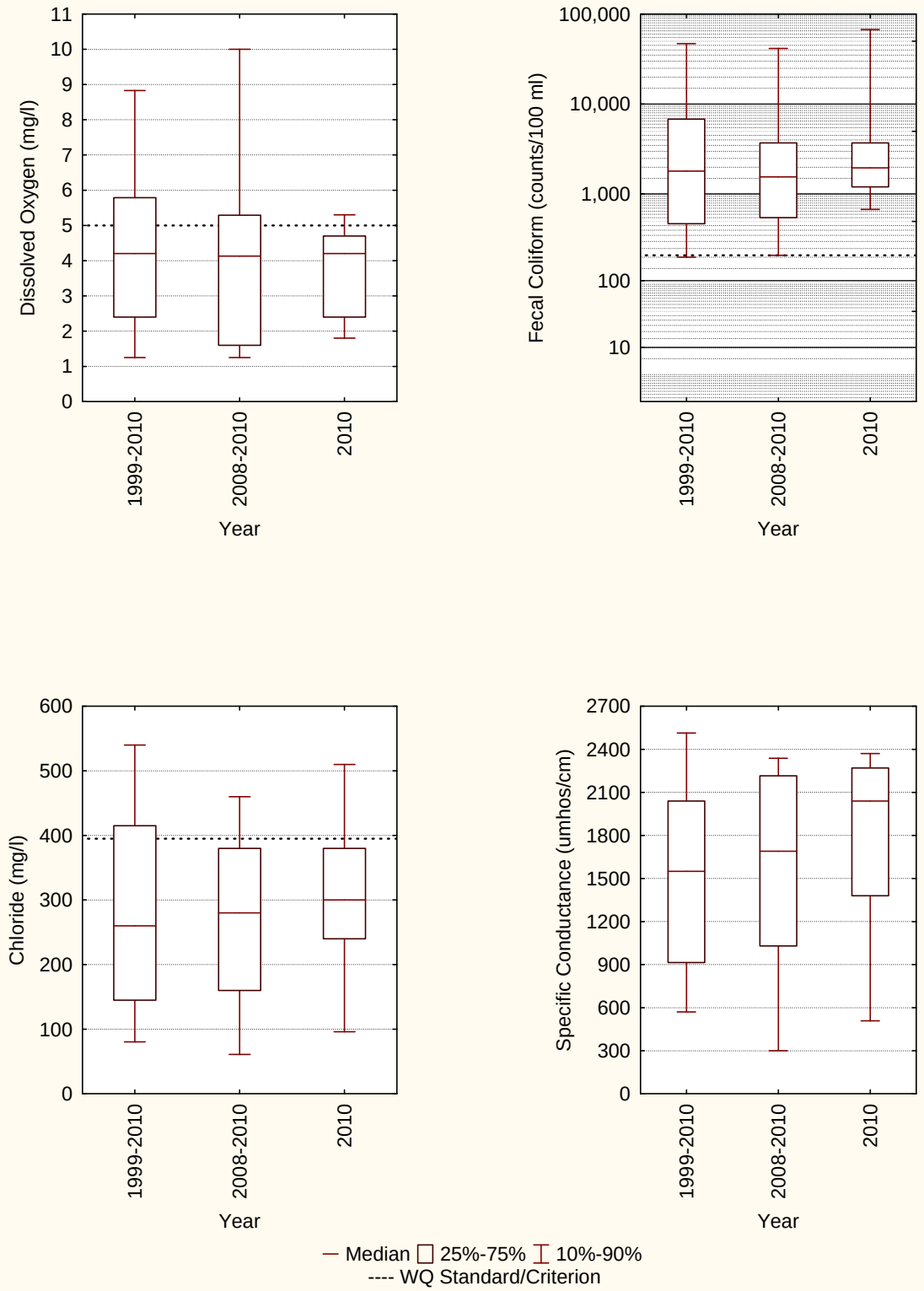
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	81.27	39.55	0.0	6.4	4.6	4.5	1.6	22.5	0.0	1.3	1.1	0.0
Standard Error	4.20	2.18	0.0	2.6	2.5	2.4	1.4	11.8	0.0	0.7	0.8	0.0
Median	85.00	42.00	0.0	3.8	0.0	2.3	0.0	11.0	0.0	0.0	0.0	0.0
Mode	85.00	44.00	0.0	3.3	0.0	1.8	0.0	10.0	0.0	0.0	0.0	0.0
Standard Deviation	13.91	7.22	0.0	8.5	8.3	7.8	4.5	39.3	0.0	2.3	2.4	0.0
Sample Variance	193.62	52.07	0.0	72.4	68.8	61.4	20.4	1541.5	0.0	5.3	5.7	0.0
Kurtosis	8.78	7.99	ND	10.8	7.6	10.6	10.1	10.6	ND	1.2	1.6	ND
Skewness	-2.86	-2.71	ND	3.3	2.6	3.2	3.1	3.2	ND	1.6	1.8	ND
Range	49.00	25.00	0.0	29.1	28.0	28.0	15.0	140.0	0.0	6.2	6.1	0.0
Minimum	41.00	19.00	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	90.00	44.00	0.0	32.0	28.0	28.0	15.0	140.0	0.0	6.2	6.1	0.0
Count	11	11	11	11	11	11	11	11	11	11	10	2
Confidence Level(95.0%)	9.35	4.85	0.0	5.7	5.6	5.3	3.0	26.4	0.0	1.5	1.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	365	311	1.6	8.0	81.2	76.0	5.0	5.0
Standard Error	19	24	1.2	2.8	5.4	5.6	0.3	0.2
Median	380	340	0.0	4.8	88.0	83.0	4.6	4.6
Mode	380	340	0.0	ND	ND	ND	4.6	4.6
Standard Deviation	64	80	4.0	8.8	17.7	18.7	1.0	0.8
Sample Variance	4087	6449	16.0	76.8	315.0	349.0	1.1	0.7
Kurtosis	9	3	8.1	8.1	2.1	2.0	1.6	4.7
Skewness	-3	-2	2.8	2.8	-1.8	-1.8	1.8	2.1
Range	230	250	13.0	29.0	52.0	55.0	2.8	2.9
Minimum	180	120	0.0	3.0	42.0	35.0	4.3	4.2
Maximum	410	370	13.0	32.0	94.0	90.0	7.1	7.1
Count	11	11	11	10	11	11	11	11
Confidence Level(95.0%)	43	54	2.7	6.3	11.9	12.6	0.7	0.6

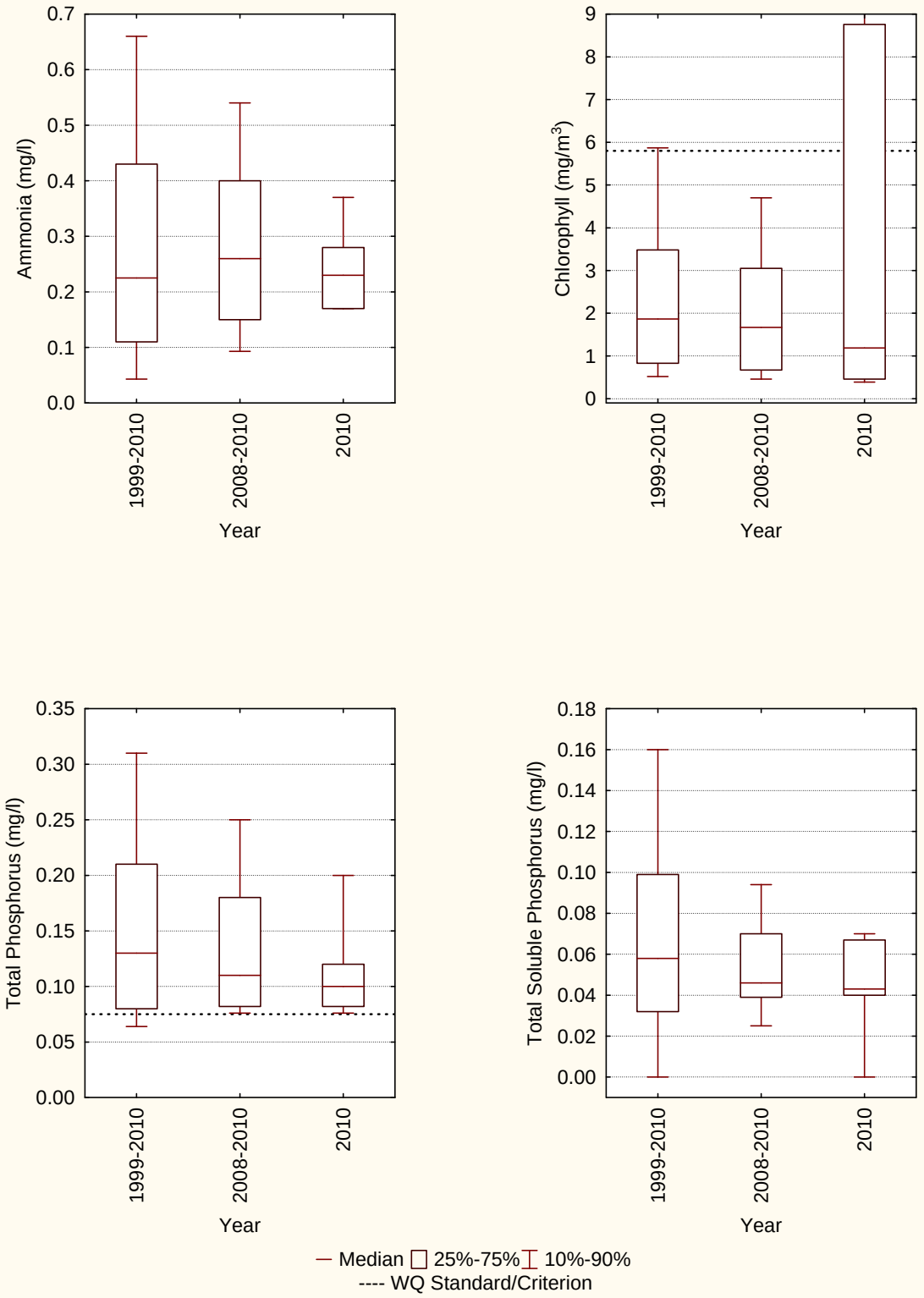
ND = No Data

Provisional MMSD Water Quality Data

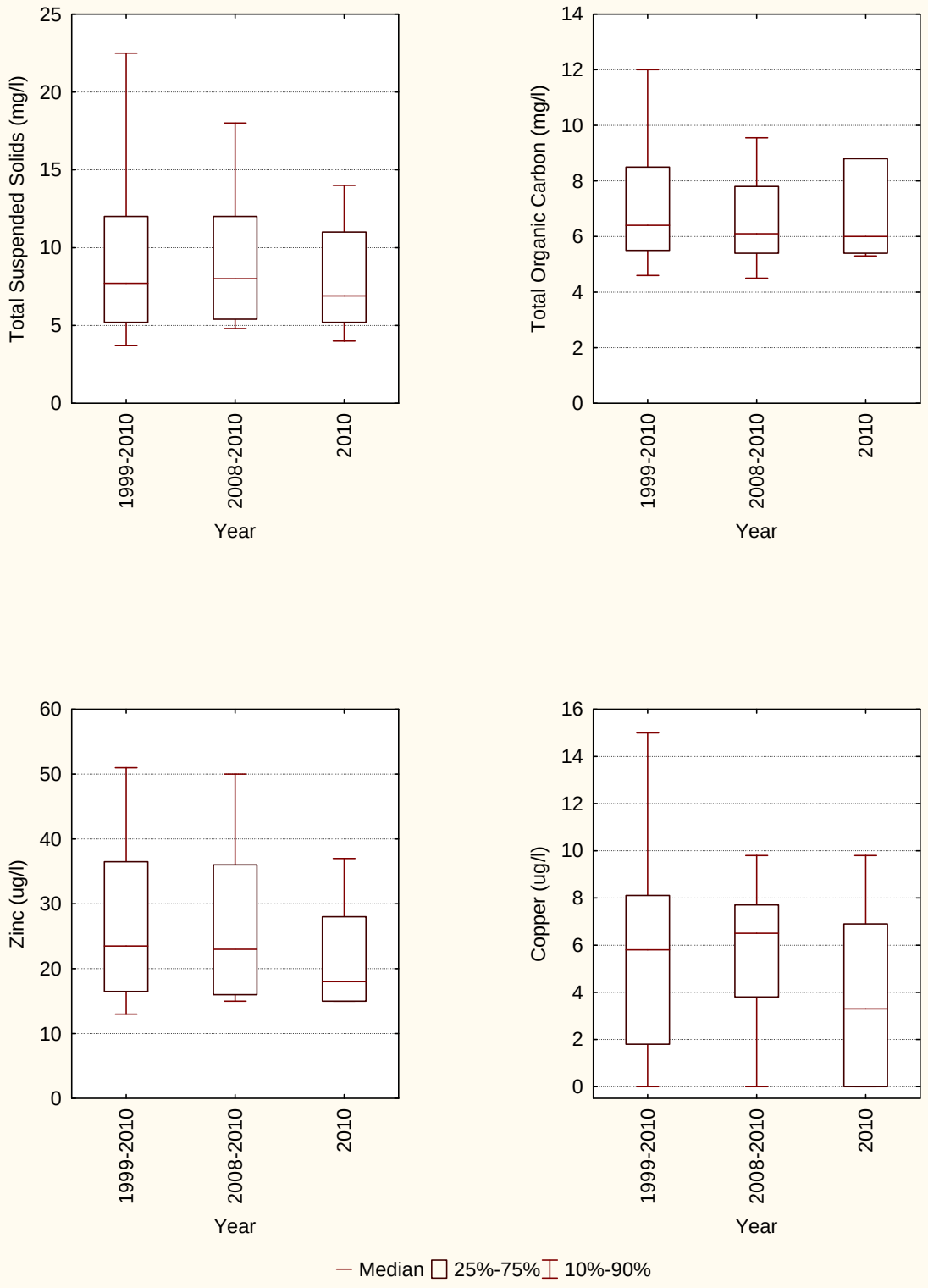
MMSD Water Quality Monitoring Program Data
Root River at National and Oklahoma Ave., Site RR-02



MMSD Water Quality Monitoring Program Data
Root River at National and Oklahoma Ave., Site RR-02



MMSD Water Quality Monitoring Program Data
Root River at National and Oklahoma Ave., Site RR-02



NATIONAL and OKLAHOMA, approx. 116TH STREET - SITE 2
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.4	17.4	4.0	4.68	0.45	0.044	0.49	0.231	0.84	0.125	0.044	ND
Standard Error	0.0	1.3	0.7	2.31	0.10	0.007	0.10	0.032	0.11	0.024	0.008	ND
Median	7.4	19.5	4.2	1.19	0.31	0.040	0.36	0.230	0.77	0.100	0.043	ND
Mode	7.5	ND	4.7	ND	ND	0.058	ND	0.170	ND	0.082	0.043	ND
Standard Deviation	0.1	4.4	2.5	6.10	0.32	0.024	0.34	0.107	0.35	0.080	0.026	ND
Sample Variance	0.0	19.7	6.1	37.20	0.10	0.001	0.12	0.012	0.12	0.006	0.001	ND
Kurtosis	-0.3	-0.8	3.2	1.86	0.28	-0.524	0.37	1.436	6.36	5.805	0.218	ND
Skewness	-0.4	-0.8	1.3	1.54	0.94	0.305	0.93	-0.512	2.34	2.379	-0.357	ND
Range	0.4	13.2	9.7	16.21	1.08	0.080	1.17	0.400	1.25	0.272	0.087	0.00
Minimum	7.2	9.3	0.4	0.39	0.02	0.007	0.03	0.000	0.55	0.068	0.000	0.00
Maximum	7.6	22.5	10.0	16.60	1.10	0.087	1.20	0.400	1.80	0.340	0.087	0.00
Count	11	11	11	7	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.1	3.0	1.7	5.64	0.21	0.016	0.23	0.072	0.23	0.054	0.018	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	979.1	958.5	5.3	20.5	14.6	1731	307.0	14954	3.4	ND
Standard Error	ND	ND	121.4	129.3	2.6	13.0	6.7	221	44.6	12790	0.2	ND
Median	ND	ND	1100.0	1093.1	3.0	6.9	9.4	2040	300.0	1950	3.3	ND
Mode	ND	ND	1200.0	ND	ND	10.0	ND	2040	380.0	1200	3.1	ND
Standard Deviation	ND	ND	402.6	428.9	8.6	43.1	22.2	732	148.1	40445	0.7	ND
Sample Variance	ND	ND	162109.1	183948.1	73.8	1854.1	491.4	535333	21919.8	1635808716	0.5	ND
Kurtosis	ND	ND	-0.2	0.1	10.6	10.8	10.7	0	-0.2	10	3.9	ND
Skewness	ND	ND	-0.5	-0.6	3.2	3.3	3.2	-1	-0.1	3	1.1	ND
Range	0.0	0.0	1290.0	1434.6	29.6	146.4	77.1	2150	479.0	129860	3.0	0
Minimum	0.0	0.0	310.0	160.0	1.4	3.6	4.0	300	61.0	140	2.1	0
Maximum	0.0	0.0	1600.0	1594.6	31.0	150.0	81.1	2450	540.0	130000	5.1	0
Count	0	0	11	11	11	11	11	11	11	10	10	0
Confidence Level(95.0%)	ND	ND	270.5	288.1	5.8	28.9	14.9	492	99.5	28933	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

NATIONAL and OKLAHOMA, approx. 116TH STREET - SITE 2
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	92.55	41.70	0.0	5.1	4.6	3.7	2.2	27.5	0.0	0.5	0.7	0.0
Standard Error	10.70	5.03	0.0	0.8	1.9	0.5	1.3	7.5	0.0	0.3	0.7	0.0
Median	100.00	44.00	0.0	4.5	3.3	3.4	0.0	18.0	0.0	0.0	0.0	0.0
Mode	120.00	44.00	0.0	ND	0.0	2.4	0.0	15.0	0.0	0.0	0.0	0.0
Standard Deviation	35.48	16.68	0.0	2.8	6.3	1.6	4.4	25.0	0.0	1.1	2.1	0.0
Sample Variance	1258.67	278.13	0.0	7.9	39.5	2.4	19.6	626.3	0.0	1.2	4.2	0.0
Kurtosis	0.76	0.82	ND	7.6	4.6	0.8	2.2	8.8	ND	2.9	8.0	ND
Skewness	-1.33	-1.33	ND	2.6	2.0	1.4	1.9	2.9	ND	2.0	2.8	ND
Range	105.00	50.30	0.0	10.4	21.0	4.4	12.0	86.0	0.0	3.1	5.8	0.0
Minimum	25.00	9.70	0.0	2.6	0.0	2.4	0.0	14.0	0.0	0.0	0.0	0.0
Maximum	130.00	60.00	0.0	13.0	21.0	6.8	12.0	100.0	0.0	3.1	5.8	0.0
Count	11	11	11	11	11	11	11	11	11	11	8	2
Confidence Level(95.0%)	23.83	11.20	0.0	1.9	4.2	1.0	3.0	16.8	0.0	0.7	1.7	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	405	286	2.4	8.9	77.1	70.1	7.0	6.7
Standard Error	47	37	1.0	1.4	9.0	8.9	0.8	0.7
Median	450	330	0.0	6.9	90.0	82.0	6.0	6.1
Mode	510	330	0.0	ND	98.0	85.0	8.8	5.1
Standard Deviation	155	121	3.2	4.3	29.8	29.6	2.5	2.3
Sample Variance	24167	14734	10.5	18.3	890.3	876.3	6.3	5.4
Kurtosis	1	2	-0.1	-1.1	2.0	1.6	2.6	1.8
Skewness	-1	-2	1.0	0.7	-1.8	-1.7	1.5	1.2
Range	450	355	9.1	11.5	86.0	83.5	9.1	8.5
Minimum	110	25	0.0	4.5	12.0	8.5	3.9	3.5
Maximum	560	380	9.1	16.0	98.0	92.0	13.0	12.0
Count	11	11	11	10	11	11	11	11
Confidence Level(95.0%)	104	82	2.2	3.1	20.0	19.9	1.7	1.6

ND = No Data

Provisional MMSD Water Quality Data

COLDSPRING ROAD, EAST OF 108TH STREET - SITE 3
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.5	17.8	4.9	7.21	0.38	0.033	0.42	0.113	0.70	0.121	0.050	ND
Standard Error	0.0	1.3	0.6	5.32	0.08	0.006	0.09	0.031	0.10	0.025	0.009	ND
Median	7.6	19.1	5.1	1.21	0.37	0.030	0.40	0.069	0.63	0.079	0.048	ND
Mode	7.6	ND	5.0	ND	ND	0.005	ND	0.140	ND	0.079	0.000	ND
Standard Deviation	0.1	4.2	1.9	14.09	0.28	0.021	0.29	0.102	0.34	0.083	0.031	ND
Sample Variance	0.0	17.6	3.6	198.44	0.08	0.000	0.09	0.010	0.12	0.007	0.001	ND
Kurtosis	-0.6	-0.9	2.5	6.35	-0.88	-1.031	-1.04	3.785	8.97	3.752	-0.050	ND
Skewness	-0.5	-0.7	-1.4	2.50	0.36	0.081	0.28	1.787	2.86	1.966	-0.228	ND
Range	0.4	12.2	7.0	38.24	0.89	0.063	0.91	0.370	1.31	0.274	0.097	0.00
Minimum	7.3	10.3	0.5	0.46	0.00	0.005	0.02	0.000	0.39	0.056	0.000	0.00
Maximum	7.7	22.5	7.4	38.70	0.89	0.068	0.93	0.370	1.70	0.330	0.097	0.00
Count	11	11	11	7	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.1	2.8	1.3	13.03	0.19	0.014	0.20	0.068	0.23	0.056	0.021	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	776.4	762.3	3.5	14.1	15.5	1390	224.5	5072	3.0	ND
Standard Error	ND	ND	59.1	62.7	1.9	7.9	8.8	126	19.1	4197	0.2	ND
Median	ND	ND	830.0	826.8	1.3	5.0	5.7	1490	230.0	580	2.8	ND
Mode	ND	ND	920.0	ND	1.5	ND	ND	1310	210.0	ND	ND	ND
Standard Deviation	ND	ND	196.0	207.8	6.3	26.2	29.2	418	63.4	13921	0.6	ND
Sample Variance	ND	ND	38425.5	43175.6	40.0	684.1	851.9	174991	4020.3	193800296	0.4	ND
Kurtosis	ND	ND	5.6	4.3	9.4	9.6	10.7	3	4.8	11	4.8	ND
Skewness	ND	ND	-2.2	-2.0	3.0	3.1	3.3	-2	-1.9	3	1.9	ND
Range	0.0	0.0	670.0	687.4	22.0	88.4	98.9	1428	231.0	46800	2.4	0
Minimum	0.0	0.0	250.0	227.0	0.0	2.6	4.1	362	59.0	200	2.3	0
Maximum	0.0	0.0	920.0	914.4	22.0	91.0	103.0	1790	290.0	47000	4.7	0
Count	0	0	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	ND	ND	131.7	139.6	4.2	17.6	19.6	281	42.6	9352	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

COLDSPRING ROAD, EAST OF 108TH STREET - SITE 3
ROOT RIVER
WATER QUALITY DATA - 2010

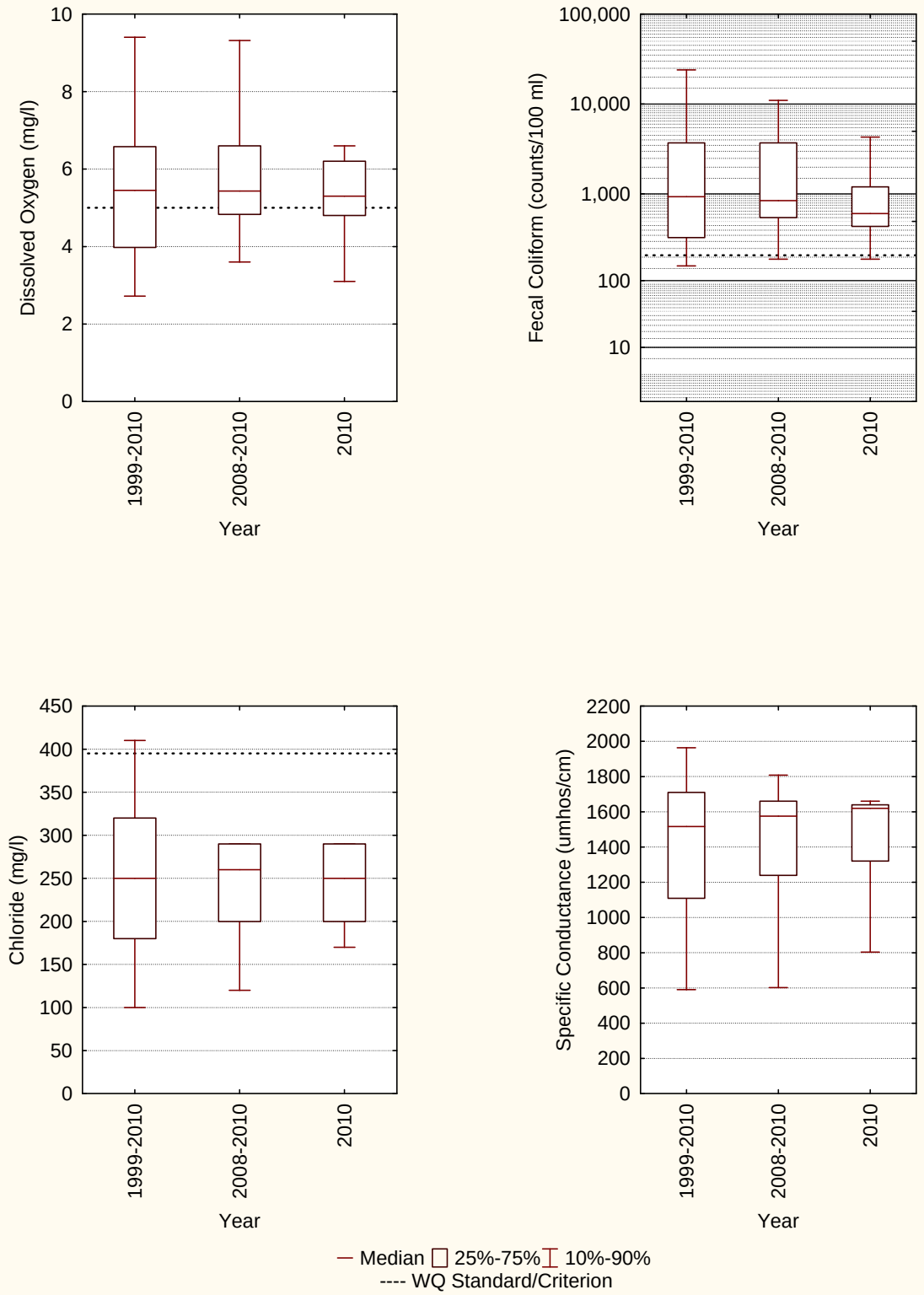
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	87.00	40.47	0.0	4.3	2.9	3.2	0.5	17.9	0.0	1.1	2.0	0.0
Standard Error	9.01	4.30	0.0	0.5	1.2	0.3	0.4	4.2	0.0	0.6	1.1	0.0
Median	91.00	44.00	0.0	3.9	0.0	2.8	0.0	13.0	0.0	0.0	0.0	0.0
Mode	88.00	43.00	0.0	ND	0.0	2.8	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	29.89	14.28	0.0	1.7	4.1	1.0	1.2	14.1	0.0	2.0	3.6	0.0
Sample Variance	893.20	203.78	0.0	3.0	16.6	1.0	1.5	198.6	0.0	3.9	13.1	0.0
Kurtosis	1.94	1.95	ND	6.2	0.3	0.7	3.8	7.9	ND	0.3	0.8	ND
Skewness	-1.51	-1.55	ND	2.3	1.3	1.0	2.2	2.7	ND	1.4	1.5	ND
Range	101.00	47.80	0.0	6.1	11.0	3.5	3.6	50.3	0.0	5.1	9.9	0.0
Minimum	19.00	8.20	0.0	2.9	0.0	1.9	0.0	7.7	0.0	0.0	0.0	0.0
Maximum	120.00	56.00	0.0	9.0	11.0	5.4	3.6	58.0	0.0	5.1	9.9	0.0
Count	11	11	11	11	11	11	11	11	11	11	11	2
Confidence Level(95.0%)	20.08	9.59	0.0	1.2	2.7	0.7	0.8	9.5	0.0	1.3	2.4	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	383	300	1.8	7.7	80.9	73.5	7.5	7.1
Standard Error	40	33	0.9	1.5	8.0	8.1	0.5	0.4
Median	410	330	0.0	5.3	91.0	84.0	7.4	6.2
Mode	400	330	0.0	5.0	91.0	ND	8.3	6.0
Standard Deviation	131	111	3.1	4.7	26.5	27.0	1.5	1.3
Sample Variance	17201	12233	9.6	22.5	700.9	729.9	2.3	1.8
Kurtosis	2	2	-0.5	1.2	2.3	2.4	1.6	0.8
Skewness	-2	-2	1.2	1.4	-1.9	-1.9	1.2	1.2
Range	429	334	7.5	14.5	79.0	81.0	5.0	4.1
Minimum	81	56	0.0	3.5	21.0	12.0	6.0	5.9
Maximum	510	390	7.5	18.0	100.0	93.0	11.0	10.0
Count	11	11	11	10	11	11	11	11
Confidence Level(95.0%)	88	74	2.1	3.4	17.8	18.1	1.0	0.9

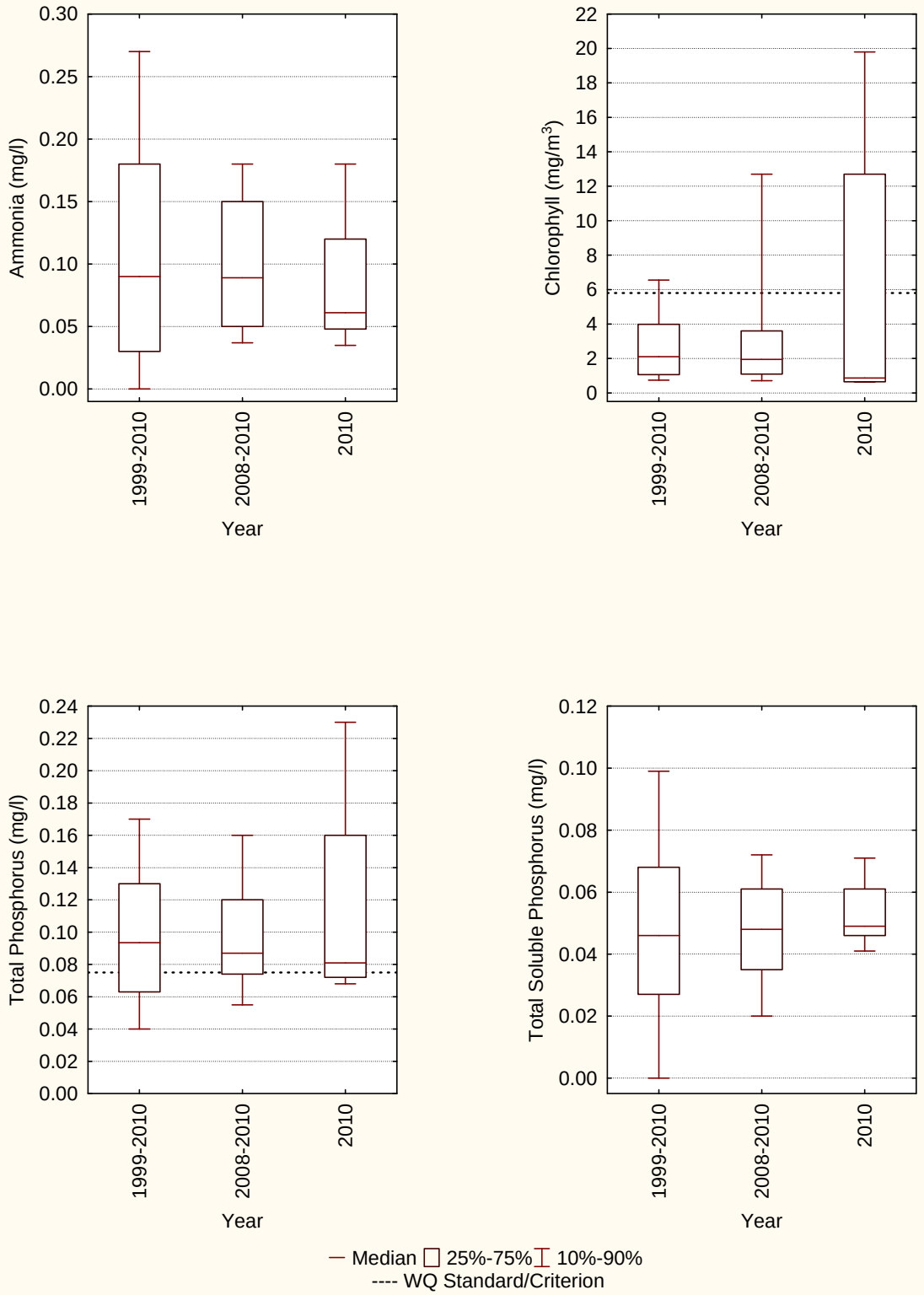
ND = No Data

Provisional MMSD Water Quality Data

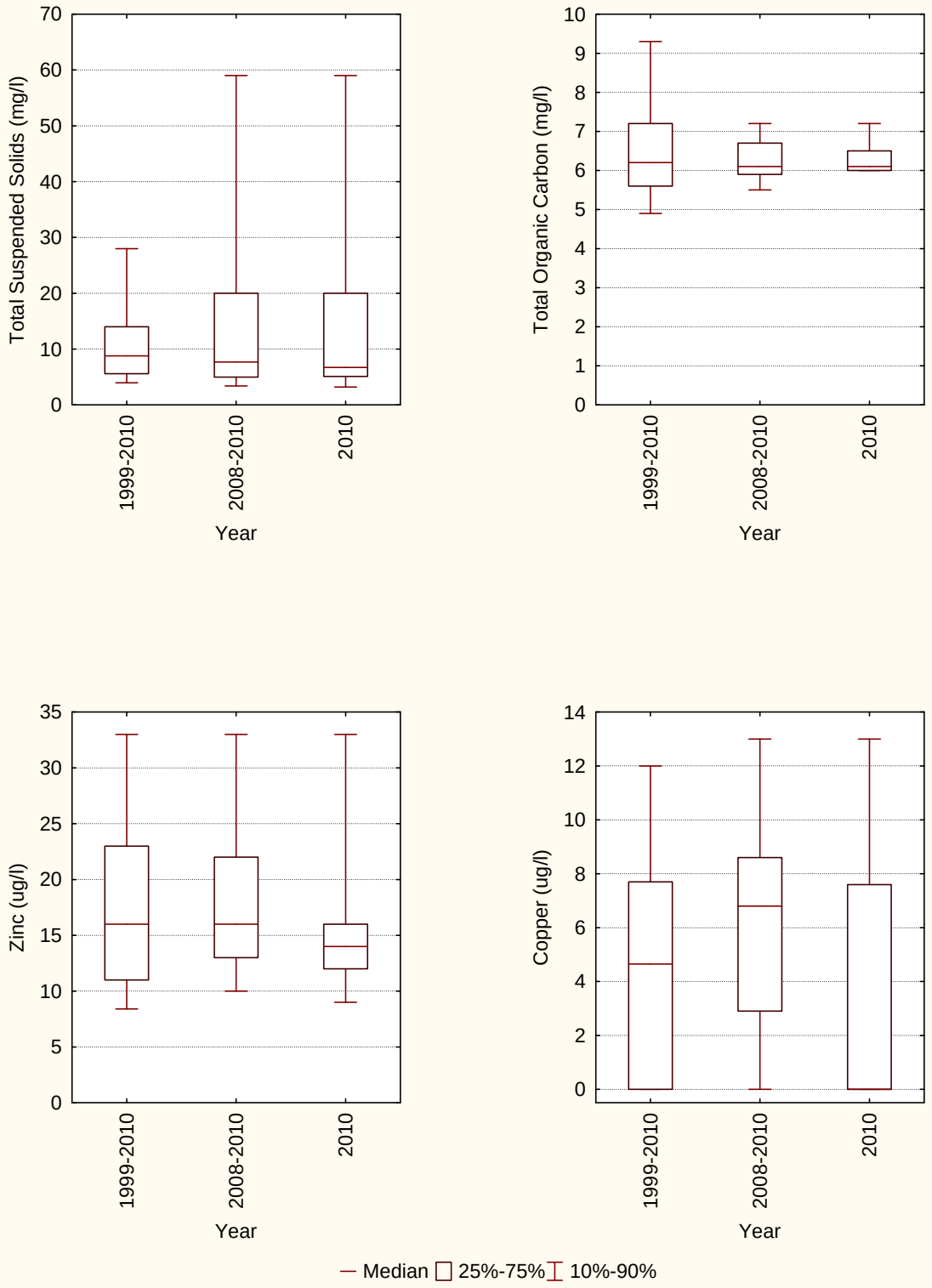
MMSD Water Quality Monitoring Program Data
Root River at Grange Ave., Site RR-04



MMSD Water Quality Monitoring Program Data
Root River at Grange Ave., Site RR-04



MMSD Water Quality Monitoring Program Data
Root River at Grange Ave., Site RR-04



GRANGE AVENUE, WEST OF 76TH STREET - SITE 4
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.6	17.3	5.4	5.27	0.49	0.029	0.52	0.094	0.73	0.113	0.049	ND
Standard Error	0.0	1.2	0.5	2.94	0.08	0.005	0.08	0.024	0.12	0.021	0.006	ND
Median	7.6	19.1	5.3	0.87	0.45	0.028	0.49	0.061	0.64	0.081	0.049	ND
Mode	7.6	20.2	5.3	ND	ND	ND	0.29	ND	0.58	ND	0.049	ND
Standard Deviation	0.1	4.1	1.8	7.78	0.27	0.016	0.28	0.081	0.39	0.068	0.020	ND
Sample Variance	0.0	16.5	3.3	60.59	0.07	0.000	0.08	0.007	0.15	0.005	0.000	ND
Kurtosis	-0.9	-0.4	1.8	0.90	-0.18	-0.919	-0.35	2.879	6.68	0.609	4.032	ND
Skewness	-0.3	-0.8	0.6	1.51	0.68	0.071	0.53	1.607	2.38	1.449	-1.481	ND
Range	0.2	12.5	6.8	19.17	0.89	0.048	0.89	0.290	1.49	0.193	0.075	0.00
Minimum	7.5	9.4	2.6	0.63	0.10	0.006	0.11	0.000	0.31	0.057	0.000	0.00
Maximum	7.7	21.9	9.4	19.80	0.99	0.054	1.00	0.290	1.80	0.250	0.075	0.00
Count	11	11	11	7	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.1	2.7	1.2	7.20	0.18	0.011	0.18	0.054	0.26	0.046	0.013	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	803.6	776.8	6.3	26.8	21.4	1437	237.3	3326	2.9	ND
Standard Error	ND	ND	47.4	58.7	3.6	15.1	11.2	106	17.0	2393	0.2	ND
Median	ND	ND	860.0	853.7	1.9	6.7	6.7	1620	250.0	600	2.8	ND
Mode	ND	ND	ND	ND	1.6	ND	ND	1640	250.0	ND	ND	ND
Standard Deviation	ND	ND	157.3	194.6	11.8	50.2	37.1	350	56.4	7938	0.7	ND
Sample Variance	ND	ND	24745.5	37878.3	138.9	2517.4	1377.8	122688	3181.8	63004021	0.4	ND
Kurtosis	ND	ND	-0.2	0.4	8.1	8.1	8.4	1	0.3	10	2.0	ND
Skewness	ND	ND	-1.0	-1.2	2.8	2.8	2.8	-2	-1.0	3	1.1	ND
Range	0.0	0.0	480.0	578.6	40.0	168.6	125.6	974	180.0	26917	2.5	0
Minimum	0.0	0.0	500.0	400.0	0.0	1.4	2.4	726	120.0	83	1.9	0
Maximum	0.0	0.0	980.0	978.6	40.0	170.0	128.0	1700	300.0	27000	4.4	0
Count	0	0	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	ND	ND	105.7	130.7	7.9	33.7	24.9	235	37.9	5332	0.5	ND

ND = No Data

Provisional MMSD Water Quality Data

GRANGE AVENUE, WEST OF 76TH STREET - SITE 4
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	84.09	41.09	0.0	4.8	4.4	3.3	1.4	21.2	0.1	0.7	2.2	0.0
Standard Error	6.57	3.41	0.0	0.8	1.9	0.5	1.0	6.8	0.1	0.5	1.2	0.0
Median	92.00	46.00	0.0	3.8	0.0	2.9	0.0	14.0	0.0	0.0	0.0	0.0
Mode	92.00	46.00	0.0	3.6	0.0	2.2	0.0	13.0	0.0	0.0	0.0	0.0
Standard Deviation	21.78	11.30	0.0	2.8	6.4	1.6	3.3	22.4	0.3	1.6	3.7	0.0
Sample Variance	474.49	127.69	0.0	7.7	41.6	2.5	11.0	503.4	0.1	2.5	13.5	0.0
Kurtosis	1.63	1.39	ND	9.5	1.5	7.1	8.5	8.6	11.0	6.1	0.6	ND
Skewness	-1.73	-1.64	ND	3.0	1.5	2.5	2.8	2.9	3.3	2.5	1.4	ND
Range	60.00	32.00	0.0	9.7	19.0	5.5	11.0	77.4	1.1	5.0	9.8	0.0
Minimum	40.00	19.00	0.0	3.3	0.0	2.2	0.0	8.6	0.0	0.0	0.0	0.0
Maximum	100.00	51.00	0.0	13.0	19.0	7.7	11.0	86.0	1.1	5.0	9.8	0.0
Count	11	11	11	11	11	11	11	11	11	11	10	2
Confidence Level(95.0%)	14.63	7.59	0.0	1.9	4.3	1.1	2.2	15.1	0.2	1.1	2.6	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	382	302	1.2	6.7	80.5	73.8	6.6	6.5
Standard Error	30	29	0.7	1.3	6.7	6.9	0.4	0.4
Median	420	340	0.0	4.9	89.0	83.0	6.1	6.1
Mode	410	340	0.0	4.2	88.0	86.0	6.1	6.0
Standard Deviation	100	97	2.3	4.2	22.3	22.9	1.2	1.2
Sample Variance	9976	9348	5.5	17.3	496.1	524.0	1.4	1.5
Kurtosis	2	2	2.5	1.3	2.4	2.1	8.4	6.0
Skewness	-2	-2	1.8	1.7	-1.9	-1.9	2.8	2.3
Range	280	288	6.8	11.2	66.0	66.0	4.1	4.5
Minimum	180	82	0.0	3.8	30.0	24.0	5.9	5.4
Maximum	460	370	6.8	15.0	96.0	90.0	10.0	9.9
Count	11	11	11	10	11	11	11	11
Confidence Level(95.0%)	67	65	1.6	3.0	15.0	15.4	0.8	0.8

ND = No Data

Provisional MMSD Water Quality Data

RYAN ROAD, WEST OF 60TH STREET - SITE 5
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.9	19.6	6.7	5.62	0.32	0.016	0.33	0.035	0.62	0.085	0.041	ND
Standard Error	0.0	1.3	0.3	0.74	0.05	0.003	0.05	0.010	0.05	0.007	0.008	ND
Median	7.9	21.2	6.7	5.15	0.39	0.015	0.43	0.024	0.64	0.087	0.052	ND
Mode	7.9	ND	6.8	ND	ND	ND	0.15	0.000	ND	0.110	0.000	ND
Standard Deviation	0.1	4.3	0.9	1.95	0.17	0.010	0.18	0.033	0.16	0.025	0.027	ND
Sample Variance	0.0	18.2	0.7	3.79	0.03	0.000	0.03	0.001	0.02	0.001	0.001	ND
Kurtosis	1.6	-0.9	0.9	0.96	-2.04	0.024	-2.09	-0.415	1.55	-1.051	-1.026	ND
Skewness	-0.9	-0.7	0.3	0.80	-0.12	0.570	-0.17	0.780	-0.70	-0.519	-0.870	ND
Range	0.3	12.2	3.1	6.04	0.45	0.036	0.45	0.099	0.60	0.069	0.069	0.00
Minimum	7.7	11.9	5.3	3.07	0.09	0.000	0.10	0.000	0.28	0.041	0.000	0.00
Maximum	8.0	24.1	8.4	9.11	0.54	0.036	0.55	0.099	0.88	0.110	0.069	0.00
Count	11	11	11	7	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.1	2.9	0.6	1.80	0.12	0.007	0.12	0.022	0.11	0.017	0.018	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	614.5	597.7	3.3	16.9	15.2	1069	151.6	575	2.4	ND
Standard Error	ND	ND	28.2	28.6	0.7	4.8	4.6	40	13.5	355	0.2	ND
Median	ND	ND	660.0	628.0	2.9	13.0	12.2	1090	150.0	200	2.3	ND
Mode	ND	ND	690.0	ND	ND	13.0	ND	1180	200.0	200	2.3	ND
Standard Deviation	ND	ND	93.5	95.0	2.3	16.0	15.3	134	44.8	1176	0.5	ND
Sample Variance	ND	ND	8747.3	9018.0	5.5	257.4	234.1	17997	2011.1	1383687	0.3	ND
Kurtosis	ND	ND	0.1	0.2	5.4	7.5	8.7	1	-0.6	11	3.4	ND
Skewness	ND	ND	-1.1	-1.1	2.1	2.6	2.8	-1	-0.2	3	1.3	ND
Range	0.0	0.0	270.0	276.2	8.4	58.2	54.8	431	144.0	4060	2.0	0
Minimum	0.0	0.0	430.0	410.0	1.1	3.8	4.6	799	76.0	40	1.6	0
Maximum	0.0	0.0	700.0	686.2	9.5	62.0	59.4	1230	220.0	4100	3.6	0
Count	0	0	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	ND	ND	62.8	63.8	1.6	10.8	10.3	90	30.1	790	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

RYAN ROAD, WEST OF 60TH STREET - SITE 5
ROOT RIVER
WATER QUALITY DATA - 2010

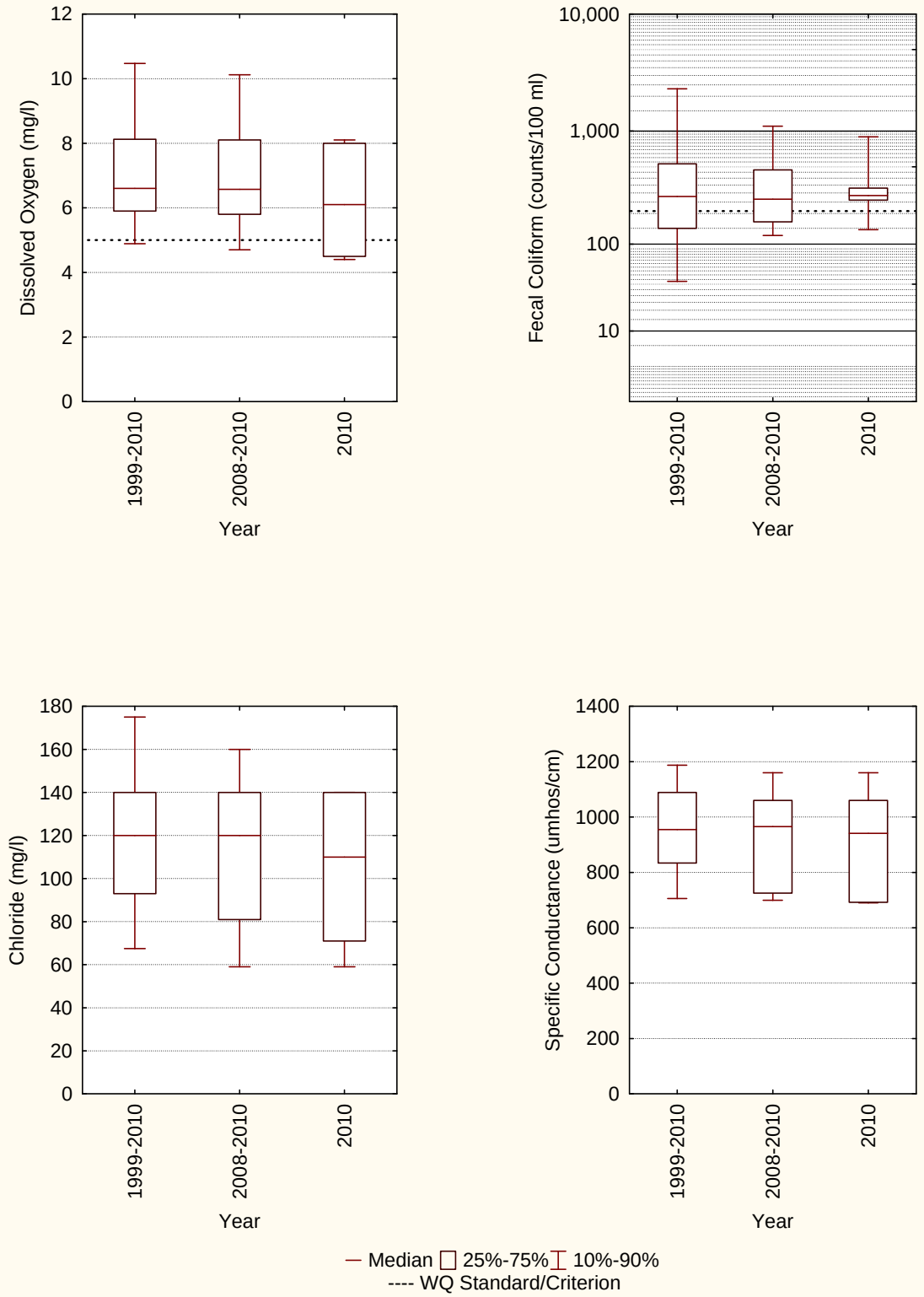
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	74.64	38.00	0.0	4.3	1.6	3.4	0.2	12.3	0.0	0.3	1.6	0.0
Standard Error	2.31	1.75	0.0	0.4	0.7	0.4	0.2	1.1	0.0	0.3	1.0	0.0
Median	74.00	38.00	0.0	3.7	0.0	2.8	0.0	12.0	0.0	0.0	0.0	0.0
Mode	74.00	35.00	0.0	3.2	0.0	2.7	0.0	12.0	0.0	0.0	0.0	0.0
Standard Deviation	7.65	5.81	0.0	1.4	2.4	1.3	0.5	3.8	0.0	1.1	3.3	0.0
Sample Variance	58.45	33.80	0.0	2.0	5.9	1.6	0.3	14.2	0.0	1.2	10.7	0.0
Kurtosis	-0.50	-0.50	ND	-0.1	0.1	2.5	11.0	0.5	ND	11.0	1.5	ND
Skewness	-0.18	-0.29	ND	1.0	1.3	1.6	3.3	0.4	ND	3.3	1.8	ND
Range	25.00	19.00	0.0	4.3	6.1	4.2	1.8	13.2	0.0	3.6	8.1	0.0
Minimum	62.00	28.00	0.0	2.8	0.0	2.2	0.0	6.8	0.0	0.0	0.0	0.0
Maximum	87.00	47.00	0.0	7.1	6.1	6.4	1.8	20.0	0.0	3.6	8.1	0.0
Count	11	11	11	11	11	11	11	11	11	11	10	2
Confidence Level(95.0%)	5.14	3.91	0.0	0.9	1.6	0.8	0.4	2.5	0.0	0.7	2.3	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	344	272	0.0	5.5	70.6	64.3	6.3	6.2
Standard Error	12	8	0.0	0.4	1.8	1.8	0.3	0.3
Median	340	280	0.0	5.1	74.0	67.0	6.3	6.1
Mode	340	300	0.0	4.9	74.0	68.0	6.4	6.0
Standard Deviation	40	27	0.0	1.4	6.0	6.1	0.8	0.9
Sample Variance	1585	736	0.0	2.0	35.5	37.0	0.7	0.9
Kurtosis	-1	-2	ND	6.3	-1.2	-1.3	0.3	0.1
Skewness	0	0	ND	2.3	-0.7	-0.7	-0.2	-0.1
Range	120	70	0.0	5.2	17.0	17.0	3.0	3.2
Minimum	280	230	0.0	4.0	60.0	54.0	4.7	4.5
Maximum	400	300	0.0	9.2	77.0	71.0	7.7	7.7
Count	11	11	11	10	11	11	11	11
Confidence Level(95.0%)	27	18	0.0	1.0	4.0	4.1	0.6	0.6

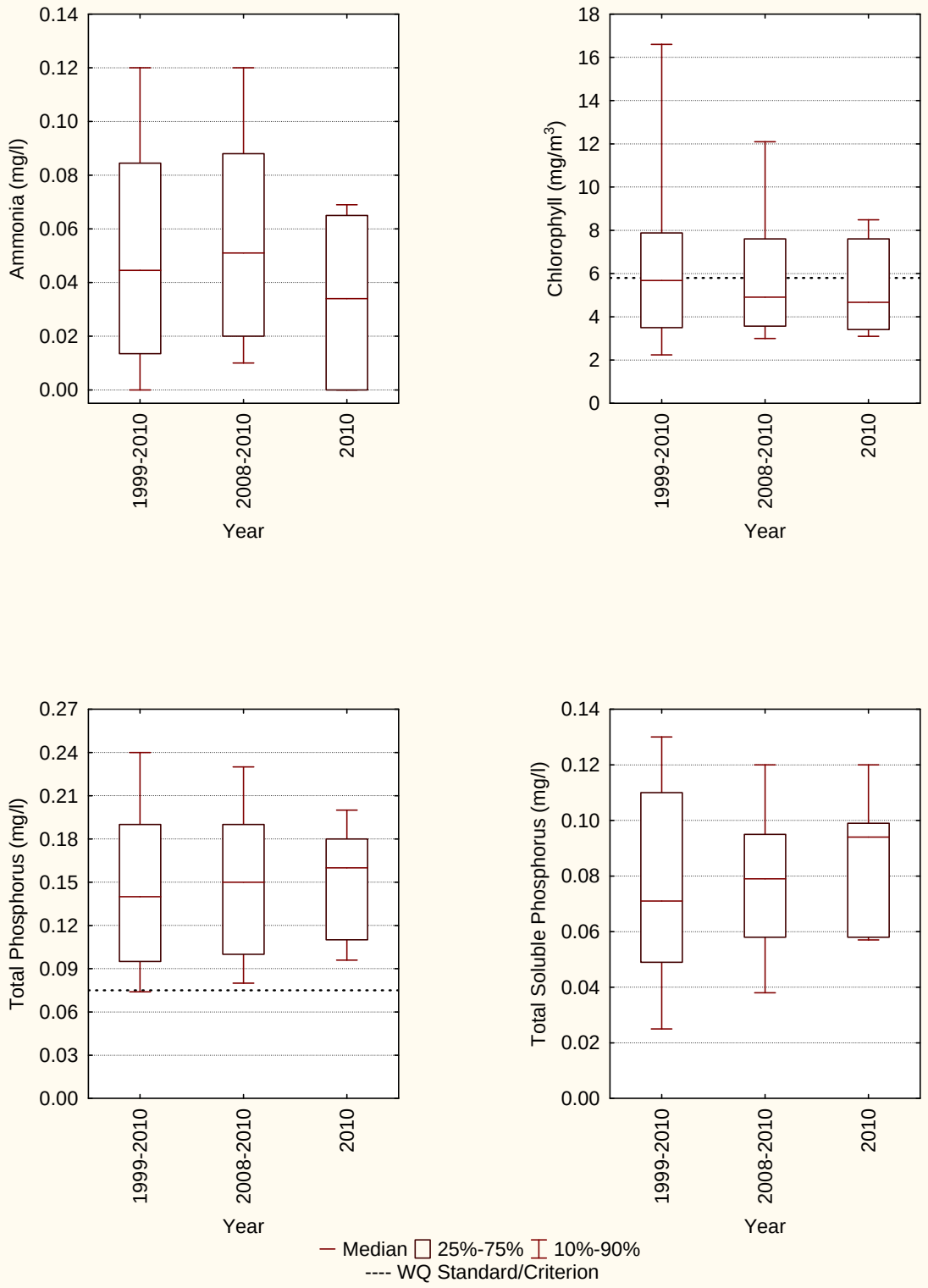
ND = No Data

Provisional MMSD Water Quality Data

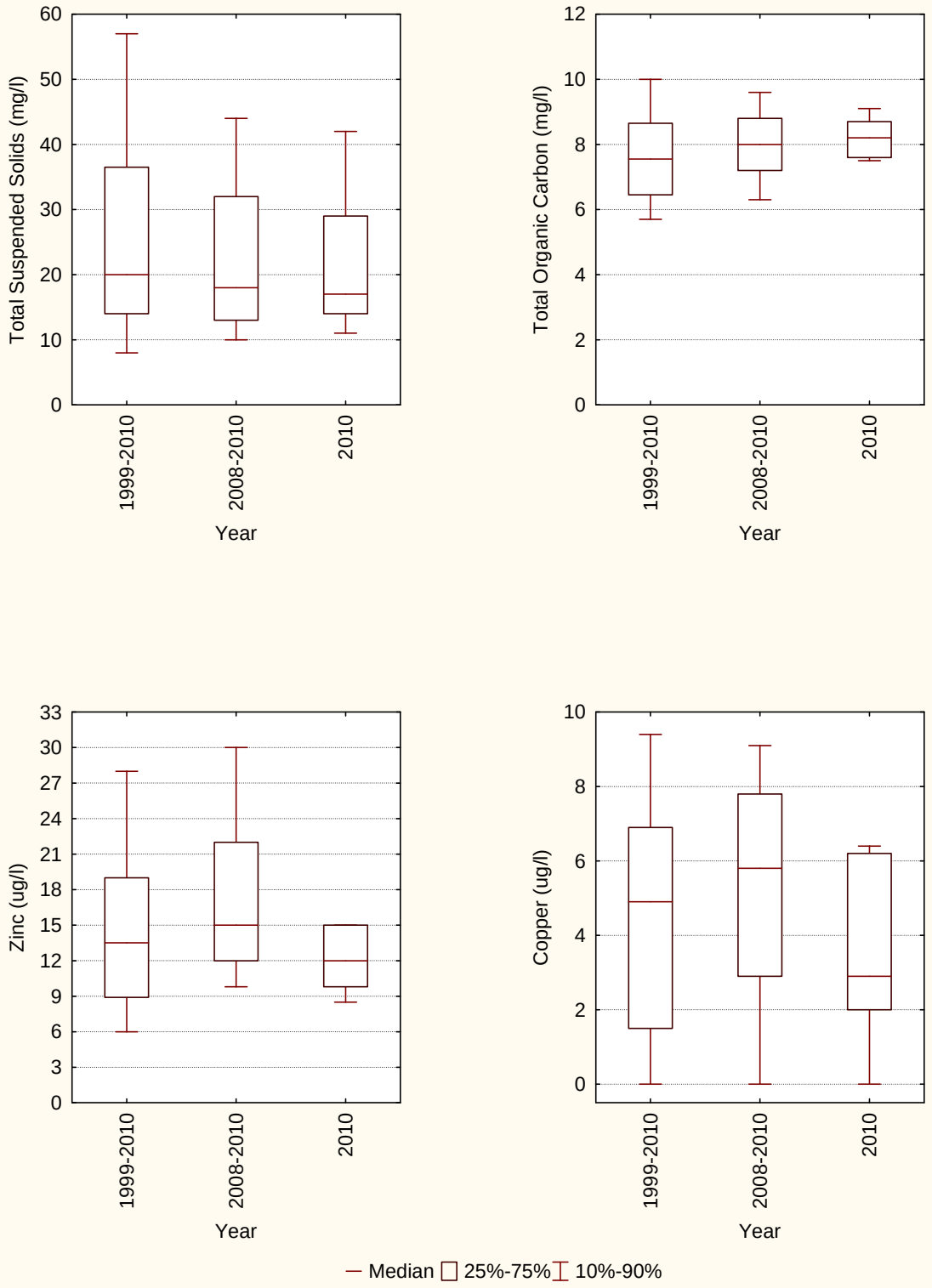
MMSD Water Quality Monitoring Program Data
Root River at County Line Rd., Site RR-06



MMSD Water Quality Monitoring Program Data
Root River at County Line Rd., Site RR-06



MMSD Water Quality Monitoring Program Data
Root River at County Line Rd., Site RR-06



COUNTY LINE ROAD (8 MILE ROAD), approx. 47TH STREET - SITE 6
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	7.8	19.6	6.2	5.46	0.92	0.028	0.96	0.046	0.86	0.174	0.086	ND
Standard Error	0.0	1.4	0.5	0.86	0.24	0.007	0.25	0.018	0.13	0.030	0.008	ND
Median	7.8	21.3	6.1	4.67	0.88	0.021	0.98	0.034	0.78	0.160	0.094	ND
Mode	7.8	ND	ND	ND	1.10	ND	1.00	0.000	ND	0.180	ND	ND
Standard Deviation	0.1	4.5	1.7	2.29	0.79	0.024	0.82	0.060	0.43	0.100	0.028	ND
Sample Variance	0.0	20.1	2.8	5.23	0.63	0.001	0.67	0.004	0.18	0.010	0.001	ND
Kurtosis	-1.0	-0.1	-1.1	-2.32	6.44	4.592	6.28	6.468	8.70	7.022	-0.440	ND
Skewness	-0.7	-0.9	0.4	0.31	2.29	1.983	2.25	2.356	2.78	2.400	-0.133	ND
Range	0.3	14.2	4.8	5.39	2.90	0.088	2.99	0.210	1.66	0.376	0.092	0.00
Minimum	7.6	10.5	4.3	3.10	0.20	0.004	0.21	0.000	0.44	0.074	0.038	0.00
Maximum	7.9	24.7	9.1	8.49	3.10	0.092	3.20	0.210	2.10	0.450	0.130	0.00
Count	11	11	11	7	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.1	3.0	1.1	2.11	0.53	0.016	0.55	0.040	0.29	0.067	0.019	ND

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	ND	ND	576.4	520.3	7.2	56.1	61.6	931	106.7	373	2.4	ND
Standard Error	ND	ND	43.4	33.9	3.5	36.5	42.8	58	12.3	101	0.1	ND
Median	ND	ND	600.0	554.0	2.9	17.0	21.9	941	110.0	275	2.4	ND
Mode	ND	ND	600.0	ND	2.8	16.0	ND	ND	140.0	250	2.4	ND
Standard Deviation	ND	ND	144.0	112.5	11.6	121.1	141.9	194	40.9	319	0.4	ND
Sample Variance	ND	ND	20725.5	12648.6	135.4	14655.4	20144.4	37484	1669.0	101498	0.1	ND
Kurtosis	ND	ND	0.5	-0.9	10.5	10.8	10.9	-1	-0.4	6	3.5	ND
Skewness	ND	ND	0.2	-0.2	3.2	3.3	3.3	0	0.1	2	-0.8	ND
Range	0.0	0.0	510.0	352.1	39.6	411.1	478.2	581	139.0	1158	1.5	0
Minimum	0.0	0.0	350.0	339.0	2.4	8.9	10.8	639	41.0	42	1.6	0
Maximum	0.0	0.0	860.0	691.1	42.0	420.0	489.0	1220	180.0	1200	3.1	0
Count	0	0	11	11	11	11	11	11	11	10	10	0
Confidence Level(95.0%)	ND	ND	96.7	75.6	7.8	81.3	95.4	130	27.4	228	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

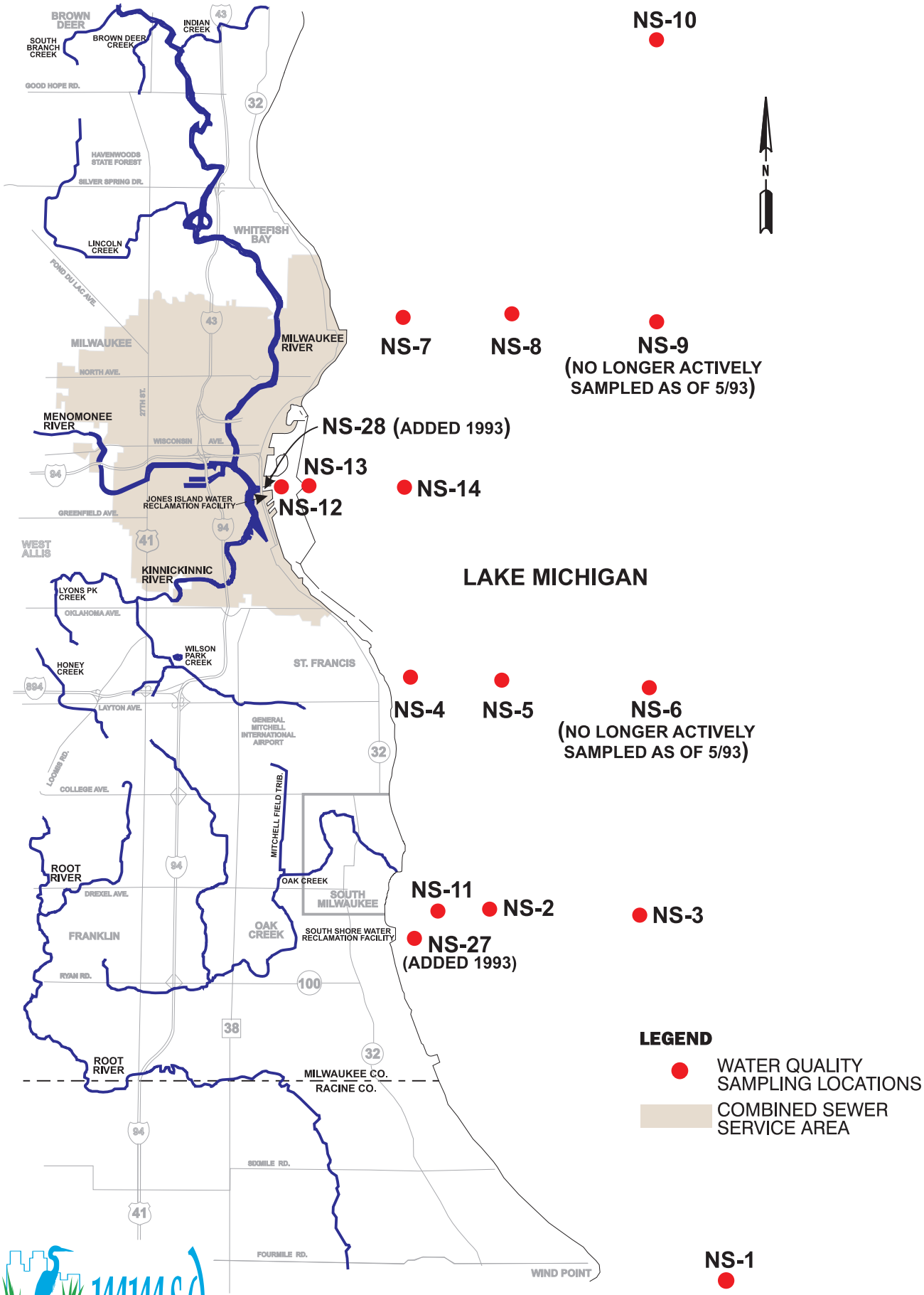
COUNTY LINE ROAD (8 MILE ROAD), approx. 47TH STREET - SITE 6
ROOT RIVER
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	70.91	35.27	0.1	6.1	4.3	5.2	0.9	16.5	0.0	1.3	1.0	0.0
Standard Error	3.21	1.84	0.1	1.9	1.3	1.7	0.7	4.8	0.0	0.9	1.0	0.0
Median	74.00	38.00	0.0	4.1	2.9	3.7	0.0	12.0	0.0	0.0	0.0	0.0
Mode	74.00	38.00	0.0	3.4	0.0	3.7	0.0	15.0	0.0	0.0	0.0	0.0
Standard Deviation	10.64	6.10	0.2	6.3	4.2	5.6	2.2	15.9	0.0	3.1	2.9	0.0
Sample Variance	113.29	37.22	0.0	40.1	17.6	31.5	5.0	254.4	0.0	9.9	8.4	0.0
Kurtosis	-0.69	-0.52	11.0	10.4	4.1	10.8	5.6	10.3	ND	6.3	9.0	ND
Skewness	-0.85	-0.78	3.3	3.2	1.8	3.3	2.4	3.2	ND	2.5	3.0	ND
Range	32.00	19.00	0.7	22.0	15.0	19.6	6.9	56.5	0.0	9.9	8.7	0.0
Minimum	52.00	24.00	0.0	3.0	0.0	2.4	0.0	7.5	0.0	0.0	0.0	0.0
Maximum	84.00	43.00	0.7	25.0	15.0	22.0	6.9	64.0	0.0	9.9	8.7	0.0
Count	11	11	11	11	11	11	11	11	11	11	9	2
Confidence Level(95.0%)	7.15	4.10	0.1	4.3	2.8	3.8	1.5	10.7	0.0	2.1	2.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	323	258	0.7	6.1	72.0	63.8	8.1	8.1
Standard Error	15	16	0.4	0.7	3.0	3.2	0.3	0.4
Median	340	280	0.0	5.6	77.0	69.0	8.2	7.7
Mode	250	280	0.0	5.6	79.0	70.0	ND	7.7
Standard Deviation	51	54	1.5	2.2	10.1	10.5	0.9	1.2
Sample Variance	2642	2896	2.2	4.7	101.6	109.6	0.9	1.4
Kurtosis	-1	4	2.2	7.9	1.4	1.4	1.9	0.0
Skewness	-1	-2	1.9	2.7	-1.5	-1.5	-0.8	0.2
Range	140	180	3.9	7.6	30.0	32.0	3.6	4.0
Minimum	240	120	0.0	4.4	49.0	40.0	6.0	6.0
Maximum	380	300	3.9	12.0	79.0	72.0	9.6	10.0
Count	11	11	11	10	11	11	11	11
Confidence Level(95.0%)	35	36	1.0	1.5	6.8	7.0	0.6	0.8

ND = No Data

Provisional MMSD Water Quality Data



Preserving The Environment • Improving Water Quality

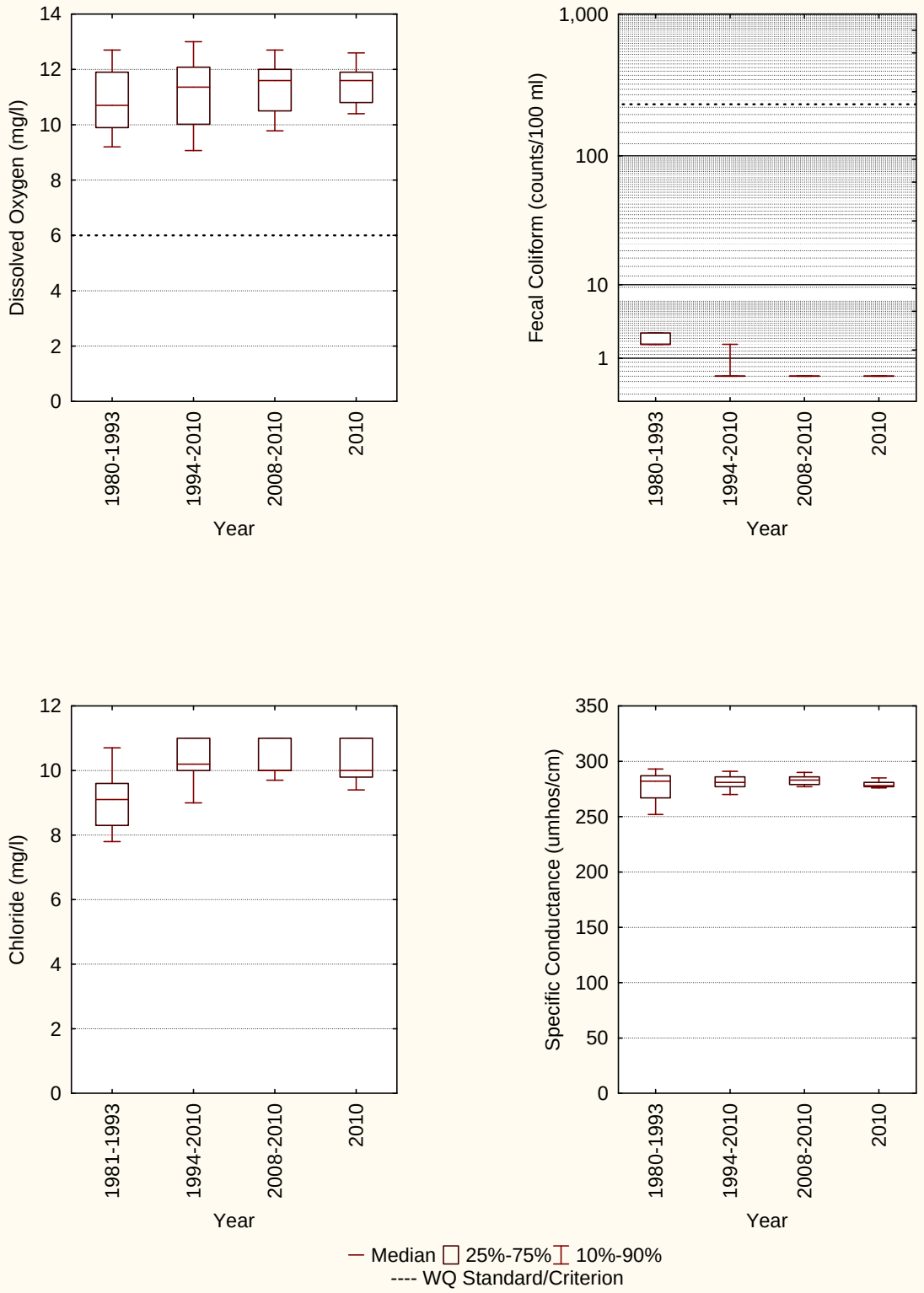
FIGURE 13

NEARSHORE (NS) SURVEY WATER QUALITY SAMPLING LOCATIONS

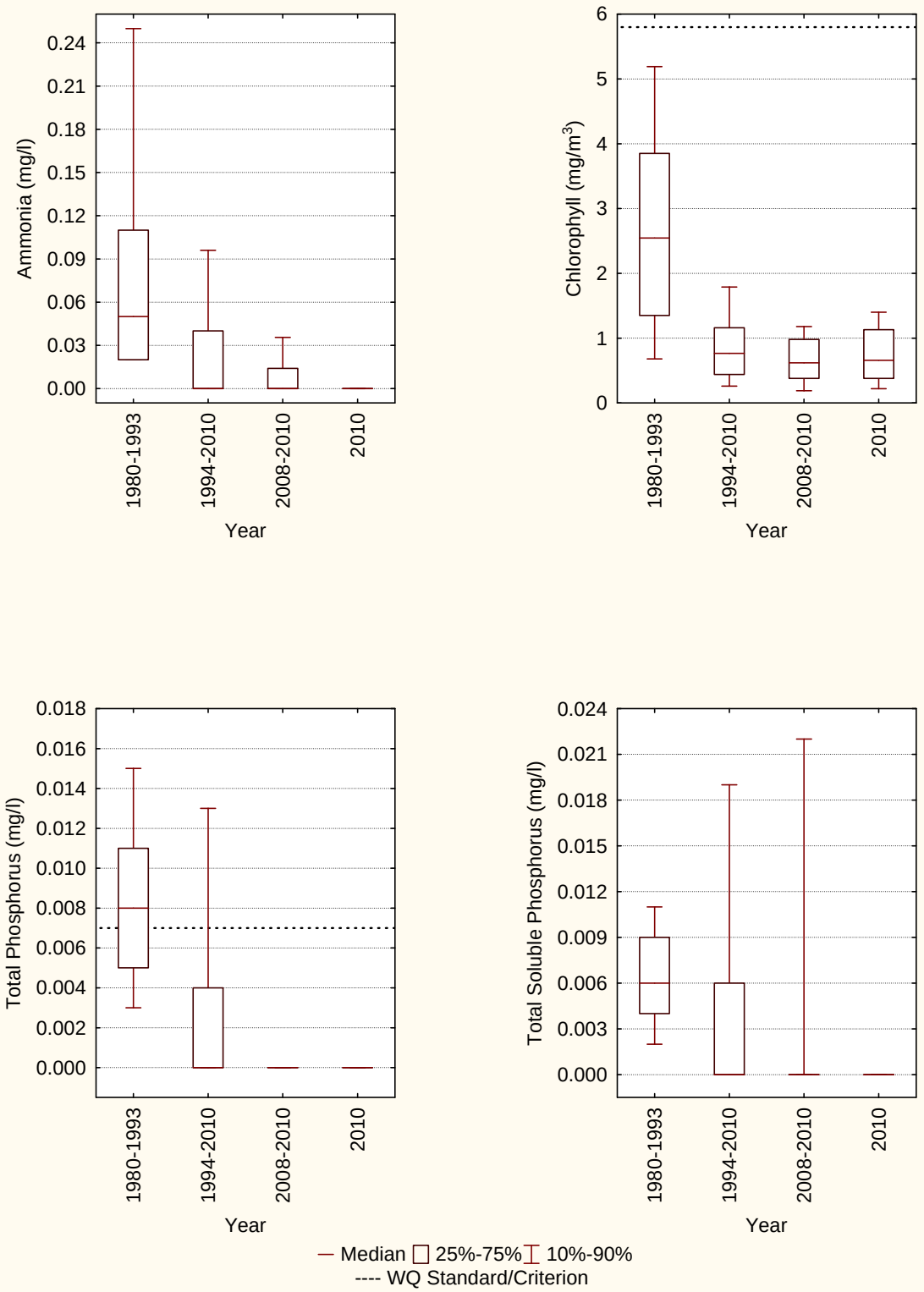
08/17/2010

02-034 pg3 REPORT

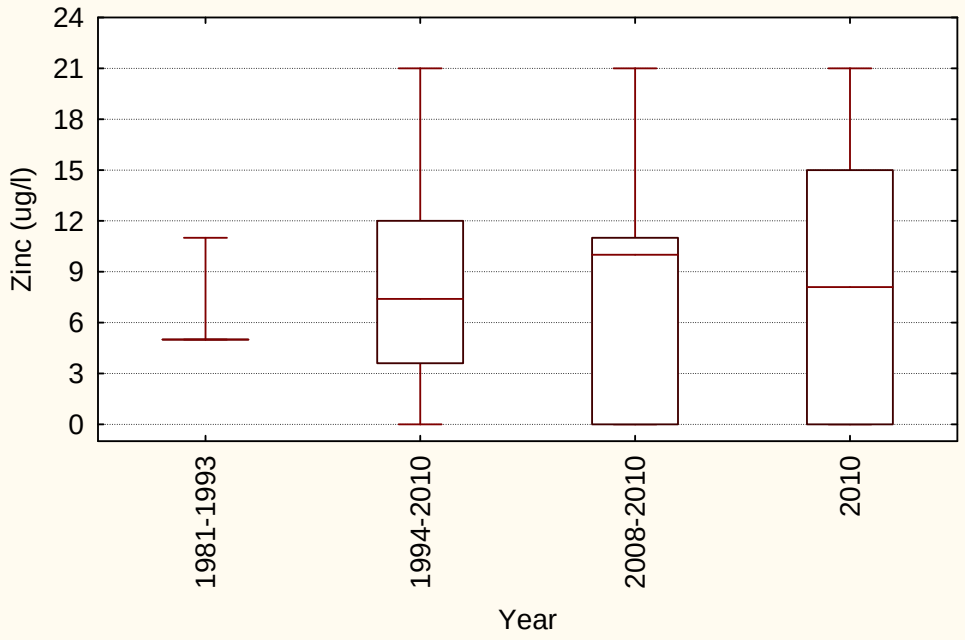
MMSD Water Quality Program Data
Nearshore survey, Site NS-01

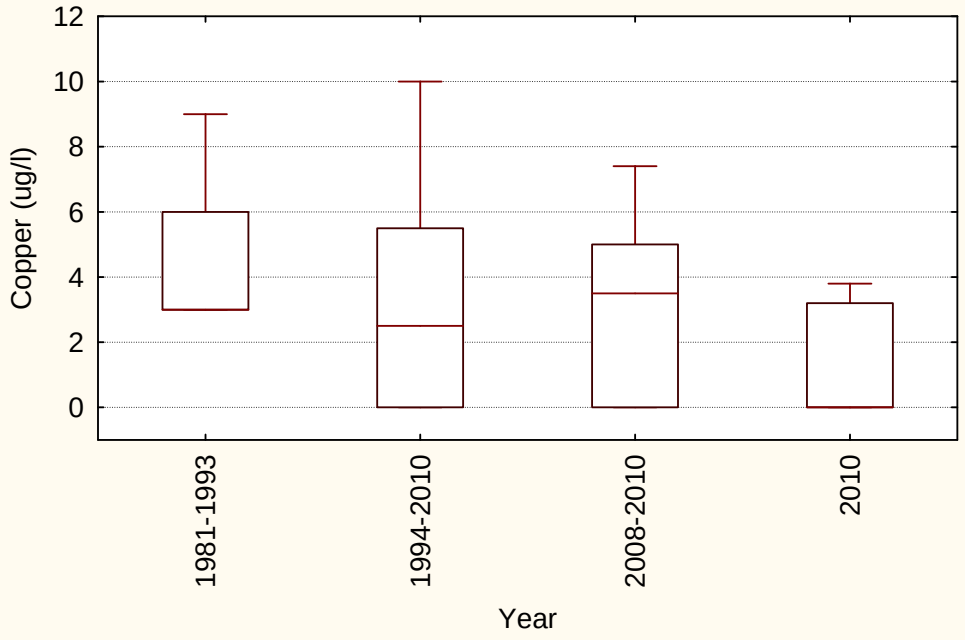


MMSD Water Quality Program Data
Nearshore survey, Site NS-01



MMSD Water Quality Program Data
Nearshore survey, Site NS-01





Median 25%-75% 10%-90%

NEAR SHORE - SITE 1
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	10.4	11.4	0.71	0.28	0.002	0.28	0.000	0.14	0.000	0.002	1.75
Standard Error	0.0	0.8	0.1	0.08	0.00	0.000	0.00	0.000	0.06	0.000	0.002	0.07
Median	8.2	8.7	11.6	0.66	0.28	0.000	0.28	0.000	0.00	0.000	0.000	1.80
Mode	8.1	6.1	11.8	0.60	0.29	0.000	0.29	0.000	0.00	0.000	0.000	1.90
Standard Deviation	0.2	4.5	0.8	0.41	0.02	0.002	0.02	0.000	0.36	0.000	0.012	0.42
Sample Variance	0.0	20.4	0.7	0.17	0.00	0.000	0.00	0.000	0.13	0.000	0.000	0.18
Kurtosis	-0.5	0.0	-0.7	-0.92	-0.34	-1.901	-0.33	ND	24.86	ND	31.313	0.34
Skewness	0.6	0.8	0.1	0.50	-0.64	0.206	-0.59	ND	4.72	ND	5.550	0.47
Range	0.6	16.8	3.0	1.35	0.07	0.005	0.08	0.000	2.00	0.000	0.071	1.70
Minimum	8.0	3.8	10.0	0.17	0.23	0.000	0.23	0.000	0.00	0.000	0.000	1.00
Maximum	8.6	20.6	13.0	1.52	0.30	0.005	0.31	0.000	2.00	0.000	0.071	2.70
Count	30	33	33	27	33	33	33	33	33	33	33	33
Confidence Level(95.0%)	0.1	1.6	0.3	0.16	0.01	0.001	0.01	0.000	0.13	0.000	0.004	0.15

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	10.7	25.9	ND	ND	ND	ND	0.5	280	10.2	0	0.0	ND
Standard Error	0.9	0.9	ND	ND	ND	ND	0.0	1	0.1	0	0.0	ND
Median	9.0	27.5	ND	ND	ND	ND	0.4	278	10.0	0	0.0	ND
Mode	14.0	28.0	ND	ND	ND	ND	0.3	278	10.0	0	0.0	ND
Standard Deviation	2.9	2.7	ND	ND	ND	ND	0.2	4	0.8	0	0.0	ND
Sample Variance	8.4	7.3	ND	ND	ND	ND	0.0	18	0.6	0	0.0	ND
Kurtosis	-0.9	-1.6	ND	ND	ND	ND	-0.7	7	4.1	ND	ND	ND
Skewness	0.7	-0.8	ND	ND	ND	ND	0.5	2	1.6	ND	ND	ND
Range	8.6	6.0	0.0	0.0	0.0	0.0	0.6	22	3.9	0	0.0	0
Minimum	7.4	22.0	0.0	0.0	0.0	0.0	0.2	275	9.1	0	0.0	0
Maximum	16.0	28.0	0.0	0.0	0.0	0.0	0.9	297	13.0	0	0.0	0
Count	11	9	0	0	0	0	33	33	33	11	11	0
Confidence Level(95.0%)	2.0	2.1	ND	ND	ND	ND	0.1	2	0.3	0	0.0	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 1
WATER QUALITY DATA - 2010

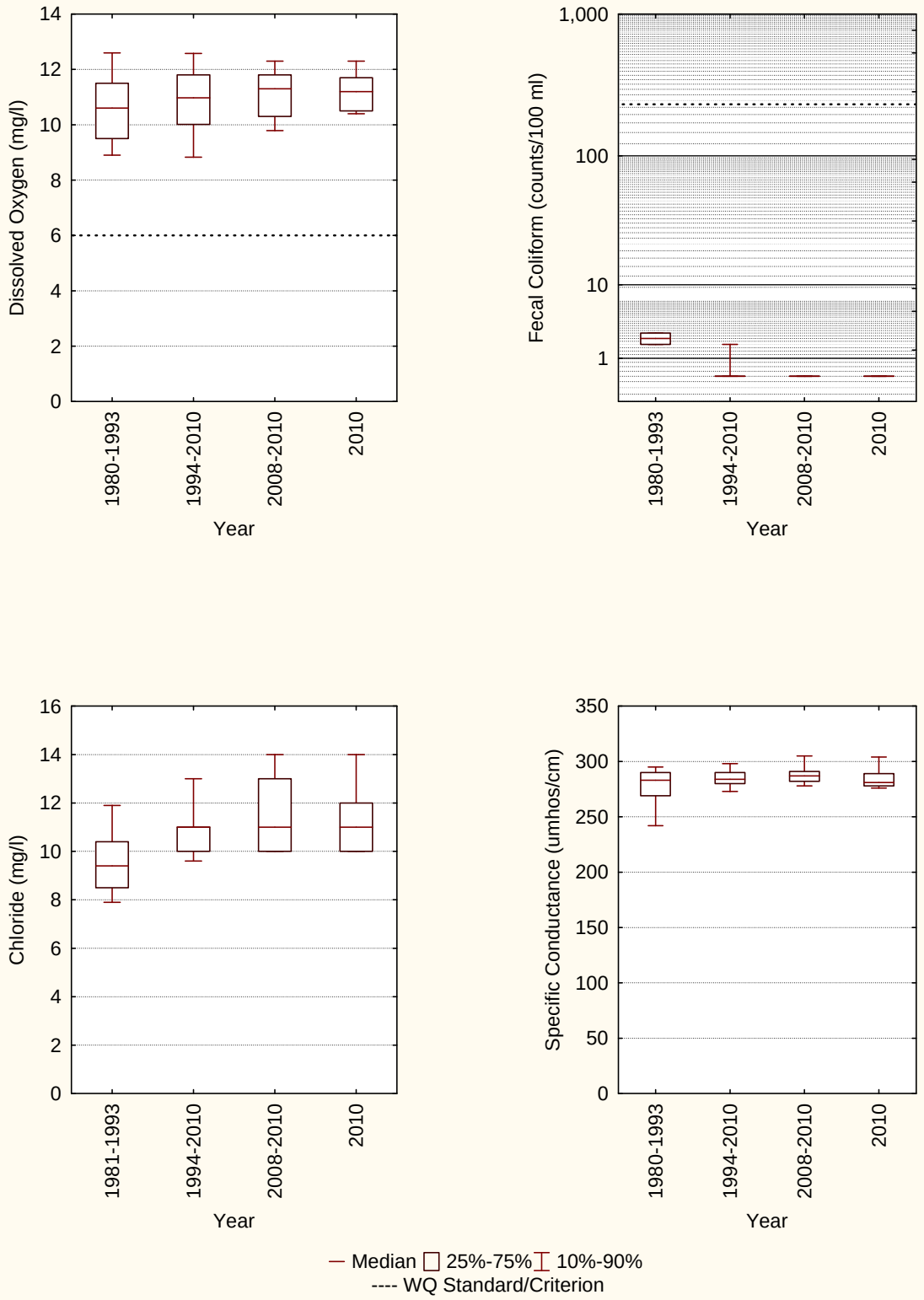
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.55	11.09	0.0	2.8	1.6	0.2	0.0	11.4	0.1	1.0	0.8	ND
Standard Error	0.37	0.16	0.0	0.1	0.7	0.2	0.0	3.9	0.1	0.5	0.8	ND
Median	33.00	11.00	0.0	2.9	0.0	0.0	0.0	8.1	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.21	0.54	0.0	0.4	2.5	0.7	0.0	12.9	0.4	1.8	2.5	ND
Sample Variance	1.47	0.29	0.0	0.2	6.1	0.5	0.0	167.3	0.2	3.3	6.2	ND
Kurtosis	0.65	1.86	ND	-0.8	1.8	11.0	ND	4.6	11.0	1.3	10.0	ND
Skewness	-0.95	0.15	ND	-0.6	1.5	3.3	ND	1.9	3.3	1.6	3.2	ND
Range	4.00	2.00	0.0	1.2	7.4	2.3	0.0	45.0	1.3	5.0	7.9	0.0
Minimum	30.00	10.00	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	34.00	12.00	0.0	3.3	7.4	2.3	0.0	45.0	1.3	5.0	7.9	0.0
Count	11	11	11	11	11	11	11	11	11	11	10	0
Confidence Level(95.0%)	0.82	0.36	0.0	0.3	1.7	0.5	0.0	8.7	0.3	1.2	1.8	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	128	ND	ND	ND	ND	ND	ND	ND
Standard Error	1	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	130	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	4	ND	ND	ND	ND	ND	ND	ND
Sample Variance	16	ND	ND	ND	ND	ND	ND	ND
Kurtosis	2	ND	ND	ND	ND	ND	ND	ND
Skewness	-2	ND	ND	ND	ND	ND	ND	ND
Range	10	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	130	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	3	ND	ND	ND	ND	ND	ND	ND

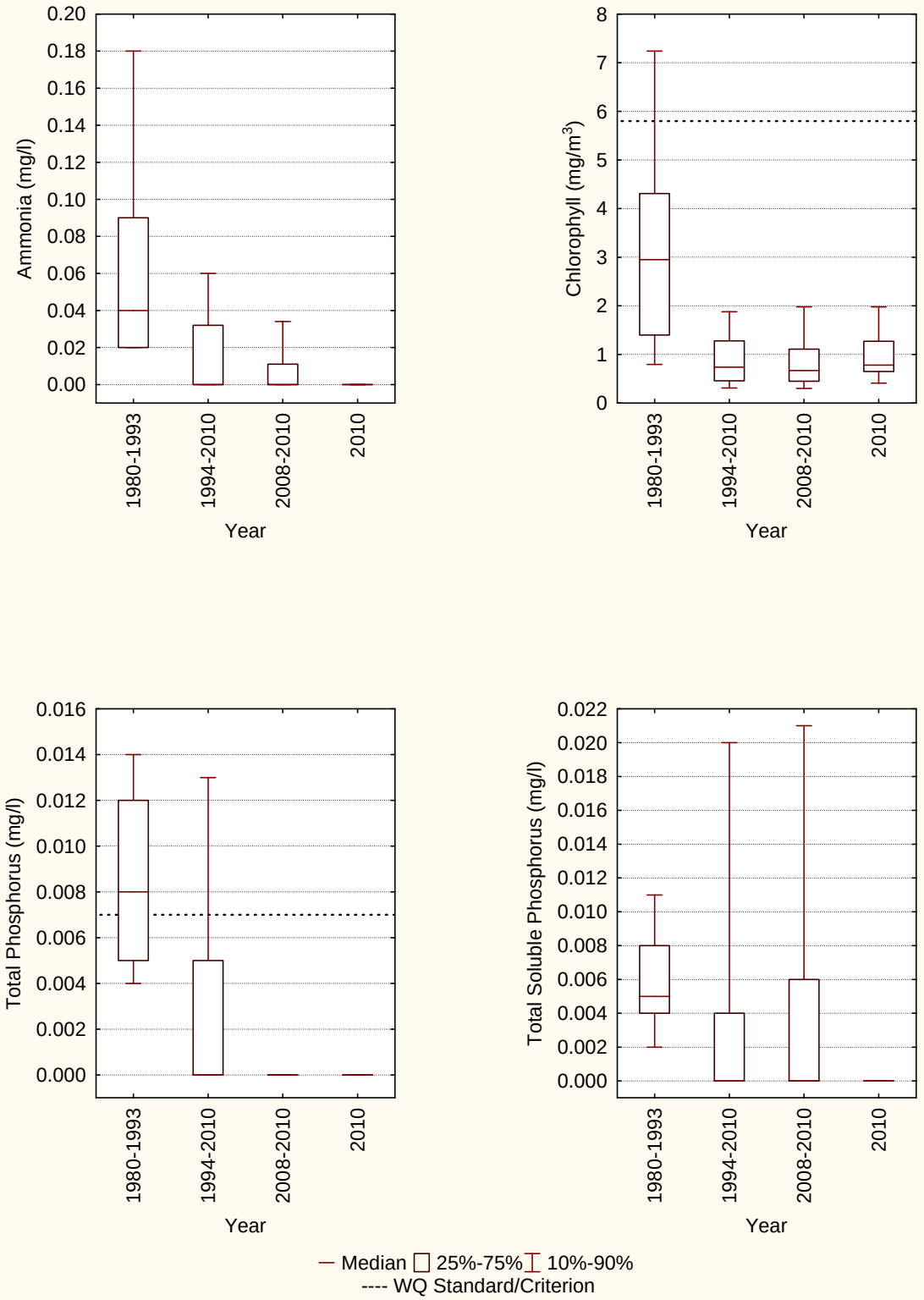
ND = No Data

Provisional MMSD Water Quality Data

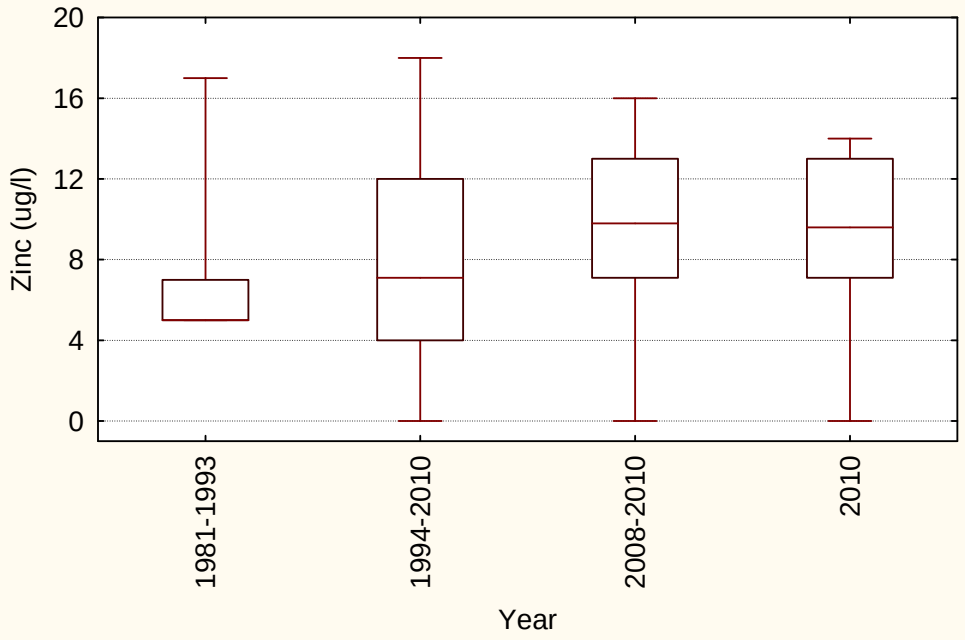
MMSD Water Quality Program Data
Nearshore survey, Site NS-02

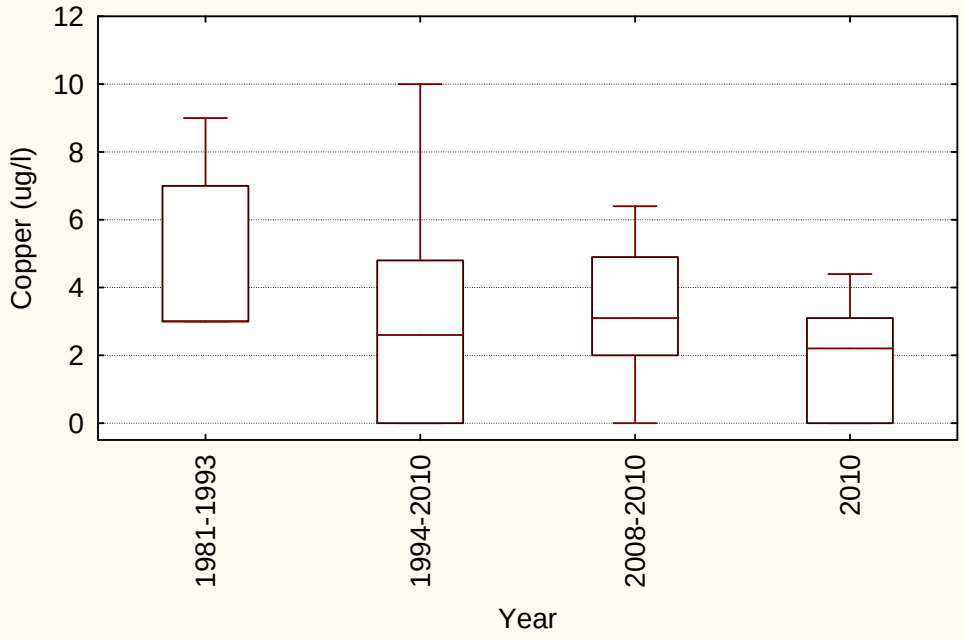


MMSD Water Quality Program Data
Nearshore survey, Site NS-02



MMSD Water Quality Program Data
Nearshore survey, Site NS-02





Median 25%-75% 10%-90%

NEAR SHORE - SITE 2
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.3	12.4	11.2	1.01	0.28	0.003	0.28	0.001	0.08	0.001	0.000	1.63
Standard Error	0.0	0.8	0.1	0.11	0.01	0.000	0.01	0.001	0.02	0.000	0.000	0.08
Median	8.3	11.7	11.2	0.78	0.28	0.004	0.28	0.000	0.00	0.000	0.000	1.70
Mode	8.1	11.5	12.3	1.11	0.28	0.000	0.29	0.000	0.00	0.000	0.000	1.70
Standard Deviation	0.2	4.3	0.8	0.56	0.04	0.002	0.04	0.006	0.13	0.003	0.002	0.44
Sample Variance	0.0	18.8	0.6	0.31	0.00	0.000	0.00	0.000	0.02	0.000	0.000	0.20
Kurtosis	-1.5	-1.1	1.3	1.06	-0.50	-0.557	-0.60	33.000	0.08	15.042	33.000	-0.53
Skewness	0.1	0.2	0.9	1.19	0.30	-1.083	0.17	5.745	1.22	3.976	5.745	0.23
Range	0.5	15.3	3.7	2.23	0.13	0.005	0.13	0.036	0.41	0.013	0.012	1.78
Minimum	8.1	5.3	10.0	0.27	0.22	0.000	0.22	0.000	0.00	0.000	0.000	0.82
Maximum	8.6	20.6	13.7	2.50	0.35	0.005	0.35	0.036	0.41	0.013	0.012	2.60
Count	30	33	33	27	33	33	33	33	33	33	33	33
Confidence Level(95.0%)	0.1	1.5	0.3	0.22	0.01	0.001	0.01	0.002	0.05	0.001	0.001	0.16

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	9.8	15.2	ND	ND	ND	ND	0.6	286	11.2	0	0.0	ND
Standard Error	1.1	0.1	ND	ND	ND	ND	0.0	2	0.3	0	0.0	ND
Median	9.0	15.2	ND	ND	ND	ND	0.5	281	11.0	0	0.0	ND
Mode	8.4	15.0	ND	ND	ND	ND	0.5	281	10.0	0	0.0	ND
Standard Deviation	3.7	0.4	ND	ND	ND	ND	0.3	11	1.7	0	0.0	ND
Sample Variance	13.9	0.2	ND	ND	ND	ND	0.1	121	2.8	0	0.0	ND
Kurtosis	-0.6	0.7	ND	ND	ND	ND	7.1	1	0.8	ND	ND	ND
Skewness	0.0	0.3	ND	ND	ND	ND	2.5	1	1.2	ND	ND	ND
Range	11.5	1.5	0.0	0.0	0.0	0.0	1.4	42	6.7	0	0.0	0
Minimum	3.5	14.5	0.0	0.0	0.0	0.0	0.3	276	9.3	0	0.0	0
Maximum	15.0	16.0	0.0	0.0	0.0	0.0	1.6	318	16.0	0	0.0	0
Count	11	9	0	0	0	0	33	33	33	11	11	0
Confidence Level(95.0%)	2.5	0.3	ND	ND	ND	ND	0.1	4	0.6	0	0.0	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 2
WATER QUALITY DATA - 2010

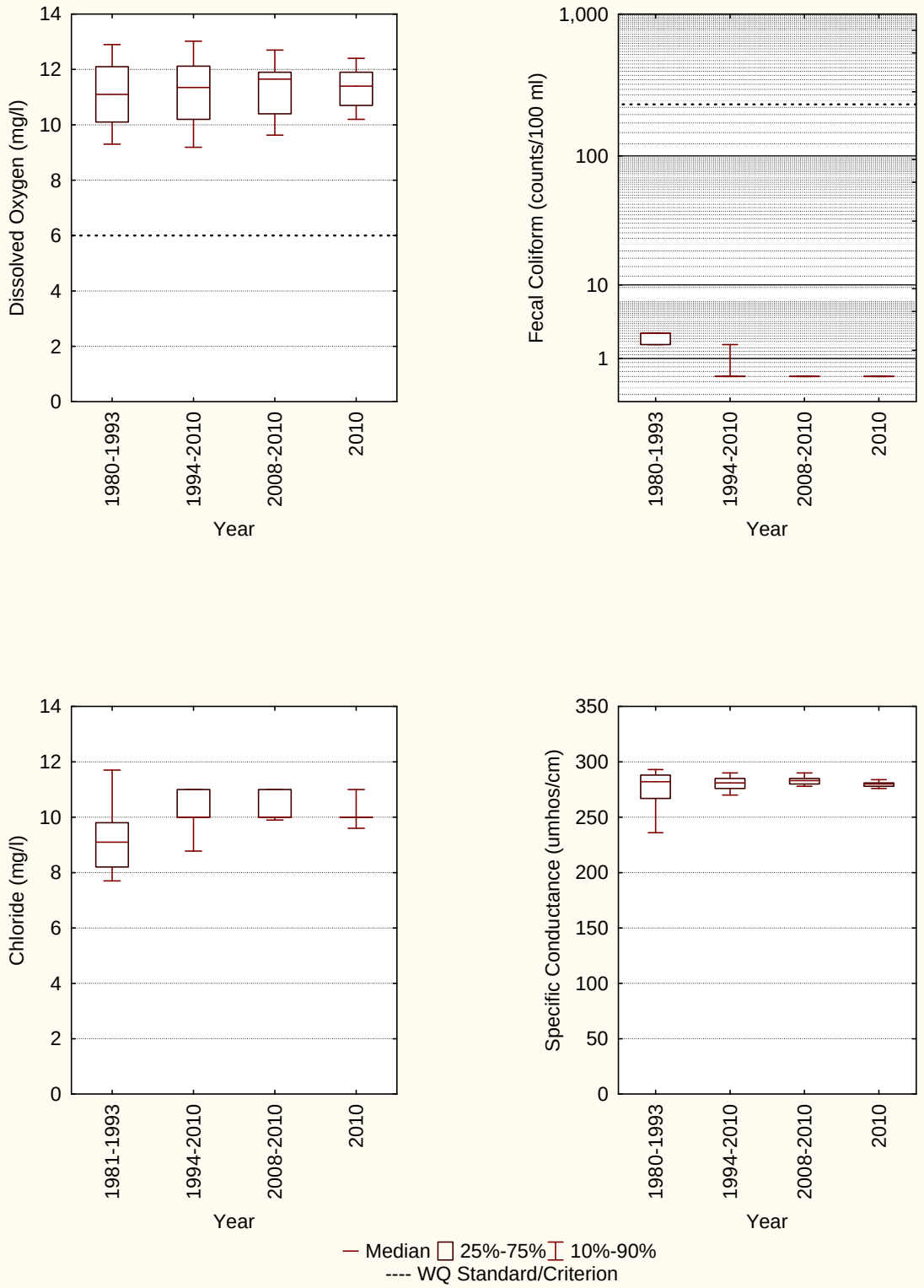
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	33.00	11.45	0.0	2.8	2.5	0.2	0.0	9.3	0.0	0.4	0.9	ND
Standard Error	0.47	0.16	0.0	0.3	1.0	0.2	0.0	1.7	0.0	0.4	0.9	ND
Median	33.00	11.00	0.0	3.0	2.2	0.0	0.0	9.6	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.55	0.52	0.0	1.1	3.2	0.5	0.0	5.5	0.0	1.4	2.7	ND
Sample Variance	2.40	0.27	0.0	1.2	10.2	0.3	0.0	30.0	0.0	1.8	7.3	ND
Kurtosis	0.03	-2.44	ND	5.1	5.4	11.0	ND	0.2	ND	11.0	9.0	ND
Skewness	0.59	0.21	ND	-1.9	2.1	3.3	ND	-0.6	ND	3.3	3.0	ND
Range	5.00	1.00	0.0	4.0	11.0	1.8	0.0	18.0	0.0	4.5	8.1	0.0
Minimum	31.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	12.00	0.0	4.0	11.0	1.8	0.0	18.0	0.0	4.5	8.1	0.0
Count	11	11	11	11	11	11	11	11	11	11	9	0
Confidence Level(95.0%)	1.04	0.35	0.0	0.7	2.1	0.4	0.0	3.7	0.0	0.9	2.1	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	129	ND	ND	ND	ND	ND	ND	ND
Standard Error	3	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	120	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	8	ND	ND	ND	ND	ND	ND	ND
Sample Variance	69	ND	ND	ND	ND	ND	ND	ND
Kurtosis	-1	ND	ND	ND	ND	ND	ND	ND
Skewness	0	ND	ND	ND	ND	ND	ND	ND
Range	20	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	140	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	6	ND	ND	ND	ND	ND	ND	ND

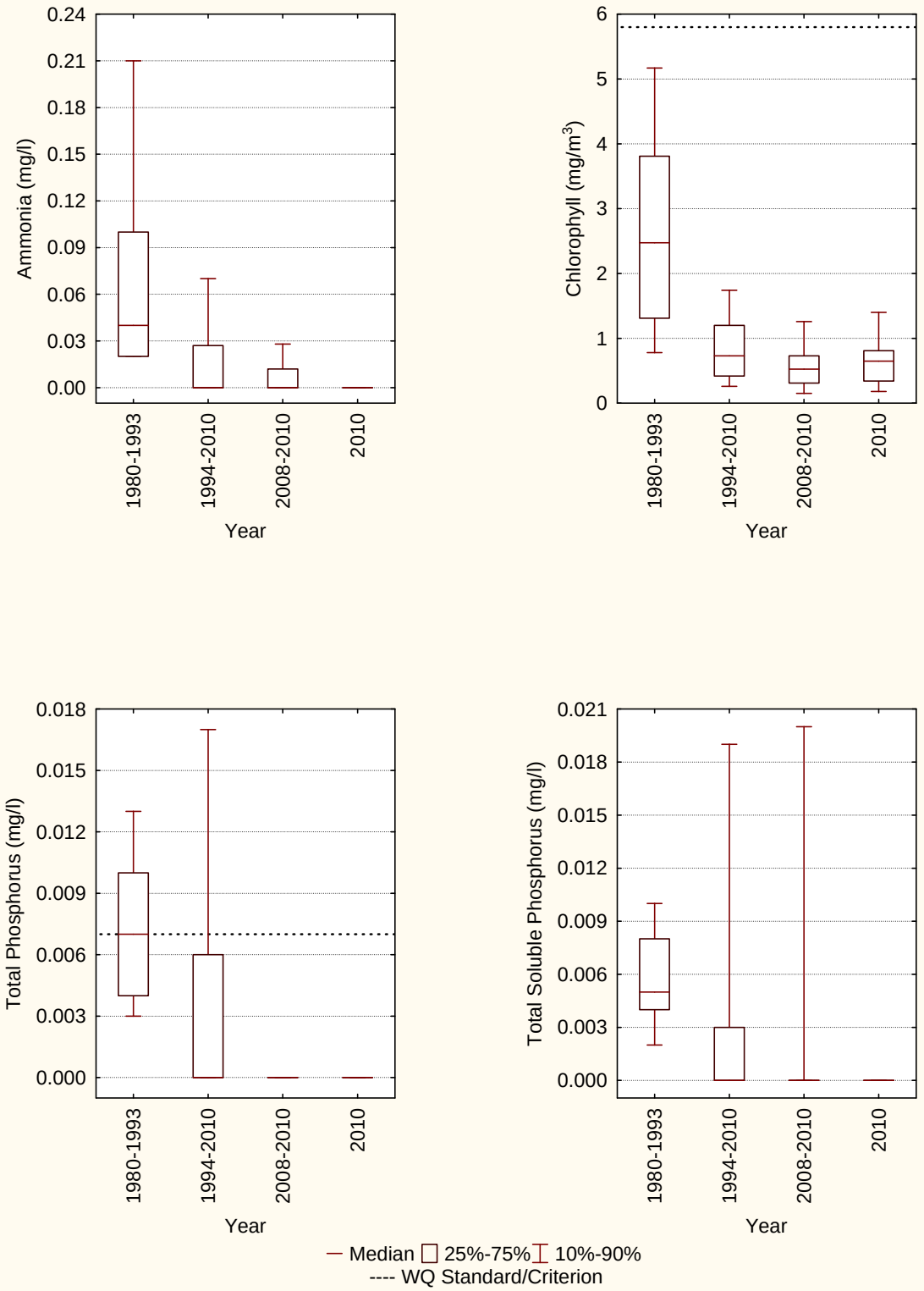
ND = No Data

Provisional MMSD Water Quality Data

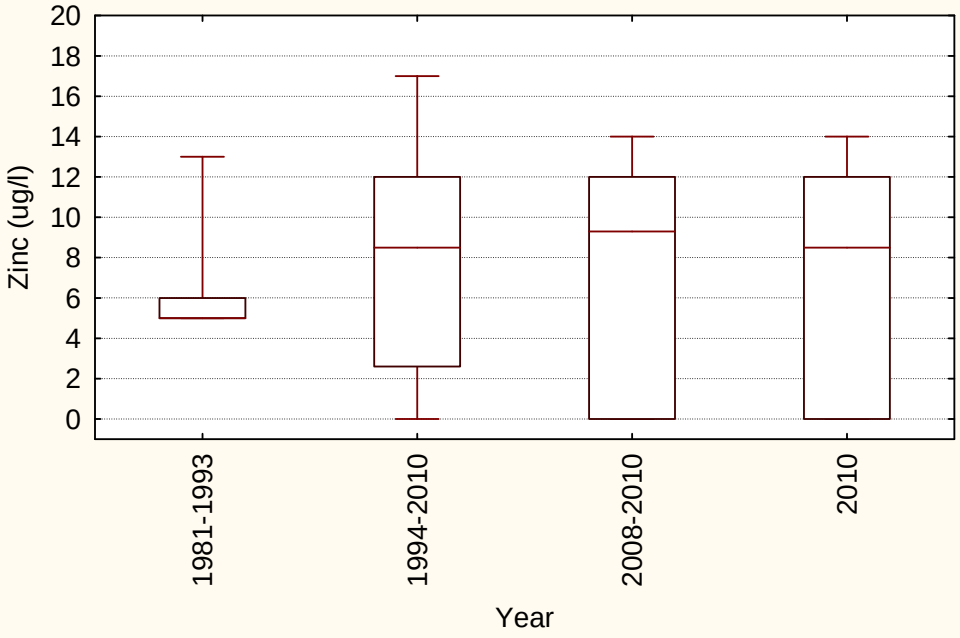
MMSD Water Quality Program Data
Nearshore survey, Site NS-03

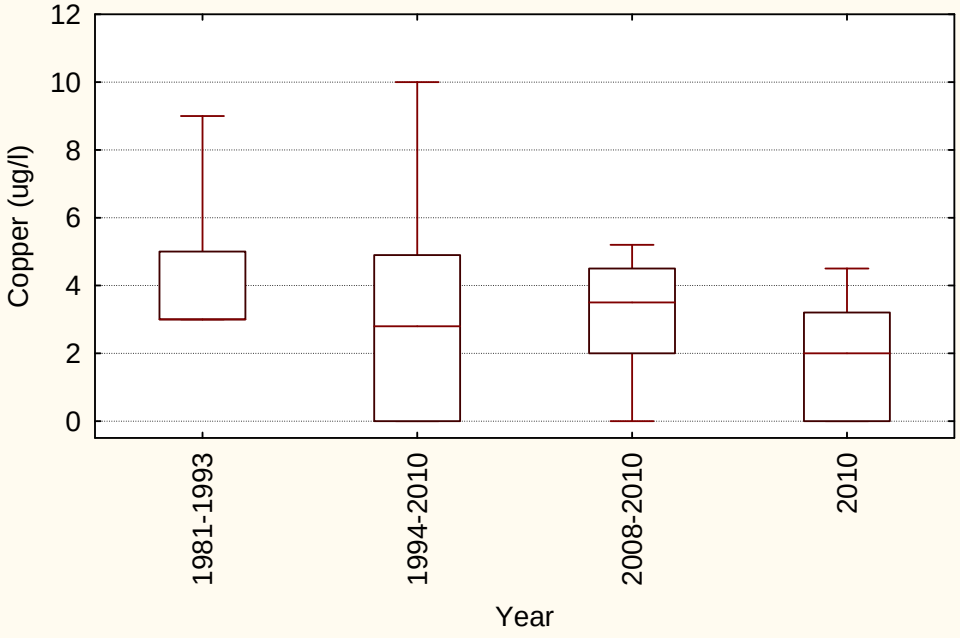


MMSD Water Quality Program Data
Nearshore survey, Site NS-03



MMSD Water Quality Program Data
Nearshore survey, Site NS-03





Median 25%-75% 10%-90%

NEAR SHORE - SITE 3
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	11.0	11.3	0.69	0.26	0.002	0.28	0.005	0.05	0.000	0.000	1.76
Standard Error	0.0	0.8	0.2	0.08	0.01	0.000	0.00	0.005	0.02	0.000	0.000	0.06
Median	8.2	8.9	11.4	0.65	0.28	0.003	0.28	0.000	0.00	0.000	0.000	1.80
Mode	8.2	12.6	11.9	1.26	0.29	0.000	0.28	0.000	0.00	0.000	0.000	1.90
Standard Deviation	0.2	4.9	0.9	0.42	0.07	0.002	0.02	0.026	0.11	0.000	0.002	0.37
Sample Variance	0.0	23.5	0.8	0.18	0.01	0.000	0.00	0.001	0.01	0.000	0.000	0.13
Kurtosis	-0.7	-0.3	-0.5	-0.07	9.96	-1.805	0.54	32.538	1.99	ND	33.000	-0.03
Skewness	0.4	0.7	-0.3	0.83	-3.14	-0.144	-0.94	5.689	1.89	ND	5.745	0.14
Range	0.7	17.3	3.4	1.52	0.31	0.006	0.10	0.150	0.35	0.000	0.010	1.50
Minimum	7.9	4.2	9.4	0.13	0.00	0.000	0.21	0.000	0.00	0.000	0.000	1.00
Maximum	8.6	21.5	12.8	1.65	0.31	0.006	0.31	0.150	0.35	0.000	0.010	2.50
Count	30	33	33	26	33	33	33	33	33	33	33	33
Confidence Level(95.0%)	0.1	1.7	0.3	0.17	0.03	0.001	0.01	0.009	0.04	0.000	0.001	0.13

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	10.8	24.8	ND	ND	ND	ND	0.4	280	10.1	0	0.0	ND
Standard Error	0.8	0.8	ND	ND	ND	ND	0.0	1	0.1	0	0.0	ND
Median	9.7	25.2	ND	ND	ND	ND	0.4	280	10.0	0	0.0	ND
Mode	14.0	25.0	ND	ND	ND	ND	0.3	280	10.0	0	0.0	ND
Standard Deviation	2.7	2.4	ND	ND	ND	ND	0.2	3	0.6	0	0.0	ND
Sample Variance	7.5	6.0	ND	ND	ND	ND	0.0	10	0.3	0	0.0	ND
Kurtosis	-1.4	0.7	ND	ND	ND	ND	0.6	3	-0.4	ND	ND	ND
Skewness	0.3	-1.3	ND	ND	ND	ND	1.1	1	0.4	ND	ND	ND
Range	8.0	7.0	0.0	0.0	0.0	0.0	0.8	15	2.0	0	0.0	0
Minimum	7.0	20.0	0.0	0.0	0.0	0.0	0.2	276	9.0	0	0.0	0
Maximum	15.0	27.0	0.0	0.0	0.0	0.0	1.0	291	11.0	0	0.0	0
Count	11	10	0	0	0	0	33	33	33	11	11	0
Confidence Level(95.0%)	1.8	1.7	ND	ND	ND	ND	0.1	1	0.2	0	0.0	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 3
WATER QUALITY DATA - 2010

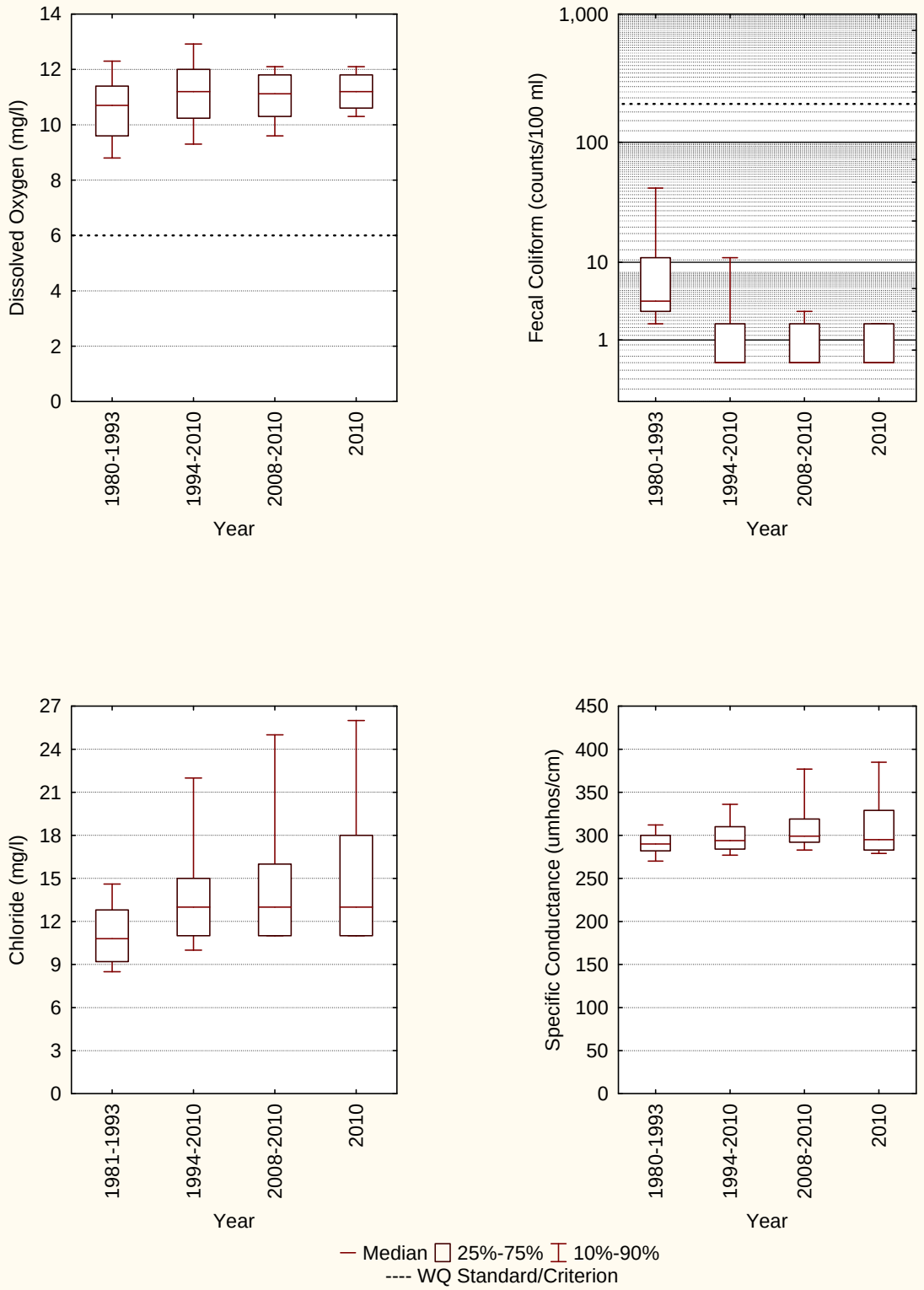
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.73	11.09	0.0	2.8	1.9	0.6	0.0	7.4	0.0	0.6	2.5	ND
Standard Error	0.33	0.21	0.0	0.4	0.6	0.3	0.0	1.7	0.0	0.4	1.1	ND
Median	33.00	11.00	0.0	2.8	2.0	0.0	0.0	8.5	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	ND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.10	0.70	0.0	1.4	2.1	1.0	0.0	5.6	0.0	1.3	3.6	ND
Sample Variance	1.22	0.49	0.0	1.9	4.5	1.0	0.0	31.0	0.0	1.6	12.7	ND
Kurtosis	-0.92	-0.45	ND	0.9	-0.7	-0.1	ND	-1.0	ND	2.5	-1.3	ND
Skewness	-0.44	-0.12	ND	-0.4	0.6	1.3	ND	-0.2	ND	2.0	0.9	ND
Range	3.00	2.00	0.0	5.0	6.0	2.6	0.0	16.0	0.0	3.5	8.7	0.0
Minimum	31.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	34.00	12.00	0.0	5.0	6.0	2.6	0.0	16.0	0.0	3.5	8.7	0.0
Count	11	11	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.74	0.47	0.0	0.9	1.4	0.7	0.0	3.7	0.0	0.9	2.4	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	128	ND	ND	ND	ND	ND	ND	ND
Standard Error	1	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	130	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	4	ND	ND	ND	ND	ND	ND	ND
Sample Variance	16	ND	ND	ND	ND	ND	ND	ND
Kurtosis	2	ND	ND	ND	ND	ND	ND	ND
Skewness	-2	ND	ND	ND	ND	ND	ND	ND
Range	10	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	130	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	3	ND	ND	ND	ND	ND	ND	ND

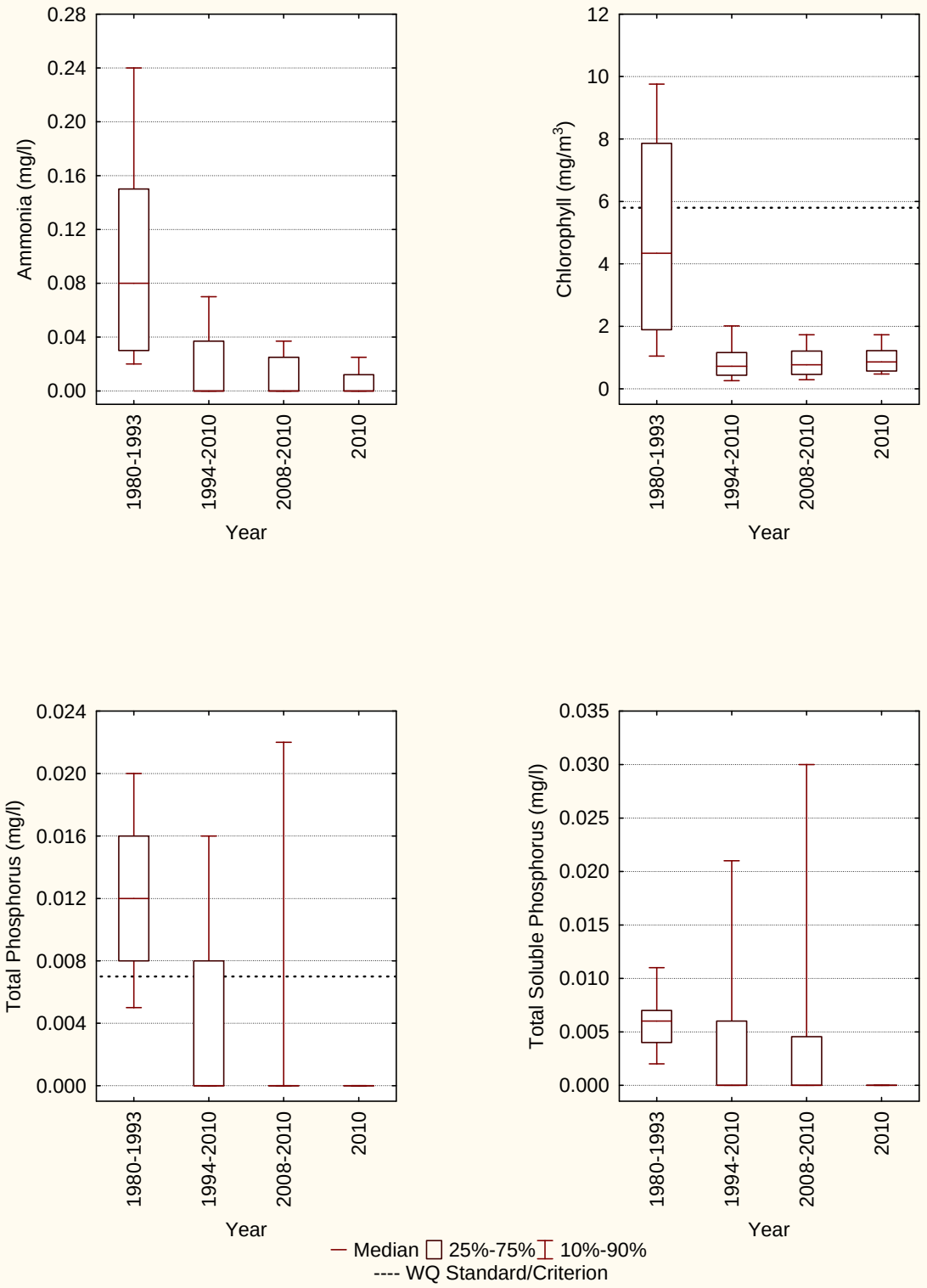
ND = No Data

Provisional MMSD Water Quality Data

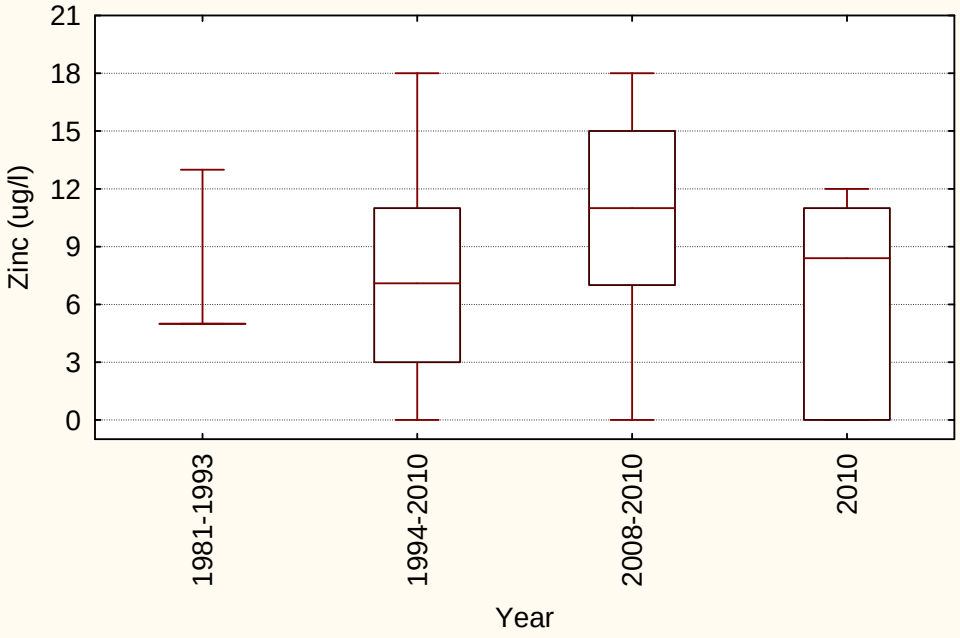
MMSD Water Quality Program Data
Nearshore survey, Site NS-04

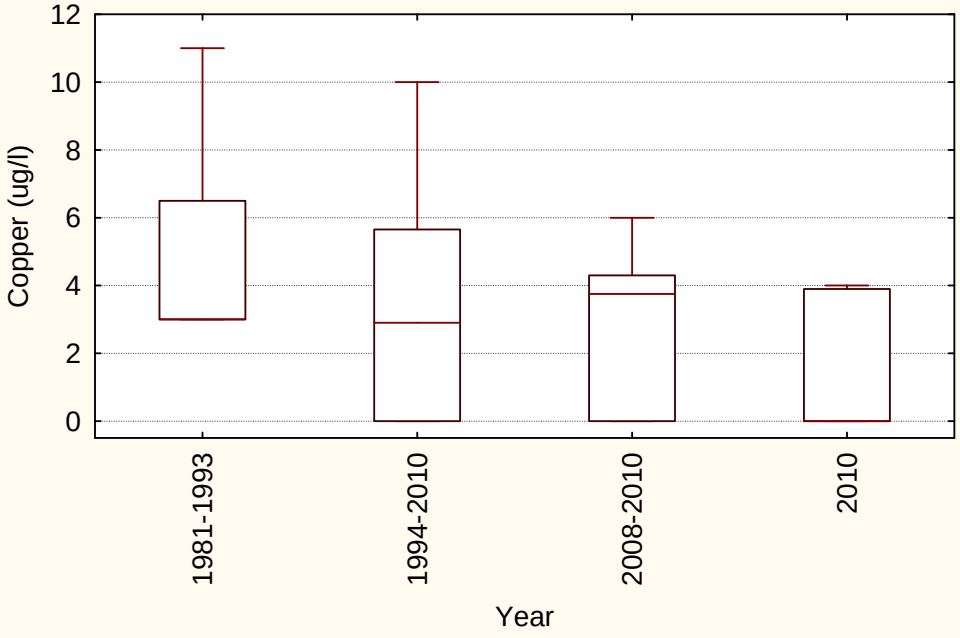


MMSD Water Quality Program Data
Nearshore survey, Site NS-04



MMSD Water Quality Program Data
Nearshore survey, Site NS-04





Median 25%-75% 10%-90%

NEAR SHORE - SITE 4
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.3	13.0	11.2	0.95	0.31	0.005	0.34	0.007	0.16	0.000	0.001	1.46
Standard Error	0.0	0.6	0.1	0.09	0.02	0.000	0.02	0.002	0.04	0.000	0.000	0.10
Median	8.3	13.3	11.2	0.86	0.28	0.005	0.30	0.000	0.00	0.000	0.000	1.20
Mode	8.4	12.7	11.0	0.62	0.26	0.005	0.27	0.000	0.00	0.000	0.000	2.20
Standard Deviation	0.2	3.6	0.8	0.45	0.13	0.002	0.11	0.011	0.23	0.003	0.002	0.60
Sample Variance	0.0	12.9	0.7	0.21	0.02	0.000	0.01	0.000	0.05	0.000	0.000	0.36
Kurtosis	-1.0	-1.3	1.2	0.87	0.73	0.995	-0.43	1.128	8.68	33.000	13.757	-0.85
Skewness	-0.3	-0.3	0.3	1.12	-0.08	-0.241	0.85	1.548	2.41	5.745	3.863	-0.21
Range	0.5	11.8	4.0	1.71	0.56	0.009	0.36	0.036	1.10	0.016	0.009	2.30
Minimum	8.0	7.0	9.6	0.44	0.00	0.000	0.21	0.000	0.00	0.000	0.000	0.00
Maximum	8.5	18.8	13.6	2.15	0.56	0.009	0.57	0.036	1.10	0.016	0.009	2.30
Count	30	33	33	27	33	33	33	33	33	33	33	33
Confidence Level(95.0%)	0.1	1.3	0.3	0.18	0.05	0.001	0.04	0.004	0.08	0.001	0.001	0.21

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.6	9.7	ND	ND	ND	ND	1.0	312	15.1	2	0.2	ND
Standard Error	0.7	0.1	ND	ND	ND	ND	0.1	7	1.0	1	0.1	ND
Median	9.0	10.0	ND	ND	ND	ND	1.0	295	13.0	0	0.0	ND
Mode	10.0	10.0	ND	ND	ND	ND	0.9	295	11.0	0	0.0	ND
Standard Deviation	2.5	0.4	ND	ND	ND	ND	0.4	39	5.7	4	0.3	ND
Sample Variance	6.1	0.2	ND	ND	ND	ND	0.1	1514	32.4	13	0.1	ND
Kurtosis	-1.6	-1.4	ND	ND	ND	ND	0.1	1	0.4	9	6.2	ND
Skewness	-0.4	-0.7	ND	ND	ND	ND	0.5	1	1.3	3	2.4	ND
Range	6.6	1.0	0.0	0.0	0.0	0.0	1.6	133	19.0	12	1.1	0
Minimum	3.4	9.0	0.0	0.0	0.0	0.0	0.4	278	10.0	0	0.0	0
Maximum	10.0	10.0	0.0	0.0	0.0	0.0	2.0	411	29.0	12	1.1	0
Count	11	9	0	0	0	0	33	33	33	11	11	0
Confidence Level(95.0%)	1.7	0.3	ND	ND	ND	ND	0.1	14	2.0	2	0.2	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 4
WATER QUALITY DATA - 2010

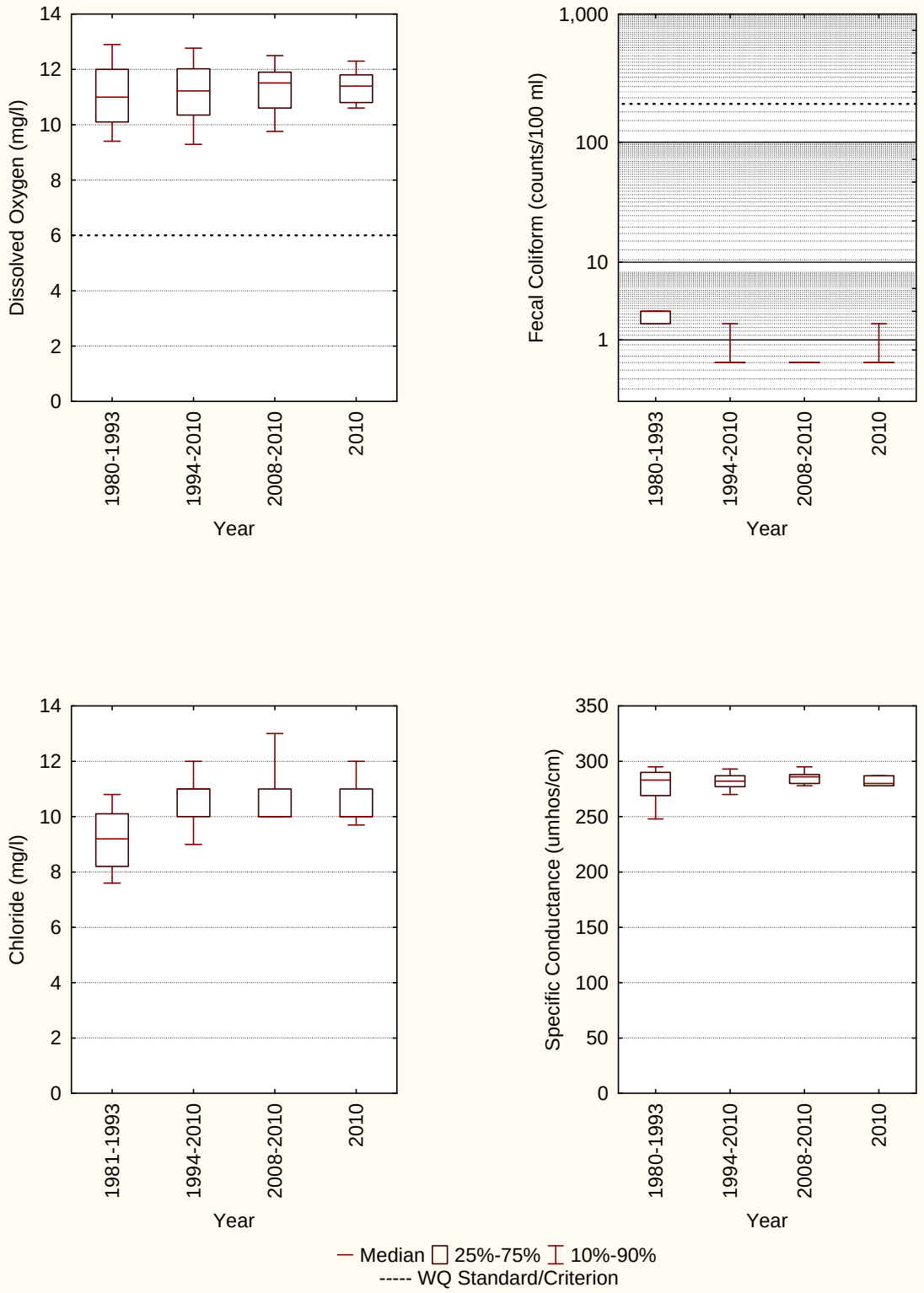
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.18	12.18	0.0	2.5	1.9	0.3	0.0	7.2	0.0	0.5	1.9	ND
Standard Error	0.77	0.40	0.0	0.4	0.8	0.2	0.0	1.6	0.0	0.4	1.0	ND
Median	33.00	12.00	0.0	3.1	0.0	0.0	0.0	8.4	0.0	0.0	0.0	ND
Mode	33.00	12.00	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	2.56	1.33	0.0	1.3	2.6	0.7	0.0	5.1	0.0	1.2	3.4	ND
Sample Variance	6.56	1.76	0.0	1.8	7.0	0.5	0.0	26.5	0.0	1.4	11.7	ND
Kurtosis	1.59	0.68	ND	0.7	1.8	2.0	ND	-0.9	ND	4.2	1.0	ND
Skewness	1.28	1.16	ND	-1.4	1.4	1.9	ND	-0.4	ND	2.2	1.5	ND
Range	9.00	4.00	0.0	3.8	8.1	1.7	0.0	15.0	0.0	3.5	9.5	0.0
Minimum	31.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	40.00	15.00	0.0	3.8	8.1	1.7	0.0	15.0	0.0	3.5	9.5	0.0
Count	11	11	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	1.72	0.89	0.0	0.9	1.8	0.5	0.0	3.5	0.0	0.8	2.3	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	135	ND	ND	ND	ND	ND	ND	ND
Standard Error	4	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	130	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	13	ND	ND	ND	ND	ND	ND	ND
Sample Variance	167	ND	ND	ND	ND	ND	ND	ND
Kurtosis	0	ND	ND	ND	ND	ND	ND	ND
Skewness	1	ND	ND	ND	ND	ND	ND	ND
Range	40	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	160	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	9	ND	ND	ND	ND	ND	ND	ND

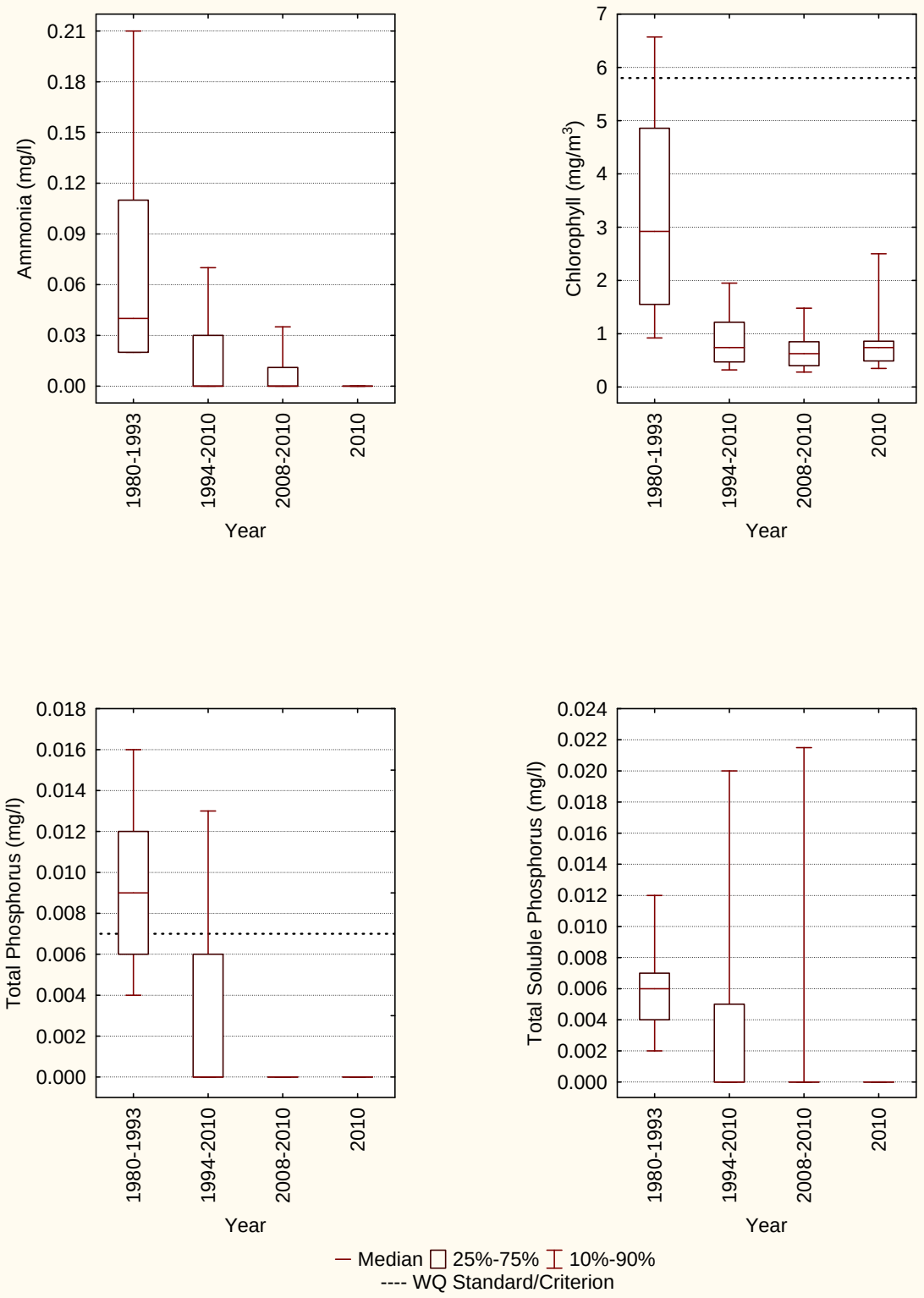
ND = No Data

Provisional MMSD Water Quality Data

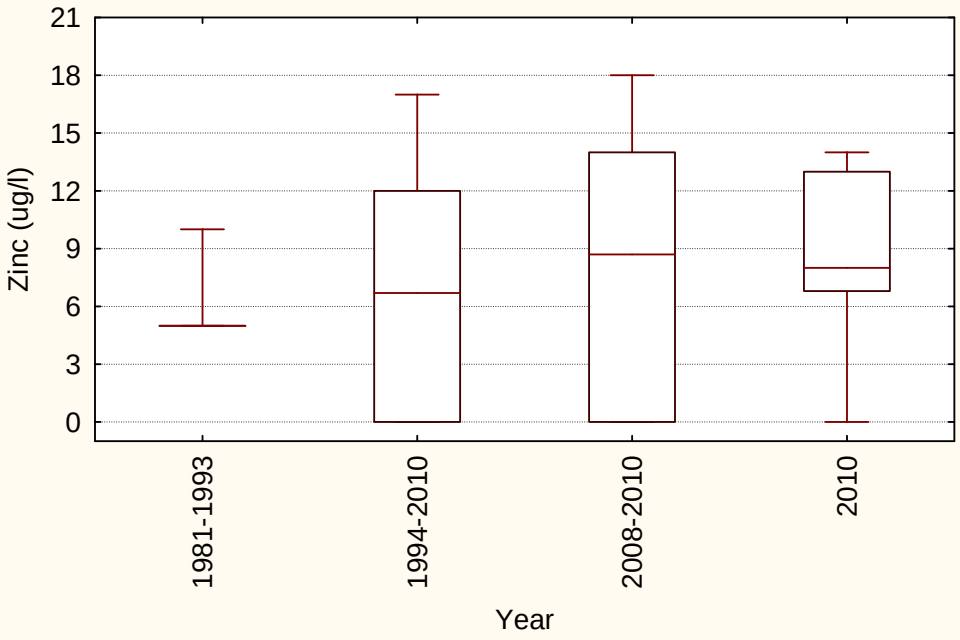
MMSD Water Quality Program Data
Nearshore survey, Site NS-05

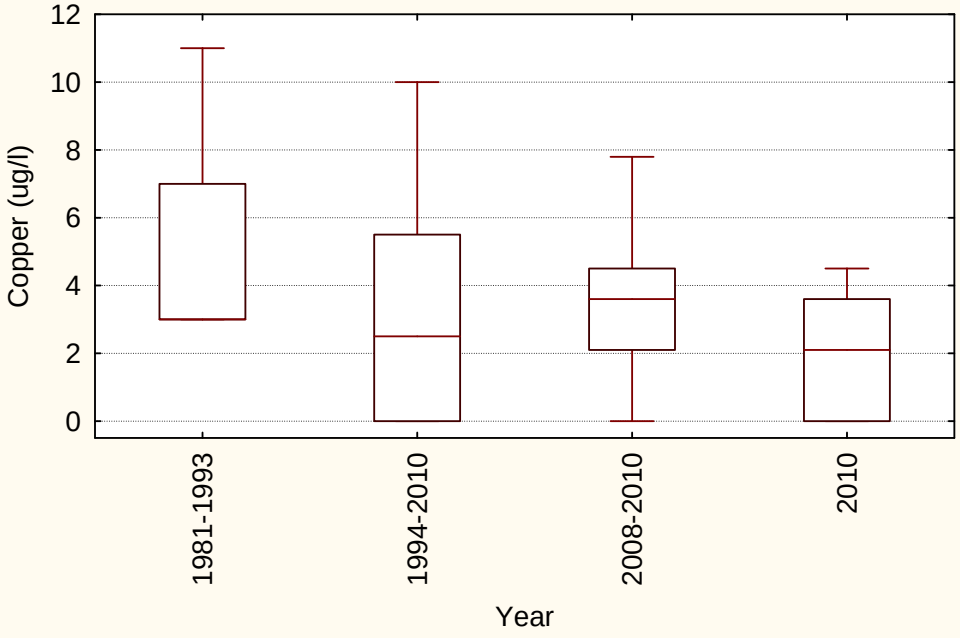


MMSD Water Quality Program Data
Nearshore survey, Site NS-05



MMSD Water Quality Program Data
Nearshore survey, Site NS-05





Median 25%-75% 10%-90%

NEAR SHORE - SITE 5
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	10.8	11.4	0.94	0.26	0.002	0.29	0.001	0.07	0.000	0.000	1.79
Standard Error	0.0	0.7	0.1	0.15	0.02	0.000	0.00	0.000	0.02	0.000	0.000	0.06
Median	8.1	8.6	11.4	0.74	0.29	0.003	0.29	0.000	0.00	0.000	0.000	1.80
Mode	8.0	14.3	12.3	0.79	0.29	0.000	0.29	0.000	0.00	0.000	0.000	1.90
Standard Deviation	0.3	4.3	0.7	0.77	0.09	0.002	0.02	0.003	0.12	0.002	0.002	0.35
Sample Variance	0.1	18.3	0.5	0.59	0.01	0.000	0.00	0.000	0.01	0.000	0.000	0.12
Kurtosis	1.0	-0.5	-0.4	5.05	5.87	-1.678	-0.25	13.885	-0.29	33.000	33.000	-0.96
Skewness	-0.9	0.7	0.0	2.32	-2.59	-0.230	-0.43	3.874	1.20	5.745	5.745	0.03
Range	1.1	16.2	3.1	3.20	0.32	0.006	0.09	0.012	0.37	0.009	0.010	1.20
Minimum	7.4	4.9	9.6	0.30	0.00	0.000	0.23	0.000	0.00	0.000	0.000	1.20
Maximum	8.5	21.1	12.7	3.50	0.32	0.006	0.32	0.012	0.37	0.009	0.010	2.40
Count	30	33	33	27	33	33	33	33	33	33	33	33
Confidence Level(95.0%)	0.1	1.5	0.3	0.30	0.03	0.001	0.01	0.001	0.04	0.001	0.001	0.12

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	9.2	18.2	ND	ND	ND	ND	0.6	282	10.4	0	0.1	ND
Standard Error	0.9	1.6	ND	ND	ND	ND	0.0	1	0.2	0	0.0	ND
Median	8.4	17.9	ND	ND	ND	ND	0.6	280	10.0	0	0.0	ND
Mode	14.0	16.5	ND	ND	ND	ND	0.4	278	10.0	0	0.0	ND
Standard Deviation	3.0	4.9	ND	ND	ND	ND	0.3	5	0.9	1	0.2	ND
Sample Variance	8.8	24.4	ND	ND	ND	ND	0.1	27	0.8	1	0.0	ND
Kurtosis	-0.8	-0.9	ND	ND	ND	ND	0.1	2	1.2	3	3.9	ND
Skewness	0.7	-0.5	ND	ND	ND	ND	0.7	1	1.2	2	2.2	ND
Range	8.4	13.8	0.0	0.0	0.0	0.0	1.1	24	3.8	3	0.5	0
Minimum	5.6	10.2	0.0	0.0	0.0	0.0	0.2	276	9.2	0	0.0	0
Maximum	14.0	24.0	0.0	0.0	0.0	0.0	1.4	300	13.0	3	0.5	0
Count	11	10	0	0	0	0	33	33	33	11	11	0
Confidence Level(95.0%)	2.0	3.5	ND	ND	ND	ND	0.1	2	0.3	1	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 5
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.82	11.18	0.0	3.3	2.3	0.5	0.0	8.8	0.0	0.3	2.3	ND
Standard Error	0.46	0.23	0.0	0.3	0.9	0.3	0.0	1.7	0.0	0.3	1.2	ND
Median	33.00	11.00	0.0	3.2	2.1	0.0	0.0	8.0	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.54	0.75	0.0	0.9	2.9	0.9	0.0	5.6	0.0	1.0	3.9	ND
Sample Variance	2.36	0.56	0.0	0.9	8.4	0.7	0.0	30.9	0.0	1.1	15.5	ND
Kurtosis	-0.16	-0.88	ND	-0.2	2.9	-0.4	ND	-0.3	ND	11.0	-0.2	ND
Skewness	-0.24	-0.33	ND	0.5	1.6	1.3	ND	-0.3	ND	3.3	1.3	ND
Range	5.00	2.00	0.0	3.1	9.4	2.1	0.0	18.0	0.0	3.4	9.7	0.0
Minimum	30.00	10.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	35.00	12.00	0.0	5.1	9.4	2.1	0.0	18.0	0.0	3.4	9.7	0.0
Count	11	11	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	1.03	0.50	0.0	0.6	1.9	0.6	0.0	3.7	0.0	0.7	2.6	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	130	ND	ND	ND	ND	ND	ND	ND
Standard Error	2	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	130	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	6	ND	ND	ND	ND	ND	ND	ND
Sample Variance	40	ND	ND	ND	ND	ND	ND	ND
Kurtosis	0	ND	ND	ND	ND	ND	ND	ND
Skewness	0	ND	ND	ND	ND	ND	ND	ND
Range	20	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	140	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	4	ND	ND	ND	ND	ND	ND	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 7
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.3	11.2	11.4	0.97	0.26	0.003	0.29	0.125	0.09	0.000	0.001	1.77
Standard Error	0.0	0.7	0.1	0.12	0.01	0.000	0.01	0.016	0.02	0.000	0.001	0.06
Median	8.3	11.1	11.5	0.71	0.27	0.004	0.29	0.145	0.00	0.000	0.000	1.80
Mode	8.2	15.5	12.1	0.63	0.26	0.000	0.31	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	4.2	0.7	0.62	0.07	0.002	0.03	0.083	0.12	0.002	0.003	0.32
Sample Variance	0.0	17.3	0.5	0.38	0.01	0.000	0.00	0.007	0.02	0.000	0.000	0.10
Kurtosis	-0.9	-0.6	0.0	-1.13	8.77	-0.876	-0.26	-0.163	-1.24	33.000	8.675	-0.83
Skewness	-0.1	0.5	-0.2	0.47	-2.81	-0.464	0.49	-0.037	0.78	5.745	3.129	0.21
Range	0.6	16.3	3.2	1.93	0.35	0.007	0.12	0.310	0.33	0.009	0.014	1.10
Minimum	8.0	5.1	9.6	0.14	0.00	0.000	0.24	0.000	0.00	0.000	0.000	1.30
Maximum	8.6	21.4	12.8	2.07	0.35	0.007	0.36	0.310	0.33	0.009	0.014	2.40
Count	33	33	33	26	33	33	33	28	28	33	33	33
Confidence Level(95.0%)	0.1	1.5	0.3	0.25	0.03	0.001	0.01	0.032	0.05	0.001	0.001	0.11

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.0	20.2	ND	ND	ND	ND	1.1	282	10.6	0	0.0	ND
Standard Error	0.8	1.5	ND	ND	ND	ND	0.2	1	0.2	0	0.0	ND
Median	6.1	21.3	ND	ND	ND	ND	0.7	280	10.0	0	0.0	ND
Mode	ND	21.0	ND	ND	ND	ND	0.5	279	10.0	0	0.0	ND
Standard Deviation	2.5	4.7	ND	ND	ND	ND	1.2	8	1.4	0	0.0	ND
Sample Variance	6.3	22.2	ND	ND	ND	ND	1.3	71	1.9	0	0.0	ND
Kurtosis	1.9	9.1	ND	ND	ND	ND	5.9	5	3.2	ND	ND	ND
Skewness	0.1	-3.0	ND	ND	ND	ND	2.6	2	1.8	ND	ND	ND
Range	9.7	16.0	0.0	0.0	0.0	0.0	4.8	40	5.8	0	0.0	0
Minimum	1.3	7.0	0.0	0.0	0.0	0.0	0.3	273	9.2	0	0.0	0
Maximum	11.0	23.0	0.0	0.0	0.0	0.0	5.1	313	15.0	0	0.0	0
Count	10	10	0	0	0	0	33	33	33	11	11	0
Confidence Level(95.0%)	1.8	3.4	ND	ND	ND	ND	0.4	3	0.5	0	0.0	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 7
WATER QUALITY DATA - 2010

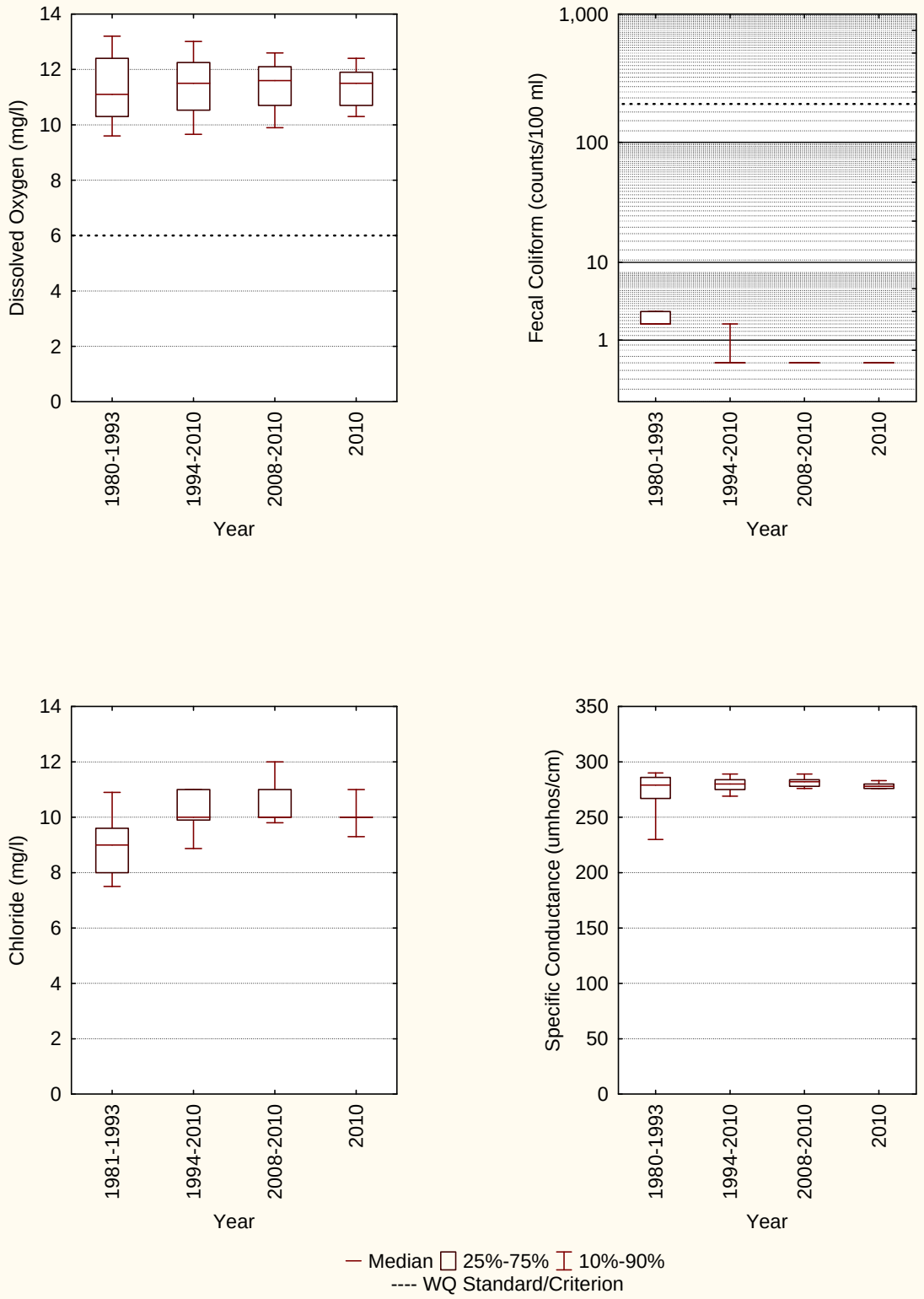
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.27	11.09	0.0	2.9	2.2	0.2	0.0	6.1	0.0	0.0	2.3	ND
Standard Error	0.49	0.25	0.0	0.2	0.9	0.2	0.0	1.7	0.0	0.0	1.2	ND
Median	32.00	11.00	0.0	3.1	2.0	0.0	0.0	8.1	0.0	0.0	0.0	ND
Mode	32.00	11.00	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.62	0.83	0.0	0.7	2.9	0.6	0.0	5.7	0.0	0.0	3.7	ND
Sample Variance	2.62	0.69	0.0	0.5	8.2	0.4	0.0	32.2	0.0	0.0	13.7	ND
Kurtosis	2.45	2.29	ND	-1.1	2.8	11.0	ND	0.4	ND	ND	-0.9	ND
Skewness	0.85	1.09	ND	0.0	1.6	3.3	ND	0.5	ND	ND	1.1	ND
Range	6.00	3.00	0.0	2.1	9.2	2.0	0.0	18.0	0.0	0.0	8.3	0.0
Minimum	30.00	10.00	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	13.00	0.0	4.0	9.2	2.0	0.0	18.0	0.0	0.0	8.3	0.0
Count	11	11	11	11	11	11	11	11	11	11	10	0
Confidence Level(95.0%)	1.09	0.56	0.0	0.5	1.9	0.4	0.0	3.8	0.0	0.0	2.6	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	126	ND	ND	ND	ND	ND	ND	ND
Standard Error	2	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	130	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	7	ND	ND	ND	ND	ND	ND	ND
Sample Variance	45	ND	ND	ND	ND	ND	ND	ND
Kurtosis	0	ND	ND	ND	ND	ND	ND	ND
Skewness	1	ND	ND	ND	ND	ND	ND	ND
Range	20	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	140	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	5	ND	ND	ND	ND	ND	ND	ND

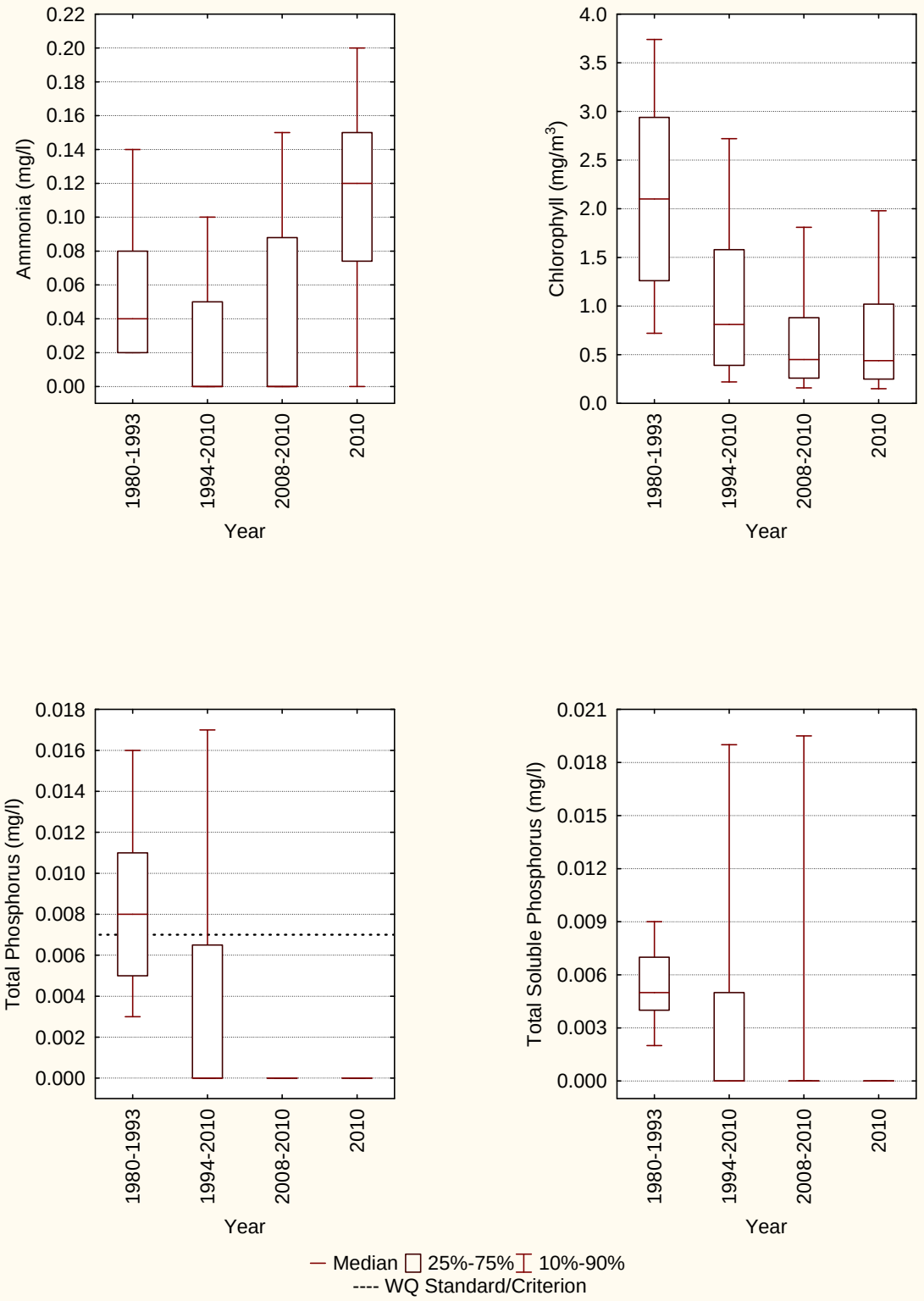
ND = No Data

Provisional MMSD Water Quality Data

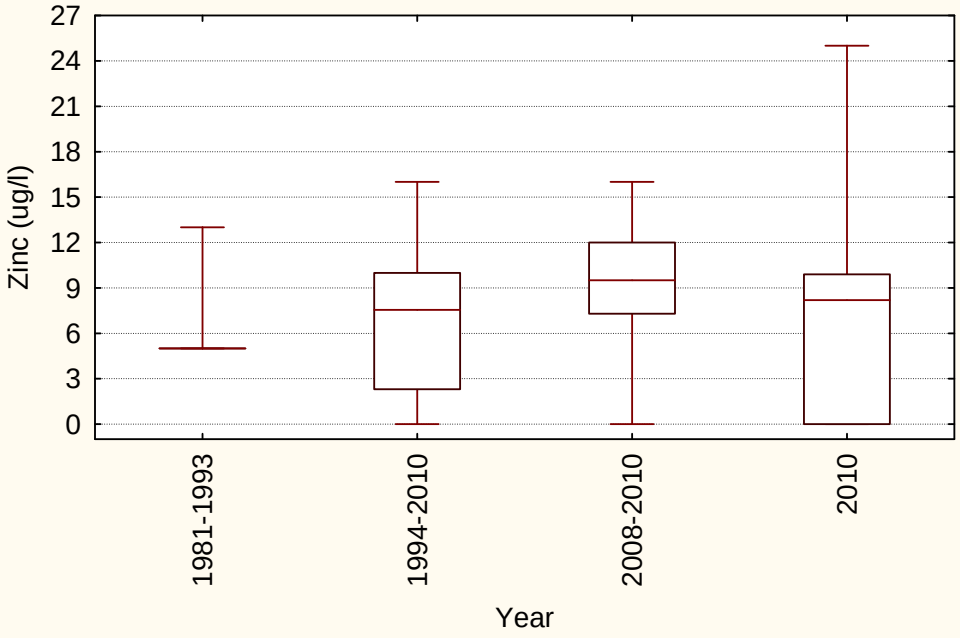
MMSD Water Quality Program Data
Nearshore survey, Site NS-08

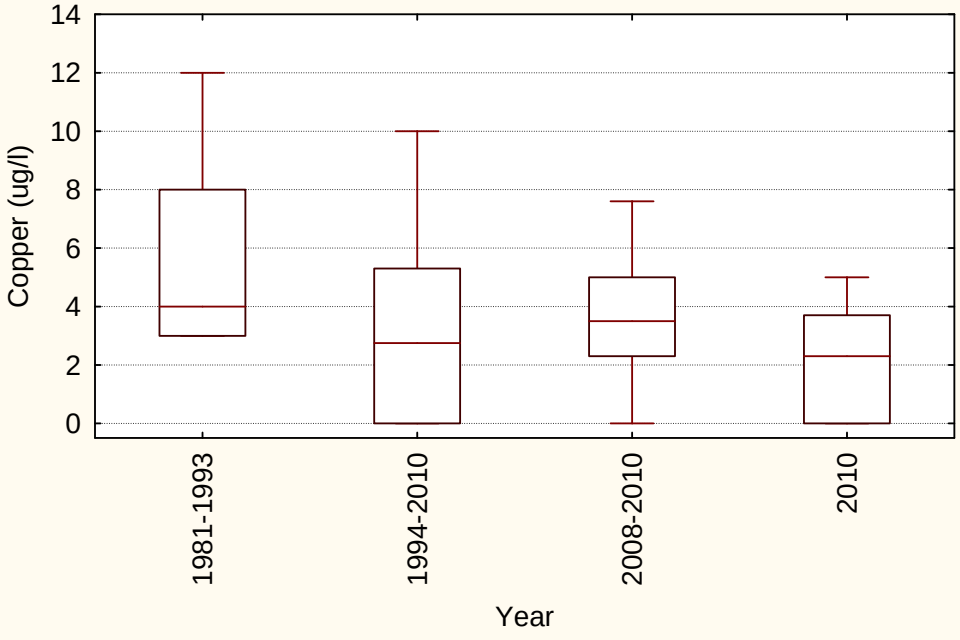


MMSD Water Quality Program Data
Nearshore survey, Site NS-08



MMSD Water Quality Program Data
Nearshore survey, Site NS-08





NEAR SHORE - SITE 8
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	9.2	11.4	0.78	0.26	0.002	0.29	0.110	0.06	0.000	0.001	2.04
Standard Error	0.0	0.8	0.1	0.18	0.02	0.000	0.00	0.012	0.02	0.000	0.001	0.06
Median	8.2	7.1	11.5	0.44	0.29	0.000	0.30	0.120	0.00	0.000	0.000	2.00
Mode	8.1	7.1	11.6	0.27	0.30	0.000	0.30	0.000	0.00	0.000	0.000	2.00
Standard Deviation	0.2	4.8	0.8	0.96	0.09	0.002	0.03	0.070	0.11	0.002	0.003	0.33
Sample Variance	0.0	23.2	0.7	0.91	0.01	0.000	0.00	0.005	0.01	0.000	0.000	0.11
Kurtosis	-0.5	0.6	-0.5	11.24	5.49	-0.844	1.10	-0.409	-0.23	33.000	33.000	0.35
Skewness	0.2	1.3	-0.2	3.05	-2.51	0.641	-0.97	-0.049	1.31	5.745	5.745	-0.60
Range	0.8	17.5	3.3	4.73	0.33	0.008	0.12	0.260	0.30	0.012	0.017	1.30
Minimum	7.8	4.1	9.5	0.00	0.00	0.000	0.21	0.000	0.00	0.000	0.000	1.30
Maximum	8.6	21.5	12.8	4.73	0.33	0.008	0.33	0.260	0.30	0.012	0.017	2.60
Count	33	33	33	27	33	33	33	33	33	33	33	33
Confidence Level(95.0%)	0.1	1.7	0.3	0.38	0.03	0.001	0.01	0.025	0.04	0.001	0.001	0.12

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	9.6	32.0	ND	ND	ND	ND	0.6	279	10.2	0	0.0	ND
Standard Error	1.4	2.6	ND	ND	ND	ND	0.2	1	0.1	0	0.0	ND
Median	8.3	31.5	ND	ND	ND	ND	0.4	278	10.0	0	0.0	ND
Mode	ND	40.0	ND	ND	ND	ND	0.4	276	10.0	0	0.0	ND
Standard Deviation	4.4	8.1	ND	ND	ND	ND	1.1	5	0.7	1	0.1	ND
Sample Variance	19.2	65.4	ND	ND	ND	ND	1.3	30	0.6	0	0.0	ND
Kurtosis	0.4	-0.1	ND	ND	ND	ND	29.5	15	5.1	11	11.0	ND
Skewness	1.0	-0.7	ND	ND	ND	ND	5.3	3	1.7	3	3.3	ND
Range	14.2	24.0	0.0	0.0	0.0	0.0	6.6	31	3.9	2	0.3	0
Minimum	3.8	16.0	0.0	0.0	0.0	0.0	0.2	274	9.1	0	0.0	0
Maximum	18.0	40.0	0.0	0.0	0.0	0.0	6.7	305	13.0	2	0.3	0
Count	10	10	0	0	0	0	32	33	33	11	11	0
Confidence Level(95.0%)	3.1	5.8	ND	ND	ND	ND	0.4	2	0.3	0	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 8
WATER QUALITY DATA - 2010

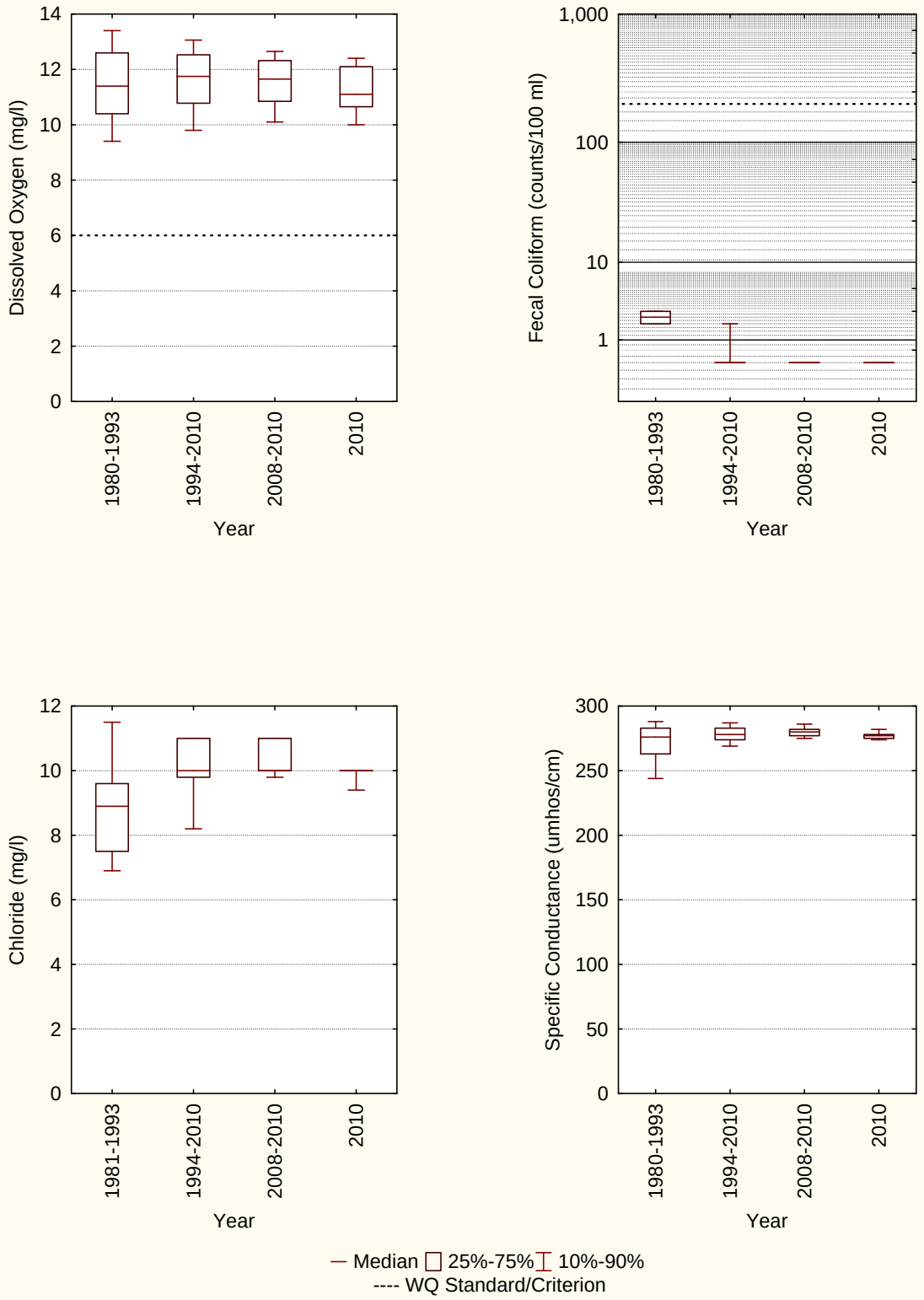
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.09	10.82	0.0	3.3	2.4	0.8	0.2	11.7	0.0	0.7	2.8	ND
Standard Error	0.44	0.18	0.0	0.3	0.8	0.3	0.2	4.5	0.0	0.5	1.2	ND
Median	32.00	11.00	0.0	3.1	2.3	0.0	0.0	8.2	0.0	0.0	0.0	ND
Mode	32.00	11.00	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.45	0.60	0.1	0.8	2.5	1.1	0.8	14.8	0.0	1.7	3.9	ND
Sample Variance	2.09	0.36	0.0	0.7	6.3	1.2	0.6	219.1	0.0	2.9	15.6	ND
Kurtosis	0.59	0.41	11.0	0.9	1.1	-1.4	11.0	5.3	ND	7.9	-1.7	ND
Skewness	0.29	0.03	3.3	0.6	1.0	0.8	3.3	2.2	ND	2.8	0.7	ND
Range	5.00	2.00	0.5	3.1	8.0	2.6	2.6	51.0	0.0	5.5	8.4	0.0
Minimum	30.00	10.00	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	35.00	12.00	0.5	5.0	8.0	2.6	2.6	51.0	0.0	5.5	8.4	0.0
Count	11	11	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.97	0.41	0.1	0.6	1.7	0.7	0.5	9.9	0.0	1.1	2.7	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	126	ND	ND	ND	ND	ND	ND	ND
Standard Error	2	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	120	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	7	ND	ND	ND	ND	ND	ND	ND
Sample Variance	45	ND	ND	ND	ND	ND	ND	ND
Kurtosis	0	ND	ND	ND	ND	ND	ND	ND
Skewness	1	ND	ND	ND	ND	ND	ND	ND
Range	20	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	140	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	5	ND	ND	ND	ND	ND	ND	ND

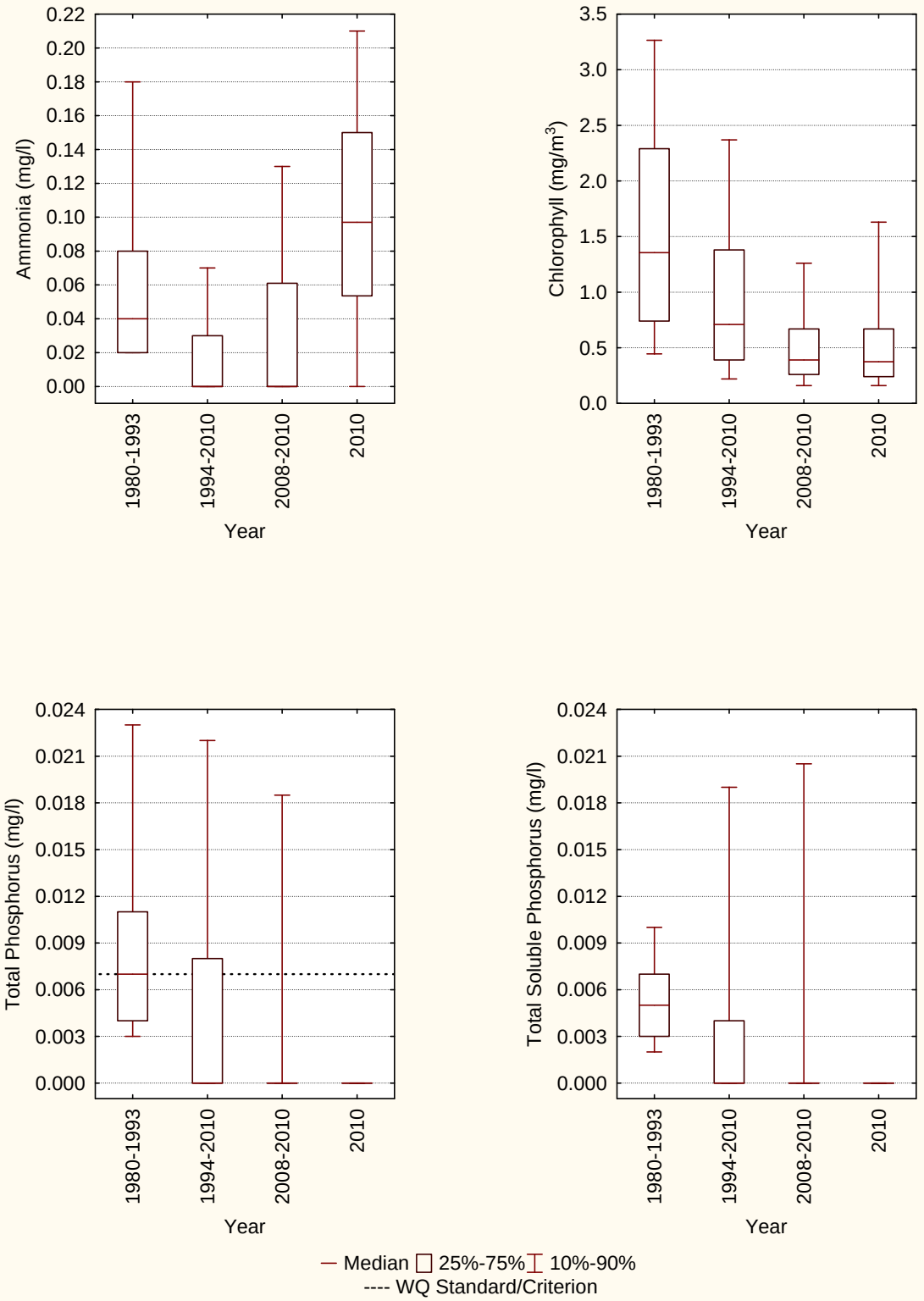
ND = No Data

Provisional MMSD Water Quality Data

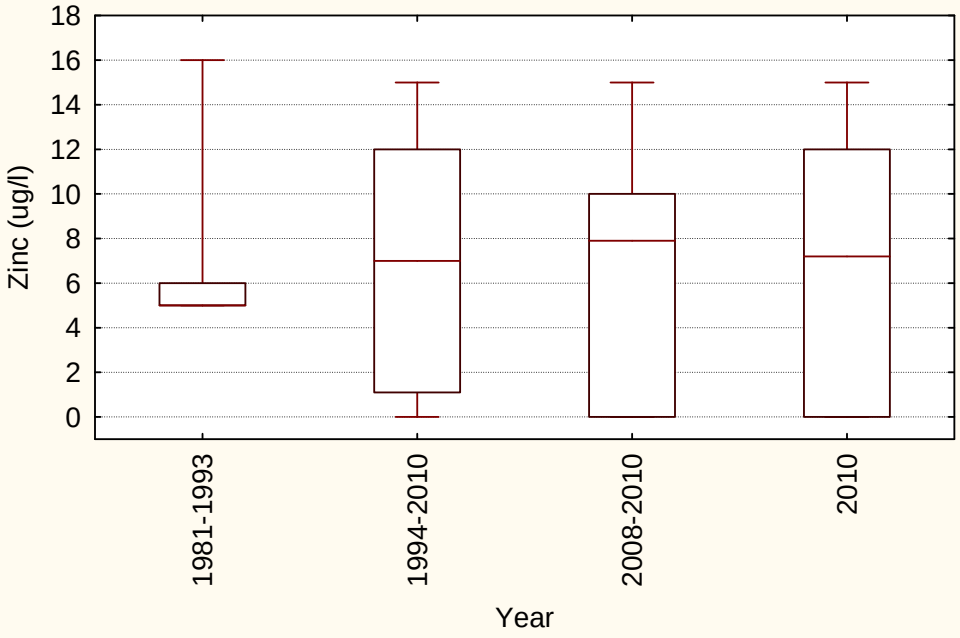
MMSD Water Quality Program Data
Nearshore survey, Site NS-10

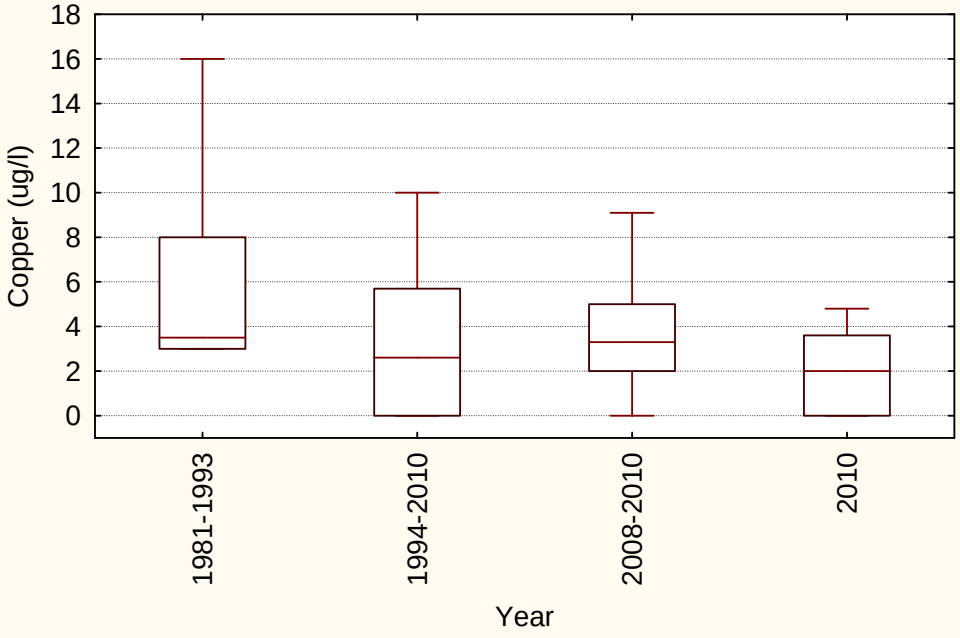


MMSD Water Quality Program Data
Nearshore survey, Site NS-10



MMSD Water Quality Program Data
Nearshore survey, Site NS-10





Median 25%-75% 10%-90%

NEAR SHORE - SITE 10
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	7.8	11.2	0.58	0.27	0.002	0.30	0.102	0.12	0.002	0.001	2.18
Standard Error	0.0	1.0	0.2	0.11	0.02	0.001	0.01	0.015	0.05	0.002	0.001	0.06
Median	8.1	5.2	11.1	0.38	0.30	0.000	0.31	0.097	0.00	0.000	0.000	2.20
Mode	7.8	5.4	10.6	0.16	0.30	0.000	0.30	0.000	0.00	0.000	0.000	2.30
Standard Deviation	0.3	5.9	1.0	0.56	0.10	0.004	0.03	0.074	0.25	0.009	0.005	0.34
Sample Variance	0.1	34.8	1.0	0.31	0.01	0.000	0.00	0.006	0.06	0.000	0.000	0.12
Kurtosis	-1.2	1.5	0.0	4.14	4.65	13.769	1.42	-0.562	10.62	23.144	12.270	0.27
Skewness	0.2	1.7	-0.4	2.06	-2.33	3.184	-0.94	0.259	2.99	4.663	3.515	-0.61
Range	0.8	19.6	4.1	2.28	0.35	0.020	0.15	0.250	1.10	0.047	0.023	1.40
Minimum	7.8	3.3	9.0	0.12	0.00	0.000	0.21	0.000	0.00	0.000	0.000	1.30
Maximum	8.6	22.9	13.1	2.40	0.35	0.020	0.36	0.250	1.10	0.047	0.023	2.70
Count	32	32	32	26	32	32	32	24	24	32	32	32
Confidence Level(95.0%)	0.1	2.1	0.4	0.23	0.03	0.001	0.01	0.031	0.10	0.003	0.002	0.12

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	13.4	35.9	ND	ND	ND	ND	0.5	277	9.9	0	0.0	ND
Standard Error	1.1	3.1	ND	ND	ND	ND	0.1	1	0.1	0	0.0	ND
Median	12.5	34.8	ND	ND	ND	ND	0.3	277	10.0	0	0.0	ND
Mode	12.0	45.0	ND	ND	ND	ND	0.2	277	10.0	0	0.0	ND
Standard Deviation	3.6	9.8	ND	ND	ND	ND	0.7	3	0.5	0	0.0	ND
Sample Variance	12.9	96.3	ND	ND	ND	ND	0.4	10	0.2	0	0.0	ND
Kurtosis	-0.5	-2.0	ND	ND	ND	ND	15.4	1	4.4	ND	ND	ND
Skewness	0.6	0.2	ND	ND	ND	ND	3.8	1	-0.8	ND	ND	ND
Range	11.0	25.0	0.0	0.0	0.0	0.0	3.3	12	2.5	0	0.0	0
Minimum	9.0	25.0	0.0	0.0	0.0	0.0	0.2	273	8.5	0	0.0	0
Maximum	20.0	50.0	0.0	0.0	0.0	0.0	3.5	285	11.0	0	0.0	0
Count	10	10	0	0	0	0	32	32	32	11	11	0
Confidence Level(95.0%)	2.6	7.0	ND	ND	ND	ND	0.2	1	0.2	0	0.0	ND

ND = No Data

Provisional MMSD Water Quality data

NEAR SHORE - SITE 10
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.91	11.09	0.0	2.8	2.2	0.2	0.0	6.8	0.0	0.7	2.1	ND
Standard Error	0.41	0.21	0.0	0.3	0.9	0.2	0.0	1.9	0.0	0.5	1.1	ND
Median	33.00	11.00	0.0	2.9	2.0	0.0	0.0	7.2	0.0	0.0	0.0	ND
Mode	34.00	11.00	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.38	0.70	0.0	1.1	2.9	0.5	0.0	6.2	0.0	1.6	3.6	ND
Sample Variance	1.89	0.49	0.0	1.3	8.4	0.3	0.0	38.7	0.0	2.6	13.1	ND
Kurtosis	-1.43	-0.45	ND	3.5	2.9	11.0	ND	-1.1	ND	5.8	0.2	ND
Skewness	-0.09	-0.12	ND	-1.5	1.6	3.3	ND	0.3	ND	2.5	1.4	ND
Range	4.00	2.00	0.0	4.2	9.3	1.7	0.0	17.0	0.0	5.0	9.5	0.0
Minimum	31.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	35.00	12.00	0.0	4.2	9.3	1.7	0.0	17.0	0.0	5.0	9.5	0.0
Count	11	11	11	11	11	11	11	11	11	11	11	0
Confidence Level(95.0%)	0.92	0.47	0.0	0.8	1.9	0.3	0.0	4.2	0.0	1.1	2.4	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	125	ND	ND	ND	ND	ND	ND	ND
Standard Error	2	ND	ND	ND	ND	ND	ND	ND
Median	130	ND	ND	ND	ND	ND	ND	ND
Mode	130	ND	ND	ND	ND	ND	ND	ND
Standard Deviation	5	ND	ND	ND	ND	ND	ND	ND
Sample Variance	27	ND	ND	ND	ND	ND	ND	ND
Kurtosis	-2	ND	ND	ND	ND	ND	ND	ND
Skewness	0	ND	ND	ND	ND	ND	ND	ND
Range	10	0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum	120	0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	130	0	0.0	0.0	0.0	0.0	0.0	0.0
Count	11	0	0	0	0	0	0	0
Confidence Level(95.0%)	4	ND	ND	ND	ND	ND	ND	ND

ND = No Data

Provisional MMSD Water Quality data

NEAR SHORE - SITE 11
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.2	12.2	11.3	1.14	0.31	0.004	0.32	0.005	0.14	0.000	0.001	1.67
Standard Error	0.0	0.5	0.1	0.11	0.01	0.000	0.01	0.002	0.04	0.000	0.000	0.05
Median	8.2	12.3	11.0	0.91	0.30	0.004	0.31	0.000	0.00	0.000	0.000	1.60
Mode	8.1	14.0	11.3	0.51	0.24	0.000	0.32	0.000	0.00	0.000	0.000	1.60
Standard Deviation	0.2	4.3	1.1	0.71	0.09	0.002	0.07	0.015	0.30	0.000	0.003	0.42
Sample Variance	0.0	18.7	1.3	0.50	0.01	0.000	0.01	0.000	0.09	0.000	0.000	0.18
Kurtosis	-0.6	-0.8	4.0	0.63	2.55	-0.376	0.06	25.526	28.25	ND	34.608	-0.45
Skewness	0.2	-0.2	1.7	1.07	-0.51	-0.881	0.76	4.770	4.62	ND	5.721	-0.03
Range	1.0	17.1	6.3	2.83	0.53	0.007	0.32	0.100	2.20	0.000	0.020	1.86
Minimum	7.7	2.8	9.8	0.29	0.00	0.000	0.22	0.000	0.00	0.000	0.000	0.64
Maximum	8.7	19.9	16.1	3.12	0.53	0.007	0.54	0.100	2.20	0.000	0.020	2.50
Count	72	75	75	38	72	72	75	75	75	75	75	75
Confidence Level(95.0%)	0.0	1.0	0.3	0.23	0.02	0.000	0.02	0.003	0.07	0.000	0.001	0.10

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	7.7	12.7	170.8	170.1	0.2	0.7	0.8	297	12.3	4	0.2	ND
Standard Error	0.8	0.2	4.7	4.7	0.1	0.2	0.1	3	0.3	4	0.1	ND
Median	6.8	12.5	170.0	168.5	0.0	0.5	0.7	286	11.0	0	0.0	ND
Mode	14.0	12.0	160.0	160.0	0.0	0.0	0.6	278	11.0	0	0.0	ND
Standard Deviation	3.8	0.7	17.1	17.1	0.4	0.7	0.5	28	2.7	18	0.4	ND
Sample Variance	14.2	0.5	291.0	292.3	0.2	0.5	0.2	794	7.2	323	0.2	ND
Kurtosis	-1.1	-0.5	-0.6	-0.6	0.6	-1.8	2.7	18	0.0	25	13.7	ND
Skewness	0.6	0.5	0.7	0.7	1.6	0.3	1.6	3	1.1	5	3.6	ND
Range	11.0	2.5	50.0	51.4	1.1	1.9	2.3	197	9.8	90	2.0	0
Minimum	3.0	11.5	150.0	148.6	0.0	0.0	0.3	273	9.2	0	0.0	0
Maximum	14.0	14.0	200.0	200.0	1.1	1.9	2.6	470	19.0	90	2.0	0
Count	25	22	13	13	14	14	75	75	75	25	25	0
Confidence Level(95.0%)	1.6	0.3	10.3	10.3	0.3	0.4	0.1	6	0.6	7	0.2	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 11
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	33.44	11.68	0.0	3.3	2.7	0.8	0.0	6.8	0.1	0.7	1.0	ND
Standard Error	0.33	0.17	0.0	0.3	0.7	0.2	0.0	1.1	0.1	0.3	0.6	ND
Median	33.00	12.00	0.0	2.9	2.0	0.0	0.0	8.7	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.64	0.85	0.0	1.3	3.4	1.2	0.0	5.4	0.4	1.3	2.8	ND
Sample Variance	2.67	0.73	0.0	1.7	11.7	1.5	0.0	28.8	0.1	1.6	7.7	ND
Kurtosis	-0.56	-0.82	ND	2.0	4.2	0.7	ND	-0.6	9.6	1.9	4.9	ND
Skewness	-0.16	0.26	ND	1.6	1.9	1.3	ND	0.0	3.3	1.7	2.5	ND
Range	6.00	3.00	0.0	5.0	14.0	4.0	0.0	19.0	1.3	4.1	9.5	0.0
Minimum	30.00	10.00	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	13.00	0.0	7.0	14.0	4.0	0.0	19.0	1.3	4.1	9.5	0.0
Count	25	25	25	25	25	25	25	25	25	25	23	0
Confidence Level(95.0%)	0.67	0.35	0.0	0.5	1.4	0.5	0.0	2.2	0.1	0.5	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	130	111	0.0	2.2	28.3	25.7	2.5	ND
Standard Error	1	0	0.0	0.3	0.3	0.3	0.0	ND
Median	130	110	0.0	2.5	28.0	25.0	2.4	ND
Mode	130	110	0.0	0.0	28.0	25.0	2.4	ND
Standard Deviation	7	3	0.0	1.0	2.1	2.1	0.3	ND
Sample Variance	50	7	0.0	1.0	4.3	4.3	0.1	ND
Kurtosis	-1	10	ND	1.9	11.3	14.3	0.1	ND
Skewness	0	3	ND	-1.6	2.5	3.0	0.9	ND
Range	20	10	0.0	3.2	13.0	13.0	1.0	0.0
Minimum	120	110	0.0	0.0	25.0	23.0	2.1	0.0
Maximum	140	120	0.0	3.2	38.0	36.0	3.1	0.0
Count	25	42	14	14	42	42	42	0
Confidence Level(95.0%)	3	1	0.0	0.6	0.6	0.6	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 12
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	13.6	10.1	7.39	0.80	0.014	0.82	0.049	0.40	0.032	0.006	3.08
Standard Error	0.0	0.5	0.1	0.60	0.03	0.001	0.04	0.007	0.03	0.003	0.002	0.12
Median	8.1	13.7	10.1	6.48	0.76	0.013	0.78	0.039	0.39	0.041	0.000	2.80
Mode	8.1	14.5	10.6	2.09	1.10	0.011	1.10	0.000	0.00	0.000	0.000	2.80
Standard Deviation	0.2	4.5	1.2	4.74	0.34	0.006	0.34	0.067	0.32	0.033	0.017	1.17
Sample Variance	0.0	20.7	1.4	22.51	0.12	0.000	0.12	0.005	0.11	0.001	0.000	1.38
Kurtosis	0.1	-0.6	0.1	0.64	0.65	1.174	0.48	40.380	5.01	-1.165	4.966	0.93
Skewness	0.6	0.0	0.3	0.98	0.84	0.961	0.81	5.261	1.29	0.378	2.496	1.16
Range	0.8	19.6	5.8	21.53	1.62	0.034	1.60	0.580	2.00	0.110	0.070	5.10
Minimum	7.8	3.7	7.3	0.97	0.28	0.004	0.30	0.000	0.00	0.000	0.000	1.50
Maximum	8.6	23.3	13.1	22.50	1.90	0.038	1.90	0.580	2.00	0.110	0.070	6.60
Count	90	96	96	63	96	96	96	96	96	96	96	96
Confidence Level(95.0%)	0.0	0.9	0.2	1.19	0.07	0.001	0.07	0.014	0.07	0.007	0.003	0.24

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.6	4.9	253.4	246.3	1.8	7.1	5.2	436	38.2	1556	1.5	2233
Standard Error	0.1	0.4	13.7	13.7	0.4	1.7	0.6	10	1.7	1116	0.2	1394
Median	1.6	4.5	260.0	247.9	1.8	4.7	3.3	427	36.0	19	1.3	1560
Mode	1.9	4.5	250.0	ND	0.0	3.5	10.5	406	20.0	0	0.0	ND
Standard Deviation	0.7	2.2	62.8	63.0	1.7	7.8	6.2	100	16.8	6311	1.1	2788
Sample Variance	0.5	4.9	3946.9	3969.7	2.8	60.8	38.3	9922	283.4	39834206	1.2	7771425
Kurtosis	2.7	1.8	3.2	3.3	9.9	13.3	21.5	0	-0.1	28	1.0	-2
Skewness	0.8	0.9	-0.7	-0.7	2.6	3.4	4.2	1	0.6	5	1.0	1
Range	3.6	10.6	318.0	321.4	8.0	38.0	44.0	438	72.0	35000	4.5	5790
Minimum	0.3	1.1	72.0	63.9	0.0	0.0	1.1	284	12.0	0	0.0	10
Maximum	3.9	11.7	390.0	385.3	8.0	38.0	45.1	722	84.0	35000	4.5	5800
Count	32	29	21	21	21	21	96	96	96	32	32	4
Confidence Level(95.0%)	0.3	0.8	28.6	28.7	0.8	3.5	1.3	20	3.4	2276	0.4	4436

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 12
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	40.91	16.53	0.0	3.7	3.5	1.1	0.2	11.5	0.0	1.1	1.5	0.0
Standard Error	1.01	0.57	0.0	0.2	0.6	0.2	0.1	0.8	0.0	0.3	0.6	0.0
Median	39.00	15.00	0.0	3.7	3.1	0.8	0.0	11.0	0.0	0.0	0.0	0.0
Mode	39.00	15.00	0.0	3.1	0.0	0.0	0.0	11.0	0.0	0.0	0.0	0.0
Standard Deviation	5.73	3.25	0.0	0.9	3.3	1.1	0.8	4.3	0.2	1.7	3.3	0.0
Sample Variance	32.80	10.58	0.0	0.8	11.0	1.3	0.6	18.8	0.0	3.0	10.7	0.0
Kurtosis	0.89	1.44	ND	-0.9	-0.1	-1.9	22.4	1.7	32.0	1.0	1.4	ND
Skewness	1.29	1.50	ND	0.1	0.7	0.2	4.7	-0.8	5.7	1.4	1.8	ND
Range	21.00	12.00	0.0	3.1	12.0	2.8	4.0	19.0	1.2	5.9	9.9	0.0
Minimum	33.00	13.00	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	54.00	25.00	0.0	5.2	12.0	2.8	4.0	19.0	1.2	5.9	9.9	0.0
Count	32	32	32	32	32	32	32	32	32	32	31	3
Confidence Level(95.0%)	2.06	1.17	0.0	0.3	1.2	0.4	0.3	1.6	0.1	0.6	1.2	0.0

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	171	137	0.5	4.7	36.9	32.7	4.2	ND
Standard Error	5	3	0.2	0.3	0.9	0.8	0.2	ND
Median	160	140	0.0	4.7	36.0	32.0	3.8	ND
Mode	150	140	0.0	4.1	32.0	29.0	3.6	ND
Standard Deviation	28	23	1.0	1.4	7.4	6.1	1.4	ND
Sample Variance	761	517	1.0	2.0	54.5	37.5	2.0	ND
Kurtosis	1	3	2.1	6.0	3.8	4.4	1.3	ND
Skewness	1	1	1.9	-1.7	1.8	1.9	1.3	ND
Range	110	124	3.2	6.9	36.0	31.0	6.2	0.0
Minimum	130	96	0.0	0.0	28.0	25.0	2.4	0.0
Maximum	240	220	3.2	6.9	64.0	56.0	8.6	0.0
Count	32	63	21	20	63	63	63	0
Confidence Level(95.0%)	10	6	0.5	0.7	1.9	1.5	0.4	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 13
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.4	10.5	5.37	0.61	0.010	0.62	0.028	0.30	0.021	0.004	2.71
Standard Error	0.0	0.5	0.1	0.54	0.03	0.001	0.03	0.004	0.03	0.004	0.002	0.12
Median	8.1	12.1	10.4	4.04	0.55	0.010	0.56	0.016	0.28	0.000	0.000	2.50
Mode	8.0	13.8	10.6	6.44	0.34	0.013	1.10	0.000	0.00	0.000	0.000	2.00
Standard Deviation	0.2	4.2	1.1	4.06	0.28	0.006	0.29	0.034	0.25	0.033	0.015	1.13
Sample Variance	0.0	18.0	1.1	16.48	0.08	0.000	0.08	0.001	0.06	0.001	0.000	1.28
Kurtosis	0.9	-0.3	1.0	0.56	1.16	-0.310	0.89	-0.231	-0.90	3.744	24.100	7.05
Skewness	0.7	0.2	0.2	1.05	1.01	0.399	0.95	1.027	0.32	1.795	4.700	2.11
Range	0.9	19.6	6.2	16.60	1.34	0.024	1.34	0.110	0.86	0.160	0.097	7.00
Minimum	7.7	2.5	7.4	0.30	0.26	0.000	0.26	0.000	0.00	0.000	0.000	1.40
Maximum	8.6	22.1	13.6	16.90	1.60	0.024	1.60	0.110	0.86	0.160	0.097	8.40
Count	78	84	84	57	84	84	84	84	84	84	84	84
Confidence Level(95.0%)	0.0	0.9	0.2	1.08	0.06	0.001	0.06	0.007	0.05	0.007	0.003	0.25

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	2.2	6.3	234.1	230.8	0.6	3.3	3.2	394	29.2	254	1.4	34
Standard Error	0.2	0.7	14.7	14.4	0.2	0.7	0.3	11	1.8	162	0.2	15
Median	1.9	5.7	220.0	217.2	0.0	2.6	2.5	372	24.0	24	1.4	14
Mode	1.8	4.5	250.0	ND	0.0	ND	1.6	381	11.0	3	0.5	4
Standard Deviation	1.3	3.7	60.6	59.4	0.9	2.9	2.7	98	16.4	856	0.9	60
Sample Variance	1.7	13.4	3675.7	3523.7	0.8	8.2	7.3	9620	269.4	732554	0.8	3544
Kurtosis	3.0	1.9	0.7	0.9	2.8	5.4	5.6	0	0.1	22	0.5	11
Skewness	1.7	1.4	1.0	1.0	1.6	2.3	2.2	1	0.9	5	0.7	3
Range	5.6	14.4	220.0	218.0	3.1	12.0	14.2	399	64.0	4400	3.6	240
Minimum	0.6	1.6	160.0	158.6	0.0	0.0	0.5	277	10.0	0	0.0	0
Maximum	6.2	16.0	380.0	376.6	3.1	12.0	14.7	676	74.0	4400	3.6	240
Count	28	26	17	17	17	17	84	84	84	28	28	16
Confidence Level(95.0%)	0.5	1.5	31.2	30.5	0.5	1.5	0.6	21	3.6	332	0.3	32

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 13
WATER QUALITY DATA - 2010

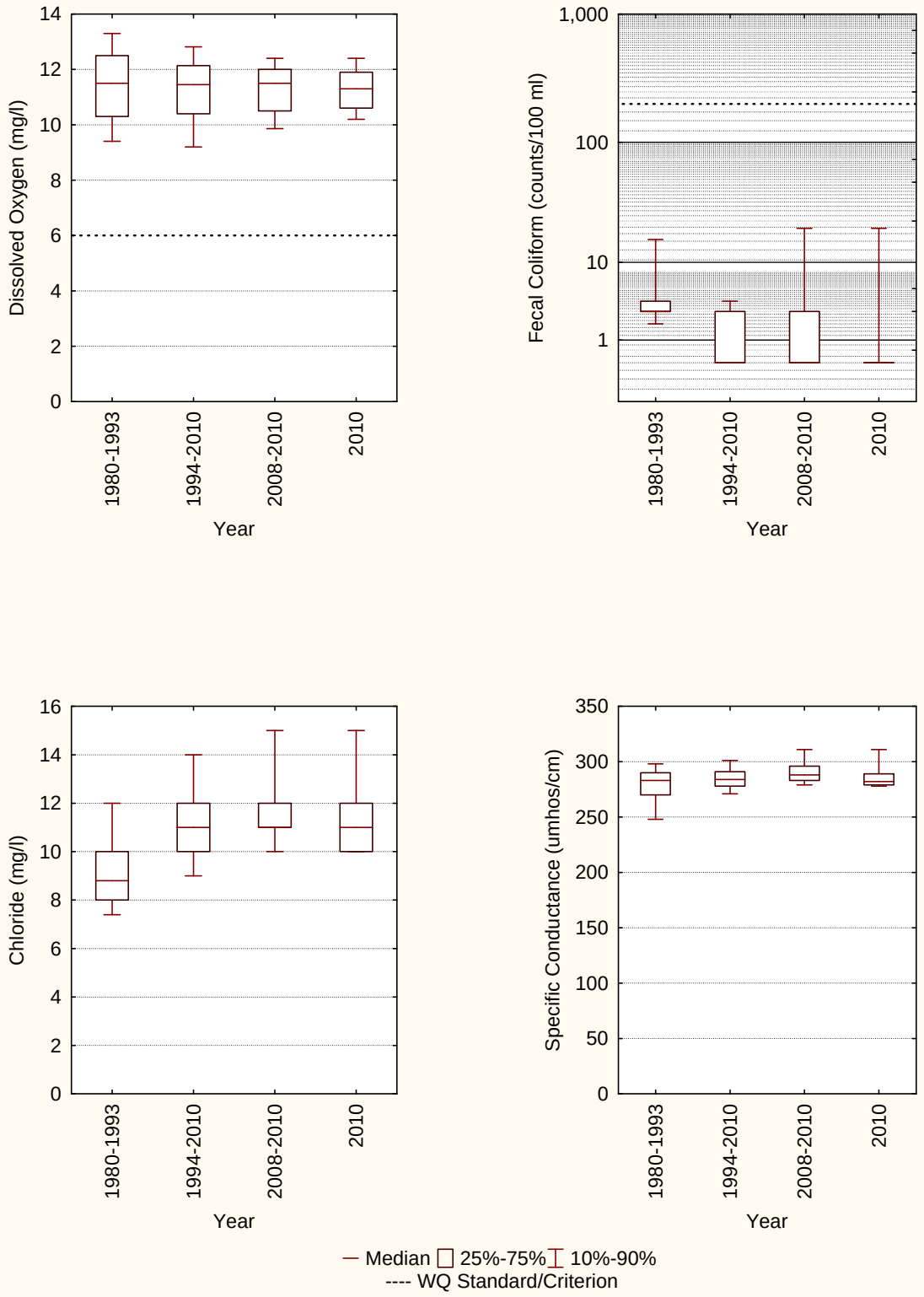
VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	38.46	14.93	0.0	3.4	3.0	0.9	0.0	11.0	0.0	0.9	1.3	ND
Standard Error	1.01	0.62	0.0	0.3	0.6	0.2	0.0	1.3	0.0	0.3	0.5	ND
Median	37.00	14.00	0.0	3.0	2.7	0.0	0.0	10.5	0.0	0.0	0.0	ND
Mode	37.00	13.00	0.0	3.0	0.0	0.0	0.0	11.0	0.0	0.0	0.0	ND
Standard Deviation	5.34	3.27	0.0	1.4	3.1	1.3	0.0	6.9	0.0	1.5	2.7	ND
Sample Variance	28.55	10.66	0.0	2.0	9.4	1.6	0.0	47.1	0.0	2.3	7.3	ND
Kurtosis	1.06	0.78	ND	4.3	0.8	-0.4	ND	8.5	ND	2.7	1.5	ND
Skewness	1.22	1.06	ND	1.1	1.0	0.9	ND	2.2	ND	1.8	1.8	ND
Range	21.00	13.00	0.0	8.0	11.0	3.9	0.0	38.0	0.0	5.8	7.9	0.0
Minimum	32.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	53.00	24.00	0.0	8.0	11.0	3.9	0.0	38.0	0.0	5.8	7.9	0.0
Count	28	28	28	28	28	28	28	28	28	28	26	0
Confidence Level(95.0%)	2.07	1.27	0.0	0.6	1.2	0.5	0.0	2.7	0.0	0.6	1.1	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	157	130	0.1	3.7	35.1	31.3	3.9	ND
Standard Error	5	3	0.1	0.3	1.0	0.8	0.2	ND
Median	150	120	0.0	4.0	34.0	30.5	3.6	ND
Mode	140	110	0.0	4.0	29.0	25.0	3.6	ND
Standard Deviation	27	20	0.5	1.4	7.1	5.9	1.5	ND
Sample Variance	704	396	0.3	1.9	50.7	34.5	2.2	ND
Kurtosis	1	1	17.0	2.2	1.4	1.5	1.6	ND
Skewness	1	1	4.1	-0.9	1.3	1.2	1.5	ND
Range	110	80	2.2	6.2	28.0	24.0	6.0	0.0
Minimum	120	110	0.0	0.0	27.0	24.0	2.3	0.0
Maximum	230	190	2.2	6.2	55.0	48.0	8.3	0.0
Count	28	51	17	17	51	50	50	0
Confidence Level(95.0%)	10	6	0.3	0.7	2.0	1.7	0.4	ND

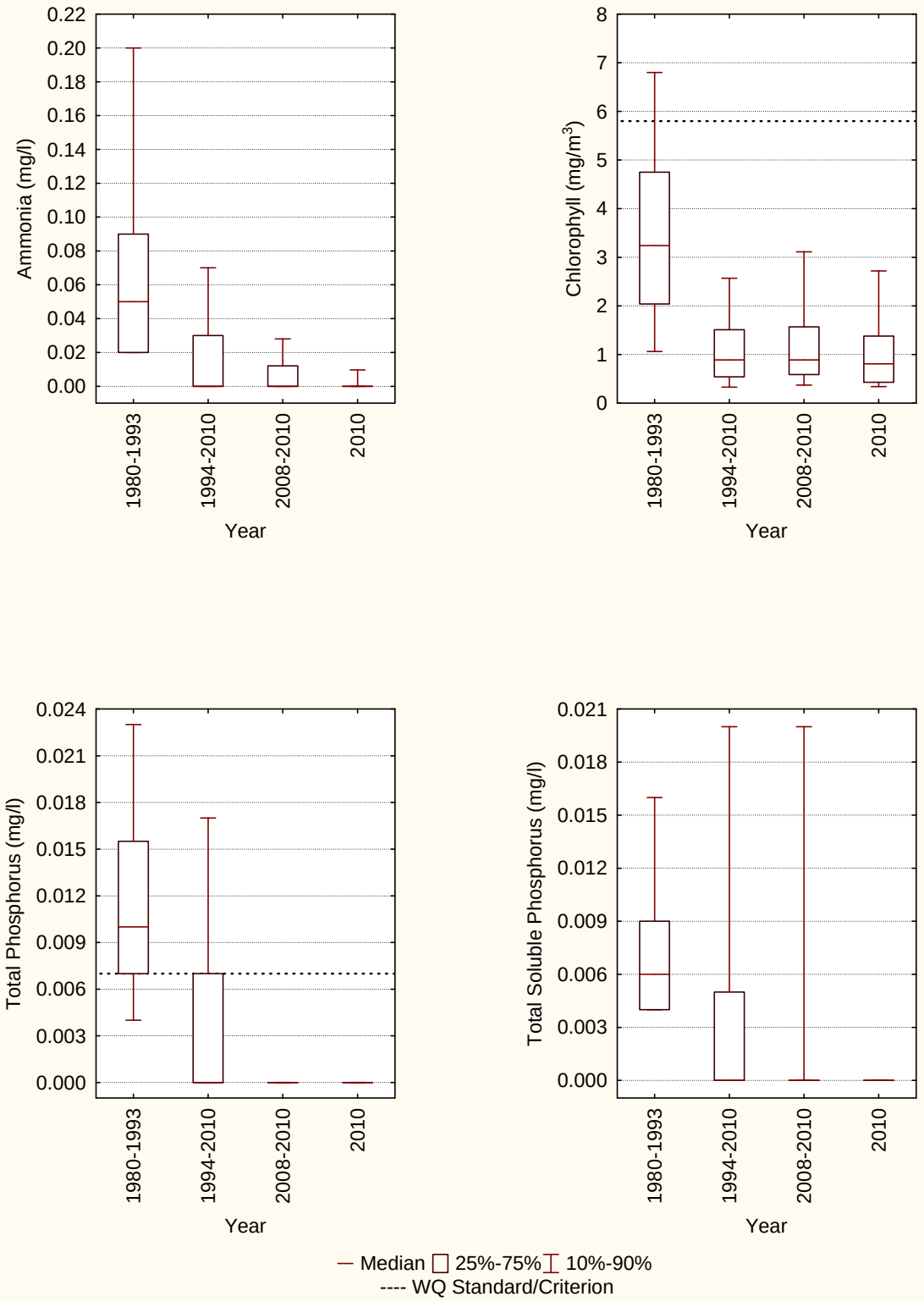
ND = No Data

Provisional MMSD Water Quality Data

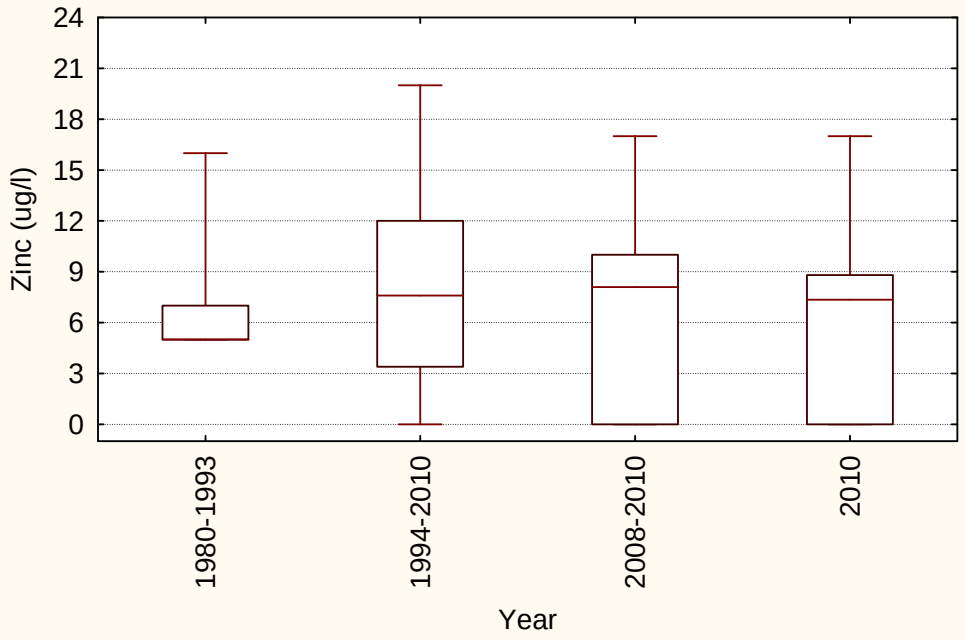
MMSD Water Quality Program Data
Nearshore survey, Site NS-14

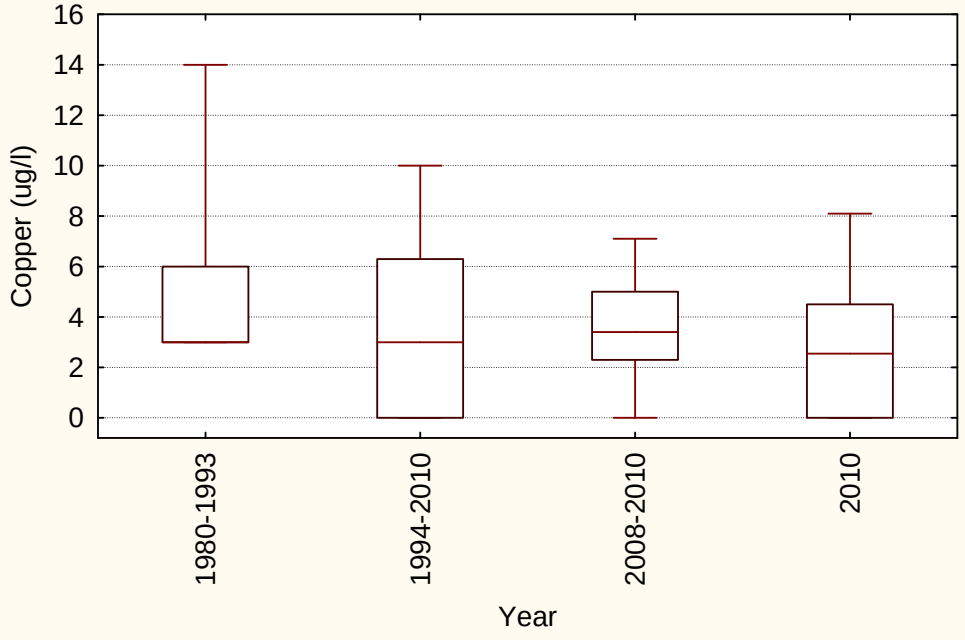


MMSD Water Quality Program Data
Nearshore survey, Site NS-14



MMSD Water Quality Program Data
Nearshore survey, Site NS-14





Median 25%-75% 10%-90%

NEAR SHORE - SITE 14
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	10.7	11.3	1.20	0.30	0.003	0.31	0.002	0.12	0.000	0.001	1.83
Standard Error	0.0	0.5	0.1	0.17	0.01	0.000	0.01	0.000	0.02	0.000	0.001	0.04
Median	8.1	10.2	11.3	0.81	0.30	0.003	0.30	0.000	0.00	0.000	0.000	1.80
Mode	8.0	13.8	11.9	0.36	0.29	0.000	0.31	0.000	0.00	0.000	0.000	1.80
Standard Deviation	0.2	4.4	0.9	1.24	0.05	0.003	0.05	0.004	0.15	0.002	0.005	0.32
Sample Variance	0.1	19.0	0.8	1.54	0.00	0.000	0.00	0.000	0.02	0.000	0.000	0.10
Kurtosis	0.0	-0.5	0.2	10.46	3.22	5.477	3.01	5.959	-0.18	78.000	78.000	0.15
Skewness	0.2	0.3	0.4	2.86	1.50	1.526	1.49	2.697	0.83	8.832	8.832	0.46
Range	1.1	18.8	4.3	7.07	0.25	0.017	0.25	0.018	0.63	0.014	0.046	1.50
Minimum	7.6	1.8	9.6	0.17	0.23	0.000	0.23	0.000	0.00	0.000	0.000	1.20
Maximum	8.7	20.6	13.9	7.24	0.48	0.017	0.48	0.018	0.63	0.014	0.046	2.70
Count	72	78	78	54	78	78	78	78	78	78	78	78
Confidence Level(95.0%)	0.1	1.0	0.2	0.34	0.01	0.001	0.01	0.001	0.03	0.000	0.001	0.07

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.7	15.6	165.3	164.8	0.3	0.6	0.9	288	11.6	14	0.3	ND
Standard Error	0.6	0.9	3.9	3.9	0.1	0.2	0.1	2	0.2	11	0.1	ND
Median	6.6	18.0	170.0	168.4	0.0	0.0	0.8	282	11.0	0	0.0	ND
Mode	10.0	18.5	160.0	160.0	0.0	0.0	1.0	282	11.0	0	0.0	ND
Standard Deviation	2.8	4.5	15.1	15.1	0.5	0.7	0.5	14	2.2	55	0.6	ND
Sample Variance	7.9	20.2	226.7	227.9	0.2	0.4	0.2	201	4.8	3040	0.4	ND
Kurtosis	0.4	0.5	0.9	0.8	-0.6	-2.0	3.7	5	4.3	24	5.5	ND
Skewness	0.4	-1.2	-0.7	-0.6	1.2	0.3	1.6	2	2.1	5	2.4	ND
Range	12.4	15.2	60.0	60.0	1.2	1.6	2.4	65	10.7	280	2.4	0
Minimum	1.6	4.8	130.0	130.0	0.0	0.0	0.3	276	9.3	0	0.0	0
Maximum	14.0	20.0	190.0	190.0	1.2	1.6	2.7	341	20.0	280	2.4	0
Count	26	24	15	15	15	15	78	78	78	26	26	0
Confidence Level(95.0%)	1.1	1.9	8.3	8.4	0.3	0.4	0.1	3	0.5	22	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 14
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	32.96	11.31	0.0	2.6	2.8	0.5	0.0	6.7	0.0	0.5	1.4	ND
Standard Error	0.25	0.11	0.0	0.3	0.6	0.2	0.0	1.2	0.0	0.3	0.6	ND
Median	33.00	11.00	0.0	2.8	2.6	0.0	0.0	7.4	0.0	0.0	0.0	ND
Mode	33.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	1.28	0.55	0.0	1.3	3.3	1.0	0.0	6.0	0.0	1.4	2.8	ND
Sample Variance	1.64	0.30	0.0	1.8	10.8	1.0	0.0	35.8	0.0	1.9	7.8	ND
Kurtosis	0.18	-0.52	ND	0.7	1.5	2.1	ND	-0.4	ND	8.9	0.8	ND
Skewness	0.57	0.07	ND	-0.5	1.3	1.9	ND	0.5	ND	3.0	1.6	ND
Range	5.00	2.00	0.0	5.4	12.0	3.2	0.0	20.0	0.0	5.7	7.6	0.0
Minimum	31.00	10.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	36.00	12.00	0.0	5.4	12.0	3.2	0.0	20.0	0.0	5.7	7.6	0.0
Count	26	26	26	26	26	26	26	26	26	26	25	0
Confidence Level(95.0%)	0.52	0.22	0.0	0.5	1.3	0.4	0.0	2.4	0.0	0.6	1.2	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	129	110	0.0	2.4	28.3	25.8	2.4	ND
Standard Error	1	0	0.0	0.2	0.3	0.3	0.1	ND
Median	130	110	0.0	2.5	28.0	25.0	2.5	ND
Mode	130	110	0.0	2.6	27.0	25.0	2.6	ND
Standard Deviation	6	3	0.0	0.7	1.7	1.8	0.5	ND
Sample Variance	39	7	0.0	0.5	3.0	3.3	0.2	ND
Kurtosis	0	13	ND	9.9	2.3	3.3	16.5	ND
Skewness	0	1	ND	-2.9	1.4	1.6	-2.4	ND
Range	20	20	0.0	3.1	8.0	9.0	3.9	0.0
Minimum	120	100	0.0	0.0	26.0	23.0	0.0	0.0
Maximum	140	120	0.0	3.1	34.0	32.0	3.9	0.0
Count	26	45	15	15	45	45	45	0
Confidence Level(95.0%)	3	1	0.0	0.4	0.5	0.5	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 27
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	12.7	11.0	1.07	0.50	0.008	0.51	0.021	0.20	0.003	0.002	1.78
Standard Error	0.0	0.5	0.2	0.13	0.04	0.002	0.04	0.008	0.03	0.001	0.001	0.06
Median	8.1	12.9	10.9	0.84	0.38	0.005	0.38	0.000	0.00	0.000	0.000	1.70
Mode	8.0	12.7	10.9	0.81	0.25	0.000	0.31	0.000	0.00	0.000	0.000	1.40
Standard Deviation	0.3	4.2	1.5	0.81	0.34	0.013	0.34	0.066	0.28	0.011	0.010	0.53
Sample Variance	0.1	17.3	2.3	0.65	0.11	0.000	0.12	0.004	0.08	0.000	0.000	0.28
Kurtosis	0.1	-0.8	6.6	1.64	6.79	33.728	6.10	42.587	13.26	15.599	24.773	0.61
Skewness	-0.4	-0.3	2.1	1.45	2.48	5.486	2.36	6.114	2.84	4.003	4.930	0.74
Range	1.5	17.2	9.1	3.11	1.70	0.097	1.70	0.510	1.80	0.062	0.061	2.70
Minimum	7.3	3.5	8.1	0.16	0.20	0.000	0.20	0.000	0.00	0.000	0.000	0.70
Maximum	8.8	20.7	17.2	3.27	1.90	0.097	1.90	0.510	1.80	0.062	0.061	3.40
Count	72	75	75	37	72	72	75	75	75	74	74	75
Confidence Level(95.0%)	0.1	1.0	0.3	0.27	0.08	0.003	0.08	0.015	0.06	0.003	0.002	0.12

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	6.8	10.5	180.1	179.3	0.2	0.9	1.1	344	17.9	20	0.5	ND
Standard Error	0.7	0.2	14.9	15.0	0.1	0.2	0.1	9	1.1	16	0.1	ND
Median	6.0	10.8	180.0	178.8	0.0	1.1	0.9	317	15.0	0	0.0	ND
Mode	11.0	11.0	190.0	188.4	0.0	0.0	0.5	293	11.0	0	0.0	ND
Standard Deviation	3.7	1.2	55.9	56.1	0.4	0.8	0.7	77	9.5	79	0.7	ND
Sample Variance	13.7	1.3	3120.3	3145.3	0.2	0.6	0.4	6005	91.2	6313	0.4	ND
Kurtosis	-1.7	11.9	5.4	5.4	4.5	-2.1	2.6	3	6.5	24	3.1	ND
Skewness	0.2	-2.9	-1.4	-1.4	2.4	-0.1	1.6	2	2.3	5	1.7	ND
Range	10.5	6.0	248.0	248.6	1.3	1.9	3.1	339	49.7	400	2.6	0
Minimum	1.5	6.0	22.0	20.3	0.0	0.0	0.3	271	9.3	0	0.0	0
Maximum	12.0	12.0	270.0	268.9	1.3	1.9	3.4	610	59.0	400	2.6	0
Count	25	22	14	14	14	14	75	75	75	25	25	0
Confidence Level(95.0%)	1.5	0.5	32.3	32.4	0.2	0.5	0.2	18	2.2	33	0.3	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 27
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	34.60	12.28	0.0	3.2	2.2	0.8	0.0	6.4	0.1	0.6	1.0	ND
Standard Error	0.44	0.25	0.0	0.4	0.7	0.3	0.0	0.9	0.1	0.3	0.5	ND
Median	34.00	12.00	0.0	2.7	0.0	0.0	0.0	7.3	0.0	0.0	0.0	ND
Mode	34.00	11.00	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND
Standard Deviation	2.20	1.24	0.0	1.9	3.4	1.4	0.0	4.6	0.4	1.4	2.5	ND
Sample Variance	4.83	1.54	0.0	3.6	11.5	2.0	0.0	20.8	0.1	2.1	6.2	ND
Kurtosis	-0.59	-0.05	ND	6.0	7.9	1.8	ND	-0.8	11.1	4.0	3.9	ND
Skewness	0.48	0.83	ND	1.7	2.5	1.7	ND	-0.3	3.4	2.3	2.2	ND
Range	8.00	4.00	0.0	9.9	15.0	4.7	0.0	15.0	1.5	4.9	8.9	0.0
Minimum	31.00	11.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	39.00	15.00	0.0	9.9	15.0	4.7	0.0	15.0	1.5	4.9	8.9	0.0
Count	25	25	25	25	25	25	25	25	25	25	25	0
Confidence Level(95.0%)	0.91	0.51	0.0	0.8	1.4	0.6	0.0	1.9	0.2	0.6	1.0	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	137	115	ND	ND	29.2	26.6	2.7	ND
Standard Error	2	2	ND	ND	0.5	0.4	0.1	ND
Median	130	110	ND	ND	28.0	26.0	2.5	ND
Mode	130	110	ND	ND	27.0	25.0	2.5	ND
Standard Deviation	11	10	ND	ND	3.2	2.9	0.4	ND
Sample Variance	121	99	ND	ND	10.5	8.5	0.2	ND
Kurtosis	0	6	ND	ND	1.3	1.7	1.1	ND
Skewness	1	2	ND	ND	1.1	1.0	1.1	ND
Range	40	50	0.0	0.0	15.0	15.0	1.8	0.0
Minimum	120	100	0.0	0.0	24.0	21.0	2.2	0.0
Maximum	160	150	0.0	0.0	39.0	36.0	4.0	0.0
Count	25	42	0	0	42	42	42	0
Confidence Level(95.0%)	5	3	ND	ND	1.0	0.9	0.1	ND

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 28
WATER QUALITY DATA - 2010

VARIABLE	PH	TEMP	DO	CHLA	NITRATE	NITRITE	NO5	AMMONIA	TKN	PHOS	SOLPHOS	SOLSIL
units	su	C	mg/L	mg/m3	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS												
Mean	8.1	14.3	8.9	6.46	0.77	0.015	0.79	0.080	0.55	0.059	0.027	4.44
Standard Error	0.0	0.5	0.2	0.44	0.03	0.001	0.03	0.005	0.03	0.004	0.003	0.23
Median	8.0	13.9	8.9	5.58	0.68	0.014	0.69	0.080	0.52	0.058	0.000	4.05
Mode	8.0	22.3	7.3	5.13	1.20	0.013	1.20	0.056	0.00	0.000	0.000	2.20
Standard Deviation	0.2	4.8	1.4	3.32	0.32	0.006	0.32	0.044	0.28	0.036	0.032	2.10
Sample Variance	0.0	23.0	2.1	11.03	0.10	0.000	0.10	0.002	0.08	0.001	0.001	4.42
Kurtosis	0.7	-0.3	-0.2	-0.61	0.30	-0.220	0.14	0.223	-0.11	-0.279	-0.446	1.49
Skewness	0.7	0.2	0.4	0.59	1.05	0.190	1.01	0.469	0.28	-0.039	0.750	1.08
Range	0.8	21.3	6.3	13.01	1.28	0.031	1.27	0.200	1.20	0.140	0.120	10.20
Minimum	7.8	3.8	6.2	0.99	0.32	0.000	0.33	0.000	0.00	0.000	0.000	1.80
Maximum	8.6	25.1	12.5	14.00	1.60	0.031	1.60	0.200	1.20	0.140	0.120	12.00
Count	78	84	84	57	84	84	84	84	84	84	84	84
Confidence Level(95.0%)	0.0	1.0	0.3	0.88	0.07	0.001	0.07	0.010	0.06	0.008	0.007	0.46

VARIABLE	SCHII	IXLITE	TS	DS	VSS	SS	TURB	SPEC	CHLOR	FECAL	LFC	ECOLIQT
units	meters	meters	mg/L	mg/L	mg/L	mg/L	NTU	umhos/cm	mg/L	CFU/100 mL	CFU/100 mL	MPN/100 mL
STATISTICS												
Mean	1.2	3.2	326.5	318.3	2.1	8.2	6.7	531	52.0	1168	2.0	75
Standard Error	0.1	0.2	15.6	15.9	0.4	1.6	0.6	16	2.4	995	0.1	25
Median	1.2	3.3	320.0	302.9	2.0	6.6	5.5	539	53.0	87	1.9	37
Mode	0.9	3.5	320.0	ND	1.4	4.9	6.4	587	53.0	16	1.2	42
Standard Deviation	0.3	0.8	64.4	65.7	1.5	6.5	5.1	149	21.9	5266	0.7	101
Sample Variance	0.1	0.6	4149.3	4318.2	2.4	42.9	25.5	22166	479.8	27728256	0.5	10142
Kurtosis	0.0	1.3	0.2	0.1	10.1	12.4	15.6	-1	-0.5	28	3.6	9
Skewness	-0.5	-0.7	0.6	0.7	2.8	3.4	3.6	0	0.1	5	1.5	3
Range	1.2	3.5	240.0	240.3	7.5	27.9	31.1	515	87.0	27988	3.4	408
Minimum	0.4	1.0	230.0	224.8	0.0	4.1	1.9	286	12.0	12	1.1	2
Maximum	1.6	4.5	470.0	465.1	7.5	32.0	33.0	801	99.0	28000	4.4	410
Count	28	26	17	17	17	17	84	84	84	28	28	16
Confidence Level(95.0%)	0.1	0.3	33.1	33.8	0.8	3.4	1.1	32	4.8	2042	0.3	54

ND = No Data

Provisional MMSD Water Quality Data

NEAR SHORE - SITE 28
WATER QUALITY DATA - 2010

VARIABLE	CA	MG	CD	CR	CU	NI	PB	ZN	AG	AS	SE	HG
units	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
STATISTICS												
Mean	46.65	20.92	0.0	4.3	4.1	1.4	0.0	13.5	0.0	0.6	1.1	ND
Standard Error	1.17	0.75	0.0	0.1	0.4	0.1	0.0	0.6	0.0	0.2	0.3	ND
Median	45.00	20.00	0.0	4.3	4.0	1.8	0.0	12.5	0.0	0.0	0.0	ND
Mode	45.00	20.00	0.0	4.6	0.0	0.0	0.0	12.0	0.0	0.0	0.0	ND
Standard Deviation	9.18	5.87	0.1	1.1	3.5	1.1	0.3	4.8	0.0	1.5	2.7	ND
Sample Variance	84.27	34.44	0.0	1.1	12.3	1.3	0.1	22.8	0.0	2.2	7.1	ND
Kurtosis	-0.01	-0.38	30.7	-0.6	-0.4	-1.6	62.0	3.7	ND	3.7	3.6	ND
Skewness	0.74	0.44	5.6	0.3	0.5	-0.2	7.9	1.7	ND	2.2	2.2	ND
Range	38.00	23.00	0.6	4.2	14.0	3.2	2.1	25.0	0.0	5.5	9.9	0.0
Minimum	32.00	11.00	0.0	2.5	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
Maximum	70.00	34.00	0.6	6.7	14.0	3.2	2.1	32.0	0.0	5.5	9.9	0.0
Count	62	62	62	62	61	62	62	62	62	62	60	0
Confidence Level(95.0%)	2.33	1.49	0.0	0.3	0.9	0.3	0.1	1.2	0.0	0.4	0.7	ND

VARIABLE	HARD	TALK	BOD5	BOD20	TC	TNIC	TNOC	TNDOC
units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
STATISTICS								
Mean	203	167	ND	ND	46.7	41.0	5.7	ND
Standard Error	6	6	ND	ND	1.8	1.5	0.4	ND
Median	190	160	ND	ND	44.0	40.0	5.0	ND
Mode	190	140	ND	ND	60.0	43.0	8.7	ND
Standard Deviation	46	40	ND	ND	12.6	10.4	2.5	ND
Sample Variance	2158	1592	ND	ND	158.9	107.8	6.3	ND
Kurtosis	0	-1	ND	ND	0.9	0.9	-0.1	ND
Skewness	1	1	ND	ND	0.9	0.9	0.8	ND
Range	190	140	0.0	0.0	54.0	44.0	9.7	0.0
Minimum	120	110	0.0	0.0	28.0	26.0	2.3	0.0
Maximum	310	250	0.0	0.0	82.0	70.0	12.0	0.0
Count	62	51	0	0	51	51	51	0
Confidence Level(95.0%)	12	11	ND	ND	3.5	2.9	0.7	ND

ND = No Data

Provisional MMSD Water Quality Data