

**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
FISH CONTAMINANT MONITORING PROGRAM**

**2009 ANNUAL EDIBLE PORTION REPORT**

**RECOMMENDATIONS FOR CHANGES TO THE 2010  
MICHIGAN DEPARTMENT OF COMMUNITY HEALTH  
FISH CONSUMPTION ADVISORY**

## TABLE OF CONTENTS

<b>SECTION 1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
<b>SECTION 2.0</b>	<b>METHODS .....</b>	<b>3</b>
2.1	Fish Collection and Edible Portion Processing.....	3
2.2	Chemical Analyses.....	3
2.3	Summary Statistics .....	4
2.4	Fish Consumption Advisory Screening Values .....	5
2.4.1	<i>Fish Consumption Advisory Screening Values for Chlorinated Organic Contaminants Other Than PCBs.....</i>	<i>6</i>
2.4.2	<i>Fish Consumption Advisory Screening Values for Total PCBs.....</i>	<i>6</i>
2.4.3	<i>Fish Consumption Advisory Screening Values for Mercury.....</i>	<i>7</i>
2.4.4	<i>Fish Consumption Advisory Screening Values for Selenium.....</i>	<i>7</i>
<b>SECTION 3.0</b>	<b>RESULTS AND DISCUSSION .....</b>	<b>8</b>
3.1	General Highlights .....	8
3.2	General Highlights of the Screening Value Comparisons.....	8
3.3	Screening Value Comparisons by Great Lake Watershed .....	9
3.3.1	<i>Lake Erie Watershed .....</i>	<i>9</i>
3.3.2	<i>Lake Huron Watershed .....</i>	<i>13</i>
3.3.3	<i>Lake Michigan Watershed .....</i>	<i>16</i>
3.3.4	<i>Lake Superior Watershed .....</i>	<i>31</i>
3.4	Summary of Recommendations .....	32
3.4.1	<i>Summary of Recommendations for Relaxed Advisories.....</i>	<i>32</i>
3.4.2	<i>Summary of Recommendations for Expanded Advisories .....</i>	<i>33</i>
3.4.3	<i>Summary of Recommendations for Additional Monitoring.....</i>	<i>33</i>
3.5	Summary of WQS Attainment Status .....	33
<b>SECTION 4.0</b>	<b>REFERENCES .....</b>	<b>35</b>

## LIST OF APPENDICES

- A. INVENTORY OF FISH CONTAMINANT MONITORING SITES AND SPECIES; 1980-2008
- B. INVENTORY OF CONTAMINANT MONITORING SITES AND SPECIES SUMMARIZED IN THE MICHIGAN FISH CONTAMINANT MONITORING 2009 ANNUAL EDIBLE PORTION REPORT
- C. CONTAMINANT DATA SUMMARIZED IN THE MICHIGAN FISH CONTAMINANT MONITORING 2009 ANNUAL EDIBLE PORTION REPORT

## LIST OF ACRONYMS

%	Percent
DDT	Dichlorodiphenyl trichloroethane
DL	Detection Level
dl-PCB	Dioxin-like PCB
FAWCAC	Fish and Wildlife Contaminant Advisory Committee
MDA	Michigan Department of Agriculture
MDCH	Michigan Department of Community Health
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
PBDE	Polybrominated diphenyl ether
PCB	Polychlorinated biphenyl
PPM	Parts per million
QL	Quantification Level
TCDD	Total 2,3,7,8-tetrachlorodibenzo-p-dioxin
TEQ	Toxic equivalent
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
WQS	Water Quality Standards
WRD	Water Resources Division

## SECTION 1.0

### INTRODUCTION

The Michigan Department of Environmental Quality (MDEQ), Water Resources Division (WRD), has analyzed over 17,000 fish tissue samples collected since 1980. The WRD conducts fish contaminant monitoring to address four goals. The first goal is to support the development of the Michigan Department of Community Health's (MDCH's) *Michigan Fish Advisory*. Edible portion sample results are used by the MDCH to issue general and specific advisories against eating certain sport fish from Michigan's surface waters. The second goal is to support the regulation of commercial fisheries in the waters of the state. The Michigan Department of Agriculture (MDA) uses edible portion monitoring results to regulate sales of the commercial catch. The third goal of the fish contaminant monitoring is to identify spatial differences and temporal trends in the quality of Michigan's surface waters. Temporal trends and spatial differences are examined by collecting whole fish and caged fish samples in addition to the edible portion samples. Finally, the fourth goal is to evaluate whether existing pollution prevention, regulatory, and remedial programs are effectively reducing chemical contamination in the aquatic environment. To achieve this goal, fish tissue samples are used to identify waters that are attaining or not attaining the designated uses described in Michigan's Water Quality Standards (WQS), identify sources of pollutants, and track the effectiveness of remedial actions. Fish contaminant analyses are limited to chemicals with high bioaccumulation potential in fish tissue. The presence of even extremely low concentrations of some bioaccumulative pollutants in surface water can result in fish tissue concentrations that pose a human or wildlife health risk.

Several state and federal agencies and tribal organizations assist with the WRD's fish contaminant monitoring efforts by collecting or analyzing samples and data. These include the Michigan Department of Natural Resources (MDNR) Fisheries Division; MDCH; MDA; United States Environmental Protection Agency (USEPA); United States Fish and Wildlife Service; Grand Traverse Bay Band of Chippewa and Ottawa; Chippewa Ottawa Resource Authority; Keweenaw Bay Indian Community; and the Great Lakes Indian Fish and Wildlife Commission. In addition, sample collection plans and analytical results are reviewed by Michigan's Fish and Wildlife Contaminant Advisory Committee (FAWCAC). The FAWCAC members include representatives from all Michigan agencies involved in fish and wildlife contaminant monitoring (MDCH, MDA, the MDNR Fisheries Division and Wildlife Division, and the MDEQ WRD). The primary role of the FAWCAC is to coordinate fish and wildlife monitoring conducted by state agencies. Also, the FAWCAC reviews fish and wildlife consumption advisories proposed by state agencies in Michigan.

Fish contaminant data are presented annually in staff reports. The objectives of this report are to:

- Summarize the results of the available edible portion fish tissue analyses.
- Identify sites where modifications to the MDCH *Michigan Fish Advisory* should be considered.
- Identify water bodies monitored in 2008 that are supporting and not supporting the fish consumption designated use described in the WQS.

Results of temporal trend analysis, caged fish studies, and special projects will be analyzed and discussed in separate staff reports.

Prior to 1986, Michigan conducted fish contaminant studies on an as needed basis primarily to address specific problems. In 1986, a comprehensive program was initiated to assess the degree of chemical contamination in fish from the surface waters of the state. Michigan's fish

contaminant data have been compiled into a large database and are available online at [www.deq.state.mi.us/fcmp](http://www.deq.state.mi.us/fcmp). The Fish Contaminant Monitoring Program database, along with several other Michigan water quality databases, is also available online through the Michigan Surface Water Information Management System at <http://mcgiga.mcgi.state.mi.us/miswims/>. Contaminant data are also available in staff reports (MDNR, 1986a, 1986b, and 1989; Duling, 1988; Duling and Benzie, 1989 and 1990; Saalfeld et al., 1991; Waggoner, 1992; Wood, 1993 and 1994; Wood et al., 1995; Day and Holden, 1996; Day, 1997, 1998, 1999, and 2002; Day and Walsh, 2000 and 2001; Day et al., 2004; Day and Bohr, 2005; Bohr and Zbytowski, 2006, 2007, 2008, and Bohr and VanDusen, 2009). In addition, an inventory of contaminant monitoring locations sampled between 1980 and 2008 with fish analyzed as edible portion samples is provided in Appendix A.

## SECTION 2.0

### METHODS

The Fish Contaminant Monitoring Program 2009 Annual Edible Portion Report includes the analytical results available by December 31, 2009, which were not presented in earlier annual reports. A list of water bodies and species included in this annual report is provided in Appendix B. Raw data from these sites are included in Appendix C (available upon request).

#### 2.1 Fish Collection and Edible Portion Processing

The MDNR Fisheries Division and MDEQ WRD collected the majority of the fish using standard fish sampling techniques determined to be appropriate for individual water bodies. These techniques included electrofishing, trap nets, gill nets, and trawling. In addition, private consultants and tribal organizations collected samples for the program.

The WRD processed fish in accordance with the Great Lakes and Environmental Assessment Section Procedure 31 (available upon request). Each fish was measured (total length) and weighed. Fish were prepared as standard edible portions (Table 1). Each sample was individually wrapped in aluminum foil, placed in a plastic bag, appropriately labeled, and frozen until analyzed.

A total of 673 fish were collected from inland lakes, rivers, and the Great Lakes and connecting channels and analyzed for this report. The report summarizes the analyses of edible portion samples of 11 fish collected from 1 location in 2009, 514 fish collected from 29 locations in 2008, 117 fish collected from 13 locations in 2007, and 31 fish collected from 4 locations in 2006. In addition, tissue from 10 fish collected in 2007 and reported in the 2008 Annual Report was analyzed for dioxins, furans, and dioxin-like polychlorinated biphenyl (PCB) congeners. In all, 17 species of fish were analyzed as edible portion samples for this report. The edible portion sample locations are illustrated in Figure 1. Edible portion sampling was often targeted toward sites of known or suspected contamination, sites popular with sport anglers, and sites with public access.

#### 2.2 Chemical Analyses

Analytical results for this report were produced by the MDCH Analytical Chemistry Laboratory and Pace Laboratories (formerly Eno River Laboratories). Both of these analytical laboratories have quality assurance programs and use peer-reviewed methods of digestion, extraction, and quantification.

A total of 683 samples collected for this report were submitted to the MDCH Analytical Chemistry Laboratory for analysis. Of those, 166 edible portion samples were analyzed for total mercury only, and a total of 51 samples were analyzed for mercury and selenium only. The remaining fish tissue samples were analyzed for mercury, percent (%) lipids, 25 organic chemicals (Table 2), and PCB congeners (Table 3). A total of 44 samples were analyzed for dioxins, furans, and dl-PCB congeners. The results are summarized in Section 3.1.

In 2007, the MDCH Analytical Chemistry Laboratory began analyzing samples for polybrominated diphenyl ether (PBDE) congeners in selected fish tissue samples. Those analyses were conducted, in part, as a test of methodology; the results were not quantified since the lab did not have suitable quality control material. The MDCH Analytical Chemistry Laboratory has since developed in-house PBDE quality control materials and has the capability to report quantified results. A total of 69 edible portion samples were analyzed for PBDE in

fiscal year 2009. The samples were analyzed for 8 PBDE congeners (BZ# 28, 47, 66, 77, 99, 100, 153, and 154). For purposes of between species and between site comparisons, total PBDE for these samples was estimated by summing the 8 congeners. Since the MDCH does not have human health screening values for PBDE at this time, no recommendations for fish consumption advisories will be based on PBDE concentrations. A separate staff report summarizing PBDE is planned.

Analyses of chlorinated dioxin, dibenzofuran (Table 4a), and coplanar PCB congeners (Table 4b) were performed on a subset of edible portion samples. Pace Laboratories, under a subcontract with the MDCH Analytical Chemistry Laboratory, analyzed these dioxin-like congeners in 44 samples; the results are summarized in Section 3.1.

Total mercury is referred to as "mercury" throughout the report. In addition, the MDCH screening values for mercury (Section 2.4.3) are based on total mercury concentrations.

Selenium samples were analyzed by the MDCH Analytical Chemistry Laboratory using techniques based on the USEPA Method 200.11 and reported as wet weight concentrations.

Toxaphene is referred to as "apparent toxaphene" throughout the report. The MDCH Analytical Chemistry Laboratory analytical method can identify a residue with chromatographic characteristics similar to toxaphene. However, the method cannot specifically identify the residue as the pesticide toxaphene.

Finally, the MDCH Analytical Chemistry Laboratory does not report concentrations below the quantification level (QL), but above the detection level (DL) for mercury, selenium, and the organic parameters listed in Table 2. As a result, concentrations of these parameters that are below the QL are coded with a "K" in Appendix E. In these cases, the "K" coded concentrations represent the MDCH Analytical Chemistry Laboratory's QLs. However, "K" codes assigned to dioxin, furan, and PCB congeners indicate that concentrations were below the DL while "J" or "NQ" codes indicate that concentrations were above the DL, but did not meet all of the quantification requirements. The "J" code was used when analytical laboratory scientists decided the divergence from quantification requirements was not significant; in these cases, the "J" coded concentrations are treated the same as uncoded results. The "NQ" coded concentrations are treated as null results.

## **2.3 Summary Statistics**

Total PCB concentration was estimated by summing the concentrations of PCB congeners. Individual congeners below the DL were assigned a concentration equal to 0 for the purpose of calculating a total PCB concentration. Also, congener analyses that did not meet retention time criteria or were subject to analytical interference were assigned a concentration equal to 0 for the purpose of calculating a total PCB concentration. If the results of an individual congener analysis did not meet all other quantification requirements, then the congener was assigned a concentration equal to the estimated concentration for the purpose of calculating a total PCB concentration. If all of the congeners were below the DL, then the total PCB concentration was reported as less than the highest DL of the individual congeners (1 part per billion).

Total chlordane concentration was estimated by summing the concentrations of 5 isomers: *alpha*-chlordane, *gamma*-chlordane, *cis*-nonachlor, *trans*-nonachlor, and oxychlordane. In some cases, individual isomers were below the QL. Individual isomers below the QL were assigned a concentration equal to 0 for the purpose of calculating a total chlordane concentration. If all 5 isomers were below the QL, then the total chlordane concentration was reported as less than the QL of the individual isomers.

Total dichlorodiphenyl trichloroethane (DDT) concentrations were calculated by summing concentrations of the para, para' and ortho, para' forms of the following chemicals: DDT, dichlorodiphenyl dichloroethane, and 1,1-bis(4-chlorophenyl)-2,2-dichloroethane. Individual chemicals below the QL were assigned a concentration equal to 0 for the purpose of calculating a total DDT concentration. If all 6 components were below the QL, then the total DDT concentration was reported as less than the lowest QL of the metabolites.

Total 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxic equivalents (TEQs) were calculated using the 2005 World Health Organization toxic equivalency factors for 7 dioxin, 10 dibenzofuran, and 12 dioxin-like PCB (dl-PCB) congeners (Van den Berg et al., 2006). The concentrations of individual dioxin, dibenzofuran, and dl-PCB congeners in a fish sample were multiplied by toxic equivalency factors; the resulting products were summed to calculate a 2,3,7,8-TCDD TEQ concentration. Beginning with the 2008 Fish Consumption Advisory, the MDCH included the 12 dl-PCB congeners in the calculation of TEQs. Any individual congener concentrations less than the DL were assigned a value of 0 for the purpose of calculating the dioxin TEQ.

The average and median contaminant concentrations were calculated for each species from each site (Appendix C). In some cases, one or more samples from a particular site had contaminant concentrations that were less than the QL (DL for dioxin TEQ and total PCBs). In these cases, calculating the true average contaminant concentration was not possible. Therefore, average contaminant concentrations were calculated using half of the QL (DL for dioxin TEQ and total PCBs) in place of the sample concentrations that were below the QL (or DL). The calculated average was then marked with a footnote to indicate that estimated values were used when quantitative concentrations were not available. If all of the concentrations were below the QL (DL for dioxin TEQ and total PCBs) the mean was reported as half of the QL (DL for dioxin TEQ and total PCBs) and the median was reported as less than the QL (DL for dioxin TEQ and total PCBs).

Summary statistics were not generated for individual dioxin, furan, or PCB congeners.

Calculated values presented in Appendix C were not rounded to significant figures. All calculated values are identified in Appendix C.

## **2.4 Fish Consumption Advisory Screening Values**

The MDCH is responsible for establishing, modifying, or removing sport fish consumption advisories in Michigan. The MDCH uses fish consumption advisory "screening values" to assess the need for advisories (Table 5). These screening values have a variety of origins. The United States Food and Drug Administration developed most of the screening values for chlorinated organic chemicals. Dioxin TEQ, mercury, and selenium screening values were developed by the MDCH. Finally, the Great Lakes states and the USEPA developed the total PCB screening values used to establish advisories for women of childbearing age and children less than 15 years of age. The underlying risk assumptions used to develop each of these screening values are different, and the criteria used to determine consumption advisories vary with the contaminant and segment of population covered by the advisory.

The fish consumption advisories are developed based on an evaluation of the relationship between contaminant concentrations and screening values across all size ranges of fish of a given species taken from specific locations. Where possible, linear regression analyses are used to predict lengths at which the concentrations in fish species are likely to exceed screening values. However, contaminant concentrations and fish total length data either do not often

conform to the underlying assumptions of this statistical method, or the method does not produce a statistically significant line. In these cases, the appropriate advisory is determined using either median concentrations or the percentage of samples exceeding the screening value, depending on the contaminant being considered.

The MDCH prefers a data set with a minimum of 10 samples before establishing or modifying fish consumption advisories. However, best professional judgment is applied when evaluating smaller data sets. Plots of contaminant concentration versus fish total length were generated to assist with data analysis in cases where contaminant concentrations exceeded screening values, or where the site and species are covered by an existing advisory.

The MDCH screening values and procedures are described in further detail below.

#### **2.4.1 Fish Consumption Advisory Screening Values for Chlorinated Organic Contaminants Other Than PCBs**

The MDCH issues fish consumption advisories based on either linear regression analyses or the percentage of samples that exceed the screening values presented in Table 5. The general population is advised to eat no more than 1 meal per week when concentrations in more than 10% of the samples from a particular species of fish of a given length range exceed the screening value. A “no consumption” advisory is issued if concentrations in 50% or more of the fish sampled exceed the screening value. In addition, the MDCH advises women and children against eating any fish when concentrations in more than 10% of a particular species of fish of a given length range exceed the screening value.

Either linear regression analyses or percentages were used to make recommendations to the MDCH regarding specific changes to the *Michigan Fish Advisory*. When linear regression analysis was not appropriate, the percentages of samples exceeding screening values were calculated. The results and recommendations are presented in Section 3.1.

#### **2.4.2 Fish Consumption Advisory Screening Values for Total PCBs**

The MDCH uses the United States Food and Drug Administration’s 2.0 parts per million (ppm) screening value for total PCB concentrations when developing advisories for the general population. The MDCH advises the general population to eat no more than 1 meal per week when concentrations in more than 10% of the samples from a particular species of fish of a given length range exceed the screening value. In addition, the MDCH advises the general population against eating any fish when concentrations in 50% or more of the samples exceed the screening value. Fish are placed into the general population consumption advisory categories according to species and size based on linear regression analyses when appropriate, otherwise the percentage of samples exceeding the screening values was calculated.

In 1998, the MDCH adopted a new advisory protocol for women of child bearing age and children less than 15 years old. The protocol includes 5 consumption advisory categories based on concentrations of total PCBs. Fish are placed into the consumption advisory categories according to species and size, based on linear regression analyses or median total PCB concentrations.

The results and recommendations are presented in Section 3.1.

### **2.4.3 Fish Consumption Advisory Screening Values for Mercury**

The MDCH uses 2 screening values to assess the need for fish consumption advisories based on mercury (Table 5). Mercury concentrations are plotted with respect to length. A “restrict consumption” advisory is issued for lengths above which the mercury concentrations exceed the 0.5 ppm screening value. A “no consumption” advisory is issued for lengths above which the mercury concentrations exceed 1.5 ppm. When linear regression analysis was not appropriate, median concentrations were used to place species and size classes into appropriate advisory categories. The results are presented in Section 3.1.

The MDCH advises the general population to eat no more than 1 meal per week of fish covered by a “restrict consumption” advisory. Women of child bearing age and children under age 15 are advised against eating more than 1 meal per month of fish covered by a “restrict consumption” screening value.

In 1988, the MDCH issued a statewide advisory covering certain predator species from all inland lakes and reservoirs, based on a preponderance of data indicating mercury concentrations were elevated in those species in most lakes and impoundments. According to the MDCH, no one should eat more than 1 meal per week of fish of the following species and sizes: rock bass, yellow perch, or crappies over 9 inches in length; and largemouth bass, smallmouth bass, walleye, northern pike, or muskellunge of any size. Also, the MDCH advises mothers who are breast feeding, pregnant women, women who intend to have children, and children under age 15 against eating more than 1 meal per month of these fish.

Lastly, the MDCH is planning to revise the protocol for determining fish consumption advisories based on mercury concentrations. The revision will most likely result in changes in advice for all water bodies, and most of the changes will result in more restrictive advice for women of child bearing age and children under age 15. Since this revision will be implemented in the near future, the MDCH decided not to institute any relaxations of the current advice based on elevated mercury concentrations. The decision was made in order to avoid possible confusion resulting from relaxing advisories in 2010 only to provide more restrictive advice in following advisories. For this reason, recommendations for advisory changes made in this report do not include suggestions for the relaxation of mercury-based advisories where such changes would be indicated under the existing protocol. However, recommendations for advisory changes were made when mercury concentrations indicated more restrictive advice was appropriate.

### **2.4.4 Fish Consumption Advisory Screening Values for Selenium**

The MDCH uses 4 screening values to assess the need for fish consumption advisories based on selenium (Table 5). Selenium concentrations are plotted with respect to length. When statistical requirements were met, linear regression analysis was used to determine the appropriate advisory category for given size classes of fish. If regression analysis was not statistically valid, median concentrations were used to place species and size classes into appropriate advisory categories. The results are presented in Section 3.1.

## SECTION 3.0

### RESULTS AND DISCUSSION

The Fish Contaminant Monitoring Program 2009 Annual Edible Portion Report includes the analytical results available by December 31, 2009, for edible portion fish samples collected primarily in 2008 and 2007. A total of 683 edible portion fish tissue samples are summarized in this report. This includes samples of 17 species from 47 locations (Figure 1).

#### 3.1 General Highlights

- Several chemicals analyzed were not quantified in any of the fish samples, including aldrin, heptachlorostyrene, lindane, pentachlorostyrene, terphenyl, and toxaphene. However, dieldrin, a breakdown product of aldrin, was quantified in fish tissue samples from 15 of 30 locations where chlorinated organic compounds were analyzed (Table 6).
- Mercury was quantified in every sample analyzed (Table 6). The highest concentrations were found in top predator species from inland lakes and impoundments.
- Dioxin TEQ concentrations were quantified in every sample from the 5 locations where samples were analyzed for dioxin-like compounds (Table 6). However, the QLs for dioxin and dibenzofuran congeners are 3 to 4 orders of magnitude lower than the QLs for other organic contaminants (Tables 2 and 4). Therefore, dioxin and dibenzofuran congeners were quantified more frequently than many of the other organic contaminants.
- The maximum concentrations of most chlorinated organic contaminants were found in fish from the Great Lakes or locations with access to the Great Lakes (Table 6). Torch Lake (Antrim County) lake trout had the highest concentrations of several organic contaminants.
- Sampling results indicate that total PCB concentrations may be declining in fish from several water bodies, and additional sampling may lead to the relaxation of consumption advisories for those locations.

#### 3.2 General Highlights of the Screening Value Comparisons

General highlights of the screening value comparisons are presented below, followed by site-specific evaluations and recommendations:

- Total DDT, dieldrin, total chlordane, heptachlor/heptachlor epoxide, and mirex screening values were not exceeded in any samples analyzed for this report.
- Total PCB concentrations were greater than or equal to the women and children screening value in 193 of 456 (42%) samples. Concentrations were greater than or equal to the women and children screening values in fish from 18 of 30 (60%) locations (Table 7). The 2009 MDCH *Fish Consumption Advisory* includes women and children advisories due to elevated PCBs for 16 of the 18 locations.
- Total PCB concentrations were greater than or equal to the general population screening value in 8 of 456 (1.8%) samples at 4 of 30 (13%) locations (Table 7). The 2009 MDCH *Fish Consumption Advisory* includes a general population advisory at these locations.

- Mercury concentrations were greater than or equal to the “restrict consumption” screening value in 150 of 673 (22%) samples from 31 of 47 (66%) locations (Table 8). The 2009 MDCH *Fish Consumption Advisory* includes either statewide or specific advisories due to elevated mercury concentrations for 30 of the 31 locations.
- One sample analyzed for this report had a mercury concentration exceeding the “no consumption” screening value (Table 8).
- Dioxin TEQ concentrations were assayed in channel catfish taken from Lake Erie in 2008; lake sturgeon collected from Lake Michigan in 2006; lake trout collected from Torch Lake in 2009; lake whitefish from the Thunder Bay in 2007; and walleye and white bass collected from the Saginaw Bay in 2008. The TEQ concentrations exceeded the “no consumption” screening value in 24 of 54 (44%) samples at 3 of 5 (60%) locations (Table 9). The 2009 MDCH *Fish Consumption Advisory* includes an advisory due to elevated dioxin TEQ concentrations for 4 of the 5 locations.
- Based on the following site-specific screening value comparisons, the MDCH should consider relaxing fish consumption advisories at 2 sites and adding or expanding advisories at 6 sites. Also, additional monitoring is recommended for 4 water bodies.

### **3.3 Screening Value Comparisons by Great Lake Watershed**

#### **3.3.1 Lake Erie Watershed**

##### **Lake Erie, Off Monroe (ID 2008266) Channel Catfish**

Existing MDCH Advisory: No one should eat any channel catfish of any size due to elevated levels of PCBs and dioxins.

Comparison to Screening values: Ten channel catfish ranging in length from 12 to 20 inches were collected from Lake Erie in 2008. Total PCB concentrations exceeded the women and children screening values in all 10 fish (Table 7; Figure 2). Concentrations in 3 channel catfish were in the women and children “1 meal per week” range, and 7 fish were in the “1 meal per month” range. The median total PCB concentration was 0.39 ppm. A total of 30 channel catfish were collected from Lake Erie since 1993. Total PCB concentrations in 9 of the 30 channel catfish collected since 1993 exceeded the general population screening value, and the median total PCB concentration was 1.3 ppm.

Dioxin, furan, and dl-PCB congeners were analyzed in the 10 channel catfish collected in 2008. Dioxin TEQ concentrations exceeded the MDCH screening value in 5 (50%) fish (Table 9; Figure 3). Linear regression analysis indicates that Lake Erie channel catfish longer than 16 inches are likely to have dioxin TEQ concentrations exceeding the 10 parts per trillion screening value. Dioxin and furan congeners (but not dl-PCB congeners) were also analyzed in 10 channel catfish collected from Lake Erie in 2002. Dioxin TEQ based only on dioxin and furan congeners has declined since 2002, but the inclusion of dl-PCB congeners in the 2008 analyses indicates that a dioxin advisory for Lake Erie channel catfish is appropriate.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Huron River, Geddes Pond, Washtenaw County (ID 2008223)**

***Carp***

Existing MDCH Advisory: Huron River, Geddes Pond carp are not covered by an advisory.

Comparison to Screening Values: Ten carp ranging in length from 15 to 26 inches were collected from the Huron River, Geddes Pond in 2008. Total PCB concentrations exceeded women and children screening values in 4 fish (Table 7; Figure 4). Concentrations in 2 fish were in the women and children “1 meal per week” range and 2 fish were in the “1 meal per month” range. The median total PCB concentration was 0.03 ppm. The median total PCB concentration in carp greater than 18 inches was 0.13 ppm.

Concentrations of mercury, total DDT, and total chlordane were below the MDCH “restrict consumption” screening value in all 10 carp collected in 2008 from Geddes Pond.

Recommendations: The MDCH should consider advising women and children to eat no more than 1 meal per week of Geddes Pond carp due to elevated levels of PCBs. Additional monitoring is not necessary at this time.

**Otter/Sylvan Lakes, Oakland County (ID 2008242)**

***Carp and Largemouth Bass***

Existing MDCH Advisory: Otter/Sylvan Lakes carp are not covered by an advisory. Largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten carp ranging in length from 18 to 27 inches were collected from Otter/Sylvan Lakes in 2008. Total PCB concentrations exceeded women and children screening values in 9 fish (Table 7; Figure 5). Concentrations in 4 fish were in the women and children “1 meal per week” range, 3 fish were in the “1 meal per month” range, and 2 carp were in the “6 meals per year” range. The overall median total PCB concentration was 0.21 ppm. The median total PCB concentration in carp less than 22 inches was 0.06 ppm, and the median concentration in carp larger than 22 inches was 0.64 ppm.

Concentrations of mercury, total DDT, and total chlordane were below the MDCH “restrict consumption” screening value in all 10 carp collected in 2008 from Otter/Sylvan Lakes.

Ten largemouth bass ranging in length from 14 to 19 inches were collected from Otter/Sylvan Lakes in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 4 fish (Table 8; Figure 6). All of the largemouth bass were of legal size and the median mercury concentration was 0.49 ppm.

Recommendations: The MDCH should consider advising women and children to eat no more than 1 meal per month of Sylvan Lake carp. Additional monitoring is not necessary at this time.

**River Raisin, below Winchester Bridge, Monroe County (ID 2008247)**

***Carp, Channel Catfish, Freshwater Drum, Smallmouth Bass, and White Bass***

Existing MDCH Advisory: No one should eat any carp or channel catfish of any size from the

River Raisin due to elevated levels of PCBs. Women and children should eat no more than 1 meal per month of freshwater drum of any size due to elevated levels of PCBs. The general population should eat no more than 1 meal per week and women and children should eat no more than six meals per year of River Raisin smallmouth bass due to elevated levels of PCBs. The general population should eat no more than 1 meal per week of white bass between 10 and 12 inches, women and children should eat no more than six meals per year of white bass less than 12 inches, and no one should eat any white bass larger than 12 inches due to elevated levels of PCBs.

Comparison to Screening Values: Ten carp ranging in length from 17 to 29 inches were collected from the River Raisin in 2008. Total PCB concentrations exceeded the general population screening value in 2 fish (Table 7; Figure 7). Concentrations exceeded women and children screening values in 7 carp. The concentration in 1 fish was in the women and children “1 meal per week” range, 4 fish were in the “1 meal per month” range, and 2 carp were in the “6 meals per year” range. The median total PCB concentration was 0.72 ppm. A total of 20 carp were collected from the River Raisin since 1998. Total PCB concentrations exceeded the general population screening value in 5 of 20 (25%) carp, and the overall median total PCB concentration was 0.84 ppm.

The River Raisin samples were collected near the river mouth and as such may in part represent fish from Lake Erie. The MDCH advisory for Lake Erie recommends that no one eat any carp due to elevated levels of PCBs and dioxins.

Five channel catfish ranging in length from 16 to 28 inches were collected from the River Raisin in 2008. Total PCB concentrations exceeded the general population screening value in 2 fish (Table 7; Figure 8). Concentrations exceeded women and children screening values in all 5 channel catfish. Concentrations in 2 fish were in the “1 meal per month” range, 1 fish was in the “6 meals per year” range, and 2 exceeded the women and children no consumption screening value. The median total PCB concentration was 1.1 ppm.

The River Raisin samples were collected near the river mouth and as such may in part represent fish from Lake Erie. The MDCH advisory for Lake Erie recommends that no one eat any channel catfish due to elevated levels of PCBs and dioxins.

Ten freshwater drum ranging in length from 15 to 26 inches were collected from the River Raisin in 2008. Total PCB concentrations exceeded women and children screening values in 8 fish (Table 7; Figure 9). Concentrations in 4 fish were in the “1 meal per week” range and 4 fish were in the “1 meal per month” range. The overall median PCB concentration was 0.16 ppm. A total of 20 freshwater drum were collected from the River Raisin since 1998, and the overall median total PCB concentration was 0.20 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 3 freshwater drum collected in 2008 and the median mercury concentration was 0.36 ppm (Table 8; Figure 10). A total of 20 freshwater drum were collected since 1998, and the overall median mercury concentration was 0.35 ppm.

Ten smallmouth bass ranging in length from 14 to 19 inches were collected from the River Raisin in 2008. Total PCB concentrations exceeded women and children screening values in 9 fish (Table 7; Figure 11). Concentrations in 3 fish were in the “1 meal per week” range and 6 were in the “1 meal per month” range. The median total PCB concentration was

0.28 ppm. A total of 28 smallmouth bass were collected from the River Raisin since 1984. The median total PCB concentration of the 17 legal size smallmouth bass was 0.44 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 smallmouth bass in 2008 and the median mercury concentration was 0.32 ppm (Table 8; Figure 12). A total of 20 smallmouth bass were collected from the River Raisin since 1998. The median mercury concentration of the 17 legal size smallmouth bass was 0.29 ppm.

Ten white bass ranging in length from 11 to 16 inches were collected from the River Raisin in 2008. Total PCB concentrations exceeded the general population screening value in 1 fish (Table 7; Figure 13). Concentrations exceeded women and children screening values in 9 white bass. Total PCB concentration in 1 fish was in the “1 meal per week” range and 8 fish were in the women and children “1 meal per month” range. The median total PCB concentration was 0.45 ppm. A total of 15 white bass were collected from the River Raisin since 1986 and the overall median total PCB concentration was 0.57 ppm. The median total PCB concentration in the 14 white bass less than 14 inches was 0.54 ppm.

Recommendations: The MDCH should consider adding mercury to the list of contaminants causing the advisory for River Raisin and Lake Erie freshwater drum. No additional monitoring is necessary at this time.

**Stony Creek Impoundment, Macomb County (IDs 2007253 and 2008251)  
*Northern Pike***

Existing MDCH Advisory: The general population should eat no more than 1 meal per week and women and children should eat no more than 1 meal per month of Stony Creek Impoundment northern pike due to elevated levels of PCBs and mercury.

Comparison to Screening Values: Ten northern pike ranging in length from 23 to 40 inches were collected from the Stony Creek Impoundment in 2007 and 2008. Total PCB concentrations were below women and children screening values in all 10 fish (Table 7; Figure 14). The median total PCB concentration was 0.002 ppm. A total of 17 northern pike were collected from the Stony Creek Impoundment since 1989. The median total PCB concentration in the 11 legal size northern pike collected since 1989 was 0.01 ppm.

Mercury concentrations in 4 northern pike exceeded the MDCH “restrict consumption” screening value and the median concentration was 0.47 ppm (Table 8; Figure 15). The median total mercury concentration of the 11 legal sized northern pike collected since 1989 was 0.51 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Whitmore Lake, Livingston County (ID 2008260)  
*Carp and Northern Pike***

Existing MDCH Advisory: Women and children should eat no more than 1 meal per week of Whitmore Lake carp greater than 22 inches due to elevated levels of PCBs. Whitmore Lake northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Three carp ranging in length from 14 to 25 inches were collected from Whitmore Lake in 2008. Total PCB concentrations were below women and

children screening values in all 3 fish (Table 7; Figure 16) and the median total PCB concentration was 0.001 ppm. A total of 13 carp were collected from Whitmore Lake since 1992 and the median total PCB concentration was 0.048 ppm. The median total PCB concentration in the 10 carp larger than 22 inches collected since 1992 was 0.053 ppm.

Ten northern pike ranging in length from 21 to 27 inches were from Whitmore Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 9 fish (Table 8; Figure 17). The median mercury concentration in the 4 legal sized northern pike was 0.6 ppm. A total of 13 northern pike were collected from Whitmore Lake since 1992 and the median mercury concentration of the legal sized fish was 0.54 ppm.

Recommendations: No change in the advisory is recommended. Additional carp larger than 22 inches should be collected to evaluate the possibility of relaxing the advisory.

### **3.3.2 Lake Huron Watershed**

#### **Lake Huron, Saginaw Bay (ID 2008271) Walleye and White Bass**

Existing MDCH Advisory: The general population should eat no more than 1 meal per week of Saginaw Bay walleye greater than 18 inches while women and children should eat no more than 1 meal per month of walleye less than 18 inches and no walleye larger than 18 inches due to elevated levels of PCBs, mercury, and dioxins. No one should eat any white bass due to elevated levels of PCBs and dioxins.

Comparison to Screening Values: Ten walleye ranging in length from 15 to 21 inches were collected from Saginaw Bay in 2008. Total PCB concentrations were below women and children screening values in all 10 fish (Table 7; Figure 18) and the median total PCB concentration was 0.02 ppm. A total of 32 walleye were collected from Saginaw Bay since 1998. The median total PCB concentration in walleye less than 18 inches was 0.02 ppm and the median concentration in walleye greater than 18 inches was 0.20 ppm.

Mercury concentrations were below the MDCH “restrict consumption” screening value in all 10 walleye collected from Saginaw Bay in 2008 (Table 8; Figure 19). The median mercury concentration was 0.13 ppm. A total of 47 walleye were collected since 1992 and analyzed for mercury. Regression analysis indicates that walleye greater than 24 inches are likely to have mercury concentrations exceeding 0.5 ppm.

Dioxin, furan, and dl-PCB congeners were analyzed in 10 walleye collected in 2008. Dioxin TEQ concentrations were below the MDCH screening value in all 10 fish (Table 9; Figure 20). A total of 20 walleye were collected from Saginaw Bay since 2004 and analyzed for the same set of dioxin-like compounds. Two of 20 (10%) walleye had dioxin TEQ concentrations exceeding the MDCH screening value.

Ten white bass ranging in length from 9 to 14 inches were collected from Lake Huron in 2008. Total PCB concentrations exceeded women and children screening values in all 10 fish (Table 7; Figure 21). Concentrations in 3 fish were in the women and children “1 meal per week” range and 7 fish were in the “1 meal per month” range. The median total PCB concentration was 0.28 ppm. A total of 31 white bass were collected from Saginaw Bay since 1993 and the median total PCB concentration was 0.47 ppm.

Dioxin, furan, and dl-PCB congeners were analyzed in 10 white bass collected from Saginaw Bay in 2008. Dioxin TEQ concentrations exceeded the MDCH screening value in 6 (60%) fish (Table 9; Figure 22).

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

### **Lake Huron, Thunder Bay (ID 2007269)**

#### ***Lake Whitefish***

Existing MDCH Advisory: The general population should not eat more than 1 meal per week of lake whitefish between 18 and 22 inches and no lake whitefish greater than 22 inches from Thunder Bay due to elevated concentrations of PCBs and dioxins. Also, women and children should not eat more than 1 meal per week of lake whitefish less than 18 inches and should not eat any lake whitefish greater than 18 inches due to elevated concentrations of PCBs and dioxins.

Comparison to Screening Values: Ten lake whitefish ranging in length from 19 to 25 inches were collected from Thunder Bay in 2007. Results of analysis for mercury, PCBs, and the standard suite of chlorinated organic contaminants were presented in the 2008 Annual Report (Bohr and VanDusen, 2009). Dioxin, furan, and dl-PCB congeners were analyzed in 2009.

Dioxin TEQ concentrations exceeded the MDCH screening value in 3 of the 10 (30%) fish collected in 2007 (Table 9; Figure 23). A total of 29 lake whitefish were collected from Thunder Bay since 1998. Dioxin TEQ concentrations in 10 of 29 (34%) lake whitefish exceeded the MDCH screening value (TEQ prior to the 2007 samples was calculated using 1989 toxic equivalency factors without dl-PCBs).

Recommendations: No change to the advisory is recommended. Additional lake whitefish larger than 22 inches should be collected from Lake Huron to evaluate the possibility of relaxing the general population advisory based on dioxins.

### **Au Sable River, Cooke Pond, Iosco County (ID 2008200)**

#### ***Northern Pike***

Existing MDCH Advisory: Cooke Pond northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 14 to 27 inches were collected from the Au Sable River, Cooke Pond, in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 3 fish (Table 8; Figure 24). The median mercury concentration of the 4 legal sized northern pike was 0.57 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Crooked Lake, Clare County (ID 2008210)**  
***Largemouth Bass***

Existing MDCH Advisory: Crooked Lake largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Nine largemouth bass ranging in length from 13 to 16 inches were collected from Crooked Lake and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 fish (Table 8; Figure 25) and the median mercury concentration was 0.24 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Flint River, Holloway Reservoir, Genesee County (ID 2008219)**  
***Channel Catfish***

Existing MDCH Advisory: Women and children should eat no more than 1 meal per month of Holloway Reservoir channel catfish due to elevated levels of PCBs.

Comparison to Screening Values: Ten channel catfish ranging in length from 13 to 22 inches were collected from the Flint River, Holloway Reservoir, in 2008. The total PCB concentration in 1 fish exceeded women and children screening values and was in the “1 meal per week” range (Table 7; Figure 26). The median total PCB concentration was 0.019 ppm. A total of 20 channel catfish were collected from the Holloway Reservoir since 1989. The median total PCB concentration was 0.08 ppm.

Concentrations of all other contaminants were below MDCH fish consumption screening values.

Recommendations: The MDCH should consider relaxing the women and children advisory to no more than 1 meal per week of Holloway Reservoir channel catfish. Additional monitoring is not necessary at this time.

**Floyd Lake, Iosco County (ID 2008220)**  
***Largemouth Bass***

Existing MDCH Advisory: Floyd Lake largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth bass ranging in length from 11 to 16 inches were collected from Floyd Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 2 fish (Table 8; Figure 27). The median mercury concentration in the 4 legal sized fish was 0.46 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Kawkawlin River, Bay County (ID 2008227)**  
***Carp***

Existing MDCH Advisory: No one should eat any carp of any size from the Kawkawlin River due

to elevated levels of PCBs.

Comparison to Screening Values: Ten carp ranging in length from 20 to 26 inches were collected from the Kawkawlin River in 2008. Total PCB concentration exceeded the general population screening value in 1 fish (Table 7; Figure 28). Concentrations exceeded women and children screening values in 9 carp. Total PCB concentrations in 8 fish were in the women and children “1 meal per month” range and 1 fish was in the women and children “6 meals per year” range. The median total PCB concentration was 0.49 ppm. A total of 30 carp were collected from the Kawkawlin River since 1988. Total PCB concentrations exceeded the general population screening value in 8 of the 30 (27%) fish collected and the median total PCB concentration was 0.92 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Tittabawassee River, Sanford Lake, Midland County (ID 2007255)**  
***Channel Catfish***

Existing MDCH Advisory: The general population should eat no more than 1 meal per week of channel catfish greater than 26 inches while women and children should eat no more than 1 meal per week of channel catfish between 12 and 26 inches and no more than 1 meal per month of channel catfish greater than 26 inches due to elevated levels of PCBs and mercury.

Comparison to Screening Values: Five channel catfish ranging in length from 17 to 25 inches were collected from Sanford Lake in 2007. Total PCB concentrations were below women and children screening values in all 5 fish (Table 7; Figure 29). The median total PCB concentration was 0.001 ppm. A total of 15 channel catfish were collected from Sanford Lake since 1999 and the median total PCB concentration was 0.04 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 channel catfish collected in 2007 from Sanford Lake and the median mercury concentration was 0.34 ppm (Table 8; Figure 30). A total of 15 channel catfish were collected since 1999 and the median mercury concentration was 0.20 ppm.

Recommendations: No change to the advisory is recommended. Additional channel catfish should be collected from Sanford Lake to evaluate the possibility of removing PCBs from the list of contaminants causing the advisory.

**3.3.3 Lake Michigan Watershed**

**Lake Michigan, Bridgeman (ID 2006501)**  
***Lake Sturgeon***

Existing MDCH Advisory: No one should eat any lake sturgeon from Lake Michigan due to elevated levels of PCBs, chlordane, DDT, and dioxin. In addition, the MDNR forbids possession of Lake Michigan lake sturgeon.

Comparison to Screening Values: Three lake sturgeon ranging in length from 21 to 64 inches were collected from Lake Michigan in 2006. Total PCB concentration exceeded women and children screening values in all 3 fish (Table 7; Figure 31). The concentration in 1 fish was in the women and children “1 meal per week” range and 2 were in the “1 meal per month” range.

The median total PCB concentration was 0.48 ppm. A total of 14 lake sturgeon were collected from southern Lake Michigan since 1994 and the median total PCB concentration was 0.48 ppm.

Total DDT concentrations were below the MDCH screening value in all 3 lake sturgeon collected from Lake Michigan in 2006 (Figure 32). Three of 14 (21%) lake sturgeon analyzed since 1994 had total DDT concentrations exceeding the 5.0 ppm MDCH screening value.

Total chlordane concentrations were below the MDCH screening value in all 3 lake sturgeon collected from Lake Michigan in 2006 (Figure 33). Five of 14 (36%) lake sturgeon analyzed since 1994 had total chlordane concentrations exceeding the 0.3 ppm MDCH screening value.

Dioxin, furan, and dl-PCB congeners were analyzed in the 3 lake sturgeon collected in 2006. Dioxin TEQ concentrations were below the MDCH screening value in all 3 fish collected from Lake Michigan (Table 9; Figure 34). The median dioxin TEQ concentration was 9.37 parts per trillion.

Recommendations: No changes to the advisory are recommended.

At the request of the MDNR Fisheries Division, the MDEQ WRD will continue to analyze samples from lake sturgeon that are found dead.

**Lake Michigan, Little Bay de Noc (IDs 2008232 and 2008280)  
Carp, Redhorse Sucker, Rock Bass, and Smallmouth Bass**

Existing MDCH Advisory: The general population should eat no more than 1 meal per week and women and children should eat no more than six meals per year of Little Bay de Noc carp less than 26 inches, and no one should eat any carp greater than 26 inches due to elevated levels of PCBs. The general population should eat no more than 1 meal per week and women and children should eat no more than 1 meal per month of sucker of any size due to elevated levels of PCBs. Little Bay de Noc rock bass are not covered by an advisory. The general population should eat no more than 1 meal per week of Little Bay de Noc smallmouth bass larger than 18 inches while women and children should eat no more than 1 meal per week of smallmouth bass less than 18 inches and no more than 1 meal per month of smallmouth bass greater than 18 inches due to elevated levels of mercury and PCBs.

Comparison to Screening Values: Ten carp ranging in length from 24 to 31 inches were collected from Little Bay de Noc in 2008. Total PCB concentrations exceeded the general population screening value in 1 fish (Table 7; Figure 35). Concentrations exceeded women and children screening values in 8 carp. Total PCB concentrations in 4 fish were in the women and children “1 meal per month” range and 4 fish were in the women and children “6 meals per year” range. The median total PCB concentration was 0.89 ppm. A total of 20 carp were collected from Little Bay de Noc and analyzed for total PCB since 2004. The median total PCB concentration in carp less than 26 inches was 0.80 ppm, and the median concentration in carp greater than 26 inches was 1.32 ppm. Total PCB concentrations exceeded the general population screening value in 5 of the 20 (25%) carp collected since 2004.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 carp collected in 2008 and the median mercury concentration was 0.38 ppm (Table 8; Figure 36). A total of 38 carp were analyzed for mercury from Little Bay de Noc since 1989 and the median mercury concentration was 0.29 ppm.

Ten redhorse sucker ranging in length from 20 to 27 inches were collected from Little Bay de Noc in 2008. Total PCB concentrations exceeded the women and children screening values in 4 fish, and the concentrations in all 4 fish were in the women and children “1 meal per week” range (Table 7; Figure 37). The median total PCB concentration was 0.03 ppm. A total of 20 redhorse sucker were collected from Little Bay de Noc since 2004 and the median total PCB concentration was 0.64 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 2 redhorse sucker collected from Little Bay de Noc in 2008 and the median mercury concentration was 0.33 ppm (Table 8; Figure 38). The median mercury concentration of the 20 redhorse sucker collected since 2004 was 0.31 ppm.

Fourteen rock bass ranging in length from 4 to 9 inches were collected from Little Bay de Noc in 2008 and analyzed for the standard suite of contaminants (Table 2). Contaminant concentrations were below the MDCH “restrict consumption” screening values in all 14 fish. A total of 18 rock bass were collected from Little Bay de Noc since 2004 and all contaminant concentrations were also below MDCH screening values.

Twenty-four smallmouth bass ranging in length from 9 to 19 inches were collected from Little Bay de Noc in 2008. Total PCB concentrations were below women and children screening values in all 24 fish and the median total PCB concentration was 0.01 ppm (Figure 39). A total of 34 smallmouth bass were collected from Little Bay de Noc since 2004. The median total PCB concentration in the 22 legal size smallmouth bass collected since 2004 was 0.02 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 3 of the 24 smallmouth bass collected in 2004 (Table 8; Figure 40). The median mercury concentration was 0.16 ppm. The median mercury concentration in the 22 legal size smallmouth bass collected since 2004 was 0.32 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Beatons Lake, Gogebic County (ID 2008263)**  
***Largemouth Bass and Smallmouth Bass***

Existing MDCH Advisory: Beatons Lake largemouth bass and smallmouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth and smallmouth bass ranging in length from 10 to 17 inches were collected from Beatons Lake in 2008 and analyzed for mercury and selenium.

Mercury concentrations in 4 fish exceeded the MDCH “restrict consumption” screening value (Table 8; Figure 41). The median mercury concentration of the 6 legal sized fish collected was 0.54 ppm. A total of 15 fish were collected since 1987 and analyzed for mercury only. The median mercury concentration of the legal sized fish collected was 0.59 ppm.

Selenium concentrations were below the MDCH screening values in all 10 fish.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Big Star Lake, Lake County (ID 2007262)**  
***Largemouth Bass***

Existing MDCH Advisory: Big Star Lake largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth bass ranging in length from 12 to 18 inches were collected from Big Star Lake in 2007 and analyzed for mercury only. Mercury concentration exceeded the MDCH “restrict consumption” screening value in 2 fish (Table 8; Figure 42). The median mercury concentration was 0.19 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Big Twin Lake, Kalkaska County (ID 2006002)**  
***Lake Herring***

Existing MDCH Advisory: Big Twin Lake lake herring are not covered by an advisory.

Comparison to Screening Values: Five lake herring ranging in length from 13 to 15 inches were collected from Big Twin Lake in 2006 and analyzed for the standard suite of contaminants (Table 2). Contaminant concentrations were below the MDCH “restrict consumption” screening value in all 5 lake herring.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Boardman Lake, Grand Traverse County (ID 2007302)**  
***White Sucker***

Existing MDCH Advisory: Boardman Lake white sucker are not covered by an advisory.

Comparison to Screening Values: Ten white sucker ranging in length from 18 to 21 inches were collected from Boardman Lake in 2007. Total PCB concentrations were below women and children screening values in all 10 fish (Table 7; Figure 43). The median total PCB concentration was 0.001 ppm. A total of 20 white sucker were collected from Boardman Lake since 1991. The median total PCB concentration was 0.01 ppm.

Concentrations of mercury, total DDT, and total chlordane were below the MDCH “restrict consumption” screening value in all 10 white sucker collected in 2007 from Boardman Lake.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Boardman River, Brown Bridge Pond, Grand Traverse County (ID 2007301)**  
***White Sucker***

Existing MDCH Advisory: Brown Bridge Pond white sucker are not covered by an advisory.

Comparison to Screening Values: Ten white sucker ranging in length from 17 to 21 inches were collected from the Boardman River at Brown Bridge Pond in 2007 and analyzed for the standard suite of contaminants (Table 2). Contaminant concentrations were below the MDCH “restrict consumption” screening value in all 10 fish.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Boardman River, Sabin Pond, Grand Traverse County (ID 2007303)**  
***White Sucker***

Existing MDCH Advisory: Sabin Pond white sucker are not covered by an advisory.

Comparison to Screening Values: Ten white sucker ranging in length from 18 to 22 inches were collected from the Boardman River at Sabin Pond in 2007 and analyzed for the standard suite of contaminants (Table 2). Contaminant concentrations were below the MDCH “restrict consumption” screening value in all 10 fish.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Coldwater Lake, Branch County (ID 2006125)**  
***Northern Pike***

Existing MDCH Advisory: Coldwater Lake northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 23 to 32 inches were collected from Coldwater Lake in 2006 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 9 fish (Table 8; Figure 44). The median mercury concentration was 0.77 ppm. A total of 32 northern pike were collected from Coldwater Lake since 1988; the median mercury concentration in the 11 legal size fish was 0.62 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Cusino Lake, Schoolcraft County (ID 2007213)**  
***Yellow Perch***

Existing MDCH Advisory: Cusino Lake yellow perch are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten yellow perch ranging in length from 7 to 13 inches were collected from Cusino Lake in 2007 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in all 10 yellow perch collected (Table 8; Figure 45). The median mercury concentration was 0.69 ppm.

Recommendations: The MDCH should consider advising women and children not to eat more than 1 meal per month, and the general population not to eat more than 1 meal per week of

yellow perch from Cusino Lake.

Additional monitoring is not necessary at this time.

**Diamond Lake, Newaygo County (ID 2008212)**  
***Largemouth Bass***

Existing MDCH Advisory: Diamond Lake largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth bass ranging in length from 13 to 19 inches were collected from Diamond Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 fish and the median mercury concentration was 0.31 ppm (Table 8; Figure 46).

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Eagle Lake, Kalamazoo County (ID 2008213)**  
***Largemouth Bass***

Existing MDCH Advisory: Eagle Lake largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth bass ranging in length from 12 to 20 inches were collected from Eagle Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 5 fish (Table 8; Figure 47). The median mercury concentration of the 7 legal sized largemouth bass collected was 0.68 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Fine Lake, Barry County (ID 2008216)**  
***Northern Pike and Walleye***

Existing MDCH Advisory: Fine Lake northern pike and walleye are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 20 to 36 inches were collected from Fine Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 3 fish. The median mercury concentration in the 8 fish of legal size was 0.38 ppm (Table 8; Figure 48).

Ten walleye ranging in length from 14 to 21 inches were collected from Fine Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 fish. The median mercury concentration in the 9 legal size fish was 0.12 ppm (Table 8; Figure 49).

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Fire Lake, Iron County (ID 2007214)**  
***Northern Pike***

Existing MDCH Advisory: Fire Lake northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 19 to 33 inches were collected from Fire Lake in 2007 and analyzed for mercury and selenium.

Mercury concentrations in 1 northern pike exceeded the MDCH “restrict consumption” screening value (Table 8; Figure 50). The median mercury concentration in the 3 legal size fish was 0.26 ppm.

Selenium concentrations were below the MDCH screening values in all 10 fish.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Flat River, downstream Belding, Ionia County (ID 2008217) and Lowell Impoundment, Kent County (ID 2008273)**  
***Carp, Rock Bass, and White Sucker***

Existing MDCH Advisory: Women and children should eat no more than one meal per month of Flat River carp of any size due to elevated levels of PCBs. Also, women and children should not eat more than 1 meal per week of white sucker larger than 18 inches or rock bass from the Flat River downstream of Greenville due to elevated levels of PCBs.

Comparison to Screening Values: Ten carp ranging in length from 16 to 25 inches were collected from the Flat River, Lowell Impoundment in 2008. Total PCB concentrations exceeded the women and children screening values in all 10 fish (Table 7; Figure 51). Concentrations of 8 fish were in the women and children “1 meal per week” range and 2 fish were in the “1 meal per month” range. The median total PCB concentration was 0.14 ppm. Eight carp were collected from the Flat River at Fallasberg Park (downstream of Greenville and Belding) in 1998 and analyzed as 2 composite samples. The median total PCB concentration for the samples analyzed since 1998 was 0.33 ppm.

Ten rock bass ranging in length from 5 to 8 inches were collected from the Flat River, downstream of Belding in 2008. Total PCB concentrations were below the MDCH women and children screening values in all 10 fish (Figure 52). Ten rock bass were collected downstream of Belding in 2003 and analyzed individually, and 9 rock bass were collected in 1998 and analyzed as 2 composite samples. The median total PCB concentration for the samples analyzed since 1998 was 0.01 ppm.

Ten white sucker ranging in length from 13 to 18 inches were collected from the Flat River, downstream of Belding in 2008. Total PCB concentrations were below the MDCH women and children screening values in all 10 fish (Figure 53). A total of 20 white sucker have been collected from the Flat River downstream of Belding since 2003, and the median total PCB concentration was 0.02 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Goose Lake, Marquette County (ID 2008221)**  
***Northern Pike and White Sucker***

Existing MDCH Advisory: Women and children should eat no more than 1 meal per month of Goose Lake northern pike due to elevated levels of PCBs. Goose Lake white sucker are not covered by an advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 21 to 27 inches were collected from Goose Lake in 2008. Total PCB concentrations exceeded women and children screening values in 8 fish (Table 7; Figure 54). Concentrations of all 8 fish were in the women and children “1 meal per week” range and the overall median total PCB concentration was 0.07 ppm. A total of 15 legal size northern pike were collected from Goose Lake since 1988. The median total PCB concentration for legal northern pike less than 26 inches was 0.14 ppm, and the median concentration in fish greater than 26 inches was 0.34 ppm.

Mercury concentrations were below the MDCH “restrict consumption” screening value in all 10 northern pike collected from Goose Lake in 2008 and the median mercury concentration was 0.09 ppm (Table 8; Figure 55). A total of 15 legal size northern pike were collected from Goose Lake since 1988. The median total mercury concentration in legal northern pike less than 26 inches was 0.20 ppm, and the median concentration in fish greater than 26 inches was 0.34 ppm.

Selenium concentrations exceeded the MDCH screening values in all 10 northern pike collected from Goose Lake in 2008 (Table 10; Figure 56). The median selenium concentration in legal northern pike was 9.8 ppm.

Ten white sucker ranging in length from 14 to 20 inches were collected from Goose Lake in 2008. Total PCB concentrations exceeded women and children screening values in 9 fish (Table 7; Figure 57). Concentrations of 6 white sucker were in the women and children “1 meal per week” range and 3 were in the “1 meal per month” range. The median total PCB concentration was 0.12 ppm.

Selenium concentrations exceeded the MDCH screening values in all 10 white sucker collected from Goose Lake in 2008 (Table 10; Figure 58). The median selenium concentration in white sucker was 12.1 ppm.

Recommendations: The MDCH should consider advising that no one eat more than 1 meal per month of Goose Lake northern pike or white sucker due to elevated levels of PCB and selenium. Additional monitoring is not necessary at this time.

**Houghton Lake, Roscommon County (ID 2008222)**  
***Carp***

Existing MDCH Advisory: Women and children should eat no more than 1 meal per week of Houghton Lake carp greater than 22 inches due to elevated levels of PCBs.

Comparison to Screening Values: Ten carp ranging in length from 22 to 32 inches were collected from Houghton Lake in 2008. Total PCB concentrations were below women and children screening values in all 10 fish (Table 7; Figure 59). The median total PCB

concentration was 0.005 ppm. A total of 27 carp were collected from Houghton Lake since 1987 with a median total PCB concentration of 0.03 ppm.

Concentrations of all other contaminants analyzed were below MDCH screening values.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Hutchins Lake, Allegan County (ID 2007218)**  
***Northern Pike***

Existing MDCH Advisory: Hutchins Lake northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 22 to 29 inches were collected from Hutchins Lake in 2007 and analyzed for mercury and the standard suite of halogenated organic compounds (Table 2). Concentrations of the halogenated organic compounds were all below MDCH screening values.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 6 northern pike collected from Hutchins Lake in 2007 (Table 8; Figure 60). The median mercury concentration in the 6 legal size northern pike was 0.52 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Lake Macatawa, Ottawa County (ID 2008262)**  
***Largemouth Bass and Walleye***

Existing MDCH Advisory: Lake Macatawa largemouth bass are covered by the statewide mercury advisory. The general population should eat no more than 1 meal per month of Lake Macatawa walleye greater than 26 inches while women and children should eat no more than 1 meal per month of walleye of any size due to elevated levels of mercury and PCBs.

Comparison to Screening Values: Ten largemouth bass ranging in length from 14 to 18 inches were collected from Lake Macatawa in 2008. Total PCB concentrations exceeded women and children screening values in 4 fish (Table 7; Figure 61). Concentrations of the 4 fish were in the women and children “1 meal per week” range and the median total PCB concentration was 0.04 ppm.

Mercury concentrations were below the MDCH “restrict consumption” screening value in all 10 largemouth bass collected from Lake Macatawa (Table 8; Figure 62) and the median mercury concentration was 0.17 ppm.

Ten walleye ranging in length from 17 to 30 inches were collected from Lake Macatawa in 2008. Total PCB concentrations exceeded women and children screening values in 8 fish (Table 7; Figure 63). Concentrations of 4 fish were in the women and children “1 meal per week” range and 4 were in the “1 meal per month” range. The overall median total PCB concentration was 0.16 ppm. A total of 30 walleye greater than the 15-inch legal size limit were collected from Lake Macatawa since 1995. The median total PCB concentration was 0.28 ppm.

Mercury concentrations in 3 walleye collected in 2008 exceeded the MDCH “restrict consumption” screening value, and the median mercury concentration was 0.45 ppm (Table 8; Figure 64). A total of 42 walleye were collected from Lake Macatawa since 1987 and 37 of these fish were above the 15-inch legal size limit. The median mercury concentration was 0.12 ppm in 15- to 22-inch walleye and 0.41 ppm in walleye 22 inches or greater.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Little Whitefish Lake, Montcalm County (ID 2008234)**  
***Largemouth Bass***

Existing MDCH Advisory: Little Whitefish Lake largemouth bass are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth bass ranging from 13 to 16 inches were collected from Little Whitefish Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 8 fish (Table 8; Figure 65) and the median mercury concentration of the 8 legal sized largemouth bass 0.62 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Long Lake, Grand Traverse County (ID 2007234)**  
***Walleye***

Existing MDCH Advisory: Long Lake walleye are covered by the statewide mercury advisory.

Comparison to Screening Values: Six walleye ranging in length from 14 to 20 inches were collected from Long Lake in 2007 and analyzed for the standard suite of contaminants (Table 2). Contaminant concentrations were below the MDCH “restrict consumption” screening values in all 6 fish collected.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Manistique River, downstream Manistique Papers Dam, Schoolcraft County (ID 2008235)**  
***Carp, Pumpkinseed, Redhorse Sucker, Rock Bass, Smallmouth Bass, and White Sucker***

Existing MDCH Advisory: No one should eat any carp of any size from the Manistique River due to elevated levels of PCBs. Women and children should eat no more than 1 meal per month of any size suckers or smallmouth bass from the Manistique River due to elevated levels of PCBs. Women and children should eat no more than 1 meal per week of rock bass due to elevated levels of mercury and PCBs. Manistique River pumpkinseed are not covered by an advisory.

Comparison to Screening Values: Ten carp ranging in length from 25 to 30 inches were collected from the Manistique River downstream of the Manistique Papers Dam in 2008. Total PCB concentrations exceeded the general population screening value in 1 fish (Table 7; Figure 66). Concentrations exceeded women and children screening values in all 10 carp.

Total PCB concentrations in 4 carp were in the women and children “1 meal per month” range, 5 were in the “6 meals per year” range, and 1 carp had a concentration exceeding the women and children “no consumption” screening value. The median total PCB concentration was 1.25 ppm. A total of 35 carp were collected from the Manistique River since 1985, including 5 collected in 1993 and analyzed as 1 composite sample. The overall median total PCB concentration was 2.35 ppm. Total PCB concentrations exceeded the general population screening value in 19 of the 35 (54%) carp collected since 1985.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 2 carp collected in 2008 (Table 8; Figure 67) and the median mercury concentration was 0.34 ppm. A total of 35 carp were collected from the Manistique River since 1985. The overall median mercury concentration was 0.29 ppm.

Nine pumpkinseed ranging in length from 4 to 7 inches were collected from the Manistique River in 2008. Total PCB concentrations exceeded women and children screening values in 5 fish, and the concentrations in all 5 fish were in the women and children “1 meal per week” range (Table 7; Figure 68). The median total PCB concentration was 0.06 ppm.

Mercury concentrations were below the MDCH screening value in all 9 pumpkinseed collected from the Manistique River.

Ten redhorse sucker and 10 white sucker ranging in length from 14 to 22 inches were collected from the Manistique River downstream of the Manistique Papers Dam in 2008. In general, the fishing public treats these species as one group; therefore, the analytical results are being considered together. Total PCB concentrations exceeded women and children screening values in 17 sucker (Table 7; Figure 69). Concentrations in 9 fish were in the women and children “1 meal per week” range and 8 were in the “1 meal per month” range. The median total PCB concentration was 0.16 ppm. A total of 40 redhorse and white sucker were collected from the Manistique River downstream of the Manistique Papers Dam since 2003. The overall median total PCB concentration was 0.19 ppm.

Mercury concentrations were below the MDCH screening value in all 20 redhorse and white sucker collected in 2008 (Figure 70). A total of 40 redhorse and white sucker were collected from the Manistique River downstream of the Manistique Papers Dam since 2003. The overall median mercury concentration was 0.19 ppm.

Twelve rock bass ranging in length from 5 to 9 inches were collected from the Manistique River in 2008. Total PCB concentrations exceeded women and children screening values in 3 fish (Table 7; Figure 71). Concentrations of 2 fish were in the women and children “1 meal per week” range and 1 fish was in the “1 meal per month” range with a median total PCB concentration of 0.01 ppm. A total of 22 rock bass were collected from the Manistique River since 2004. The median total PCB concentration was 0.01 ppm.

Mercury concentrations exceeded the MDCH screening value in 1 rock bass collected in 2008 (Table 8; Figure 72). The median mercury concentration was 0.34 ppm. A total of 22 rock bass were collected from the Manistique River since 2004. The median mercury concentration was 0.34 ppm.

Ten smallmouth bass ranging in length from 10 to 18 inches were collected from the Manistique River in 2008. Total PCB concentrations exceeded women and children screening values in 6 fish (Table 7; Figure 73). Concentrations of 5 smallmouth bass were in the women

and children “1 meal per week” range and 1 fish was in the “1 meal per month” range. The median total PCB concentration was 0.07 ppm. A total of 19 smallmouth bass were collected from the Manistique River downstream of the Manistique Papers Dam since 2003 and 10 of these fish were at or above the 14-inch legal size limit. The median total PCB concentration in the legal size smallmouth bass was 0.14 ppm.

Mercury concentrations were below the MDCH screening value in all 10 smallmouth bass collected from the Manistique River in 2008 (Table 8; Figure 74). A total of 19 smallmouth bass were collected from the Manistique River downstream of the Manistique Papers Dam since 2003. The median mercury concentration in the 10 legal size fish was 0.34 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Muskegon Lake, Muskegon County (ID 2008239)**  
***Walleye***

Existing MDCH Advisory: The general population should eat no more than 1 meal per week of Lake Muskegon walleye greater than 22 inches while women and children should eat no more than 1 meal per month of walleye of any size due to elevated levels of PCBs and mercury.

Comparison to Screening Values: Ten walleye ranging in length from 15 to 24 inches were collected from Muskegon Lake in 2008. Total PCB concentrations exceeded women and children screening values in 2 fish (Table 7; Figure 75). The concentration in 1 fish was in the women and children “1 meal per week” range and 1 fish was in the “1 meal per month” range. The median total PCB concentration was 0.017 ppm. A total of 19 walleye were collected from Muskegon Lake since 1993. The median total PCB concentration in the 5 fish less than 18 inches was 0.007 ppm and the median concentration in the 14 walleye greater than 18 inches was 0.271 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 walleye collected from Muskegon Lake in 2008 (Table 8; Figure 76). The median mercury concentration was 0.16 ppm. A total of 48 walleye were collected since 1986. The median mercury concentration in the 11 walleye less than 18 inches was 0.12 ppm and the median concentration in the 37 fish greater than 18 inches was 0.47 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Muskegon River, downstream of Croton Dam, Newaygo County (ID 2008240)**  
***Redhorse Sucker and Walleye***

Existing MDCH Advisory: The general population should eat no more than 1 meal per week and women and children should eat no more 1 meal per month of sucker greater than 18 inches from the Muskegon River downstream of Croton Dam due to elevated levels of PCBs and mercury. Women and children should eat no more than 1 meal per week of Muskegon River walleye less than 18 inches and no more than 1 meal per month of walleye greater than 18 inches due to elevated levels of PCBs.

Comparison to Screening Values: Ten redhorse sucker ranging in length from 14 to 18 inches were collected from the Muskegon River downstream of the Croton Dam in 2008. Total PCB

concentrations were below women and children screening values in all 10 fish (Table 7; Figure 77). The median total PCB concentration was 0.003 ppm. A total of 20 redhorse sucker were collected from the Muskegon River downstream of Croton Dam since 1996. The median total PCB concentration in the 14 redhorse sucker less than 18 inches was 0.006 ppm and the median concentration in the 6 fish greater than 18 inches was 0.42 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 4 fish collected in 2008 (Table 8; Figure 78). The median mercury concentration was 0.46 ppm. A total of 20 sucker were collected from the Muskegon River since 1996. The median mercury concentration in the redhorse sucker less than 18 inches was 0.36 ppm and the median concentration in fish greater than 18 inches was 0.42 ppm.

Ten walleye ranging in length from 17 to 27 inches were collected from the Muskegon River downstream of the Croton Dam in 2008. Total PCB concentrations exceeded women and children screening values in 4 fish (Table 7; Figure 79). The concentration in 1 fish was in the women and children “1 meal per week” range and 3 fish were in the “1 meal per month” range. The overall median total PCB concentration was 0.04 ppm. A total of 35 walleye were collected from the Muskegon River since 1993, including 5 fish collected in 1993 that were analyzed as 1 composite. The median total PCB concentration in walleye less than 22 inches was 0.09 ppm and the median concentration in fish larger than 22 inches was 0.60 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 5 walleye collected in 2008 (Table 8; Figure 80). The median mercury concentration was 0.44 ppm. A total of 35 walleye were collected from the Muskegon River since 1989. The median mercury concentration in walleye less than 22 inches was 0.24 ppm and the median concentration in fish greater than 22 inches was 0.046 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

### **Perch Lake, Iron County (ID 2006064) *Northern Pike and Walleye***

Existing MDCH Advisory: Perch Lake northern pike and walleye are covered by the statewide mercury advisory.

Comparison to Screening Values: Eight northern pike ranging in length from 23 to 32 inches were collected from Perch Lake in 2006 and analyzed for mercury and selenium.

Mercury concentration exceeded the MDCH “restrict consumption” screening value in 2 northern pike (Table 8; Figure 81). The median mercury concentration was 0.4 ppm. A total of 16 northern pike were collected from Perch Lake since 1988 and the median mercury concentration in the 7 legal size fish was 0.4 ppm.

Selenium concentrations were below the MDCH screening values in all 10 northern pike.

Five walleye ranging in length from 18 to 23 inches were collected from Perch Lake in 2006 and analyzed for mercury and selenium.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in all 5 fish collected and the median mercury concentration was 0.6 ppm (Table 8; Figure 82). A total of

17 walleye were collected from Perch Lake since 1988 and the median mercury concentration in the 14 legal size fish was 0.64 ppm.

Selenium concentrations were below the MDCH screening values in all 10 walleye.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Rock Lake, Montcalm County (ID 2007248)**  
***Largemouth Bass and Walleye***

Existing MDCH Advisory: Rock Lake largemouth bass and walleye are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten largemouth bass ranging in length from 11 to 16 inches were collected from Rock Lake in 2007 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 6 fish and the median mercury concentration in the 3 legal size fish was 0.77 ppm (Table 8; Figure 83).

Ten walleye ranging in length from 14 to 17 inches were collected from Rock Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 2 fish (Table 8; Figure 84). The median mercury concentration in the 8 legal size walleye was 0.41 ppm.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Schweitzer Reservoir, Marquette County (ID 2008272)**  
***Northern Pike***

Existing MDCH Advisory: Schweitzer Reservoir northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Four northern pike ranging in length from 17 to 31 inches were collected from the Schweitzer Reservoir in 2008 and analyzed for mercury and selenium. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 fish and the median mercury concentration was 0.19 ppm (Table 8; Figure 85). A total of 10 northern pike were collected from the Schweitzer Reservoir since 1992 and the median mercury concentration in the 3 legal size fish was 0.66 ppm.

Selenium concentrations were below the MDCH screening values in all 4 fish.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Shakey Lakes, Menominee County (ID 2007275)**  
***Northern Pike***

Existing MDCH Advisory: Shakey Lakes northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Ten northern pike ranging in length from 19 to 28 inches were collected from the Shakey Lakes in 2007 and analyzed for the standard suite of contaminants, including selenium (Table 2). Concentrations of halogenated organic contaminants were below the MDCH screening values in all 10 fish.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 8 northern pike collected from the Shakey Lakes in 2007 (Table 8; Figure 86). The median mercury concentration in the 4 legal size fish was 0.73 ppm.

Selenium concentrations were below the MDCH screening values in all 10 fish.

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Three Mile Lake, Van Buren County (ID 2007264)**  
***Northern Pike***

Existing MDCH Advisory: Three Mile Lake northern pike are covered by the statewide mercury advisory.

Comparison to Screening Values: Four northern pike ranging in length from 30 to 36 inches were collected from Three Mile Lake in 2007 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in all 4 fish and the median mercury concentration was 0.80 ppm (Table 8; Figure 87).

Recommendations: No change to the advisory is recommended and additional monitoring is not necessary at this time.

**Torch Lake, Antrim County (ID 2009300)**  
***Lake Trout***

Existing MDCH Advisory: Women and children should eat no more than 1 meal per month of Torch Lake lake trout between less than 26 inches while the general population should eat no more than one meal per week of lake trout between 22 and 26 inches. No one should eat any lake trout greater than 26 inches due to elevated levels of mercury, PCBs, and chlordane.

Comparison to Screening Values: Eleven lake trout ranging in length from 17 to 28 inches were collected from Torch Lake in 2009. Total PCB concentrations exceeded women and children screening values in all 11 fish (Table 7; Figure 88). Concentrations of 4 fish were in the women and children “1 meal per week” range and 7 fish were in the “1 meal per month” range. The median total PCB concentration was 0.34 ppm. A total of 32 lake trout were collected from Torch Lake since 1991. The median total PCB concentration was 0.42 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 10 lake trout collected in 2009 and the median mercury concentration was 1.03 ppm (Table 8; Figure 89). A total of 32 lake trout were collected from Torch Lake since 1991, 14 of the 32 (44%) fish exceeded the restrict consumption screening value. The median mercury concentration was 0.46 ppm.

Total chlordane concentrations were below the MDCH “restrict consumption” screening value in all 11 lake trout collected from Torch Lake in 2009 (Figure 90). A total of 32 lake trout were

collected since 1991. Total chlordane concentrations exceeded the MDCH “restrict consumption” screening value in 7 of the 32 (22%) lake trout.

Dioxin, furan, and dl-PCB congeners were analyzed in 11 lake trout collected in 2009. Dioxin TEQ concentrations exceeded the MDCH screening value in 10 (91%) fish (Table 9; Figure 91).

Recommendations: The MDCH should consider advising that no one eat lake trout from Torch Lake due to elevated concentrations of dioxin TEQ, PCBs, and mercury. In addition, the MDCH should consider removing chlordane from the list of contaminants causing the consumption advisory on Torch Lake lake trout. Additional monitoring is not necessary at this time.

### **3.3.4 Lake Superior Watershed**

#### **Lake Superior, Isle Royale and Munising (IDs 2008267 and 2008268) Lake Trout**

Existing MDCH Advisory: The general population should eat no more than 1 meal per week of Lake Superior lake trout greater than 30 inches due to elevated levels of PCBs, mercury, and chlordane. Also, women and children should eat no more than 1 meal per week of Lake Superior lake trout less than 26 inches, no more than 1 meal per month of lake trout between 26 and 30 inches, and women and children should not eat any lake trout greater than 30 inches due to elevated levels of PCBs, mercury, and chlordane.

Comparison to Screening Values: Nineteen lake trout ranging in length from 13 to 29 inches were collected from Lake Superior in 2008. Total PCB concentrations exceeded women and children screening values in 4 fish (Table 7; Figure 92). Concentrations of 3 fish were in the women and children “1 meal per week” range and 1 fish was in the women and children “1 meal per month” range. The median total PCB concentration was 0.02 ppm. A total of 79 legal size lake trout were collected from Lake Superior since 1996. The median total PCB concentration in lake trout between 15 and 26 inches was 0.12 ppm, the median concentration in lake trout between 26 and 30 inches was 0.34 ppm, and in lake trout greater than 30 inches the median concentration was 0.67 ppm.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 1 lake trout collected from Lake Superior in 2008 (Table 8; Figure 93), and the median mercury concentration was 0.15 ppm. A total of 79 legal size lake trout were collected from Lake Superior since 1996. The median mercury concentration in lake trout between 15 and 26 inches was 0.13 ppm, the median concentration in lake trout between 26 and 30 inches was 0.20 ppm, and in lake trout greater than 30 inches the median concentration was 0.77 ppm.

Chlordane concentrations were below the MDCH “restrict consumption” screening value in all 19 fish collected from Lake Superior in 2008 (Figure 94), and the overall median chlordane concentration in the 79 legal size lake trout collected since 1996 was 0.06 ppm.

Recommendations: No change to the advisory is recommended. Additional Lake Superior lake trout larger than 30 inches should be collected to evaluate the possibility of removing chlordane from the list of contaminants causing the advisory.

**Deer Lake, Marquette County (ID 2008211)**  
***Northern Pike and Walleye***

Existing MDCH Advisory: No one should eat any species of fish of any size from Deer Lake due to elevated levels of mercury.

Comparison to Screening Values: Five northern pike ranging in length from 20 to 34 inches were collected from Deer Lake in 2008 and analyzed for mercury and selenium.

Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 2 northern pike and exceeded the MDCH “no consumption” screening value in 1 fish (Table 8; Figure 95). A total of 67 northern pike were collected from Deer Lake since 1997 and 29 of these fish were at or above the 24-inch legal size limit. The median mercury concentration was 0.79 ppm in fish 24 to 26 inches, 1.24 ppm in fish 26 to 30 inches, and 3.2 ppm in fish 30 inches or greater.

Selenium concentrations were below the MDCH screening values in all 5 northern pike.

Twenty-two walleye ranging in length from 13 to 17 inches were collected from Deer Lake in 2008 and analyzed for mercury only. Mercury concentrations exceeded the MDCH “restrict consumption” screening value in 8 fish (Table 8; Figure 96). A total of 114 walleye were collected from Deer Lake since 1996 and 107 of these fish were at or above the 15-inch legal size limit. The median mercury concentration was 0.72 ppm in 15- to 18-inch walleye, 1.2 ppm in walleye between 18 and 22 inches, and 1.3 ppm in walleye 22 inches or greater.

Selenium concentrations were below the MDCH screening values in all 22 walleye.

Deer Lake sediments remain heavily polluted with mercury from historic mining operations and there are ongoing sources of mercury to the lake. The principal party responsible for the mercury pollution, Cliffs Natural Resources (formerly Cleveland-Cliffs Iron Co), has agreed to address the mercury problem through remediation, mitigation, and monitoring. In addition, the MDNR manages Deer Lake as a trophy fishery and anglers are not allowed to keep their catch.

Recommendations: No changes to the advisory are recommended, and a long-term fish tissue monitoring plan is in place.

### **3.4 Summary of Recommendations**

The MDCH should consider relaxing fish consumption advisories at 2 sites and adding or expanding advisories at 6 sites. Also, additional monitoring is recommended for 4 water bodies.

#### **3.4.1 Summary of Recommendations for Relaxed Advisories**

- The MDCH should consider relaxing the women and children advisory to no more than 1 meal per week of Holloway Reservoir channel catfish.
- The MDCH should consider removing chlordane from the list of contaminants causing the consumption advisory on Torch Lake (Antrim County) lake trout.

### **3.4.2 Summary of Recommendations for Expanded Advisories**

- The MDCH should consider advising women and children to eat no more than 1 meal per week of Geddes Pond carp due to elevated levels of PCBs.
- The MDCH should consider advising women and children to eat no more than 1 meal per month of Sylvan Lake carp.
- The MDCH should consider adding mercury to the list of contaminants causing the advisory for River Raisin and Lake Erie freshwater drum.
- The MDCH should consider advising women and children not to eat more than 1 meal per month, and the general population not to eat more than 1 meal per week, of yellow perch from Cusino Lake.
- The MDCH should consider advising that no one eat more than 1 meal per month of Goose Lake northern pike or white sucker due to elevated levels of PCBs and selenium.
- The MDCH should consider advising that no one eat lake trout from Torch Lake due to elevated concentrations of dioxin TEQ, PCBs, and mercury.

### **3.4.3 Summary of Recommendations for Additional Monitoring**

- Additional carp larger than 22 inches should be collected from Whitmore Lake, Livingston County, to evaluate the possibility of relaxing the advisory based on PCBs.
- Additional lake whitefish larger than 22 inches should be collected from Lake Huron to evaluate the possibility of relaxing the general population advisory based on dioxins.
- Additional channel catfish should be collected from Sanford Lake (Tittabawassee River, Midland County) to evaluate the possibility of removing PCBs from the list of contaminants causing the advisory.
- Additional Lake Superior lake trout larger than 30 inches should be collected to evaluate the possibility of removing chlordane from the list of contaminants causing the advisory.

## **3.5 Summary of WQS Attainment Status**

The MDEQ WRD is required by the federal Clean Water Act to describe the water quality of all navigable waters of the state and to provide an analysis of the extent to which these waters support designated uses. Designated uses are set forth in Rule 100 (R323.1100) of the Part 4 Rules, WQS, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Michigan Compiled Laws). States are required by the Clean Water Act to develop a list of water bodies that do not support designated uses or do not attain WQS, and therefore, require the development of a Total Maximum Daily Load (TMDL). The MDEQ WRD compiles a biennial integrated report, which includes that list, in order to satisfy Clean Water Act requirements.

Water bodies are evaluated and placed into at least one reporting category for each of 10 designated uses. A water body is placed in Category 1 if all designated uses are supported and no use is threatened and in Category 2 if some designated uses are supported. Category 3

indicates that there is not sufficient data to determine if the designated use is being supported. Category 4 includes water bodies that have a threatened or impaired designated use, but do not need a TMDL developed because either: (a) a TMDL has been approved or established by the USEPA; (b) an impairment caused by a pollutant is being addressed through other pollution control requirements; or (c) an impairment is not caused by a pollutant. Lastly, if a water body does not attain WQS and is in need of TMDL development, it is listed in Category 5.

The fish consumption designated use protects a water body's ability to provide a fishery for human consumption. Attainment status of the fish consumption designated use is determined for water bodies with site-specific data, water column concentrations of Bioaccumulative Chemicals of Concern, fish tissue concentrations of Bioaccumulative Chemicals of Concern, and/or Fish Consumption Advisories issued by the MDCH. Details of the methods used to make attainment status determinations as well as changes in attainment status are subject to biennial review, and are presented in the 2008 Sections 303(d), 305(b), and 314 Integrated Report (LeSage and Smith, 2008).

The sites assessed for the Fish Contaminant Monitoring Program 2009 Annual Edible Portion Report represented 45 water bodies of which 22 had not been assessed previously for the fish consumption designated use (Table 11). Pending review, 14 of the previously unassessed water bodies will be designated as Category 5 for fish consumption, 4 will be designated as Category 2 for fish consumption, and 4 previously unassessed water bodies will be designated as Category 3. In addition, 1 water body will be changed from Category 5 to Category 3 for the fish consumption designated use. Water body record modifications will be reviewed by MDEQ WRD staff and the public before being presented in the 2012 Integrated Report. The USEPA will then review the Integrated Report to determine if they can approve the changes in attainment status.

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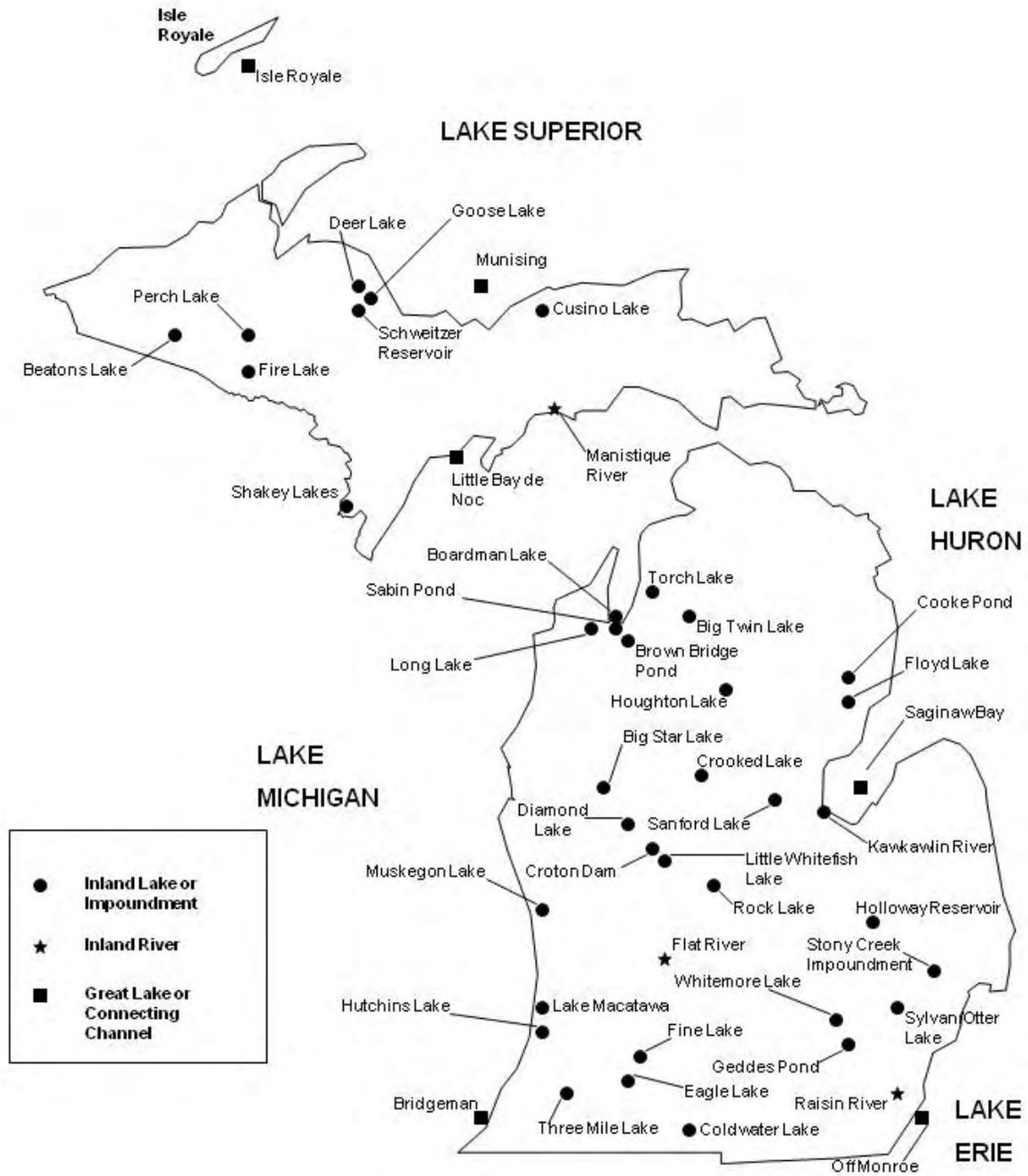


Figure 1. Edible portion fish sample locations

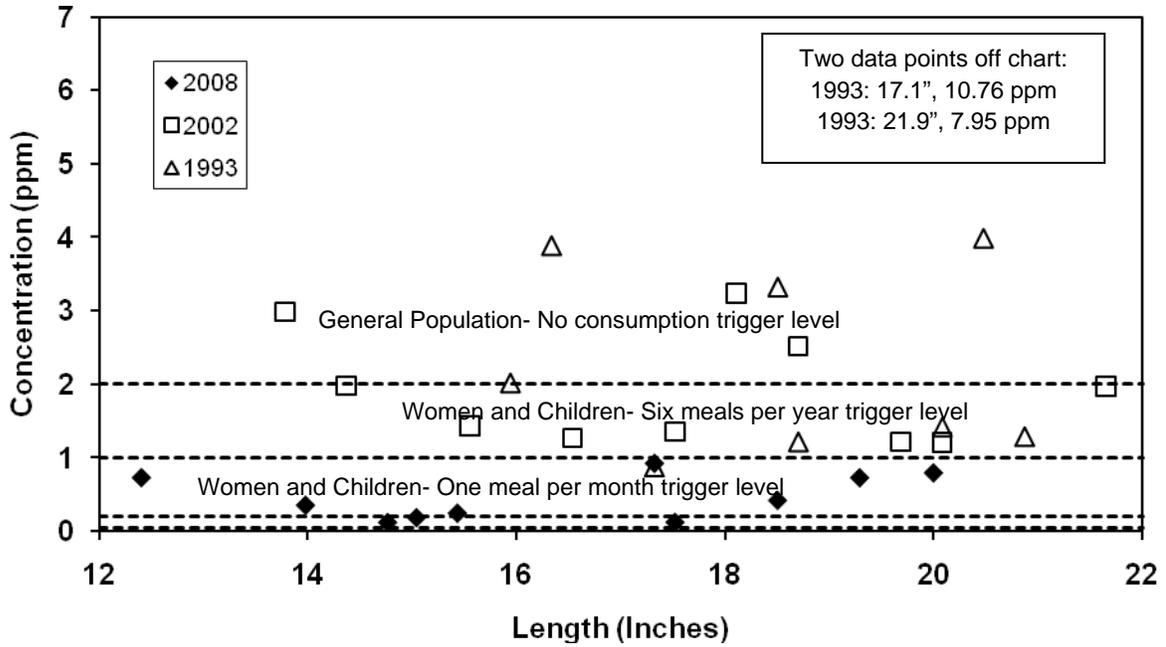


Figure 2. Total length versus total PCB concentration in channel catfish collected from Lake Erie, off Monroe, in 1993 (ID 93082), 2002 (ID 2002045), and 2008 (ID 2008266).

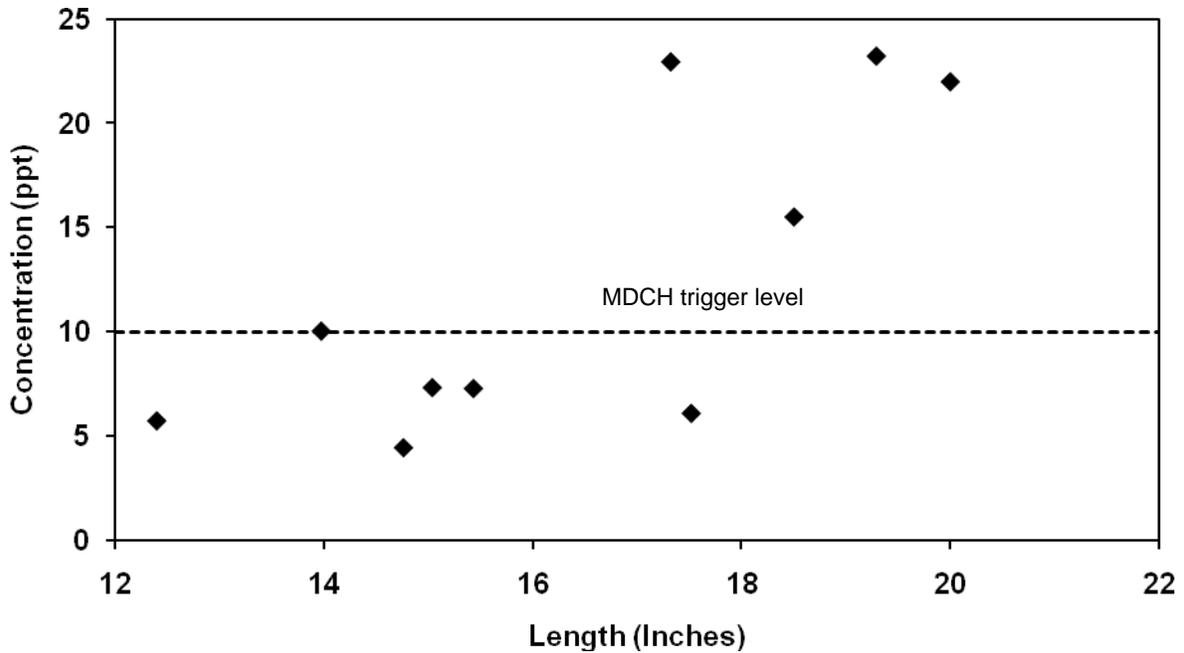


Figure 3. Total length versus dioxin TEQ concentration in channel catfish collected from Lake Erie, off Monroe, in 2008 (ID 2008266).

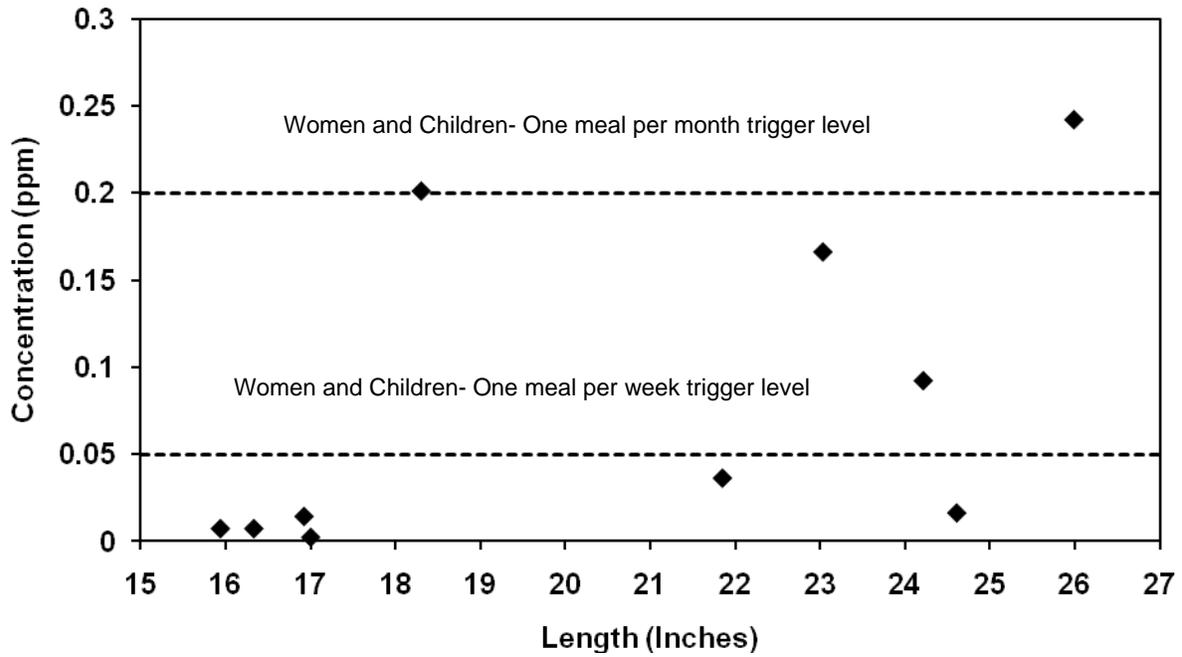


Figure 4. Total length versus total PCB concentration in carp collected from the Huron River, Geddes Pond, Washtenaw County, in 2008 (ID 2008223).

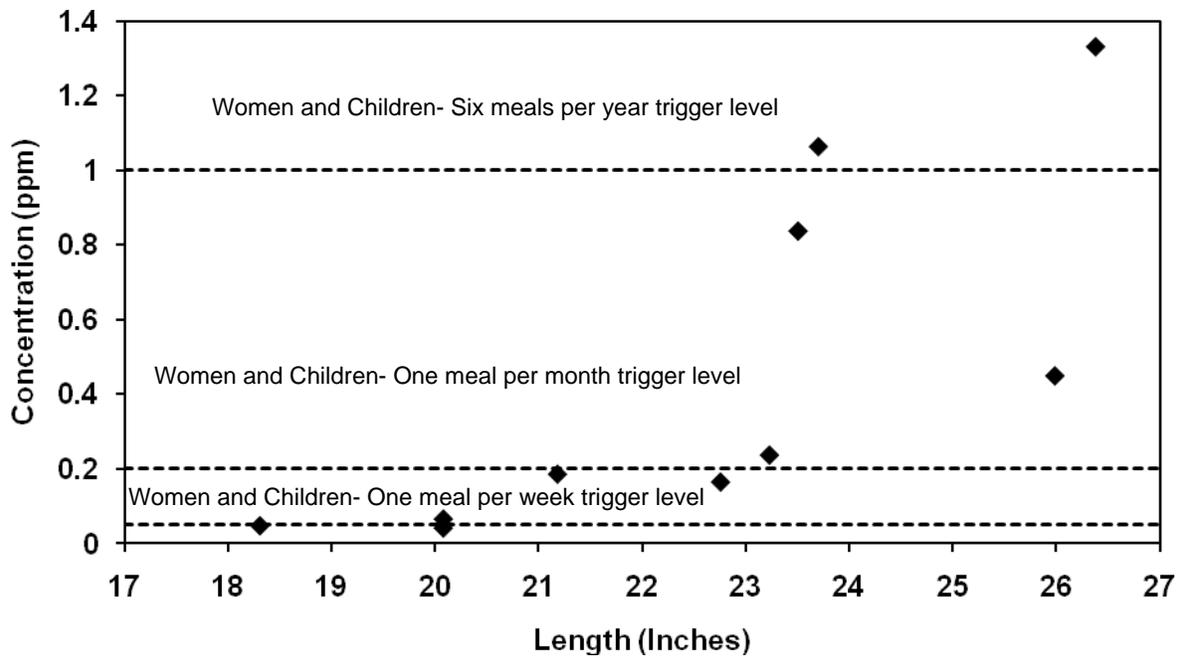


Figure 5. Total length versus total PCB concentration in carp collected from Sylvan/Otter Lakes, Oakland County, in 2008 (ID 2008242).

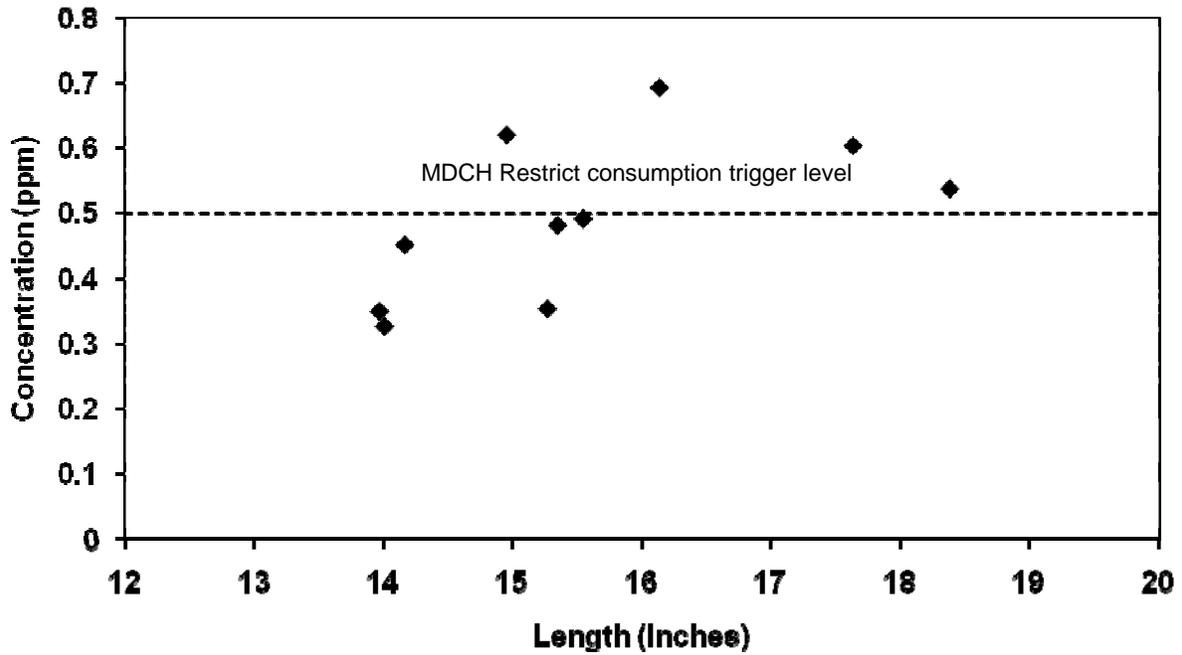


Figure 6. Total length versus total mercury concentration in largemouth bass collected from Sylvan/Otter Lakes, Oakland County, in 2008 (ID 2008242).



Figure 7. Total length versus total PCB concentration in carp collected from the River Raisin, below the Winchester Bridge, Monroe County, in 1998 (ID 1998089) and 2008 (ID 2008247).

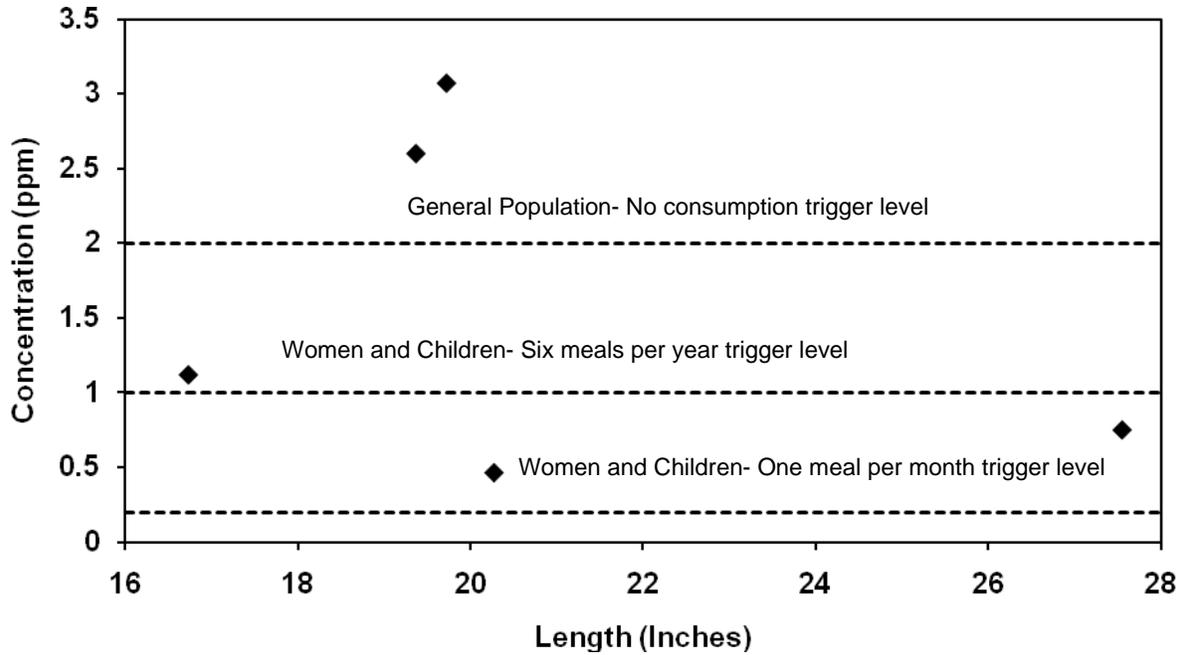


Figure 8. Total length versus total PCB concentration in channel catfish collected from the River Raisin, below the Winchester Bridge, Monroe County, in 2008 (ID 2008247).

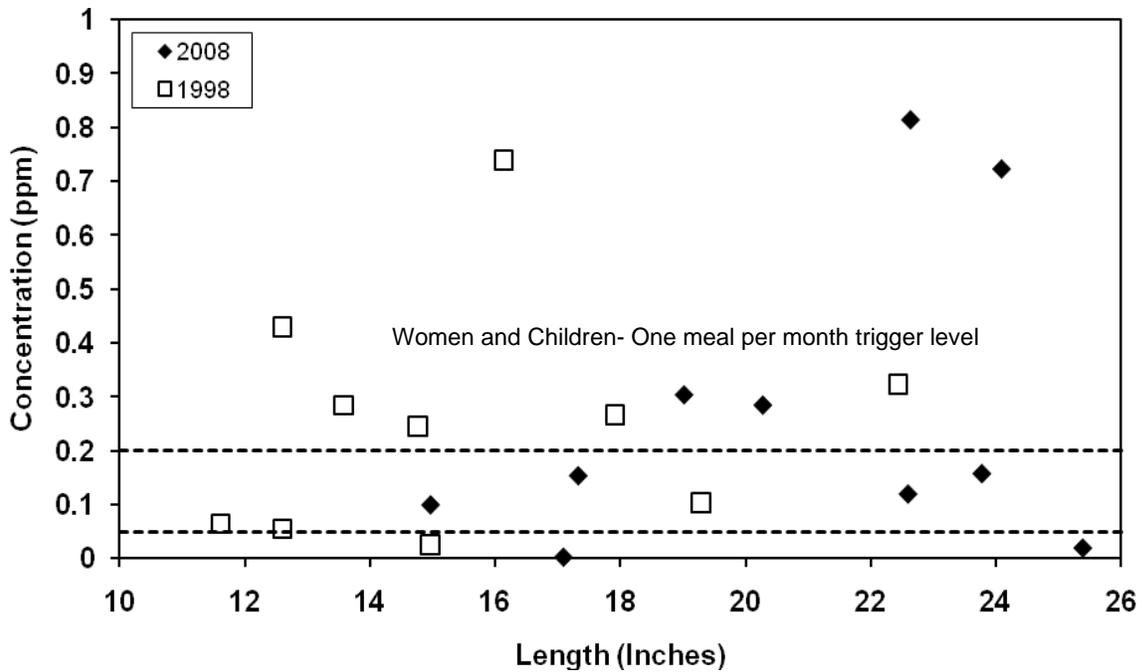


Figure 9. Total length versus total PCB concentration in freshwater drum collected from the River Raisin, below the Winchester Bridge, Monroe County, in 1998 (ID 1998089) and 2008 (ID 2008247).

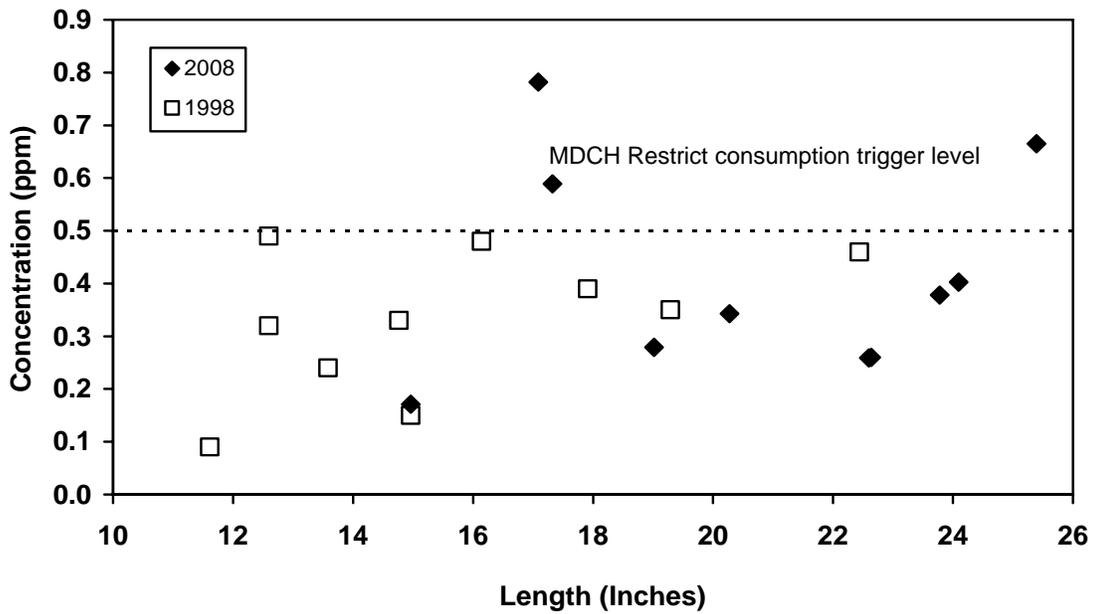


Figure 10. Total length versus total mercury concentration in freshwater drum collected from the River Raisin, below the Winchester Bridge, Monroe County, in 1998 (ID 1998089) and 2008 (ID 2008247).

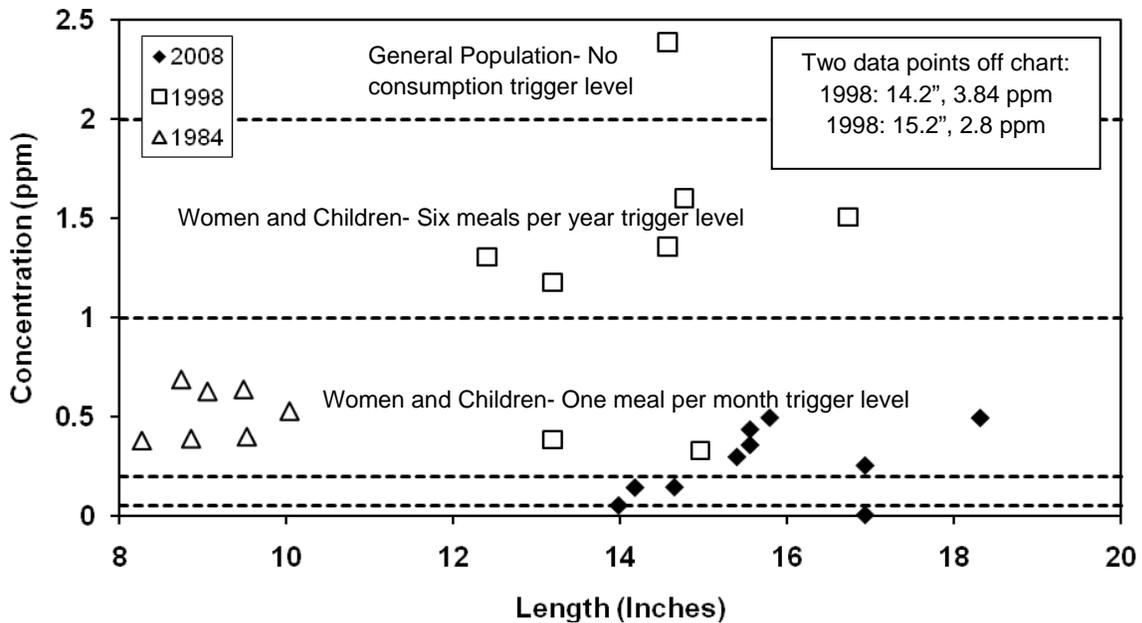


Figure 11. Total length versus total PCB concentration in smallmouth bass collected from the River Raisin, below the Winchester Bridge, Monroe County, in 1984 (ID 84015), 1998 (ID 1998086), and 2008 (ID 2008247).

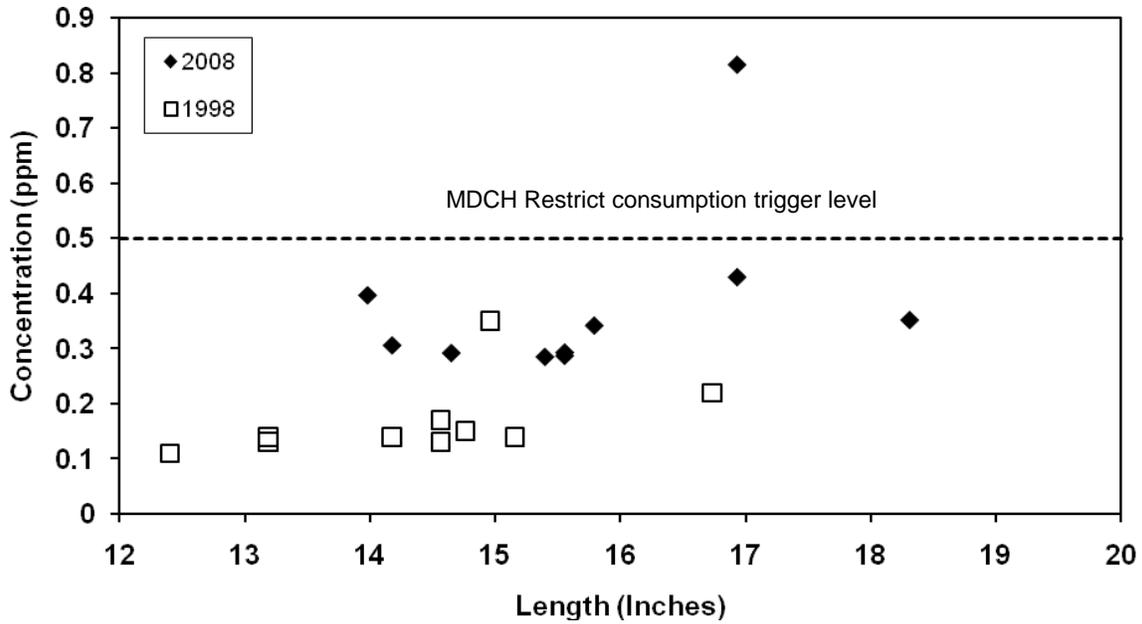


Figure 12. Total length versus total mercury concentration in smallmouth bass collected from the River Raisin, below the Winchester Bridge, Monroe County, in 1998 (ID 1998086) and 2008 (ID 2008247).

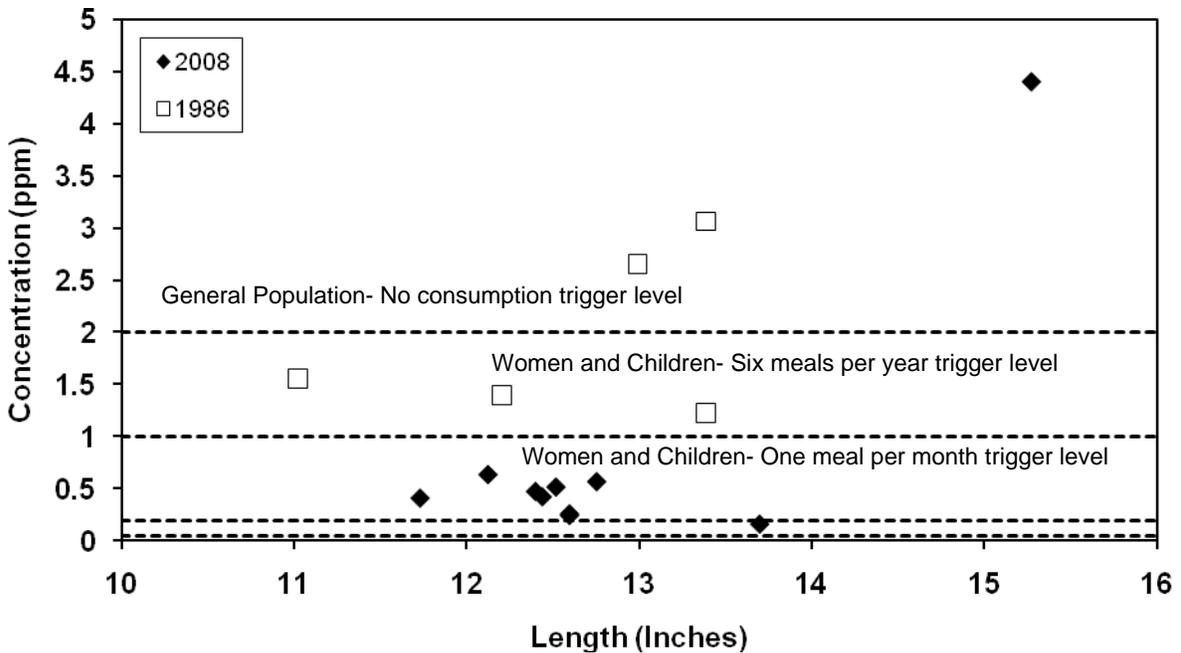


Figure 13. Total length versus total PCB concentration in white bass collected from the River Raisin, below the Winchester Bridge, Monroe County, in 1986 (ID 86019) and 2008 (ID 2008247).

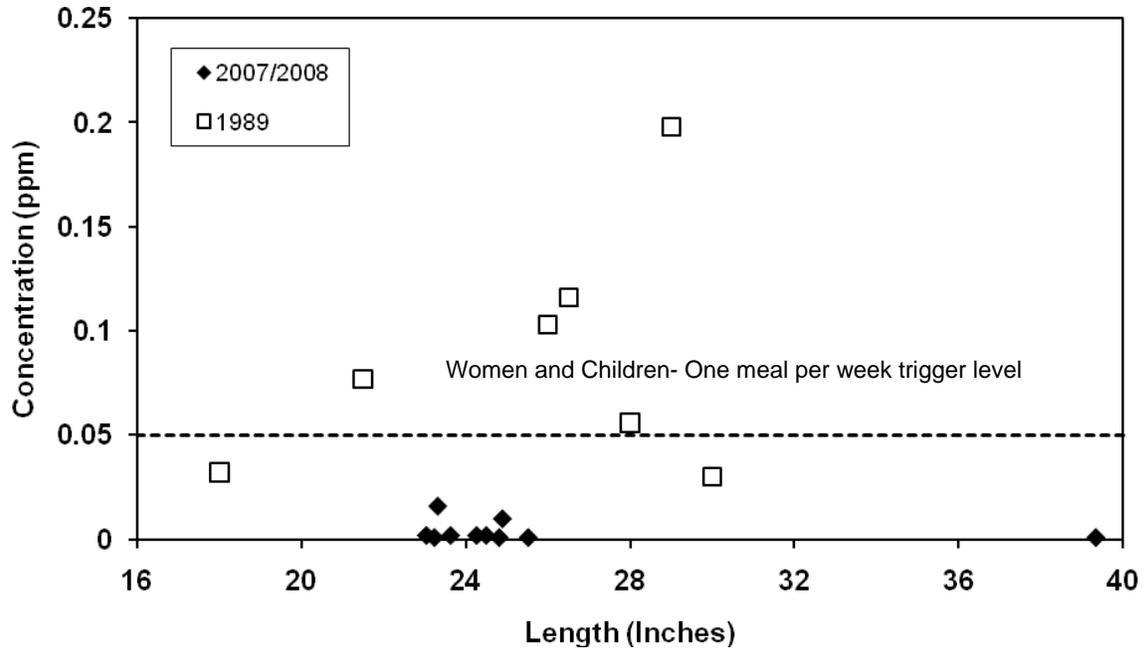


Figure 14. Total length versus total PCB concentration in northern pike collected from the Stony Creek Impoundment, Monroe County, in 1989 (ID 89025) and 2007/2008 (IDs 2007253 & 2008251).

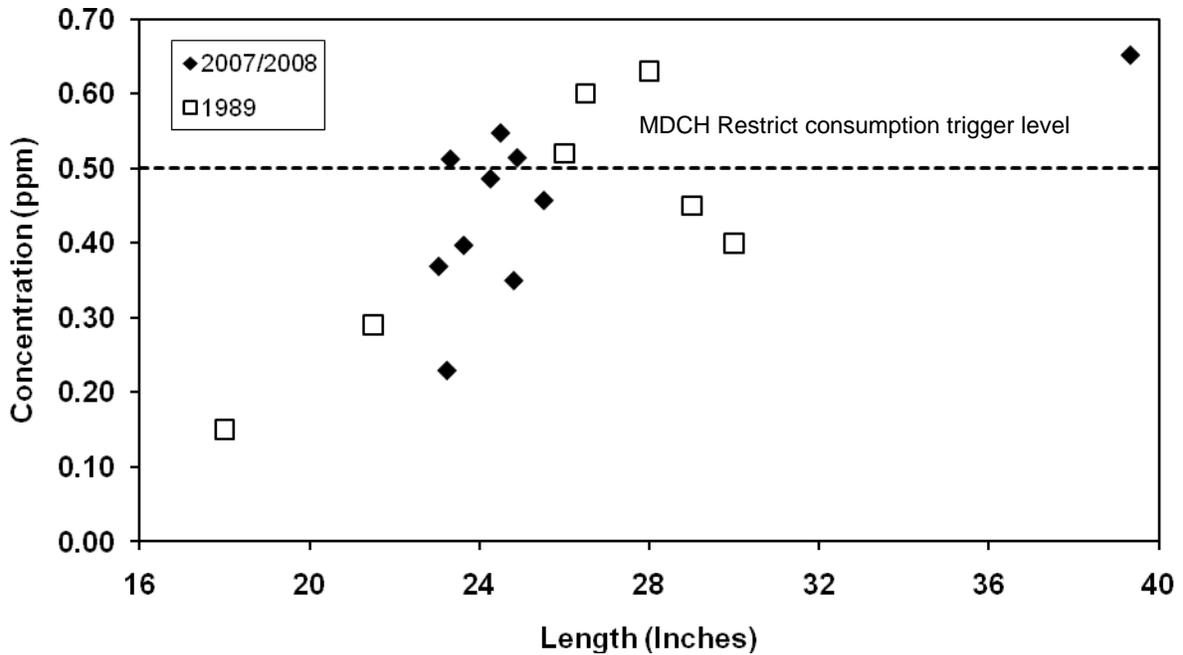


Figure 15. Total length versus total mercury concentration in northern pike collected from the Stony Creek Impoundment, Monroe County, in 1989 (ID 89025) and 2007/2008 (IDs 2007253 & 2008251).

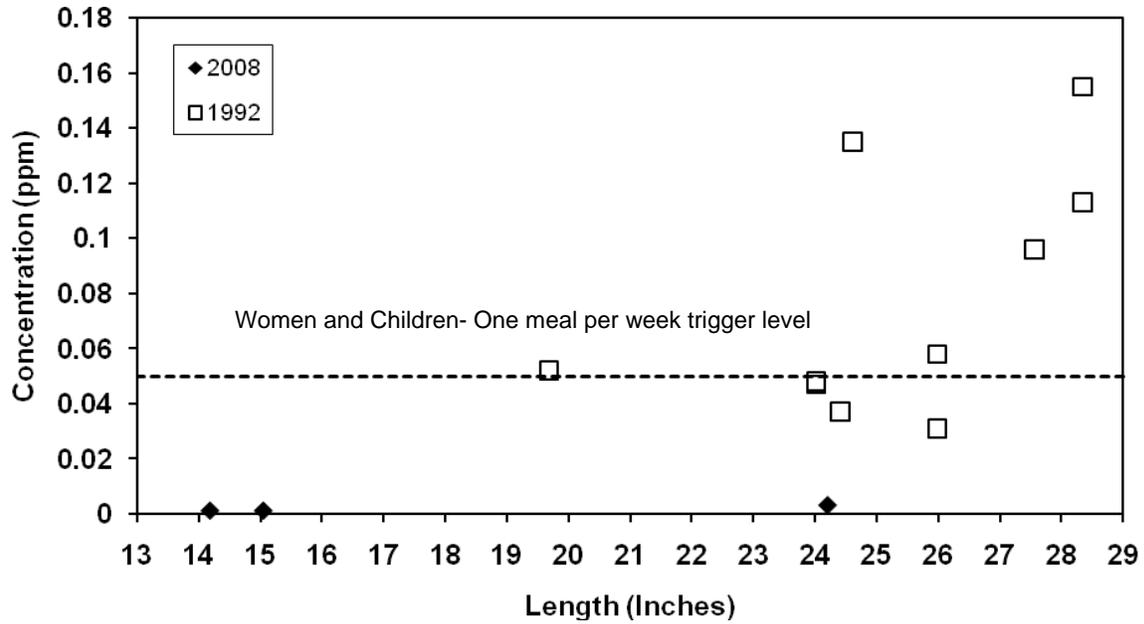


Figure 16. Total length versus total PCB concentration in carp collected from Whitmore Lake, Livingston County, in 1992 (ID 92038) and 2008 (ID 2008260).

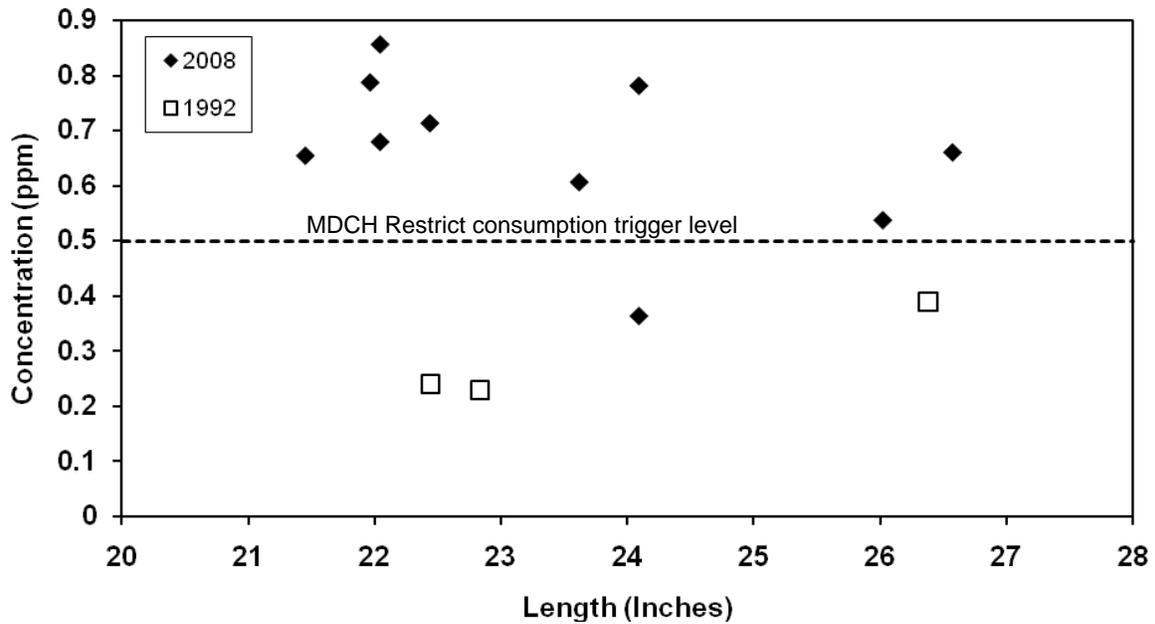


Figure 17. Total length versus total mercury concentration in northern pike collected from Whitmore Lake, Livingston County, in 1992 (ID 92038) and 2008 (ID 2008260).

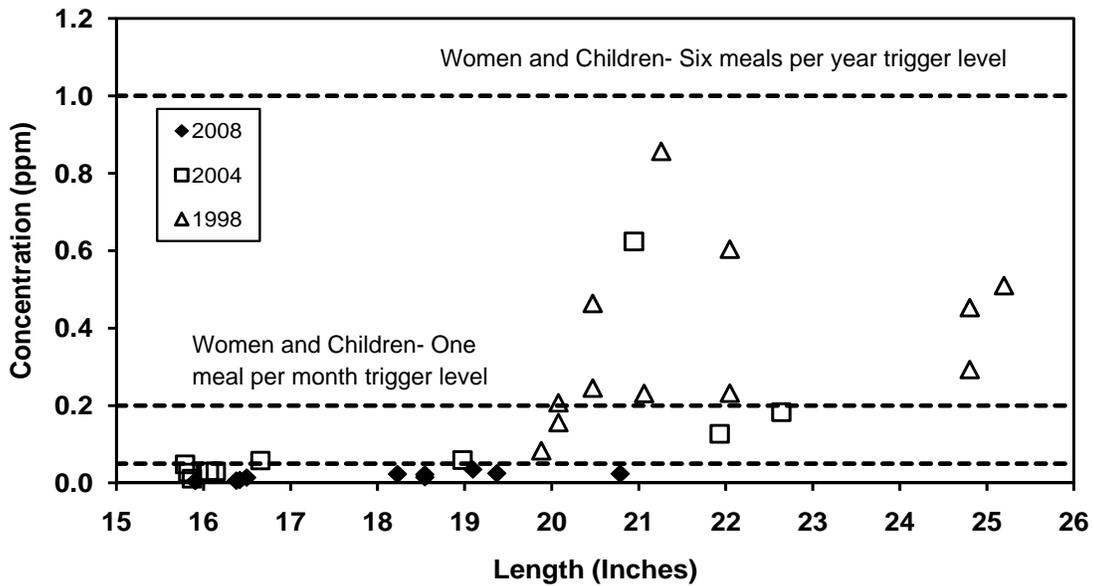


Figure 18. Total length versus total PCB concentration in walleye collected from Lake Huron, Saginaw Bay, in 1998 (ID 1998140), 2004 (ID 2004046), and 2008 (ID 2008271).

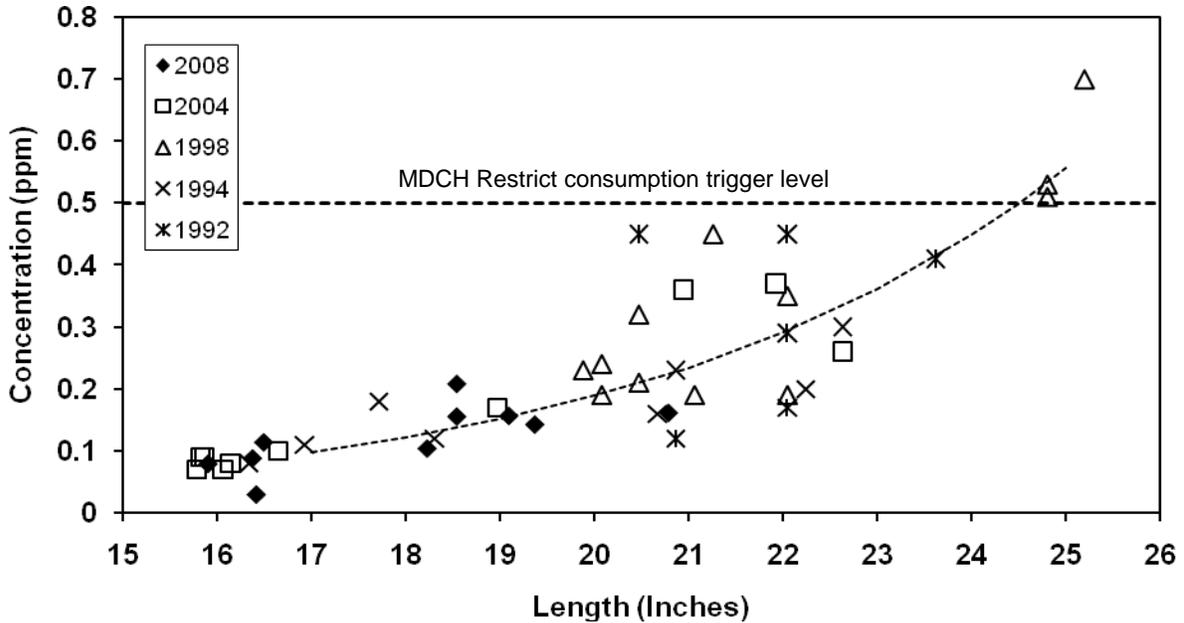


Figure 19. Total length versus total mercury concentration in walleye collected from Lake Huron, Saginaw Bay, in 1992 (ID 92054), 1994 (ID 94038), 1998 (ID 1998140), 2004 (ID 2004046), and 2008 (ID 2008271).

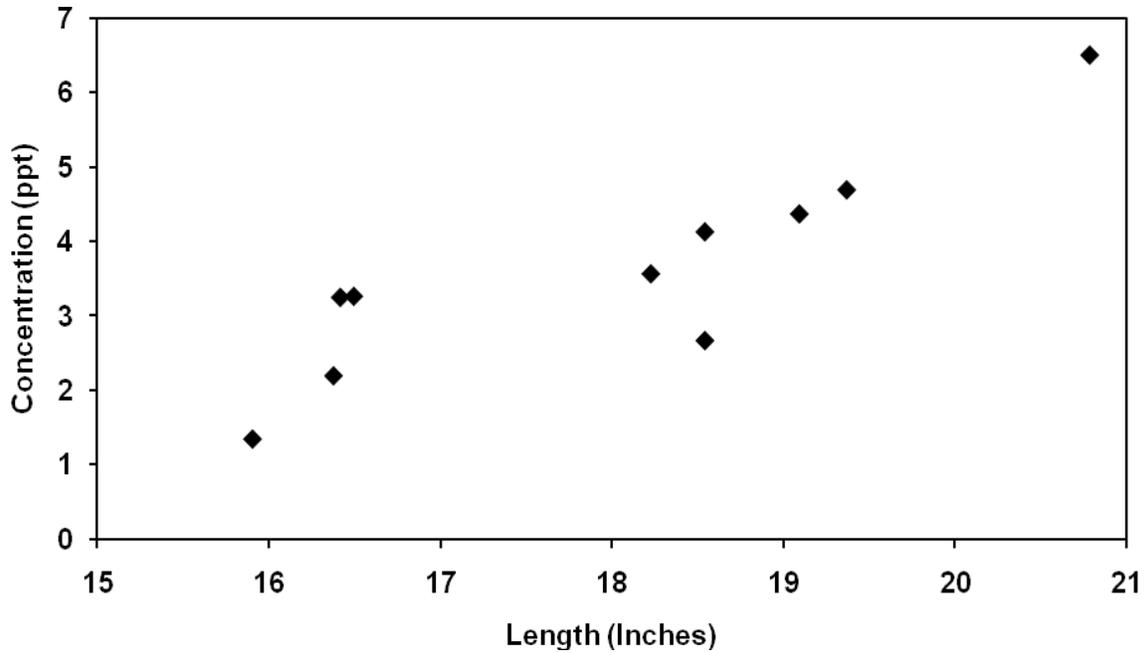


Figure 20. Total length versus dioxin TEQ concentration in walleye collected from Lake Huron, Saginaw Bay, 2008 (ID 2008271).

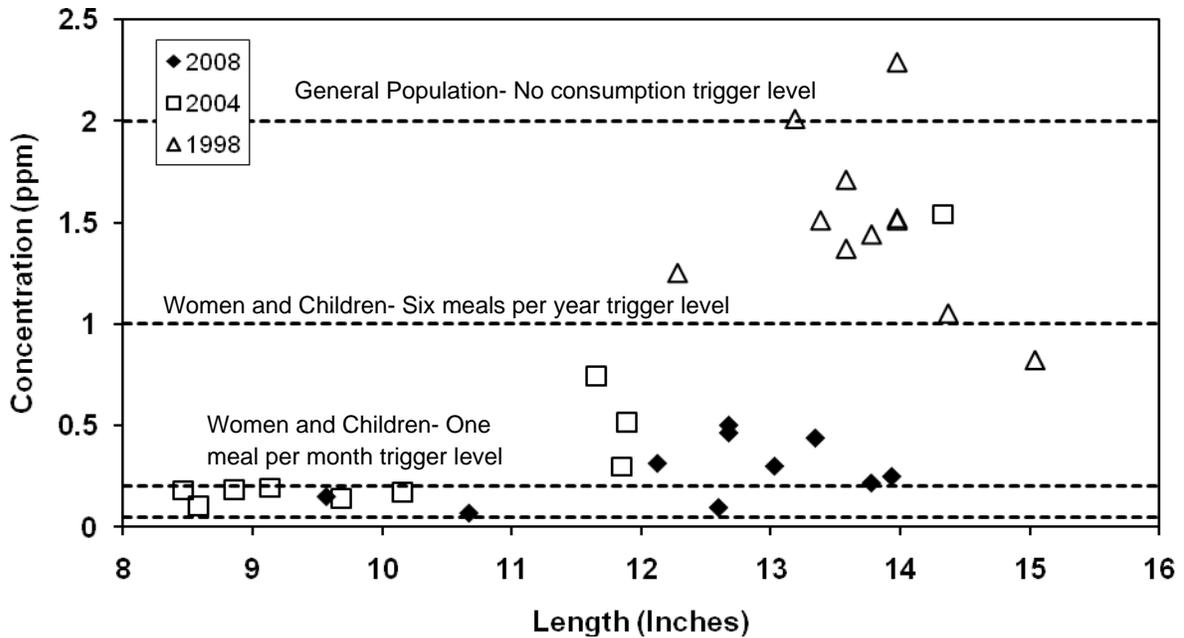


Figure 21. Total length versus total PCB concentration in white bass collected from Lake Huron, Saginaw Bay, in 1998 (ID 1998140), 2004 (ID 2004046), and 2008 (ID 2008271).

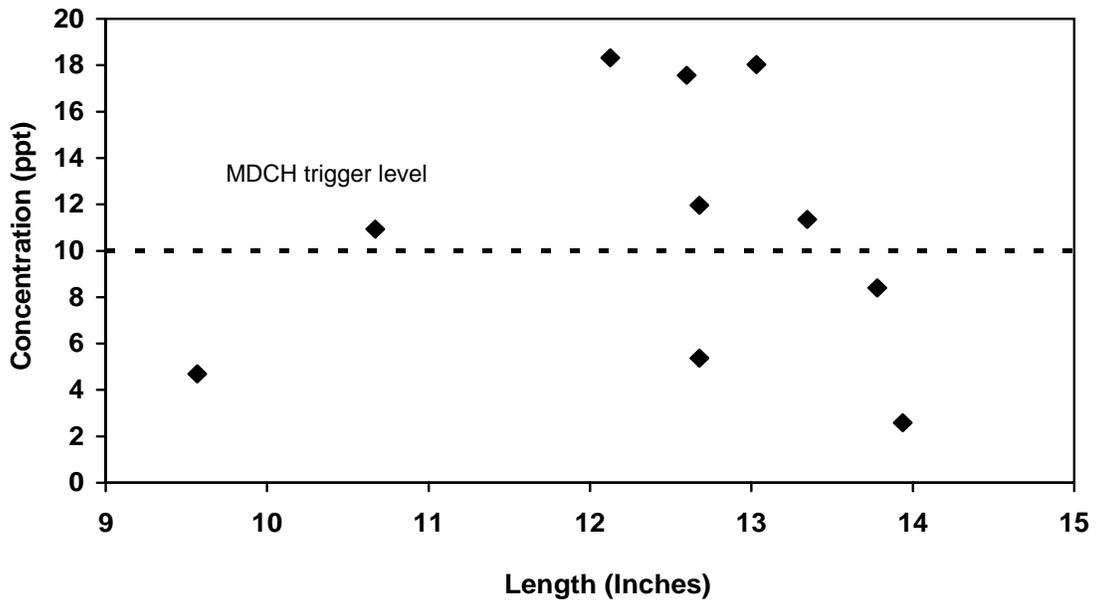


Figure 22. Total length versus dioxin TEQ concentration in white bass collected from Lake Huron, Saginaw Bay, 2008 (ID 2008271).

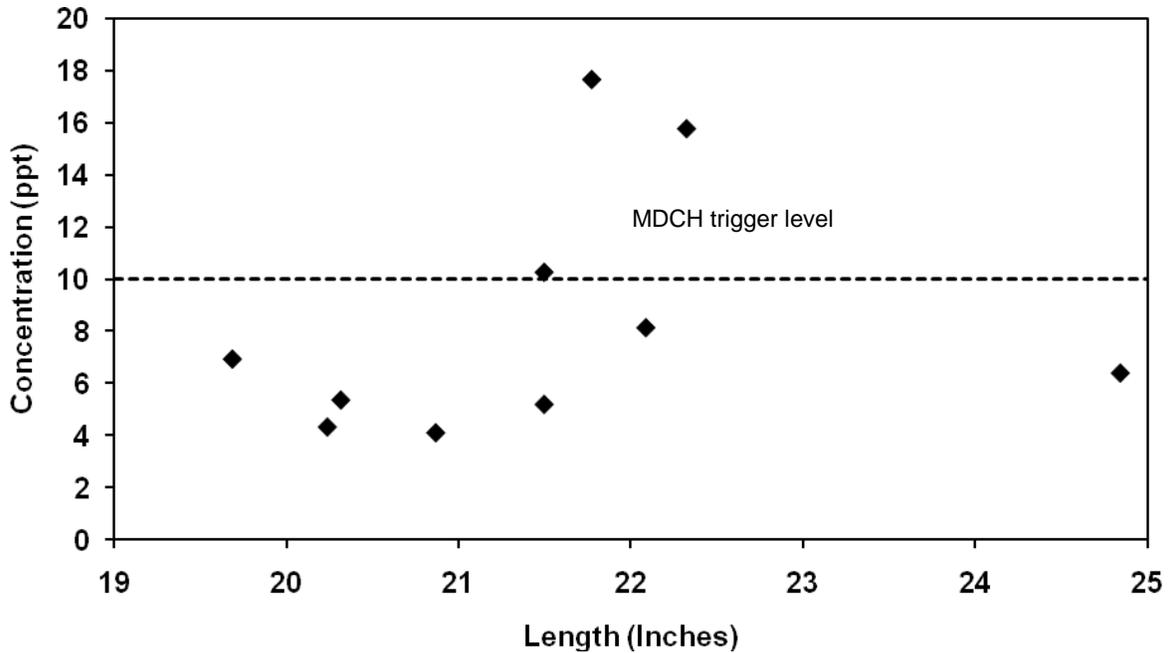


Figure 23. Total length versus dioxin TEQ concentration in lake whitefish collected from Lake Huron, Thunder Bay, in 2007 (ID 2007269).

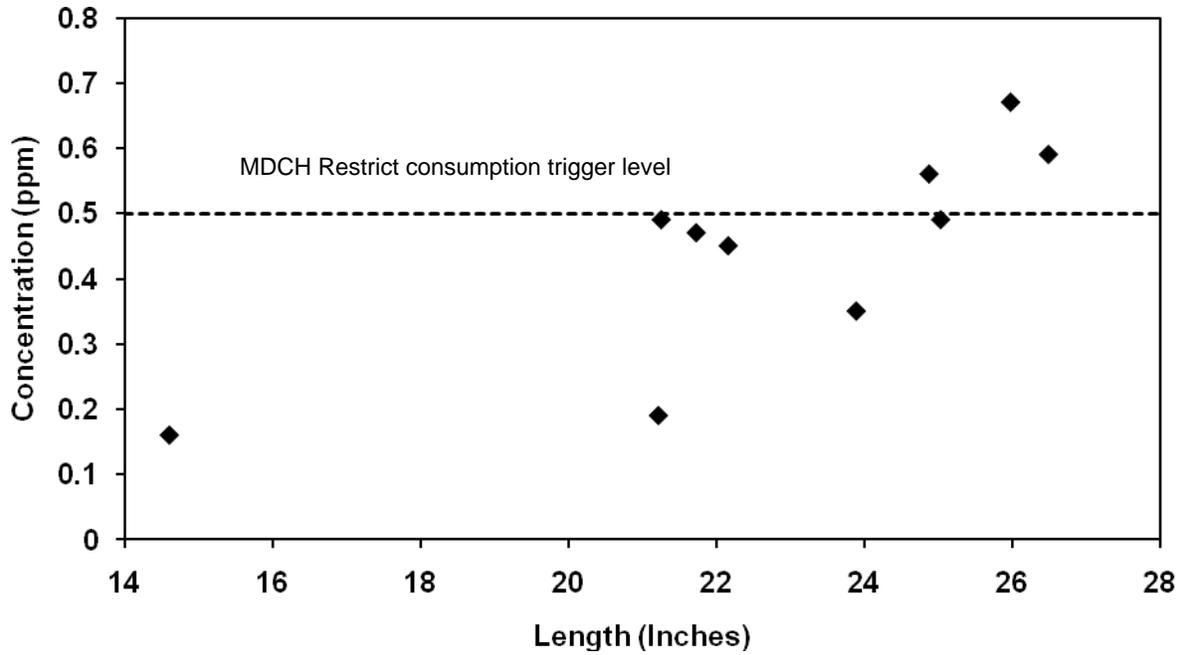


Figure 24. Total length versus total mercury concentration in northern pike collected from the Au Sable River, Cooke Pond, Iosco County, in 2008 (ID 2008200).

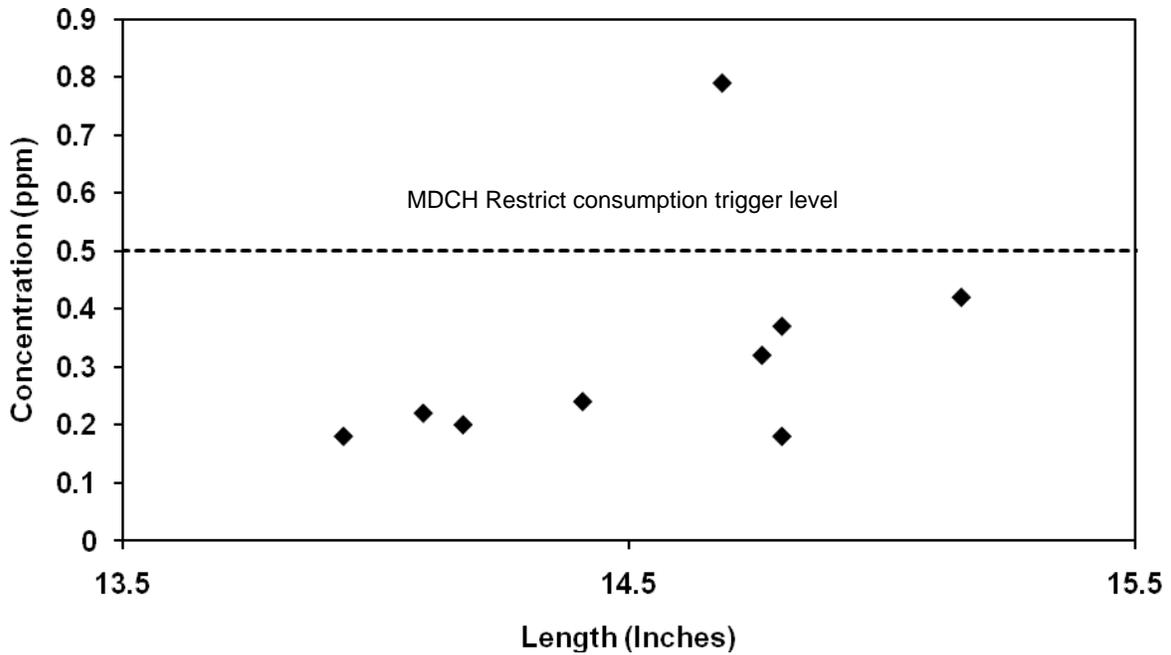


Figure 25. Total length versus total mercury concentration in largemouth bass collected from Crooked Lake, Clare County, in 2008 (ID 2008210).

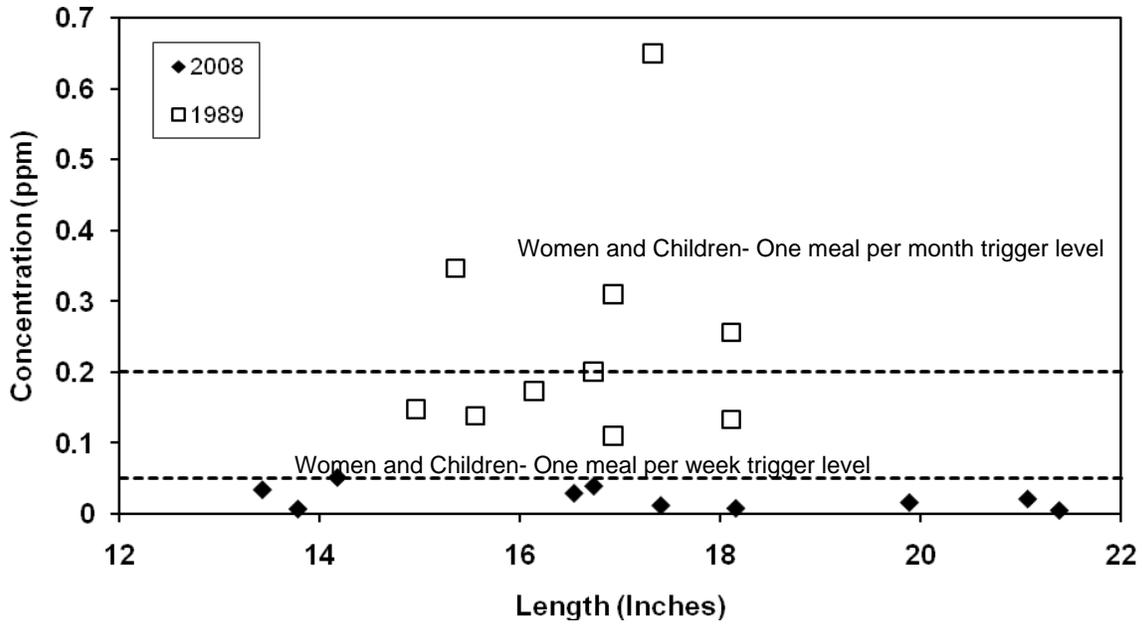


Figure 26. Total length versus total PCB concentration in channel catfish collected from the Flint River, Holloway Reservoir, Genesee County, in 1989 (ID 89041) and 2008 (ID 2008219).

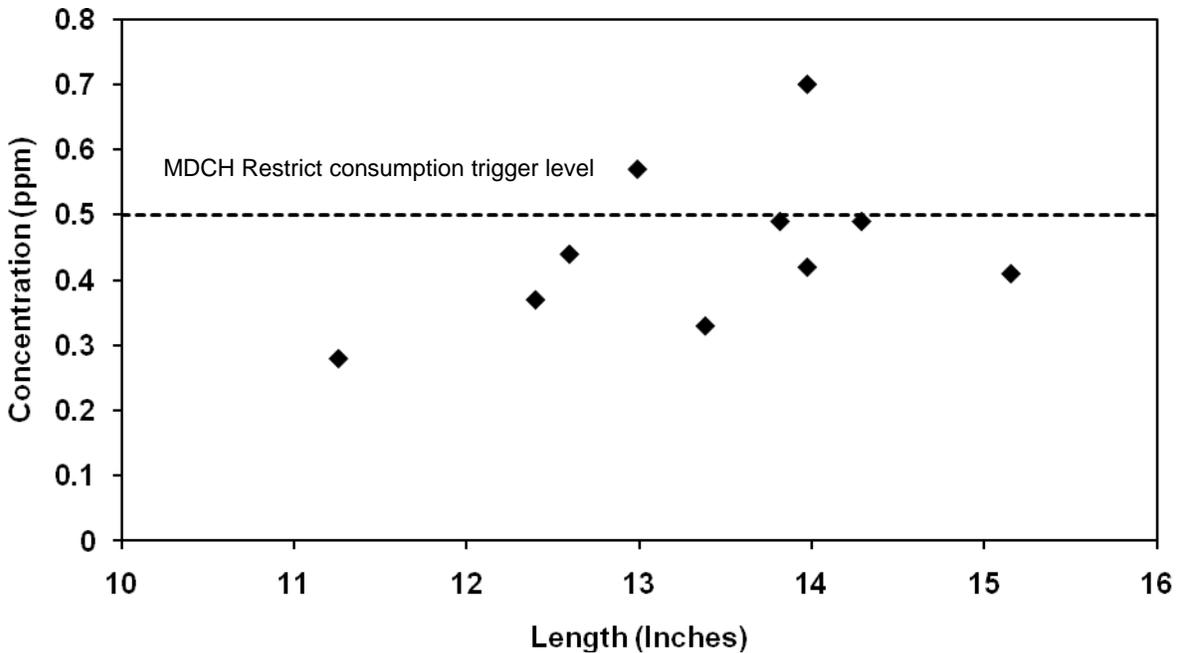


Figure 27. Total length versus total mercury concentration in largemouth bass collected from Floyd Lake, Iosco County, in 2008 (ID 2008220).

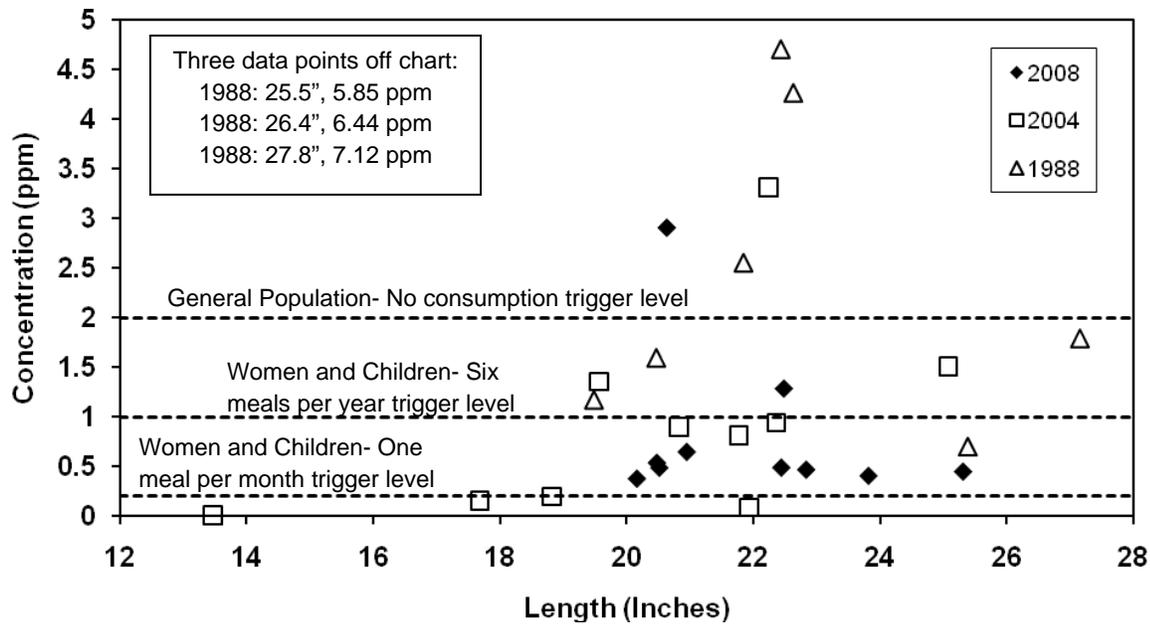


Figure 28. Total length versus total PCB concentration in carp collected from the Kawkawlin River, M-247, Bay County, in 1988 (ID 88027), 2004 (ID 2004039), and 2008 (ID 2008227).

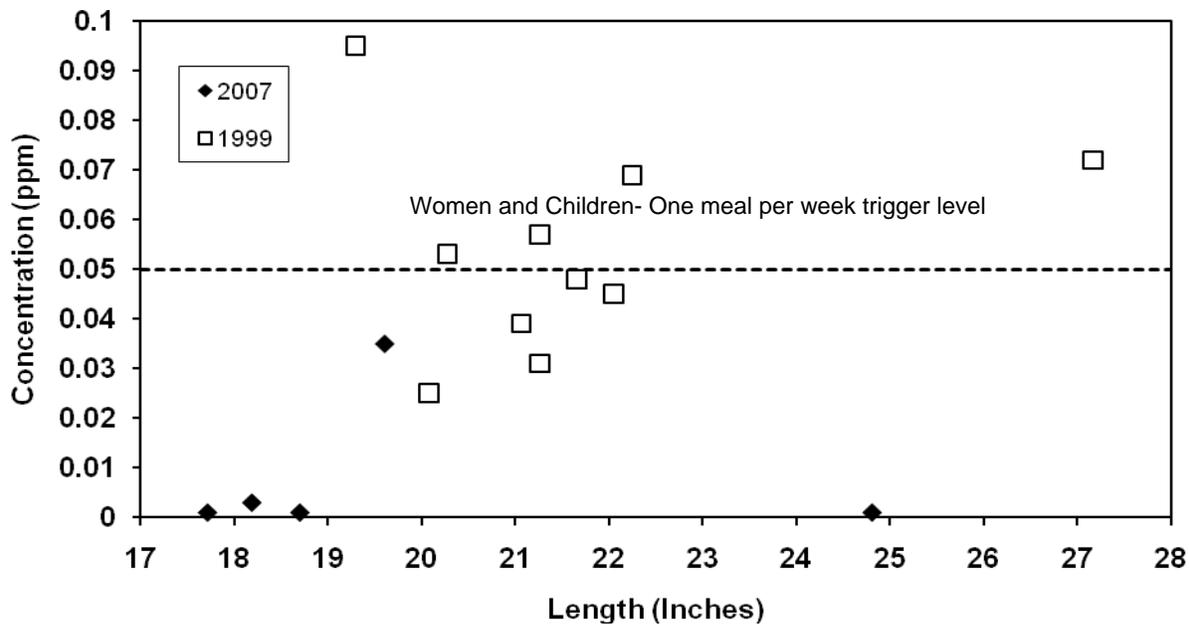


Figure 29. Total length versus total PCB concentration in channel catfish collected from the Tittabawassee River, Sanford Lake, Midland County, in 1999 (ID 1999081) and 2007 (ID 2007255).

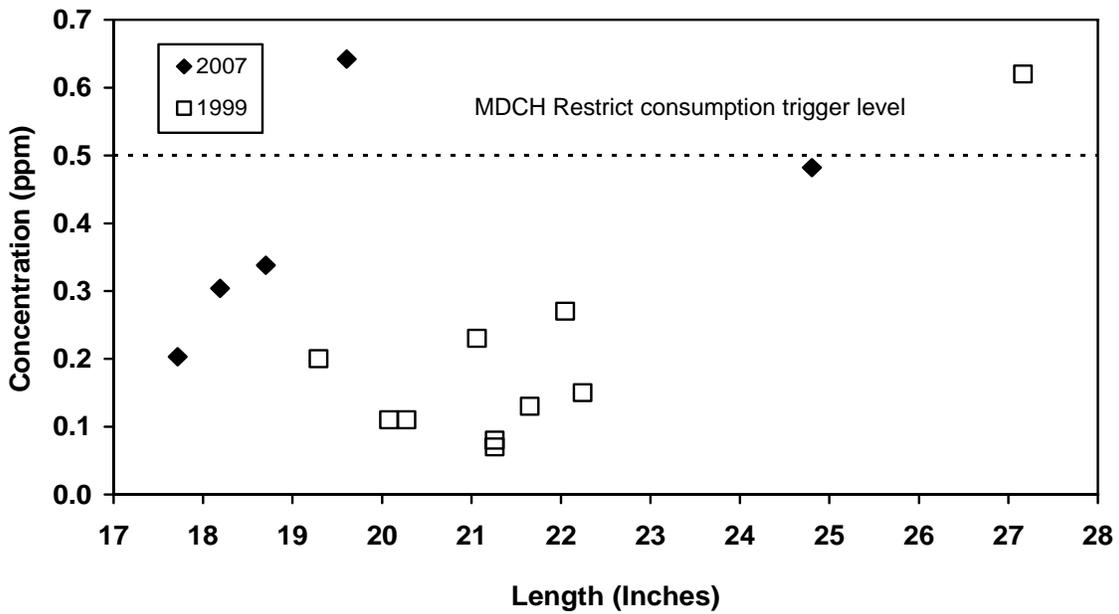


Figure 30. Total length versus total mercury concentration in channel catfish collected from the Tittabawassee River, Sanford Lake, Midland County, in 1999 (ID 1999081) and 2007 (ID 2007255).

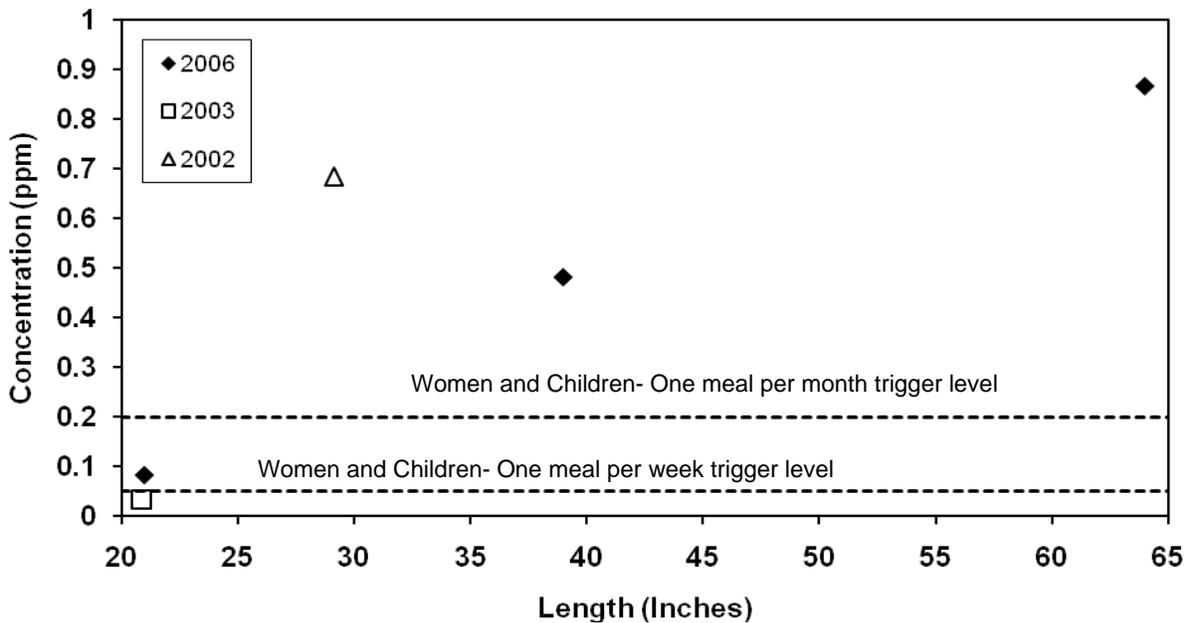


Figure 31. Total length versus total PCB concentration in lake sturgeon collected from Lake Michigan, Bridgeman, in 2002 (ID 2002112), 2003 (ID 2003159), and 2006 (ID 2006501).

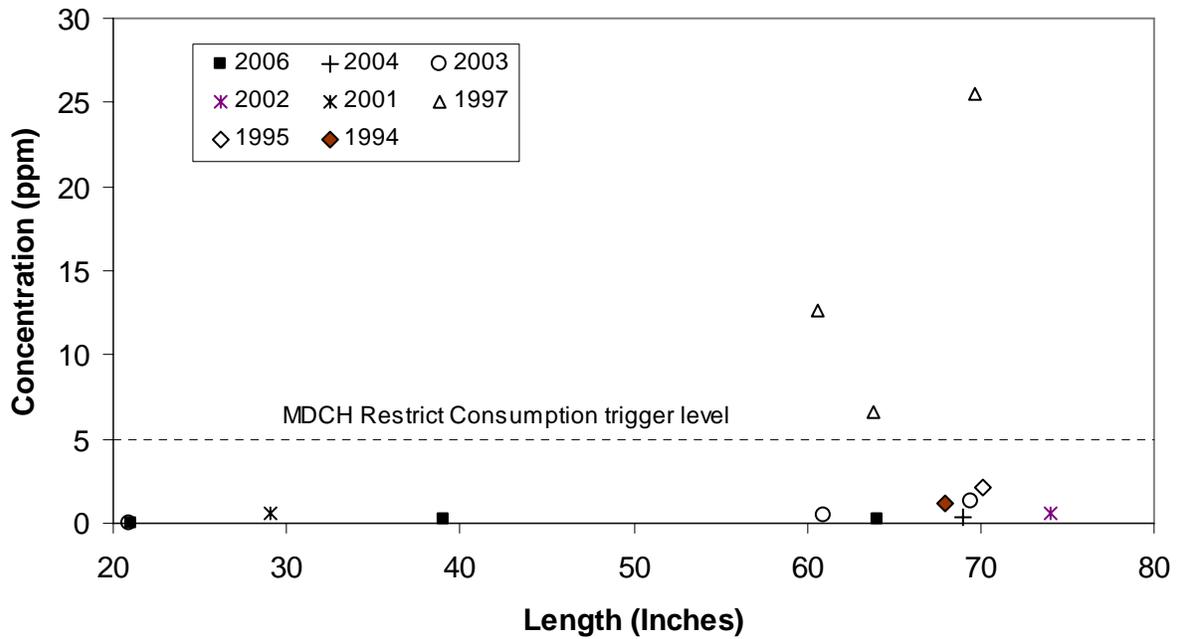


Figure 32. Total length versus total DDT concentration in lake sturgeon collected from southern Lake Michigan from 1994 through 2006 (IDs 94057, 95064, 97069, 2002112, 2003155, 2003159, 2003160, 2004200, and 2006501).

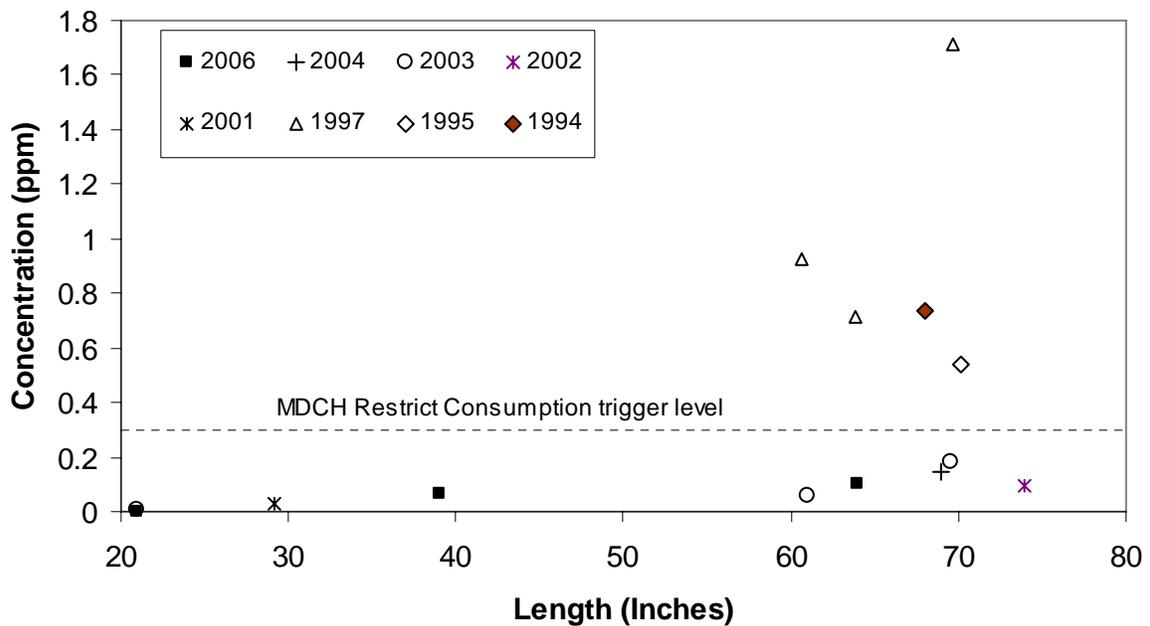


Figure 33. Total length versus total chlordane concentration in lake sturgeon collected from southern Lake Michigan from 1994 through 2006 (IDs 94057, 95064, 97069, 2002112, 2003155, 2003159, 2003160, 2004200, and 2006501).

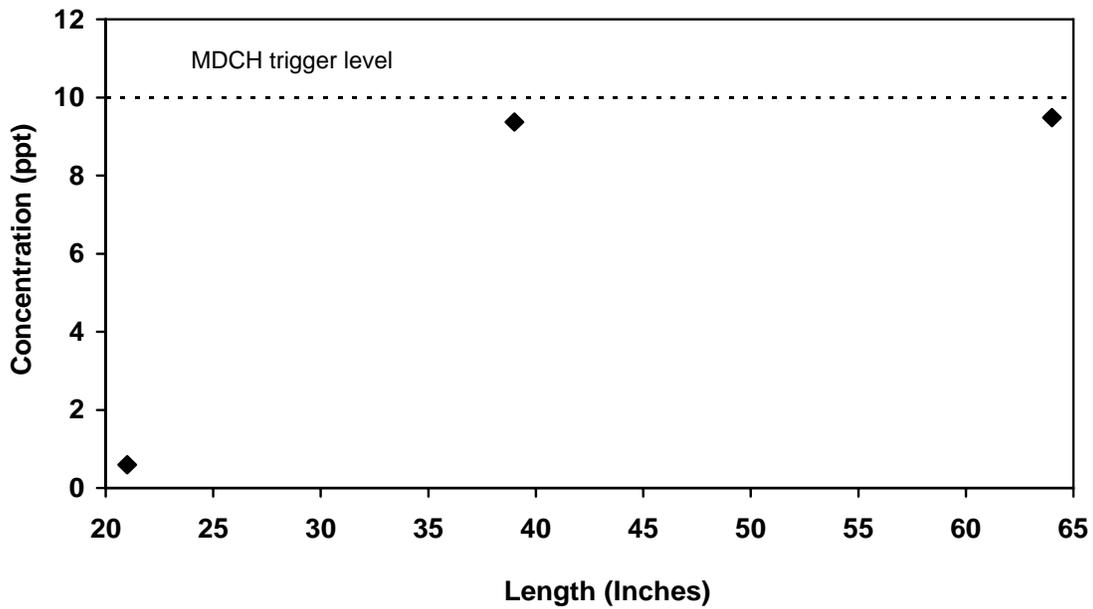


Figure 34. Total length versus dioxin TEQ concentration in lake sturgeon collected from Lake Michigan, Bridgeman, in 2006 (ID 2006501).

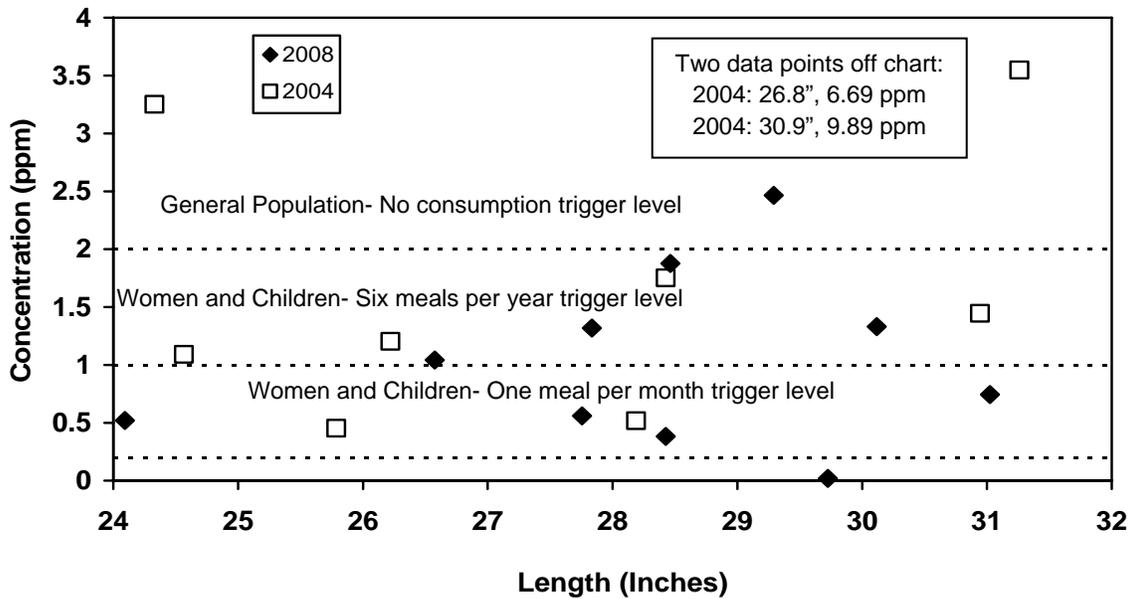


Figure 35. Total length versus total PCB concentration in carp collected from Little Bay de Noc, in 2004 (ID 2004150) and 2008 (ID 2008232).

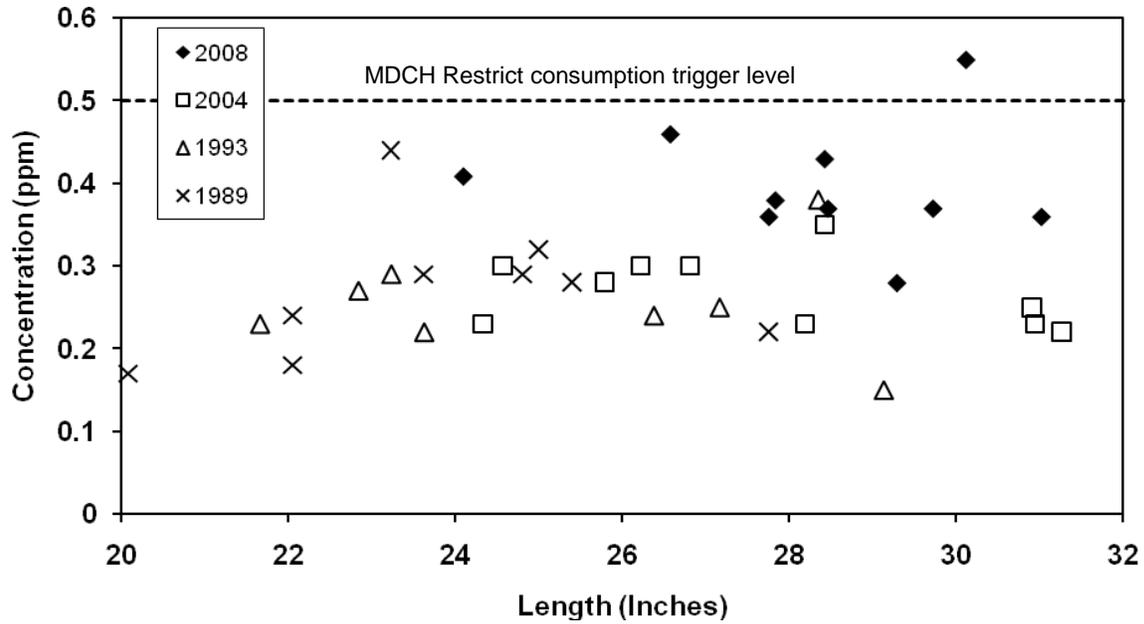


Figure 36. Total length versus total mercury concentration in carp collected from Little Bay de Noc, in 1989 (ID 89032), 1993 (ID 93079), 2004 (ID 2004150), and 2008 (ID 2008232).

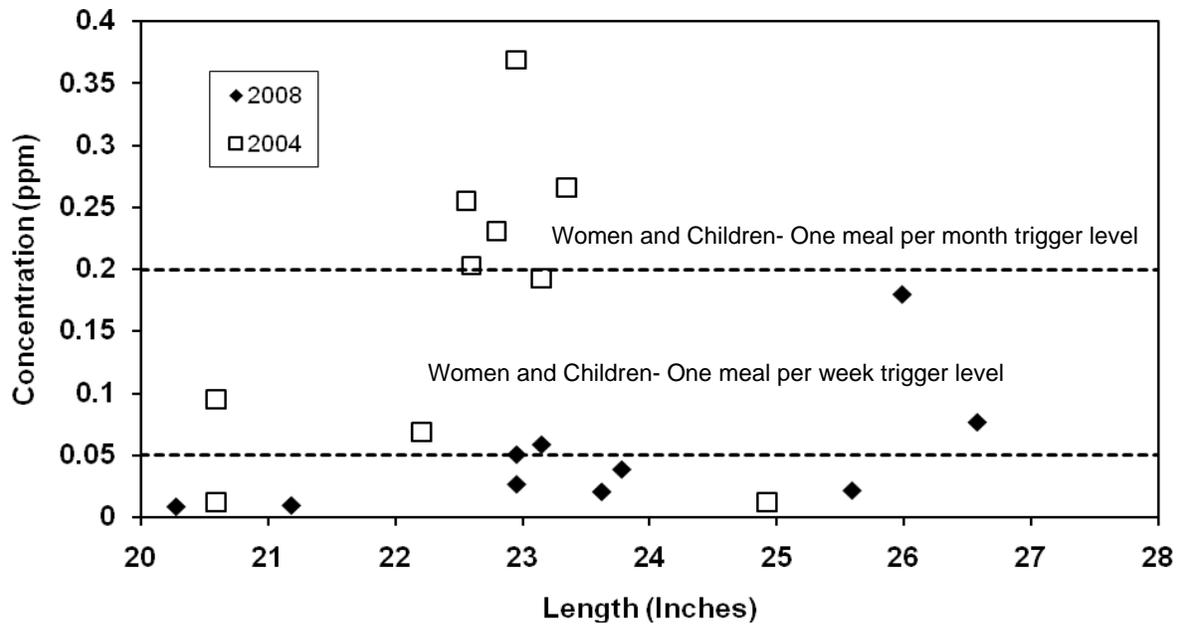


Figure 37. Total length versus total PCB concentration in redhorse sucker collected from Little Bay de Noc, in 2004 (ID 2004150) and 2008 (ID 2008232).

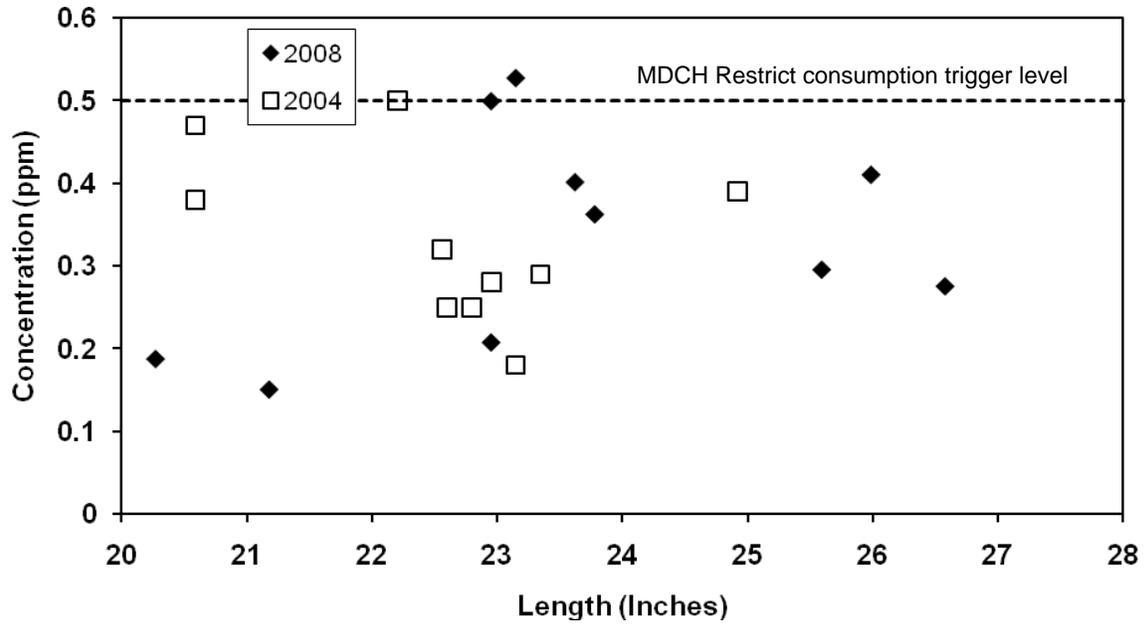


Figure 38. Total length versus total mercury concentration in redhorse sucker collected from Little Bay de Noc, in 2004 (ID 2004150) and 2008 (ID 2008232).

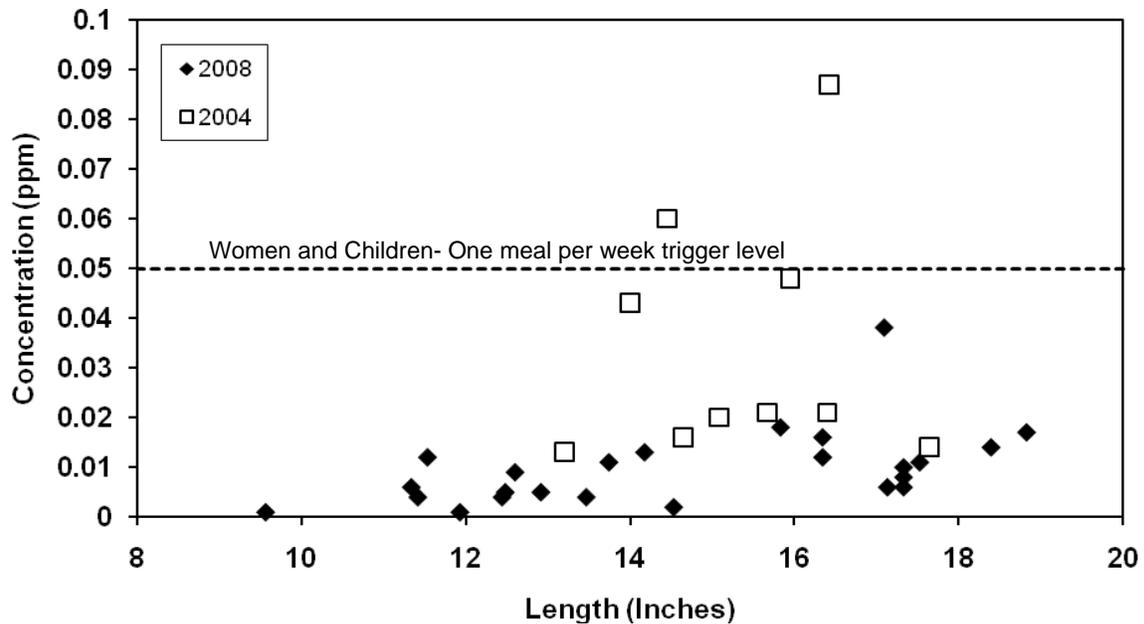


Figure 39. Total length versus total PCB concentration in smallmouth bass collected from Little Bay de Noc, in 2004 (ID 2004150) and 2008 (IDs 2008232 & 2008280).

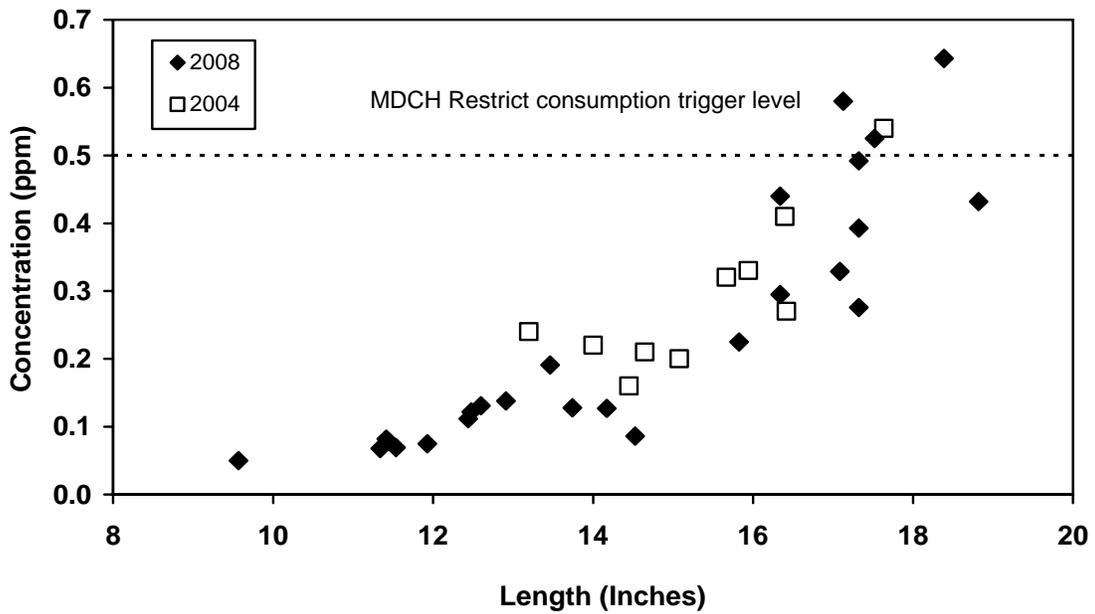


Figure 40. Total length versus total mercury concentration in smallmouth bass collected from Little Bay de Noc, in 2004 (ID 2004150) and 2008 (IDs 2008232 & 2008280).

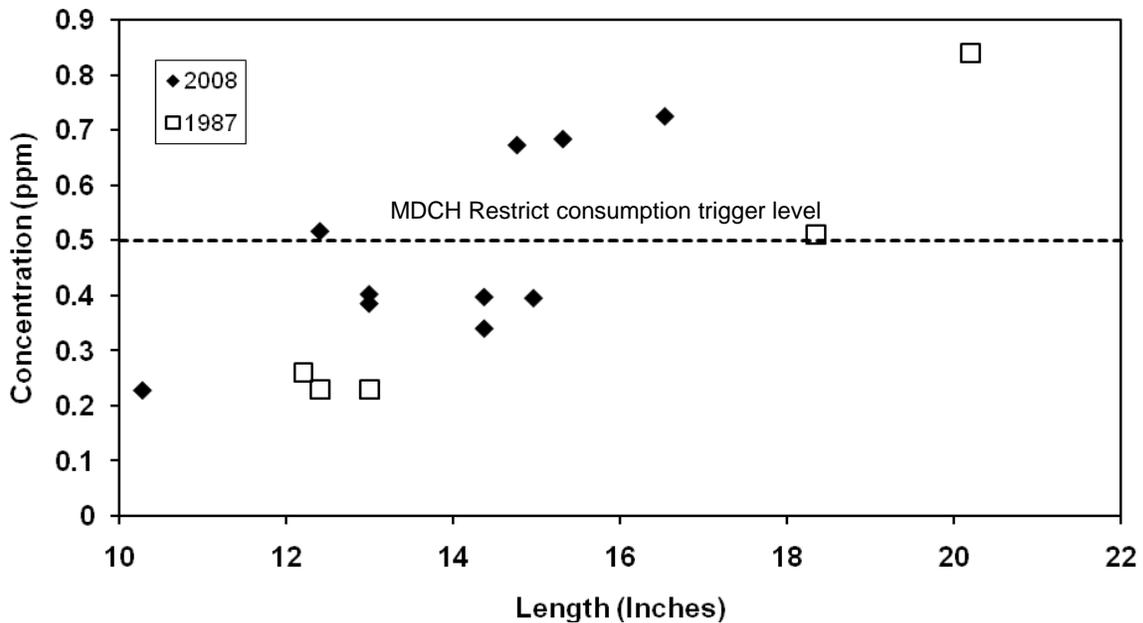


Figure 41. Total length versus total mercury concentration in largemouth and smallmouth bass collected from Beatons Lake, Gogebic County, in 1987 (ID 87005) and 2008 (ID 2008263).

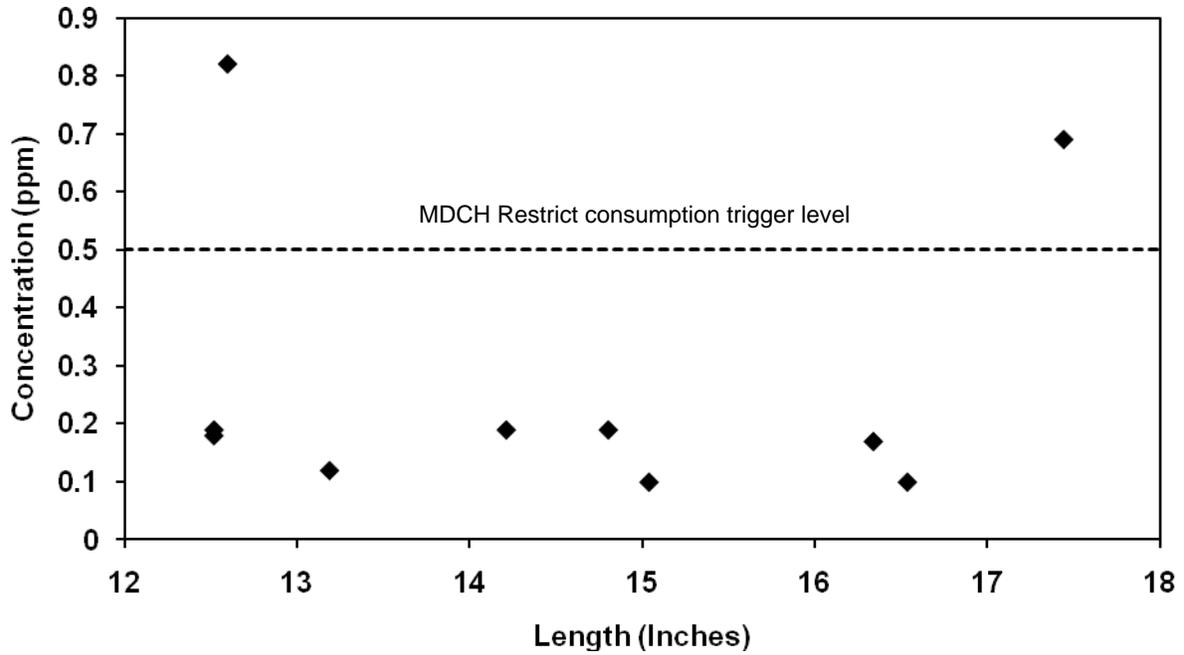


Figure 42. Total length versus total mercury concentration in largemouth bass collected from Big Star Lake, Lake County, in 2007 (ID 2007262).

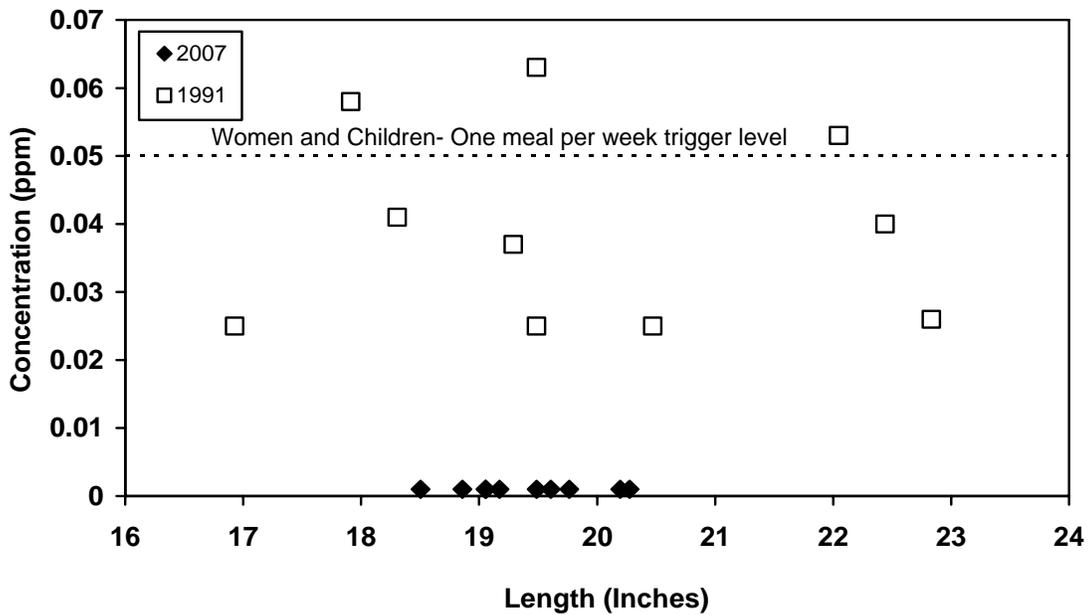


Figure 43. Total length versus total PCB concentration in white sucker collected from Boardman Lake, Grand Traverse County, in 1991 (ID 91006) and 2007 (ID 2007302).

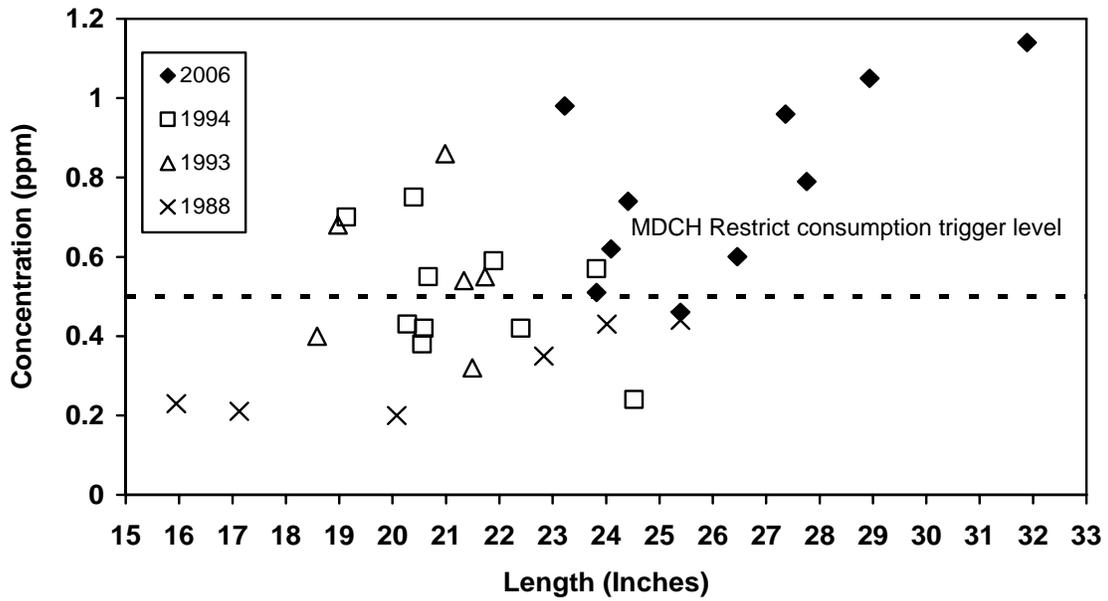


Figure 44. Total length versus total mercury concentration in northern pike collected from Coldwater Lake, Branch County, in 1988 (ID 88061), 1993 (ID 93067), 1994 (ID 94019), and 2006 (ID 2006125).

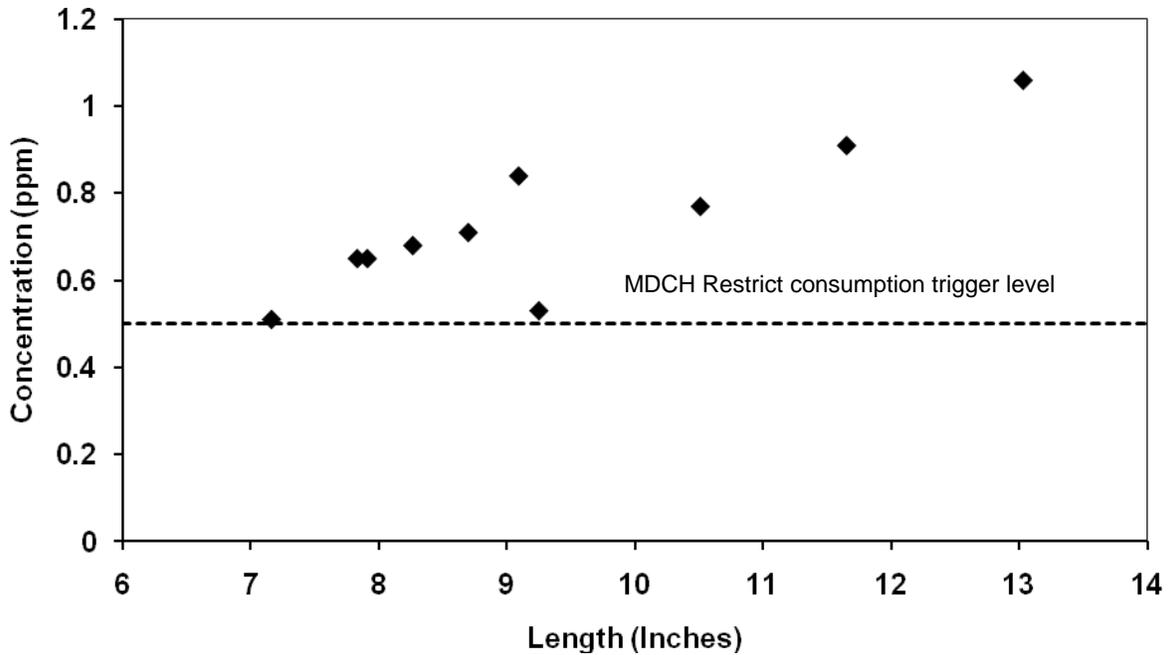


Figure 45. Total length versus total mercury concentration in yellow perch collected from Cusino Lake, Schoolcraft County, in 2007 (ID 2007213).

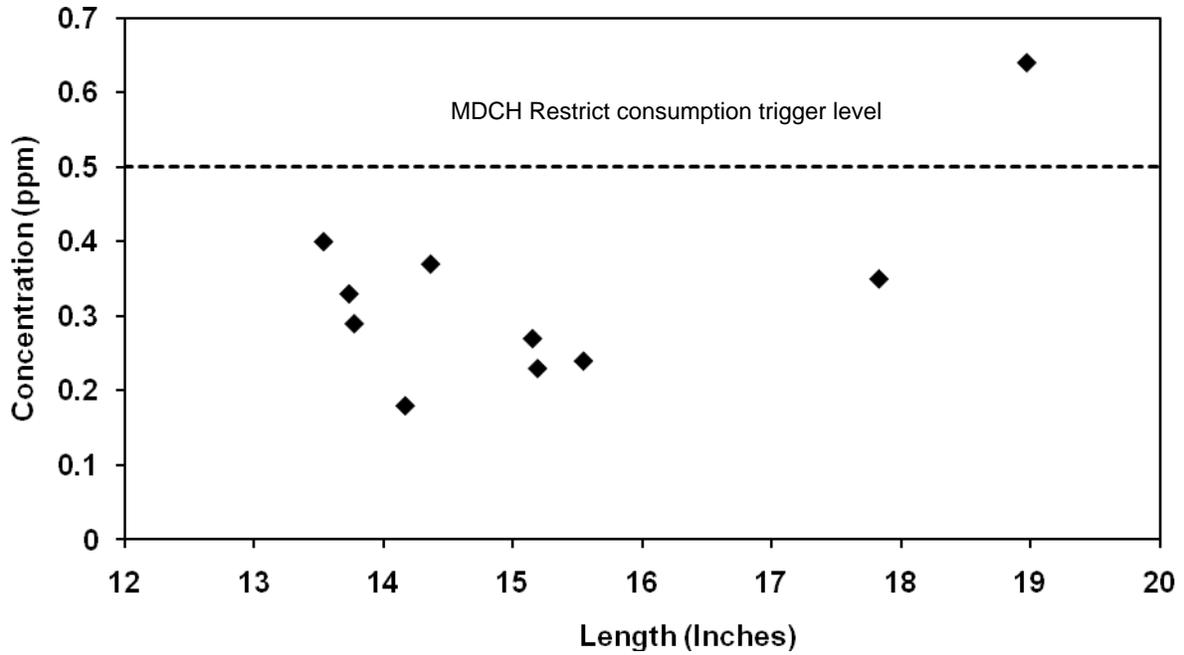


Figure 46. Total length versus total mercury concentration in largemouth bass collected from Diamond Lake, Newaygo County, in 2008 (ID 2008212).

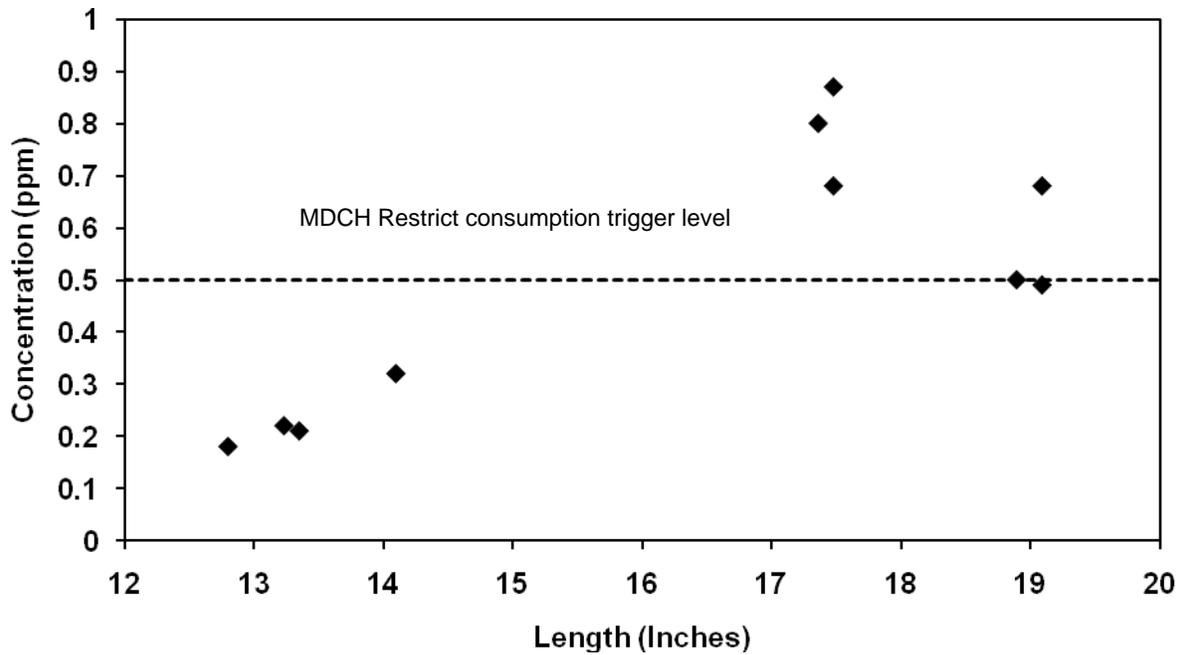


Figure 47. Total length versus total mercury concentration in largemouth bass collected from Eagle Lake, Kalamazoo County, in 2008 (ID 2008213).

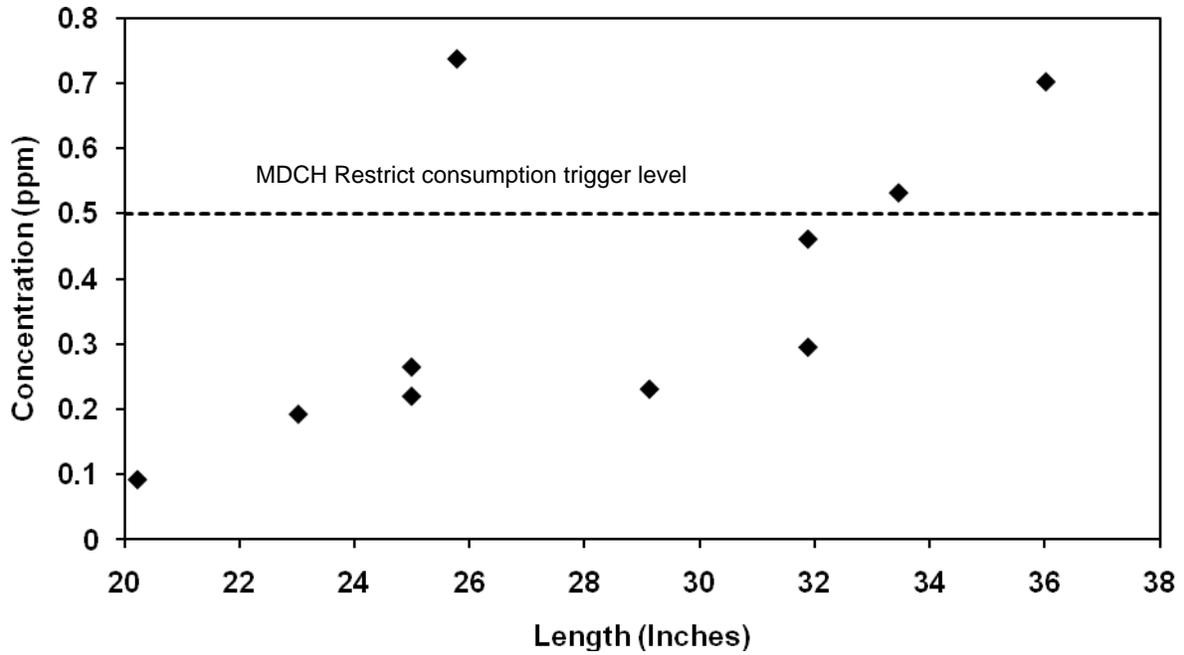


Figure 48. Total length versus total mercury concentration in northern pike collected from Fine Lake, Barry County, in 2008 (ID 2008216).

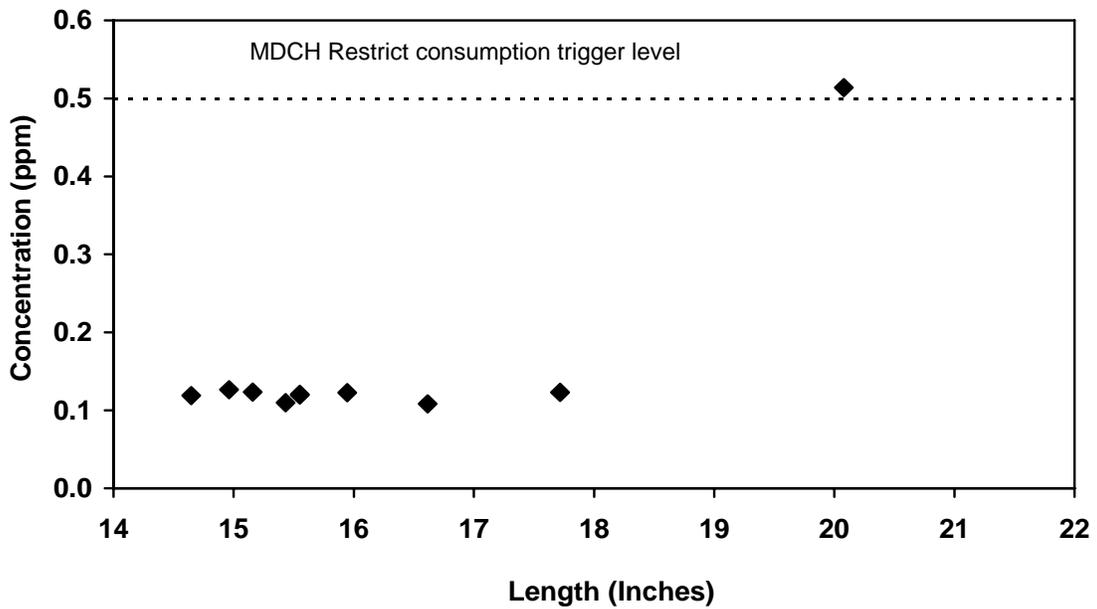


Figure 49. Total length versus total mercury concentration in walleye collected from Fine Lake, Barry County, in 2008 (ID 2008216).

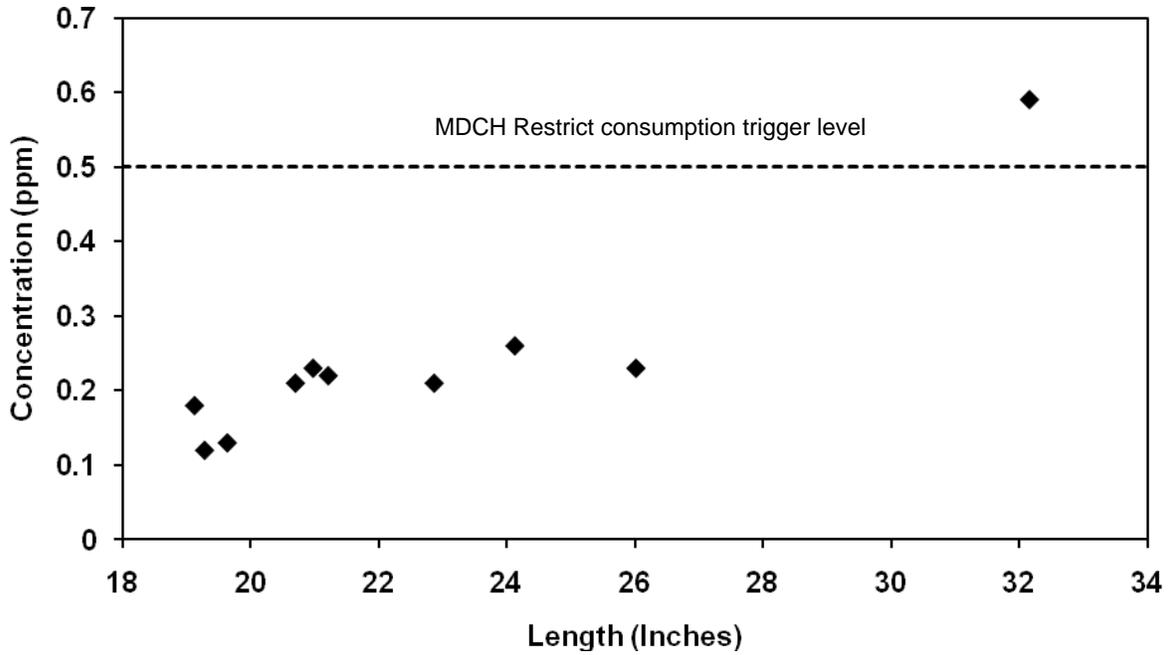


Figure 50. Total length versus total mercury concentration in northern pike collected from Fire Lake, Iron County, in 2007 (ID 2007214).

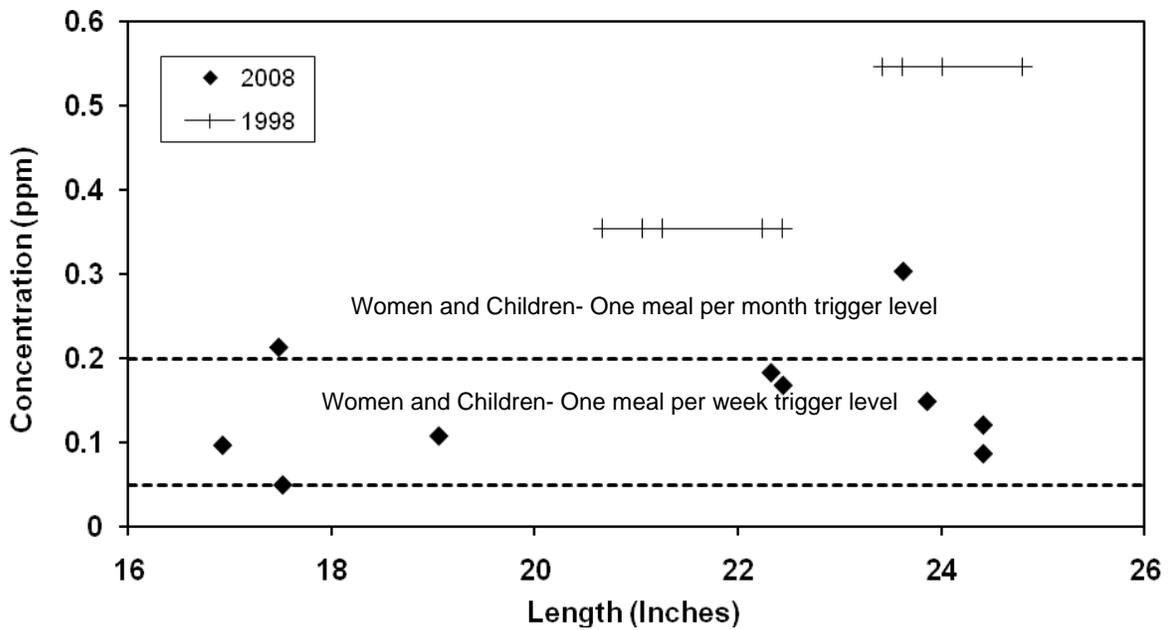


Figure 51. Total length versus total PCB concentration in carp collected from the Flat River, Lowell Impoundment, Kent County, in 1998 (ID 1998035) and 2008 (ID 2008273).

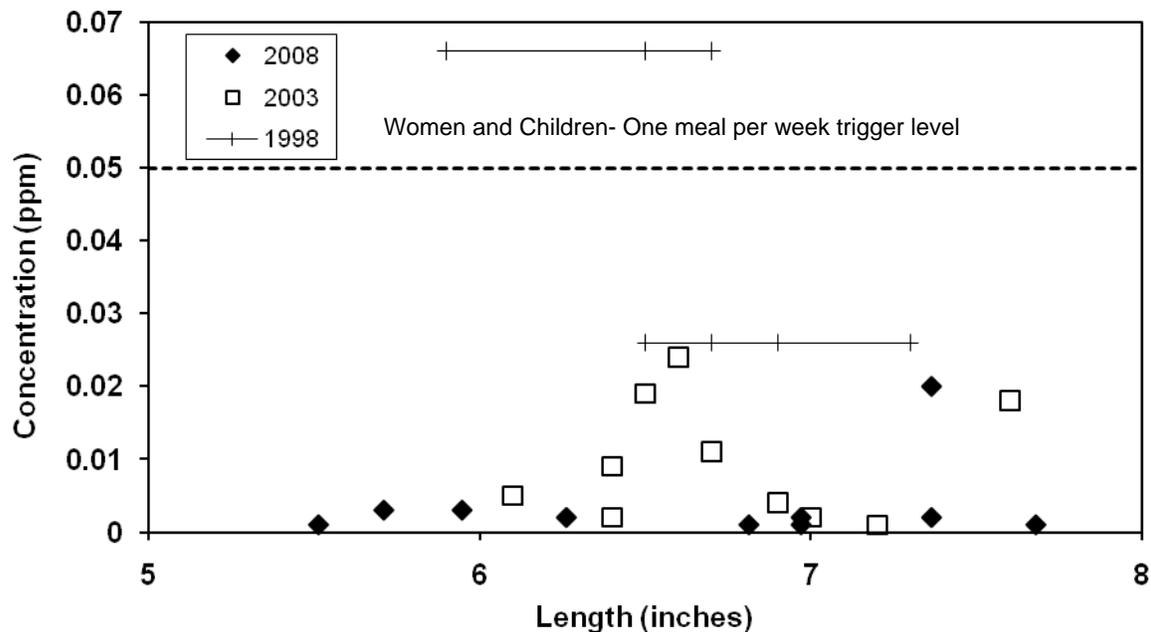


Figure 52. Total length versus total PCB concentration in rock bass collected from the Flat River, below Belding, Ionia County, in 1998 (ID 1998037), 2003 (ID 2003031), and 2008 (ID 2008217).

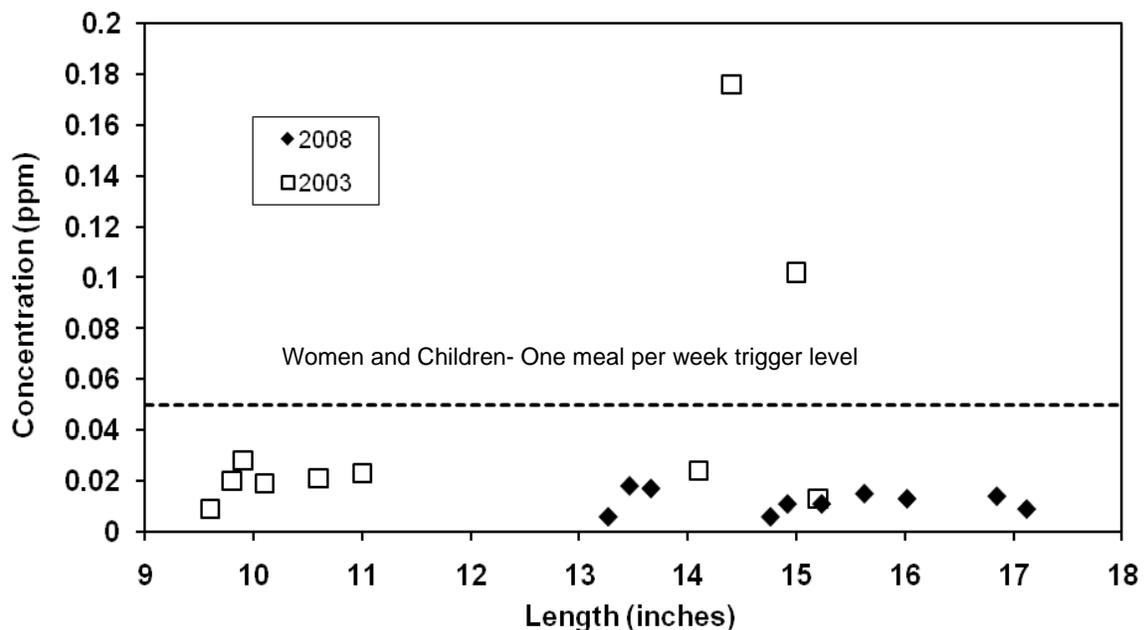


Figure 53. Total length versus total PCB concentration in white sucker collected from the Flat River, below Belding, Ionia County, in 1998 (ID 1998037), 2003 (ID 2003031), and 2008 (ID 2008217).

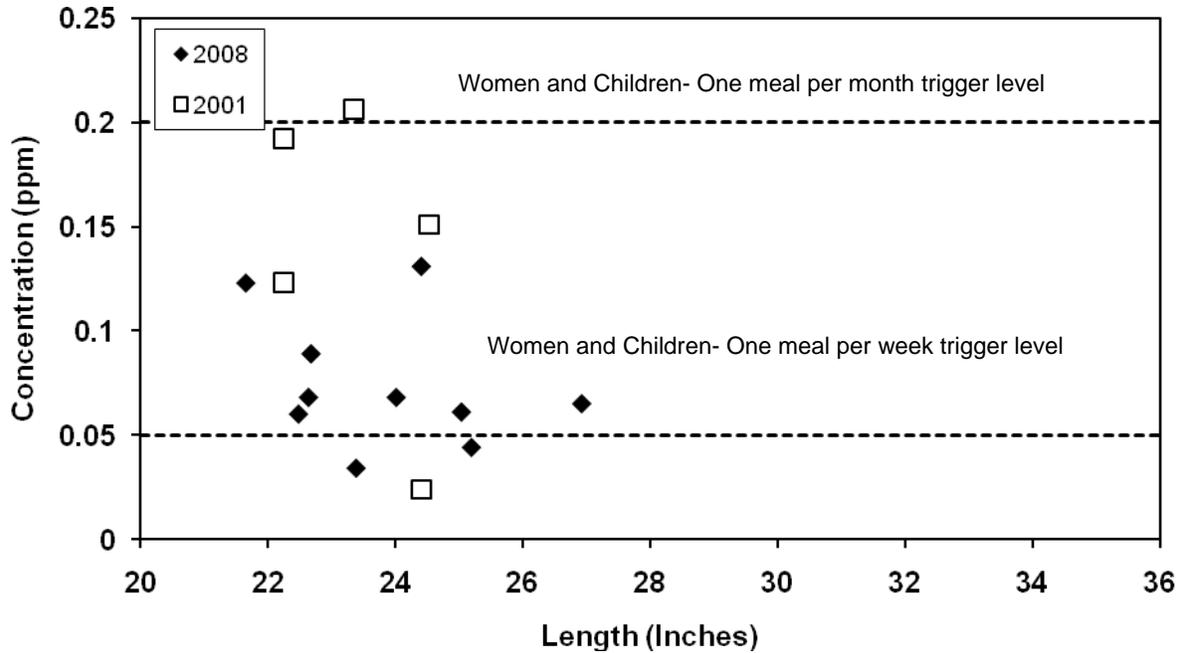


Figure 54. Total length versus total PCB concentration in northern pike collected from Goose Lake, Marquette County, in 2001 (ID 2001011) and 2008 (ID 2008221).

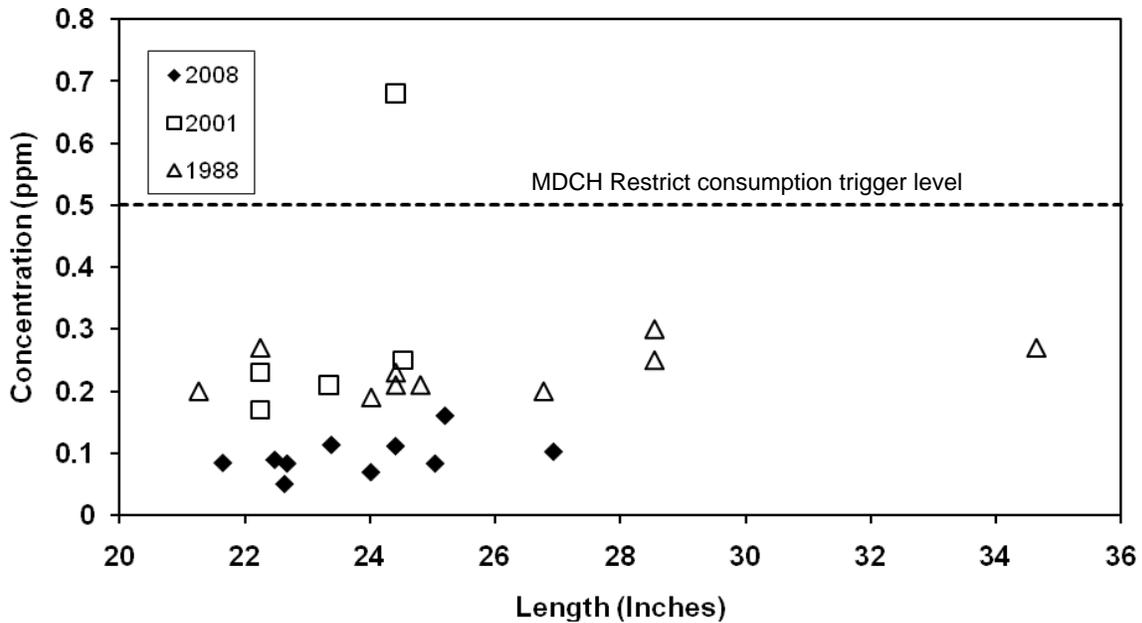


Figure 55. Total length versus total mercury concentration in northern pike collected from Goose Lake, Marquette County, in 1988 (ID 88045), 2001 (ID 2001011), and 2008 (ID 2008221).

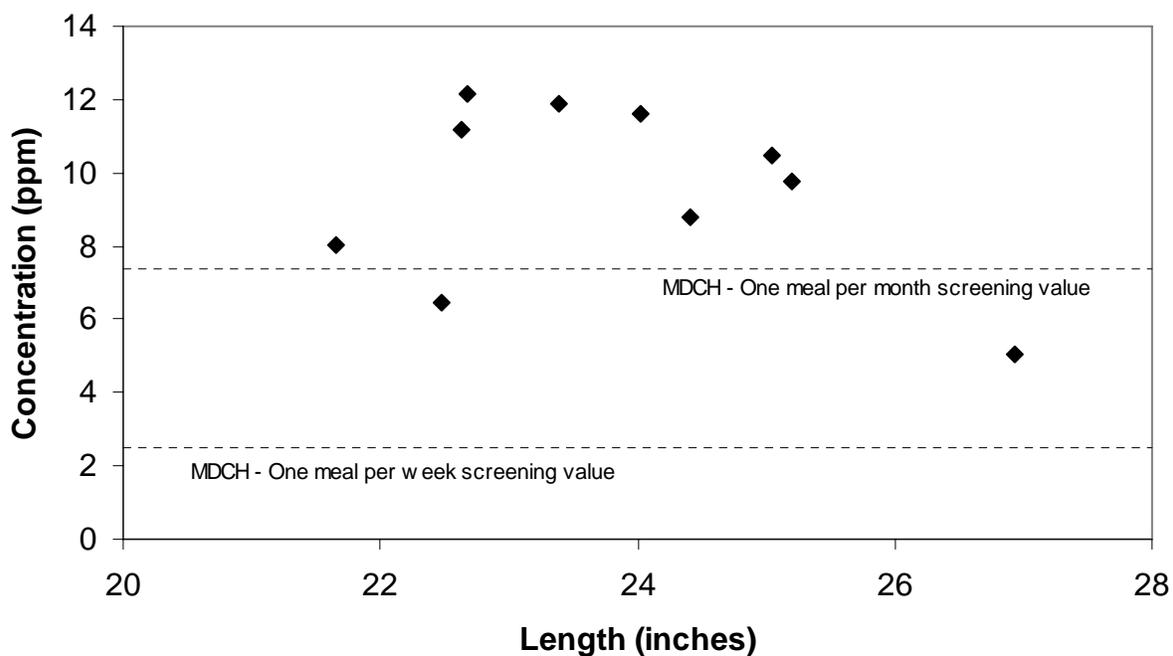


Figure 56. Total length versus selenium concentration in northern pike collected from Goose Lake, Marquette County, in 2008 (ID 2008221).

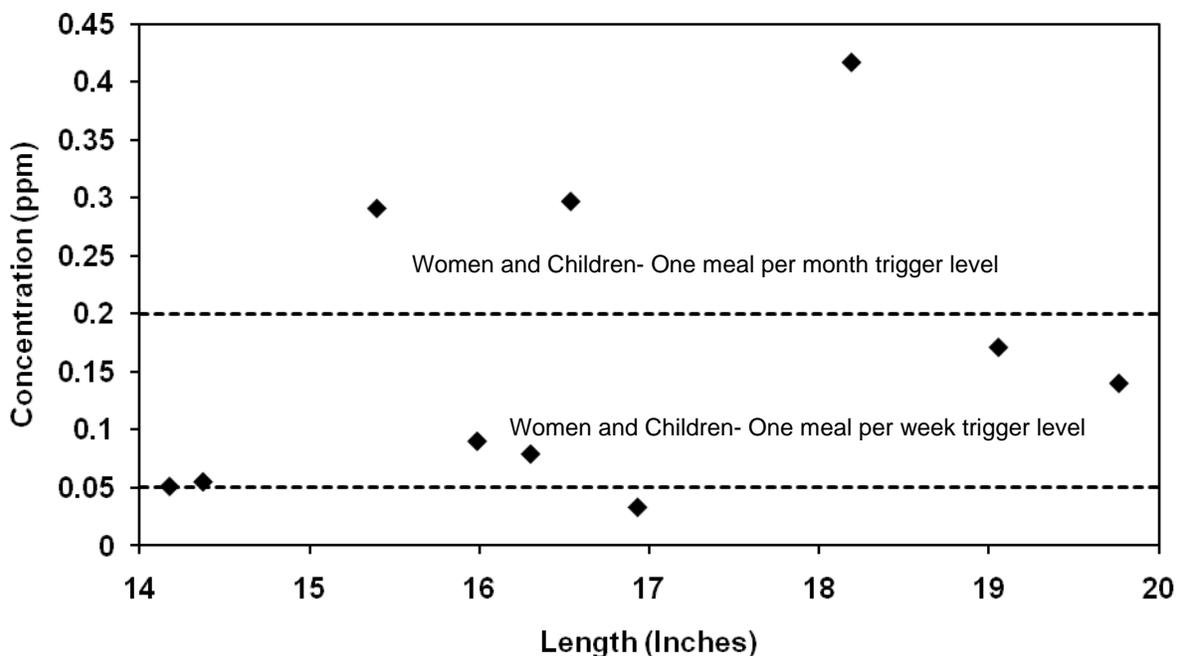


Figure 57. Total length versus total PCB concentration in white sucker collected from Goose Lake, Marquette County, in 2008 (ID 2008221).

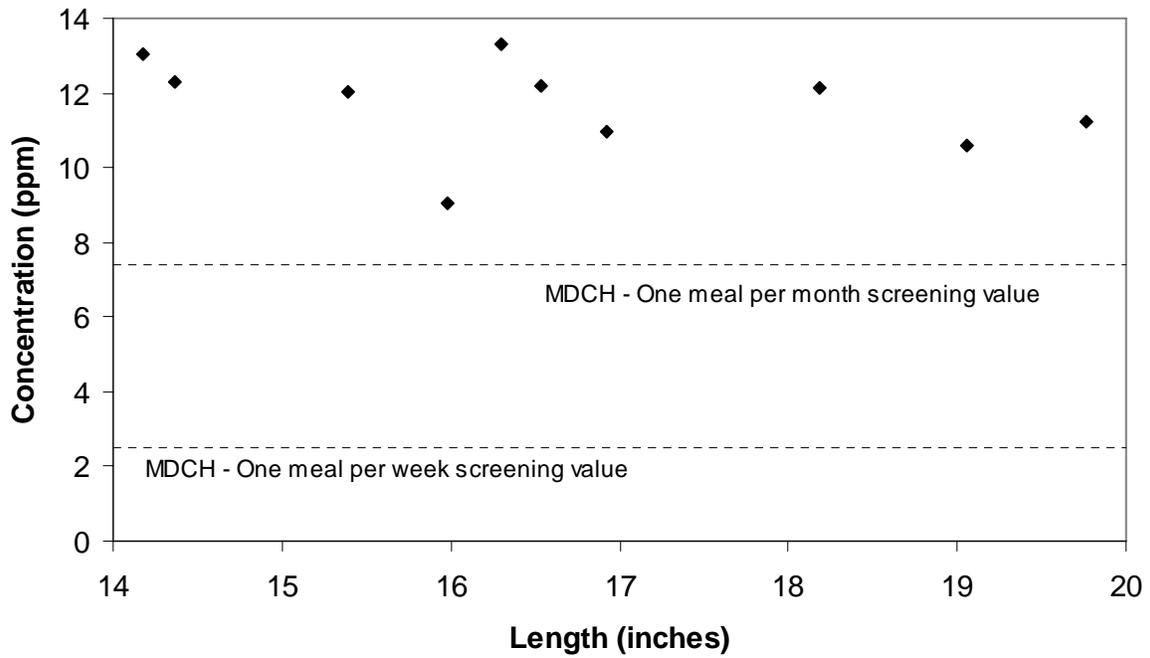


Figure 58. Total length versus selenium concentration in white sucker collected from Goose Lake, Marquette County, in 2008 (ID 2008221).

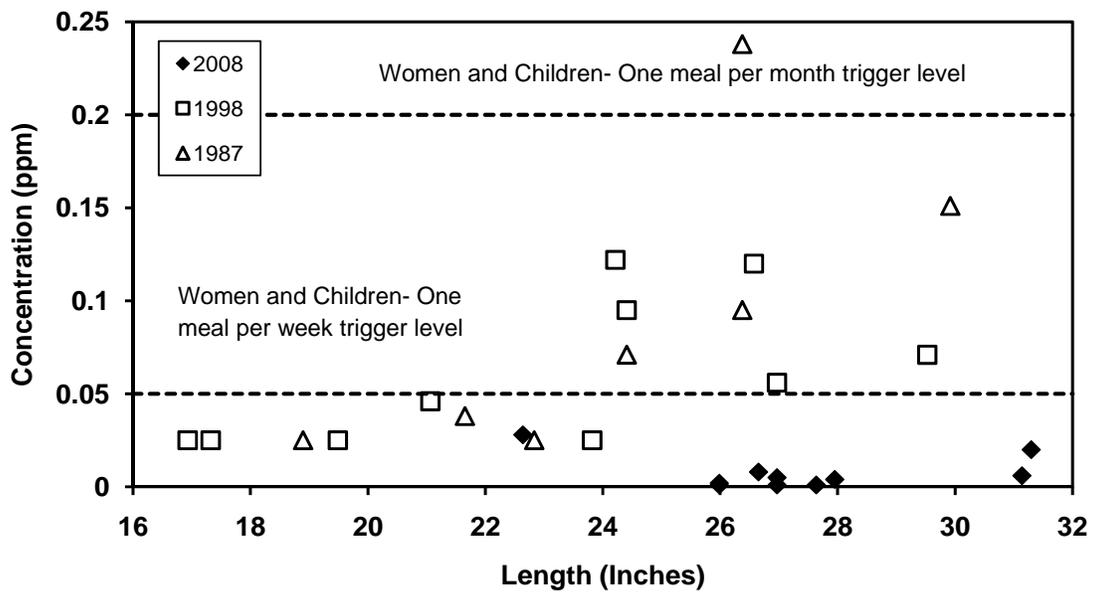


Figure 59. Total length versus total PCB concentration in carp collected from Houghton Lake, Roscommon County, in 1987 (ID 87063), 1998 (ID 1998127), and 2008 (ID 2008222).

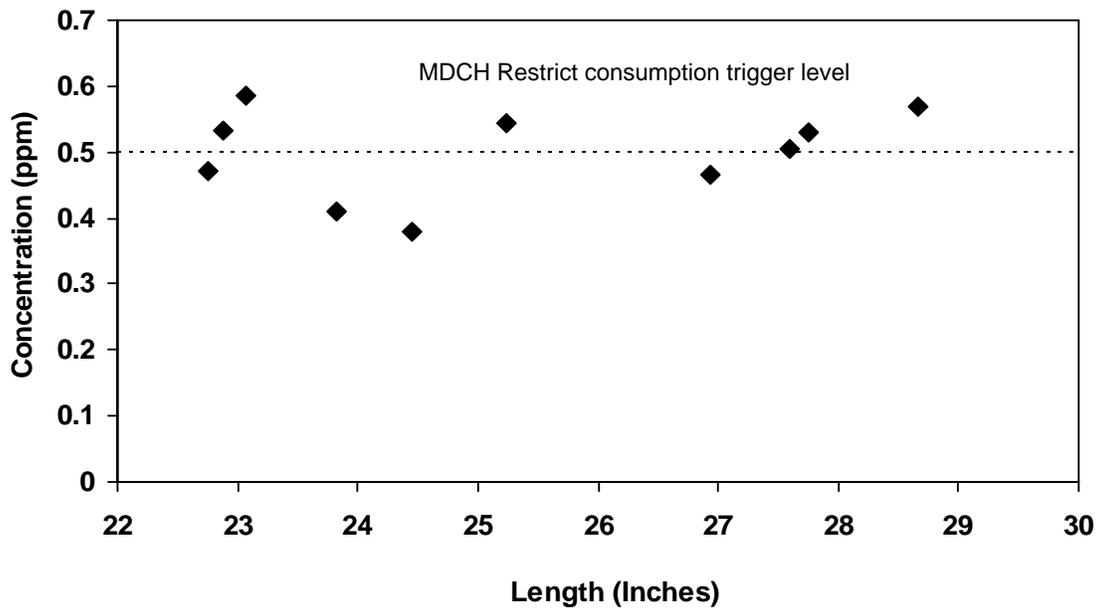


Figure 60. Total length versus total mercury concentration in northern pike collected from Hutchins Lake, Allegan County, in 2007 (ID 2007218).

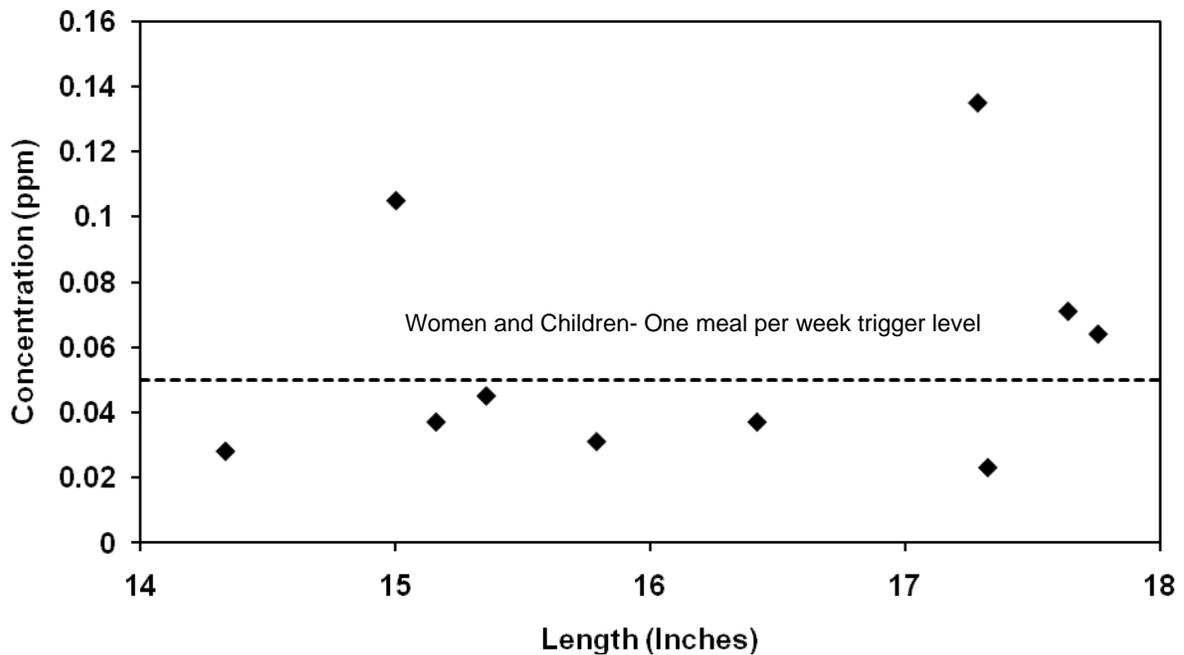


Figure 61. Total length versus total PCB concentration in largemouth bass collected from Lake Macatawa, Ottawa County, in 2008 (ID 2008262).

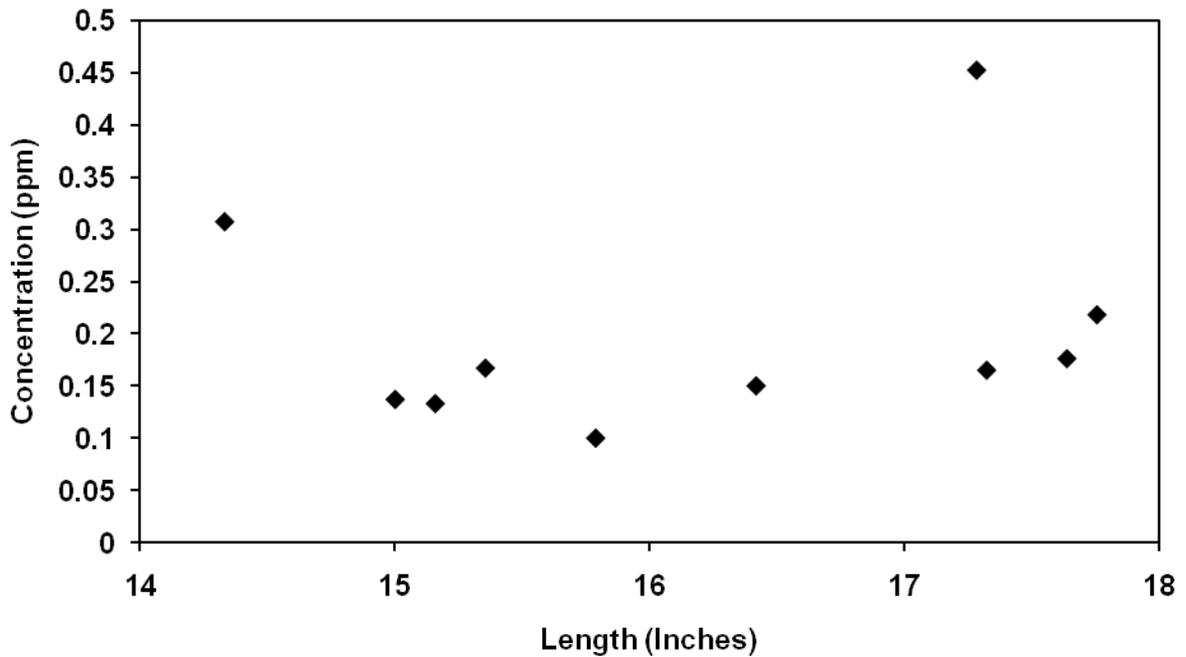


Figure 62. Total length versus total mercury concentration in largemouth bass collected from Lake Macatawa, Ottawa County, in 2008 (ID 2008262).

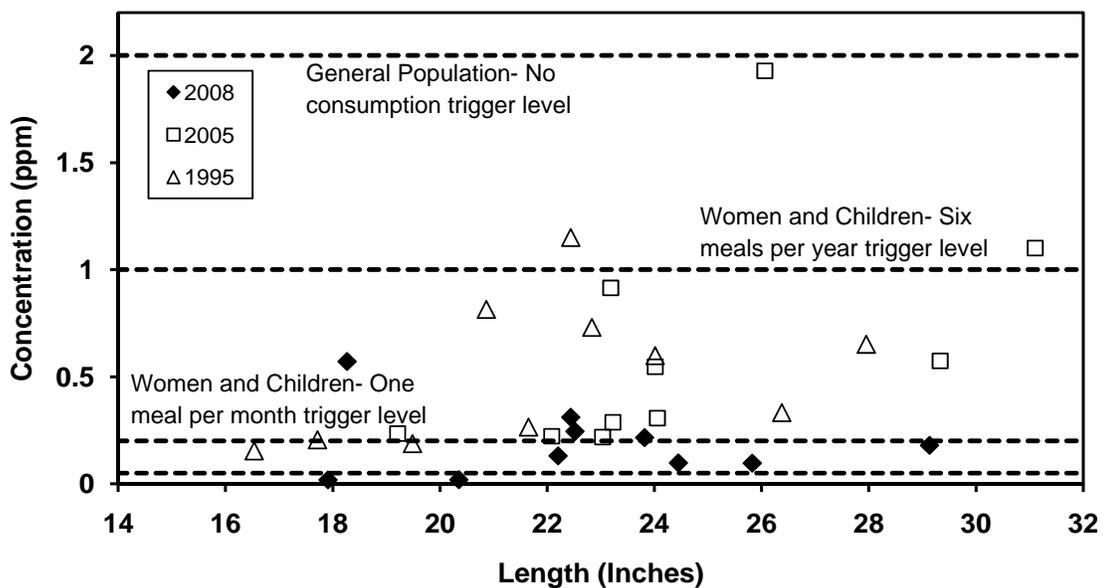


Figure 63. Total length versus total PCB concentration in walleye collected from Lake Macatawa, Ottawa County, in 1995 (ID 95006), 2005 (ID 2005047), and 2008 (ID 2008262).

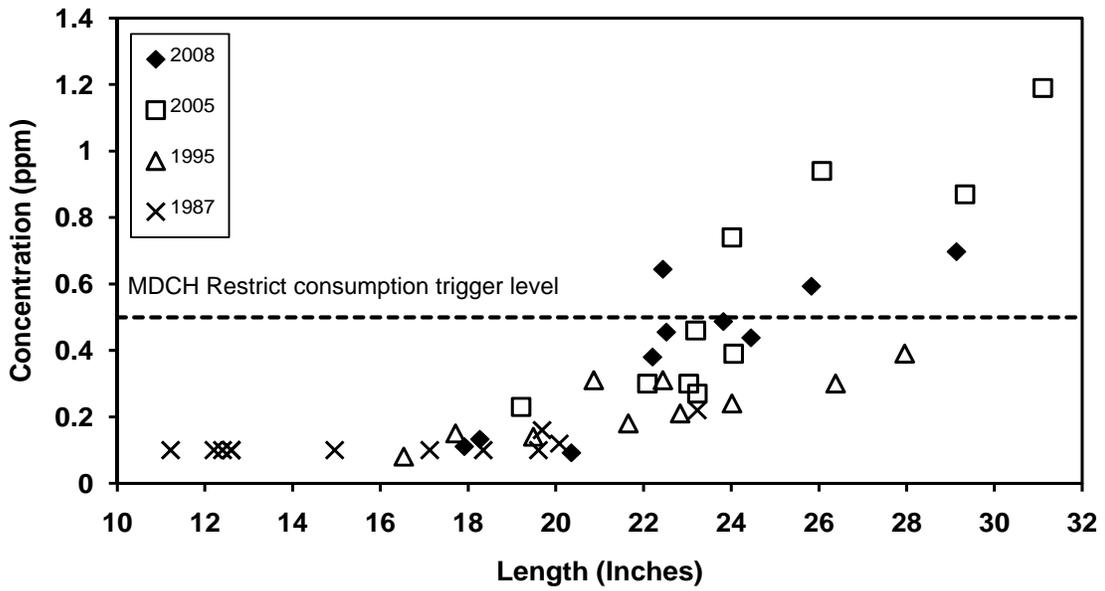


Figure 64. Total length versus total mercury concentration in walleye collected from Lake Macatawa, Ottawa County, in 1987 (ID 87061), 1995 (ID 95006), 2005 (ID 2005047), and 2008 (ID 2008262).

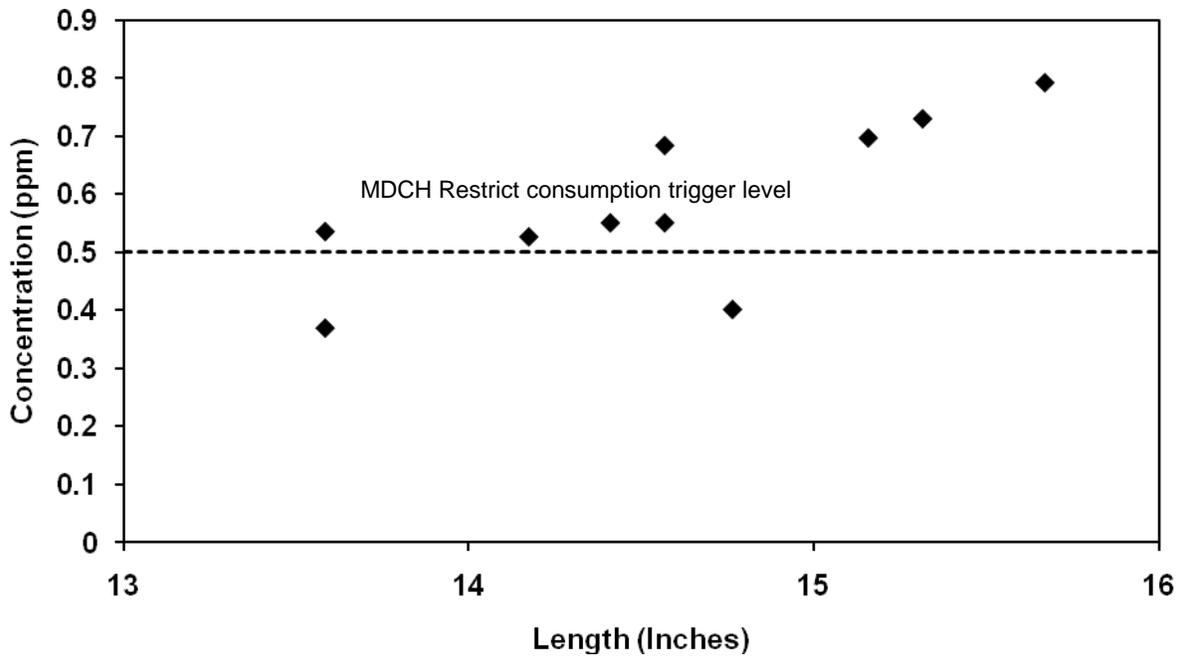


Figure 65. Total length versus total mercury concentration in largemouth bass collected from Little Whitefish Lake, Montcalm County, in 2008 (ID 2008234).

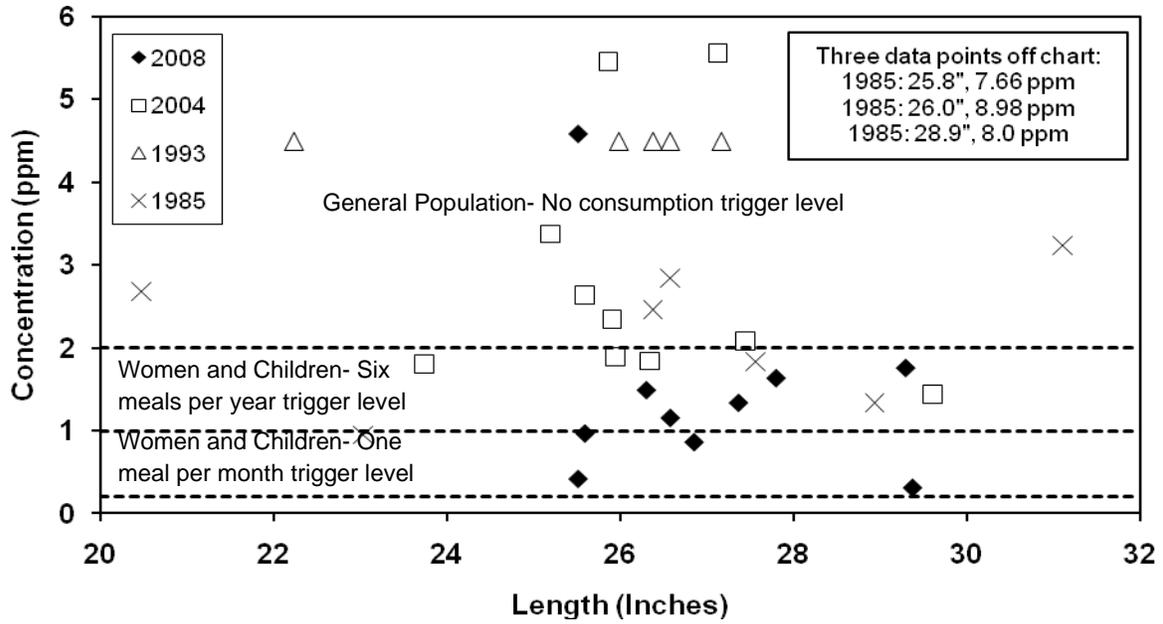


Figure 66. Total length versus total PCB concentration in carp collected from the Manistique River, below the Manistique Papers Dam, in 1985 (ID 85008), 1993 (ID 93033), 2004 (ID 2004072), and 2008 (ID 2008235).

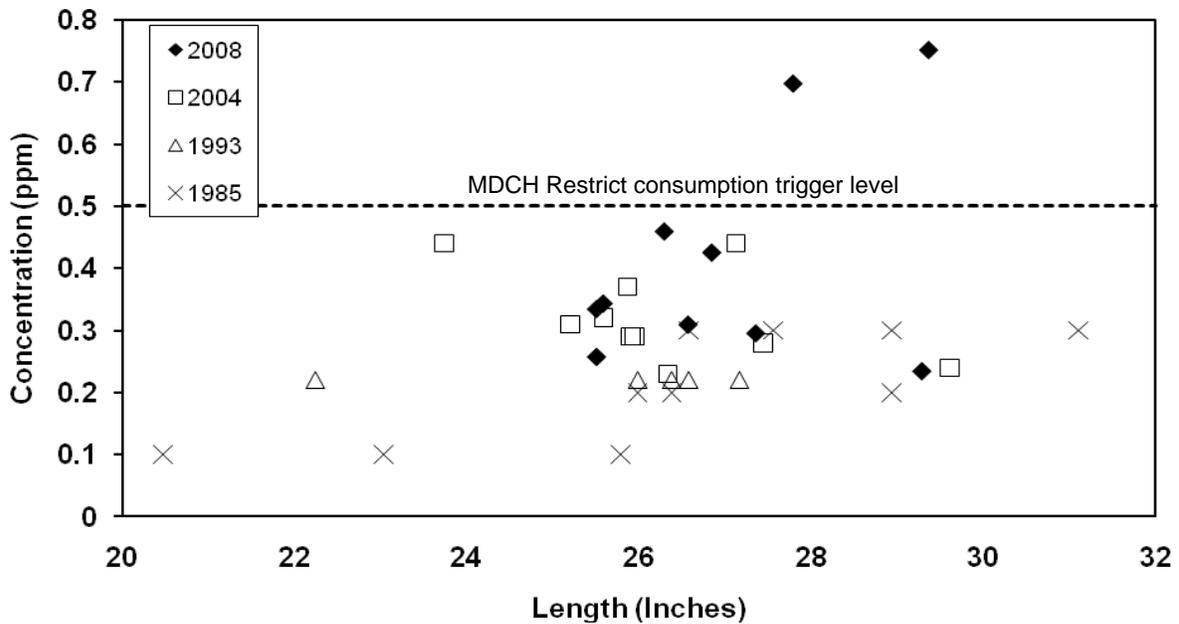


Figure 67. Total length versus total mercury concentration in carp collected from the Manistique River, below the Manistique Papers Dam, in 1985 (ID 85008), 1993 (ID 93033), 2004 (ID 2004072), and 2008 (ID 2008235).

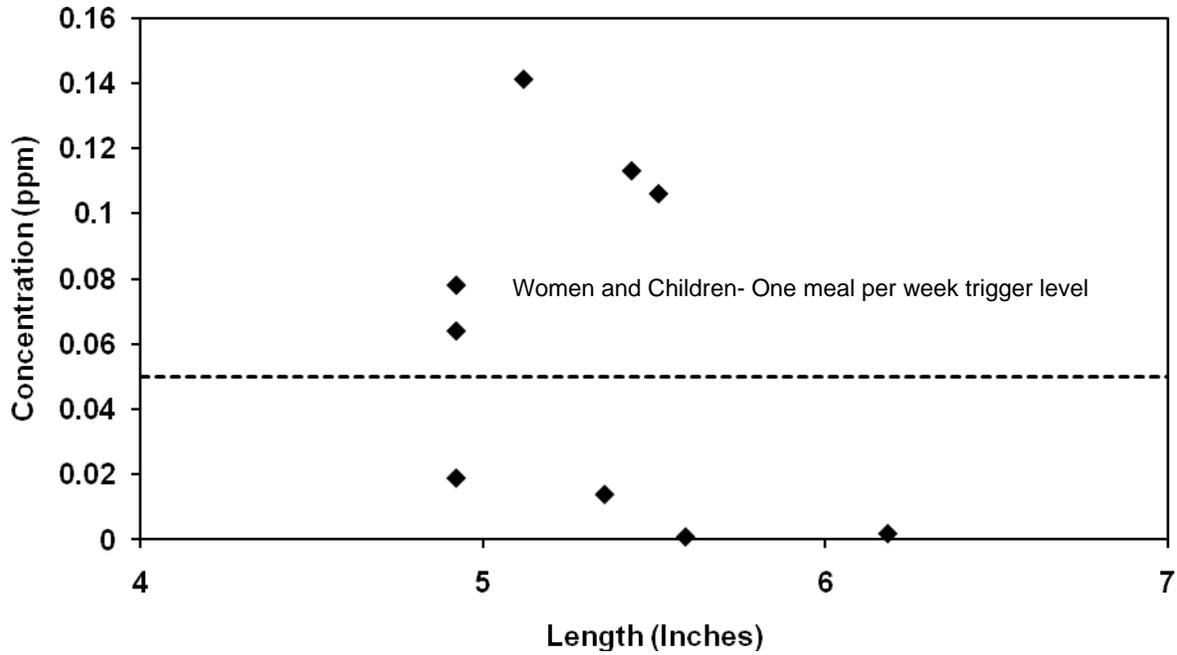


Figure 68. Total length versus total PCB concentration in pumpkinseed collected from the Manistique River, below the Manistique Papers Dam, in 2008 (ID 2008235).

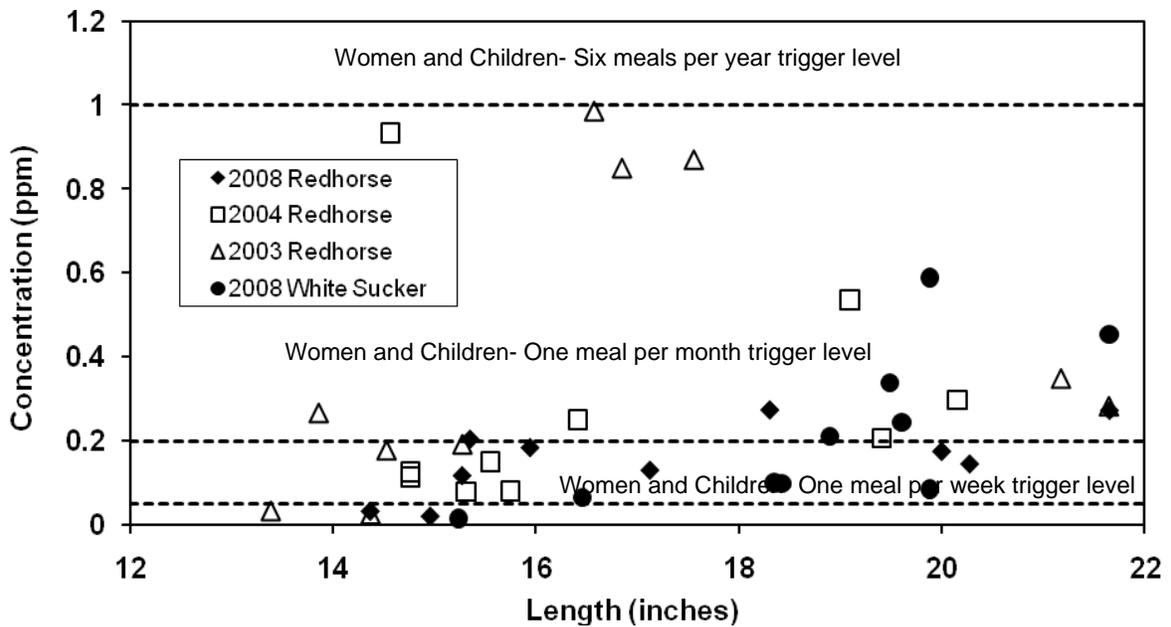


Figure 69. Total length versus total PCB concentration in suckers collected from the Manistique River, below the Manistique Papers Dam, in 2003 (ID 2003077), 2004 (ID 2004072), and 2008 (ID 2008235).

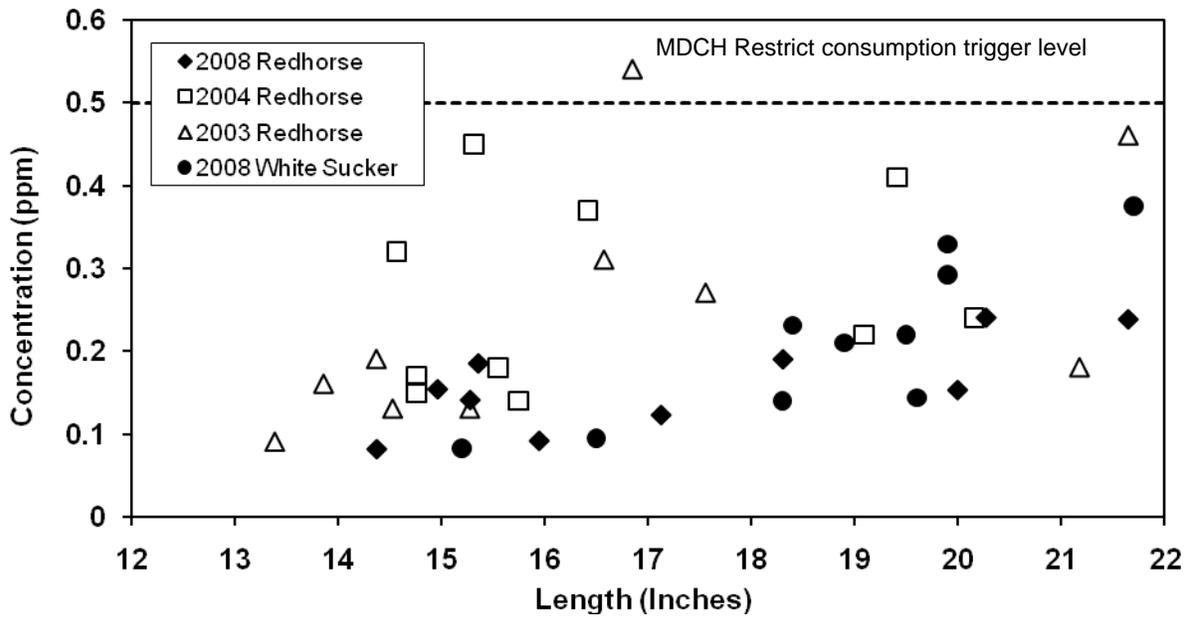


Figure 70. Total length versus total mercury concentration in suckers collected from the Manistique River, below the Manistique Papers Dam, in 2003 (ID 2003077), 2004 (ID 2004072), and 2008 (ID 2008235).

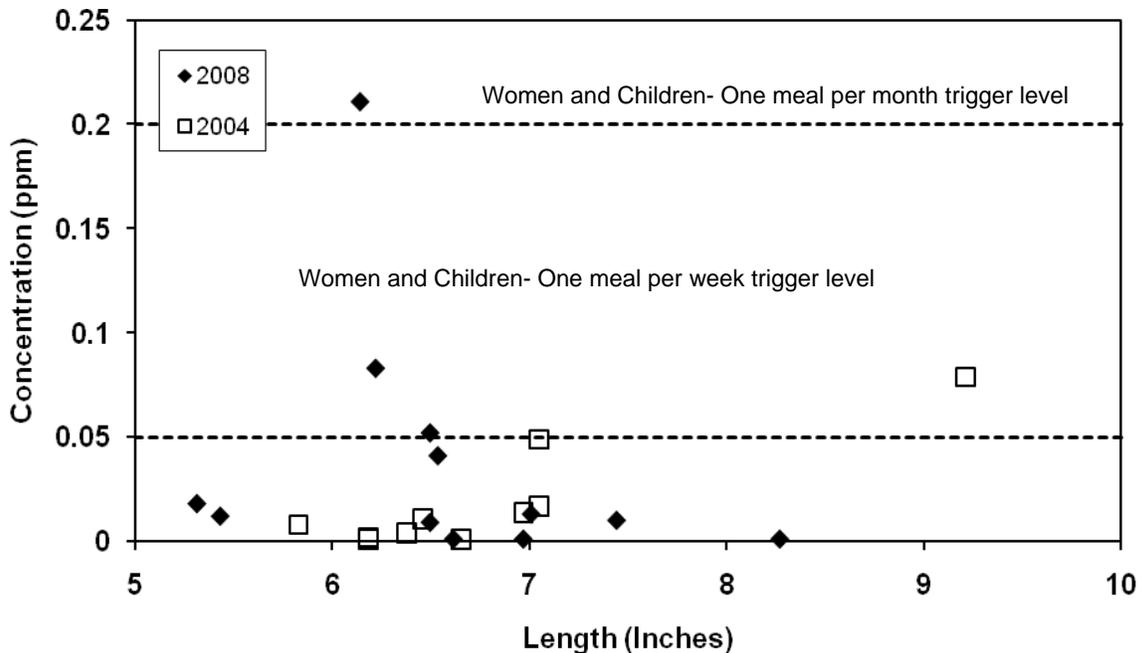


Figure 71. Total length versus total PCB concentration in rock bass collected from the Manistique River, below the Manistique Papers Dam, in 2004 (ID 2004072) and 2008 (ID 2008235).

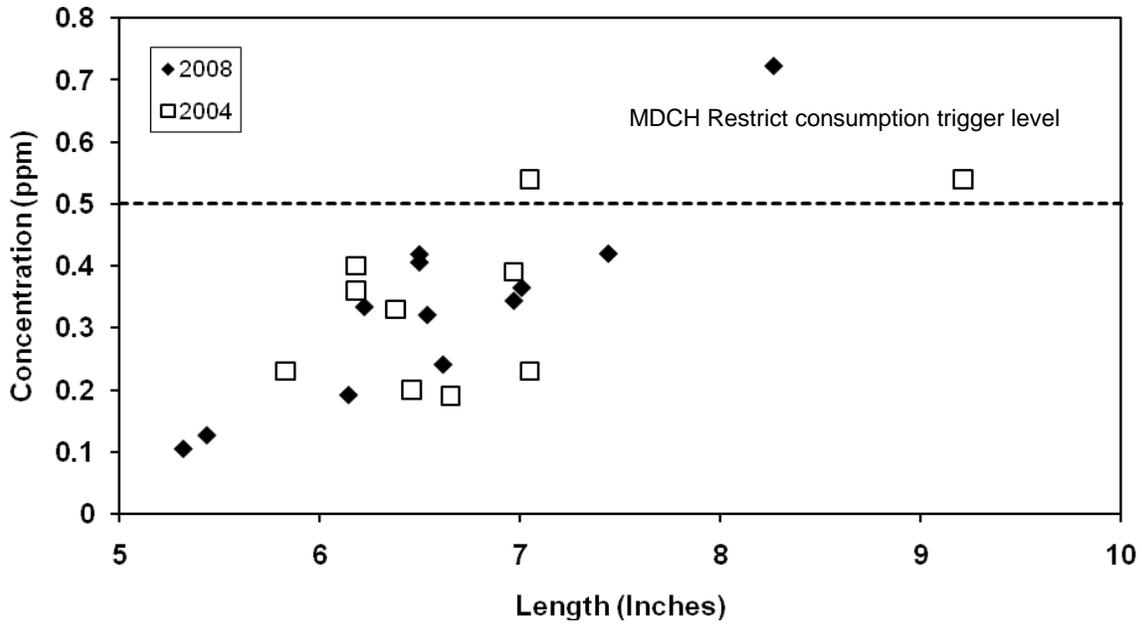


Figure 72. Total length versus total mercury concentration in rock bass collected from the Manistique River, below the Manistique Papers Dam, in 2004 (ID 2004072) and 2008 (ID 2008235).

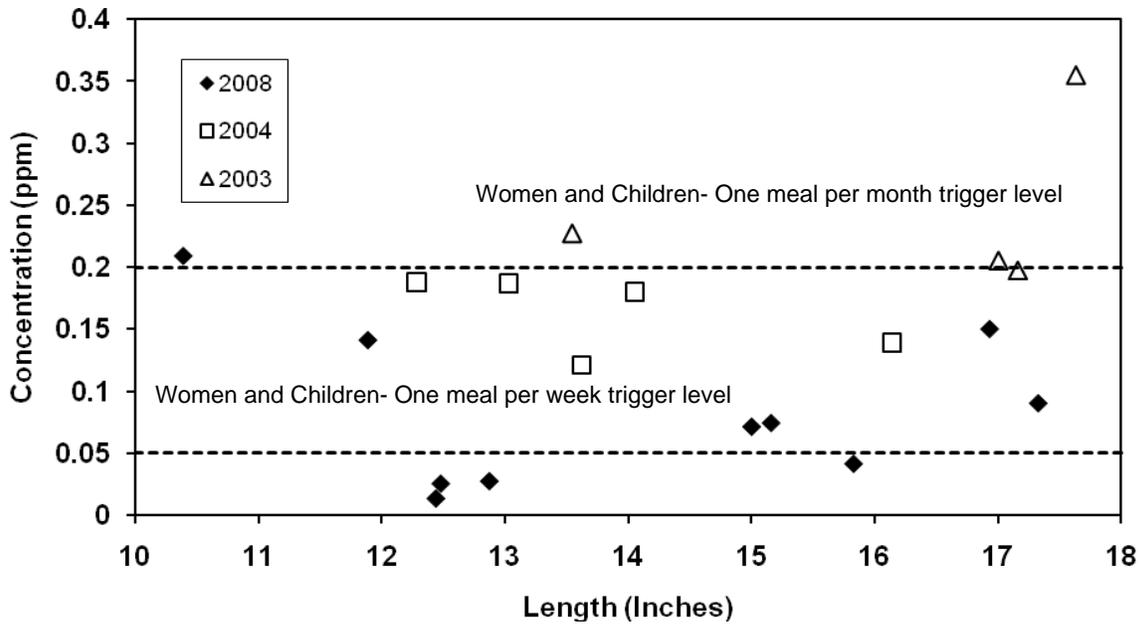


Figure 73. Total length versus total PCB concentration in smallmouth bass collected from the Manistique River, below the Manistique Papers Dam, in 2003 (ID 2003077), 2004 (ID 2004072), and 2008 (ID 2008235).

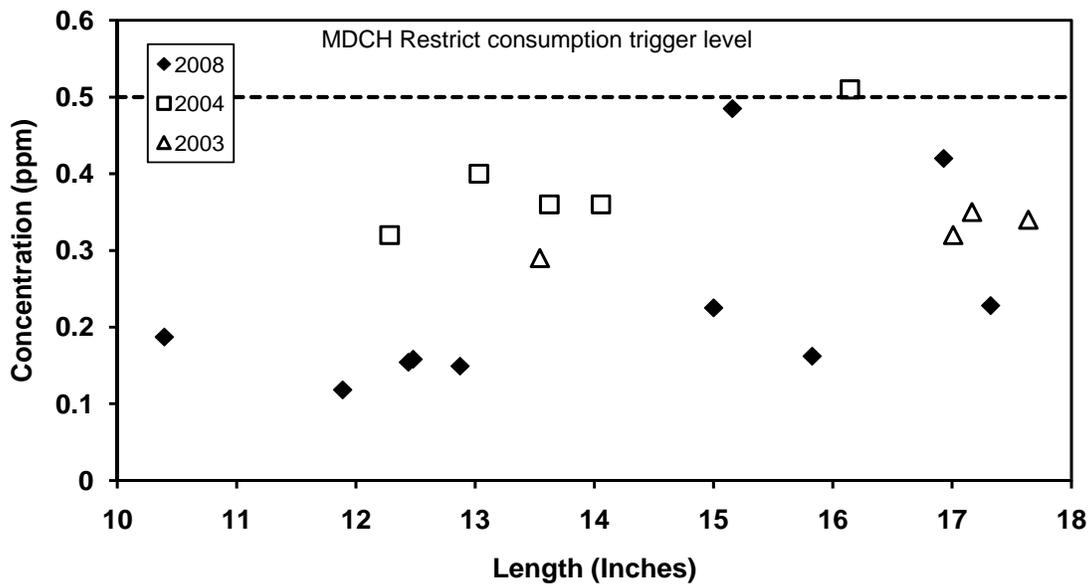


Figure 74. Total length versus total mercury concentration in smallmouth bass collected from the Manistique River, below the Manistique Papers Dam, in 2003 (ID 2003077), 2004 (ID 2004072), and 2008 (ID 2008235).



Figure 75. Total length versus total PCB concentration in walleye collected from Muskegon Lake, Muskegon County, in 1993 (ID 93071), 2002 (ID 2002071), and 2008 (ID 2008239).

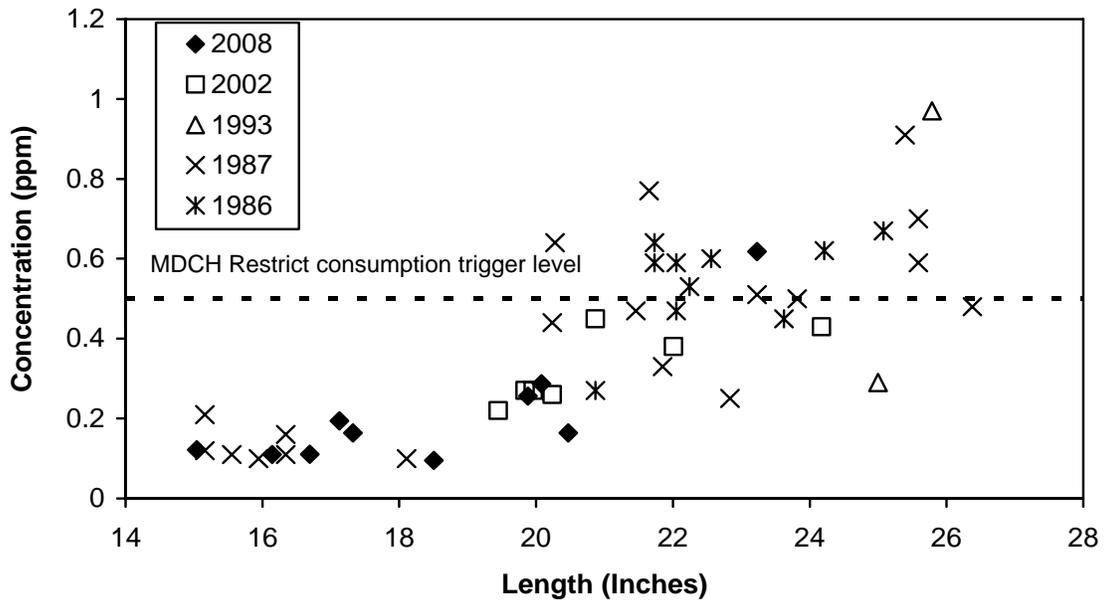


Figure 76. Total length versus total mercury concentration in walleye collected from Muskegon Lake, Muskegon County, in 1986 (ID 86061), 1987 (ID 87054), 1993 (ID 93071), 2002 (ID 2002071), and 2008 (ID 2008239).

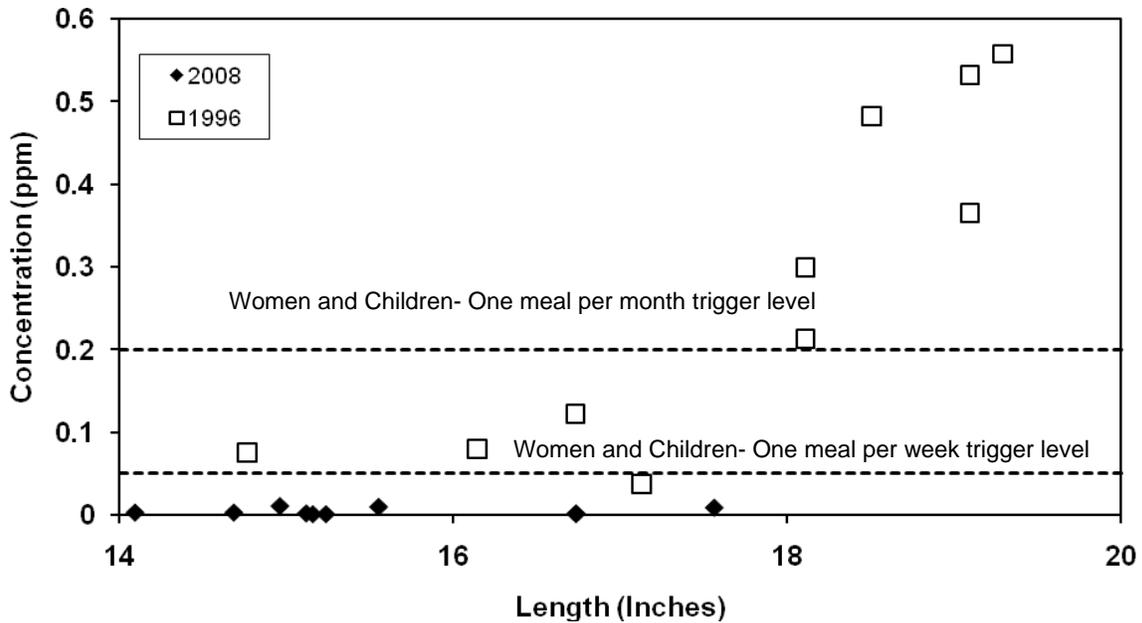


Figure 77. Total length versus total PCB concentration in redhorse sucker collected from the Muskegon River, downstream of Croton Dam, in 1996 (ID 96042) and 2008 (ID 2008240).

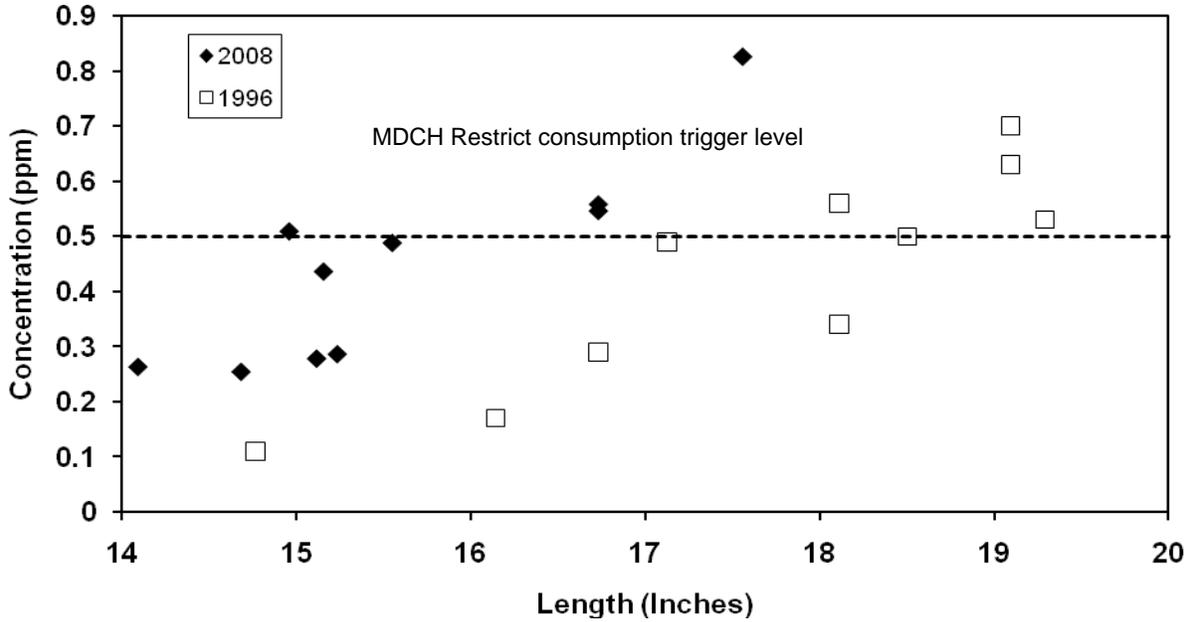


Figure 78. Total length versus total mercury concentration in redhorse sucker collected from the Muskegon River, downstream of Croton Dam, in 1996 (ID 96042) and 2008 (ID 2008240).

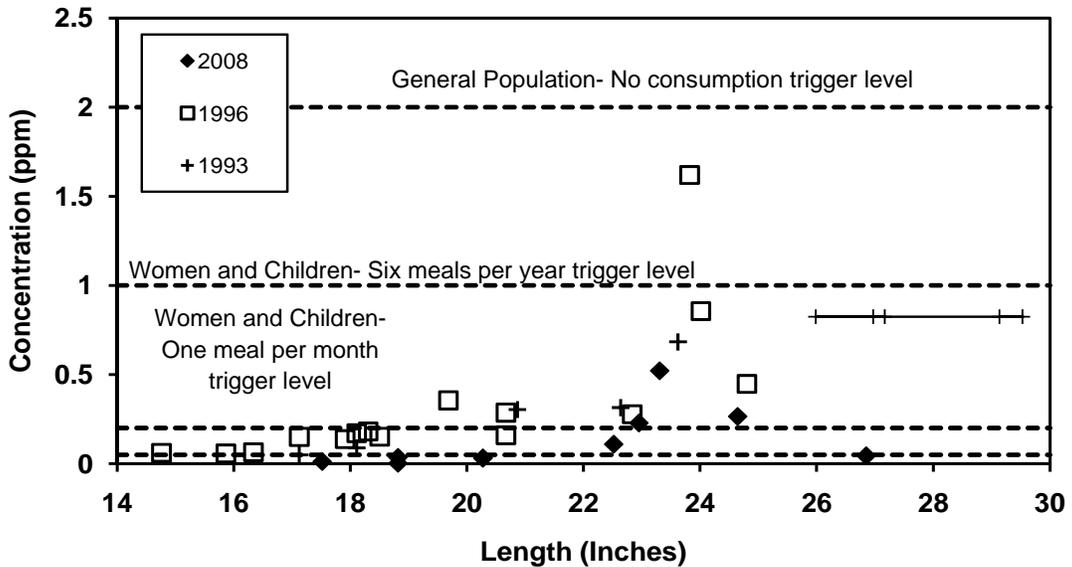


Figure 79. Total length versus total PCB concentration in walleye collected from the Muskegon River, downstream of Croton Dam, in 1993 (ID 93011), 1996 (ID 96042), and 2008 (ID 2008240).

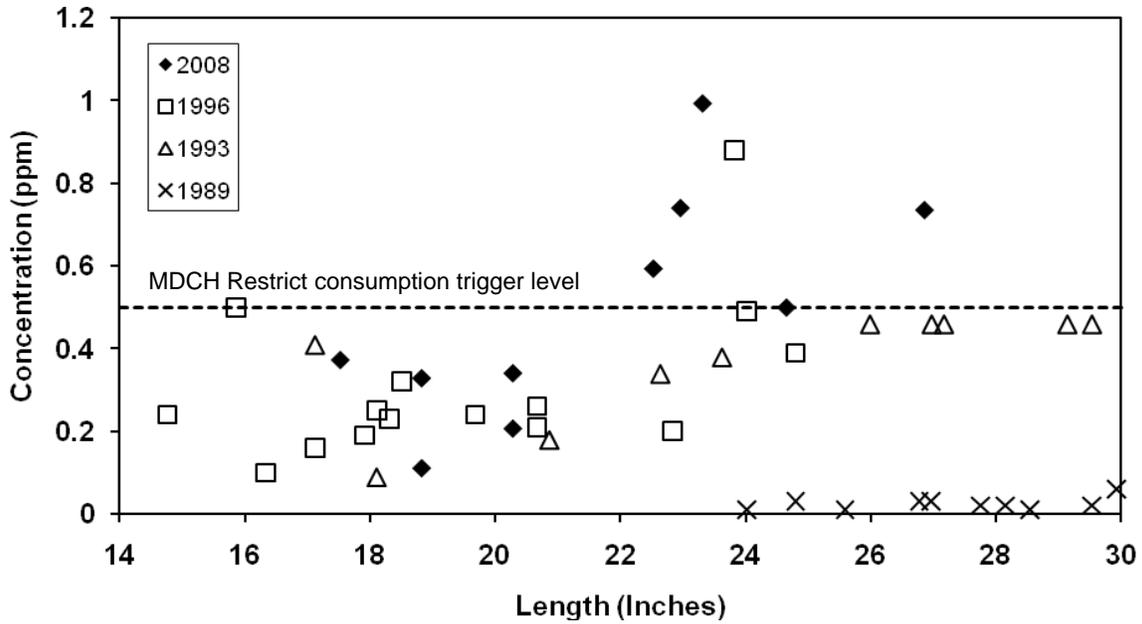


Figure 80. Total length versus total mercury concentration in walleye collected from the Muskegon River, downstream of Croton Dam, in 1989 (ID 89002), 1993 (ID 93011), 1996 (ID 96042), and 2008 (ID 2008240).

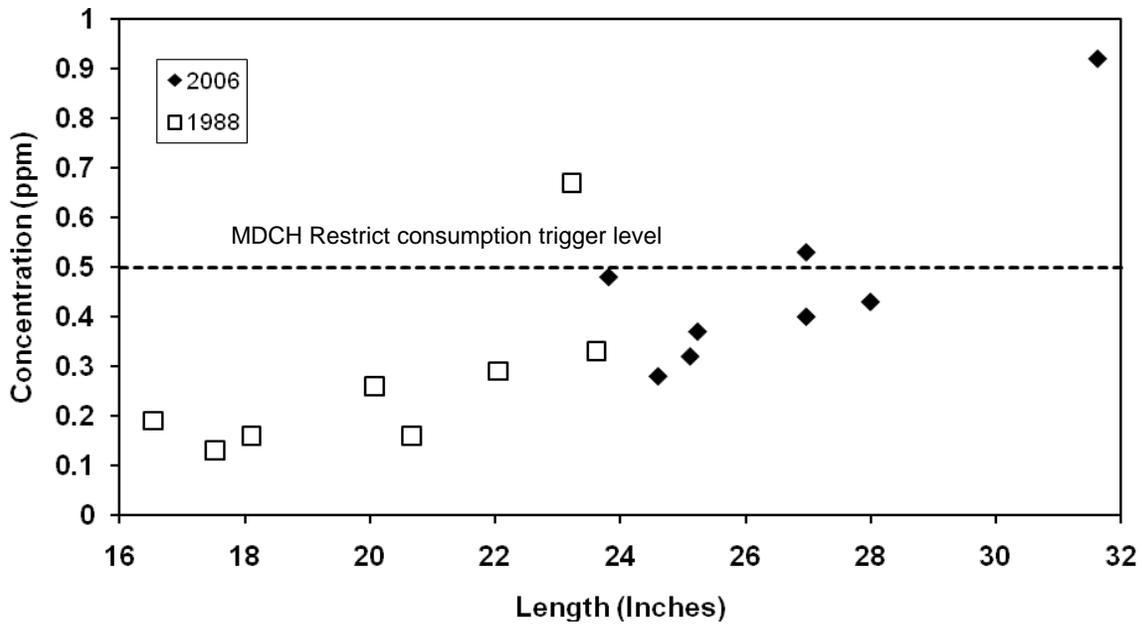


Figure 81. Total length versus total mercury concentration in northern pike collected from Perch Lake, Iron County, in 1988 (ID 88051) and 2006 (ID 2006064).

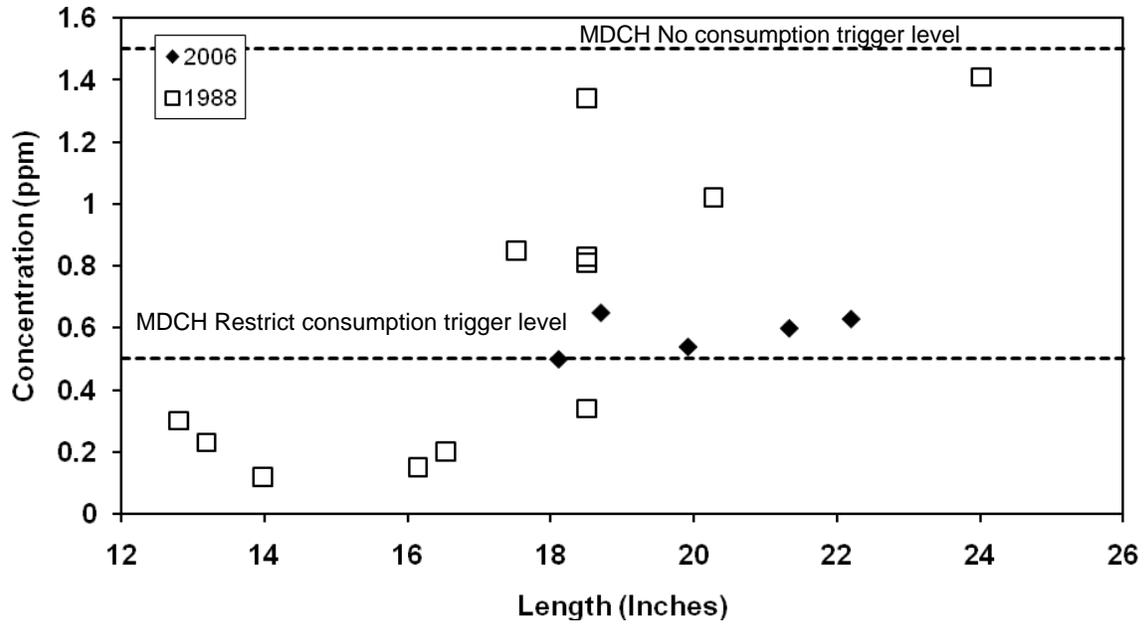


Figure 82. Total length versus total mercury concentration in walleye collected from Perch Lake, Iron County, in 1988 (ID 88051) and 2006 (ID 2006064).

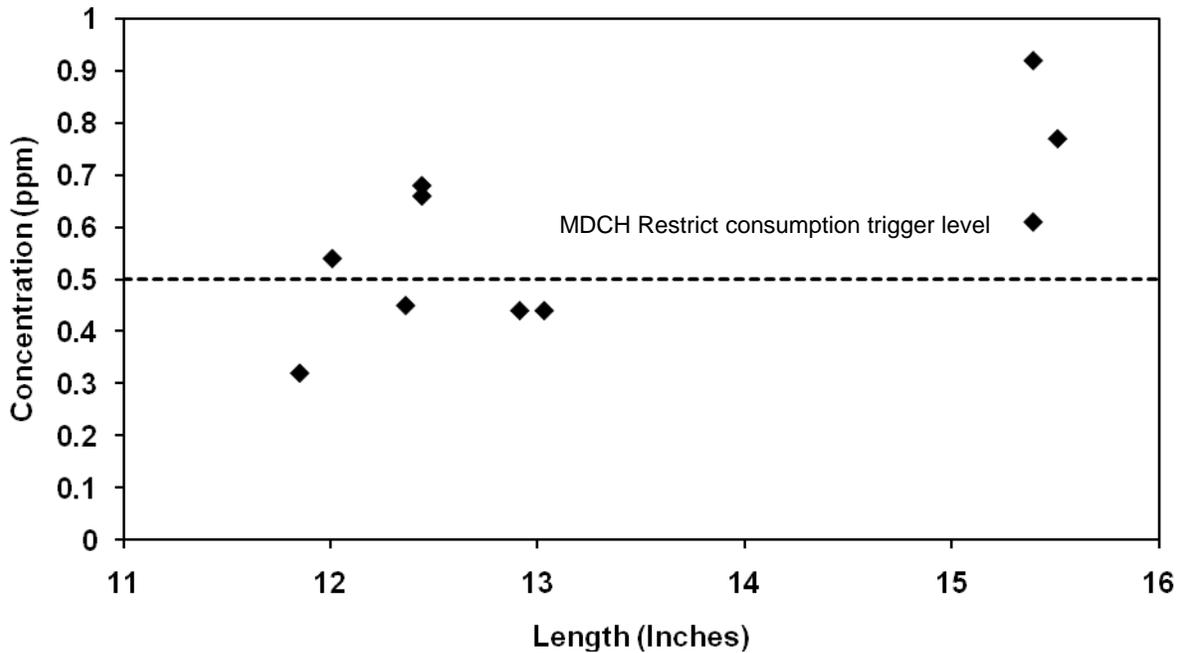


Figure 83. Total length versus total mercury concentration in largemouth bass collected from Rock Lake, Montcalm County, in 2007 (ID 2007248).

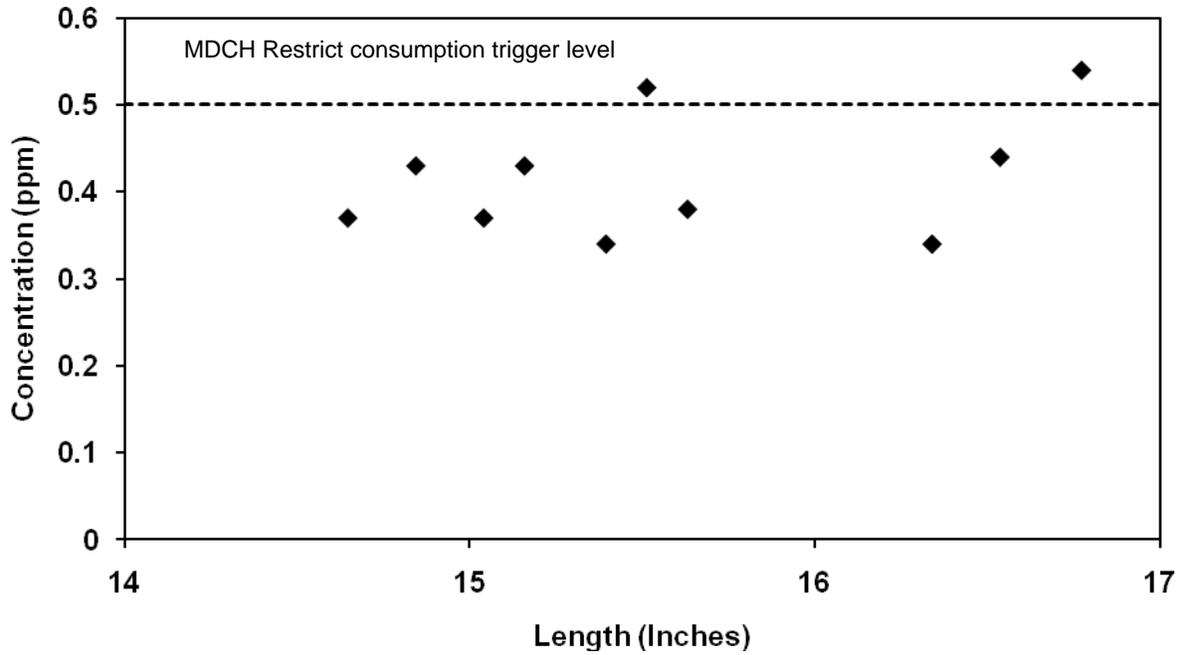


Figure 84. Total length versus total mercury concentration in walleye collected from Rock Lake, Montcalm County, in 2007 (ID 2007248).

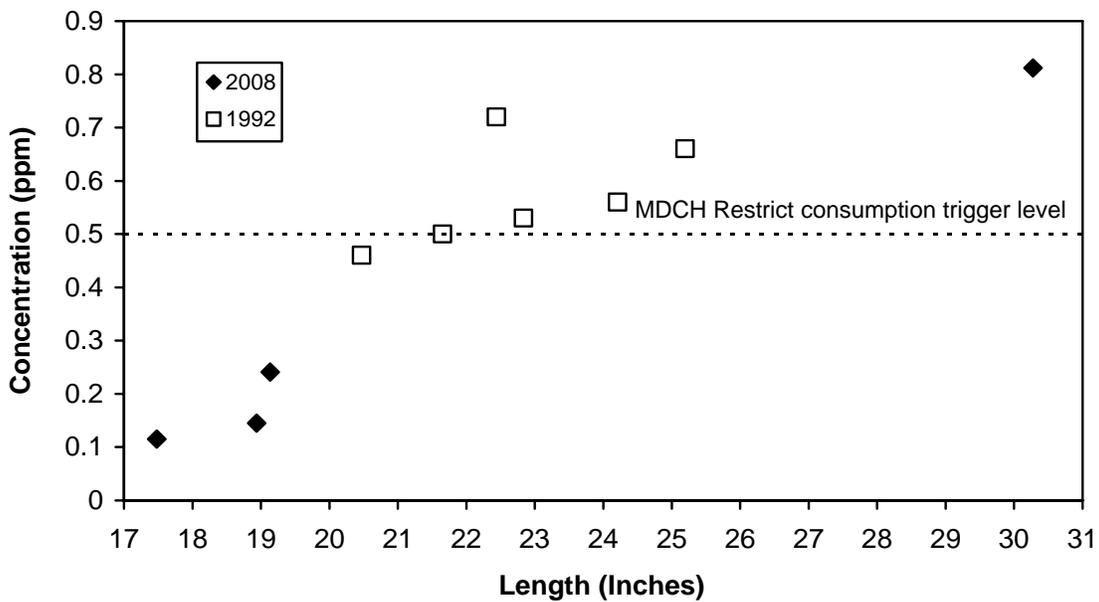


Figure 85. Total length versus total mercury concentration in northern pike collected from the Schweitzer Reservoir, Marquette County, in 1992 (ID 92047) and 2008 (ID 2008272).

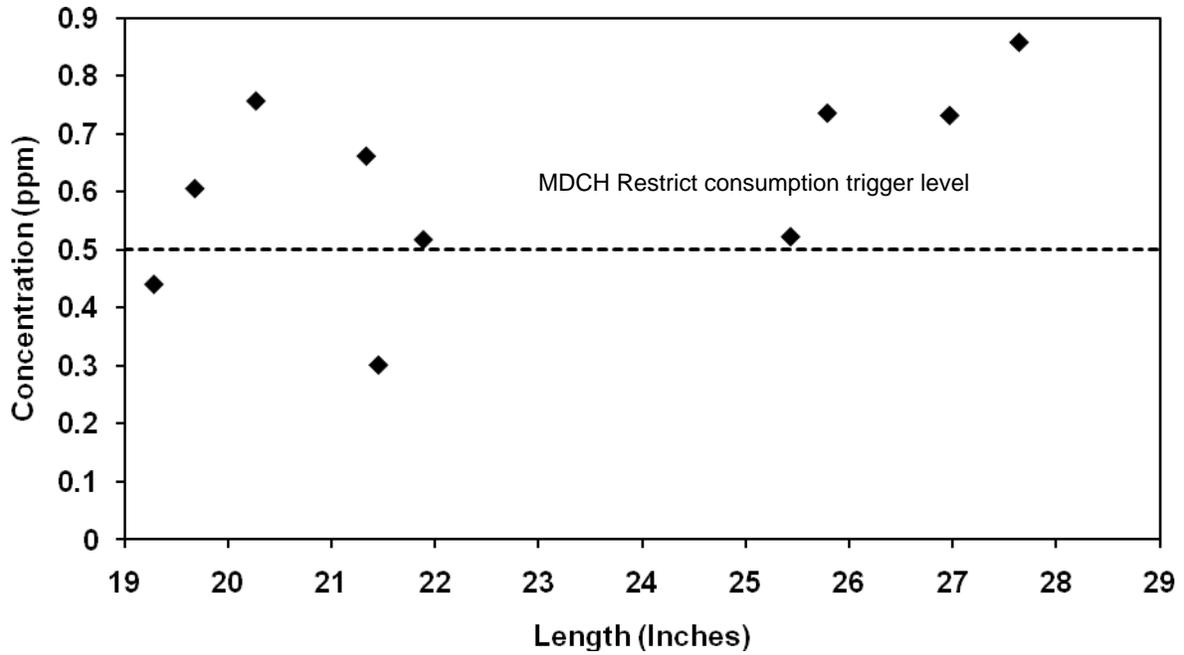


Figure 86. Total length versus total mercury concentration in northern pike collected from the Shakey Lakes, Menominee County, in 2007 (ID 2007275).

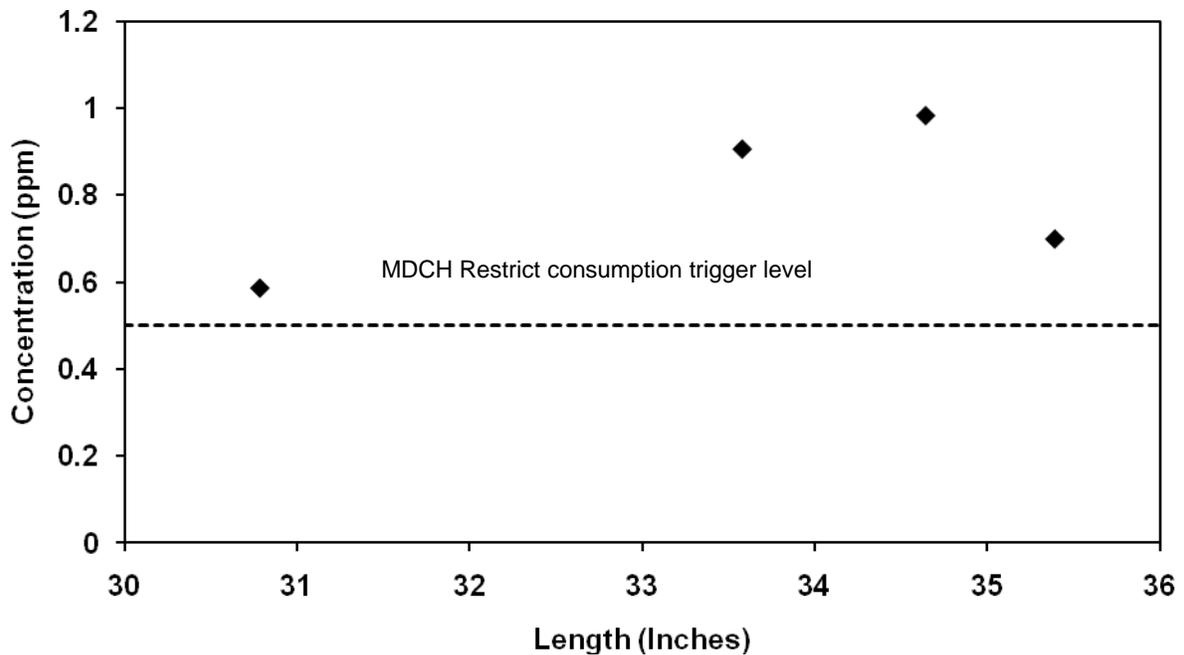


Figure 87. Total length versus total mercury concentration in northern pike collected from Three Mile Lake, Van Buren County, in 2007 (ID 2007264).

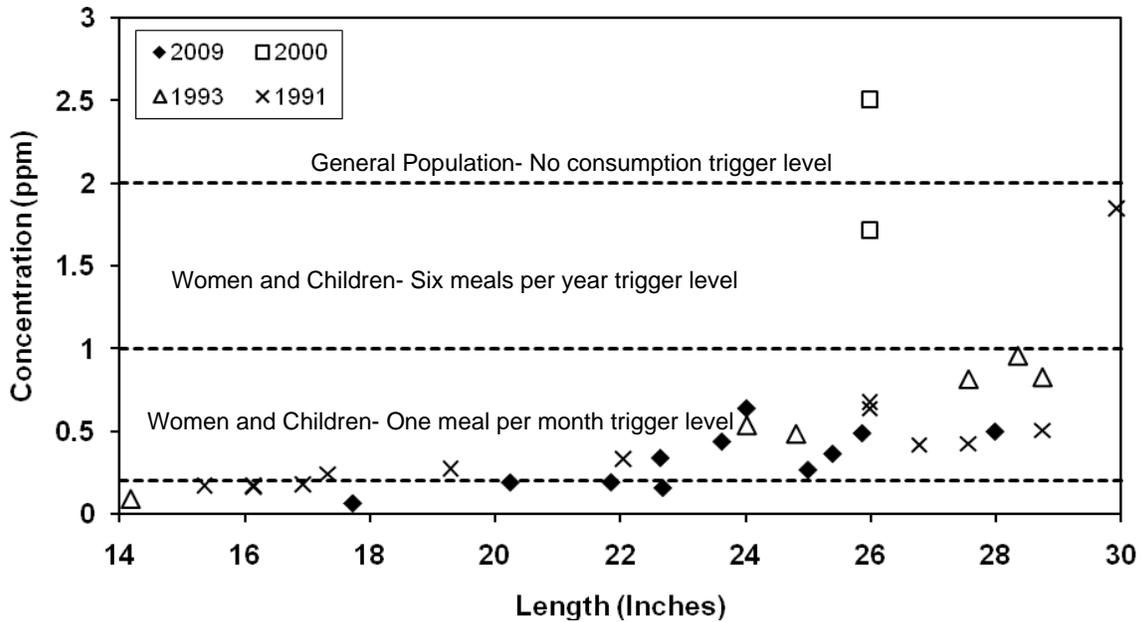


Figure 88. Total length versus total PCB concentration in lake trout collected from Torch Lake, Antrim County, in 1991 (ID 91035), 1993 (ID 93085), 2000 (ID 2000125), and 2009 (ID 2009300).

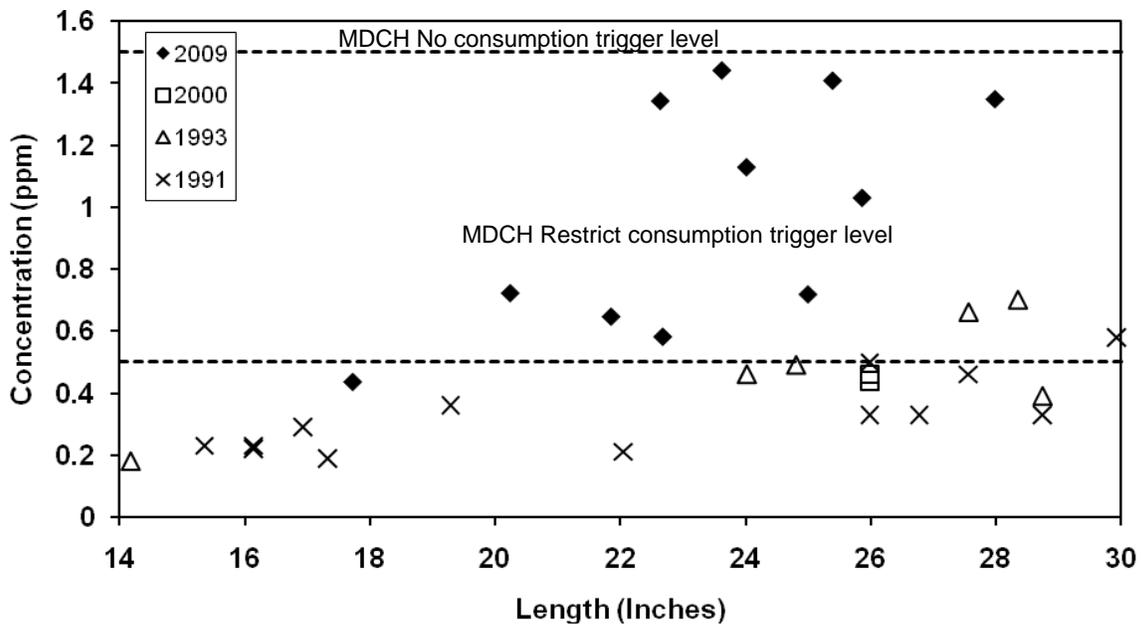


Figure 89. Total length versus total mercury concentration in lake trout collected from Torch Lake, Antrim County, in 1991 (ID 91035), 1993 (ID 93085), 2000 (ID 2000125), and 2009 (ID 2009300).

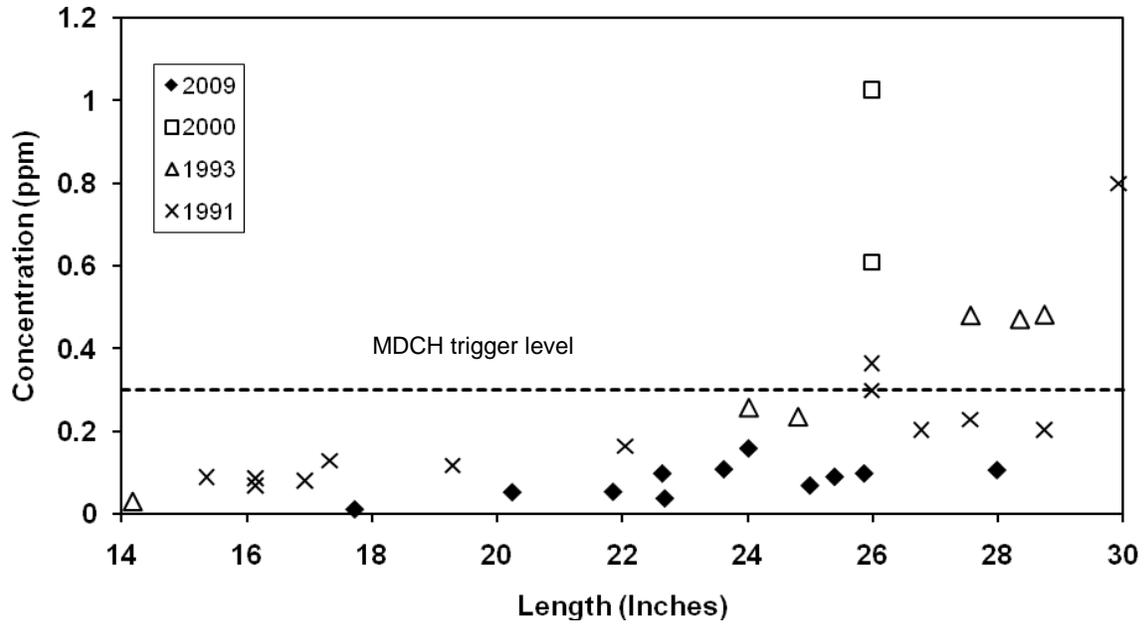


Figure 90. Total length versus total chlordane concentration in lake trout collected from Torch Lake, Antrim County, in 1991 (ID 91035), 1993 (ID 93085), 2000 (ID 2000125), and 2009 (ID 2009300).

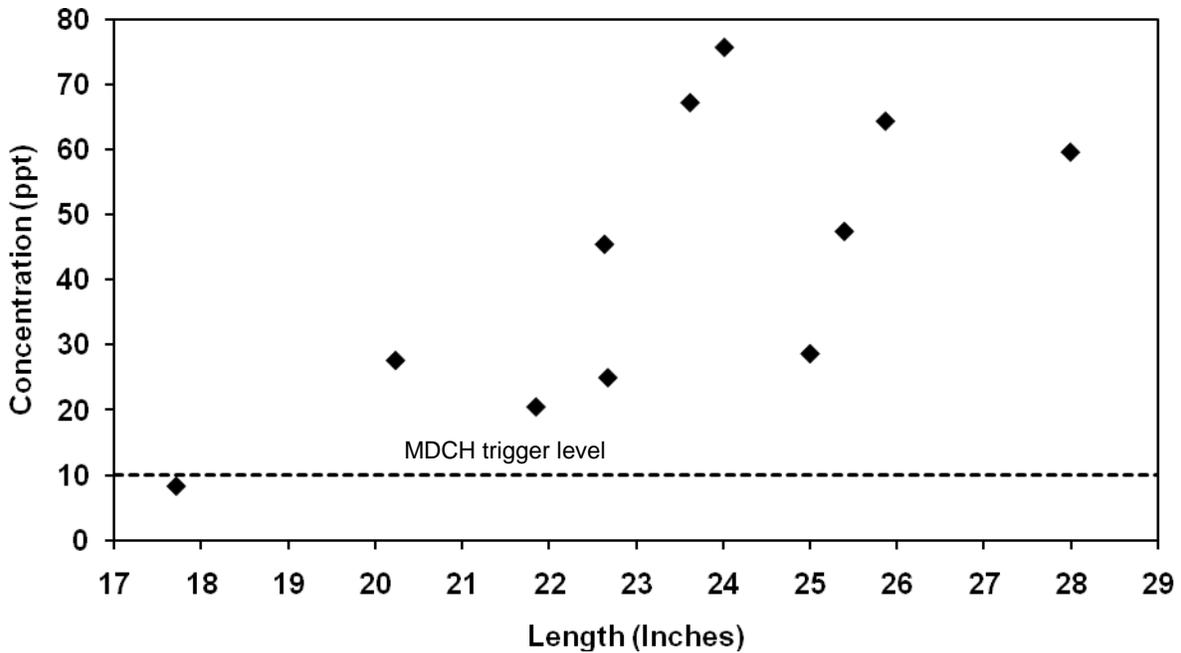


Figure 91. Total length versus dioxin TEQ concentration in lake trout collected from Torch Lake, Antrim County, in 2009 (ID 2009300).

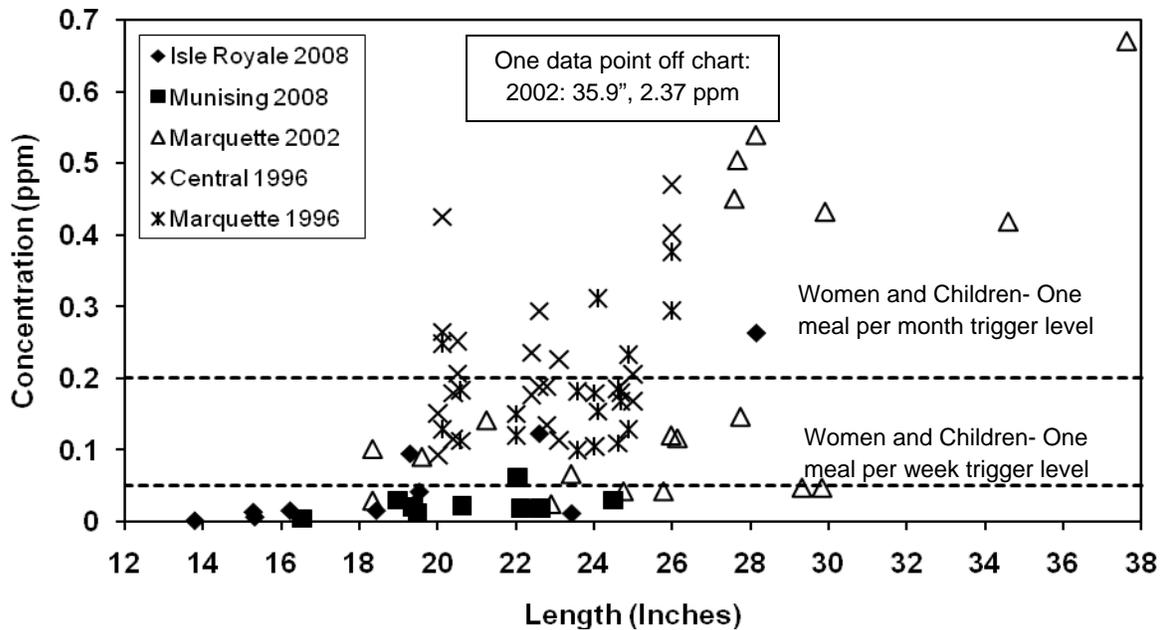


Figure 92. Total length versus total PCB concentration in lake trout collected from Lake Superior, in 1996 (IDs 96034 & 96038), 2002 (ID 2002060), and 2008 (IDs 2008267 & 2008268).

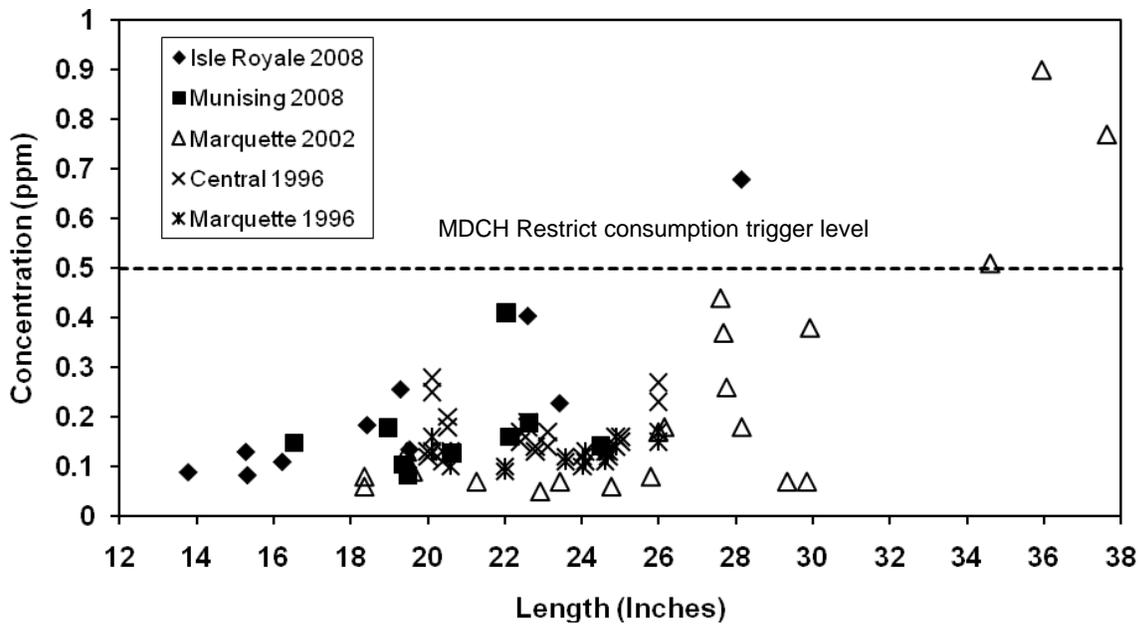


Figure 93. Total length versus total mercury concentration in lake trout collected from Lake Superior, in 1996 (IDs 96034 & 96038), 1996 (ID 96034), and 2008 (IDs 2008267 & 2008268).

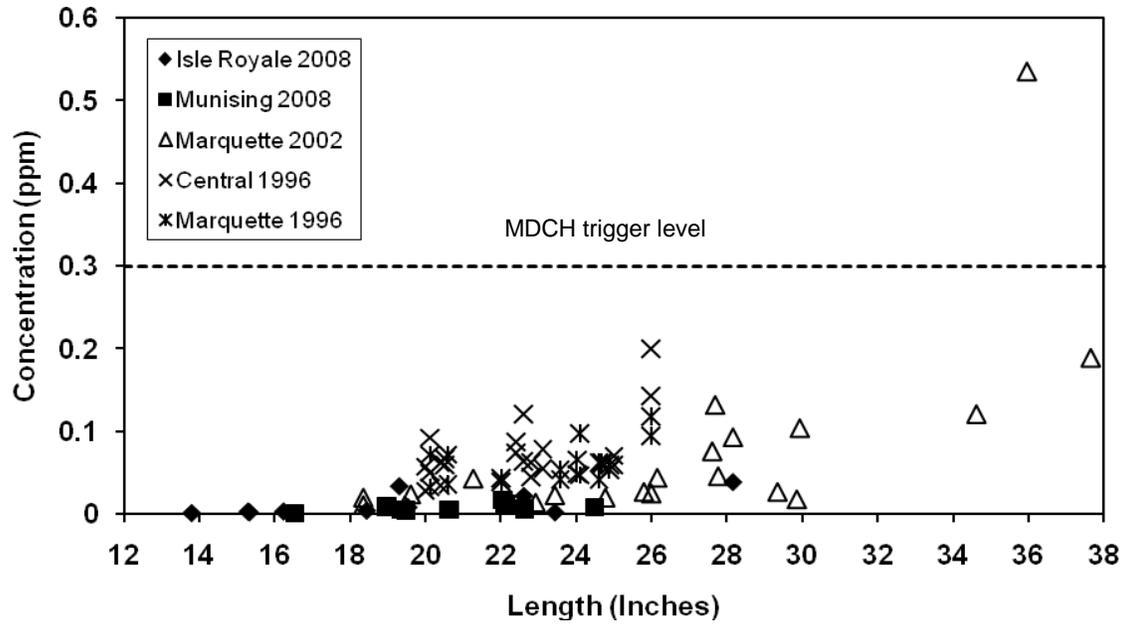


Figure 94. Total length versus total chlordane concentration in lake trout collected from Lake Superior, in 1996 (IDs 96034 & 96038), 2002 (ID 2002060), and 2008 (IDs 2008267 & 2008268).

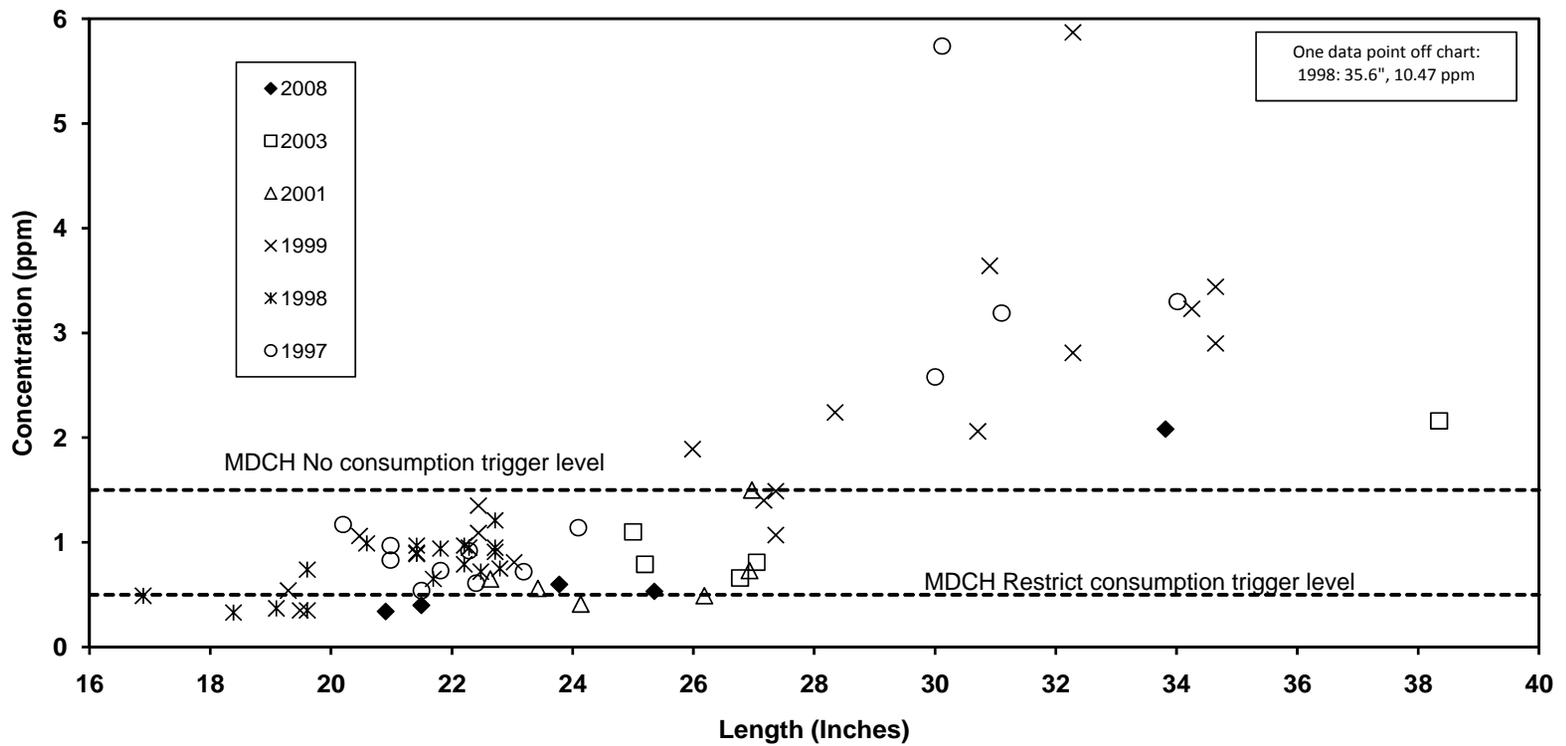


Figure 95. Total length versus total mercury concentration in northern pike collected from Deer Lake, Marquette County, in 1997 (ID 97070), 1998 (ID 1998024), 1999 (ID 1999006), 2001 (ID 2001008), 2003 (ID 2003161), and 2008 (ID 2008211).

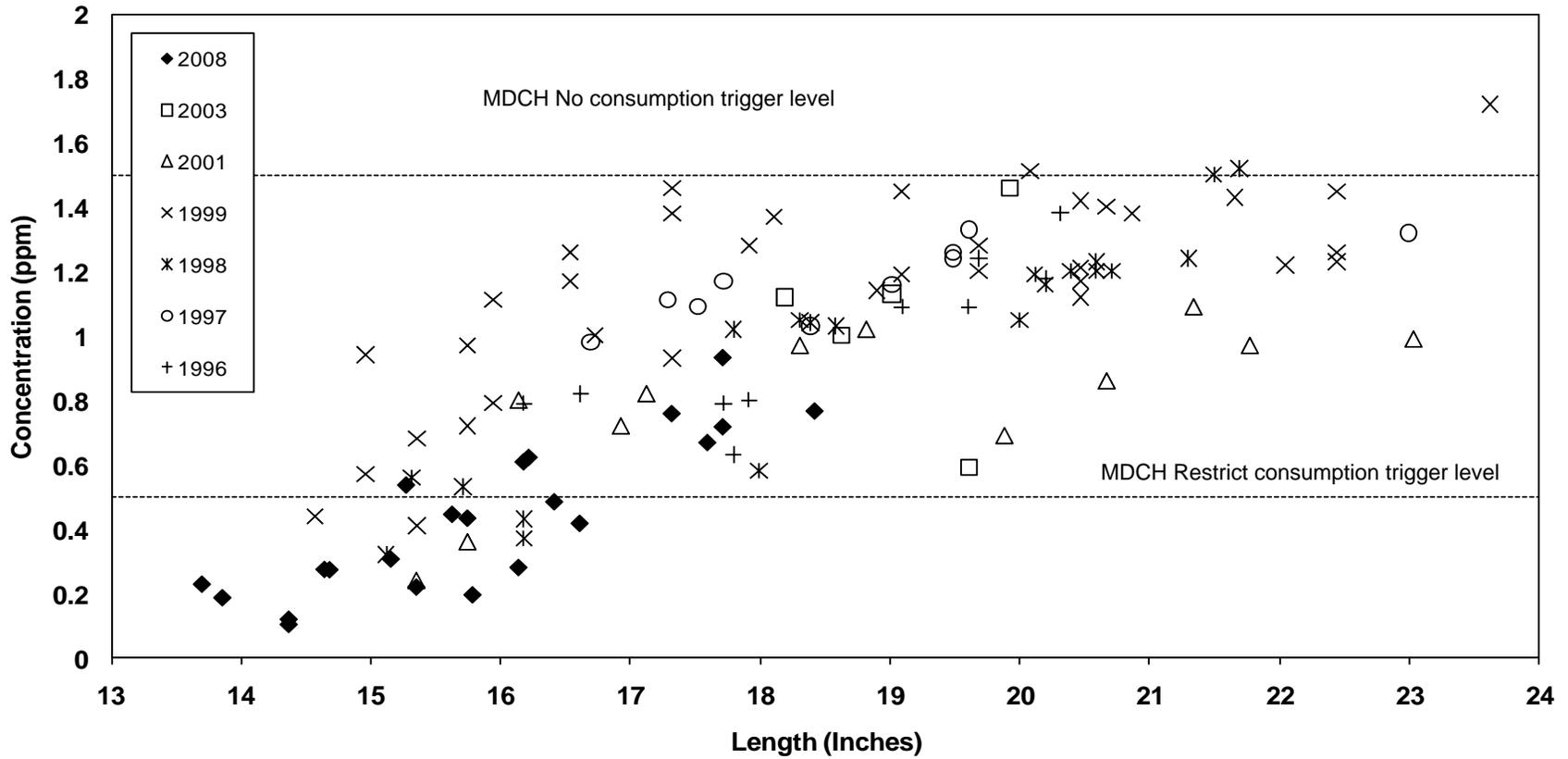


Table 1. Standard edible portions of Michigan's sport and commercial fishes.

Standard Edible Portion	Common Name	Scientific Name
Skin-on Fillet	Yellow Perch	<i>Perca flavescens</i>
	Walleye	<i>Sander vitreus</i>
	Sauger	<i>Sander canadense</i>
	Largemouth Bass	<i>Micropterus salmonids</i>
	Smallmouth Bass	<i>Micropterus dolomieu</i>
	Bluegill	<i>Lepomis macrochirus</i>
	Pumpkinseed	<i>Lepomis gibbosus</i>
	Rock Bass	<i>Ambloplites rupestris</i>
	White Bass	<i>Morone chrysops</i>
	Black Crappie	<i>Pomoxis nigromaculatus</i>
	White Crappie	<i>Pomoxis annularis</i>
	Green Sunfish	<i>Lepomis cyanellus</i>
	Longear Sunfish	<i>Lepomis megalotis</i>
	Warmouth	<i>Lepomis gulosus</i>
White Sucker	<i>Catostomus commersonii</i>	
Redhorse Sucker	<i>Moxostoma</i> spp.	
Lake Whitefish	<i>Coregonus clupeaformis</i>	
Lake Trout (lean & ciscowet)	<i>Salvelinus namaycush</i>	
Rainbow Trout (Steelhead)	<i>Oncorhynchus mykiss</i>	
Brown Trout	<i>Salmo trutta</i>	
Brook Trout	<i>Salvelinus fontinalis</i>	
Splake	<i>Salvelinus fontinalis</i> X <i>Salvelinus namaycush</i>	
	Atlantic Salmon	<i>Salmo salar</i>
	Coho Salmon	<i>Oncorhynchus kisutch</i>
	Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
	Pink Salmon	<i>Oncorhynchus gorbuscha</i>
Skin-off Fillet	Black Bullhead	<i>Ameiurus melas</i>
	Brown Bullhead	<i>Ameiurus nebulosus</i>
	Yellow Bullhead	<i>Ameiurus natalis</i>
	Channel Catfish	<i>Ictalurus punctatus</i>
	Muskellunge	<i>Esox masquinongy</i>
	Northern Pike	<i>Esox lucius</i>
	Round Whitefish (Menominee)	<i>Prosopium cylindraceum</i>
	Lake Herring	<i>Coregonus artedii</i>
	Chubs	<i>Coregonus</i> sp
	Carp	<i>Cyprinus carpio</i>
Freshwater Drum (Sheepshead)	<i>Aplodinotus grunniens</i>	
Buffalo	<i>Ictiobus cyprinellus</i>	
Burbot	<i>Lota lota</i>	
Quillback	<i>Carpiodes cyprinus</i>	
Skin-off Steak	Sturgeon	<i>Acipenser fulvescens</i>
Headless, Gutted	Rainbow Smelt	<i>Osmerus mordax</i>

Table 2. Contaminants quantified in edible portion fish tissue samples.

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<u>Standard Analyses</u>	<u>Level of Quantification</u>
Hexachlorobenzene	0.001 ppm
<i>gamma</i> -BHC (Lindane)	0.001 ppm
Aldrin	0.001 ppm
Dieldrin	0.001 ppm
4,4'-DDE	0.001 ppm
4,4'-DDD	0.001 ppm
4,4'-DDT	0.001 ppm
2,4'-DDE	0.001 ppm
2,4'-DDD	0.001 ppm
2,4'-DDT	0.001 ppm
Heptachlor Epoxide	0.001 ppm
Mercury	0.010 ppm
Selenium	0.010 ppm
Oxychlordane	0.001 ppm
<i>gamma</i> -Chlordane	0.001 ppm
<i>trans</i> -Nonachlor	0.001 ppm
<i>alpha</i> -Chlordane	0.001 ppm
<i>cis</i> -Nonachlor	0.001 ppm
Octachlorostyrene	0.001 ppm
Hexachlorostyrene	0.001 ppm
Heptachlorostyrene	0.001 ppm
Pentachlorostyrene	0.001 ppm
Heptachlor	0.001 ppm
Terphenyl	0.250 ppm
Toxaphene	0.050 ppm
Mirex	0.001 ppm
PBB (FF-1, BP-6)	0.001 ppm
Total PCB (congener method)	0.001 ppm

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Table 3. PCB structure and corresponding identification number of congeners quantified in fish tissue samples.

BZ#	Structure	BZ#	Structure
	TRICHLOROBIPHENYLS		HEXACHLOROBIPHENYLS
17	2,2',4	128	2,2',3,3',4,4'
18	2,2',5	130	2,2',3,3',4,5'
22	2,3,4'	132	2,2',3,3',4,6'
25	2,3',4	135	2,2',3,3',5,6'
26	2,3',5	136	2,2',3,3',6,6'
28	2,4,4'	137	2,2',3,4,4',5
31	2,4',5	138	2,2',3,4,4',5'
32	2,4',6	141	2,2',3,4,5,5'
33	2',3,4	144	2,2',3,4,5',6
37	3,4,4'	146	2,2',3,4',5,5'
	TETRACHLOROBIPHENYLS	149	2,2',3,4',5,6
40	2,2',3,3'	151	2,2',3,5,5',6
42	2,2',3,4'	153	2,2',4,4',5,5'
44	2,2',3,5'	156	2,3,3',4,4',5
45	2,2',3,6	157	2,3,3',4,4',5'
47	2,2',4,4'	158	2,3,3',4,4',6
49	2,2',4,5'	163	2,3,3',4',5,6
52	2,2',5,5'	167	2,3,4,4',5,5'
56	2,3,3',4'		HEPTACHLOROBIPHENYLS
60	2,3,4,4'	170	2,2',3,3',4,4',5
63	2,3',4',5	171	2,2',3,3',4,4',6
64	2,3,4',6	172	2,2',3,3',4,5,5'
66	2,3',4,4'	174	2,2',3,3',4,5,6'
70	2,3',4',5	175	2,2',3,3',4,5',6
71	2,3',4',6	177	2,2',3,3',4',5,6
74	2,4,4',5	178	2,2',3,3',5,5',6
77	3,3',4,4'	179	2,2',3,3',5,6,6'
	PENTACHLOROBIPHENYLS	180	2,2',3,4,4',5,5'
82	2,2',3,3',4	182	2,2',3,4,4',5,6'
84	2,2',3,3',6	183	2,2',3,4,4',5',6
87	2,2',3,4,5'	185	2,2',3,4,5,5',6
90	2,2',3,4',5	187	2,2',3,4',5,5',6
91	2,2',3,4',6	190	2,3,3',4,4',5,6
92	2,2',3,5,5'	193	2,3,3',4',5,5',6
95	2,2',3,5',6		OCTACHLOROBIPHENYLS
97	2,2',3',4,5	194	2,2',3,3',4,4',5,5'
99	2,2',4,4',5	195	2,2',3,3',4,4',5,6
100	2,2',4,4',6	196	2,2',3,3',4,4',5,6'
101	2,2',4,5,5'	198	2,2',3,3',4,5,5',6
105	2,3,3',4,4'	199	2,2',3,3',4,5,6,6'
110	2,3,3',4',6	201	2,2',3,3',4,5,5',6'
118	2,3',4,4',5	203	2,2',3,4,4',5,5',6
126	3,3',4,4',5	205	2,3,3',4,4',5,5',6
			NONACHLOROBIPHENYLS
		206	2,2',3,3',4,4',5,5',6

BZ# = identification numbers adopted by the International Union of Pure and Applied Chemists (IUPAC).

Table 4a. Chlorinated dibenzo-p-dioxin (CDD) and chlorinated dibenzofuran (CDF) congeners quantified in fish tissue samples.

<u>CDD</u>	<u>Level of Quantification</u>
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1.0 ppt
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PCDD)	1.0 ppt
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0 ppt
1,2,3,6,7,8-HxCDD	1.0 ppt
1,2,3,7,8,9-HxCDD	1.0 ppt
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.0 ppt
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.0 ppt
<u>CDF</u>	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.0 ppt
1,2,3,7,8-Pentachlorodibenzofuran (PCDF)	1.0 ppt
2,3,4,7,8-PCDF	1.0 ppt
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0 ppt
1,2,3,6,7,8-HxCDF	1.0 ppt
1,2,3,7,8,9-HxCDF	1.0 ppt
2,3,4,6,7,8-HxCDF	1.0 ppt
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.0 ppt
1,2,3,4,7,8,9-HpCDF	1.0 ppt
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.0 ppt

Table 4b. Coplanar PCB congeners analyzed for Michigan's Fish Contaminant Monitoring Program.

<u>BZ#</u>	<u>Structure</u>	<u>Quantification Limit (ppt)</u>
	TETRACHLOROBIPHENYLS	
077	3,3',4,4'	50.0
081	3,4,4',5	50.0
	PENTACHLOROBIPHENYLS	
105	2,3,3',4,4'	50.0
114	2,3,4,4',5	50.0
118	2,3',4,4',5	50.0
123	2',3,4,4',5	50.0
126	3,3',4,4',5	50.0
	HEXACHLOROBIPHENYLS	
156	2,3,3',4,4',5	50.0
157	2,3,3',4,4',5'	50.0
167	2,3',4,4',5,5'	50.0
169	3,3',4,4',5,5'	50.0
	HEPTACHLOROBIPHENYLS	
189	2,3,3',4,4',5,5'	50.0

BZ# = identification numbers adopted by the International Union of Pure and Applied Chemists (IUPAC).

Table 5. Screening values used by the Michigan Department of Community Health (MDCH) to establish sport fish consumption advisories.

Chemical	MDCH Trigger Level
Total Chlordane	0.3 ppm (= mg/kg)
Total DDT	5.0 ppm
Dieldrin	0.3 ppm
Dioxin Toxic Equivalents#	10.0 ppt (= ng/kg)
Heptachlor (+Heptachlor Epoxide)	0.3 ppm
Mercury	
Restrict Consumption	0.5 ppm
No Consumption	1.5 ppm
Mirex	0.1 ppm
Selenium	
1 Meal Per Week	2.5 ppm
1 Meal Per Month	7.4 ppm
6 Meals Per Year	32.0 ppm
No Consumption	64.0 ppm
Total PCB	
General Population	2.0 ppm
Women of Child Bearing Age and Children Under 15 Years	
1 Meal Per Week	0.05 ppm
1 Meal Per Month	0.2 ppm
6 Meals Per Year	1.0 ppm
No Consumption	1.9 ppm
Toxaphene	5.0 ppm

# The MDCH advisory trigger level for dioxin applies to total 2,3,7,8-TCDD toxic equivalent concentrations.

Table 6. Summary of chemicals quantified in edible portion fish tissue samples.

Chemical*	# of Sites Monitored	# of Sites Quantified	Concentration Range (ppm)	Location and Species with Maximum Concentration
Total Chlordane	30	21	K0.001-0.158	Torch Lake, Antrim County- Lake Trout
Total DDT	30	30	0.001-1.10	Torch Lake, Antrim County- Lake Trout
Dieldrin	30	15	K0.001-0.024	Lake Michigan, Bridgeman- Lake Sturgeon
Heptachlor Epoxide	30	9	K0.001-0.137	Lake Superior, Isle Royale- Lake Trout
Hexachlorobenzene	30	12	K0.001-0.034	Otter/Sylvan Lakes- Carp
Mirex	30	8	K0.001-0.006	Torch Lake, Antrim County- Lake Trout
Mercury	47	47	0.01-2.081	Deer Lake, Marquette County- Northern Pike
Octachlorostyrene	30	8	K0.001-0.025	River Raisin, Monroe County- Carp
PBB	30	9	K0.001-0.006	Torch Lake, Antrim County- Lake Trout
Selenium	5	5	0.13-13.29	Goose Lake, Marquette County- White sucker
Total PCB	30	26	K0.001-5.397	River Raisin, Monroe County- Carp
Total PBDE	7	7	1.00-55.6	Lake Superior, Isle Royale- Lake Trout
Dioxin TEQ	5	5	0.60-75.65 (ppt)	Torch Lake, Antrim County- Lake Trout

K = Unquantified at the level shown.

\* Aldrin, Beta-BCH, Heptachlor, Heptachlorostyrene, Hexachlorostyrene, Lindane, Pentachlorostyrene, Terphenyl, and Toxaphene were not quantified at any of the sites monitored.

Table 7. Edible portion fish tissue samples with total PCB concentrations exceeding the MDCH's sport fish consumption advisory trigger levels.

				Number of Fish in Each Consumption Advisory Category*					General Population Trigger Level	Current Advisory
				Women and Children Consumption Advisory Categories						
Site ID	Location	Species	Median Conc. ppm	1 meal/week 0.05-0.2 ppm	1 meal/month 0.2-1.0 ppm	6 meals/year 1.0-1.9 ppm	No Cons. > 1.9 ppm	2.0 ppm		
<b>Lake Erie Watershed</b>										
2008266	Lake Erie Off Monroe	Channel Catfish	0.39	3/10	7/10				Yes (#)	
2008223	Huron River Geddes Pond	Carp	0.03	2/10	2/10				No	
2008242	Otter/Sylvan Lakes Oakland County	Carp	0.21	4/10	3/10	2/10			No (#)	
2008247	River Raisin d/s Winchester Bridge	Channel Catfish	0.72	1/10	4/10	2/10		2/10	Yes	
		Freshwater Drum	1.1		2/5	1/5		2/5	Yes	
		Smallmouth Bass	0.16	4/10	4/10				Yes	
		White Bass	0.28	3/10	6/10				Yes	
			0.45	1/10	8/10			1/10	Yes	
<b>Lake Huron Watershed</b>										
2008271	Lake Huron Saginaw Bay	White Bass	0.28	3/10	7/10				Yes (#)	
2008219	Flint River Holloway Reservoir	Channel Catfish	0.019	1/10					Yes	
2008227	Kawkawlin River Bay County	Carp	0.49		8/10	1/10		1/10	Yes	
<b>Lake Michigan Watershed</b>										
2006501	Lake Michigan Bridgeman	Lake Sturgeon	0.48	1/3	2/3				Yes (#)	
2008232	Lake Michigan	Carp	0.89		4/10	4/10		1/10	Yes	
2008280	Little Bay de Noc	Redhorse Sucker	0.03	4/10					Yes	

Number of samples exceeding trigger levels/number of samples analyzed.

# Covered by the statewide mercury advisory or an advisory based on contaminants other than total PCBs.

Table 7. Continued

				Number of Fish in Each Consumption Advisory Category*					General Population Trigger Level	Current Advisory
				Women and Children Consumption Advisory Categories						
Site ID	Location	Species	Median Conc. ppm	1 meal/week 0.05-0.2 ppm	1 meal/month 0.2-1.0 ppm	6 meals/year 1.0-1.9 ppm	No Cons. > 1.9 ppm	2.0 ppm		
2008273	Flat River Lowell Impoundment	Carp	0.14	8/10	2/10				Yes	
2008221	Goose Lake Marquette County	Northern Pike	0.07	8/10					Yes	
2008262	Lake Macatawa Ottawa County	Largemouth Bass Walleye	0.04 0.16	4/10 4/10	4/10				No (#) Yes (#)	
2008235	Manistique River d/s Papers Dam	Carp Pumpkinseed Redhorse Sucker Rock Bass Smallmouth Bass White Sucker	1.25 0.06 0.16 0.01 0.07 0.16	5/9 5/10 2/12 5/10 4/10	4/10 3/10 1/12 1/10 5/10	5/10	1/10	1/10	Yes No Yes Yes (#) Yes Yes	
2008239	Muskegon Lake Muskegon County	Walleye	0.017	1/10	1/10				Yes (#)	
2008240	Muskegon River d/s Croton Dam	Walleye	0.04	1/10	3/10				Yes	
2009300	Torch Lake Antrim County	Lake Trout	0.34	4/11	7/11				Yes (#)	
<b>Lake Superior Watershed</b>										
2008267 2008268	Lake Superior Isle Royale & Munising	Lake Trout	0.02	3/19	1/19				Yes (#)	

Number of samples exceeding trigger levels/number of samples analyzed.

# Covered by the statewide mercury advisory or an advisory based on contaminants other than total PCBs.

Table 8. Edible portion fish tissue samples with mercury concentrations exceeding the MDCH's sport fish consumption advisory trigger level.

Site ID	Location	Species	Species Median Concentration (ppm)	Range (ppm)	Exceedance* Rate	Current Advisory
<b>Lake Erie Watershed</b>						
2008242	Otter/Sylvan Lakes Oakland County	Largemouth Bass	0.49	0.326-0.692	4/10	Yes (a)
2008247	River Raisin d/s Winchester Bridge	Freshwater Drum Smallmouth Bass	0.36 0.32	0.17-0.78 0.284-0.815	3/10 1/10	No (#) No (#)
2008251 2007253	Stony Creek Impoundment Macomb County	Northern Pike	0.47	0.23-0.65	4/10	Yes (#)
2008260	Whitmore Lake Livingston County	Northern Pike	0.67	0.363-0.856	9/10	Yes (a)
<b>Lake Huron Watershed</b>						
2008200	Au Sable River Cooke Pond	Northern Pike	0.48	0.16-0.67	3/10	Yes (a)
2008210	Crooked Lake Clare County	Largemouth Bass	0.24	0.18-0.79	1/9	Yes (a)
2008220	Floyd Lake Iosco County	Largemouth Bass	0.43	0.28-0.70	2/10	Yes (a)
2007255	Tittabawassee River Sanford Lake	Channel Catfish	0.34	0.20-0.64	1/5	Yes (#)
<b>Lake Michigan Watershed</b>						
2008232	Lake Michigan	Carp	0.38	0.28-0.55	1/10	No (#)
2008280	Little Bay de Noc	Redhorse Sucker Smallmouth Bass	0.33 0.16	0.151-0.528 0.05-0.64	2/10 3/24	No (#) Yes (#)
2008263	Beatons Lake	Largemouth/ Smallmouth Bass	0.4	0.229-0.725	4/10	Yes (a)

\* Number of samples exceeding trigger levels/number of samples analyzed.

a The species and water body are covered by the statewide mercury advisory.

# Covered by an advisory based on contaminants other than mercury

Table 8. Continued

Site ID	Location	Species	Species Median Concentration (ppm)	Range (ppm)	Exceedance* Rate	Current Advisory
2007262	Big Star Lake Lake County	Largemouth Bass	0.19	0.1-0.82	2/10	Yes (a)
2006125	Coldwater Lake Branch County	Northern Pike	0.77	0.46-1.14	9/10	Yes (a)
2007213	Cusino Lake Schoolcraft County	Yellow Perch	0.69	0.51-1.06	10/10	Yes (a)
2008212	Diamond Lake Newaygo County	Largemouth Bass	0.31	0.18-0.64	1/10	Yes (a)
2008213	Eagle Lake Kalamazoo County	Largemouth Bass	0.50	0.18-0.87	5/10	Yes (a)
2008216	Fine Lake Barry County	Northern Pike Walleye	0.28 0.12	0.092-0.737 0.11-0.51	3/10 1/10	Yes (a) Yes (a)
2007214	Fire Lake Iron County	Northern Pike	0.21	0.12-0.59	1/10	Yes (a)
2007218	Hutchins Lake Allegan County	Northern Pike	0.52	0.379-0.586	6/10	Yes (a)
2008262	Lake Macatawa Ottawa County	Walleye	0.45	0.092-0.697	3/10	Yes (#)
2008234	Little Whitefish Lake Montcalm County	Largemouth Bass	0.55	0.369-0.791	8/10	Yes (a)
2008235	Manistique River d/s Papers Dam	Carp Rock Bass	0.34 0.34	0.253-0.752 0.105-0.723	2/10 1/12	No (#) Yes (#)
2008239	Muskegon Lake Muskegon County	Walleye	0.16	0.095-0.618	1/10	Yes (#)
2008240	Muskegon River d/s Croton Dam	Redhorse Sucker Walleye	0.46 0.44	0.255-0.827 0.111-0.994	4/10 5/10	Yes (#) No (#)

\* Number of samples exceeding trigger levels/number of samples analyzed.  
a The species and water body are covered by the statewide mercury advisory.  
# Covered by an advisory based on contaminants other than mercury

Table 8. Continued

Site ID	Location	Species	Species Median Concentration (ppm)	Range (ppm)	Exceedance* Rate	Current Advisory
2006064	Perch Lake Iron County	Northern Pike	0.40	0.28-0.92	2/8	Yes (a)
		Walleye	0.60	0.50-0.65	5/5	Yes (a)
2007248	Rock Lake Montcalm County	Largemouth Bass	0.58	0.32-0.92	6/10	Yes (a)
		Walleye	0.41	0.34-0.52	2/10	Yes (a)
2008272	Schweitzer Reservoir Marquette County	Northern Pike	0.19	0.115-0.812	1/4	Yes (a)
2007275	Shakey Lakes Menominee County	Northern Pike	0.63	0.301-0.857	8/10	Yes (a)
2007264	Three Mile Lake Van Buren County	Northern Pike	0.80	0.587-0.984	4/4	Yes (a)
2009300	Torch Lake Antrim County	Lake Trout	1.03	0.435-1.442	10/11	Yes (#)
<b>Lake Superior Watershed</b>						
2008267	Lake Superior Isle Royale & Munising	Lake Trout	0.15	0.082-0.679	1/19	Yes (#)
2008268						
2008211	Deer Lake Marquette County	Northern Pike	0.53	0.339-2.081	3/5	Yes

- \* Number of samples exceeding trigger levels/number of samples analyzed.
- a The species and water body are covered by the statewide mercury advisory.
- # Covered by an advisory based on contaminants other than mercury

Table 9. Dioxin TEQ concentrations in edible portion samples.

Site ID	Location	Species	Species Median Concentration (ppt)	Range (ppt)	Exceedance* Rate	Current Advisory
2006501	Lake Michigan Bridgeman	Lake Sturgeon	9.37	0.60-9.49	0/3	Yes
2007269	Lake Huron Thunder Bay	Lake Whitefish	6.67	4.11-17.66	3/10	Yes
2008271	Lake Huron Saginaw Bay	Walleye White Bass	3.41 11.14	1.35-6.5 2.58-18.32	0/10 6/10	Yes Yes
2008266	Lake Erie Off Monroe	Channel Catfish	8.68	4.44-23.23	5/10	Yes
2009300	Torch Lake	Lake Trout	45.43	8.29-75.65	10/11	Yes (#)

\* Number of samples exceeding trigger levels/number of samples analyzed.

# Covered by an advisory based on contaminants other than dioxin

Table 10. Selenium concentrations in edible portion samples.

Site ID	Location	Species	Species Median Concentration (ppt)	Range (ppm)	Exceedance* Rate	Current Advisory
2008221	Goose Lake Marquette County	Northern Pike White Sucker	9.8 12.1	5.04-12.18 9.06-12.18	8/10 10/10	Yes (#) No

# Covered by an advisory based on contaminants other than selenium

Table 11. Fish consumption water quality attainment categories for water bodies assessed for the 2009 Annual Edible Portion Report.

Location	Present Category	Proposed Category	Impairment	Species Sampled
<b>Lake Erie Watershed</b>				
Lake Erie, Off Monroe	5	5	FCA PCB, Dioxins	Channel Catfish
Huron River, Geddes Pond, Washtenaw County	None	5	FCA PCB	Carp
Otter/Sylvan Lakes, Oakland County	None	5	FCA PCB Fish Tissue-Hg	Carp Largemouth Bass
River Raisin, Monroe County	5	5	FCA PCB, Fish Tissue- Hg	Carp Channel Catfish Freshwater Drum Smallmouth Bass White Bass
Stony Creek Impoundment, Macomb County	5	5	FCA PCB, Fish Tissue-Hg	Northern Pike
Whitmore Lake, Livingston County	5	5	FCA PCB, Fish Tissue-Hg	Carp Northern Pike
<b>Lake Huron Watershed</b>				
Lake Huron, Saginaw Bay	5	5	FCA PCB, Dioxins, Fish Tissue-Hg	Walleye White Bass
Lake Huron, Thunder Bay	5	5	FCA PCB, Dioxins	Lake Whitefish
Au Sable River, Cooke Pond, Iosco County	None	5	Fish Tissue-Hg	Northern Pike
Crooked Lake, Clare County	None	2		Largemouth Bass
Flint River, Holloway Reservoir, Genesee County	5	5	FCA PCB	Channel Catfish
Floyd Lake, Iosco County	None	5	Fish Tissue-Hg	Largemouth Bass
Kawkawlin River, Bay County	5	5	FCA PCB	Carp
Tittabawassee River, Sanford Lake, Midland County	5	5	FCA PCB, Fish Tissue-Hg	Channel Catfish
<b>Lake Michigan Watershed</b>				
Lake Michigan, Bridgeman	5	5	FCA PCB, Chlordane, Dioxins, DDT	Lake Sturgeon
Lake Michigan, Little Bay de Noc	5	5	FCA PCB, Fish Tissue-Hg	Carp Redhorse Sucker Rock Bass Smallmouth Bass
Beatons Lake, Gogebic County	5	5	Fish Tissue-Hg	Largemouth Bass Smallmouth Bass
Big Star Lake, Lake County	None	2		Largemouth Bass

Table 11. Continued.

Location	Present Category	Proposed Category	Impairment	Species Sampled
Big Twin Lake, Kalkaska County	None	5	Fish Tissue-Hg	Lake Herring
Boardman Lake, Grand Traverse County	None	3		White Sucker
Boardman River, Brown Bridge Pond, Grand Traverse County	None	3		White Sucker
Boardman River, Sabin Pond, Grand Traverse County	None	3		White Sucker
Coldwater Lake, Branch County	5	5	Fish Tissue-Hg	Northern Pike
Cusino Lake, Schoolcraft County	None	5	Fish Tissue-Hg	Yellow Perch
Diamond Lake, Newaygo County	None	2		Largemouth Bass
Eagle Lake, Kalamazoo Country	None	5	Fish Tissue-Hg	Largemouth Bass
Fine Lake, Barry County	None	5	Fish Tissue-Hg	Northern Pike Walleye
Fire Lake, Iron County	None	2		Northern Pike
Flat River, Ionia County	5	5	FCA PCB	Rock Bass White Sucker
Flat River, Lowell Impoundment, Kent County	5	5	FCA PCB	Carp
Goose Lake, Marquette County	5	5	FCA PCB, Selenium	Northern Pike White Sucker
Houghton Lake, Houghton County	5	5	FCA PCB	Carp
Hutchins Lake, Allegan County	None	5	Fish Tissue-Hg	Northern Pike
Lake Macatawa, Ottawa County	5	5	FCA PCB, Fish Tissue-Hg	Largemouth Bass Walleye
Little Whitefish Lake, Montcalm County	None	5	Fish Tissue-Hg	Largemouth Bass
Long Lake, Grand Traverse County	None	5	Fish Tissue-Hg	Walleye
Manistique River, Schoolcraft County	5	5	FCA PCB, Fish Tissue-Hg	Carp Pumpkinseed Redhorse Sucker Smallmouth Bass White Sucker
Muskegon Lake, Muskegon County	5	5	FCA PCB	Walleye

Table 11. Continued.

Location	Present Category	Proposed Category	Impairment	Species Sampled
Muskegon River, Newaygo County	5	5	FCA PCB, Fish Tissue-Hg	Redhorse Sucker Walleye
Perch Lake, Iron County	None	5	Fish Tissue-Hg	Northern Pike Walleye
Rock Lake, Montcalm County	None	5	Fish Tissue-Hg	Largemouth Bass Walleye
Schweitzer Reservoir, Marquette County	5	3		Northern Pike
Shakey Lakes, Menominee County	None	5	Fish Tissue-Hg	Northern Pike
Three Mile Lake, Van Buren County	None	3		Northern Pike
Torch Lake, Antrim County	5	5	Fish Tissue-Hg	Lake Trout
<b>Lake Superior Watershed</b>				
Lake Superior, Isle Royale and Munising	5	5	FCA PCB, Chlordane, Dioxins,	Lake Trout
Deer Lake, Marquette County	5	5	Fish Tissue-Hg	Northern Pike Walleye

\* - Chlordane removed from list of contaminants causing an advisory

† - PCBs removed from list of contaminants causing an advisory

APPENDIX A  
INVENTORY OF FISH CONTAMINANT MONITORING SITES AND SPECIES  
EDIBLE PORTION SAMPLES  
1980 - 2008

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Adrian Lake	Lenawee County	90007	Jun/13/1990	Carp, Northern Pike
Antoine Lake	Dickinson County	88004	May/24/1988	Largemouth Bass, Smallmouth Bass, Walleye
Antoine Lake	Dickinson County	2005001	Nov/10/2005	Northern Pike, Walleye
Arbutus Lake	Grand Traverse County	93066	May/11/1993	Northern Pike
Au Sable River	Alcona Dam Pond	2003002	Jun/10/2003	Carp, Northern Pike, Walleye
Au Sable River	Chase River Road	1998136	Aug/25/1998	Brown Trout, White Sucker
Au Sable River	Cooke Pond	2008200	May/12/2008	Northern Pike
Au Sable River	Oscoda	86037	Jul/31/1986	Carp
Au Sable River	Oscoda	97001	May/21/1997	Carp, Walleye
Au Sable River	Oscoda	1999001	Sep/20/1999	Carp, Walleye
Au Sable River	Oscoda	2005002	Oct/03/2005	Carp, Walleye
Au Sable River	Thendara Road	1998144	Sep/08/1998	Brown Trout, White Sucker
Au Sable River, Middle Branch	Alcona County, above Alcona Pond	1998073	May/20/1998	Walleye, White Sucker
Au Sable River, North Branch	Lovells	96003	Sep/10/1996	Brown Trout
Au Sable River, North Branch	Otsego County, Dam #2	88039	Nov/03/1988	Brown Trout
Au Train Basin	Alger County	90060	Aug/30/1990	Northern Pike, Yellow Perch
Au Train Lake	Alger County	87003	Apr/14/1987	Northern Pike, Walleye
Au Train Lake	Alger County	93048	May/11/1993	Northern Pike, Walleye
Au Train Lake	Alger County	2005003	Sep/12/2005	Walleye, Yellow Perch
Austin Lake	Kalamazoo County	93091	May/04/1993	Carp, Largemouth Bass
Austin Lake	Kalamazoo County	2003154	Jul/21/2003	Carp, Largemouth Bass, Yellow Bullhead
Bad River	Saginaw County	94034	Aug/30/1994	Channel Catfish, Northern Pike
Bad River	Saginaw County	2004003	Jun/23/2004	Carp, Channel Catfish, Northern Pike
Baldwin River	near M-37	2005004	Aug/18/2005	Brown Trout
Barton Lake	Kalamazoo County	91057	Oct/01/1991	Carp, Largemouth Bass, Northern Pike
Bass Lake	Grand Traverse County	95063	Jun/20/1995	Bluegill, Northern Pike, Yellow Perch
Battle Creek River	Battle Creek, Division St.	91004	Oct/24/1991	Carp, Smallmouth Bass
Battle Creek River	Battle Creek, Division St.	2004004	Jun/10/2004	Carp, Smallmouth Bass
Bear Lake	Kalkaska County	87036	Jun/24/1987	Brown Trout, Smallmouth Bass
Bear Lake	Muskegon County	86062	Oct/29/1986	Carp, Largemouth Bass, Northern Pike
Bear Lake	Muskegon County	93002	Nov/02/1993	Northern Pike, Walleye
Bear River	Emmet County	1998006	Aug/04/1998	Brown Trout, White Sucker
Beatons Lake	Gogebic County	87005	Apr/28/1987	Largemouth Bass, Rainbow Trout
Beatons Lake	Gogebic County	2008263	May/07/2008	Largemouth Bass, Smallmouth Bass
Beaufort Lake	Baraga County	87039	Jun/17/1987	Northern Pike, Walleye
Beaver Lake	Alger County	2003150	Aug/28/2003	Walleye, Yellow Perch
Beaver Lake	Alpena County	87022	Jun/03/1987	Northern Pike, Smallmouth Bass
Bellaire Lake	Antrim County	87095	Sep/16/1987	Splake, Walleye
Big Blue Lake	Muskegon County	88054	Oct/06/1988	Largemouth Bass, Northern Pike
Big Creek, West Branch	Crawford County, County Road 612	88059	Nov/03/1988	Brown Trout
Big Seven Lake (Seven Lakes)	Oakland County	2004133	May/18/2004	Largemouth Bass
Big Shag Lake	Marquette County	2001003	May/01/2001	Northern Pike
Big Star Lake	Lake Co	2007262	Apr/24/2007	Largemouth Bass
Big Twin Lake	Kalkaska County	2006002	May/25/2006	Lake Herring, White Sucker
Bills Lake	Newaygo County	88055	Oct/05/1988	Largemouth Bass, Walleye

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Bird Lake	Hillsdale County	87019	May/27/1987	Bluegill, Northern Pike, Yellow Perch
Bishop Lake	Livingston County	87014	May/12/1987	Largemouth Bass, Northern Pike
Bishop Lake	Livingston County	89010	Jun/28/1989	Largemouth Bass, Northern Pike
Black Creek	Lenawee County	91005	Jun/13/1991	Carp
Black Creek	Muskegon County, US-31	87013	May/05/1987	Brown Trout, Carp, White Sucker
Black Lake	Cheboygan County	90052	Feb/01/1989	Lake Sturgeon
Black River	Sanilac County, Croswell Impoundment	89017	Apr/20/1989	Carp
Black River	Sanilac County, Croswell Impoundment	2007263	Nov/08/2007	Carp
Black River	South Haven	92016	Aug/25/1992	Carp, Northern Pike
Black River, South Branch	Downstream of Bangor Dam	89020	Jul/07/1989	Carp, Largemouth Bass, Northern Pike, Rock Bass, White Sucker
Black River, South Branch	Downstream of Bangor Dam	2002008	Sep/23/2002	Carp, Northern Pike, White Sucker
Black River, South Branch	Upstream of Bangor Dam	2002106	Sep/23/2002	Carp, Northern Pike, White Sucker
Blind Sucker Flooding	Luce County	2007207	Jun/19/2007	Yellow Perch
Boardman Lake	Grand Traverse County	91006	Sep/26/1991	Northern Pike, Walleye, White Sucker
Boardman Lake	Grand Traverse County	2007302	Jun/05/2007	White Sucker
Boardman River	Brown Bridge Pond	2007301	May/23/2007	Northern Pike, White Sucker
Boardman River	Sabin Pond	2007303	Jun/19/2007	White Sucker
Bob Lake	Houghton County	2001134	Oct/03/2001	Walleye
Boot Lake	Schoolcraft County	2004007	Jun/23/2004	Walleye
Boston Pond	Houghton County	2000105	Jul/11/2000	White Sucker, Yellow Perch
Boyne River	Charlevoix County	1998011	Aug/05/1998	Brown Trout, White Sucker
Brevoort Lake	Mackinac County	89033	May/01/1989	Rock Bass, Walleye
Bristol Lake	Barry County	2002009	May/15/2002	Largemouth Bass, White Sucker
Budd Lake	Clare Co	2007268	May/09/2007	Largemouth Bass
Burt Lake	Cheboygan County	90061	May/07/1990	Northern Pike, Walleye
Burt Lake	Cheboygan County	2001005	Oct/10/2001	Walleye, White Sucker
Cable Lake	Iron County	88005	May/26/1988	Largemouth Bass, Walleye
Camp Lake	Kent County	2003015	May/21/2003	Brown Bullhead, Largemouth Bass, Northern Pike
Caribou Lake	Chippewa County	86004	May/21/1986	Rock Bass, Walleye
Caribou Lake	Chippewa County	2006006	Jun/13/2006	Rock Bass, Smallmouth Bass
Carney Lake	Dickinson County	89031	May/08/1989	Northern Pike, Walleye
Carp Creek	u/s Deer Lake	2005013	Aug/25/2005	Brook Trout, White Sucker
Carp Lake	Chippewa County	87089	Oct/23/1987	Northern Pike, Walleye
Carp River	Carp River Basin	1999003	Aug/20/1999	Brook Trout, Northern Pike
Carp River	Eagle Mills Pump House	88068	Oct/06/1988	Northern Pike, Yellow Perch
Carp River	Eagle Mills Pump House	93074	Jul/23/1993	Brook Trout, Northern Pike
Carp River	Landfill Rd.	2004009	Aug/18/2004	Brook Trout
Carp River	M-35	84012	Sep/27/1984	Brook Trout, White Sucker, Yellow Perch
Carp River	M-35	2004010	Aug/17/2004	Brook Trout, White Sucker
Cary Lake	Branch County	2001140	Oct/02/2001	Largemouth Bass, White Sucker
Cass Lake	Oakland County	91007	Sep/26/1991	Northern Pike, Smallmouth Bass, Walleye
Cass River	Above Caro	88008	May/30/1988	Carp, Northern Pike
Cass River	Above Caro	2005014	Aug/09/2005	Redhorse Sucker, Rock Bass
Cass River	Bridgeport	85003	Aug/29/1985	Black Bullhead, Channel Catfish
Cass River	Bridgeport	92035	Jul/21/1992	Carp, Channel Catfish, Largemouth Bass, Northern Pike

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Cass River	Bridgeport	2004011	Jun/24/2004	Carp, Channel Catfish
Cass River	Caro Impoundment	1998019	Oct/27/1998	Carp, Largemouth Bass
Cass River	Caro Impoundment	2006104	Jul/13/2006	Carp, Largemouth Bass
Cass River	Saginaw County, Dixie Highway	85039	Jan/31/1985	Carp, Freshwater Drum, Smallmouth Bass
Cass River	Tuscola County, above Frankenmuth	88009	Jun/07/1988	Redhorse Sucker, Rock Bass, Smallmouth Bass
Cedar Lake	Alcona County	90067	Oct/09/1990	Largemouth Bass, Northern Pike
Cedar River	Antrim County	1998020	Aug/17/1998	Brown Trout, White Sucker
Chaney Lake	Gogebic County	87037	Jun/08/1987	Black Crappie, Northern Pike
Chaney Lake	Gogebic County	93049	Jun/03/1993	Northern Pike, Yellow Perch
Chaney Lake	Gogebic County	1998147	Oct/01/1998	Northern Pike, Walleye
Chaney Lake	Gogebic County	2000003	Apr/26/2000	Northern Pike, Walleye, Yellow Perch
Cheboyganing Creek	Saginaw County	89058	Aug/02/1989	Carp, Northern Pike
Cheboyganing Creek	Saginaw County	94035	Aug/01/1994	Carp
Cheboyganing Creek	Saginaw County	2004013	Aug/09/2004	Carp
Chenango Lake	Livingston County	2003017	Oct/16/2003	Largemouth Bass, Yellow Bullhead
Chicagon Lake	Iron County	86006	May/22/1986	Rock Bass, Smallmouth Bass, Walleye
Chicagon Lake	Iron County	94022	Apr/27/1994	Walleye
Chicagon Lake	Iron County	2001007	Nov/22/2000	Lake Whitefish
Chippewa River	Midland County	84007	Sep/08/1984	Black Crappie, Channel Catfish, Redhorse Sucker, Smallmouth Bass, White Sucker
Chippewa River	Midland County, M-20	85005	Jun/08/1985	Carp
Chippewa River	Nature Center	2000071	Sep/18/2000	Redhorse Sucker
Chippewa River	Upstream of Lake Isabella, Roland/Drew	97005.2	Aug/13/1997	Rock Bass
Chippewa River	Upstream of Lake Isabella, Wyman Road	97005.1	Aug/13/1997	Carp, White Sucker
Cisco Lake	Gogebic County, Cisco Lake Chain	88030	Jul/11/1988	Northern Pike, Walleye
Cisco Lake	Gogebic County, Cisco Lake Chain	95031	Aug/14/1995	Bluegill, Walleye
Cisco Lake	Gogebic County, Cisco Lake Chain	1999005	Apr/19/1999	Walleye
Clark Lake	Jackson	88043	Sep/29/1988	Black Crappie, Largemouth Bass, Rock Bass
Clear Spring Lake	Macomb County	1999088	Sep/20/1999	Largemouth Bass
Clifford Lake	Montcalm County	2004014	Jun/15/2004	Largemouth Bass
Clinton River	Macomb Co above Utica, Avon Road	86044	Aug/26/1986	Carp, Walleye
Clinton River	Macomb County above I-94 overpass	83003	Apr/15/1983	Carp, Walleye, White Sucker
Clinton River	Macomb County, Mt. Clemens	86015	Jun/16/1986	Carp, Largemouth Bass, Smallmouth Bass, Walleye
Clinton River	Ryan Road, Utica	84014	Sep/23/1984	Carp, White Sucker
Clinton River	Ryan Road, Utica	94003	May/25/1994	Carp, Rock Bass, White Sucker
Clinton River	Ryan Road, Utica	2004015	Oct/07/2004	Carp, Northern Pike, Rock Bass, White Sucker
Clinton River, North Branch	Macomb County	96006	Jun/17/1996	Rock Bass, Smallmouth Bass
Coldwater Lake	Branch County	88061	Oct/31/1988	Largemouth Bass, Northern Pike, Rock Bass
Coldwater Lake	Branch County	93067	Oct/04/1993	Largemouth Bass, Northern Pike
Coldwater Lake	Branch County	94019	Apr/12/1994	Bluegill, Largemouth Bass, Northern Pike

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Coldwater Lake	Branch County	2006125	Nov/28/2006	Northern Pike
Coldwater Lake	Isabella County	89061	Aug/09/1989	Largemouth Bass, Walleye
Coldwater River	Brown Road	1998021	Jul/14/1998	White Sucker
Craig Lake	Baraga County	89074	Aug/23/1989	Walleye
Craig Lake	Baraga County	91028	Jun/04/1991	Northern Pike, Walleye
Craig Lake	Baraga County	2005015	Nov/08/2005	Black Crappie, Northern Pike, Walleye, White Sucker
Cranberry Lake	Clare Co	2007212	May/23/2007	Largemouth Bass
Crego Park Pond	Lansing	86033	Jul/29/1986	Black Bullhead, Bluegill, Goldfish
Crockery Lake	Ottawa County	2006009	Jun/06/2006	Largemouth Bass
Crooked Lake	Barry County	2003020	Sep/19/2003	Brown Bullhead, Largemouth Bass
Crooked Lake	Clare Co	2008210	May/13/2008	Largemouth Bass
Crooked Lake	Emmet County	89057	Jun/04/1989	Largemouth Bass, Walleye
Crystal Lake	Benzie County	89077	Aug/01/1989	Brown Trout, Lake Trout, Yellow Perch
Crystal Lake	Benzie County	97061	Jul/23/1997	Lake Trout, White Sucker
Crystal Lake	Benzie County	2000017	Sep/06/2000	Lake Trout, White Sucker
Cusino Lake	Schoolcraft Co	2007213	Jun/05/2007	Yellow Perch
Dead River	Forestville Basin	96007	Jun/06/1996	Smallmouth Bass, Walleye
Dead River	Forestville Basin	97075	Sep/08/1997	Smallmouth Bass, Walleye
Dead River	Forestville Basin	2005017	Jun/01/2005	Northern Pike, Walleye
Deer Lake	Alger County	2004019	Jun/02/2004	Northern Pike
Deer Lake	Charlevoix County	2003021	Oct/30/2003	Largemouth Bass, Northern Pike
Deer Lake	Marquette County	84011	Oct/09/1984	Northern Pike, White Sucker, Yellow Perch
Deer Lake	Marquette County	87099	Oct/26/1987	Brown Bullhead, Northern Pike, Walleye, Yellow Perch
Deer Lake	Marquette County	88067	Oct/06/1988	Brook Trout, Northern Pike, Yellow Perch
Deer Lake	Marquette County	91032	Nov/02/1990	Walleye
Deer Lake	Marquette County	93083	Sep/14/1993	Northern Pike, Walleye
Deer Lake	Marquette County	96008	Oct/02/1996	Walleye
Deer Lake	Marquette County	97070	Oct/02/1997	Northern Pike, Walleye, Yellow Perch
Deer Lake	Marquette County	1998024	Oct/09/1998	Northern Pike, Walleye, Yellow Perch
Deer Lake	Marquette County	1999006	May/04/1999	Northern Pike, Walleye, Yellow Perch
Deer Lake	Marquette County	2001008	May/01/2001	Northern Pike, Walleye, Yellow Perch
Deer Lake	Marquette County	2003161	May/03/2003	Northern Pike, Walleye
Deer Lake	Marquette County	2008211	Sep/14/2008	Northern Pike, Walleye, White Sucker, Yellow Perch
Detroit River	Belle Isle	85009	Jun/19/1985	Carp
Detroit River	Belle Isle	90031	Aug/27/1990	Freshwater Drum, Walleye
Detroit River	Fighting Island	86063	Jun/03/1986	Carp
Detroit River	Gibraltar Bay	86011	Jun/03/1986	Carp
Detroit River	Grassy Island	85010	Jun/19/1985	Carp
Detroit River	Grassy Island	86064	Jun/03/1986	Walleye
Detroit River	Grassy Island	94018	Aug/25/1994	Carp
Detroit River	Grassy Island	2001010	Oct/30/2001	Walleye
Detroit River	Michigan waters	93068	Apr/01/1993	Lake Sturgeon
Detroit River	Michigan waters	2004021	Jul/20/2004	Carp, Freshwater Drum, Redhorse Sucker, Yellow Perch
Detroit River	Michigan waters	2005200	Jan/01/2005	Lake Sturgeon

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Detroit River	Trenton Channel	90032	Aug/30/1990	Carp, Freshwater Drum, Walleye
Detroit River	Trenton Channel	93020	Sep/01/1993	Freshwater Drum, Northern Pike, Redhorse Sucker, Yellow Perch
Detroit River	Wyandotte	1999007	Oct/29/1999	Walleye
Diamond Lake	Newaygo Co	2008212	Sep/22/2008	Largemouth Bass
Dinner Lake	Gogebic County	2004024	Jun/11/2004	Black Crappie, Largemouth Bass, Northern Pike, Smallmouth Bass, Walleye
Dodge Lake	Schoolcraft County	2006121	Jun/14/2006	Largemouth Bass, Northern Pike
Dowagiac Creek	Dutch Settlement Road, u/s LaGrange Lake	1998027	Sep/02/1998	Brown Trout, White Sucker
Dowagiac River	Cass County, M-51	91008	Jul/18/1991	Carp
Dowagiac River	Cass County, Sink Road	2000020	Sep/18/2000	Carp
Duck Creek	Gogebic County	1998135	Jun/04/1998	Brook Trout, White Sucker
Duck Lake	Calhoun County	94011	May/23/1994	Bluegill, Largemouth Bass, Redear Sunfish, Walleye, Yellow Perch
Duck Lake	Gogebic County	86029	Jul/08/1986	Northern Pike, Rock Bass, Walleye
Duck Lake	Gogebic County	1999009	Apr/22/1999	Walleye
Eagle Lake	Kalamazoo Co	2008213	Jun/03/2008	Largemouth Bass
East Bass Lake	Marquette County	2007202	Jun/05/2007	Northern Pike
Echo Lake	Grand Isle, Alger County	95060	Jun/21/1995	Northern Pike, Yellow Perch
Elk Lake	Grand Traverse/Antrim County	90023	Sep/12/1990	Lake Trout
Elk Lake	Grand Traverse/Antrim County	96059	Dec/01/1996	Lake Trout
Elk Lake	Grand Traverse/Antrim County	97076	Dec/30/1997	Lake Trout
Elk Lake	Grand Traverse/Antrim County	2006012	Apr/11/2006	Brown Trout, Lake Trout, Northern Pike, Walleye
Ellsworth Lake	Antrim County	86009	May/28/1986	Largemouth Bass, Northern Pike, White Sucker
Ellsworth Lake	Antrim County	94063	Jun/09/1994	Brown Bullhead, Largemouth Bass, White Sucker
Emerald Lake	Newaygo County	2004026	Jun/23/2004	Largemouth Bass, Northern Pike
Emily Lake	Houghton County	2002110	Jun/06/2002	Walleye
Emily Lake	Iron County	88006	May/25/1988	Largemouth Bass, Walleye
Erickson Power Plant Pond	Eaton County	86003	May/14/1986	Brown Bullhead, Sunfish, Yellow Perch
Escanaba River	Cataract Basin	2004028	Jul/27/2004	Walleye
Escanaba River	Delta County, between Dams 1 & 2	88047	Oct/04/1988	Northern Pike, White Sucker
Escanaba River	Delta County, between Dams 1 & 2	90071	Nov/13/1990	Northern Pike, White Sucker
Escanaba River	Delta County, between Dams 1 & 2	93075	Aug/12/1993	Northern Pike, Yellow Perch
Escanaba River	Delta County, Dam 3	85029	Jun/26/1985	Rock Bass
Escanaba River	Escanaba, river mouth	86065	Jul/30/1986	Walleye
Escanaba River	Escanaba, river mouth	93032	Jun/02/1993	Carp
Escanaba River	Greenwood Reservoir	92045	Jul/30/1992	Black Crappie, Largemouth Bass, Northern Pike
Escanaba River	Greenwood Reservoir	1999077	May/04/1999	Northern Pike
Ess Lake	Montmorency County	2003023	May/29/2003	Northern Pike
Fawn River	St. Joseph County, Stubey Road	90016	Jul/18/1990	Carp, Redhorse Sucker, Smallmouth Bass, White Sucker
Fawn River	St. Joseph County, Stubey Road	2000021	Sep/06/2000	Redhorse Sucker, Rock Bass
Fawn River	St. Joseph County, Stubey Road	2005019	Sep/14/2005	Carp, Smallmouth Bass

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

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Fenner Lake	Allegan County	92072	Aug/04/1992	Carp, Largemouth Bass
Fine Lake	Barry Co	2008216	May/20/2008	Northern Pike, Walleye
Fire Lake	Iron County	2007214	Jun/01/2007	Northern Pike
First Sister Lake	Washtenaw County	94062.2	Sep/20/1994	Brown Bullhead, White Crappie
Fish Lake	Barry County	91034	Sep/04/1991	Largemouth Bass, Northern Pike
Fish Lake	Marquette County	88046	Oct/04/1988	Largemouth Bass, Northern Pike, Sunfish, Yellow Perch
Five Lakes	Clare County	91009	Apr/16/1991	Largemouth Bass, Northern Pike
Five Lakes	Clare County	2004131	May/11/2004	Largemouth Bass
Flat River	Fallasberg Park, downstream of Fallasberg Dam	1998035	Oct/27/1998	Carp
Flat River	Fallasberg Park, downstream of Fallasberg Dam	2008217	Aug/20/2008	Rock Bass, White Sucker
Flat River	Ingalls Road, downstream of Belding	1998037	Jul/30/1998	Rock Bass
Flat River	Ingalls Road, downstream of Belding	2003031	Jul/29/2003	Rock Bass, White Sucker
Flat River	Long Lake Road, upstream of Belding	1998036	Jul/30/1998	Rock Bass
Flat River	Lowell Impoundment	2008273	Oct/13/2008	Carp
Flat River	Miller Rd, upstream of Greenville	2003032	Jul/29/2003	Rock Bass, White Sucker
Fletcher Pond	Alpena County	2005020	May/16/2005	Northern Pike
Flint River	Birch Run Road	93005	Aug/30/1993	Carp
Flint River	Flushing	1998038	Oct/08/1998	Carp, Smallmouth Bass
Flint River	Holloway Reservoir	89041	May/18/1989	Black Crappie, Channel Catfish, Largemouth Bass, Smallmouth Bass
Flint River	Holloway Reservoir	2008219	May/20/2008	Channel Catfish
Flint River	Mott Reservoir	96011	Apr/16/1996	Carp, Walleye
Floyd Lake	Iosco County	2008220	May/28/2008	Largemouth Bass
Fortune Lake	Iron County	90012	May/29/1990	Largemouth Bass, Smallmouth Bass
Four Mile Lake	Washtenaw County	2000022	May/12/2000	Northern Pike
Fremont Lake	Newaygo County	90062	Oct/26/1990	Carp
Fremont Lake	Newaygo County	2005021	Jun/22/2005	Carp, Largemouth Bass
Frenchman Lake	Chippewa County	2004029	May/26/2004	Northern Pike
Fumee Lake	Dickinson County	90011	May/25/1990	Smallmouth Bass
Galien River	New Buffalo	92017	Aug/06/1992	Carp, Largemouth Bass, Rock Bass
Galien River	New Buffalo	2007215	Sep/18/2007	Carp
Gaylanta Lake	Montmorency County	2003040	May/08/2003	Northern Pike
Glen Lake	Leelanau County	90053	Oct/18/1990	Lake Trout, Smallmouth Bass
Glen Lake	Leelanau County	2007216	Apr/17/2007	Lake Trout, Rainbow Trout
Goose Lake	Marquette County	88045	Oct/06/1988	Northern Pike, Walleye, Yellow Perch
Goose Lake	Marquette County	2001011	May/01/2001	Northern Pike, Walleye, Yellow Perch
Goose Lake	Marquette County	2008221	Jun/08/2008	Northern Pike, White Sucker
Gourdneck Lake	Kalamazoo County	2005126	May/26/2005	Northern Pike
Grand Lake	Presque Isle County	95015	May/22/1995	Rock Bass, Smallmouth Bass, Walleye
Grand River	at Ionia	2006103	Jul/11/2006	Carp, Channel Catfish, Redhorse Sucker, Walleye
Grand River	Clinton County, State Road	84006	Aug/29/1984	Carp, Largemouth Bass, Smallmouth Bass

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

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Grand River	Clinton County, State Road	85004	Jul/24/1985	Carp
Grand River	Clinton County, State Road	90022	Sep/06/1990	Carp, Largemouth Bass, Smallmouth Bass
Grand River	Downstream of Dimondale	2004147	Jun/16/2004	Northern Pike
Grand River	Eaton Rapids, Gale Road/Waverly Road	2001021	Oct/03/2001	Carp, Largemouth Bass, Walleye, White Sucker
Grand River	Eaton Rapids, Gale Road/Waverly Road	2004146	Jul/01/2004	Channel Catfish, Northern Pike, Smallmouth Bass, Walleye
Grand River	Grand Haven, river mouth	86039	Aug/04/1986	Carp, Largemouth Bass, Walleye
Grand River	Grand Haven, river mouth	93036	Jun/09/1993	Carp
Grand River	Grand Rapids, below 6th Street dam	1998148	Mar/05/1998	Northern Pike, Redhorse Sucker, Walleye
Grand River	Grand Rapids, below 6th Street dam	2007300	Jun/18/2007	Northern Pike
Grand River	Kent County, above 6th St. Dam	1999011	Mar/17/1999	Northern Pike
Grand River	Kent County, below Grand Rapids	90029	Aug/23/1990	Carp
Grand River	Kent County, below Grand Rapids	91036	Mar/20/1991	Walleye
Grand River	Maple Grove Road	90021	Aug/14/1990	Carp, Walleye
Grand River	Maple Grove Road	2002113	Oct/03/2002	Northern Pike
Grand River	Moores River Impoundment	89054	Jul/27/1989	Channel Catfish, Largemouth Bass, Northern Pike, Smallmouth Bass, Walleye
Grand River	Moores River Impoundment	96013	May/07/1996	Carp, Largemouth Bass
Grand River	Moores River Impoundment	2004148	Jun/09/2004	Northern Pike
Grand River	Portland Impoundment	92051	Oct/01/1992	Carp
Grand Sable Lake	Alger County	87088	Oct/22/1987	Lake Trout, Northern Pike
Gratiot Lake	Keweenaw County	87038	Jan/01/1987	Rock Bass, Smallmouth Bass
Gratiot Lake	Keweenaw County	2005025	May/25/2005	Northern Pike, Smallmouth Bass, Walleye
Green Lake	Grand Traverse County	93065	May/11/1993	Northern Pike, White Sucker
Green Lake	Grand Traverse County	2003139	Jun/04/2003	Lake Trout
Gull Lake	Kalamazoo County	89073	Nov/01/1989	Largemouth Bass, Northern Pike
Gull Lake	Kalamazoo County	93064	Jun/10/1993	Largemouth Bass, Northern Pike
Gulliver Lake	Schoolcraft County	90015	May/15/1990	Northern Pike, Smallmouth Bass, Walleye
Gun Lake	Barry County	2006014	Jun/01/2006	Largemouth Bass
Hagerman Lake	Iron County	88050	Oct/12/1988	Smallmouth Bass, Walleye
Hamilton Lake	Dickinson County	94024	Apr/19/1994	Northern Pike, Walleye
Hamlin Lake	Mason County	90070	Feb/05/1991	Black Crappie, Northern Pike
Hanbury Lake	Dickinson County	2005028	May/02/2005	Largemouth Bass
Hardwood Lake	Ogemaw County	2004034	Jun/02/2004	Northern Pike
Hawk Lake	Oakland County	90004	May/01/1990	Brown Bullhead, Northern Pike
Heron Lake	Oakland County	2000027	Jul/08/2000	Largemouth Bass
Hersey River	Osceola County, Diamond Road	85035	May/15/1985	Brown Trout, White Sucker
Hersey River	Osceola County, Reed City	86013	Jun/09/1986	Brown Trout, Northern Pike, White Sucker
Hersey River	Osceola County, Reed City	1998041	Jul/08/1998	Brown Trout
Hess Lake	Newaygo County	97062	Aug/26/1997	Carp, Largemouth Bass, Mirror Carp
Higgins Lake	Roscommon County	88038	Oct/27/1988	Brown Trout, Lake Herring, Lake Trout
Higgins Lake	Roscommon County	95057.1	Oct/31/1995	Lake Herring, Lake Trout
Higgins Lake	Roscommon County	1998042	Nov/25/1998	Lake Trout

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

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Hopkins Lake	Shiawassee County	91033	Sep/04/1991	Largemouth Bass
Houghton Lake	Roscommon County	87063	Aug/05/1987	Carp, Northern Pike, Walleye
Houghton Lake	Roscommon County	93050	Jun/01/1993	Walleye
Houghton Lake	Roscommon County	1998127	Jun/16/1998	Carp
Houghton Lake	Roscommon County	2008222	May/21/2008	Carp
Hubbard Lake	Alcona County	89076	Oct/16/1989	Northern Pike, Walleye
Hubbard Lake	Alcona County	2006017	May/10/2006	Walleye, White Sucker
Huron River	Barton Pond	92021	May/07/1992	Carp, Smallmouth Bass
Huron River	Belleville Lake	88003	May/10/1988	Carp, Walleye
Huron River	Belleville Lake	1999014	May/19/1999	Carp, Gizzard Shad, Walleye, White Sucker
Huron River	Ford Lake	83002	Sep/12/1983	Black Crappie, Brown Bullhead, Carp, Largemouth Bass, Walleye, White Sucker
Huron River	Ford Lake	89026	May/02/1989	Black Crappie, Walleye
Huron River	Ford Lake	92020	May/05/1992	Carp, Walleye
Huron River	Ford Lake	1999015	May/19/1999	Black Crappie, Carp, Channel Catfish, Walleye
Huron River	Ford Lake	2006018	May/16/2006	Black Crappie, Carp, Channel Catfish, Walleye
Huron River	Geddes Pond	2008223	May/06/2008	Carp
Hutchins Lake	Allegan County	2007218	May/08/2007	Northern Pike
Intermediate Lake	Antrim County	90044	Sep/19/1990	Rock Bass, Smallmouth Bass, Walleye
Iron River	Above Wild River Road	1998045	Jun/04/1998	Brown Trout
Jordan Lake	Ionia/Barry County	89047	Jun/21/1989	Largemouth Bass
Kalamazoo River	Above Otsego City Dam	93073.3	Oct/11/1993	Walleye
Kalamazoo River	Above Otsego City Dam	1999085	Oct/13/1999	Carp, Smallmouth Bass
Kalamazoo River	Above Otsego City Dam	2001049	Sep/20/2001	Carp, Smallmouth Bass
Kalamazoo River	Above Otsego City Dam	2006164	Sep/05/2006	Carp
Kalamazoo River	Ceresco Impoundment, 12 Mile Road	1999082	Oct/07/1999	Carp, Smallmouth Bass
Kalamazoo River	Ceresco Impoundment, 12 Mile Road	2000120	Sep/21/2000	Carp, Smallmouth Bass
Kalamazoo River	Ceresco Impoundment, 12 Mile Road	2001042	Oct/11/2001	Carp, Smallmouth Bass
Kalamazoo River	Ceresco Impoundment, 12 Mile Road	2006160	Aug/08/2006	Carp, Smallmouth Bass
Kalamazoo River	Ceresco Impoundment, 15 Mile Road	87048	Jul/22/1987	Carp, Largemouth Bass, Smallmouth Bass
Kalamazoo River	City of Allegan Dam	1999092	Nov/09/1999	Carp, Smallmouth Bass
Kalamazoo River	City of Allegan Dam	2001052	Sep/17/2001	Carp, Smallmouth Bass
Kalamazoo River	City of Allegan Dam	2006167	Sep/07/2006	Carp, Channel catfish, Smallmouth Bass
Kalamazoo River	D-Avenue	2000123	Aug/31/2000	Carp, Smallmouth Bass
Kalamazoo River	Kalamazoo Avenue	2000122	Aug/29/2000	Carp, Northern Pike, Rock Bass, Smallmouth Bass
Kalamazoo River	Kalamazoo Lake	83008	Jul/01/1984	Carp
Kalamazoo River	Kalamazoo Lake	85054	Jul/01/1985	Carp, Largemouth Bass, Smallmouth Bass
Kalamazoo River	Kalamazoo Lake	86027	Jul/09/1986	Carp, Largemouth Bass
Kalamazoo River	Kalamazoo Lake	87010	Mar/31/1987	Black Crappie, Bluegill, Brown Trout, Channel Catfish, Flathead Catfish, Freshwater Drum, Largemouth Bass, N. Pike Eggs, Northern Pike, Rainbow Trout, Rock Bass, Walleye, White Sucker, Yellow Perch

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Kalamazoo River	Kalamazoo Lake	87046	Jul/13/1987	Carp
Kalamazoo River	Kalamazoo Lake	93035	Jun/08/1993	Carp
Kalamazoo River	Kalamazoo Lake	93073.6	Oct/09/1993	Walleye
Kalamazoo River	Kalamazoo Lake	1999095	Oct/19/1999	Brown Trout, Carp, Smallmouth Bass
Kalamazoo River	Kalamazoo Lake	2001055	Oct/03/2001	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River	Kalamazoo Lake	2006170	Sep/29/2006	Carp
Kalamazoo River	Lake Allegan	83007	Jul/01/1983	Carp
Kalamazoo River	Lake Allegan	83034	May/01/1983	Largemouth Bass, Sunfish
Kalamazoo River	Lake Allegan	85053	Jul/01/1985	Carp, Largemouth Bass, Smallmouth Bass
Kalamazoo River	Lake Allegan	86026	Jul/07/1986	Carp
Kalamazoo River	Lake Allegan	87045	Jul/14/1987	Carp, Northern Pike, Smallmouth Bass
Kalamazoo River	Lake Allegan	90050	Oct/11/1990	Carp
Kalamazoo River	Lake Allegan	92019	Oct/27/1992	Carp
Kalamazoo River	Lake Allegan	93073.1	Sep/16/1993	Walleye
Kalamazoo River	Lake Allegan	94025	Jun/22/1994	Carp
Kalamazoo River	Lake Allegan	1999087	Oct/05/1999	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River	Lake Allegan	2000124	Sep/18/2000	Black Crappie, Carp, Largemouth Bass, Smallmouth Bass, Walleye
Kalamazoo River	Lake Allegan	2001053	Aug/23/2001	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River	Lake Allegan	2006168	Sep/27/2006	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River	Morrow Pond	85049	Jul/01/1985	Carp, Largemouth Bass, Smallmouth Bass
Kalamazoo River	Morrow Pond	86022	Jul/07/1986	Carp
Kalamazoo River	Morrow Pond	87043	Jul/14/1987	Carp, Smallmouth Bass
Kalamazoo River	Morrow Pond	93073.2	Oct/15/1993	Walleye
Kalamazoo River	Morrow Pond	1999083	Jul/28/1999	Carp, Smallmouth Bass
Kalamazoo River	Morrow Pond	2001043	Aug/17/2001	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River	Morrow Pond	2006161	Aug/29/2006	Carp, Smallmouth Bass
Kalamazoo River	Mosel Avenue	83006	Jul/01/1983	Carp
Kalamazoo River	Mosel Avenue	85051	Jul/01/1985	Carp, Smallmouth Bass
Kalamazoo River	Mosel Avenue	86024	Jul/07/1986	Carp
Kalamazoo River	Mosel Avenue	93073.5	Oct/15/1993	Walleye
Kalamazoo River	Mosel Avenue	2001046	Sep/25/2001	Smallmouth Bass
Kalamazoo River	Mosel Avenue	2006162	Sep/20/2006	Carp, Smallmouth Bass
Kalamazoo River	New Richmond	93073.4	Sep/21/1993	Walleye
Kalamazoo River	New Richmond	1999094	Nov/18/1999	Carp, Channel Catfish, Largemouth Bass, Smallmouth Bass
Kalamazoo River	New Richmond	2001054	Oct/16/2001	Carp, Flathead Catfish, Smallmouth Bass
Kalamazoo River	New Richmond	2006169	Oct/03/2006	Carp, Channel Catfish, Flathead Catfish, Smallmouth Bass
Kalamazoo River	Otsego Dam Impoundment	1999086	Oct/29/1999	Carp, Smallmouth Bass
Kalamazoo River	Otsego Dam Impoundment	2001050	Sep/18/2001	Carp, Smallmouth Bass
Kalamazoo River	Otsego Dam Impoundment	2006165	Sep/19/2006	Carp
Kalamazoo River	Plainwell Dam Reservoir	83005	Jul/01/1983	Carp
Kalamazoo River	Plainwell Dam Reservoir	85052	Jul/01/1985	Carp, Smallmouth Bass
Kalamazoo River	Plainwell Dam Reservoir	86025	Jul/08/1986	Carp

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Kalamazoo River	Plainwell Dam Reservoir	87044	Jul/14/1987	Carp
Kalamazoo River	Plainwell Dam Reservoir	1999084	Oct/12/1999	Carp, Smallmouth Bass
Kalamazoo River	Plainwell Dam Reservoir	2001048	Sep/05/2001	Carp, Smallmouth Bass
Kalamazoo River	Plainwell Dam Reservoir	2006163	Sep/22/2006	Carp, Smallmouth Bass
Kalamazoo River	Trowbridge Dam Impoundment	1999093	Nov/03/1999	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River	Trowbridge Dam Impoundment	2001051	Oct/09/2001	Carp, Smallmouth Bass
Kalamazoo River	Trowbridge Dam Impoundment	2003142	Aug/18/2003	Carp, Smallmouth Bass
Kalamazoo River	Trowbridge Dam Impoundment	2004143	Aug/25/2004	Carp
Kalamazoo River	Trowbridge Dam Impoundment	2006166	Sep/06/2006	Carp, Channel Catfish, Smallmouth Bass
Kalamazoo River, South Branch	Hillsdale County	1998103	Apr/22/1998	White Sucker
Kawkawlin River	Bay County, M-247	88027	Aug/04/1988	Carp, Northern Pike
Kawkawlin River	Bay County, M-247	2004039	Aug/10/2004	Carp, Northern Pike
Kawkawlin River	Bay County, M-247	2008227	Apr/16/2008	Carp
Kearsley Creek	Kearsley Reservoir	2000029	Jul/07/2000	Carp, Largemouth Bass
Kent Lake	Oakland County	90017	Jul/18/1990	Black Crappie, Largemouth Bass, Smallmouth Bass, Walleye
Kent Lake	Oakland County	1998050	Jul/27/1998	Carp, Largemouth Bass, Smallmouth Bass
Kent Lake	Oakland County	2004040	May/11/2004	Black Crappie, Walleye
King Lake	Baraga County	2005037	Apr/30/2005	Largemouth Bass
Kingston Lake	Alger County	2003047	May/29/2003	Largemouth Bass, Muskellunge, Smallmouth Bass, Walleye
Klinger Lake	St. Joseph County	90034	Oct/02/1990	Largemouth Bass
Klinger Lake	St. Joseph County	2001145	Aug/22/2001	Largemouth Bass
Klinger Lake	St. Joseph County	2006126	Dec/05/2006	Northern Pike
Lake 27	Otsego County	95033	Jun/10/1995	Northern Pike
Lake Ann	Benzie County	89013	May/31/1989	Northern Pike, Smallmouth Bass
Lake Cadillac	Wexford County	2004041	Sep/28/2004	Northern Pike, Smallmouth Bass
Lake Charlevoix	Charlevoix County	90051	Nov/01/1990	Brown Trout, Lake Trout
Lake Charlevoix	Charlevoix County	2006023	Apr/19/2006	Walleye, White Sucker
Lake Emma	Presque Isle County	2003050	May/22/2003	Northern Pike
Lake Erie	Brest Bay	92062	Oct/15/1992	Walleye
Lake Erie	Huron River, Flat Rock	84050	Jan/01/1984	Coho
Lake Erie	Huron River, Flat Rock	97018	Oct/17/1997	Chinook, Rainbow Trout
Lake Erie	N. Maumee Bay	95008	Apr/26/1995	Carp
Lake Erie	N. Maumee Bay	2006025	Sep/26/2006	Carp, Largemouth Bass, Yellow Perch
Lake Erie	Off Monroe	86002	Apr/22/1986	Carp, Channel Catfish, Walleye
Lake Erie	Off Monroe	87093	Oct/20/1987	Walleye
Lake Erie	Off Monroe	94027	Apr/19/1994	Walleye
Lake Erie	Off Monroe	95040	Apr/26/1995	Freshwater Drum, White Bass, White Perch
Lake Erie	Off Monroe	2000030	Apr/04/2000	Carp
Lake Erie	Off Monroe	2006099	Apr/24/2006	Carp, Freshwater Drum, Smallmouth Bass, White Bass, Yellow Perch
Lake Erie	Off Monroe	2008266	Apr/14/2008	Channel Catfish
Lake Erie	Western Basin	93082	Apr/01/1993	Carp, Channel Catfish, Gizzard Shad, White Bass, Yellow Perch
Lake Erie	Western Basin	95058	Oct/11/1995	Walleye

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Erie	Western Basin	97019	Apr/15/1997	Lake Whitefish, Smallmouth Bass, Yellow Perch
Lake Erie	Western Basin	2002045	Apr/05/2002	Channel Catfish
Lake Erie	Western Basin	2004043	Apr/20/2004	Walleye, White Bass, White Perch
Lake Esau	Presque Isle County	2003052	Jun/18/2003	Smallmouth Bass
Lake Fenton	Genesee County	87059	Jul/22/1987	Largemouth Bass
Lake Fenton	Genesee County	89037	May/09/1989	Largemouth Bass
Lake Fenton	Genesee County	90005	May/23/1990	Largemouth Bass, Northern Pike, Walleye
Lake Geneserath	Charlevoix County, Beaver Island	90072	Jun/01/1990	Largemouth Bass, Northern Pike
Lake Gogebic	Gogebic/Ontonagon County	85062	Jul/30/1985	Walleye, White Sucker
Lake Gogebic	Gogebic/Ontonagon County	2002046	Apr/28/2002	Walleye
Lake Gogebic	Gogebic/Ontonagon County	2003156	Oct/14/2003	Rock Bass
Lake Hudson	Lenawee County	89003	Apr/03/1989	Carp, Muskellunge, Northern Pike
Lake Hudson	Lenawee County	2000032	Jul/21/2000	Carp, Largemouth Bass
Lake Huron	Alpena	85024	Oct/10/1985	Brown Trout
Lake Huron	Au Sable River	83014	Oct/11/1983	Chinook
Lake Huron	Au Sable River	83041	Oct/08/1983	Chinook
Lake Huron	Au Sable River	84046	Sep/19/1984	Chinook
Lake Huron	Au Sable River	86052	Sep/26/1986	Chinook
Lake Huron	Au Sable River	87079	Sep/17/1987	Chinook
Lake Huron	Au Sable River	89062	Oct/11/1989	Chinook
Lake Huron	Au Sable River	91048	Sep/30/1991	Chinook
Lake Huron	Au Sable River	93060	Oct/12/1993	Chinook
Lake Huron	Au Sable River	97022	Oct/06/1997	Chinook
Lake Huron	Black River	95053	Oct/18/1995	Chinook
Lake Huron	Black River	96018	Oct/15/1996	Coho
Lake Huron	Black River	1998052	Oct/14/1998	Coho
Lake Huron	East of Bois Blanc Island	83025	Nov/08/1983	Lake Trout
Lake Huron	Grindstone City	89050	May/30/1989	Lake Trout
Lake Huron	Grindstone City	2004130	May/10/2004	Lake Trout
Lake Huron	Hammond Bay	83018	Oct/25/1983	Lake Trout, Lake Whitefish
Lake Huron	Harbor Beach	89068	Nov/01/1989	Brown Trout
Lake Huron	Les Cheneaux Islands	95003	Apr/17/1995	Yellow perch
Lake Huron	Lexington	85027	Oct/22/1985	Brown Trout
Lake Huron	Marquette Island	83024	Nov/08/1983	Lake Trout
Lake Huron	Nunns Creek	93051	Apr/25/1993	Rainbow Smelt
Lake Huron	Oscoda	85025	Oct/10/1985	Brown Trout
Lake Huron	Port Austin	86007	May/27/1986	Lake Trout
Lake Huron	Port Austin	91052	May/20/1991	Lake Trout
Lake Huron	Port Austin	96019	May/16/1996	Lake Trout, Lake Whitefish
Lake Huron	Port Sanilac	85026	Oct/23/1985	Brown Trout
Lake Huron	Rock Falls Creek	91023	Apr/26/1991	Rainbow Trout
Lake Huron	Rock Falls Creek	92006	Apr/09/1992	Rainbow Trout
Lake Huron	Rockport	86021	Jun/19/1986	Lake Trout
Lake Huron	Rockport	89049	May/15/1989	Lake Trout
Lake Huron	Saginaw Bay	85031	May/23/1985	Channel Catfish
Lake Huron	Saginaw Bay	2008271	Sep/12/2008	Walleye, White Bass
Lake Huron	Saginaw Bay, Au Gres	87017	Jun/22/1987	Carp, Channel Catfish, Walleye, Yellow Perch
Lake Huron	Saginaw Bay, Au Gres	91037	Sep/25/1991	Carp, Channel Catfish, Walleye, White Sucker, Yellow Perch
Lake Huron	Saginaw Bay, Bay Port	84043	Jul/31/1984	Carp

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Huron	Saginaw Bay, Bay Port	87015	May/12/1987	Carp, Channel Catfish, Walleye, Yellow Perch
Lake Huron	Saginaw Bay, Bay Port	2004046	Sep/10/2004	Carp, Channel Catfish, Walleye, White Bass, White Sucker, Yellow Perch
Lake Huron	Saginaw Bay, Caseville	86028	Jun/25/1986	Channel Catfish, Walleye
Lake Huron	Saginaw Bay, Charity Island	84044	Sep/27/1984	Walleye
Lake Huron	Saginaw Bay, Charity Island	2007270	Sep/04/2007	Freshwater Drum
Lake Huron	Saginaw Bay, Fish Point	91038	Oct/01/1991	Carp, Channel Catfish, Walleye, White Sucker, Yellow Perch
Lake Huron	Saginaw Bay, near Saginaw River mouth	84042	Jun/04/1984	Carp, Channel Catfish
Lake Huron	Saginaw Bay, near Saginaw River mouth	85034	May/28/1985	Carp, Channel Catfish
Lake Huron	Saginaw Bay, near Saginaw River mouth	92054	Sep/23/1992	Lake Whitefish, Walleye
Lake Huron	Saginaw Bay, near Saginaw River mouth	93069	Jun/04/1993	Alewife, Brown Trout, Carp, Lake Trout, Northern Pike, White Bass, Yellow Perch
Lake Huron	Saginaw Bay, near Saginaw River mouth	94038	Sep/27/1994	Walleye, White Perch
Lake Huron	Saginaw Bay, near Saginaw River mouth	1998140	Sep/21/1998	Carp, Channel Catfish, Walleye
Lake Huron	Saginaw Bay, near Saginaw River mouth	1999089	Oct/21/1999	Channel Catfish
Lake Huron	Saginaw Bay, off Saginaw River	87016	May/17/1987	Carp, Channel Catfish, Walleye, Yellow Perch
Lake Huron	Saginaw Bay, Pinconning	86068	Jun/23/1986	Carp, Channel Catfish
Lake Huron	Saginaw Bay, Rifle River	93009	Apr/19/1993	Rainbow Trout, White Sucker
Lake Huron	Saginaw Bay, Sand Point	83032	May/01/1983	Walleye
Lake Huron	Saginaw Bay, Sebewaing	86069	Apr/22/1986	Channel Catfish
Lake Huron	Saginaw Bay, Wildfowl Bay	85033	May/23/1985	Carp
Lake Huron	Saginaw Bay, Wildfowl Bay	85063	Sep/25/1985	Carp
Lake Huron	Saginaw Bay, Wildfowl Bay	85064	Apr/26/1985	Carp, Channel Catfish
Lake Huron	Saginaw Bay, Wildfowl Bay	86070	Apr/21/1986	Carp
Lake Huron	Saginaw Bay, Wildfowl Bay	86071	May/12/1986	Channel Catfish
Lake Huron	Saginaw Bay, Wildfowl Bay	86072	Jul/21/1986	Carp
Lake Huron	Saginaw Bay, Wildfowl Bay	88010	Jun/14/1988	Carp, Channel Catfish, Walleye, Yellow Perch
Lake Huron	South Point	92055	Jun/02/1992	Lake Trout, Lake Whitefish
Lake Huron	Swan River	84054	Sep/30/1984	Coho
Lake Huron	Swan River	86055	Oct/07/1986	Chinook
Lake Huron	Swan River	86067	Oct/10/1986	Coho
Lake Huron	Swan River	87080	Sep/18/1987	Chinook
Lake Huron	Swan River	88090	Sep/01/1988	Chinook
Lake Huron	Swan River	89064	Oct/20/1989	Chinook
Lake Huron	Swan River	91047	Sep/30/1991	Chinook
Lake Huron	Swan River	93052	Oct/13/1993	Chinook
Lake Huron	Swan River	95048	Oct/10/1995	Chinook
Lake Huron	Swan River	96021	Oct/18/1996	Chinook
Lake Huron	Swan River	97021	Oct/13/1997	Chinook
Lake Huron	Swan River	1998053	Oct/01/1998	Chinook
Lake Huron	Tawas Bay	90068	Oct/10/1990	Burbot
Lake Huron	Tawas River	83009	Oct/11/1983	Chinook, Coho
Lake Huron	Tawas River	84056	Oct/01/1984	Coho
Lake Huron	Tawas River	85056	Oct/08/1985	Coho

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Huron	Tawas River	86051	Sep/26/1986	Chinook, Coho
Lake Huron	Thunder Bay	86046	Jul/23/1986	Brown Trout
Lake Huron	Thunder Bay	90069	Oct/15/1990	Brown Trout
Lake Huron	Thunder Bay	91053	Jun/19/1991	Brown Trout
Lake Huron	Thunder Bay	92057	Jun/01/1992	Brown Trout, Lake Whitefish
Lake Huron	Thunder Bay	93070	Jun/14/1993	Alewife, Brown Trout, Carp, Channel Catfish, Chub, Lake Trout, Walleye
Lake Huron	Thunder Bay	96022	Jun/26/1996	Lake Trout, Lake Whitefish
Lake Huron	Thunder Bay	1998055	Aug/20/1998	Lake Whitefish
Lake Huron	Thunder Bay	1999029	Aug/03/1999	Carp, Lake Whitefish, Walleye
Lake Huron	Thunder Bay	2001061	Jul/02/2001	Carp
Lake Huron	Thunder Bay	2004145	May/24/2004	Lake Trout
Lake Huron	Thunder Bay	2007269	Oct/23/2007	Lake Whitefish
Lake Huron	Thunder Bay River	89051	Jun/29/1989	Carp, Channel Catfish, Walleye
Lake Independence	Marquette County	89034	May/08/1989	Northern Pike, Walleye
Lake Independence	Marquette County	95009	May/09/1995	Lake Herring, Northern Pike, Walleye
Lake Independence	Marquette County	2005045	Apr/29/2005	Walleye
Lake Lansing	Ingham County	89036	Jun/07/1989	Black Crappie, Largemouth Bass
Lake Le Vasseur	Marquette County	2002104	Jun/19/2002	Northern Pike
Lake Macatawa	Ottawa County	80002	Jan/01/1980	Black Crappie, Bluegill, Carp, Channel Catfish, Northern Pike, Smallmouth Bass, Walleye, White Sucker, Yellow Perch
Lake Macatawa	Ottawa County	84002	Apr/10/1984	Carp, Walleye
Lake Macatawa	Ottawa County	87061	Jul/16/1987	Carp, Walleye
Lake Macatawa	Ottawa County	95006	May/05/1995	Carp, Walleye
Lake Macatawa	Ottawa County	2005047	May/16/2005	Carp, Walleye
Lake Macatawa	Ottawa County	2008262	May/12/2008	Largemouth Bass, Walleye
Lake Margrethe	Crawford County	95002	Mar/31/1995	Walleye
Lake Margrethe	Crawford County	2007227	May/08/2007	Walleye
Lake Medora	Keweenaw County	2004050	Jun/15/2004	Smallmouth Bass, Walleye
Lake Michigamme	Marquette County	84019	Aug/22/1984	Northern Pike, Rock Bass, Walleye, White Sucker, Yellow Perch
Lake Michigamme	Marquette County	97023	Jun/07/1997	Lake Herring, Northern Pike, White Sucker
Lake Michigamme	Marquette County	2006035	Apr/22/2006	Rock Bass, Walleye
Lake Michigan	Big Bay De Noc	90059	May/30/1990	Lake Whitefish
Lake Michigan	Bridgeman	2002112	Oct/03/2001	Lake Sturgeon
Lake Michigan	Bridgeman	2003159	Sep/05/2003	Lake Sturgeon
Lake Michigan	Bridgeman	2006501	Jun/01/2006	Lake Sturgeon
Lake Michigan	Charlevoix	86012	Jun/06/1986	Brown Trout, Chinook, Lake Trout
Lake Michigan	Charlevoix	96027	Aug/27/1996	Lake Trout
Lake Michigan	Charlevoix/Little Traverse Bay	89043	May/17/1989	Lake Trout
Lake Michigan	Epoufette	83019	Nov/08/1983	Lake Whitefish
Lake Michigan	Glen Haven	83022	Oct/20/1983	Lake Trout
Lake Michigan	Glen Haven	84040	Jun/04/1984	Chub
Lake Michigan	Grand Haven	86001	Apr/04/1986	Lake Trout, Yellow Perch
Lake Michigan	Grand Haven	87011	Apr/07/1987	Lake Trout
Lake Michigan	Grand Haven	96025	May/29/1996	Lake Trout
Lake Michigan	Grand Haven	97030	Apr/11/1997	Yellow Perch
Lake Michigan	Grand River, Grand Rapids	84055	Sep/28/1984	Coho

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

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Lake Michigan	Grand River, Grand Rapids	94059	Oct/01/1994	Rainbow Trout
Lake Michigan	Grand River, Webber Dam	83015	Oct/06/1983	Chinook, Coho
Lake Michigan	Grand River, Webber Dam	85057	Sep/27/1985	Coho
Lake Michigan	Grand River, Webber Dam	86050	Oct/03/1986	Coho
Lake Michigan	Grand River, Webber Dam	87086	Sep/23/1987	Chinook
Lake Michigan	Grand River, Webber Dam	88041	Sep/19/1988	Coho
Lake Michigan	Grand River, Webber Dam	90046	Sep/25/1990	Coho
Lake Michigan	Grand River, Webber Dam	91045	Oct/10/1991	Chinook
Lake Michigan	Grand River, Webber Dam	92052	Sep/22/1992	Coho
Lake Michigan	Grand River, Webber Dam	93077	Sep/21/1993	Chinook
Lake Michigan	Grand River, Webber Dam	94043	Sep/15/1994	Coho
Lake Michigan	Grand River, Webber Dam	95054	Oct/12/1995	Chinook
Lake Michigan	Grand River, Webber Dam	97024	Sep/29/1997	Chinook
Lake Michigan	Grand River, Webber Dam	1998056	Oct/28/1998	Coho
Lake Michigan	Grand Traverse Bay	83016	Aug/16/1983	Lake Whitefish
Lake Michigan	Grand Traverse Bay	83026	Nov/29/1983	Lake Trout
Lake Michigan	Grand Traverse Bay	91061	Oct/29/1991	Lake Whitefish
Lake Michigan	Grand Traverse Bay	92060	Aug/05/1992	Brown Trout, Lake Whitefish
Lake Michigan	Grand Traverse Bay	97025	Oct/02/1997	Lake Trout
Lake Michigan	Grand Traverse Bay	97077	Dec/30/1997	Lake Whitefish
Lake Michigan	Grand Traverse Bay	1998141	Sep/09/1998	Lake Trout
Lake Michigan	Grand Traverse Bay, East Arm	84031	Mar/01/1984	Lake Trout
Lake Michigan	Grand Traverse Bay, East Arm	90065	Nov/11/1990	Lake Whitefish, Yellow Perch
Lake Michigan	Grand Traverse Bay, East Arm	96024	Dec/05/1996	Lake Whitefish
Lake Michigan	Grand Traverse Bay, West Arm	84032	Mar/20/1984	Lake Trout
Lake Michigan	Grand Traverse Bay, West Arm	84037	May/29/1984	Lake Trout
Lake Michigan	Grand Traverse Bay, West Arm	90066	Jun/20/1990	Lake Whitefish
Lake Michigan	Grand Traverse Bay, West Arm	93088	Jun/07/1993	Brown Trout, Lake Whitefish
Lake Michigan	Green Bay	93078	Apr/18/1993	Brown Trout, Splake
Lake Michigan	Green Bay	1999032	Aug/02/1999	Lake Whitefish
Lake Michigan	Green Bay	2001066	Apr/13/2001	Brown Trout
Lake Michigan	Green Bay	2002054	Apr/11/2002	Brown Trout
Lake Michigan	Green Bay	2003148	Apr/10/2003	Brown Trout
Lake Michigan	Green Bay	2004054	Apr/08/2004	Smallmouth Bass, White Sucker
Lake Michigan	Green Bay, Cedar River	88057	Jul/19/1988	Longnose Sucker, White Sucker
Lake Michigan	Green Bay, Cedar River	92022	Apr/29/1992	Brown Trout, Chinook, Rainbow Trout, Smallmouth Bass, Splake, Walleye
Lake Michigan	Green Bay, Cedar River	2000037	Apr/10/2000	Carp
Lake Michigan	Green Bay, Cedar River	2005050	Apr/15/2005	Longnose Sucker, Smallmouth Bass, Walleye, White Sucker
Lake Michigan	Kalamazoo River mouth	2003155	May/17/2002	Lake Sturgeon
Lake Michigan	Lake Muskegon	2004200	Apr/01/2004	Lake Sturgeon
Lake Michigan	Leland	84049	Aug/06/1984	Chub
Lake Michigan	Little Bay De Noc	83017	Oct/20/1983	Lake Trout, Lake Whitefish
Lake Michigan	Little Bay De Noc	87004	Apr/14/1987	Northern Pike, Walleye
Lake Michigan	Little Bay De Noc	89032	Apr/10/1989	Carp
Lake Michigan	Little Bay De Noc	90001	Feb/28/1990	Burbot

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Michigan	Little Bay De Noc	91022	Apr/16/1991	Longnose Sucker, Walleye
Lake Michigan	Little Bay De Noc	92049	Jun/04/1992	Walleye
Lake Michigan	Little Bay De Noc	93079	Apr/27/1993	Carp, Yellow Perch
Lake Michigan	Little Bay De Noc	94042	Apr/20/1994	White Sucker
Lake Michigan	Little Bay De Noc	95016	Feb/12/1995	Lake Sturgeon
Lake Michigan	Little Bay De Noc	2004150	Sep/10/2004	Carp, Redhorse Sucker, Rock Bass, Smallmouth Bass, Walleye
Lake Michigan	Little Bay De Noc	2008232	Apr/22/2008	Carp, Redhorse Sucker, Rock Bass, Smallmouth Bass
Lake Michigan	Little Bay De Noc	2008280	Apr/22/2008	Smallmouth Bass
Lake Michigan	Little Manistee River Weir	85021	Sep/09/1985	Brown Trout
Lake Michigan	Little Manistee River Weir	86053	Oct/06/1986	Brown Trout, Chinook, Rainbow Trout
Lake Michigan	Little Manistee River Weir	94044	Nov/07/1994	Rainbow Trout
Lake Michigan	Little Traverse Bay	83021	Sep/27/1983	Lake Trout
Lake Michigan	Little Traverse Bay	84036	May/02/1984	Lake Trout
Lake Michigan	Ludington	90058	Oct/21/1990	Yellow Perch
Lake Michigan	Ludington	2000118	Jul/19/1999	Lake Sturgeon
Lake Michigan	Manistee	83029	May/12/1983	Chub
Lake Michigan	Manistee Lake	2003158	Jul/10/2003	Lake Sturgeon
Lake Michigan	Manistee River	83020	Sep/20/1983	Chinook
Lake Michigan	Manistee River	84045	Sep/06/1984	Chinook, Coho
Lake Michigan	Manistee River	84047	Sep/19/1984	Chinook
Lake Michigan	Manistee River	85066	Sep/25/1985	Chinook
Lake Michigan	Manistee River	86066	Oct/10/1986	Chinook, Coho
Lake Michigan	Manistee River	88092	Sep/10/1988	Chinook, Chinook Eggs, Coho
Lake Michigan	Manistee River	97069	May/15/1997	Lake Sturgeon
Lake Michigan	Manistee River	2004055	Apr/01/2004	Rainbow Trout
Lake Michigan	Manistique River	85036	May/15/1985	Rainbow Trout
Lake Michigan	Manitou Islands	83031	Oct/20/1983	Chub
Lake Michigan	Menominee River	88052	Oct/12/1988	Brown Trout
Lake Michigan	Millecoquins River	2000115	Dec/14/2000	Lake Sturgeon
Lake Michigan	Muskegon	88060	Jun/01/1988	Carp, Walleye
Lake Michigan	Muskegon	90009	May/30/1990	Lake Whitefish
Lake Michigan	Muskegon	97027	Jul/01/1997	Lake Whitefish
Lake Michigan	New Buffalo	2003160	Aug/19/2003	Lake Sturgeon
Lake Michigan	Northern Lake Michigan	97028	Mar/26/1997	Lake Whitefish
Lake Michigan	Northern Lake Michigan	2001132	Oct/31/2001	Burbot
Lake Michigan	Norwood	84033	Mar/20/1984	Lake Trout
Lake Michigan	Pentwater	83028	May/06/1983	Chub
Lake Michigan	Pentwater	84034	Apr/09/1984	Lake Trout
Lake Michigan	Pentwater	84041	Aug/02/1984	Chub
Lake Michigan	Pentwater	89039	May/02/1989	Lake Trout
Lake Michigan	Pentwater	91025	Apr/12/1991	Brown Trout, Lake Trout
Lake Michigan	Platte River	83011	Oct/07/1983	Chinook, Coho
Lake Michigan	Platte River	83040	Sep/20/1983	Coho
Lake Michigan	Platte River	84048	Sep/30/1984	Coho
Lake Michigan	Platte River	84053	Oct/09/1984	Coho
Lake Michigan	Platte River	85022	Sep/25/1985	Brown Trout
Lake Michigan	Platte River	85055	Sep/25/1985	Coho
Lake Michigan	Platte River	85068	Sep/25/1985	Coho
Lake Michigan	Platte River	86054	Oct/06/1986	Coho
Lake Michigan	Platte River	87091	Oct/06/1987	Chinook

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Michigan	Platte River	88066	Sep/26/1988	Coho
Lake Michigan	Platte River	88091	Sep/10/1988	Coho, Coho Eggs
Lake Michigan	Platte River	89067	Oct/30/1989	Chinook
Lake Michigan	Platte River	90048	Oct/01/1990	Coho
Lake Michigan	Platte River	91055	Oct/09/1991	Chinook
Lake Michigan	Platte River	92068	Sep/23/1992	Coho
Lake Michigan	Platte River	92069	Oct/21/1992	Brown Trout
Lake Michigan	Platte River	93053	Sep/29/1993	Chinook
Lake Michigan	Platte River	94045	Oct/01/1994	Coho
Lake Michigan	Platte River	94046	Oct/15/1994	Rainbow Trout
Lake Michigan	Platte River	95049	Oct/09/1995	Chinook
Lake Michigan	Platte River	96028	Oct/01/1996	Coho
Lake Michigan	Platte River	97029	Oct/15/1997	Chinook
Lake Michigan	Platte River	1998059	Sep/24/1998	Coho
Lake Michigan	Platte River Hatchery	94060	Oct/19/1994	Coho
Lake Michigan	Point Betsie	84035	Apr/15/1984	Lake Trout
Lake Michigan	South Fox Island	83027	Nov/29/1983	Lake Trout
Lake Michigan	South Haven	83030	Aug/08/1983	Chub
Lake Michigan	South Haven	86008	Jun/07/1986	Brown Trout, Chinook, Rainbow Trout
Lake Michigan	South Haven	87034	Jun/13/1987	Lake Trout
Lake Michigan	South Haven	90041	Sep/11/1990	Yellow Perch
Lake Michigan	South Haven	1998060	Apr/23/1998	Rainbow Smelt
Lake Michigan	South Haven	2004051	Jun/15/2004	Round Goby
Lake Michigan	Southern	94057	Jul/01/1994	Lake Sturgeon
Lake Michigan	Southern	95064	Sep/24/1995	Lake Sturgeon
Lake Michigan	Southern	1998152	Sep/25/1998	Rainbow Smelt
Lake Michigan	St. Joseph River, Berrien Springs	83010	Oct/05/1983	Chinook, Coho
Lake Michigan	St. Joseph River, Berrien Springs	84051	Oct/03/1984	Coho
Lake Michigan	St. Joseph River, Berrien Springs	85023	Sep/20/1985	Brown Trout
Lake Michigan	St. Joseph River, Berrien Springs	85059	Sep/19/1985	Coho
Lake Michigan	St. Joseph River, Berrien Springs	86048	Sep/15/1986	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	86049	Sep/15/1986	Coho
Lake Michigan	St. Joseph River, Berrien Springs	87001	Apr/07/1987	Rainbow Trout
Lake Michigan	St. Joseph River, Berrien Springs	87084	Sep/30/1987	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	87085	Sep/30/1987	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	88032	Sep/15/1988	Coho
Lake Michigan	St. Joseph River, Berrien Springs	89065	Oct/27/1989	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	89066	Oct/27/1989	Brown Trout
Lake Michigan	St. Joseph River, Berrien Springs	90042	Sep/19/1990	Brown Trout
Lake Michigan	St. Joseph River, Berrien Springs	90043	Sep/20/1990	Coho
Lake Michigan	St. Joseph River, Berrien Springs	91043	Sep/30/1991	Chinook

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Michigan	St. Joseph River, Berrien Springs	92067	Sep/22/1992	Coho
Lake Michigan	St. Joseph River, Berrien Springs	93061	Sep/09/1993	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	94047	Sep/29/1994	Coho
Lake Michigan	St. Joseph River, Berrien Springs	94048	Sep/12/1994	Rainbow Trout
Lake Michigan	St. Joseph River, Berrien Springs	95055	Oct/13/1995	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	96030	Oct/22/1996	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	97031	Oct/31/1997	Chinook
Lake Michigan	St. Joseph River, Berrien Springs	1998061	Sep/25/1998	Coho
Lake Michigan	St. Joseph River, Berrien Springs	2004060	Mar/26/2004	Rainbow Trout
Lake Michigan	Sturgeon Bay	83023	Oct/20/1983	Lake Trout
Lake Michigan	Thompson Creek	83012	Oct/31/1983	Chinook, Coho
Lake Michigan	Thompson Creek	84052	Oct/17/1984	Coho
Lake Michigan	Thompson Creek	85020	Oct/15/1985	Brown Trout
Lake Michigan	Thompson Creek	85058	Sep/19/1985	Coho
Lake Michigan	Thompson Creek	86060	Oct/17/1986	Coho
Lake Michigan	Thompson Creek	87094	Oct/01/1987	Chinook
Lake Michigan	Thompson Creek	88048	Sep/18/1988	Coho
Lake Michigan	Thompson Creek	89071	Oct/01/1989	Brown Trout
Lake Michigan	Thompson Creek	89072	Oct/01/1989	Chinook
Lake Michigan	Thompson Creek	96031	Oct/01/1996	Coho
Lake Michigan	Thompson Creek	97032	Oct/14/1997	Chinook
Lake Michigan	Thompson Creek	1998062	Oct/20/1998	Coho
Lake Mitchell	Wexford County	89012	Jun/14/1989	Largemouth Bass, Walleye
Lake Mitchell	Wexford County	2003141	May/01/2003	Largemouth Bass
Lake Nepessing	Lapeer County	97033	Sep/11/1997	Largemouth Bass
Lake Orion	Oakland County	87021	May/29/1987	Largemouth Bass
Lake Orion	Oakland County	89005	Jun/07/1989	Largemouth Bass, Northern Pike
Lake Orion	Oakland County	2001071	May/01/2001	Carp, Largemouth Bass
Lake Ovid	Clinton County	89011	Apr/28/1989	Black Bullhead, Black Crappie, Largemouth Bass, Northern Pike, Tiger Muskie, Yellow Bullhead
Lake Ovid	Clinton County	2003152	Jun/25/2003	Largemouth Bass
Lake Paradise	Emmet County	2001073	Oct/09/2001	Largemouth Bass, Smallmouth Bass, White Sucker
Lake Ponemah	Genesee County	2000044	Jul/07/2000	Carp, Largemouth Bass
Lake St. Clair	Bouvier Bay	86017	Jun/17/1986	Carp, Smallmouth Bass
Lake St. Clair	L'Anse Creuse Bay	94049	Aug/24/1994	Bluegill, Brown Bullhead, Channel Catfish, Freshwater Drum, Largemouth Bass, Northern Pike, Rock Bass, Smallmouth Bass, Yellow Perch
Lake St. Clair	L'Anse Creuse Bay	97034	Jun/01/1997	Black Crappie, Bluegill, Northern Pike, Pumpkinseed, Walleye, White Bass
Lake St. Clair	L'Anse Creuse Bay	1998064	Jun/15/1998	Bluegill, Carp, Channel Catfish, Freshwater Drum, Walleye
Lake St. Clair	Michigan waters	85014	Sep/10/1985	Muskellunge

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake St. Clair	Michigan waters	87035	Jun/18/1987	Bluegill, Channel Catfish, Freshwater Drum, Largemouth Bass, Rock Bass, Smallmouth Bass, Walleye
Lake St. Clair	Michigan waters	88026	Aug/19/1988	Bluegill, Freshwater Drum, Smallmouth Bass, White Bass, Yellow Perch
Lake St. Clair	Michigan waters	90054	Jul/15/1990	Lake Sturgeon
Lake St. Clair	Michigan waters	91056	Oct/28/1991	Lake Sturgeon, Walleye
Lake St. Clair	Michigan waters	2000108	Aug/28/2000	Lake Sturgeon
Lake St. Clair	Michigan waters	2001077	Jun/26/2001	Carp, Muskellunge, Smallmouth Bass, Walleye
Lake St. Clair	Michigan waters	2003069	Sep/15/2003	Smallmouth Bass
Lake St. Clair	Michigan waters	2005201	Jun/14/2005	Lake Sturgeon
Lake St. Clair	St. Johns Marsh	85013	Jul/15/1985	Carp
Lake Superior	Carp River	95021	Oct/04/1995	Coho
Lake Superior	Carp River	97036	Oct/01/1997	Chinook, Coho
Lake Superior	Carp River	2000045	Oct/12/2000	Chinook
Lake Superior	Central	92076	Aug/19/1992	Lake Trout
Lake Superior	Central	96034	May/23/1996	Lake Trout, Lake Whitefish, Siscowet
Lake Superior	Central	2000046	Apr/30/2000	Lake Herring, Lake Whitefish
Lake Superior	Chink Creek	95022	Oct/26/1995	Coho
Lake Superior	Chocolay River	94061	Nov/02/1994	Coho
Lake Superior	Copper Harbor	87007	Apr/29/1987	Lake Trout
Lake Superior	Grand Marais Harbor	84005	Jun/15/1984	Lake Trout
Lake Superior	Huron Bay	2006111	Apr/20/2006	Rainbow Trout, Walleye
Lake Superior	Isle Royale	89046	Aug/09/1989	Lake Trout
Lake Superior	Isle Royale	92063	Aug/04/1992	Lake Trout
Lake Superior	Isle Royale	2008267	May/15/2008	Lake Trout
Lake Superior	Keweenaw Bay	93054	May/19/1993	Rainbow Smelt
Lake Superior	Keweenaw Bay	2003070	May/29/2003	Siscowet
Lake Superior	Keweenaw Bay	2006043	Apr/17/2006	Rainbow Trout
Lake Superior	Keweenaw Bay	2007230	May/15/2007	Lake Herring, Siscowet
Lake Superior	Keweenaw Bay	2007231	May/15/2007	Lake Whitefish
Lake Superior	Keweenaw Bay, Keystone Point	92073	Jul/31/1992	Lake Whitefish, Siscowet
Lake Superior	Keweenaw Bay, L'Anse Bay	89029	Apr/24/1989	Lake Trout
Lake Superior	Keweenaw Bay, Traverse Island	91060	May/01/1991	Lake Trout
Lake Superior	Keweenaw Bay, Traverse Island	2001079	Jun/08/2001	Siscowet
Lake Superior	Laughing Whitefish River	88036	Sep/27/1988	Chinook
Lake Superior	Manitou Island	87072	Jun/26/1987	Siscowet
Lake Superior	Marquette	86031	Jun/06/1986	Lake Trout, Lake Whitefish
Lake Superior	Marquette	87009	Apr/27/1987	Lake Trout
Lake Superior	Marquette	89028	Apr/27/1989	Lake Trout
Lake Superior	Marquette	92042	Jun/19/1991	Siscowet
Lake Superior	Marquette	92074	Aug/18/1992	Lake Whitefish, Siscowet
Lake Superior	Marquette	93089	Jul/01/1993	Lake Whitefish
Lake Superior	Marquette	95065	Dec/13/1995	Siscowet
Lake Superior	Marquette	96038	Jun/10/1996	Lake Trout, Lake Whitefish, Siscowet
Lake Superior	Marquette	2002060	May/13/2002	Lake Trout, Lake Whitefish
Lake Superior	Marquette	2007267	May/01/2007	Lake Whitefish

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Lake Superior	Middle Branch Ontonagon River	1999040	Nov/15/1999	Brown Trout
Lake Superior	Mineral River	1998134	Jun/07/1998	Longnose Sucker
Lake Superior	Munising	87069	Aug/10/1987	Siscowet
Lake Superior	Munising	94056	Dec/16/1994	Lake Herring
Lake Superior	Munising	95066	Jul/27/1995	Lake Herring
Lake Superior	Munising	2008268	Jun/01/2008	Lake Trout
Lake Superior	Ontonagon	85028	Aug/01/1985	Lake Trout, Lake Whitefish, White Sucker
Lake Superior	Otter River Fish Ladder	2000119	May/27/2000	Lake Sturgeon
Lake Superior	Pendills Creek	96037	Sep/15/1996	Coho
Lake Superior	Portage Lake/ Sturgeon River	2007254	Dec/20/2006	Burbot, Burbot Liver
Lake Superior	Portage Lake/Dollar Bay	2003157	Sep/12/2003	Lake Sturgeon
Lake Superior	Tahquamenon River	84003	May/10/1984	Lake Whitefish
Lake Superior	West of Keweenaw Peninsula	87008	Apr/28/1987	Lake Trout
Lake Superior	West of Keweenaw Peninsula	87071	Jun/25/1987	Siscowet
Lake Superior	West of Keweenaw Peninsula	92077	Jul/13/1992	Siscowet
Lake Superior	Whitefish Bay	93090	Jul/30/1993	Yellow Perch
Lakeville Lake	Oakland County	2000047	Apr/22/2000	Carp, Largemouth Bass
Langford Lake	Gogebic County	86030	Jul/08/1986	Bluegill, Northern Pike, Walleye
Langford Lake	Gogebic County	94051	Jul/20/1994	Northern Pike, Walleye
Lily Lake	Clare County	90064	Aug/23/1990	Largemouth Bass, Northern Pike
Lincoln Lake	Kent County	88033	Sep/14/1988	Northern Pike, Rock Bass, Walleye
Little Lake	Marquette County	2002043	May/24/2002	Walleye
Little Oxbow Lake	Gogebic County	2005056	Nov/01/2005	Largemouth Bass, Walleye
Little Round Lake	Alger Co.	2006199	Nov/19/2006	Bluegill
Little Whitefish Lake	Montcalm Co	2008234	May/14/2008	Largemouth Bass
Littlefield Lake	Isabella County	95014	May/24/1995	Bluegill, Largemouth Bass
Lobdell Lake	Genesee County	2003072	May/20/2003	Carp, Largemouth Bass
Long Lake	Grand Traverse Co	2007234	May/22/2007	Walleye, White Sucker
Long Lake	Ionia County	90035	Oct/01/1990	Largemouth Bass
Long Lake	Iosco County	90036	Jun/12/1990	Largemouth Bass, Northern Pike
Long Lake	Iron County	2007235	Apr/17/2007	Walleye
Long Lake	Kalamazoo County	2002064	Oct/16/2002	Black Crappie
Long Lake	Kalamazoo County	2003153	Mar/28/2003	Brown Bullhead
Long Lake	Kent Co.	2006044	Jun/15/2006	Largemouth Bass
Long Lake	Montmorency County	2006046	May/11/2006	Smallmouth Bass
Long Lake	Presque Isle County	2004066	Apr/14/2004	Smallmouth Bass, White Sucker
Long Lake	Presque Isle County	2006045	May/25/2006	Brown Bullhead, Smallmouth Bass
Long Lake	St. Joseph County/Colon Twp	2001142	Nov/19/2001	Brown Bullhead, Largemouth Bass
Looking Glass River	Dewitt	1998132	May/20/1998	Rock Bass, White Sucker
Loon Lake	Oakland County	2000050	Jul/20/2000	Carp, Largemouth Bass, Smallmouth Bass
Lost Lake	Presque Isle County	2007237	Jun/05/2007	Largemouth Bass
Lower Trout Lake	Oakland County	90049	Sep/27/1990	Largemouth Bass, Northern Pike
Lower Trout Lake	Oakland County	93062	May/27/1993	Largemouth Bass
Maceday Lake	Oakland County	91049	Sep/16/1991	Northern Pike
Maceday Lake	Oakland County	96040	Apr/24/1996	Northern Pike
Manistee Lake	Manistee County	91015	Jun/19/1991	Smallmouth Bass, Walleye

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Manistee Lake	Manistee County	92027	May/12/1992	Black Crappie, Largemouth Bass, Rock Bass
Manistee Lake	Manistee County	95019	Jun/07/1995	Bluegill
Manistee River	Cameron Bridge	1998069	Aug/26/1998	Brown Trout
Manistee River	M-72	1998123	Aug/27/1998	White Sucker
Manistique Lake	Mackinac County	2003075	Apr/25/2003	Walleye
Manistique River	d/s Manistique Papers Dam	84009	Oct/18/1984	Redhorse Sucker, Walleye, White Sucker
Manistique River	d/s Manistique Papers Dam	85008	Jun/01/1985	Carp, Largemouth Bass, Walleye
Manistique River	d/s Manistique Papers Dam	88017	Aug/03/1988	Channel Catfish
Manistique River	d/s Manistique Papers Dam	93033	Jun/02/1993	Carp
Manistique River	d/s Manistique Papers Dam	2003077	Oct/07/2003	Redhorse Sucker, Smallmouth Bass, Walleye
Manistique River	d/s Manistique Papers Dam	2004072	Aug/02/2004	Carp, Redhorse Sucker, Rock Bass, Smallmouth Bass, Walleye
Manistique River	d/s Manistique Papers Dam	2007238	Apr/17/2007	Walleye
Manistique River	d/s Manistique Papers Dam	2008235	May/28/2008	Carp, Pumpkinseed, Redhorse Sucker, Rock Bass, Smallmouth Bass, Walleye, White Sucker
Manistique River	Manistique, above Dam	87090	Oct/21/1987	Northern Pike, Redhorse Sucker
Manistique River	Manistique, river mouth	86035	Jul/31/1986	Carp, Walleye
Mann Creek	Moraine Lake	92041.2	Oct/21/1992	Northern Pike
Mann Creek	Sloan Lake	92041.1	Oct/21/1992	Northern Pike
Mann Creek	Sloan Lake	94001	May/25/1994	Bluegill, Northern Pike
Maple River	u/s Matherton	2006150	Jul/11/2006	Carp
Marion Lake	Gogebic County	87070	Jul/29/1987	Rock Bass, Walleye
Marion Lake	Gogebic County	2003500	Jul/01/2003	Northern Pike, Smallmouth Bass, Walleye, Yellow Perch
Marten Lake	Iron County	85019	Oct/25/1985	Brown Bullhead, Northern Pike
McCormick Lake	Montmorency County	2004074	Jun/02/2004	Brown Trout
Menominee River	Badwater Impoundment	92024	Apr/17/1992	Walleye
Menominee River	Below Grand Rapids Dam	97038	May/27/1997	Carp, Redhorse Sucker
Menominee River	Below Quinnesec	88053	Oct/11/1988	Northern Pike, Redhorse Sucker, Smallmouth Bass, Walleye
Menominee River	Below Quinnesec	1999080	May/25/1999	Northern Pike
Menominee River	Below Sturgeon Falls Dam	92048	Jul/28/1992	Carp, Walleye
Menominee River	Big Quinnesec Falls Flowage	95034	Apr/17/1995	Rock Bass, Walleye, White Sucker
Menominee River	Chalk Hills Impoundment	91030	Jul/08/1991	Carp, Walleye
Menominee River	Chalk Hills Impoundment	96041	Oct/13/1996	Carp, Redhorse Sucker, Walleye
Menominee River	Dickinson County, below Piers Gorge	89078	Sep/12/1989	Redhorse Sucker, Walleye
Menominee River	Dickinson County, Little Quinnesec Flowage	89079	Apr/21/1989	Carp, Walleye, White Sucker
Menominee River	Dickinson County, Vulcan	86058	Oct/09/1986	Northern Pike, Redhorse Sucker, Smallmouth Bass, Walleye
Menominee River	Iron County	84017	Aug/01/1984	Rock Bass
Menominee River	Lower Scott Flowage, between Dams 1 and 2	90055	Oct/01/1990	Rock Bass, Walleye
Menominee River	Menominee, river mouth	88007	May/26/1988	Carp, Walleye
Menominee River	Menominee, river mouth	91040	Apr/20/1991	Lake Sturgeon
Menominee River	Menominee, river mouth	93031	Jun/01/1993	Carp
Menominee River	Menominee, river mouth	2001146	Oct/10/2000	Lake Sturgeon
Menominee River	Menominee, river mouth	2006097	Apr/10/2006	Carp, Walleye
Menominee River	Sturgeon Falls Impoundment	1999080	May/25/1999	Northern Pike

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Menominee River	Upper Scott Flowage, Chappee Rapids	90057	Sep/20/1990	Rock Bass, Walleye
Menominee River	Upper Scott Flowage, Highway JJ	90056	Sep/27/1990	Rock Bass, Walleye
Michigamme River	Iron County	84022	Aug/31/1984	Walleye
Michigamme River	Iron County, Michigamme Falls Impoundment	84025	Aug/24/1984	Black Crappie, Northern Pike, Pumpkinseed, Smallmouth Bass, Walleye, Yellow Perch
Michigamme River	Marquette County	84021	Aug/16/1984	Northern Pike, Walleye
Michigamme River	Michigamme Reservoir	84026	Jun/01/1984	Northern Pike, Walleye, White Sucker
Michigamme River	Michigamme Reservoir	92075	Sep/14/1992	Northern Pike, Walleye
Michigamme River	Michigamme Reservoir	95061	Oct/03/1995	Northern Pike, Walleye
Michigamme River	Michigamme Reservoir	1998072	Sep/29/1998	Northern Pike, Walleye
Michigamme River	Michigamme Reservoir	2000052	Sep/13/2000	Northern Pike, Walleye
Michigamme River	Peavy Pond	84023	Aug/10/1984	Northern Pike, Rock Bass, Walleye, White Sucker, Yellow Perch
Michigamme River	Peavy Pond	97043	Oct/30/1997	Burbot, Walleye
Michigamme River	Peavy Pond	1998145	Oct/13/1998	Lake Whitefish, Northern Pike, Rock Bass, Smallmouth Bass, Walleye, White Sucker, Yellow Perch
Middle Straits Lake	Oakland County	2007240	May/09/2007	Northern Pike
Milakokia Lake	Mackinac County	85061	Jun/18/1985	Walleye, White Sucker
Milakokia Lake	Mackinac County	94031	Jun/21/1994	Walleye, White Sucker, Yellow Perch
Milakokia Lake	Mackinac County	2007241	May/22/2007	Walleye
Millecoquins Lake	Mackinac County	89038	May/11/1989	Northern Pike, Walleye
Millecoquins Lake	Mackinac County	92071	Aug/05/1992	Lake Sturgeon
Millecoquins Lake	Mackinac County	2006049	May/01/2006	Rock Bass, Walleye
Mona Lake	Muskegon County	87056	Jul/14/1987	Carp, Smallmouth Bass
Mona Lake	Muskegon County	2000055	Oct/25/2000	Carp, Smallmouth Bass, Walleye
Mona Lake	Muskegon County	2002069	Jul/08/2002	Carp
Montcalm Lake	Montcalm County	2003065	Jul/07/2003	Largemouth Bass
Montcalm Lake	Montcalm County	2004062	May/20/2004	Largemouth Bass
Morrison Lake	Ionia County	88002	May/03/1988	Carp, Largemouth Bass, Walleye, White Sucker
Morrison Lake	Ionia County	1998076	Oct/27/1998	Largemouth Bass
Morrison Lake	Ionia County	2003081	Jun/15/2003	Carp
Mullett Lake	Cheboygan County	88035	Oct/18/1988	Northern Pike, Smallmouth Bass, Walleye
Murphy Lake	Tuscola Co	2007243	Apr/12/2007	Northern Pike
Muskallonge Lake	Luce County	2002070	May/15/2002	Brown Bullhead, Northern Pike
Muskegon Lake	Muskegon County	86061	Oct/29/1986	Carp, Largemouth Bass, Northern Pike, Walleye
Muskegon Lake	Muskegon County	87054	Jul/07/1987	Largemouth Bass, Smallmouth Bass, Walleye
Muskegon Lake	Muskegon County	93071	Aug/19/1993	Carp, Walleye
Muskegon Lake	Muskegon County	2001082	Sep/13/2001	Largemouth Bass, Smallmouth Bass
Muskegon Lake	Muskegon County	2002071	Sep/04/2002	Carp, Walleye
Muskegon Lake	Muskegon County	2006050	Jun/06/2006	Northern Pike
Muskegon Lake	Muskegon County	2008239	May/15/2008	Walleye
Muskegon River	Muskegon, river mouth	93038	Jun/09/1993	Carp
Muskegon River	Newaygo County, below Croton Dam	93011	Apr/04/1993	Walleye

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Muskegon River	Newaygo County, below Croton Dam	96042	Mar/29/1996	Redhorse Sucker, Walleye
Muskegon River	Newaygo County, below Croton Dam	2008240	May/15/2008	Redhorse sucker, Walleye
Muskegon River	Newaygo County, Croton Dam Pond	97047	Sep/30/1997	Walleye, White Sucker
Nawakwa Lake	Alger County	89055	Jun/20/1989	Northern Pike, Walleye
Nawakwa Lake	Alger County	1999076	May/06/1999	Northern Pike, Walleye
Net River	Iron County, The Wide Waters	89030	May/01/1989	Northern Pike, Walleye
Nettie Lake	Presque Isle County	95032	Jun/05/1995	Largemouth Bass, Northern Pike
Nettie Lake	Presque Isle County	2005114	Sep/21/2005	Smallmouth Bass
Nevins Lake	Montcalm County	2004076	Sep/07/2004	Largemouth Bass
North Lake Leelanau	Leelanau County	2002078	Apr/26/2002	White Sucker
North Lake Leelanau	Leelanau County	2003082	Oct/21/2003	Lake Trout
North Manistique Lake	Luce County	89048	Jun/07/1989	Northern Pike, Walleye, Yellow Perch
North Manistique Lake	Luce County	2003083	Apr/24/2003	Walleye, Yellow Perch
Norvell Lake	Jackson County	2001084	Oct/17/2001	Carp, Largemouth Bass
Nottawa River	Calhoun County	1998080	Jul/29/1998	Brown Trout, Northern Hogsucker, White Sucker
Ontonagon River	Bond Falls	1999047	Apr/18/1999	Walleye
Ontonagon River	Victoria Impoundment	88065	Jul/06/1988	Northern Pike, Walleye
Ontonagon River	Victoria Impoundment	2000060	May/17/2000	Walleye
Orchard Lake	Oakland County	87087	Sep/25/1987	Largemouth Bass, Northern Pike
Orchard Lake	Oakland County	89006	Jun/07/1989	Largemouth Bass, Northern Pike, Smallmouth Bass
Orchard Lake	Oakland County	94036	May/10/1994	Northern Pike
Ormes Lake	Gogebic County	2005071	Nov/01/2005	Largemouth Bass
Osmun Lake	Oakland County	1999048	Jul/07/1999	Carp, Largemouth Bass
Osterhout Lake	Allegan County	2007265	May/24/2007	Largemouth Bass
Otsego Lake	Otsego Co	2007244	May/22/2007	Walleye
Ottawa Lake	Iron County	86005	May/22/1986	Northern Pike, Rock Bass, Walleye
Ottawa River	Mouth	93047	Sep/29/1993	Carp, Largemouth Bass
Ottawa River	Mouth	2006109	Sep/26/2006	Carp, Largemouth Bass
Otter Lake	Houghton County	2000061	May/25/2000	Walleye, White Sucker
Paint Creek	Oakland County	1998081	Aug/19/1998	White Sucker
Paint Lake	Iron County	2003144	Jun/11/2003	Northern Pike
Paint River	Paint River Pond	84024	Aug/28/1984	Muskellunge, Rock Bass, Walleye, Yellow Perch
Palmer Lake	St. Joseph County	2001141	Aug/30/2001	Largemouth Bass
Parker Creek	Grand Traverse County	1998048	Jul/09/1998	Brown Trout
Paw Paw River	Maple Lake	2006048	Sep/27/2006	Carp, Largemouth Bass
Peach Lake	Ogemaw County	2004080	May/18/2004	Northern Pike
Pearl Lake	Benzie County	97050	Jan/01/1997	Northern Pike
Perch Lake	Iron County	88051	Oct/12/1988	Northern Pike, Walleye
Perch Lake	Iron County	2006064	Jun/15/2006	Northern Pike, Walleye
Perch Lake	Marquette County	84020	Aug/16/1984	Lake Whitefish, Longnose Sucker, Northern Pike, Rock Bass, Smallmouth Bass, White Sucker, Yellow Perch
Pere Marquette Lake	Mason County	89075	Aug/23/1989	Largemouth Bass, Northern Pike
Pere Marquette Lake	Mason County	2003086	May/05/2003	Northern Pike, White Sucker
Pere Marquette River	Lake County	2004081	Sep/03/2004	Brown Trout
Pere Marquette River	Ludington, river mouth	93037	Jun/09/1993	Redhorse Sucker

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Pere Marquette River, Little South Branch	Lake County	2004082	Aug/24/2004	Brown Trout, White Sucker
Pere Marquette River, Little South Branch	Taylor Bridge	94032	Aug/17/1993	Brown Trout
Pickerel Lake	Dickinson County	87082	Sep/24/1987	Largemouth Bass, Northern Pike
Pickerel Lake	Emmet County	89069	May/23/1989	Largemouth Bass, Smallmouth Bass, Walleye
Pigeon River	Ottawa Co, at 136th Ave	2005129	Jun/28/2005	White Sucker
Pigeon River	Vistula Rd.	2005076	Sep/14/2005	Redhorse Sucker, Rock Bass, Smallmouth Bass
Pike Lake	Luce County	89056	Jun/28/1989	Walleye
Pine Lake	Barry County	95001	Mar/20/1995	Black Crappie, Northern Pike
Pine Lake	Manistee County	87042	Jun/02/1987	Brown Trout, Largemouth Bass, Rock Bass
Pine River	Above Alma	1998085	Oct/15/1998	Rock Bass, White Sucker
Pine River	Alma Impoundment	95018	Jun/07/1995	Carp, Largemouth Bass
Pine River	Below Alma Dam	97060	Jul/29/1997	Carp, Largemouth Bass
Pine River	Gratiot County, below St Louis Dam	83001	Oct/31/1983	Brown Bullhead, Carp, Common Shiner, Rock Bass, Smallmouth Bass, White Sucker
Pine River	Gratiot County, below St Louis Dam	85007	Aug/06/1985	Carp
Pine River	Gratiot County, below St Louis Dam	94021	Aug/23/1994	Carp
Pine River	Gratiot County, below St Louis Dam	97072	Oct/16/1997	Carp
Pine River	Midland County, Homer Road	85060	Apr/11/1985	Carp, Smallmouth Bass, White Sucker
Pine River	Montcalm County, Edmore	86041	Jul/29/1986	Brown Trout, Northern hogsucker, Redhorse Sucker, White Sucker
Pine River	St. Clair County, Griswold Road	92009	Jul/30/1992	Carp
Pine River	St. Louis	96500	Oct/15/1996	Muskrat, Raccoon
Pine River	St. Louis Impoundment	86042	Aug/07/1986	Carp, Crappie, Largemouth Bass, Northern Pike, Smallmouth Bass
Pine River	St. Louis Impoundment	89027	Apr/27/1989	Black Crappie, Carp, Largemouth Bass
Pine River	St. Louis Impoundment	95005	Apr/24/1995	Black Crappie, Carp
Pine River	St. Louis Impoundment	97071	Oct/17/1997	Carp, Smallmouth Bass
Platte Lake	Benzie County	2004151	Jul/11/2004	Channel Catfish, Northern Pike, Smallmouth Bass, Walleye
Platte Lake	Benzie County	2005160	Sep/02/2005	Rock Bass
Platte River	Burnt Mill Road, Benzie County	1998087	Aug/05/1998	Brown Trout, White Sucker
Plum Creek	Monroe	1999090	Nov/01/1999	Black Buffalo, Carp, Channel Catfish, White Bass
Pomeroy Lake	Gogebic County	97052	Apr/30/1997	Walleye
Pomeroy Lake	Gogebic County	1999055	Apr/28/1999	Walleye
Pontiac Lake	Oakland County	1999079	Apr/06/1999	Channel Catfish
Portage Creek	Bryant Mill Pond	85050	Jul/01/1985	Carp
Portage Creek	Bryant Mill Pond	86023	Jul/08/1986	Carp
Portage Creek	Bryant Mill Pond	87047	Jul/14/1987	Carp
Portage Creek	Bryant Mill Pond	2000121	Aug/10/2000	Brown Trout, Carp
Portage Creek	Bryant Mill Pond	2001044	Aug/29/2001	Carp, White Sucker
Portage Creek	Bryant Mill Pond	2002108	Aug/19/2002	Carp
Portage Creek	Bryant Mill Pond	2006172	Sep/18/2006	Carp, White Sucker
Portage Creek	Monarch Pond	2001045	Oct/17/2001	Carp

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Portage Creek	Monarch Pond	2006171	Sep/19/2006	Carp
Portage Lake	Houghton County	88016	Aug/04/1988	Brown Trout, Northern Pike, Walleye
Portage Lake	Houghton County	1998151	Sep/15/1998	Walleye, White Sucker
Portage Lake	Houghton County	2007247	Apr/19/2007	Walleye
Portage Lake	Jackson County	89042	May/23/1989	Black Crappie, Largemouth Bass, Northern Pike
Portage Lake	Manistee County	90008	Jun/12/1990	Largemouth Bass, Northern Pike, Smallmouth Bass
Portage Lake	Manistee County	2004144	Oct/11/2004	Carp, Largemouth Bass, Northern Pike
Portage Lake	Washtenaw/Livingston County	89009	May/10/1989	Largemouth Bass, Walleye
Prairie River Lake	St. Joseph County	86043	Aug/12/1986	Largemouth Bass
Pratt Lake	Gladwin County	2003095	May/22/2003	Largemouth Bass
Pretty Lake	Luce County	2004083	Jun/22/2004	Walleye
Proud Lake	Oakland County	2006066	May/25/2006	Carp, Largemouth Bass
Rabbit River	d/s Hamilton Dam	2003098	Sep/17/2003	Carp, Largemouth Bass, Northern Pike, Redhorse Sucker, Rock Bass
Rabbit River	u/s Hamilton Dam	2003096	Sep/17/2003	Carp, Largemouth Bass, Northern Pike, Redhorse Sucker
Rainbow Lake	Montcalm County	90045	Sep/21/1990	Largemouth Bass, Northern Pike
Raisin River	Monroe County, above Monroe Dam	87024	Jun/09/1987	Carp, Smallmouth Bass
Raisin River	Monroe County, above Monroe Dam	2004085	Oct/06/2004	Carp
Raisin River	Monroe, below Winchester Bridge	84015	Jun/28/1984	Carp, Largemouth Bass, Rock Bass, Smallmouth Bass
Raisin River	Monroe, below Winchester Bridge	86019	Jun/19/1986	Carp, White Bass
Raisin River	Monroe, below Winchester Bridge	1998089	Sep/18/1998	Carp, Freshwater Drum, Smallmouth Bass
Raisin River	Monroe, below Winchester Bridge	2008247	Jun/14/2008	Carp, Channel Catfish, Freshwater Drum, Smallmouth Bass, White Bass
Raisin River, South Branch	Lenawee County, below Adrian	91051	Aug/29/1991	Carp, Northern Pike, Redhorse Sucker
Randall Lake Chain	Craig Lake	90014.2	Jun/27/1990	Largemouth Bass, Northern Pike
Randall Lake Chain	Morrison Lake	2007242	Apr/06/2007	Northern Pike
Randall Lake Chain	Randall Lake	90014.1	Jun/27/1990	Black Crappie, Largemouth Bass, Northern Pike
Rapid River	Kalkaska County	1998137	Sep/01/1998	Brown Trout
Red Cedar River	Gramer Road	91019.2	Jun/27/1991	Carp
Red Cedar River	Gregory Road	91019.1	Jun/27/1991	Carp, Northern Pike
Red Cedar River	M-52	91019.3	Jun/27/1991	Carp, Northern Pike
Red Cedar River	MSU	2000075	Aug/01/2000	Carp, Northern Pike, Rock Bass, Smallmouth Bass
Red Cedar River	MSU	2001096	Apr/27/2001	Carp, Northern Pike, Rock Bass
Reed's Lake	Kent County	89070	Sep/20/1989	Largemouth Bass, Northern Pike
Reed's Lake	Kent County	1998094	Oct/30/1998	Northern Pike, Walleye
Rice Lake	Houghton County	91027	May/02/1991	Northern Pike, Walleye
Rifle River	Arenac County	88040	Aug/22/1988	Redhorse Sucker, Rock Bass
Robinson Creek	Roscommon	89053	Jul/12/1989	Brook Trout, Brown Trout
Robinson Lake	Newaygo County	2004095	May/06/2004	Northern Pike
Rock Lake	Montcalm Co	2007248	May/30/2007	Largemouth Bass, Walleye
Rogue River	11 Mile/Granger	1998095	Aug/17/1998	Brown Trout, White Sucker

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Rogue River	Kent County, above Rockford Dam	93072	Nov/01/1993	White Sucker
Roland Lake	Houghton County	87040	Jun/30/1988	Rock Bass, Smallmouth Bass
Rogue River	Below M-153	95059	Apr/24/1995	Carp, Northern Pike, White Sucker
Rogue River	Below M-153	2005077	Nov/04/2005	Carp, Redhorse Sucker
Rogue River	Dearborn, river mouth	86016	Jun/24/1986	Carp
Rogue River	Oakland County, Lahser Road	87029	Jun/17/1987	Carp, Rock Bass, White Sucker
Rogue River	Wayne County, above turning basin	85012	Jun/19/1985	Carp
Rogue River	Wayne County, below Jefferson Ave	85011	Jun/19/1985	Carp
Rogue River	Wayne County, Eliza Howell Park	87031	Jun/17/1987	White Sucker
Rogue River	Wayne County, Eliza Howell Park	94015	Sep/13/1994	White Sucker
Rogue River, Lower Branch	Wayne County, Gullely Road	87025	Jun/16/1987	Carp
Rogue River, Middle Branch	d/s Nankin Dam	2005078	Nov/03/2005	Carp, Rock Bass, White Sucker
Rogue River, Middle Branch	Inkster Road below Newburgh Lake	2002084	Sep/06/2002	White Sucker
Rogue River, Middle Branch	Newburgh Lake	88011	Jul/19/1988	Largemouth Bass, Northern Pike, White Sucker
Rogue River, Middle Branch	Newburgh Lake	93014	Nov/17/1993	Northern Pike, White Sucker
Rogue River, Middle Branch	Newburgh Lake	95024	May/30/1995	Bluegill, Largemouth Bass
Rogue River, Middle Branch	Newburgh Lake	2001097	Oct/30/2001	Carp, Channel Catfish, Largemouth Bass, White Sucker
Rogue River, Middle Branch	Newburgh Lake	2002085	Sep/24/2002	Carp, Channel Catfish, Northern Pike, White Sucker
Rogue River, Middle Branch	Newburgh Lake	2005079	Jun/02/2005	Carp, Channel Catfish, Northern Pike, White Sucker
Rogue River, Middle Branch	Oakland County, 9 Mile Road	87028	Jun/16/1987	Brown Bullhead, Carp, Channel Catfish, Rock Bass, White Sucker
Rogue River, Middle Branch	Phoenix Lake	88012	Jul/19/1988	Carp, Northern Pike, White Sucker
Rogue River, Middle Branch	Phoenix Lake	95023	Jun/13/1995	Bluegill, Carp
Rogue River, Middle Branch	Phoenix Lake	2001098	Oct/30/2001	Carp, Channel Catfish, Northern Pike
Rogue River, Middle Branch	Phoenix Lake	2002086	Oct/22/2002	Carp, Northern Pike, White Sucker
Rogue River, Middle Branch	u/s Nankin Dam	2005080	Nov/03/2005	Carp, Northern Pike, Rock Bass, White Sucker
Rogue River, Middle Branch	Wayne County, Haggerty/Hines Drain	87027	Jun/16/1987	Rock Bass, Smallmouth Bass, White Sucker
Rogue River, Middle Branch	Wayne County, Inkster Road	87026	Jun/16/1987	Goldfish
Rogue River, Middle Branch	Wayne County, Merriman Road	2000083	Jul/24/2000	White Sucker
Rogue River, Upper Branch	Oakland County, Powers Road	87032	Jun/17/1987	White Sucker
Rogue River, Upper Branch	Wayne County, 7 Mile Road	87030	Jun/17/1987	White Sucker
Round Lake	Delta County	87083	Sep/23/1987	Northern Pike, Walleye
Round Lake	Marquette County, Champion Twp	2005081	Jun/07/2005	Largemouth Bass
Ruddiman Creek	Lagoon	2001131	Sep/13/2001	Carp, Largemouth Bass
Runkle Lake	Iron County	85018	Jun/11/1985	Northern Pike
Runkle Lake	Iron County	2003104	Apr/21/2003	Northern Pike
Ruppert Lake	Kalamazoo County	2004099	May/28/2004	Largemouth Bass
Rush Lake	Van Buren County	2004100	Mar/23/2004	Northern Pike
Saginaw River	Bay County	86014	Jun/10/1986	Carp, Walleye
Saginaw River	Bay County	2003200	Oct/14/2003	Lake Sturgeon

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Saginaw River	Bay County, LaFayette	84013	Aug/09/1984	Carp, Northern Pike, White Bass
Saginaw River	Bay County, LaFayette	2004113	Aug/09/2004	Carp
Saginaw River	Saginaw County, Crow Island	92036	Jul/15/1992	Carp
Sand Lake	Lenawee County	2003107	May/29/2003	Walleye
Sand Lake	Newaygo County	92058	May/22/1992	Black Crappie, Largemouth Bass
Schweitzer Creek	Schweitzer Reservoir	92047	Aug/07/1992	Northern Pike, Smallmouth Bass, Walleye
Schweitzer Creek	Schweitzer Reservoir	2008272	Oct/01/2008	Northern Pike
Sebewaing River	Huron County	88037	Oct/20/1988	Carp, Northern Pike
Sebewaing River	Huron County	2004114	Aug/11/2004	Carp, Northern Pike
Second Sister Lake	Washtenaw County	94062.1	Sep/20/1994	Brown Bullhead
Selkirk Lake	Allegan County	93057	May/20/1993	Largemouth Bass, Yellow Bullhead
Shakey Lakes	Menominee Co	2007275	Jun/12/2007	Northern Pike
Shiawassee River	City of Byron	95039	Jun/22/1995	Carp, Northern Pike
Shiawassee River	Exchange Road	2003109	Jul/22/2003	Carp, Smallmouth Bass
Shiawassee River	Genesee County, Duffield Road	81007	Jun/03/1981	Carp, Northern hogsucker, Northern Pike, Rock Bass, Sunfish
Shiawassee River	Henderson	92012	Sep/22/1992	Carp, Smallmouth Bass
Shiawassee River	Oakland County, Fish Lake Road	87062	Jul/28/1987	Carp, Largemouth Bass, Rock Bass
Shiawassee River	Saginaw County below Chesaning	87064	Aug/05/1987	Carp, Rock Bass, Smallmouth Bass
Shiawassee River	Shiawassee County, Byron Road	81006	Jun/03/1981	Black Crappie, Carp, Northern Pike, Redhorse Sucker, Rock Bass, Sunfish
Shiawassee River	Shiawassee County, Byron Road	85002	Jul/17/1985	Carp, Redhorse Sucker, Rock Bass, Smallmouth Bass
Shiawassee River	Shiawassee County, New Lothrop Road	81008	Jun/03/1981	Black Crappie, Carp, Minnow, Northern hogsucker, Rock Bass, Sunfish, White Sucker
Shiawassee River	Shiawassee County, New Lothrop Road	85001	Jul/17/1985	Carp, Crappie, Rock Bass
Shiawassee River	Shiawassee County, New Lothrop Road	87066	Jul/30/1987	Carp, Northern Pike, Smallmouth Bass
Shiawassee River	Shiawassee Pond	81009	Jun/03/1981	Black Bullhead, Carp, Sunfish
Shiawassee River, South Branch	Between M59 & Byron	2004101	Jul/13/2004	Carp, Rock Bass, White Sucker
Shiawassee River, South Branch	Livingston County, Bowen Road	81002	Jun/03/1981	Black Bullhead, Minnow, Northern Pike, Sunfish, White Sucker
Shiawassee River, South Branch	Livingston County, Bowen Road	84008	Jun/02/1984	Black Crappie, Grass Pickerel, Northern Pike, Rock Bass, White Sucker
Shiawassee River, South Branch	Livingston County, Chase Lake Road	81004	Jun/03/1981	Carp, Minnow, Northern Pike, Rock Bass, Sunfish, White Sucker, Yellow Bullhead
Shiawassee River, South Branch	Livingston County, Chase Lake Road	86036	Jul/30/1986	Carp, Northern Pike, Rock Bass, White Sucker
Shiawassee River, South Branch	Livingston County, Grand River Road	81001	Jun/03/1981	Minnow, Sunfish, White Sucker
Shiawassee River, South Branch	Livingston County, Marr Road	81003	Jun/03/1981	Carp, Minnow, Northern Pike, Sunfish, White Sucker, Yellow Bullhead
Shiawassee River, South Branch	Livingston County, Marr Road	87065	Jul/29/1987	Rock Bass, White Sucker
Shiawassee River, South Branch	Livingston County, Oak Grove Road	81005	Jun/03/1981	Black Crappie, Carp, Rock Bass, White Sucker
Shupac Lake	Crawford County	89044	May/23/1989	Largemouth Bass, Rainbow Trout, Smallmouth Bass, Yellow Perch
Silver Lake	Dickinson County	2002111	Jun/19/2002	Walleye

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Silver Lake	Grand Traverse Co	2007251	Jun/05/2007	Walleye
Silver Lead Creek	Marquette County, K.I. Sawyer AFB	2006072	May/15/2006	Brook Trout
Siskiwit Lake	Isle Royale	87033	Jun/17/1987	Lake Trout
Siskiwit Lake	Isle Royale	93029	May/20/1993	Lake Trout, Lake Whitefish, Northern Pike
Siskiwit Lake	Isle Royale	96049	Aug/09/1996	Lake Trout
Siskiwit Lake	Isle Royale	2002105	Jun/29/2002	Lake Trout
Six Mile Lake	Charlevoix County	2003110	May/08/2003	Northern Pike
Six Mile Lake	Houghton County	95012	May/16/1995	Bluegill, Walleye
Smokey Lake	Iron County	86056	Oct/07/1986	Lake Trout, Rock Bass, Smallmouth Bass, White Sucker
South Groveland Pond	Dickinson County	2003146	Jun/04/2003	Walleye
South Lake	Washtenaw County	87020	Jun/09/1987	Largemouth Bass, Northern Pike, Rock Bass
South Lake	Washtenaw County	88062	Sep/19/1988	Largemouth Bass, Northern Pike
South Lake	Washtenaw County	89008	Jun/28/1989	Largemouth Bass, Northern Pike
South Manistique Lake	Mackinac County	88034	Sep/20/1988	Rock Bass, Walleye
Sporley Lake	Marquette County	93058	Jun/01/1993	White Sucker
Sporley Lake	Marquette County	2004117	May/10/2004	Splake
Spring Brook	Kalamazoo County	1998106	Aug/19/1998	Brown Trout
Squaw Lake	Dickinson/Marquette County	89018	May/08/1989	Rainbow Trout, Splake, Yellow Perch
Squaw Lake	Dickinson/Marquette County	93059	May/18/1993	Largemouth Bass, White Sucker
St. Clair River	Algonac	86018	Jun/18/1986	Carp, Walleye
St. Clair River	Marine City	91031	May/14/1991	Walleye
St. Clair River	Marine City	2006076	May/20/2006	Carp, Walleye
St. Clair River	Port Huron	86038	Jul/31/1986	Freshwater Drum, Walleye
St. Clair River	Rivermouth, North Channel	94008	Aug/25/1994	Carp, Freshwater Drum
St. Clair River	St. Clair	85006	Oct/10/1985	Walleye
St. Joseph River	Above Niles Dam	95052	Jul/07/1995	Carp
St. Joseph River	Benton Harbor, river mouth	93034	Jun/08/1993	Carp
St. Joseph River	Berrien Springs, below Dam	84004	Oct/03/1984	Carp, Smallmouth Bass
St. Joseph River	Berrien Springs, below Dam	87096	Nov/18/1987	Carp, Smallmouth Bass, Walleye
St. Joseph River	Chapin Lake	83033	May/01/1983	Smallmouth Bass
St. Joseph River	Chapin Lake	87097	Nov/19/1987	Carp, Smallmouth Bass
St. Joseph River	Chapin Lake	95051.1	Jul/06/1995	Carp, Smallmouth Bass
St. Joseph River	Chapin Lake	2005098	Oct/27/2005	Carp, Largemouth Bass, Smallmouth Bass
St. Joseph River	Constantine Impoundment	1998110	Jun/24/1998	Channel Catfish, Redhorse Sucker
St. Joseph River	St. Joseph County, Constantine	92031	Apr/02/1992	Carp, Walleye
St. Joseph River	St. Joseph County, Three Rivers	92032	Apr/03/1992	Walleye
St. Joseph River	Sturgis Impoundment	2004119	Oct/14/2004	Carp, Largemouth Bass
St. Marys River	Michigan Waters	95046	Aug/01/1995	Northern Pike, Walleye, Yellow Perch
St. Marys River	Michigan Waters	2004120	Apr/19/2004	Northern Pike, Walleye
St. Marys River	Munuscong Bay	86045	Aug/26/1986	Northern Pike, Walleye
St. Marys River	Munuscong Bay	91021	Apr/23/1991	Walleye
St. Marys River	Munuscong Bay	95004.1	Apr/17/1995	Carp
St. Marys River	Munuscong Bay	2004149	Sep/07/2004	Northern Pike
St. Marys River	N. Drummond Island	89035	May/11/1989	Yellow Perch
St. Marys River	Sugar Island	87049	Sep/11/1987	Northern Pike, Walleye, White Sucker

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Stanley Lake	Iron County	90013	May/31/1990	Largemouth Bass, Smallmouth Bass, Walleye
Stanley Lake	Iron County	2001143	Sep/10/2001	Walleye
Stevenson Lake	Isabella County	2002096	May/08/2002	Brown Bullhead, Largemouth Bass, Northern Pike, Yellow Bullhead
Stony Creek Impoundment	Macomb County	89025	Apr/16/1989	Crappie, Northern Pike, Walleye
Stony Creek Impoundment	Macomb County	2007253	Oct/30/2007	Northern Pike
Stony Creek Impoundment	Macomb County	2008251	Apr/16/2008	Northern Pike
Sudden Lake	Ontonagon County	2001144	Oct/03/2001	Walleye
Sullivan Creek	USFWS-Sullivan Creek Hatchery	2005124	May/03/2005	Lake Trout
Sunday Lake	Gogebic County	2003126	May/29/2003	Black Crappie, Northern Pike, Walleye, Yellow Perch
Sunset Lake	Iron County	88049	Oct/11/1988	Northern Pike, Walleye
Sylvan Lake	Newaygo County	2004141	Jun/22/2004	Largemouth Bass, Northern Pike
Sylvan/Otter Lake	Oakland Co	2008242	May/21/2008	Carp, Largemouth Bass
Tahquamenon River	Dollarville	1998114	Jul/06/1998	Walleye, White Sucker
Tahquamenon River	Luce County, Slater's Landing	88028	Aug/08/1988	Northern Pike, Walleye
Tahquamenon River	Luce County, Slater's Landing	2005105	Jul/14/2005	Walleye, Yellow Perch
Tannery Creek	Emmet County	87058	Jul/21/1987	Brook Trout
Tawas River	Iosco County	88058	Oct/14/1988	Northern Pike, White Sucker
Teal Lake	Marquette County	2004122	May/11/2004	Smallmouth Bass, Walleye
Teal Lake	Marquette County	2005106	Jun/01/2005	Walleye
Tepee Lake	Iron County	2003145	Jun/19/2003	Northern Pike
Terry Lake	Oakland County	1999064	Jul/07/1999	Carp, Largemouth Bass
Thompson Lake	Livingston County	86010	Jun/03/1986	Carp, Northern Pike, Yellow Perch
Thompson Lake	Livingston County	95038	Jun/13/1995	Black Crappie, Carp
Thompson Lake	Livingston County	2005107	May/18/2005	Black Crappie, Carp, Northern Pike
Thompson Lake	St. Joseph County	2002036	Jun/25/2002	Brown Bullhead, Largemouth Bass
Thornapple River	Ada Impoundment	2005130	Jul/19/2005	Carp, Smallmouth Bass
Thornapple River	Cascade Impoundment	2005131	Jul/19/2005	Smallmouth Bass
Thornapple River	d/s Nashville	2006100	Jun/14/2006	White Sucker
Thornapple River	Gresham Highway	1998117	Jul/02/1998	White Sucker
Thornapple River	LaBarge Impoundment	2006102	Jun/20/2006	Carp
Thornapple River	Middleville Impoundment	2006101	Jun/14/2006	White Sucker
Thornapple River	Thornapple Lake, Barry County	93016	May/12/1993	Largemouth Bass, Redhorse Sucker
Thornapple River	Thornapple Lake, Barry County	2006081	Apr/12/2006	Largemouth Bass
Thousand Island Lake	Gogebic County, Cisco Lake Chain	1999065	Apr/23/1999	Walleye
Thread Creek	Genesee County	93017	Aug/30/1993	Carp, Northern Pike
Thread Creek	Thread Lake	2000092	Sep/28/2000	Carp, Largemouth Bass
Three Mile Lake	Van Buren County	2007264	May/16/2007	Northern Pike
Thunder Bay River	4-Mile Pond	2006082	May/25/2006	Smallmouth Bass
Thunder Bay River	Alpena County, Lake Besser	89052	Jun/29/1989	Carp, Redhorse Sucker, Smallmouth Bass, Walleye
Thunder Bay River	Alpena County, Lake Besser	2006083	May/24/2006	Brown Bullhead, Smallmouth Bass
Thunder Bay River	Seven Mile Pond	2002097	Oct/15/2002	Brown Bullhead, Largemouth Bass
Tittabawassee River	Midland County, below Dow Dam	84010	Apr/03/1984	Carp, Walleye, White Sucker

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Tittabawassee River	Midland County, below Dow Dam	87002	Apr/07/1987	Walleye
Tittabawassee River	Midland County, below Dow Dam	92064	Oct/30/1992	Carp, Walleye
Tittabawassee River	Midland County, below Dow Dam	95013	Apr/06/1995	White Bass, White Sucker
Tittabawassee River	Midland County, below Dow Dam	1999066	May/26/1999	Carp, Smallmouth Bass
Tittabawassee River	Midland County, below Dow Dam	2000093	Jul/05/2000	Smallmouth Bass, Walleye
Tittabawassee River	Midland County, Smiths Crossing Road	85015	Apr/17/1985	Walleye
Tittabawassee River	Midland County, Smiths Crossing Road	85016	May/23/1985	Black Crappie, Northern Pike, Smallmouth Bass, White Bass
Tittabawassee River	Midland County, Smiths Crossing Road	85017	Jul/16/1985	Walleye
Tittabawassee River	Midland County, Smiths Crossing Road	2003132	Apr/02/2003	Carp, Channel Catfish, Smallmouth Bass, Walleye, White Bass
Tittabawassee River	Sanford Lake	89004	Apr/07/1989	Black Crappie, Northern Pike, Walleye
Tittabawassee River	Sanford Lake	1999081	May/20/1999	Black Crappie, Channel Catfish, Rock Bass
Tittabawassee River	Sanford Lake	2007255	May/15/2007	Channel Catfish
Tobico Marsh	Bay County	96054	May/21/1996	Carp, Northern Pike
Tobico Marsh	Bay County	2007256	May/30/2007	Carp, Largemouth Bass, Northern Pike
Todd Lake	Osceola County	87041	Jul/02/1987	Largemouth Bass, Northern Pike
Torch Lake	Antrim County	91035	Sep/11/1991	Lake Trout, Smallmouth Bass
Torch Lake	Antrim County	93085	Nov/03/1993	Brown Trout, Lake Trout
Torch Lake	Antrim County	94054	Jul/15/1994	Lake Whitefish
Torch Lake	Antrim County	2000125	Mar/07/1996	Lake Trout
Torch Lake	Antrim County	2001110	Oct/08/2001	Lake Whitefish, Yellow Perch
Torch Lake	Antrim County	2009300	Mar/15/2009	Lake Trout, Rainbow Trout
Torch Lake	Houghton County	88015	Aug/23/1988	Northern Pike, Smallmouth Bass, Walleye
Torch Lake	Houghton County	2000096	May/03/2000	Northern Pike, Smallmouth Bass, Walleye
Torch Lake	Houghton County	2007257	Apr/25/2007	Northern Pike, Walleye, White Sucker
Tucker Lake	Leelanau County	2005127	Jun/03/2005	Brown Bullhead
Union Lake	Branch County	91026	Jun/12/1991	Carp, Channel Catfish, Crappie, Northern Pike
Union Lake	Branch County	2003135	Jun/17/2003	Carp, Channel Catfish, Largemouth Bass, Walleye
Union Lake	Oakland County	2002100	May/29/2002	Largemouth Bass, Smallmouth Bass
Unnamed Lake	Baraga County	2005108	Jun/06/2005	Largemouth Bass, Northern Pike, Yellow Perch
Unnamed Lake	Washtenaw County	89007	May/02/1989	Bullhead, Largemouth Bass
Van Auken Lake	Van Buren County	2004125	Mar/23/2004	Northern Pike
Van Etten Lake	Iosco County, Oscoda	90010	Jun/06/1990	Carp, Channel Catfish, Walleye
Vandercook Lake	Jackson County	88042	Sep/27/1988	Carp
Vermilac Lake	Baraga County	88029	May/16/1988	Northern Pike, Yellow Perch
Vermilac Lake	Baraga County	2001135	Oct/04/2001	Walleye
W. Branch Maple River	Emmet County	1998070	Jul/28/1998	Brown Trout, White Sucker
Wabascon Creek	Bedford	1998133	May/18/1998	Rock Bass, White Sucker
Wabasis Lake	Kent County	90047	Sep/25/1990	Largemouth Bass, Northern Pike

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION INVENTORY

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Walkup Lake	Newaygo County	1999075	Jun/21/1999	Bluegill
Walled Lake	Oakland County	88031	Aug/24/1988	Carp, Northern Pike
Walloon Lake	Charlevoix County	87023	Jun/04/1987	Smallmouth Bass
Walloon Lake	Charlevoix County	2000099	Oct/10/2000	Rock Bass, White Sucker, Yellow Bullhead, Yellow Perch
Walloon Lake	Charlevoix County	2006086	Apr/18/2006	Brown Bullhead, Northern Pike, Rainbow Trout, Smallmouth Bass, Walleye, White Sucker
Wamplers Lake	Jackson/Lenawee County	89040	May/19/1989	Black Crappie, Largemouth Bass, Northern Pike
Wamplers Lake	Jackson/Lenawee County	94055	Oct/17/1994	Largemouth Bass, Northern Pike
White Lake	Muskegon County	80001	Jul/02/1980	Carp, Largemouth Bass, Northern Pike, Redhorse Sucker, Smallmouth Bass, White Sucker, Yellow Perch
White Lake	Muskegon County	84001	Jul/24/1984	Carp, Northern Pike, Redhorse Sucker, Smallmouth Bass, Walleye
White Lake	Muskegon County	87057	Jul/14/1987	Smallmouth Bass, Walleye
White Lake	Muskegon County	91046	Aug/21/1991	Carp, Walleye
White Lake	Muskegon County	2004126	Sep/13/2004	Carp, Smallmouth Bass, Walleye
White Lake	Muskegon County	2007258	Jun/12/2007	Carp, Northern Pike
White Lake	Oakland Co.	2001111	Oct/18/2001	Brown Bullhead, Rock Bass
White Lake	Oakland Co.	2007259	Jun/05/2007	Walleye
Whitmore Lake	Livingston County	92038	Jun/09/1992	Carp, Largemouth Bass, Northern Pike
Whitmore Lake	Livingston County	2008260	May/28/2008	Carp, Northern Pike
Wixom Lake	Gladwin County	2002102	May/16/2002	Channel Catfish, Northern Pike
Wolf Creek	Montcalm County, Grove Road	2000103	Sep/18/2000	White Sucker
Wolf Creek	Montcalm County, Vickeryville Road	92015	Jun/01/1992	Brown Trout, Rock Bass
Woodland Lake	Livingston County	2000104	May/02/2000	Carp, Largemouth Bass

APPENDIX B  
INVENTORY OF FISH CONTAMINANT MONITORING SITES AND SPECIES  
REPORTED IN  
2009 ANNUAL EDIBLE PORTION REPORT

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION - 2009 REPORT SAMPLE SITES

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Au Sable River	Cooke Pond	2008200	May/12/2008	Northern Pike
Beatons Lake	Gogebic County	2008263	May/07/2008	Largemouth Bass, Smallmouth Bass
Big Star Lake	Lake Co	2007262	Apr/24/2007	Largemouth Bass
Big Twin Lake	Kalkaska County	2006002	May/25/2006	Lake Herring, White Sucker
Boardman Lake	Grand Traverse County	2007302	Jun/05/2007	White Sucker
Boardman River	Brown Bridge Pond	2007301	May/23/2007	Northern Pike, White Sucker
Boardman River	Sabin Pond	2007303	Jun/19/2007	White Sucker
Coldwater Lake	Branch County	2006125	Nov/28/2006	Northern Pike
Crooked Lake	Clare Co	2008210	May/13/2008	Largemouth Bass
Cusino Lake	Schoolcraft Co	2007213	Jun/05/2007	Yellow Perch
Deer Lake	Marquette County	2008211	Sep/14/2008	Northern Pike, Walleye, White Sucker, Yellow Perch
Diamond Lake	Newaygo Co	2008212	Sep/22/2008	Largemouth Bass
Eagle Lake	Kalamazoo Co	2008213	Jun/03/2008	Largemouth Bass
Fine Lake	Barry Co	2008216	May/20/2008	Northern Pike, Walleye
Fire Lake	Iron County	2007214	Jun/01/2007	Northern Pike
Flat River	Fallasberg Park, downstream of Fallasberg Dam	2008217	Aug/20/2008	Rock Bass, White Sucker
Flat River	Lowell Impoundment	2008273	Oct/13/2008	Carp
Flint River	Holloway Reservoir	2008219	May/20/2008	Channel Catfish
Floyd Lake	Iosco County	2008220	May/28/2008	Largemouth Bass
Goose Lake	Marquette County	2008221	Jun/08/2008	Northern Pike, White Sucker
Houghton Lake	Roscommon County	2008222	May/21/2008	Carp
Huron River	Geddes Pond	2008223	May/06/2008	Carp
Hutchins Lake	Allegan County	2007218	May/08/2007	Northern Pike
Kawkawlin River	Bay County, M-247	2008227	Apr/16/2008	Carp
Lake Erie	Off Monroe	2008266	Apr/14/2008	Channel Catfish
Lake Huron	Saginaw Bay	2008271	Sep/12/2008	Walleye, White Bass
Lake Macatawa	Ottawa County	2008262	May/12/2008	Largemouth Bass, Walleye
Lake Michigan	Bridgeman	2006501	Jun/01/2006	Lake Sturgeon
Lake Michigan	Little Bay De Noc	2008232	Apr/22/2008	Carp, Redhorse Sucker, Rock Bass, Smallmouth Bass
Lake Michigan	Little Bay De Noc	2008280	Apr/22/2008	Smallmouth Bass
Lake Superior	Isle Royale	2008267	May/15/2008	Lake Trout
Lake Superior	Munising	2008268	Jun/01/2008	Lake Trout
Little Whitefish Lake	Montcalm Co	2008234	May/14/2008	Largemouth Bass
Long Lake	Grand Traverse Co	2007234	May/22/2007	Walleye, White Sucker
Manistique River	d/s Manistique Papers Dam	2008235	May/28/2008	Carp, Pumpkinseed, Redhorse Sucker, Rock Bass, Smallmouth Bass, Walleye, White Sucker
Muskegon Lake	Muskegon County	2008239	May/15/2008	Walleye
Muskegon River	Newaygo County, below Croton Dam	2008240	May/15/2008	Redhorse sucker, Walleye
Perch Lake	Iron County	2006064	Jun/15/2006	Northern Pike, Walleye
Raisin River	Monroe, below Winchester Bridge	2008247	Jun/14/2008	Carp, Channel Catfish, Freshwater Drum, Smallmouth Bass, White Bass
Rock Lake	Montcalm Co	2007248	May/30/2007	Largemouth Bass, Walleye
Schweitzer Creek	Schweitzer Reservoir	2008272	Oct/01/2008	Northern Pike
Shakey Lakes	Menominee Co	2007275	Jun/12/2007	Northern Pike
Stony Creek Impoundment	Macomb County	2007253	Oct/30/2007	Northern Pike
Stony Creek Impoundment	Macomb County	2008251	Apr/16/2008	Northern Pike

MICHIGAN FISH CONTAMINANT MONITORING - EDIBLE PORTION - 2009 REPORT SAMPLE SITES

<u>Waterbody</u>	<u>Location</u>	<u>Visit ID#</u>	<u>Date</u>	<u>Species</u>
Sylvan/Otter Lake	Oakland Co	2008242	May/21/2008	Carp, Largemouth Bass
Three Mile Lake	Van Buren County	2007264	May/16/2007	Northern Pike
Tittabawassee River	Sanford Lake	2007255	May/15/2007	Channel Catfish
Torch Lake	Antrim County	2009300	Mar/15/2009	Lake Trout, Rainbow Trout
Whitmore Lake	Livingston County	2008260	May/28/2008	Carp, Northern Pike

APPENDIX C  
CONTAMINANT DATA SUMMARIZED IN THE  
MICHIGAN FISH CONTAMINANT MONITORING  
2009 ANNUAL EDIBLE PORTION REPORT



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Big Twin Lake

Collection Date: May / 25 / 2006

Location: Kalkaska County

VisitID: 2006002

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Lake Herring</b>		<b>Fs</b>						
2006002-S01	0.20	0.347						0.001 K
2006002-S02	0.70	0.332						0.002
2006002-S03	0.20	0.340						0.001 K
2006002-S04	0.50	0.218						0.002
2006002-S05	0.70	0.308						0.001 K
No. of Samples:	5	5						5
Mean+:	0.46	0.309						0.001*
Median+:	0.50	0.332						0.001

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Big Twin Lake

Collection Date: May / 25 / 2006

Location: Kalkaska County

VisitID: 2006002

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Lake Herring</b>	<b>Fs</b>					
2006002-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S04	0.001	0.001 K	0.001	0.001 K	0.001 K	0.002
2006002-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						5
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Big Twin Lake

Collection Date: May / 25 / 2006

Location: Kalkaska County

VisitID: 2006002

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Lake Herring</b>	<b>Fs</b>						
2006002-S01	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2006002-S02	0.002	0.004	0.001 K	0.001 K		0.001 K	0.006
2006002-S03	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2006002-S04	0.003	0.006	0.001 K	0.001 K		0.001 K	0.009
2006002-S05	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
No. of Samples:							5
Mean+:							0.004 *
Median+:							0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Big Twin Lake

Collection Date: May / 25 / 2006

Location: Kalkaska County

VisitID: 2006002

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Lake Herring</b>	<b>Fs</b>						
2006002-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2006002-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2006002-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2006002-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2006002-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	5	5	5	5	5	5	5
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Big Twin Lake

Collection Date: May / 25 / 2006

Location: Kalkaska County

VisitID: 2006002

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Lake Herring</b>	<b>Fs</b>						
2006002-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2006002-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	5	5	5	5	5	5	5
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Perch Lake

Collection Date: Jun / 15 / 2006

Location: Iron County

Latitude / Longitude: 46.36273/-88.6616

VisitID: 2006064

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment	Mercury (mg/kg)	Selenium (mg/kg)
<b>Northern Pike</b>		<b>Fs</b>						
	2006064-S01	Fs	M		23.8	5.1		
	2006064-S02	Fs	M		24.6	7.2	0.280	0.230
	2006064-S03	Fs	M		25.1	7.9	0.320	0.220
	2006064-S04	Fs	M		27.0	8.5	0.400	0.250
	2006064-S05	Fs	M		27.0	9.8	0.530	0.210
	2006064-S06	Fs	M		28.0	12.0	0.430	0.260
	2006064-S07	Fs	M		25.2	7.7	0.370	0.280
	2006064-S08	Fs	F		31.6	11.2	0.920	0.280
No. of Samples:				8	8		8	8
Mean+:				26.5	8.7		0.466	0.262
Median+:				26.1	8.2		0.415	0.415
<b>Walleye</b>		<b>F</b>						
	2006064-S09	F	M		18.7	4.4	0.650	0.310
	2006064-S10	F	F		19.9	5.3	0.540	0.260
	2006064-S11	F	M		18.1	4.7	0.500	0.360
	2006064-S12	F	M		21.3	8.6	0.600	0.360
	2006064-S13	F	F		22.2	8.3	0.630	0.380
No. of Samples:				5	5		5	5
Mean+:				20.1	6.3		0.584	0.334
Median+:				19.9	5.3		0.600	0.600

F = skin-on fillet  
Fs = skin-off fillet  
E = egg only  
W = whole fish  
O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error





**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Jun / 01 / 2006

Location: Bridgeman

VisitID: 2006501

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Lake Sturgeon</b>	<b>0</b>							
2006501-S01	12.50	0.278						0.866
2006501-S02	4.40	0.035						0.082
2006501-S03	16.20	0.197						0.481
No. of Samples:	3	3						3
Mean+:	11.03	0.170						0.476
Median+:	12.50	0.197						0.481

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan  
Location: Bridgeman  
VisitID: 2006501

Collection Date: Jun / 01 / 2006

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Lake Sturgeon</b>	<b>O</b>					
2006501-S01	0.021	0.011	0.016	0.045	0.006	0.099
2006501-S02	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2006501-S03	0.013	I	0.017	0.032	0.007	0.069
No. of Samples:						3
Mean+:						0.056
Median+:						0.069

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Jun / 01 / 2006

Location: Bridgeman

VisitID: 2006501

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Lake Sturgeon</b>	<b>O</b>						
2006501-S01	0.036	0.191	0.012	0.008		0.007	0.254
2006501-S02	0.003	0.010	0.001 K	0.001 K		0.001 K	0.013
2006501-S03	0.005	0.179	0.016	0.002		0.001	0.203
No. of Samples:							3
Mean+:							0.157
Median+:							0.203

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Jun / 01 / 2006

Location: Bridgeman

VisitID: 2006501

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Lake Sturgeon</b>	<b>O</b>						
2006501-S01	0.050 K	0.001 K	0.017	0.001 K	0.004	0.001 K	0.250 K
2006501-S02	0.050 K	0.001 K	0.003 J	0.001 K	0.001 K	0.001 K	0.250 K
2006501-S03	0.050 K	0.001 K	0.024 J	0.001 K	0.006	0.001 K	0.250 K
No. of Samples:	3	3	3	3	3	3	3
Mean+:	0.025 *	0.001 *	0.015 J	0.001 *	0.004 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.017 J	0.001 K	0.004	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Jun / 01 / 2006

Location: Bridgeman

VisitID: 2006501

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Lake Sturgeon</b>	<b>O</b>						
2006501-S01	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2006501-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2006501-S03	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
No. of Samples:	3	3	3	3	3	3	3
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001

+ = Calculated value; not rounded to appropriate number of significant digits.

i = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Jun / 01 / 2006

Location: Bridgeman

VisitID: 2006501

Species Sample #	Total Dioxin Toxic Equivalents+ (ppt)	2,3,7,8- TCDD (ppt)	1,2,3,7,8- PCDD (ppt)	1,2,3,4,7,8- HxCDD (ppt)	1,2,3,6,7,8- HxCDD (ppt)	1,2,3,7,8,9- HxCDD (ppt)	1,2,3,4,6,7,8- HpCDD (ppt)	OCDD (ppt)
<b>Lake Sturgeon</b>	<b>O</b>							
2006501-S01	9.49	J 0.36	K 0.29	K 0.50	J 0.62	K 0.41	I	I
2006501-S02	0.60	K 0.16	J 0.22	K 0.27	K 0.27	K 0.28	J 0.37	I
2006501-S03	9.37	I	J 0.42	K 0.22	I	K 0.55	J 0.64	J 1.60
No. of Samples:	3							
Mean+:	6.4833							
Median+:	9.368							

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Jun / 01 / 2006

Location: Bridgeman

VisitID: 2006501

Sample #:	2,3,7,8 -TCDF (ppt)	1,2,3,7,8 -PCDF (ppt)	2,3,4,7,8 -PCDF (ppt)	1,2,3,4,7,8 -HxCDF (ppt)	1,2,3,6,7,8 -HxCDF (ppt)	1,2,3,7,8,9 -HxCDF (ppt)	2,3,4,6,7,8 -HxCDF (ppt)	1,2,3,4,6,7,8 -HpCDF (ppt)	1,2,3,4,7,8,9 -HpCDF (ppt)	OCDF (ppt)
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**Lake Sturgeon      O**

2006501-S01	15.00	I	J 2.10	K 0.31	I	K 0.20	K 0.24	K 0.29	K 0.23	I
2006501-S02	1.50	I	J 0.31	K 0.12	I	K 0.17	K 0.14	K 0.09	K 0.14	K 0.25
2006501-S03	14.00	I	J 1.30	K 0.06	I	K 0.08	K 0.32	K 0.39	K 0.18	J 0.33

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan  
Location: Bridgeman  
VisitID: 2006501

Collection Date: Jun / 01 / 2006

Coplanar  
PCB Congener Number\*\*

Species Sample #	Cong. 077 (ppb)	Cong. 081 (ppb)	Cong. 105 (ppb)	Cong. 114 (ppb)	Cong. 118 (ppb)	Cong. 123 (ppb)	Cong. 126 (ppb)	Cong. 156 (ppb)	Cong. 157 (ppb)	Cong. 167 (ppb)	Cong. 169 (ppb)	Cong. 189 (ppb)
<b>Lake Sturgeon</b>												
2006501-S01	0.29	I	23.00	1.90	35.00	1.90	0.04	7.20	2.00	0.32	0.03	0.85
2006501-S02	T	T	1.60	T	2.00	T	T	0.70	0.50 K	0.50 K	T	T
2006501-S03	0.16	I	12.00	0.77	21.00	0.74	0.05	3.50	1.00	0.42	0.02	0.41
No. of Samples:	3	3	3	3	3	3	3	3	3	3	3	3
Mean+:	0.225		12.200	1.335	19.333	1.320	0.047	3.800	1.083 *	0.330 *	0.023	0.630
Median+:	0.225		12.000	1.335	21.000	1.320	0.047	3.500	1.000	0.320	0.023	0.630

⊕ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification.  
 a = AHH inducing congener.  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Undetected at detection level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Fire Lake  
Location: Iron County  
VisitID: 2007214

Collection Date: Jun / 01 / 2007  
Latitude / Longitude: 46.14515/-88.6533

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment	Mercury (mg/kg)	Selenium (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>							
	2007214-S01	Fs		19.1	1.5		0.180	0.400
	2007214-S02	Fs	M	19.6	1.9		0.130	0.350
	2007214-S03	Fs		19.3	1.8		0.120	0.350
	2007214-S04	Fs	M	21.0	2.1		0.230	0.450
	2007214-S05	Fs	M	21.2	2.0		0.220	0.370
	2007214-S06	Fs		20.7	2.2		0.210	0.360
	2007214-S07	Fs	F	22.9	2.5		0.210	0.350
	2007214-S08	Fs	M	24.1	3.3		0.260	0.340
	2007214-S09	Fs	M	26.0	4.0		0.230	0.330
	2007214-S10	Fs	M	32.2	8.1		0.590	0.290
No. of Samples:				10	10		10	10
Mean+:				22.6	2.9		0.238	0.359
Median+:				21.1	2.2		0.215	0.215

F = skin-on fillet  
Fs = skin-off fillet  
E = egg only  
W = whole fish  
O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Hutchins Lake

Collection Date:

May / 08 / 2007

Location: Allegan County

Latitude / Longitude::

42.58107/-86.13025

VisitID: 2007218

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Northern Pike</b>						
2007218-S01	Fs	F		23.1	2.6	
2007218-S02	Fs	M		22.8	2.7	
2007218-S03	Fs	M		22.9	2.8	
2007218-S04	Fs	M		23.8	3.5	
2007218-S05	Fs	M		24.4	3.3	
2007218-S06	Fs	F		25.2	4.4	
2007218-S07	Fs	F		26.9	5.0	
2007218-S08	Fs	F		27.8	5.2	
2007218-S09	Fs	M		27.6	4.8	
2007218-S10	Fs	F		28.7	6.1	
No. of Samples:				10	10	
Mean+:				25.3	4.0	
Median+:				24.8	4.0	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Hutchins Lake

Collection Date: May / 08 / 2007

Location: Allegan County

VisitID: 2007218

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
<b>Northern Pike</b>	<b>Fs</b>							
2007218-S01	0.40	0.586						0.007
2007218-S02	0.30	0.470						0.001 K
2007218-S03	0.60	0.533						0.008
2007218-S04	0.30	0.410						0.002
2007218-S05	0.50	0.379						0.004
2007218-S06	0.30	0.545						0.001 K
2007218-S07	0.40	0.467						0.001
2007218-S08	0.40	0.531						0.001 K
2007218-S09	0.40	0.505						0.001 K
2007218-S10	0.80	0.570						0.005
No. of Samples:	10	10						10
Mean+:	0.44	0.500						0.003*
Median+:	0.40	0.518						0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Hutchins Lake

Collection Date: May / 08 / 2007

Location: Allegan County

VisitID: 2007218

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>					
2007218-S01	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2007218-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S03	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2007218-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S10	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Hutchins Lake

Collection Date: May / 08 / 2007

Location: Allegan County

VisitID: 2007218

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007218-S01	0.009	0.043	0.002	0.001		0.001 K	0.055
2007218-S02	0.002	0.009	0.001 K	0.001 K		0.001 K	0.011
2007218-S03	0.007	0.045	0.001	0.001 K		0.001 K	0.053
2007218-S04	0.003	0.018	0.001 K	0.001 K		0.001 K	0.021
2007218-S05	0.006	0.031	0.001 K	0.001 K		0.001 K	0.037
2007218-S06	0.001	0.009	0.001 K	0.001 K		0.001 K	0.010
2007218-S07	0.003	0.015	0.001 K	0.001 K		0.001 K	0.018
2007218-S08	0.002	0.013	0.001 K	0.001 K		0.001 K	0.015
2007218-S09	0.002	0.014	0.001 K	0.001 K		0.001 K	0.016
2007218-S10	0.004	0.036	0.001 K	0.001 K		0.001 K	0.040
No. of Samples:							10
Mean+:							0.028
Median+:							0.020

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Hutchins Lake

Collection Date: May / 08 / 2007

Location: Allegan County

VisitID: 2007218

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Northern Pike</b>							
	<b>Fs</b>						
2007218-S01	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S02	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S03	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S04	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S05	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S06	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S07	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S08	0.050 K	0.001 K	I	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S09	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2007218-S10	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Hutchins Lake

Collection Date: May / 08 / 2007

Location: Allegan County

VisitID: 2007218

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007218-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007218-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Long Lake

Collection Date:

May / 22 / 2007

Location: Grand Traverse Co

Latitude / Longitude::

44.7197/-85.7525

VisitID: 2007234

Notes:

Species	Sample#:	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>Walleye</b>							
	2007234-S11	F	M		14.4	0.8	
	2007234-S12	F	F		14.3	0.9	
	2007234-S13	F	M		15.0	0.9	
	2007234-S14	F	F		17.6	1.8	
	2007234-S15	F	F		19.6	2.1	
	2007234-S16	F	F		19.5	2.2	
No. of Samples:					6	6	
Mean+:					16.7	1.5	
Median+:					16.3	1.4	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Long Lake

Collection Date: May / 22 / 2007

Location: Grand Traverse Co

VisitID: 2007234

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Walleye</b>	<b>F</b>							
2007234-S11	0.30	0.261						0.001
2007234-S12	0.30	0.223						0.001 K
2007234-S13	0.20	0.268						0.001 K
2007234-S14	0.30	0.415						0.001 K
2007234-S15	0.40	0.384						0.001 K
2007234-S16	0.30	0.326						0.001 K
No. of Samples:	6	6						6
Mean+:	0.30	0.313						0.001 *
Median+:	0.30	0.297						0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Long Lake

Collection Date: May / 22 / 2007

Location: Grand Traverse Co

VisitID: 2007234

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Walleye</b>	<b>F</b>					
2007234-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						6
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Long Lake

Collection Date: May / 22 / 2007

Location: Grand Traverse Co

VisitID: 2007234

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Walleye</b>	<b>F</b>						
2007234-S11	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007234-S12	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007234-S13	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007234-S14	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007234-S15	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007234-S16	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							6
Mean+:							0.001 *
Median+:							0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Long Lake

Collection Date: May / 22 / 2007

Location: Grand Traverse Co

VisitID: 2007234

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Walleye</b>	<b>F</b>						
2007234-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007234-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007234-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007234-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007234-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007234-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	6	6	6	6	6	6	6
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Long Lake

Collection Date: May / 22 / 2007

Location: Grand Traverse Co

VisitID: 2007234

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Walleye</b>	<b>F</b>						
2007234-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007234-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	6	6	6	6	6	6	6
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Oct / 30 / 2007

Location: Macomb County

Latitude / Longitude: 42.75451/-83.08972

VisitID: 2007253

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Northern Pike</b>						
2007253-S05	Fs	M		23.6	2.6	include with 2008251
2007253-S06	Fs	F		25.5	3.1	
No. of Samples:				2	2	
Mean+:				24.6	2.9	
Median+:				24.4	3.0	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Oct / 30 / 2007

Location: Macomb County

VisitID: 2007253

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>							
2007253-S05	0.10	0.397						0.002
2007253-S06	0.10	0.457						0.001 K
No. of Samples:	2	2						2
Mean+:	0.10	0.427						0.0013*
Median+:	0.10	0.427						0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Oct / 30 / 2007

Location: Macomb County

VisitID: 2007253

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>					
2007253-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007253-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						2
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Oct / 30 / 2007

Location: Macomb County

VisitID: 2007253

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007253-S05	0.001	0.013	0.001 K	0.001 K		0.001 K	0.014
2007253-S06	0.001	0.010	0.001 K	0.001 K		0.001 K	0.011
No. of Samples:							2
Mean+:							0.0125
Median+:							0.013

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Oct / 30 / 2007

Location: Macomb County

VisitID: 2007253

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007253-S05	0.050 K	0.001 K	0.001 K	0.001 K	J	0.001 K	0.250 K
2007253-S06	0.050 K	0.001 K	0.001 K	0.001 K	J	0.001 K	0.250 K
No. of Samples:	2	2	2	2	2	2	2
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *		0.0005*	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K		0.001K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

! = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Oct / 30 / 2007

Location: Macomb County

VisitID: 2007253

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007253-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007253-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	2	2	2	2	2	2	2
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Tittabawassee River

Collection Date:

May / 15 / 2007

Location: Sanford Lake

Latitude / Longitude::

43.70926/-84.38474

VisitID: 2007255

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Channel Catfish</b>						
2007255-S01	Fs			18.2	2.4	
2007255-S02	Fs			17.7	2.1	
2007255-S03	Fs	F		18.7	2.6	
2007255-S04	Fs	F		19.6	3.5	
2007255-S05	Fs	F		24.8	6.4	
No. of Samples:				5	5	
Mean+:				19.8	3.4	
Median+:				18.7	2.6	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Tittabawassee River

Collection Date: May / 15 / 2007

Location: Sanford Lake

VisitID: 2007255

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>							
2007255-S01	0.90	0.304						0.003
2007255-S02	0.20	0.203						0.001 K
2007255-S03	0.30	0.338						0.001 K
2007255-S04	4.10	0.642						0.035
2007255-S05	0.30	0.482						0.001 K
No. of Samples:	5	5						5
Mean+:	1.16	0.394						0.008*
Median+:	0.30	0.338						0.001

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Tittabawassee River

Collection Date: May / 15 / 2007

Location: Sanford Lake

VisitID: 2007255

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>					
2007255-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007255-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007255-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007255-S04	0.002	0.001 K	0.001	0.003	0.001 K	0.006
2007255-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						5
Mean+:						0.002 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Tittabawassee River

Collection Date: May / 15 / 2007

Location: Sanford Lake

VisitID: 2007255

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2007255-S01	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2007255-S02	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007255-S03	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2007255-S04	0.002	0.020	0.001 K	0.001 K		0.001 K	0.022
2007255-S05	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
No. of Samples:							5
Mean+:							0.007 *
Median+:							0.004

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Tittabawassee River

Collection Date: May / 15 / 2007

Location: Sanford Lake

VisitID: 2007255

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2007255-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007255-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007255-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007255-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007255-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	5	5	5	5	5	5	5
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Tittabawassee River

Collection Date: May / 15 / 2007

Location: Sanford Lake

VisitID: 2007255

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2007255-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007255-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007255-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007255-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007255-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	5	5	5	5	5	5	5
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Big Star Lake

Collection Date:

Apr / 24 / 2007

Location: Lake Co

Latitude / Longitude::

43.8339/-85.9461

VisitID: 2007262

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment	Mercury (mg/kg)
<b>Largemouth Bass F</b>							
2007262-S01	F	M		12.6	0.9		0.820
2007262-S02	F	F		12.5	1.0		0.180
2007262-S03	F	F		12.5	1.1		0.190
2007262-S04	F	F		14.2	1.6		0.190
2007262-S05	F	F		14.8	1.7		0.190
2007262-S06	F	F		13.2	1.4		0.120
2007262-S07	F	F		15.0	2.0		0.100
2007262-S08	F	F		16.5	2.4		0.100
2007262-S09	F	F		16.3	2.8		0.170
2007262-S10	F	F		17.4	2.9		0.690
No. of Samples:				10	10		10
Mean+:				14.5	1.8		0.275
Median+:				14.5	1.6		0.185

F = skin-on fillet  
Fs = skin-off fillet  
E = egg only  
W = whole fish  
O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error





**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Oct / 23 / 2007

Location: Thunder Bay

VisitID: 2007269

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total	Total
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)	PCB (Arochlor) (mg/kg)	PCB (Congeners) (mg/kg)
<b>Lake Whitefish</b>	<b>F</b>							
2007269-S01	2.80	0.073						0.056
2007269-S02	0.20	0.114						0.054
2007269-S03	1.20	0.094						0.151
2007269-S04	0.60	0.102						0.053
2007269-S05	4.80	0.097						0.062
2007269-S06	1.60	0.179						0.174
2007269-S07	2.60	0.089						0.035
2007269-S08	1.60	0.112						0.188
2007269-S09	5.60	0.033						0.071
2007269-S10	5.20	0.160						0.097
No. of Samples:	10	10						10
Mean+:	2.62	0.105						0.094
Median+:	2.10	0.100						0.067

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Oct / 23 / 2007

Location: Thunder Bay

VisitID: 2007269

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
Lake Whitefish	F					
2007269-S01	0.001 K	0.001 K	0.002	0.003	0.001 K	0.005
2007269-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007269-S03	0.001 K	0.001 K	0.003	0.004	0.001 K	0.007
2007269-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007269-S05	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2007269-S06	0.001 K	0.001 K	0.004	0.007	0.002	0.013
2007269-S07	0.001 K	0.001 K	0.002	0.001	0.001 K	0.003
2007269-S08	0.001 K	0.001 K	0.011	0.010	0.001 K	0.021
2007269-S09	0.001 K	0.001 K	0.001 K	0.005	0.001 K	0.005
2007269-S10	0.001	0.001 K	0.003	0.006	0.001 K	0.010
No. of Samples:						10
Mean+:						0.007 *
Median+:						0.005

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Oct / 23 / 2007

Location: Thunder Bay

VisitID: 2007269

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Lake Whitefish</b>	<b>F</b>						
2007269-S01	0.001	0.022	0.003	0.001 K		0.001 K	0.026
2007269-S02	0.001 K	0.012	0.001 K	0.001 K		0.001 K	0.012
2007269-S03	0.001	0.053	0.003	0.001 K		0.001 K	0.057
2007269-S04	0.001 K	0.016	0.001	0.001 K		0.001 K	0.017
2007269-S05	0.001	0.013	0.002	0.001 K		0.001 K	0.016
2007269-S06	0.001 K	0.061	0.004	0.001 K		0.001 K	0.065
2007269-S07	0.001	0.010	0.002	0.001 K		0.001 K	0.013
2007269-S08	0.002	0.049	0.009	0.001 K		0.001 K	0.060
2007269-S09	0.001 K	0.035	0.001 K	0.001 K		0.001 K	0.035
2007269-S10	0.002	0.035	0.006	0.001 K		0.001 K	0.043
No. of Samples:							10
Mean+:							0.034
Median+:							0.031

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Oct / 23 / 2007

Location: Thunder Bay

VisitID: 2007269

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Lake Whitefish</b>	<b>F</b>						
2007269-S01	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S05	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S06	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S07	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S08	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S09	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2007269-S10	0.050 K	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

i = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Oct / 23 / 2007

Location: Thunder Bay

VisitID: 2007269

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Lake Whitefish F</b>							
2007269-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001
2007269-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007269-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
Location: Thunder Bay  
VisitID: 2007269

Collection Date: Oct / 23 / 2007

Species Sample #	Total Dioxin Toxic Equivalents+ (ppt)	2,3,7,8- TCDD (ppt)	1,2,3,7,8- PCDD (ppt)	1,2,3,4,7,8- HxCDD (ppt)	1,2,3,6,7,8- HxCDD (ppt)	1,2,3,7,8,9- HxCDD (ppt)	1,2,3,4,6,7,8- HpCDD (ppt)	OCDD (ppt)
Lake Whitefish	F							
2007269-S01	6.94	0.52 J	0.67 J	0.08 J	0.42 I		0.21 J	0.51 J
2007269-S02	4.33	I	0.36 J	0.14 K	0.23 J	0.08 K	0.07 K	0.44 J
2007269-S03	15.77	0.57 I		0.13 K	0.48 J	0.09 J	0.17 J	0.62 J
2007269-S04	5.20	J 0.40	J 0.54	K 0.12	J 0.31	J 0.09	J 0.09	J 0.39
2007269-S05	5.37	J 0.38	J 0.47	I	J 0.31	J 0.08	J 0.29	I
2007269-S06	17.66	1.40 J	1.40 K	0.16 J	0.58 K	0.10 I		J 0.47
2007269-S07	4.11	J 0.26	J 0.28	I	J 0.16	K 0.07	J 0.12	J 0.42
2007269-S08	10.27	0.44 J	0.47 K	0.10 J	0.29 K	0.06 J	0.12 J	0.40 J
2007269-S09	8.14	0.47 J	0.93 K	0.16 J	0.43 K	0.19 J	0.26 J	0.60 J
2007269-S10	6.40	0.41 J	0.48 K	0.16 I		K 0.12	I	J 0.63
No. of Samples:	10							
Mean+:	8.4204							
Median+:	6.671							

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Oct / 23 / 2007

Location: Thunder Bay

VisitID: 2007269

Sample #:	2,3,7,8 -TCDF (ppt)	1,2,3,7,8 -PCDF (ppt)	2,3,4,7,8 -PCDF (ppt)	1,2,3,4,7,8 -HxCDF (ppt)	1,2,3,6,7,8 -HxCDF (ppt)	1,2,3,7,8,9 -HxCDF (ppt)	2,3,4,6,7,8 -HxCDF (ppt)	1,2,3,4,6,7,8 -HpCDF (ppt)	1,2,3,4,7,8,9 -HpCDF (ppt)	OCDF (ppt)
<b>Lake Whitefish</b>	<b>F</b>									
2007269-S01	4.60 J	1.20 I		J 0.20 I		K 0.07 I			K 0.22	K 0.06
2007269-S02	1.00 J	1.90 I		J 0.22 I		K 0.09	K 0.08	I	K 0.15	K 0.06
2007269-S03	2.80	2.10 I		I	I	K 0.05	J 0.13	I	K 0.24	K 0.10
2007269-S04	0.80 J	0.86 J	0.54 I	I	I	K 0.07	K 0.06	I	K 0.10	K 0.06
2007269-S05	4.80 J	2.00 I		J 0.28 I		K 0.08	J 0.16	I	K 0.18	K 0.09
2007269-S06	5.70	7.20 I		J 0.80 I		I	J 0.24	I	K 0.24	K 0.13
2007269-S07	2.40 J	0.74 J	0.59 J	J 0.23 I		K 0.06	J 0.08	I	K 0.16	K 0.10
2007269-S08	2.70 J	1.20 I		I	I	K 0.08	I	I	K 0.23	K 0.05
2007269-S09	5.20 J	1.30 I		J 0.58 I		K 0.16	J 0.24	I	K 0.37	K 0.09
2007269-S10	3.10 J	1.70 I		I	I	K 0.14	K 0.14	I	K 0.26	K 0.10

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Collection Date: Oct / 23 / 2007

Waterbody Name: Lake Huron  
Location: Thunder Bay  
VisitID: 2007269

Coplanar  
PCB Congener Number\*\*

Species Sample #	Cong. 077 (ppb)	Cong. 081 (ppb)	Cong. 105 (ppb)	Cong. 114 (ppb)	Cong. 118 (ppb)	Cong. 123 (ppb)	Cong. 126 (ppb)	Cong. 156 (ppb)	Cong. 157 (ppb)	Cong. 167 (ppb)	Cong. 169 (ppb)	Cong. 189 (ppb)
Lake Whitefish F												
2007269-S01	0.12	0.01 J	2.07	0.16	4.62	0.18	0.05	0.61	0.17	0.36	0.01	0.10
2007269-S02	0.02	I	3.89	0.29	8.76	0.27	0.03	1.89	0.48	0.36	0.01	0.31 J
2007269-S03	0.03	I	7.72	0.53	1.64	0.58	0.09	2.61	0.76	0.89	0.19	0.36
2007269-S04	0.02	I	2.97	0.21	6.78	0.22	0.03	1.32	0.36	0.34	0.01 J	0.21
2007269-S05	0.18	0.01 J	2.66	0.18	5.44	0.20	0.03	0.63	0.17	0.26	0.00 J	0.08
2007269-S06	0.11	I	9.51	0.81	19.70	0.81	0.12	2.88	0.84	1.53	0.02	0.37
2007269-S07	0.07	0.01 J	1.73	0.11	3.72	0.16	0.03	0.53	0.13	0.23	0.00 J	0.08
2007269-S08	0.05	I	7.08	0.52	16.50	0.39	0.08	2.73	0.73	0.73	0.02	0.45
2007269-S09	0.08	I	2.20	0.16	5.00	0.16	0.05	0.86	0.23	0.42	0.01 J	0.14
2007269-S10	0.06	0.01 J	2.97	0.21	6.89	0.25	0.05	1.09	0.25	0.46	0.01 J	0.15
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10	10
Mean±:	0.074	0.007 J	4.280	0.319	7.905	0.323	0.055	1.514	0.413	0.559	0.029 J	0.225 J
Median±:	0.064	0.006 J	2.970	0.214	6.110	0.237	0.046	1.205	0.306	0.393	0.010	0.181

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification.  
 a = AHH inducing congener.  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Undetected at detection level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Shakey Lakes

Collection Date:

Jun / 12 / 2007

Location: Menominee Co

Latitude / Longitude:

45.4167/-87.8204

VisitID: 2007275

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment	Mercury	Selenium
Sample#:	Type			(in)	(lb)		(mg/kg)	(mg/kg)
<b>Northern Pike</b>	<b>Fs</b>							
2007275-S01	Fs	M		19.3	1.3		0.440	0.140
2007275-S02	Fs	F		19.7	1.5		0.605	0.150
2007275-S03	Fs	M		20.3	1.5		0.756	0.180
2007275-S04	Fs			21.3	1.9		0.661	0.150
2007275-S05	Fs	F		21.5	2.2		0.301	0.160
2007275-S06	Fs	F		21.9	2.2		0.517	0.170
2007275-S07	Fs	F		25.8	3.5		0.735	0.150
2007275-S08	Fs	F		27.0	4.4		0.731	0.140
2007275-S09	Fs	F		25.4	3.5		0.522	0.160
2007275-S10	Fs	F		27.6	5.0		0.857	0.130
No. of Samples:				10	10		10	10
Mean+:				23.0	2.7		0.613	0.153
Median+:				21.7	2.2		0.633	0.633

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Shakey Lakes

Collection Date: Jun / 12 / 2007

Location: Menominee Co

VisitID: 2007275

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>							
2007275-S01	0.10	0.440						0.001 K
2007275-S02	0.10	0.605						0.001 K
2007275-S03	0.20	0.756						0.001 K
2007275-S04	0.10	0.661						0.001 K
2007275-S05	0.10	0.301						0.001 K
2007275-S06	0.10	0.517						0.001 K
2007275-S07	0.10	0.735						0.001 K
2007275-S08	0.20	0.731						0.001 K
2007275-S09	0.10	0.522						0.001 K
2007275-S10	0.10	0.857						0.001 K
No. of Samples:	10	10						10
Mean+:	0.12	0.612						0.001*
Median+:	0.10	0.633						0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Shakey Lakes

Collection Date: Jun / 12 / 2007

Location: Menominee Co

VisitID: 2007275

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>					
2007275-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING**  
**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Shakey Lakes

Collection Date: Jun / 12 / 2007

Location: Menominee Co

VisitID: 2007275

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007275-S01	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2007275-S02	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2007275-S03	0.001	0.017	0.001 K	0.001 K		0.001 K	0.018
2007275-S04	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007275-S05	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2007275-S06	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2007275-S07	0.001 K	0.009	0.001 K	0.001 K		0.001 K	0.009
2007275-S08	0.001	0.014	0.001 K	0.001 K		0.001 K	0.015
2007275-S09	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2007275-S10	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
No. of Samples:							10
Mean+:							0.007
Median+:							0.004

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Shakey Lakes

Collection Date: Jun / 12 / 2007

Location: Menominee Co

VisitID: 2007275

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007275-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007275-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Shakey Lakes

Collection Date: Jun / 12 / 2007

Location: Menominee Co

VisitID: 2007275

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2007275-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007275-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date: May / 23 / 2007

Location: Brown Bridge Pond

VisitID: 2007301

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
<b>White Sucker</b>	<b>F</b>							
2007301-S07	1.10	0.150						0.001 K
2007301-S08	1.10	0.398						0.001 K
2007301-S09	1.00	0.079						0.001 K
2007301-S10	0.90	0.223						0.001 K
2007301-S11	2.40	0.086						0.001 K
2007301-S12	0.80	0.223						0.001 K
2007301-S13	0.70	0.270						0.001 K
2007301-S14	0.90	0.284						0.001 K
2007301-S15	2.40	0.219						0.001 K
2007301-S16	0.50	0.360						0.001 K
No. of Samples:	10	10						10
Mean+:	1.18	0.229						0.001*
Median+:	0.95	0.223						0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

! = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date: May / 23 / 2007

Location: Brown Bridge Pond

VisitID: 2007301

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>White Sucker</b>	<b>F</b>					
2007301-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date: May / 23 / 2007

Location: Brown Bridge Pond

VisitID: 2007301

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007301-S07	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2007301-S08	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2007301-S09	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007301-S10	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2007301-S11	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007301-S12	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007301-S13	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2007301-S14	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2007301-S15	0.001	0.004	0.001 K	0.001 K		0.001 K	0.005
2007301-S16	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
No. of Samples:							10
Mean+:							0.002 *
Median+:							0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River  
Location: Brown Bridge Pond  
VisitID: 2007301

Collection Date: May / 23 / 2007

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007301-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S15	0.050 K	0.001 K	I	0.001 K	0.001 K	0.001 K	0.250 K
2007301-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date: May / 23 / 2007

Location: Brown Bridge Pond

VisitID: 2007301

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007301-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007301-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman Lake

Collection Date: Jun / 05 / 2007

Location: Grand Traverse County

VisitID: 2007302

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total	Total
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)	PCB (Arochlor) (mg/kg)	PCB (Congeners) (mg/kg)
<b>White Sucker</b>		<b>F</b>						
2007302-S01	0.30	0.290						0.001 K
2007302-S02	0.40	0.198						0.001 K
2007302-S03	0.30	0.231						0.001 K
2007302-S04	1.70	0.243						0.001 K
2007302-S05	0.50	0.385						0.001 K
2007302-S06	0.60	0.385						0.001 K
2007302-S07	0.90	0.330						0.001 K
2007302-S08	1.00	0.179						0.001 K
2007302-S09	0.90	0.324						0.001 K
2007302-S10	1.00	0.200						0.001 K
No. of Samples:	10	10						10
Mean+:	0.76	0.277						0.001*
Median+:	0.75	0.267						0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

i = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman Lake

Collection Date: Jun / 05 / 2007

Location: Grand Traverse County

VisitID: 2007302

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>White Sucker</b>	<b>F</b>					
2007302-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman Lake

Collection Date: Jun / 05 / 2007

Location: Grand Traverse County

VisitID: 2007302

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007302-S01	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007302-S02	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007302-S03	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007302-S04	0.001	0.003	0.001 K	0.001 K		0.001 K	0.004
2007302-S05	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007302-S06	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007302-S07	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007302-S08	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007302-S09	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007302-S10	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
No. of Samples:							10
Mean+:							0.001 *
Median+:							0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman Lake

Collection Date: Jun / 05 / 2007

Location: Grand Traverse County

VisitID: 2007302

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007302-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007302-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman Lake  
Location: Grand Traverse County  
VisitID: 2007302

Collection Date: Jun / 05 / 2007

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007302-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007302-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date:

Jun / 19 / 2007

Location: Sabin Pond

Latitude / Longitude::

44.7034/-85.6206

VisitID: 2007303

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>White Sucker</b>						
	2007303-S01	F	F	18.1	2.5	
	2007303-S02	F	F	18.2	2.8	
	2007303-S03	F	F	18.0	2.6	
	2007303-S04	F	M	18.7	2.6	
	2007303-S05	F	F	19.4	3.2	
	2007303-S06	F	F	20.9	3.1	
	2007303-S07	F	F	20.9	3.6	
	2007303-S08	F	F	21.0	4.0	
	2007303-S09	F		21.4	4.0	
	2007303-S10	F		21.4	4.2	
No. of Samples:				10	10	
Mean+:				19.8	3.3	
Median+:				20.2	3.2	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date: Jun / 19 / 2007

Location: Sabin Pond

VisitID: 2007303

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
<b>White Sucker</b>	<b>F</b>							
2007303-S01	0.80	0.145						0.001 K
2007303-S02	0.40	0.177						0.001 K
2007303-S03	0.80	0.164						0.001 K
2007303-S04	0.60	0.348						0.001 K
2007303-S05	1.40	0.203						0.001 K
2007303-S06	1.00	0.297						0.001 K
2007303-S07	1.40	0.311						0.001 K
2007303-S08	2.60	0.301						0.001 K
2007303-S09	2.10	0.354						0.001 K
2007303-S10	2.00	0.209						0.001 K
No. of Samples:	10	10						10
Mean+:	1.31	0.251						0.001*
Median+:	1.20	0.253						0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River

Collection Date: Jun / 19 / 2007

Location: Sabin Pond

VisitID: 2007303

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>White Sucker</b>	<b>F</b>					
2007303-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2007303-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

i = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River  
Location: Sabin Pond  
VisitID: 2007303

Collection Date: Jun / 19 / 2007

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007303-S01	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007303-S02	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007303-S03	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007303-S04	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007303-S05	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007303-S06	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2007303-S07	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2007303-S08	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2007303-S09	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2007303-S10	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
No. of Samples:							10
Mean+:							0.002 *
Median+:							0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River  
Location: Sabin Pond  
VisitID: 2007303

Collection Date: Jun / 19 / 2007

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007303-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2007303-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Boardman River  
Location: Sabin Pond  
VisitID: 2007303

Collection Date: Jun / 19 / 2007

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>White Sucker</b>	<b>F</b>						
2007303-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2007303-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Au Sable River

Collection Date: May / 12 / 2008

Location: Cooke Pond

Latitude / Longitude:: 44.4457/-83.6329

VisitID: 2008200

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Mercury
Sample#:	Type			(in)	(lb)	(mg/kg)
<b>Northern Pike</b>	<b>Fs</b>					
2008200-S01	Fs			14.6	0.7	0.160
2008200-S02	Fs	F		21.3	1.9	0.490
2008200-S03	Fs	F		21.7	2.1	0.470
2008200-S04	Fs	F		21.2	2.1	0.190
2008200-S05	Fs	F		22.2	2.4	0.450
2008200-S06	Fs	F		23.9	2.9	0.350
2008200-S07	Fs	F		24.9	2.7	0.560
2008200-S08	Fs	F		26.0	3.2	0.670
2008200-S09	Fs	F		25.0	3.4	0.490
2008200-S10	Fs	F		26.5	4.4	0.590
No. of Samples:				10	10	10
Mean+:				22.7	2.6	0.442
Median+:				23.0	2.5	0.480

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error





Waterbody Name: Deer Lake  
 Location: Marquette County  
 VisitID: 2008211

Collection Date: Sep / 14 / 2008  
 Latitude / Longitude: 46.52095/-87.67287

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Mercury	Selenium
Sample#:	Type			(in)	(lb)	(mg/kg)	(mg/kg)
No. of Samples:				22	22	22	22
Mean+:				15.9	1.2	0.437	0.451
Median+:				15.8	1.2	0.427	0.427

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error





**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Fine Lake  
Location: Barry Co  
VisitID: 2008216

Collection Date: May / 20 / 2008  
Latitude / Longitude:: 42.4455/-85.2921

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment	Mercury (mg/kg)
<b>Northern Pike</b>							
	<b>Fs</b>						
2008216-S01	Fs	M		20.2	1.7		0.092
2008216-S02	Fs	M		25.0	3.4		0.265
2008216-S03	Fs	M		23.0	2.8		0.192
2008216-S04	Fs			25.0	3.4		0.220
2008216-S05	Fs	M		25.8	3.0		0.737
2008216-S06	Fs	F		29.1	6.0		0.231
2008216-S07	Fs	F		31.9	7.9		0.295
2008216-S08	Fs	F		31.9	7.0		0.461
2008216-S09	Fs	F		33.5	9.1		0.532
2008216-S10	Fs	F		36.0	11.6		0.702
No. of Samples:				10	10		10
Mean+:				28.1	5.6		0.373
Median+:				27.5	4.7		0.280
<b>Walleye</b>							
	<b>F</b>						
2008216-S11	F			15.2	1.1		0.124
2008216-S12	F	F		15.6	1.2		0.120
2008216-S13	F	F		14.6	1.1		0.119
2008216-S14	F			15.0	1.1		0.126
2008216-S15	F			15.4	1.2		0.110
2008216-S16	F			16.6	1.5		0.108
2008216-S17	F			15.6	1.4		0.120
2008216-S18	F			15.9	1.5		0.123
2008216-S19	F			17.7	2.0		0.123
2008216-S20	F			20.1	3.0		0.514
No. of Samples:				10	10		10
Mean+:				16.2	1.5		0.159
Median+:				15.6	1.3		0.122

F = skin-on fillet  
Fs = skin-off fillet  
E = egg only  
W = whole fish  
O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Aug / 20 / 2008

Location: Fallasberg Park, downstream of Fallasberg Dam

VisitID: 2008217

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Rock Bass</b>		<b>F</b>						
2008217-S01	0.10	0.070						0.001 K
2008217-S02	0.40	0.040						0.003
2008217-S03	0.30	0.040						0.003
2008217-S04	0.30	0.030						0.002
2008217-S05	0.40	0.070						0.001 K
2008217-S06	0.20	0.070						0.001 K
2008217-S07	0.20	0.060						0.002
2008217-S08	0.20	0.080						0.002
2008217-S09	0.40	0.070						0.020
2008217-S10	0.20	0.140						0.001 K
No. of Samples:	10	10						10
Mean+:	0.27	0.067						0.0034*
Median+:	0.25	0.070						0.002
<b>White Sucker</b>		<b>F</b>						
2008217-S11	0.60	0.080						0.018
2008217-S12	1.00	0.038						0.017
2008217-S13	0.60	0.043						0.006
2008217-S14	0.60	0.035						0.011
2008217-S15	0.20	0.105						0.011
2008217-S16	0.20	0.044						0.006
2008217-S17	0.20	0.156						0.015
2008217-S18	0.40	0.083						0.013
2008217-S19	0.40	0.092						0.014
2008217-S20	0.40	0.159						0.009
No. of Samples:	10	10						10
Mean+:	0.46	0.0835						0.012
Median+:	0.40	0.081						0.012

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Aug / 20 / 2008

Location: Fallasberg Park, downstream of Fallasberg Dam

VisitID: 2008217

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Rock Bass</b>						
	F					
2008217-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0005 *
Median+:						0.001 K
<b>White Sucker</b>						
	F					
2008217-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Aug / 20 / 2008

Location: Fallasberg Park, downstream of Fallasberg Dam

VisitID: 2008217

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Rock Bass</b>							
	F						
2008217-S01	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008217-S02	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008217-S03	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008217-S04	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008217-S05	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008217-S06	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008217-S07	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008217-S08	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008217-S09	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008217-S10	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							10
Mean+:							0.0011 *
Median+:							0.001 K
<b>White Sucker</b>							
	F						
2008217-S11	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008217-S12	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008217-S13	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008217-S14	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008217-S15	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008217-S16	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008217-S17	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008217-S18	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008217-S19	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008217-S20	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
No. of Samples:							10
Mean+:							0.0021
Median+:							0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Aug / 20 / 2008

Location: Fallasberg Park, downstream of Fallasberg Dam

VisitID: 2008217

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Rock Bass</b>							
	F						
2008217-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>White Sucker</b>							
	F						
2008217-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S18	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008217-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Aug / 20 / 2008

Location: Fallasberg Park, downstream of Fallasberg Dam

VisitID: 2008217

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Rock Bass F</b>							
2008217-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>White Sucker F</b>							
2008217-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008217-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flint River

Collection Date: May / 20 / 2008

Location: Holloway Reservoir

VisitID: 2008219

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>							
2008219-S01	3.70	0.097						0.034
2008219-S02	0.80	0.114						0.007
2008219-S03	6.50	0.105						0.051
2008219-S04	0.80	0.276						0.029
2008219-S05	1.60	0.266						0.039
2008219-S06	0.70	0.442						0.008
2008219-S07	1.60	0.097						0.012
2008219-S08	1.20	0.204						0.016
2008219-S09	1.00	0.210						0.021
2008219-S10	1.10	0.090						0.005
No. of Samples:	10	10						10
Mean+:	1.90	0.1901						0.0222
Median+:	1.15	0.159						0.019

+ = Calculated value; not rounded to appropriate number of significant digits.

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J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

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\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flint River

Collection Date: May / 20 / 2008

Location: Holloway Reservoir

VisitID: 2008219

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>					
2008219-S01	0.001	0.001 K	0.001 K	0.002	0.001 K	0.003
2008219-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008219-S03	0.002	0.001 K	0.007	0.002	0.001 K	0.011
2008219-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008219-S05	0.001	0.001 K	0.001	0.002	0.001 K	0.004
2008219-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008219-S07	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008219-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008219-S09	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008219-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0022 *
Median+:						0.001

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flint River

Collection Date: May / 20 / 2008

Location: Holloway Reservoir

VisitID: 2008219

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2008219-S01	0.005	0.024	0.047	0.001 K		0.007	0.083
2008219-S02	0.002	0.008	0.001 K	0.001 K		0.001 K	0.010
2008219-S03	0.007	0.029	0.002	0.001 K		0.001 K	0.038
2008219-S04	0.002	0.015	0.001 K	0.001 K		0.001 K	0.017
2008219-S05	0.005	0.023	0.001 K	I		0.001 K	0.028
2008219-S06	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008219-S07	0.003	0.013	0.001 K	0.001 K		0.001 K	0.016
2008219-S08	0.003	0.011	0.001 K	0.001 K		0.001 K	0.014
2008219-S09	0.003	0.016	0.001 K	0.001 K		0.001 K	0.019
2008219-S10	0.002	0.008	0.001 K	0.001 K		0.001 K	0.010
No. of Samples:							10
Mean+:							0.0239
Median+:							0.017

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flint River

Collection Date: May / 20 / 2008

Location: Holloway Reservoir

VisitID: 2008219

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2008219-S01	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S02	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S03	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S04	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S05	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S06	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S07	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S08	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S09	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008219-S10	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0007 *	0.0005 *	0.0005 *	0.0005*	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flint River

Collection Date: May / 20 / 2008

Location: Holioway Reservoir

VisitID: 2008219

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2008219-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S03	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008219-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0006 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

l = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Goose Lake

Collection Date:

Jun / 08 / 2008

Location: Marquette County

Latitude / Longitude:

46.47046/-87.52107

VisitID: 2008221

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment	Mercury	Selenium
Sample#:	Type			(in)	(lb)		(mg/kg)	(mg/kg)
<b>Northern Pike</b>		<b>Fs</b>						
2008221-S01	Fs	M		21.7	2.8		0.085	8.030
2008221-S02	Fs	F		22.5	3.1		0.090	6.480
2008221-S03	Fs	F		22.6	2.9		0.051	11.170
2008221-S04	Fs	F		22.7	2.9		0.084	12.180
2008221-S05	Fs	M		23.4	3.4		0.114	11.870
2008221-S06	Fs	M		24.0	3.4		0.070	11.630
2008221-S07	Fs	M		24.4	3.5		0.112	8.790
2008221-S08	Fs	M		25.2	3.5		0.161	9.760
2008221-S09	Fs	F		25.0	4.2		0.084	10.500
2008221-S10	Fs			26.9	4.8		0.103	5.040
No. of Samples:				10	10		10	10
Mean+:				23.8	3.4		0.095	9.545
Median+:				23.7	3.4		0.088	0.088
<b>White Sucker</b>		<b>F</b>						
2008221-S11	F	F		14.4	1.1		0.014	12.320
2008221-S12	F	F		14.2	1.3		0.010	13.050
2008221-S13	F	M		15.4	1.8		0.030	12.020
2008221-S14	F	M		16.3	1.6		0.026	13.290
2008221-S15	F	F		16.0	2.0		0.022	9.060
2008221-S16	F	F		16.5	2.1		0.029	12.180
2008221-S17	F	F		16.9	2.0		0.025	10.970
2008221-S18	F	M		18.2	2.7		0.040	12.120
2008221-S19	F	F		19.1	2.9		0.054	10.580
2008221-S20	F	F		19.8	3.4		0.022	11.230
No. of Samples:				10	10		10	10
Mean+:				16.7	2.1		0.027	11.682
Median+:				16.4	2.0		0.026	0.026

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = calculated value; not rounded to appropriate number of significant digits

I = analytical interference; quantification not possible

J = estimated value; may not be accurate

K = Concentration below the level of quantification shown

\* = mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

T = analysis not conducted due to technical error

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Goose Lake

Collection Date: Jun / 08 / 2008

Location: Marquette County

VisitID: 2008221

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Northern Pike</b>		<b>Fs</b>						
2008221-S01	0.30	0.085						0.123
2008221-S02	0.20	0.090						0.060
2008221-S03	0.20	0.051						0.068
2008221-S04	0.30	0.084						0.089
2008221-S05	0.20	0.114						0.034
2008221-S06	0.20	0.070						0.068
2008221-S07	0.30	0.112						0.131
2008221-S08	0.10	0.161						0.044
2008221-S09	0.20	0.084						0.061
2008221-S10	0.20	0.103						0.065
No. of Samples:	10	10						10
Mean+:	0.22	0.0954						0.0743
Median+:	0.20	0.088						0.067
<b>White Sucker</b>		<b>F</b>						
2008221-S11	0.50	0.014						0.055
2008221-S12	0.60	0.010						0.051
2008221-S13	2.70	0.030						0.291
2008221-S14	0.70	0.026						0.079
2008221-S15	0.60	0.022						0.090
2008221-S16	3.40	0.029						0.297
2008221-S17	0.30	0.025						0.033
2008221-S18	1.00	0.040						0.417
2008221-S19	1.40	0.054						0.171
2008221-S20	0.90	0.022						0.140
No. of Samples:	10	10						10
Mean+:	1.21	0.0272						0.1624
Median+:	0.80	0.026						0.115

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Goose Lake

Collection Date: Jun / 08 / 2008

Location: Marquette County

VisitID: 2008221

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Northern Pike</b> <b>Fs</b>						
2008221-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0005 *
Median+:						0.001 K
<b>White Sucker</b> <b>F</b>						
2008221-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Goose Lake

Collection Date: Jun / 08 / 2008

Location: Marquette County

VisitID: 2008221

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Northern Pike</b>							
	<b>Fs</b>						
2008221-S01	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008221-S02	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S03	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S04	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S05	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S06	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S07	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008221-S08	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S09	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S10	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							10
Mean+:							0.0007 *
Median+:							0.001 K
<b>White Sucker</b>							
	<b>F</b>						
2008221-S11	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S12	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S13	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008221-S14	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008221-S15	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S16	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008221-S17	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008221-S18	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008221-S19	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008221-S20	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							10
Mean+:							0.0016 *
Median+:							0.001

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

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\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
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Waterbody Name: Goose Lake

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Location: Marquette County

VisitID: 2008221

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Northern Pike</b> <b>Fs</b>							
2008221-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>White Sucker</b> <b>F</b>							
2008221-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S13	0.050 K	0.001 K	I	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S16	0.050 K	0.001 K	I	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S18	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008221-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

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\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Goose Lake

Collection Date: Jun / 08 / 2008

Location: Marquette County

VisitID: 2008221

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Northern Pike</b> <b>Fs</b>							
2008221-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>White Sucker</b> <b>F</b>							
2008221-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008221-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake

Collection Date:

May / 21 / 2008

Location: Roscommon County

Latitude / Longitude:

44.3466/-84.7338

VisitID: 2008222

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Carp</b>						
2008222-S01	Fs	F		22.6	6.7	
2008222-S02	Fs	M		26.0	10.3	
2008222-S03	Fs	M		26.0	9.6	
2008222-S04	Fs	M		26.7	10.8	
2008222-S05	Fs	F		27.0	13.4	
2008222-S06	Fs	M		27.0	11.0	
2008222-S07	Fs	M		27.6	13.9	
2008222-S08	Fs	F		28.0	14.9	
2008222-S09	Fs	F		31.1	22.4	
2008222-S10	Fs	F		31.3	27.6	
No. of Samples:				10	10	
Mean+:				27.3	14.0	
Median+:				27.0	12.2	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake

Collection Date: May / 21 / 2008

Location: Roscommon County

VisitID: 2008222

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>	<b>Fs</b>							
2008222-S01	11.70	0.288						0.028
2008222-S02	6.50	0.229						0.001
2008222-S03	8.40	0.238						0.002
2008222-S04	4.90	0.247						0.008
2008222-S05	6.90	0.187						0.005
2008222-S06	0.70	0.214						0.001
2008222-S07	6.10	0.042						0.001 K
2008222-S08	8.90	0.088						0.004
2008222-S09	11.40	0.279						0.006
2008222-S10	18.20	0.094						0.020
No. of Samples:	10	10						10
Mean+:	8.37	0.1906						0.0075*
Median+:	7.65	0.222						0.005

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

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\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake  
Location: Roscommon County  
VisitID: 2008222

Collection Date: May / 21 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>	<b>Fs</b>					
2008222-S01	0.002	0.001 K	0.002	0.004	0.001 K	0.008
2008222-S02	0.001	0.001 K	0.001 K	0.002	0.001 K	0.003
2008222-S03	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008222-S04	0.001	0.001 K	0.001	0.002	0.001 K	0.004
2008222-S05	0.001	0.001 K	0.005	0.002	0.001 K	0.008
2008222-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S08	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008222-S09	0.001	0.001 K	0.001	0.002	0.001 K	0.004
2008222-S10	0.002	0.001 K	0.002	0.003	0.001 K	0.007
No. of Samples:						10
Mean+:						0.0039 *
Median+:						0.004

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake  
Location: Roscommon County  
VisitID: 2008222

Collection Date: May / 21 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008222-S01	0.006	0.031	0.001 K	0.001 K		0.001 K	0.037
2008222-S02	0.002	0.007	0.001 K	0.001 K		0.001 K	0.009
2008222-S03	0.002	0.008	0.001 K	0.001 K		0.001 K	0.010
2008222-S04	0.003	0.016	0.001 K	0.001 K		0.001 K	0.019
2008222-S05	0.003	0.011	0.001 K	0.001 K		0.001 K	0.014
2008222-S06	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008222-S07	0.001	0.003	0.001 K	0.001 K		0.001 K	0.004
2008222-S08	0.003	0.008	0.001 K	0.001 K		0.001 K	0.011
2008222-S09	0.003	0.011	0.001 K	0.001 K		0.001 K	0.014
2008222-S10	0.007	0.027	0.001 K	0.001 K		0.001 K	0.034
No. of Samples:							10
Mean+:							0.0156
Median+:							0.013

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake

Collection Date: May / 21 / 2008

Location: Roscommon County

VisitID: 2008222

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008222-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008222-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake  
Location: Roscommon County  
VisitID: 2008222

Collection Date: May / 21 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008222-S01	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S02	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S03	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S04	0.004	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S05	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S07	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S08	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S09	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008222-S10	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0019 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Houghton Lake  
 Location: Roscommon County  
 VisitID: 2008222  
 Collection Date: May / 21 / 2008

Species Sample #	PBDE Congener Number**										Total PBDE (ppb)	
	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)	Cong. 154 (ppb)		
<b>Carp</b>												
2008222-S01	1.90	10.20	1.00 K	13.70								
2008222-S02	1.00 K	3.20	1.00 K	3.20								
2008222-S03	1.10	7.00	1.00 K	9.10								
2008222-S04	1.00 K	4.50	1.00 K	4.50								
2008222-S05	1.00	5.80	1.00 K	6.80								
2008222-S06	1.00 K	1.10	1.00 K	1.10								
2008222-S07	1.00 K	1.50	1.00 K	1.50								
2008222-S08	1.00 K	3.10	1.00 K	3.10								
2008222-S09	1.40	7.70	1.00 K	10.30								
2008222-S10	1.00 K	5.60	1.00 K	5.60								
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10	10
Mean±:	0.840 *	4.970	0.500 *	0.500 *	0.500 *	0.500 *	0.730 *	0.500 *	0.500 *	0.500 *	0.500 *	5.890
Median±:	1.000 K	5.050	1.000 K	5.050								

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Concentration below quantification level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Huron River

Collection Date:

May / 06 / 2008

Location: Geddes Pond

Latitude / Longitude::

42.2696/-83.6801

VisitID: 2008223

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Carp</b>						
2008223-S01	Fs	F		15.9	2.2	
2008223-S02	Fs	f		16.9	2.7	
2008223-S03	Fs	F		16.3	2.2	
2008223-S04	Fs	f		17.0	2.9	
2008223-S05	Fs	M		18.3	3.0	
2008223-S06	Fs	M		21.9	5.7	
2008223-S07	Fs	M		23.0	5.9	
2008223-S08	Fs	M		24.2	7.2	
2008223-S09	Fs	F		24.6	10.1	
2008223-S10	Fs	M		26.0	9.3	
No. of Samples:				10	10	
Mean+:				20.4	5.1	
Median+:				20.1	4.3	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Huron River

Collection Date: May / 06 / 2008

Location: Geddes Pond

VisitID: 2008223

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>	<b>Fs</b>							
2008223-S01	0.30	0.105						0.007
2008223-S02	0.30	0.182						0.014
2008223-S03	0.10	0.081						0.007
2008223-S04	0.10	0.252						0.002
2008223-S05	2.50	0.096						0.201
2008223-S06	0.90	0.185						0.036
2008223-S07	2.90	0.044						0.166
2008223-S08	1.40	0.128						0.092
2008223-S09	0.90	0.183						0.016
2008223-S10	2.20	0.177						0.242
No. of Samples:	10	10						10
Mean+:	1.16	0.143						0.078
Median+:	0.90	0.153						0.026

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Huron River  
Location: Geddes Pond  
VisitID: 2008223

Collection Date: May / 06 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>	<b>Fs</b>					
2008223-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S05	0.009	0.004	0.003	0.006	0.001 K	0.022
2008223-S06	0.004	0.001	0.001	0.003	0.001 K	0.009
2008223-S07	0.003	0.001	0.001	0.003	0.001 K	0.008
2008223-S08	0.003	I	0.001	0.004	0.001 K	0.008
2008223-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S10	0.007	0.005	0.003	0.010	0.002	0.027
No. of Samples:						10
Mean+:						0.008 *
Median+:						0.005

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING**  
**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Huron River  
 Location: Geddes Pond  
 VisitID: 2008223

Collection Date: May / 06 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008223-S01	0.007	0.018	0.001 K	0.001 K		0.001 K	0.025
2008223-S02	0.007	0.024	0.001 K	0.001 K		0.001 K	0.031
2008223-S03	0.004	0.016	0.001 K	0.001 K		0.001 K	0.020
2008223-S04	0.002	0.007	0.001 K	0.001 K		0.001 K	0.009
2008223-S05	0.066	0.239	0.001 K	0.007		0.001 K	0.312
2008223-S06	0.038	0.088	0.001 K	0.004		0.001 K	0.130
2008223-S07	0.036	0.165	0.001 K	0.004		0.001 K	0.205
2008223-S08	0.049	0.152	0.001	0.005		0.001 K	0.207
2008223-S09	0.007	0.022	0.001 K	0.001 K		0.001 K	0.029
2008223-S10	0.097	0.433	0.002	0.010		0.001	0.543
No. of Samples:							10
Mean+:							0.151
Median+:							0.081

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Huron River  
Location: Geddes Pond  
VisitID: 2008223

Collection Date: May / 06 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008223-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008223-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Huron River

Collection Date: May / 06 / 2008

Location: Geddes Pond

VisitID: 2008223

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008223-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008223-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Waterbody Name: Huron River  
Location: Geddes Pond  
VisitID: 2008223  
Collection Date: May / 06 / 2008

Species  
Sample #

Species Sample #	PBDE Congener Number**										Total PBDE (ppb)	
	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)	Cong. 154 (ppb)		
Carp												
Fs												
2008223-S01	1.00 K	1.80	1.00 K	1.80								
2008223-S02	1.00 K	1.50	1.00 K	1.50								
2008223-S03	1.00 K	1.20	1.00 K	1.20								
2008223-S04	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K
2008223-S05	1.30	9.90	1.00 K	1.00 K	1.00 K	1.00 K	1.80	1.00 K	1.00 K	1.00 K	1.00 K	13.00
2008223-S06	1.20	5.70	1.00 K	1.00 K	1.00 K	1.00 K	1.40	1.00 K	1.00 K	1.00 K	1.00 K	8.30
2008223-S07	1.00	7.00	1.00 K	1.00 K	1.00 K	1.00 K	1.50	1.00 K	1.00 K	1.00 K	1.00 K	9.50
2008223-S08	1.80	10.70	1.00 K	1.00 K	1.00 K	1.00 K	2.20	1.00 K	1.00 K	1.00 K	1.00 K	14.70
2008223-S09	1.00 K	2.40	1.00 K	2.40								
2008223-S10	2.40	17.40	1.00 K	1.00 K	1.00 K	1.00 K	3.40	1.00 K	1.00 K	1.00 K	1.30	24.50
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10	10
Mean±:	1.020 *	5.810 *	0.500 *	0.500 *	0.500 *	0.500 *	1.280 *	0.500 *	0.580 *	0.580 *	0.580 *	7.740 *
Median±:	1.000	4.050	1.000 K	1.000 K	1.000 K	1.000 K	1.200	1.000 K	1.000 K	1.000 K	1.000 K	5.350

@ = Mean and median are calculated using duplicate #1 only.  
+ = Calculated value; not rounded to appropriate number of significant digits.  
\*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
\* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
! = Analytical interference; quantification not possible.  
J = Estimated value; value may not be precise.  
K = Concentration below quantification level shown.  
T = Analysis not conducted due to technical error.  
NQ = Does not meet all quantification requirements.  
RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkawlin River

Collection Date:

Apr / 16 / 2008

Location: Bay County, M-247

Latitude / Longitude::

43.6436/-83.91389

VisitID: 2008227

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>Carp</b>						
	2008227-S01	Fs	M		20.5	4.7
	2008227-S02	Fs	M		20.2	4.5
	2008227-S03	Fs	M		20.6	5.2
	2008227-S04	Fs	F		20.5	5.4
	2008227-S05	Fs	F		20.9	6.0
	2008227-S06	Fs	M		22.4	6.1
	2008227-S07	Fs	M		22.8	6.7
	2008227-S08	Fs	F		22.5	8.1
	2008227-S09	Fs	F		23.8	9.5
	2008227-S10	Fs	M		25.3	9.7
No. of Samples:				10	10	
Mean+:				22.0	6.6	
Median+:				21.7	6.1	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkawlin River

Collection Date: Apr / 16 / 2008

Location: Bay County, M-247

VisitID: 2008227

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>	<b>Fs</b>							
2008227-S01	2.80	0.225						0.490
2008227-S02	3.60	0.257						0.380
2008227-S03	9.10	0.295						2.912
2008227-S04	4.70	0.275						0.540
2008227-S05	6.50	0.322						0.651
2008227-S06	4.10	0.253						0.492
2008227-S07	3.30	0.174						0.471
2008227-S08	16.30	0.325						1.289
2008227-S09	23.50	0.391						0.409
2008227-S10	17.40	0.297						0.451
No. of Samples:	10	10						10
Mean+:	9.13	0.281						0.809
Median+:	5.60	0.285						0.491

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkawlin River

Collection Date: Apr / 16 / 2008

Location: Bay County, M-247

VisitID: 2008227

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>	<b>Fs</b>					
2008227-S01	0.001 K	0.001 K	0.010	0.001	0.001 K	0.011
2008227-S02	0.001 K	0.001 K	0.002	0.002	0.001 K	0.004
2008227-S03	0.003	0.001	0.007	0.006	0.001 K	0.017
2008227-S04	0.002	0.001 K	0.002	0.002	0.001 K	0.006
2008227-S05	0.002	0.001	0.002	0.003	0.001 K	0.008
2008227-S06	0.001 K	0.001 K	0.002	0.002	0.001 K	0.004
2008227-S07	0.001 K	0.001 K	0.001	0.001 K	0.001 K	0.001
2008227-S08	0.003	0.001	0.005	0.006	0.001 K	0.015
2008227-S09	0.004	0.002	0.009	0.008	0.001 K	0.023
2008227-S10	0.006	0.001 K	I	0.011	0.001 K	0.017
No. of Samples:						10
Mean+:						0.011
Median+:						0.010

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkawlin River

Collection Date: Apr / 16 / 2008

Location: Bay County, M-247

VisitID: 2008227

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008227-S01	0.009	0.038	0.001 K	0.002		0.001 K	0.049
2008227-S02	0.009	0.033	0.001 K	0.002		0.001 K	0.044
2008227-S03	0.036	0.257	0.001 K	0.008		0.001 K	0.301
2008227-S04	0.012	0.048	0.001 K	0.002		0.001 K	0.062
2008227-S05	0.015	0.064	0.001 K	0.003		0.001 K	0.082
2008227-S06	0.011	0.036	0.001 K	0.003		0.001 K	0.050
2008227-S07	0.009	0.044	0.001 K	0.002		0.001 K	0.055
2008227-S08	0.030	0.097	0.001 K	0.008		0.001 K	0.135
2008227-S09	0.061	0.071	0.001 K	0.016		0.001 K	0.148
2008227-S10	0.093	0.085	0.001 K	0.024		0.001 K	0.202
No. of Samples:							10
Mean+:							0.113
Median+:							0.072

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkawlin River

Collection Date: Apr / 16 / 2008

Location: Bay County, M-247

VisitID: 2008227

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008227-S01	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S02	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S03	0.050 K	0.001 K	0.001J	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S04	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S05	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S06	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S07	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S08	0.050 K	0.001 K	0.001J	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S09	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2008227-S10	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.002 J*	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkauiin River

Collection Date: Apr / 16 / 2008

Location: Bay County, M-247

VisitID: 2008227

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008227-S01	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S02	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S03	0.001	0.016	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008227-S04	0.001	0.004	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S05	0.005	0.004	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S06	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S07	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S08	0.002	0.008	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008227-S09	0.002	0.012	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008227-S10	0.004	0.021	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.002 *	0.008	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001	0.004	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Kawkawlin River  
 Location: Bay County, M-247  
 VisitID: 2008227  
 Collection Date: Apr / 16 / 2008

Species Sample #	PBDE Congener Number**										Total PBDE (ppb)
	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)	Cong. 154 (ppb)	
<b>Carp</b>											
2008227-S01	1.20	7.20	1.00 K	1.00 K	1.00 K	1.00 K	1.70	1.00 K	1.00 K	1.00 K	10.10
2008227-S02	1.20	6.60	1.00 K	1.00 K	1.00 K	1.00 K	1.50	1.00 K	1.00 K	1.00 K	9.30
2008227-S03	2.70	18.20	1.00 K	1.50	1	2.00	4.20	1.00 K	1.00 K	1.90	30.50
2008227-S04	1.10	9.50	1.00 K	1.00 K	1.00 K	1.00 K	1.80	1.00 K	1.00 K	1.00 K	12.40
2008227-S05	1.90	16.70	1.00 K	1.00 K	1.00 K	1.00 K	1.20	1.00 K	1.00 K	1.10	20.90
2008227-S06	1.50	10.60	1.00 K	1.00 K	1.00 K	1.00 K	1.40	1.00 K	1.00 K	1.00 K	13.50
2008227-S07	1.20	7.60	1.00 K	1.00 K	1.00 K	1.00 K	1.70	1.00 K	1.00 K	1.00 K	10.50
2008227-S08	2.70	20.30	1.00 K	2.10	1.00 K	1	4.50	1.00 K	1.00 K	2.10	31.70
2008227-S09	3.20	20.60	1.00 K	1.00 K	1.00 K	2.20	5.20	1.00 K	1.00 K	2.90	34.10
2008227-S10	5.10	36.70	1.00 K	2.10	1.00 K	1.60	5.10	1.00 K	1.00 K	2.40	53.00
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10
Mean+:	2.180	15.400	0.500*	0.920*	0.500*	0.978*	2.830	0.500*	0.500*	1.290*	22.600
Median+:	1.700	13.650	1.000K	1.000K	1.000K	1.000K	1.750	1.000K	1.000K	1.050	17.200

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
 J = Analytical interference; quantification not possible.  
 K = Concentration below quantification level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date:

Apr / 22 / 2008

Location: Little Bay De Noc

Latitude / Longitude::

45.79069/-87.05099

VisitID: 2008232

Notes:

Species	Sample#:	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>Carp</b>							
	2008232-S39	Fs	M		24.1	6.6	collected 4/22-4/25/08
	2008232-S40	Fs	M		27.8	8.1	collected 4/22-4/25/08
	2008232-S41	Fs	M		27.8	11.9	collected 4/22-4/25/08
	2008232-S42	Fs	M		29.3	11.0	collected 4/22-4/25/08
	2008232-S43	Fs	M		26.6	11.5	collected 4/22-4/25/08
	2008232-S44	Fs	F		28.4	12.6	collected 4/22-4/25/08
	2008232-S45	Fs	M		28.5	12.6	collected 4/22-4/25/08
	2008232-S46	Fs	F		29.7	17.5	collected 4/22-4/25/08, tumor
	2008232-S47	Fs	F		30.1	16.3	collected 4/22-4/25/08
	2008232-S48	Fs	F		31.0	20.5	collected 4/22-4/25/08
No. of Samples:					10	10	
Mean+:					28.3	12.9	
Median+:					28.4	12.2	
<b>Redhorse Sucker</b>							
	2008232-S29	Fs	F		20.3	3.5	collected 4/22/08
	2008232-S30	Fs	M		21.2	3.5	collected 4/22/08
	2008232-S31	Fs	M		23.0	4.6	collected 4/22/08
	2008232-S32	Fs	M		23.1	4.8	collected 4/22/08
	2008232-S33	Fs	F		23.0	5.5	collected 4/22/08
	2008232-S34	Fs	F		23.6	5.5	collected 4/22/08
	2008232-S35	Fs	F		23.8	6.3	collected 4/22/08
	2008232-S36	Fs	F		25.6	6.7	collected 4/22/08
	2008232-S37	Fs	F		26.0	8.3	collected 4/22/08
	2008232-S38	Fs	F		26.6	8.8	collected 4/22/08
No. of Samples:					10	10	
Mean+:					23.6	5.7	
Median+:					23.4	5.5	
<b>Rock Bass</b>							
	2008232-S01	F			4.5	0.1	
	2008232-S02	F			5.5	0.1	
	2008232-S03	F			6.0	0.2	
	2008232-S04	F	F		6.2	0.2	
	2008232-S05	F	M		6.3	0.2	
	2008232-S06	F	M		6.5	0.2	
	2008232-S07	F	M		6.8	0.3	
	2008232-S08	F	F		7.0	0.3	
	2008232-S09	F	F		7.2	0.3	
	2008232-S10	F	M		7.5	0.4	
	2008232-S11	F	F		7.7	0.4	
	2008232-S12	F	M		8.1	0.5	
	2008232-S13	F	F		8.3	0.5	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

VisitID: 2008232

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
2008232-S14	F	F		8.4	0.5	
No. of Samples:				14	14	
Mean+:				6.9	0.3	
Median+:				6.9	0.3	
<b>Smallmouth Bass</b>						
2008232-S15	F	M		9.6	0.5	
2008232-S16	F	M		11.4	0.8	
2008232-S17	F	M		11.3	0.9	
2008232-S18	F	F		11.5	0.9	
2008232-S19	F	F		12.5	0.9	
2008232-S20	F	M		11.9	1.0	
2008232-S21	F			12.4	1.1	
2008232-S22	F	F		12.6	1.2	
2008232-S23	F	M		12.9	1.2	
2008232-S24	F	M		13.5	1.3	
2008232-S25	F	M		13.7	1.5	
2008232-S26	F	M		14.2	1.7	
2008232-S27	F	M		14.5	2.0	
2008232-S28	F	M		17.1	3.3	
No. of Samples:				14	14	
Mean+:				12.8	1.3	
Median+:				12.5	1.1	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008232

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>		<b>Fs</b>						
2008232-S39	2.30	0.409						0.520
2008232-S40	1.00	0.360						0.561
2008232-S41	8.60	0.380						1.318
2008232-S42	6.70	0.280						2.465
2008232-S43	9.20	0.460						1.043
2008232-S44	1.60	0.430						0.383
2008232-S45	12.10	0.370						1.876
2008232-S46	15.70	0.370						0.019
2008232-S47	11.50	0.550						1.332
2008232-S48	18.10	0.360						0.743
No. of Samples:	10	10						10
Mean+:	8.68	0.3969						1.026
Median+:	8.90	0.375						0.893
<b>Redhorse Sucker</b>		<b>Fs</b>						
2008232-S29	2.70	0.188						0.009
2008232-S30	1.30	0.151						0.010
2008232-S31	0.20	0.500						0.051
2008232-S32	0.80	0.528						0.059
2008232-S33	3.30	0.208						0.027
2008232-S34	0.50	0.402						0.021
2008232-S35	1.10	0.363						0.039
2008232-S36	0.70	0.296						0.022
2008232-S37	3.40	0.411						0.180
2008232-S38	2.40	0.276						0.077
No. of Samples:	10	10						10
Mean+:	1.64	0.3323						0.0495
Median+:	1.20	0.330						0.033
<b>Rock Bass</b>		<b>F</b>						
2008232-S01	0.10	0.049						0.001 K
2008232-S02	23.00	0.053						0.001 K
2008232-S03	0.20	0.086						0.001 K
2008232-S04	0.50	0.048						0.001
2008232-S05	0.20	0.074						0.001 K
2008232-S06	0.50	0.075						0.004
2008232-S07	0.50	0.057						0.002
2008232-S08	0.70	0.066						0.002
2008232-S09	0.60	0.079						0.009

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008232

Sample #:	% Fat	Mercury (mg/kg)	PCB				Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
2008232-S10	0.40	0.146					0.001 K	
2008232-S11	0.40	0.138					0.001 K	
2008232-S12	0.40	0.087					0.001	
2008232-S13	0.60	0.119					0.002	
2008232-S14	0.20	0.147					0.001 K	
No. of Samples:	14	14					14	
Mean+:	2.02	0.0874					0.0017*	
Median+:	0.45	0.077					0.001	
<b>Smallmouth Bass F</b>								
2008232-S15	0.20	0.050					0.001 K	
2008232-S16	0.60	0.082					0.004	
2008232-S17	1.00	0.068					0.006	
2008232-S18	1.00	0.069					0.012	
2008232-S19	0.40	0.122					0.005	
2008232-S20	1.00	0.075					0.001 K	
2008232-S21	0.60	0.112					0.004	
2008232-S22	1.00	0.131					0.009	
2008232-S23	0.80	0.138					0.005	
2008232-S24	0.60	0.191					0.004	
2008232-S25	0.60	0.128					0.011	
2008232-S26	0.40	0.127					0.013	
2008232-S27	0.60	0.086					0.002	
2008232-S28	1.10	0.329					0.038	
No. of Samples:	14	14					14	
Mean+:	0.71	0.122					0.0081*	
Median+:	0.60	0.117					0.005	

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008232

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>						
	<b>Fs</b>					
2008232-S39	0.001 K	0.001 K	0.002	0.003	0.001 K	0.005
2008232-S40	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008232-S41	0.002	0.001 K	0.006	0.011	0.001 K	0.019
2008232-S42	0.005	0.002	0.013	0.024	0.001	0.045
2008232-S43	0.003	0.001 K	0.008	0.016	0.001 K	0.027
2008232-S44	0.001	0.001 K	0.005	0.008	0.001 K	0.014
2008232-S45	0.010	0.004	0.013	0.021	0.002	0.050
2008232-S46	0.001	0.001 K	0.001 K	0.002	0.001 K	0.003
2008232-S47	0.009	0.002	0.012	0.024	0.003	0.050
2008232-S48	0.005	0.002	0.007	0.016	0.001	0.031
No. of Samples:						10
Mean+:						0.0245
Median+:						0.023
<b>Redhorse Sucker</b>						
	<b>Fs</b>					
2008232-S29	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S30	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S31	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S32	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S33	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008232-S34	0.001 K	0.001 K	0.001 K	I	0.001 K	0.001 K
2008232-S35	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S36	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S37	0.001 K	0.001 K	0.002	0.004	0.001 K	0.006
2008232-S38	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
No. of Samples:						10
Mean+:						0.0014 *
Median+:						0.001 K
<b>Rock Bass</b>						
	<b>F</b>					
2008232-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Lake Michigan  
 Location: Little Bay De Noc  
 VisitID: 2008232

Collection Date: Apr / 22 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
2008232-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						14
Mean+:						0.0005 *
Median+:						0.001 K
<b>Smallmouth Bass F</b>						
2008232-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S21	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S22	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S23	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S24	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S25	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S26	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S27	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008232-S28	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
No. of Samples:						14
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan  
Location: Little Bay De Noc  
VisitID: 2008232

Collection Date: Apr / 22 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>							
	<b>Fs</b>						
2008232-S39	0.002	0.107	0.001 K	0.001 K		0.001 K	0.109
2008232-S40	0.001 K	0.082	0.001 K	0.001 K		0.001 K	0.082
2008232-S41	0.006	0.213	0.001 K	I		0.001 K	0.219
2008232-S42	0.021	0.691	0.001 K	I		0.003	0.715
2008232-S43	0.011	0.386	0.001 K	I		0.001 K	0.397
2008232-S44	0.003	0.097	0.001 K	0.001 K		0.001 K	0.100
2008232-S45	0.040	0.275	0.001 K	0.008		0.001	0.324
2008232-S46	0.003	0.011	0.001 K	0.001 K		0.001 K	0.014
2008232-S47	0.052	0.427	I	0.005		0.002	0.486
2008232-S48	0.029	0.247	0.001 K	I		0.002	0.278
No. of Samples:							10
Mean+:							0.2724
Median+:							0.249
<b>Redhorse Sucker</b>							
	<b>Fs</b>						
2008232-S29	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008232-S30	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008232-S31	0.001 K	0.007	0.001 K	0.001 K		0.001 K	0.007
2008232-S32	0.001 K	0.015	0.001 K	0.001 K		0.001 K	0.015
2008232-S33	0.001	0.010	0.001 K	0.001 K		0.001 K	0.011
2008232-S34	0.001 K	0.006	0.001 K	0.001 K		0.001 K	0.006
2008232-S35	I	0.011	0.001 K	0.001 K		0.001 K	0.011
2008232-S36	0.001 K	0.006	0.001 K	0.001 K		0.001 K	0.006
2008232-S37	0.002	0.043	0.002	0.001 K		0.001 K	0.047
2008232-S38	0.001	0.018	0.001 K	0.001 K		0.001 K	0.019
No. of Samples:							10
Mean+:							0.0131
Median+:							0.009
<b>Rock Bass</b>							
	<b>F</b>						
2008232-S01	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S02	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S03	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S04	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S05	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S06	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S07	0.001 K	0.001	0.001	0.001 K		0.001 K	0.002
2008232-S08	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S09	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S10	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Lake Michigan  
 Location: Little Bay De Noc  
 VisitID: 2008232

Collection Date: Apr / 22 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
2008232-S11	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S12	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S13	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S14	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							14
Mean+:							0.0006 *
Median+:							0.001 K
<b>Smallmouth Bass F</b>							
2008232-S15	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008232-S16	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008232-S17	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008232-S18	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008232-S19	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008232-S20	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008232-S21	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008232-S22	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008232-S23	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008232-S24	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008232-S25	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008232-S26	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008232-S27	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008232-S28	0.001 K	0.007	0.001 K	0.001 K		0.001 K	0.007
No. of Samples:							14
Mean+:							0.0022 *
Median+:							0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008232

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>							
	<b>Fs</b>						
2008232-S39	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S40	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S41	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S42	0.050 K	0.001 K	0.009	0.001 K	I	0.001 K	0.250 K
2008232-S43	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S44	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S45	0.050 K	0.001 K	0.006	0.001 K	0.001	0.001 K	0.250 K
2008232-S46	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S47	0.050 K	0.001 K	0.004	0.001 K	0.002	0.001 K	0.250 K
2008232-S48	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0036 *	0.0005 *	0.0007 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
<b>Redhorse Sucker</b>							
	<b>Fs</b>						
2008232-S29	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S30	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S31	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S32	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S33	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S34	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S35	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S36	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S37	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S38	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0006 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>Rock Bass</b>							
	<b>F</b>						
2008232-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Lake Michigan  
 Location: Little Bay De Noc  
 VisitID: 2008232

Collection Date: Apr / 22 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
2008232-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	14	14	14	14	14	14	14
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>Smallmouth Bass F</b>							
2008232-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S18	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S21	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S22	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S23	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S24	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S25	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S26	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S27	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008232-S28	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	14	14	14	14	14	14	14
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008232

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp Fs</b>							
2008232-S39	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S40	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S41	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.002	0.001 K
2008232-S42	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.003	0.001 K
2008232-S43	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.002	0.001 K
2008232-S44	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001
2008232-S45	0.001	0.006	0.001 K	0.001 K	0.001 K	0.003	0.001 K
2008232-S46	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S47	0.003	0.001	0.001 K	0.001 K	0.001 K	0.002	0.001 K
2008232-S48	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.0016 *	0.0005 *	0.0005 *	0.0005 *	0.0015 *	0.0006 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.002	0.001 K
<b>Redhorse Sucker Fs</b>							
2008232-S29	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S30	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S31	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S32	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S33	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S34	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S35	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S36	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S37	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S38	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Rock Bass F</b>							
2008232-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Lake Michigan  
 Location: Little Bay De Noc  
 VisitID: 2008232

Collection Date: Apr / 22 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
2008232-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	14	14	14	14	14	14	14
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Smallmouth Bass F</b>							
2008232-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S21	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S22	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S23	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S24	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S25	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S26	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S27	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008232-S28	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
No. of Samples:	14	14	14	14	14	14	14
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Manistique River

Collection Date:

May / 28 / 2008

Location: d/s Manistique Papers Dam

Latitude / Longitude:

45.96193/-86.24965

VisitID: 2008235

Notes:

Species	Sample#:	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>Carp</b>							
	2008235-S01	Fs	M		25.6	8.2	
	2008235-S02	Fs	M		26.6	9.7	
	2008235-S03	Fs	M		25.5	9.5	
	2008235-S04	Fs	M		29.3	12.0	
	2008235-S05	Fs	M		27.4	10.3	
	2008235-S06	Fs	F		26.9	10.6	
	2008235-S07	Fs	F		25.5	11.8	
	2008235-S08	Fs	F		27.8	14.2	
	2008235-S09	Fs	F		26.3	14.1	
	2008235-S10	Fs	F		29.4	15.9	
No. of Samples:					10	10	
Mean+:					27.0	11.6	
Median+:					26.7	11.2	
<b>Pumpkinseed</b>							
	2008235-S63	F	F		4.9	0.1	
	2008235-S64	F	M		4.9	0.1	
	2008235-S65	F	F		4.9	0.1	
	2008235-S66	F	M		5.1	0.1	
	2008235-S68	F	M		5.4	0.1	
	2008235-S69	F	F		5.4	0.1	
	2008235-S70	F	M		5.6	0.1	
	2008235-S71	F	F		5.5	0.1	
	2008235-S72	F	M		6.2	0.2	
No. of Samples:					9	9	
Mean+:					5.3	0.1	
Median+:					5.4	0.1	
<b>Redhorse Sucker</b>							
	2008235-S41	Fs	F		15.3	1.5	
	2008235-S42	Fs	M		15.0	1.2	
	2008235-S43	Fs			15.4	1.5	
	2008235-S44	Fs	M		14.4	1.4	
	2008235-S45	Fs	F		15.9	1.8	
	2008235-S46	Fs	F		17.1	2.1	
	2008235-S47	Fs	F		18.3	2.7	
	2008235-S48	Fs	F		20.0	4.2	
	2008235-S49	Fs	F		20.3	4.4	
	2008235-S50	Fs	F		21.7	4.3	
No. of Samples:					10	10	
Mean+:					17.3	2.5	
Median+:					16.5	1.9	
<b>Rock Bass</b>							

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

VisitID: 2008235

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
2008235-S51	F			5.3	0.1	
2008235-S52	F	M		5.4	0.1	
2008235-S53	F	F		6.6	0.2	
2008235-S54	F	M		6.2	0.2	
2008235-S55	F	M		6.1	0.2	
2008235-S56	F	F		7.0	0.3	
2008235-S57	F	M		7.0	0.3	
2008235-S58	F	F		6.5	0.2	
2008235-S59	F	M		6.5	0.2	
2008235-S60	F	F		6.5	0.2	
2008235-S61	F	M		7.4	0.3	
2008235-S62	F	F		8.3	0.5	
No. of Samples:				12	12	
Mean+:				6.6	0.2	
Median+:				6.5	0.2	
<b>Smallmouth Bass</b>						
2008235-S31	F	M		10.4	0.6	
2008235-S32	F	F		11.9	1.1	
2008235-S33	F	F		12.9	1.2	
2008235-S34	F	F		12.4	1.2	
2008235-S35	F	F		12.5	1.1	
2008235-S36	F	M		15.0	2.2	
2008235-S37	F	F		15.2	2.1	
2008235-S38	F	M		15.8	2.5	
2008235-S39	F	M		17.3	3.3	
2008235-S40	F	M		16.9	3.0	
No. of Samples:				10	10	
Mean+:				14.0	1.8	
Median+:				13.9	1.6	
<b>White Sucker</b>						
2008235-S11	F			15.2	1.3	
2008235-S12	F	M		16.5	1.9	
2008235-S13	F	F		18.4	2.4	
2008235-S14	F	F		18.3	2.5	
2008235-S15	F	F		19.6	2.7	
2008235-S16	F			19.5	2.9	
2008235-S17	F	F		19.9	2.8	
2008235-S18	F	M		18.9	2.9	
2008235-S19	F	F		19.9	3.2	
2008235-S20	F	F		21.7	4.1	
No. of Samples:				10	10	
Mean+:				18.8	2.7	
Median+:				19.2	2.7	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>		<b>Fs</b>						
2008235-S01	2.90	0.344						0.972
2008235-S02	3.40	0.310						1.160
2008235-S03	3.90	0.258						0.424
2008235-S04	4.80	0.235						1.763
2008235-S05	4.00	0.296						1.342
2008235-S06	2.10	0.426						0.867
2008235-S07	17.80	0.335						4.586
2008235-S08	13.10	0.698						1.640
2008235-S09	20.90	0.460						1.495
2008235-S10	11.20	0.752						0.317
No. of Samples:	10	10						10
Mean+:	8.41	0.411						1.457
Median+:	4.40	0.340						1.251
<b>Pumpkinseed</b>		<b>F</b>						
2008235-S63	0.20	0.084						0.064
2008235-S64	0.30	0.091						0.019
2008235-S65	0.20	0.091						0.078
2008235-S66	0.20	0.105						0.141
2008235-S68	0.20	0.077						0.014
2008235-S69	0.20	0.109						0.113
2008235-S70	0.10	0.069						0.001 K
2008235-S71	0.30	0.066						0.106
2008235-S72	0.10	0.100						0.002
No. of Samples:	9	9						9
Mean+:	0.20	0.088						0.060*
Median+:	0.20	0.091						0.064
<b>Redhorse Sucker</b>		<b>Fs</b>						
2008235-S41	1.10	0.141						0.117
2008235-S42	1.00	0.154						0.020
2008235-S43	1.40	0.185						0.204
2008235-S44	0.50	0.082						0.032
2008235-S45	1.10	0.092						0.184
2008235-S46	1.80	0.123						0.130
2008235-S47	2.30	0.190						0.274
2008235-S48	0.80	0.153						0.175
2008235-S49	1.40	0.240						0.145
2008235-S50	1.20	0.238						0.273

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K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>No. of Samples:</b>	10	10						10
<b>Mean+:</b>	1.26	0.160						0.155
<b>Median+:</b>	1.15	0.154						0.160
<b>Rock Bass</b>	<b>F</b>							
2008235-S51	0.20	0.105						0.018
2008235-S52	0.10	0.127						0.012
2008235-S53	0.10	0.241						0.001 K
2008235-S54	0.30	0.334						0.083
2008235-S55	0.30	0.192						0.211
2008235-S56	0.20	0.344						0.001 K
2008235-S57	0.10	0.365						0.013
2008235-S58	0.10	0.406						0.009
2008235-S59	0.20	0.321						0.041
2008235-S60	0.40	0.419						0.052
2008235-S61	0.10	0.420						0.010
2008235-S62	0.20	0.723						0.001 K
<b>No. of Samples:</b>	12	12						12
<b>Mean+:</b>	0.19	0.333						0.038*
<b>Median+:</b>	0.20	0.339						0.013
<b>Smallmouth Bass</b>	<b>F</b>							
2008235-S31	0.70	0.187						0.209
2008235-S32	1.70	0.118						0.141
2008235-S33	0.20	0.149						0.027
2008235-S34	0.30	0.154						0.013
2008235-S35	0.20	0.158						0.025
2008235-S36	0.40	0.225						0.071
2008235-S37	0.30	0.485						0.074
2008235-S38	0.70	0.162						0.041
2008235-S39	0.50	0.228						0.090
2008235-S40	0.30	0.420						0.150
<b>No. of Samples:</b>	10	10						10
<b>Mean+:</b>	0.53	0.229						0.084
<b>Median+:</b>	0.35	0.175						0.073
<b>White Sucker</b>	<b>F</b>							
2008235-S11	1.50	0.083						0.015
2008235-S12	1.50	0.095						0.065
2008235-S13	0.80	0.231						0.099
2008235-S14	1.60	0.140						0.100
2008235-S15	1.50	0.144						0.245

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I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
2008235-S16	1.50	0.220						0.339
2008235-S17	1.30	0.329						0.588
2008235-S18	2.30	0.210						0.211
2008235-S19	1.30	0.292						0.085
2008235-S20	1.50	0.375						0.454
No. of Samples:	10	10						10
Mean+:	1.48	0.212						0.220
Median+:	1.50	0.215						0.156

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>						
	Fs					
2008235-S01	0.001 K	0.001 K	0.002	0.005	0.001 K	0.007
2008235-S02	0.004	0.001 K	0.006	0.015	0.001 K	0.025
2008235-S03	0.001 K	0.001 K	0.002	0.003	0.001 K	0.005
2008235-S04	0.004	0.001	0.007	0.012	0.001 K	0.024
2008235-S05	0.001	0.001 K	0.003	0.008	0.001 K	0.012
2008235-S06	0.001	0.001 K	0.003	0.006	0.001 K	0.010
2008235-S07	0.024	0.008	0.024	0.045	0.006	0.107
2008235-S08	0.003	0.001 K	0.009	0.014	0.001 K	0.026
2008235-S09	0.004	0.001	0.008	0.013	0.001	0.027
2008235-S10	0.002	0.001 K	0.003	0.004	0.001 K	0.009
No. of Samples:						10
Mean+:						0.0252
Median+:						0.018
<b>Pumpkinseed</b>						
	F					
2008235-S63	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S64	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S65	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S66	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S68	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S69	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S70	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S71	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S72	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						9
Mean+:						0.0005 *
Median+:						0.001 K
<b>Redhorse Sucker</b>						
	Fs					
2008235-S41	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S42	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S43	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S44	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S45	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S46	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S47	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008235-S48	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
2008235-S49	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S50	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
No. of Samples:						10
Mean+:						0.0008 *
Median+:						0.001 K
<b>Rock Bass F</b>						
2008235-S51	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S52	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S53	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S54	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S55	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S56	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S57	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S58	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S59	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S60	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S61	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S62	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						12
Mean+:						0.0005 *
Median+:						0.001 K
<b>Smallmouth Bass F</b>						
2008235-S31	0.001 K	0.001 K	0.001	0.001	0.001 K	0.002
2008235-S32	0.001 K	0.001 K	0.002	0.003	0.001 K	0.005
2008235-S33	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S34	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S35	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S36	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S37	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S38	0.001 K	0.001 K	0.001	0.001	0.001 K	0.002
2008235-S39	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2008235-S40	0.001 K	0.001 K	0.002	0.003	0.001 K	0.005
No. of Samples:						10
Mean+:						0.002 *
Median+:						0.002
<b>White Sucker F</b>						
2008235-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
2008235-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>							
	<b>Fs</b>						
2008235-S01	0.002	0.074	0.001 K	0.001 K		0.001 K	0.076
2008235-S02	0.009	0.346	0.001 K	0.001		0.001 K	0.356
2008235-S03	0.004	0.132	0.001 K	0.001 K		0.001 K	0.136
2008235-S04	0.014	0.340	0.001 K	0.002		0.001 K	0.356
2008235-S05	0.005	0.163	0.001 K	0.001 K		0.001 K	0.168
2008235-S06	0.002	0.083	0.001 K	0.001 K		0.001 K	0.085
2008235-S07	0.057	0.818	0.002	0.010		0.005	0.892
2008235-S08	0.010	0.255	0.001 K	0.002		0.001 K	0.267
2008235-S09	0.014	0.173	0.001 K	0.001 K		0.001 K	0.187
2008235-S10	0.004	0.033	0.001 K	0.001 K		0.001 K	0.037
No. of Samples:							10
Mean+:							0.256
Median+:							0.178
<b>Pumpkinseed</b>							
	<b>F</b>						
2008235-S63	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S64	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008235-S65	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S66	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S68	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S69	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S70	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S71	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S72	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							9
Mean+:							0.0006 *
Median+:							0.001 K
<b>Redhorse Sucker</b>							
	<b>Fs</b>						
2008235-S41	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008235-S42	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008235-S43	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008235-S44	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008235-S45	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008235-S46	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008235-S47	0.001 K	0.009	0.001 K	0.001 K		0.001 K	0.009
2008235-S48	0.001 K	0.013	0.001 K	0.001 K		0.001 K	0.013
2008235-S49	0.001 K	0.006	0.001 K	0.001 K		0.001 K	0.006
2008235-S50	0.001 K	0.033	0.001	0.001 K		0.001 K	0.034

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
No. of Samples:							10
Mean+:							0.0082
Median+:							0.005
<b>Rock Bass F</b>							
2008235-S51	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S52	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S53	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S54	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008235-S55	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S56	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S57	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S58	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S59	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S60	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S61	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008235-S62	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
No. of Samples:							12
Mean+:							0.0005 *
Median+:							0.001 K
<b>Smallmouth Bass F</b>							
2008235-S31	0.001 K	0.012	0.001 K	0.001 K		0.001 K	0.012
2008235-S32	0.001 K	0.014	0.001 K	0.001 K		0.001 K	0.014
2008235-S33	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008235-S34	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008235-S35	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008235-S36	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008235-S37	0.001 K	0.008	0.001 K	0.001 K		0.001 K	0.008
2008235-S38	0.001 K	0.007	0.001 K	0.001 K		0.001 K	0.007
2008235-S39	0.001 K	0.011	0.001 K	0.001 K		0.001 K	0.011
2008235-S40	0.001 K	0.017	0.001	0.001 K		0.001 K	0.018
No. of Samples:							10
Mean+:							0.0084
Median+:							0.008
<b>White Sucker F</b>							
2008235-S11	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008235-S12	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008235-S13	0.001 K	0.006	0.001 K	0.001 K		0.001 K	0.006
2008235-S14	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008235-S15	0.001 K	0.007	0.001 K	0.001 K		0.001 K	0.007
2008235-S16	0.001 K	0.007	0.001 K	0.001 K		0.001 K	0.007
2008235-S17	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River  
 Location: d/s Manistique Papers Dam  
 VisitID: 2008235

Collection Date: May / 28 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
2008235-S18	0.001 K	0.012	0.001 K	0.001 K		0.001 K	0.012
2008235-S19	0.001 K	0.008	0.001 K	0.001 K		0.001 K	0.008
2008235-S20	0.001 K	0.014	0.001 K	0.001 K		0.001 K	0.014
No. of Samples:							10
Mean+:							0.0063
Median+:							0.007

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b> Fs							
2008235-S01	0.050 K	0.001 K	0.002	0.001	I	0.001 K	0.250 K
2008235-S02	0.050 K	0.001 K	0.002	0.001 K	I	0.001 K	0.250 K
2008235-S03	0.050 K	0.001 K	0.001	0.001 K	I	0.001 K	0.250 K
2008235-S04	0.050 K	0.001 K	0.002	0.001 K	I	0.001 K	0.250 K
2008235-S05	0.050 K	0.001 K	0.001	0.001 K	I	0.001 K	0.250 K
2008235-S06	0.050 K	0.001 K	0.001	0.001 K	I	0.001 K	0.250 K
2008235-S07	0.050 K	0.001 K	0.005	I	0.003	0.001 K	0.250 K
2008235-S08	0.050 K	0.001 K	0.003	0.001 K	0.001	0.001 K	0.250 K
2008235-S09	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S10	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0025	0.0006 *	0.0013 *	0.0005*	0.125 *
Median+:	0.050 K	0.001 K	0.002	0.001 K	0.001	0.001K	0.250 K
<b>Pumpkinseed</b> F							
2008235-S63	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S64	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S65	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S66	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S68	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S69	0.050 K	0.001 K	0.001K	0.001 K	I	0.001 K	0.250 K
2008235-S70	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S71	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S72	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	9	9	9	9	9	9	9
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005*	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.250 K
<b>Redhorse Sucker</b> Fs							
2008235-S41	0.050 K	0.001 K	0.001K	0.001 K	0.002	0.001 K	0.250 K
2008235-S42	0.050 K	0.001 K	0.001K	0.001 K	0.010	0.001 K	0.250 K
2008235-S43	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S44	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S45	0.050 K	0.001 K	0.001K	0.001 K	0.005	0.001 K	0.250 K
2008235-S46	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S47	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S48	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S49	0.050 K	0.001 K	0.001K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River  
 Location: d/s Manistique Papers Dam  
 VisitID: 2008235

Collection Date: May / 28 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
2008235-S50	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0007 *	0.0005 *	0.002 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>Rock Bass F</b>							
2008235-S51	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S52	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S53	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S54	0.050 K	0.001 K	0.001 K	0.001 K	0.007	0.001 K	0.250 K
2008235-S55	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S56	0.050 K	0.001 K	I	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S57	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S58	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S59	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S60	0.050 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.250 K
2008235-S61	0.050 K	0.001 K	0.001 K	0.001 K	0.003	0.001 K	0.250 K
2008235-S62	0.050 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.250 K
No. of Samples:	12	12	12	12	12	12	12
Mean+:	0.025 *	0.0005 *	0.001 *	0.0005 *	0.0013 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>Smallmouth Bass F</b>							
2008235-S31	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S32	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S33	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S34	0.050 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.250 K
2008235-S35	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S36	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S37	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S38	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S39	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S40	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0007 *	0.0005 *	0.0006 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>White Sucker F</b>							
2008235-S11	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
2008235-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S15	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S16	0.050 K	0.001 K	0.001 K	I	0.001 K	0.001 K	0.250 K
2008235-S17	0.050 K	0.001 K	0.001	I	0.001 K	0.001 K	0.250 K
2008235-S18	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S19	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008235-S20	0.050 K	0.001 K	0.001 K	I	I	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0009 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Manistique River

Collection Date: May / 28 / 2008

Location: d/s Manistique Papers Dam

VisitID: 2008235

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b> <b>Fs</b>							
2008235-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008235-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S07	0.002	0.002	0.001 K	0.001 K	0.001 K	0.002	0.001
2008235-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008235-S09	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008235-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0007 *	0.0007 *	0.0005 *	0.0005 *	0.0005 *	0.0008 *	0.0006 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Pumpkinseed</b> <b>F</b>							
2008235-S63	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S64	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S65	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S66	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S68	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S69	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S70	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S71	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S72	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	9	9	9	9	9	9	9
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Redhorse Sucker</b> <b>Fs</b>							
2008235-S41	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S42	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S43	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S44	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S45	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S46	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S47	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S48	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River  
 Location: d/s Manistique Papers Dam  
 VisitID: 2008235

Collection Date: May / 28 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
2008235-S49	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S50	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

**Rock Bass F**

2008235-S51	0.001 K						
2008235-S52	0.001 K						
2008235-S53	0.001 K						
2008235-S54	0.001 K						
2008235-S55	0.001 K						
2008235-S56	0.001 K						
2008235-S57	0.001 K						
2008235-S58	0.001 K						
2008235-S59	0.001 K						
2008235-S60	0.001 K						
2008235-S61	0.001 K						
2008235-S62	0.001 K						
No. of Samples:	12	12	12	12	12	12	12
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K						

**Smallmouth Bass F**

2008235-S31	0.001 K						
2008235-S32	0.001 K						
2008235-S33	0.001 K						
2008235-S34	0.001 K						
2008235-S35	0.001 K						
2008235-S36	0.001 K						
2008235-S37	0.001 K						
2008235-S38	0.001 K						
2008235-S39	0.001 K						
2008235-S40	0.001 K						
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K						

**White Sucker F**

2008235-S11	0.001 K						
2008235-S12	0.001 K						

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Manistique River  
 Location: d/s Manistique Papers Dam  
 VisitID: 2008235

Collection Date: May / 28 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
2008235-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008235-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon Lake

Collection Date: May / 15 / 2008

Location: Muskegon County

VisitID: 2008239

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Walleye</b>		<b>F</b>						
2008239-S01	0.20	0.122						0.001
2008239-S02	0.60	0.194						0.001 K
2008239-S03	0.40	0.110						0.021
2008239-S04	0.50	0.111						0.018
2008239-S05	0.50	0.164						0.007
2008239-S06	0.70	0.095						0.010
2008239-S07	0.40	0.256						0.015
2008239-S08	1.00	0.287						0.101
2008239-S09	1.30	0.164						0.031
2008239-S10	1.10	0.618						0.241
No. of Samples:	10	10						10
Mean+:	0.67	0.2121						0.0446*
Median+:	0.55	0.164						0.017

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon Lake

Collection Date: May / 15 / 2008

Location: Muskegon County

VisitID: 2008239

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Walleye</b>	<b>F</b>					
2008239-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S02	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008239-S03	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008239-S04	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008239-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S07	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008239-S08	0.002	0.001 K	0.002	0.004	0.001 K	0.008
2008239-S09	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008239-S10	0.004	0.001 K	0.006	0.011	0.001	0.022
No. of Samples:						10
Mean+:						0.0038 *
Median+:						0.001

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon Lake  
Location: Muskegon County  
VisitID: 2008239

Collection Date: May / 15 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Walleye</b>	<b>F</b>						
2008239-S01	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008239-S02	0.001	0.004	0.001 K	0.001 K		0.001 K	0.005
2008239-S03	0.001	0.005	0.001 K	0.001 K		0.001 K	0.006
2008239-S04	0.001	0.005	0.001 K	0.001 K		0.001 K	0.006
2008239-S05	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008239-S06	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008239-S07	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008239-S08	0.003	0.026	0.002	0.001 K		0.001 K	0.031
2008239-S09	0.001	0.009	0.001	0.001 K		0.001 K	0.011
2008239-S10	0.005	0.058	0.005	0.001		0.001 K	0.069
No. of Samples:							10
Mean+:							0.0139
Median+:							0.006

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon Lake  
Location: Muskegon County  
VisitID: 2008239

Collection Date: May / 15 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Walleye</b>	<b>F</b>						
2008239-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008239-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

i = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon Lake

Collection Date: May / 15 / 2008

Location: Muskegon County

VisitID: 2008239

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Walleye</b>	<b>F</b>						
2008239-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008239-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon River

Collection Date: May / 15 / 2008

Location: Newaygo County, below Croton Dam

VisitID: 2008240

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Golden Redhorse</b>		<b>F</b>						
2008240-S11	0.60	0.264						0.003
2008240-S12	0.40	0.255						0.003
2008240-S13	0.40	0.279						0.002
2008240-S14	0.20	0.287						0.001 K
2008240-S15	0.40	0.510						0.011
2008240-S16	0.40	0.437						0.001
2008240-S17	0.40	0.489						0.010
2008240-S18	0.20	0.547						0.001 K
2008240-S19	0.20	0.827						0.009
2008240-S20	0.80	0.559						0.002
No. of Samples:	10	10						10
Mean+:	0.40	0.4454						0.0042*
Median+:	0.40	0.463						0.003
<b>Walleye</b>		<b>F</b>						
2008240-S01	0.50	0.373						0.012
2008240-S02	0.50	0.329						0.002
2008240-S03	0.80	0.111						0.035
2008240-S04	0.30	0.207						0.031
2008240-S05	0.50	0.341						0.032
2008240-S06	0.90	0.594						0.109
2008240-S07	1.70	0.994						0.521
2008240-S08	0.90	0.741						0.228
2008240-S09	1.80	0.500						0.265
2008240-S10	1.00	0.736						0.044
No. of Samples:	10	10						10
Mean+:	0.89	0.4926						0.1279
Median+:	0.85	0.437						0.040

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon River

Collection Date: May / 15 / 2008

Location: Newaygo County, below Croton Dam

VisitID: 2008240

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Golden Redhorse F</b>						
2008240-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.0005 *
Median+:						0.001 K
<b>Walleye F</b>						
2008240-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S03	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008240-S04	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008240-S05	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008240-S06	0.001	0.001 K	0.002	0.004	0.001 K	0.007
2008240-S07	0.008	0.002	0.018	0.032	0.003	0.063
2008240-S08	0.003	0.001 K	0.006	0.010	0.001	0.020
2008240-S09	0.003	0.001 K	0.007	0.012	0.001	0.023
2008240-S10	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
No. of Samples:						10
Mean+:						0.0121 *
Median+:						0.002

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon River

Collection Date: May / 15 / 2008

Location: Newaygo County, below Croton Dam

VisitID: 2008240

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Golden Redhorse F</b>							
2008240-S11	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008240-S12	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008240-S13	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008240-S14	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008240-S15	0.001 K	0.006	0.001 K	0.001 K		0.001 K	0.006
2008240-S16	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008240-S17	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008240-S18	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008240-S19	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008240-S20	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
No. of Samples:							10
Mean+:							0.0023 *
Median+:							0.002
<b>Walleye F</b>							
2008240-S01	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005
2008240-S02	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008240-S03	0.002	0.010	0.001 K	0.001 K		0.001 K	0.012
2008240-S04	0.001	0.009	0.001 K	0.001 K		0.001 K	0.010
2008240-S05	0.001	0.009	0.001 K	0.001 K		0.001 K	0.010
2008240-S06	0.002	0.036	0.002	0.001 K		0.001 K	0.040
2008240-S07	0.008	0.175	0.017	0.003		0.002	0.205
2008240-S08	0.003	0.062	0.004	0.001 K		0.001 K	0.069
2008240-S09	0.005	0.098	0.005	I		0.001 K	0.108
2008240-S10	0.001 K	0.009	0.001 K	0.001 K		0.001 K	0.009
No. of Samples:							10
Mean+:							0.0471
Median+:							0.011

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon River

Collection Date: May / 15 / 2008

Location: Newaygo County, below Croton Dam

VisitID: 2008240

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Golden Redhorse F</b>							
2008240-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S18	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>Walleye F</b>							
2008240-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008240-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Muskegon River

Collection Date: May / 15 / 2008

Location: Newaygo County, below Croton Dam

VisitID: 2008240

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Golden Redhorse F</b>							
2008240-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.000 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Walleye F</b>							
2008240-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008240-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008240-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0006 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake

Collection Date:

May / 21 / 2008

Location: Oakland Co

Latitude / Longitude::

42.6129/-83.3559

VisitID: 2008242

Notes:

Species	Sample#	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>Carp</b>							
	2008242-S11	Fs	M		18.3	4.2	
	2008242-S12	Fs	M		20.1	4.0	
	2008242-S13	Fs			20.1	4.4	
	2008242-S14	Fs	M		21.2	5.3	
	2008242-S15	Fs	M		23.2	6.3	
	2008242-S16	Fs	M		22.8	5.9	
	2008242-S17	Fs	M		23.7	6.3	
	2008242-S18	Fs	M		23.5	7.4	
	2008242-S19	Fs	F		26.0	12.1	
	2008242-S20	Fs	M		26.4	9.9	
No. of Samples:					10	10	
Mean+:					22.5	6.6	
Median+:					23.0	6.1	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake  
Location: Oakland Co  
VisitID: 2008242

Collection Date: May / 21 / 2008

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>	<b>Fs</b>							
2008242-S11	2.80	0.071						0.049
2008242-S12	0.80	0.215						0.067
2008242-S13	3.60	0.039						0.043
2008242-S14	2.60	0.171						0.187
2008242-S15	3.60	0.180						0.238
2008242-S16	0.60	0.086						0.166
2008242-S17	6.10	0.110						1.063
2008242-S18	6.60	0.099						0.837
2008242-S19	12.20	0.236						0.450
2008242-S20	7.50	0.234						1.330
No. of Samples:	10	10						10
Mean+:	4.64	0.1441						0.443
Median+:	3.60	0.141						0.213

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake

Collection Date: May / 21 / 2008

Location: Oakland Co

VisitID: 2008242

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>	<b>Fs</b>					
2008242-S11	0.003	0.001	0.001 K	0.002	0.001 K	0.006
2008242-S12	0.001	0.001 K	0.001 K	0.001	0.001 K	0.002
2008242-S13	0.003	0.001	0.001 K	0.001	0.001 K	0.005
2008242-S14	0.003	0.001	0.002	0.002	0.001 K	0.008
2008242-S15	0.003	0.001 K	0.002	0.003	0.001 K	0.008
2008242-S16	0.001	0.001 K	0.001 K	0.002	0.001 K	0.003
2008242-S17	0.012	0.004	0.006	0.011	0.001	0.034
2008242-S18	0.007	0.003	0.004	0.006	0.001 K	0.020
2008242-S19	0.011	0.004	0.006	0.008	0.001	0.030
2008242-S20	0.009	0.004	0.006	0.006	0.001	0.026

No. of Samples:	10
Mean+:	0.0142
Median+:	0.008

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake

Collection Date: May / 21 / 2008

Location: Oakland Co

VisitID: 2008242

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008242-S11	0.009	0.020	0.001 K	0.002		0.001 K	0.031
2008242-S12	0.006	0.014	0.001 K	0.001 K		0.001 K	0.020
2008242-S13	0.009	0.016	0.001 K	0.002		0.001 K	0.027
2008242-S14	0.022	0.071	0.001 K	0.003		0.001 K	0.096
2008242-S15	0.029	0.101	0.001 K	0.004		0.001 K	0.134
2008242-S16	0.008	0.039	0.001 K	0.001 K		0.001 K	0.047
2008242-S17	0.088	0.341	0.001 K	0.008		0.001 K	0.437
2008242-S18	0.052	0.355	0.001 K	0.007		0.001 K	0.414
2008242-S19	0.069	0.174	0.001 K	0.008		0.001 K	0.251
2008242-S20	0.061	0.537	0.001 K	0.008		0.001 K	0.606
No. of Samples:							10
Mean+:							0.2063
Median+:							0.115

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake

Collection Date: May / 21 / 2008

Location: Oakland Co

VisitID: 2008242

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008242-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S18	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008242-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake  
Location: Oakland Co  
VisitID: 2008242

Collection Date: May / 21 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008242-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.000 K
2008242-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008242-S17	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S18	0.006	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S19	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008242-S20	0.034	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0047 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Sylvan/Otter Lake  
 Location: Oakland Co  
 VisitID: 2008242  
 Collection Date: May / 21 / 2008

Species Sample #	PBDE Congener Number**										Total PBDE (ppb)	
	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)			
<b>Carp</b>												
<b>Fs</b>												
2008242-S11	1.00 K	2.10	1.00 K	1.00 K	1.00 K	2.10						
2008242-S12	1.00 K	1.50	1.00 K	1.00 K	1.00 K	1.50						
2008242-S13	1.00 K	1.60	1.00 K	1.00 K	1.00 K	1.60						
2008242-S14	1.00 K	2.60	1.00 K	1.00 K	1.00 K	2.60						
2008242-S15	1.20	5.40	1.00 K	1.00 K	1.00 K	6.60						
2008242-S16	1.00 K	1.90	1.00 K	1.00 K	1.00 K	1.90						
2008242-S17	1.60	9.30	1.00 K	1.00 K	1.00 K	1.00 K	1.80	1.00 K	1.00 K	1.00 K	1.00 K	12.70
2008242-S18	1.50	6.70	1.00 K	1.00 K	1.00 K	1.00 K	1.30	1.00 K	1.00 K	1.00 K	1.00 K	9.50
2008242-S19	2.20	11.20	1.00 K	1.00 K	1.00 K	1.00 K	2.00	1.00 K	1.00 K	1.00 K	1.00 K	15.40
2008242-S20	1.90	9.00	1.00 K	1.00 K	1.00 K	1.00 K	1.80	1.00 K	1.00 K	1.00 K	1.00 K	12.70
<b>No. of Samples:</b>	10	10	10	10	10	10	10	10	10	10	10	10
<b>Mean+:</b>	1.090 *	5.130	0.500 *	0.500 *	0.500 *	0.500 *	0.990 *	0.500 *	0.500 *	0.500 *	0.500 *	6.660
<b>Median+:</b>	1.100	4.000	1.000 K	1.000 K	1.000 K	4.600						

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value, not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Concentration below quantification level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.



VisitID: 2008247

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
2008247-S05	F	M		15.8	2.0	
2008247-S06	F	F		16.9	2.4	
2008247-S07	F	F		15.6	2.2	
2008247-S08	F	F		15.4	2.1	
2008247-S09	F	F		16.9	2.2	
2008247-S10	F	M		18.3	3.5	
No. of Samples:				10	10	
Mean+:				15.7	2.1	
Median+:				15.6	2.1	
<b>White Bass</b>						
2008247-S11	F	F		12.4	0.7	
2008247-S12	F	M		11.7	0.7	
2008247-S13	F	F		12.1	0.6	
2008247-S14	F	F		12.6	0.9	
2008247-S15	F	F		12.4	0.9	
2008247-S16	F	F		12.6	0.9	
2008247-S17	F	F		12.5	0.8	
2008247-S18	F	F		12.8	0.9	
2008247-S19	F	F		13.7	1.0	
2008247-S20	F	F		15.3	2.2	
No. of Samples:				10	10	
Mean+:				12.8	1.0	
Median+:				12.6	0.9	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Raisin River

Collection Date: Jun / 14 / 2008

Location: Monroe, below Winchester Bridge

VisitID: 2008247

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>		<b>Fs</b>						
2008247-S31	1.60	0.116						0.892
2008247-S32	0.20	0.038						0.067
2008247-S33	0.40	0.174						0.417
2008247-S34	1.00	0.132						0.550
2008247-S35	2.40	0.270						1.487
2008247-S36	0.80	0.218						0.289
2008247-S37	10.10	0.358						5.397
2008247-S38	0.20	0.468						0.038
2008247-S39	2.20	0.248						1.427
2008247-S40	10.20	0.212						2.668
No. of Samples:	10	10						10
Mean+:	2.91	0.223						1.323
Median+:	1.30	0.215						0.721
<b>Channel Catfish</b>		<b>Fs</b>						
2008247-S41	1.50	0.398						1.122
2008247-S42	6.70	0.372						3.074
2008247-S43	5.20	0.232						2.603
2008247-S44	1.80	0.102						0.467
2008247-S45	6.10	0.480						0.753
No. of Samples:	5	5						5
Mean+:	4.26	0.317						1.604
Median+:	5.20	0.372						1.122
<b>Freshwater Drum</b>		<b>Fs</b>						
2008247-S21	0.20	0.171						0.099
2008247-S22	0.10	0.782						0.002
2008247-S23	0.50	0.589						0.153
2008247-S24	1.50	0.279						0.303
2008247-S25	1.80	0.343						0.284
2008247-S26	0.40	0.259						0.119
2008247-S27	0.60	0.378						0.157
2008247-S28	6.20	0.260						0.813
2008247-S29	2.60	0.403						0.722
2008247-S30	0.10	0.665						0.019
No. of Samples:	10	10						10
Mean+:	1.40	0.413						0.267
Median+:	0.55	0.361						0.155

+ = Calculated value; not rounded to appropriate number of significant digits.

l = Analytical interference; quantification not possible.

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K = Undetected at detection level shown.

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Waterbody Name: Raisin River

Collection Date: Jun / 14 / 2008

Location: Monroe, below Winchester Bridge

VisitID: 2008247

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Smallmouth Bass F</b>								
2008247-S01	0.20	0.396						0.054
2008247-S02	0.20	0.305						0.144
2008247-S03	0.10	0.291						0.146
2008247-S04	0.20	0.286						0.358
2008247-S05	0.60	0.341						0.495
2008247-S06	0.10	0.815						0.006
2008247-S07	0.50	0.292						0.436
2008247-S08	0.40	0.284						0.298
2008247-S09	0.30	0.429						0.255
2008247-S10	0.60	0.351						0.494
No. of Samples:	10	10						10
Mean+:	0.32	0.379						0.269
Median+:	0.25	0.323						0.277
<b>White Bass F</b>								
2008247-S11	1.90	0.257						0.476
2008247-S12	0.80	0.172						0.412
2008247-S13	1.60	0.303						0.638
2008247-S14	1.00	0.265						0.262
2008247-S15	1.60	0.400						0.425
2008247-S16	1.50	0.193						0.247
2008247-S17	1.60	0.195						0.518
2008247-S18	1.90	0.191						0.570
2008247-S19	0.30	0.414						0.163
2008247-S20	1.60	0.458						4.400
No. of Samples:	10	10						10
Mean+:	1.38	0.285						0.811
Median+:	1.60	0.261						0.451

+ = Calculated value; not rounded to appropriate number of significant digits.

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\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Raisin River

Collection Date: Jun / 14 / 2008

Location: Monroe, below Winchester Bridge

VisitID: 2008247

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>						
	<b>Fs</b>					
2008247-S31	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S32	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S33	0.001 K	0.001 K	0.004	0.001 K	0.001 K	0.004
2008247-S34	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S35	0.003	0.001	0.002	0.004	0.001 K	0.010
2008247-S36	0.001 K	0.001 K	0.001 K	0.003	0.001 K	0.003
2008247-S37	0.005	0.002	0.006	0.009	0.001 K	0.022
2008247-S38	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S39	0.003	0.001	0.003	0.005	0.001 K	0.012
2008247-S40	0.003	0.001	0.003	0.005	0.001 K	0.012
No. of Samples:						10
Mean+:						0.0065 *
Median+:						0.004
<b>Channel Catfish</b>						
	<b>Fs</b>					
2008247-S41	0.002	0.001 K	0.002	0.003	0.001 K	0.007
2008247-S42	0.009	0.003	0.009	0.012	0.002	0.035
2008247-S43	0.007	0.003	0.007	0.009	0.001	0.027
2008247-S44	0.003	0.001	0.002	0.003	0.001 K	0.009
2008247-S45	0.003	0.001	0.003	0.004	0.001 K	0.011
No. of Samples:						5
Mean+:						0.0178
Median+:						0.011
<b>Freshwater Drum</b>						
	<b>Fs</b>					
2008247-S21	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S22	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S23	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S24	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008247-S25	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008247-S26	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S27	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S28	0.002	0.001 K	0.002	0.003	0.001 K	0.007
2008247-S29	0.001	0.001 K	0.002	0.003	0.001 K	0.006
2008247-S30	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Raisin River  
 Location: Monroe, below Winchester Bridge  
 VisitID: 2008247

Collection Date: Jun / 14 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
No. of Samples:						10
Mean+:						0.0018 *
Median+:						0.001 K
<b>Smallmouth Bass F</b>						
2008247-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S02	0.001 K	0.001 K	0.003	0.001	0.001 K	0.004
2008247-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S04	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2008247-S05	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2008247-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S07	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008247-S08	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.002
2008247-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S10	0.001 K	0.001 K	0.002	0.002	0.001 K	0.004
No. of Samples:						10
Mean+:						0.002 *
Median+:						0.002
<b>White Bass F</b>						
2008247-S11	0.002	0.001 K	0.002	0.002	0.001 K	0.006
2008247-S12	0.001	0.001 K	0.002	0.002	0.001 K	0.005
2008247-S13	0.002	0.001 K	0.003	0.003	0.001 K	0.008
2008247-S14	0.001	0.001 K	0.001	0.001	0.001 K	0.003
2008247-S15	0.002	0.001 K	0.002	0.002	0.001 K	0.006
2008247-S16	0.002	0.001 K	0.002	0.002	0.001 K	0.006
2008247-S17	0.002	0.001 K	0.012	0.003	0.001 K	0.017
2008247-S18	0.002	0.001 K	0.002	0.002	0.001 K	0.006
2008247-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S20	0.003	0.001 K	0.003	0.004	0.001 K	0.010
No. of Samples:						10
Mean+:						0.0068 *
Median+:						0.006

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Raisin River

Collection Date: Jun / 14 / 2008

Location: Monroe, below Winchester Bridge

VisitID: 2008247

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>							
	<b>Fs</b>						
2008247-S31	0.005	0.014	0.001 K	0.001		0.001 K	0.020
2008247-S32	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008247-S33	0.004	0.017	0.001 K	0.001 K		0.001 K	0.021
2008247-S34	0.004	0.020	0.001 K	0.001 K		0.001 K	0.024
2008247-S35	0.012	0.044	0.001 K	0.002		0.001 K	0.058
2008247-S36	0.005	0.027	0.001 K	0.001 K		0.001 K	0.032
2008247-S37	0.034	0.175	0.001	0.003		0.001 K	0.213
2008247-S38	0.001	0.004	0.001 K	0.001 K		0.001 K	0.005
2008247-S39	0.016	0.069	0.001 K	0.002		0.001 K	0.087
2008247-S40	0.018	0.103	0.001 K	0.003		0.001 K	0.124
No. of Samples:							10
Mean+:							0.0585
Median+:							0.028
<b>Channel Catfish</b>							
	<b>Fs</b>						
2008247-S41	0.008	0.037	0.001	0.001 K		0.001 K	0.046
2008247-S42	0.038	0.124	0.004	0.003		0.001 K	0.169
2008247-S43	0.033	0.098	0.004	0.003		0.001 K	0.138
2008247-S44	0.013	0.023	0.002	0.001		0.001 K	0.039
2008247-S45	0.012	0.041	0.002	0.001 K		0.001 K	0.055
No. of Samples:							5
Mean+:							0.0894
Median+:							0.055
<b>Freshwater Drum</b>							
	<b>Fs</b>						
2008247-S21	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008247-S22	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008247-S23	0.001	0.003	0.001 K	0.001 K		0.001 K	0.004
2008247-S24	0.003	0.007	0.001 K	0.001 K		0.001 K	0.010
2008247-S25	0.003	0.005	0.001 K	0.001 K		0.001 K	0.008
2008247-S26	0.001	0.003	0.001 K	0.001 K		0.001 K	0.004
2008247-S27	0.002	0.003	0.001 K	0.001 K		0.001 K	0.005
2008247-S28	0.008	0.018	0.002	0.001 K		0.001 K	0.028
2008247-S29	0.006	0.014	0.002	0.001 K		0.001 K	0.022
2008247-S30	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
No. of Samples:							10
Mean+:							0.0084
Median+:							0.005
<b>Smallmouth Bass</b>							
	<b>F</b>						
2008247-S01	0.001 K	0.005	0.001 K	0.001 K		0.001 K	0.005

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Raisin River  
 Location: Monroe, below Winchester Bridge  
 VisitID: 2008247

Collection Date: Jun / 14 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
2008247-S02	0.003	0.008	0.001 K	0.001 K		0.001 K	0.011
2008247-S03	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008247-S04	0.004	0.019	0.001	0.001 K		0.001 K	0.024
2008247-S05	0.006	0.025	0.002	0.001 K		0.001 K	0.033
2008247-S06	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008247-S07	0.005	0.008	0.001	0.001 K		0.001 K	0.014
2008247-S08	0.003	0.014	0.001	0.001 K		0.001 K	0.018
2008247-S09	0.003	0.012	0.001 K	0.001 K		0.001 K	0.015
2008247-S10	0.006	0.017	0.002	0.001		0.001 K	0.026
No. of Samples:							10
Mean+:							0.015
Median+:							0.015
<b>White Bass F</b>							
2008247-S11	0.008	0.016	0.001 K	0.001 K		0.001 K	0.024
2008247-S12	0.006	0.016	0.001	0.001 K		0.001 K	0.023
2008247-S13	0.010	0.026	0.001 K	0.001 K		0.001 K	0.036
2008247-S14	0.006	0.010	0.001 K	0.001 K		0.001 K	0.016
2008247-S15	0.007	0.017	0.001	0.001 K		0.001 K	0.025
2008247-S16	0.007	0.012	0.001 K	0.001 K		0.001 K	0.019
2008247-S17	0.009	0.022	0.001	0.001 K		0.001 K	0.032
2008247-S18	0.009	0.021	0.001 K	0.001 K		0.001 K	0.030
2008247-S19	0.002	0.006	0.001 K	0.001 K		0.001 K	0.008
2008247-S20	0.014	0.007	0.003	0.001		0.001 K	0.025
No. of Samples:							10
Mean+:							0.0238
Median+:							0.025

+ = Calculated value; not rounded to appropriate number of significant digits.

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J = Estimated value; value may not be precise.

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\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Raisin River

Collection Date: Jun / 14 / 2008

Location: Monroe, below Winchester Bridge

VisitID: 2008247

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>							
	Fs						
2008247-S31	0.050 K	0.001 K	0.003	I	0.001 K	0.001 K	0.250 K
2008247-S32	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S33	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S34	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S35	0.050 K	0.001 K	0.006	I	0.001 K	0.001 K	0.250 K
2008247-S36	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S37	0.050 K	0.001 K	0.010	I	0.001 K	0.001 K	0.250 K
2008247-S38	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S39	0.050 K	0.001 K	0.008	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S40	0.050 K	0.001 K	0.008	I	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0043 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.250 K
<b>Channel Catfish</b>							
	Fs						
2008247-S41	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S42	0.050 K	0.001 K	0.012	0.001 K	0.002	0.001 K	0.250 K
2008247-S43	0.050 K	0.001 K	0.013	0.001 K	0.001	0.001 K	0.250 K
2008247-S44	0.050 K	0.001 K	0.007	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S45	0.050 K	0.001 K	0.009	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	5	5	5	5	5	5	5
Mean+:	0.025 *	0.0005 *	0.009	0.0005 *	0.0009 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.009	0.001 K	0.001	0.001 K	0.250 K
<b>Freshwater Drum</b>							
	Fs						
2008247-S21	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S22	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S23	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S24	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S25	0.050 K	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S26	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S27	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S28	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S29	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S30	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0024 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Raisin River  
 Location: Monroe, below Winchester Bridge  
 VisitID: 2008247

Collection Date: Jun / 14 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Smallmouth Bass F</b>							
2008247-S01	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S02	0.050 K	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S03	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S04	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S05	0.050 K	0.001 K	0.007	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S07	0.050 K	0.001 K	0.007	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S08	0.050 K	0.001 K	0.005	0.001 K	0.003	0.001 K	0.250 K
2008247-S09	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S10	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0036 *	0.0005 *	0.0008 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
<b>White Bass F</b>							
2008247-S11	0.050 K	0.001 K	0.007	0.001 K	0.002	0.001 K	0.250 K
2008247-S12	0.050 K	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S13	0.050 K	0.001 K	0.008	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S14	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S15	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S16	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S17	0.050 K	0.001 K	0.005	0.001 K	0.001	0.001 K	0.250 K
2008247-S18	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008247-S20	0.050 K	0.001 K	0.006	I	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0051 *	0.0005 *	0.0007 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Raisin River

Collection Date: Jun / 14 / 2008

Location: Monroe, below Winchester Bridge

VisitID: 2008247

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>							
	<b>Fs</b>						
2008247-S31	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S32	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S33	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S34	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S35	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S36	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S37	0.003	0.025	0.001 K	0.001 K	0.001 K	0.005	0.001 K
2008247-S38	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S39	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008247-S40	0.002	0.006	0.001 K	0.001 K	0.001 K	0.001	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0009 *	0.0038 *	0.0005 *	0.0005 *	0.0005 *	0.0011 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Channel Catfish</b>							
	<b>Fs</b>						
2008247-S41	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008247-S42	0.002	0.008	0.001 K	0.001 K	0.001 K	0.001 K	0.003
2008247-S43	0.001	0.006	0.001 K	0.001 K	0.001 K	0.001 K	0.003
2008247-S44	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S45	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	5	5	5	5	5	5	5
Mean+:	0.0009 *	0.0038	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0016 *
Median+:	0.001	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001
<b>Freshwater Drum</b>							
	<b>Fs</b>						
2008247-S21	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S22	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S23	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S24	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S25	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008247-S26	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S27	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S28	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008247-S29	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S30	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

Waterbody Name: Raisin River  
 Location: Monroe, below Winchester Bridge  
 VisitID: 2008247

Collection Date: Jun / 14 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0006 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Smallmouth Bass F</b>							
2008247-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008247-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0006 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>White Bass F</b>							
2008247-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008247-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Undetected at detection level shown.  
 T = Analysis not conducted due to technical error.  
 \* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Apr / 16 / 2008

Location: Macomb County

VisitID: 2008251

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Northern Pike</b>		<b>Fs</b>						
2008251-S02	0.10	0.512						0.016
2008251-S03	0.10	0.369						0.002
2008251-S04		0.230						0.001 K
2008251-S05	0.10	0.486						0.002
2008251-S06	0.10	0.514						0.010
2008251-S07		0.547						0.002
2008251-S08	0.10	0.350						0.001
2008251-S09	0.10	0.651						0.001
No. of Samples:	8	8						8
Mean+:	0.08	0.4574						0.0043*
Median+:	0.10	0.499						0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

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T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

Collection Date: Apr / 16 / 2008

Location: Macomb County

VisitID: 2008251

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>					
2008251-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						8
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment  
 Location: Macomb County  
 VisitID: 2008251

Collection Date: Apr / 16 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2008251-S02	0.003	0.043	0.001 K	0.001 K		0.001 K	0.046
2008251-S03	0.002	0.014	0.001 K	0.001 K		0.001 K	0.016
2008251-S04	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008251-S05	0.001	0.013	0.001 K	0.001 K		0.001 K	0.014
2008251-S06	0.002	0.028	0.001 K	0.001 K		0.001 K	0.030
2008251-S07	0.001	0.014	0.001 K	0.001 K		0.001 K	0.015
2008251-S08	0.001	0.011	0.001 K	0.001 K		0.001 K	0.012
2008251-S09	0.003	0.013	0.001 K	0.001 K		0.001 K	0.016
No. of Samples:							8
Mean+:							0.019
Median+:							0.016

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment  
Location: Macomb County  
VisitID: 2008251

Collection Date: Apr / 16 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Northern Pike</b>							
	<b>Fs</b>						
2008251-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008251-S03	0.050 K	0.001 K	0.001 K	0.001 K	I	0.001 K	0.250 K
2008251-S04	0.050 K	0.001 K	0.001 K	0.001 K	I	0.001 K	0.250 K
2008251-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008251-S06	0.050 K	0.001 K	0.001 K	0.001 K	I	0.001 K	0.250 K
2008251-S07	0.050 K	0.001 K	0.001 K	0.001 K	I	0.001 K	0.250 K
2008251-S08	0.050 K	0.001 K	0.001 K	0.001 K	I	0.001 K	0.250 K
2008251-S09	0.050 K	0.001 K	0.001 K	0.001 K	I	0.001 K	0.250 K
No. of Samples:	8	8	8	8	8	8	8
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Stony Creek Impoundment

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Location: Macomb County

VisitID: 2008251

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Northern Pike</b>	<b>Fs</b>						
2008251-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008251-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	8	8	8	8	8	8	8
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.





**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Whitmore Lake

Collection Date: May / 28 / 2008

Location: Livingston County

VisitID: 2008260

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>	<b>Fs</b>							
2008260-S11	0.20	0.010						0.001 K
2008260-S12	0.20	0.010						0.001 K
2008260-S13	2.40	0.010						0.003
No. of Samples:	3	3						3
Mean+:	0.93	0.0083 *						0.0013 *
Median+:	0.20	0.010						0.001

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Whitmore Lake  
 Location: Livingston County  
 VisitID: 2008260

Collection Date: May / 28 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>	<b>Fs</b>					
2008260-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008260-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008260-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						3
Mean+:						0.0005 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Whitmore Lake  
Location: Livingston County  
VisitID: 2008260

Collection Date: May / 28 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008260-S11	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008260-S12	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008260-S13	0.003	0.009	0.001 K	0.001 K		0.001 K	0.012
No. of Samples:							3
Mean+:							0.0043 *
Median+:							0.001

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Whitmore Lake  
Location: Livingston County  
VisitID: 2008260

Collection Date: May / 28 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008260-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008260-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008260-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	3	3	3	3	3	3	3
Mean+:	0.025 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Whitmore Lake  
Location: Livingston County  
VisitID: 2008260

Collection Date: May / 28 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008260-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008260-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008260-S13	0.005	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	3	3	3	3	3	3	3
Mean+:	0.002 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Macatawa

Collection Date:

May / 12 / 2008

Location: Ottawa County

Latitude / Longitude::

42.79479/-86.11593

VisitID: 2008262

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Largemouth Bass</b>						
2008262-S11	F	M		14.3	1.8	
2008262-S12	F	F		15.0	1.9	
2008262-S13	F	F		15.2	2.3	
2008262-S14	F	F		15.4	2.6	
2008262-S15	F	M		15.8	2.6	
2008262-S16	F	M		16.4	2.6	
2008262-S17	F	M		17.6	3.5	
2008262-S18	F	M		17.3	3.3	
2008262-S19	F	F		17.3	3.3	
2008262-S20	F	M		17.8	3.3	
No. of Samples:				10	10	
Mean+:				16.2	2.7	
Median+:				16.1	2.6	
<b>Walleye</b>						
2008262-S01	F			18.3	2.1	
2008262-S02	F			17.9	2.1	
2008262-S03	F	M		20.4	3.5	
2008262-S04	F	M		22.4	3.9	jaw tag #202808
2008262-S05	F	F		22.2	4.3	
2008262-S06	F	M		22.5	4.1	
2008262-S07	F	F		24.4	5.2	
2008262-S08	F	M		23.8	5.0	
2008262-S09	F	F		25.8	5.5	
2008262-S10	F	F		29.1	8.8	
No. of Samples:				10	10	
Mean+:				22.7	4.4	
Median+:				22.5	4.2	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Macatawa

Collection Date: May / 12 / 2008

Location: Ottawa County

VisitID: 2008262

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Largemouth Bass</b>		<b>F</b>						
2008262-S11	0.40	0.307						0.028
2008262-S12	1.00	0.137						0.105
2008262-S13	0.60	0.133						0.037
2008262-S14	0.50	0.167						0.045
2008262-S15	0.20	0.100						0.031
2008262-S16	0.20	0.150						0.037
2008262-S17	0.30	0.176						0.071
2008262-S18	0.50	0.452						0.135
2008262-S19	0.30	0.165						0.023
2008262-S20	0.30	0.218						0.064
No. of Samples:	10	10						10
Mean+:	0.43	0.2005						0.0576
Median+:	0.35	0.166						0.041
<b>Walleye</b>		<b>F</b>						
2008262-S01	0.20	0.133						0.571
2008262-S02	0.40	0.111						0.019
2008262-S03	0.60	0.092						0.020
2008262-S04	0.80	0.644						0.311
2008262-S05	0.60	0.380						0.131
2008262-S06	1.00	0.455						0.245
2008262-S07	0.60	0.438						0.098
2008262-S08	0.60	0.487						0.216
2008262-S09	0.40	0.593						0.097
2008262-S10	1.20	0.697						0.180
No. of Samples:	10	10						10
Mean+:	0.64	0.403						0.1888
Median+:	0.60	0.447						0.156

+ = Calculated value; not rounded to appropriate number of significant digits.

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T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Macatawa  
Location: Ottawa County  
VisitID: 2008262

Collection Date: May / 12 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Largemouth Bass F</b>						
2008262-S11	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008262-S12	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2008262-S13	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008262-S14	0.001	0.001 K	0.001	0.002	0.001 K	0.004
2008262-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S16	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008262-S17	0.001 K	0.001 K	0.001	0.001	0.001 K	0.002
2008262-S18	0.001 K	0.001 K	0.002	0.004	0.001 K	0.006
2008262-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S20	0.001 K	0.001 K	0.003	0.002	0.001 K	0.005

No. of Samples: 10  
Mean+: 0.0024 \*  
Median+: 0.002

<b>Walleye F</b>						
2008262-S01	0.004	0.001 K	0.005	0.009	0.001 K	0.018
2008262-S02	0.001 K					
2008262-S03	0.001 K					
2008262-S04	0.003	0.001 K	0.012	0.012	0.001	0.028
2008262-S05	0.001	0.001 K	0.002	0.003	0.001 K	0.006
2008262-S06	0.003	0.001 K	0.003	0.007	0.001 K	0.013
2008262-S07	0.001	0.001 K	0.002	0.003	0.001 K	0.006
2008262-S08	0.003	0.001 K	0.004	0.006	0.001 K	0.013
2008262-S09	0.001	0.001 K	0.001	0.001	0.001 K	0.003
2008262-S10	0.003	0.001 K	0.003	0.005	0.001 K	0.011

No. of Samples: 10  
Mean+: 0.0099 \*  
Median+: 0.009

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Macatawa

Collection Date: May / 12 / 2008

Location: Ottawa County

VisitID: 2008262

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Largemouth Bass F</b>							
2008262-S11	0.001	0.005	0.001 K	0.001 K		0.001 K	0.006
2008262-S12	0.002	0.009	0.001 K	0.001 K		0.001 K	0.011
2008262-S13	0.002	0.005	0.001 K	0.001 K		0.001 K	0.007
2008262-S14	0.002	0.007	0.001 K	0.001 K		0.001 K	0.009
2008262-S15	0.001	0.005	0.001 K	0.001 K		0.001 K	0.006
2008262-S16	0.002	0.005	0.001 K	0.001 K		0.001 K	0.007
2008262-S17	0.002	0.008	0.001 K	0.001 K		0.001 K	0.010
2008262-S18	0.003	0.021	0.002	0.001 K		0.001 K	0.026
2008262-S19	0.001	0.003	0.001 K	0.001 K		0.001 K	0.004
2008262-S20	0.002	0.012	0.001 K	0.001 K		0.001 K	0.014

No. of Samples:	10
Mean+:	0.010
Median+:	0.008

<b>Walleye F</b>							
2008262-S01	0.017	0.091	0.001 K	0.003		0.001 K	0.111
2008262-S02	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008262-S03	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008262-S04	0.004	0.087	0.007	0.001 K		0.001 K	0.098
2008262-S05	0.002	0.018	0.002	0.001 K		0.001 K	0.022
2008262-S06	0.004	0.043	0.003	0.001 K		0.001 K	0.050
2008262-S07	0.002	0.015	0.002	0.001 K		0.001 K	0.019
2008262-S08	0.004	0.039	0.003	0.001 K		0.001 K	0.046
2008262-S09	0.002	0.012	0.001 K	0.001 K		0.001 K	0.014
2008262-S10	0.003	0.029	0.003	0.001 K		0.001 K	0.035

No. of Samples:	10
Mean+:	0.0403
Median+:	0.029

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Macatawa  
Location: Ottawa County  
VisitID: 2008262

Collection Date: May / 12 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Largemouth Bass F</b>							
2008262-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S12	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S14	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S16	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S18	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0006 J*	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>Walleye F</b>							
2008262-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S04	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S05	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S06	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S07	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S08	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008262-S10	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0015 *	0.0005 *	0.0005 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Macatawa

Collection Date: May / 12 / 2008

Location: Ottawa County

VisitID: 2008262

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Largemouth Bass F</b>							
2008262-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S14	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S16	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S18	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>Walleye F</b>							
2008262-S01	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008262-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0005 *	0.0007 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.





**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Collection Date: Apr / 14 / 2008

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Channel Catfish</b>		<b>Fs</b>						
2008266-S01	8.20	0.073						0.733
2008266-S02	7.00	0.123						0.359
2008266-S03	2.00	0.048						0.191
2008266-S04	1.30	0.060						0.126
2008266-S05	6.00	0.116						0.251
2008266-S06	2.10	0.044						0.128
2008266-S07	7.00	0.196						0.926
2008266-S08	7.40	0.089						0.731
2008266-S09	5.60	0.150						0.424
2008266-S10	5.30	0.265						0.797
No. of Samples:	10	10						10
Mean+:	5.19	0.1164						0.4666
Median+:	5.80	0.103						0.392

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Collection Date: Apr / 14 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>					
2008266-S01	0.002	0.001 K	0.002	0.004	0.001 K	0.008
2008266-S02	0.004	0.002	0.003	0.005	0.001 K	0.014
2008266-S03	0.001	0.001 K	0.001	0.002	0.001 K	0.004
2008266-S04	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008266-S05	0.002	0.001	0.002	0.004	0.001 K	0.009
2008266-S06	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008266-S07	0.004	0.002	0.004	0.005	0.001 K	0.015
2008266-S08	0.003	0.002	0.004	0.004	0.001 K	0.013
2008266-S09	0.002	0.001 K	0.002	0.003	0.001 K	0.007
2008266-S10	0.006	0.002	0.007	0.009	0.001	0.025
No. of Samples:						10
Mean+:						0.0097
Median+:						0.009

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Collection Date: Apr / 14 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2008266-S01	0.007	0.031	I	0.001		0.001 K	0.039
2008266-S02	0.010	0.022	I	0.001		0.001 K	0.033
2008266-S03	0.005	0.010	0.001 K	0.001 K		0.001 K	0.015
2008266-S04	0.003	0.007	I	0.001 K		0.001 K	0.010
2008266-S05	0.006	0.014	I	0.001 K		0.001 K	0.020
2008266-S06	0.004	0.006	I	0.001 K		0.001 K	0.010
2008266-S07	0.015	0.041	0.002	0.001		0.001 K	0.059
2008266-S08	0.015	0.032	0.001	0.001		0.001 K	0.049
2008266-S09	0.010	0.018	0.001 K	0.001 K		0.001 K	0.028
2008266-S10	0.023	0.049	0.003	0.001 K		0.001 K	0.075
No. of Samples:							10
Mean+:							0.0338
Median+:							0.031

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Collection Date: Apr / 14 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Channel Catfish</b>	<b>Fs</b>						
2008266-S01	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S02	0.050 K	0.001 K	0.008	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S03	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S04	0.050 K	0.001 K	0.002 J	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S05	0.050 K	0.001 K	0.005 J	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S06	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S07	0.050 K	0.001 K	0.009 J	0.001 K	0.001	0.001 K	0.250 K
2008266-S08	0.050 K	0.001 K	0.005 J	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S09	0.050 K	0.001 K	0.005 J	0.001 K	0.001 K	0.001 K	0.250 K
2008266-S10	0.050 K	0.001 K	0.011 J	0.001 K	0.001	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0055 J	0.0005 *	0.0006 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.005 J	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.  
 + = Calculated value; not rounded to appropriate number of significant figures.  
 I = Analytical interference; quantification not possible  
 J = Estimated value; value may not be precise  
 K = Undetected at detection level shown  
 T = Analysis not conducted due to technical error  
 \* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Collection Date: Apr / 14 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Channel Catfish Fs</b>							
2008266-S01	0.001	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S02	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S07	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S08	0.001	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S09	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008266-S10	0.001 K	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0006 *	0.0015 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Collection Date: Apr / 14 / 2008

Species	Total Dioxin Toxic Equivalents+ (ppt)	2,3,7,8- TCDD (ppt)	1,2,3,7,8- PCDD (ppt)	1,2,3,4,7,8- HxCDD (ppt)	1,2,3,6,7,8- HxCDD (ppt)	1,2,3,7,8,9- HxCDD (ppt)	1,2,3,4,6,7,8- HpCDD (ppt)	OCDD (ppt)
Sample #								
<b>Channel Catfish</b>	<b>Fs</b>							
2008266-S01	5.73	1.20	J 1.60	I	J 3.60	J 0.91	J 3.40	J 7.10
2008266-S02	10.03	0.98	J 0.80	J 0.36	J 1.20	J 0.42	J 1.70	6.50
2008266-S03	7.33	0.45	J 0.53	J 0.49	J 1.30	J 0.35	J 1.60	4.60
2008266-S04	4.44	I	J 0.44	J 0.29	J 0.89	J 0.20	J 0.80	J 3.00
2008266-S05	7.28	0.74	J 0.67	J 0.30	J 1.00	J 0.41	J 1.50	5.60
2008266-S06	6.09	J 0.35	J 0.49	I	J 0.79	J 0.18	J 0.53	J 1.90
2008266-S07	22.96	1.20	J 1.60	J 0.53	2.20	J 0.44	J 1.30	J 2.90
2008266-S08	23.23	1.60	J 1.90	I	3.40	J 0.82	J 1.90	5.80
2008266-S09	15.52	0.92	J 1.20	I	J 1.80	J 0.56	J 1.50	J 3.20
2008266-S10	22.00	1.20	J 1.10	I	J 1.20	J 0.26	J 0.70	J 2.90
No. of Samples:	10							
Mean+:	12.4601							
Median+:	8.681							

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Erie

Collection Date: Apr / 14 / 2008

Location: Off Monroe

VisitID: 2008266

Sample #:	2,3,7,8 -TCDF (ppt)	1,2,3,7,8 -PCDF (ppt)	2,3,4,7,8 -PCDF (ppt)	1,2,3,4,7,8 -HxCDF (ppt)	1,2,3,6,7,8 -HxCDF (ppt)	1,2,3,7,8,9 -HxCDF (ppt)	2,3,4,6,7,8 -HxCDF (ppt)	1,2,3,4,6,7,8 -HpCDF (ppt)	1,2,3,4,7,8,9 -HpCDF (ppt)	OCDF (ppt)
<b>Channel Catfish</b>	<b>Fs</b>									
2008266-S01	1.40 J	1.80 J	3.60 J	0.66 I	I	J	0.49 J	I	K 0.80 J	0.33 J
2008266-S02	0.77 J	1.30 J	1.20 J	0.17 I	I	K 0.04 J	0.19 J	I	K 0.25 K	0.08 K
2008266-S03	0.48 J	0.56 J	0.69 I	I	I	J 0.04 J	0.12 J	I	K 0.09 K	0.05 K
2008266-S04 J	0.32 J	0.46 J	0.64 I	I	I	J 0.05 I	I	I	K 0.10 K	0.06 K
2008266-S05	0.87 J	0.83 J	1.10 J	0.20 I	I	K 0.06 I	I	I	K 0.28 K	0.11 K
2008266-S06	0.48 J	0.54 J	0.82 J	0.11 I	I	I	K 0.06 I	I	K 0.19 K	0.07 K
2008266-S07	1.30	4.10	3.10 I	I	I	K 0.09 J	0.39 J	I	K 0.46 K	0.12 K
2008266-S08	1.30	2.70 I	I	0.56 J	I	J 0.14 I	I	I	K 0.23 K	0.18 K
2008266-S09	1.50 J	0.83	2.40 J	0.35 I	I	K 0.04 I	I	I	K 0.15 K	0.09 K
2008266-S10	1.50	4.70 J	1.50 I	I	I	K 0.07 K	0.13 J	I	K 0.24 K	0.06 K

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Collection Date: Apr / 14 / 2008

Waterbody Name: Lake Erie  
Location: Off Monroe  
VisitID: 2008266

Coplanar  
PCB Congener Number\*\*

Species Sample #	Cong. 077 (ppb)	Cong. 081 (ppb)	Cong. 105 (ppb)	Cong. 114 (ppb)	Cong. 118 (ppb)	Cong. 123 (ppb)	Cong. 126 (ppb)	Cong. 156 (ppb)	Cong. 157 (ppb)	Cong. 167 (ppb)	Cong. 169 (ppb)	Cong. 189 (ppb)
Channel Catfish Fs												
2008266-S01			7.00		22.20			3.60	0.50 K	2.30		
2008266-S02	0.06		5.68	0.52	18.10	0.46	0.07	1.94	0.48	1.32	0.00 J	0.27
2008266-S03	0.05	0.02	3.81	0.34	8.54	0.43	0.05	1.53	0.40	1.04	0.00 J	0.24
2008266-S04	0.02	0.01	2.90	0.26	6.24	0.29	0.03	1.25	0.31	0.79	0.00 J	0.20
2008266-S05	0.05	0.01 J	3.69	0.32	10.30	0.39	0.05	1.65	0.43	1.04	0.00 J	0.27
2008266-S06	0.04	0.02	3.12	0.28	8.73	0.42	0.04	1.47	0.38	1.00	0.00 J	0.26
2008266-S07	0.15	0.03	10.80	0.97	33.70	1.14	0.17	4.64	1.21	3.25	0.01	0.83
2008266-S08	0.08		12.70	1.26	29.70	1.41	0.17	6.22	1.59	4.40	0.01	1.28
2008266-S09	0.13		8.41	0.71	19.80	0.66	0.11	4.08	1.07	2.69	0.01 J	0.79
2008266-S10	0.13		14.80	1.26		1.45	0.17	7.11	1.73	5.05	0.01	1.31
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10	10
Mean+:	0.072	0.015J	7.291	0.592	17.479	0.665	0.085	3.349	0.785*	2.288	0.007J	0.545
Median+:	0.056	0.014	6.340	0.430	18.100	0.448	0.059	2.770	0.455	1.810	0.004J	0.269

C217

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification.  
 a = AHH inducing congener.  
 i = Analytical interference; quantification not possible.  
 j = Estimated value; value may not be precise.  
 K = Undetected at detection level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date:

May / 15 / 2008

Location: Isle Royale

Latitude / Longitude:

47.87569/-88.96268

VisitID: 2008267

Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Lake Trout</b>						
2008267-S01	F			13.8	0.8	
2008267-S02	F			15.3	1.0	
2008267-S03	F			15.3	0.9	
2008267-S04	F			16.2	1.3	
2008267-S05	F			18.4	1.5	
2008267-S06	F			19.3	2.0	
2008267-S07	F			19.5	2.5	
2008267-S08	F			22.6	3.3	
2008267-S09	F	F		23.4	3.7	
2008267-S10	F	M		28.1	6.7	
No. of Samples:				10	10	
Mean+:				19.2	2.4	
Median+:				18.9	1.7	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: May / 15 / 2008

Location: Isle Royale

VisitID: 2008267

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Lake Trout</b>	<b>F</b>							
2008267-S01	0.60	0.089						0.002
2008267-S02	1.20	0.083						0.007
2008267-S03	1.10	0.130						0.014
2008267-S04	1.60	0.110						0.016
2008267-S05	0.70	0.184						0.016
2008267-S06	6.60	0.256						0.095
2008267-S07	3.90	0.135						0.042
2008267-S08	2.60	0.404						0.123
2008267-S09	0.20	0.228						0.012
2008267-S10	3.70	0.679						0.263
<b>No. of Samples:</b>	10	10						10
<b>Mean+:</b>	2.22	0.2298						0.059
<b>Median+:</b>	1.40	0.160						0.016

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: May / 15 / 2008

Location: Isle Royale

VisitID: 2008267

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Lake Trout</b>	<b>F</b>					
2008267-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008267-S02	0.001 K	0.001 K	0.002	0.001 K	0.001 K	0.002
2008267-S03	0.001 K	0.001 K	0.002	0.001	0.001 K	0.003
2008267-S04	0.001 K	0.001 K	0.001	0.002	0.001 K	0.003
2008267-S05	0.001 K	0.001 K	0.002	0.002	0.001 K	0.004
2008267-S06	0.004	0.001 K	0.015	0.015	0.001 K	0.034
2008267-S07	0.001 K	0.001 K	0.004	0.004	0.001 K	0.008
2008267-S08	0.001	0.001 K	0.009	0.010	0.002	0.022
2008267-S09	0.001 K	0.001 K	0.001	0.001	0.001 K	0.002
2008267-S10	0.003	0.001 K	0.015	0.018	0.003	0.039
No. of Samples:						10
Mean+:						0.0118 *
Median+:						0.004

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior  
Location: Isle Royale  
VisitID: 2008267

Collection Date: May / 15 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2008267-S01	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008267-S02	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008267-S03	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008267-S04	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008267-S05	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008267-S06	0.001 K	0.033	I	0.001 K		0.001 K	0.033
2008267-S07	0.001 K	0.012	I	0.001 K		0.001 K	0.012
2008267-S08	0.001 K	0.031	I	0.001 K		0.001 K	0.031
2008267-S09	0.001 K	0.005	I	0.001 K		0.001 K	0.005
2008267-S10	0.001 K	0.065	I	I		0.002	0.067
No. of Samples:							10
Mean+:							0.0163
Median+:							0.005

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: May / 15 / 2008

Location: Isle Royale

VisitID: 2008267

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor. (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2008267-S01	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S02	0.050 K	0.001 K	0.002 J	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S03	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S04	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S06	0.050 K	0.001 K	0.010 J	0.001 K	0.137	0.001 K	0.250 K
2008267-S07	0.050 K	0.001 K	0.002 J	0.001 K	0.001	0.001 K	0.250 K
2008267-S08	0.050 K	0.001 K	0.002 J	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008267-S10	0.050 K	0.001 K	I	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.0005 *	0.0022 J*	0.0005 *	0.0142 *	0.0005*	0.125 *
Median+:	0.050 K	0.001 K	0.001 J	0.001 K	0.001 K	0.001K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: May / 15 / 2008

Location: Isle Royale

VisitID: 2008267

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2008267-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S06	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008267-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2008267-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001K	0.001 K
2008267-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.002	0.002
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.0007 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0008 *	0.0007 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior  
Location: Isle Royale  
VisitID: 2008267

Collection Date: May / 15 / 2008

**PBDE Congener Number\*\***

Species Sample #	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)	Total PBDE (ppb)
Lake Trout	F									
2008267-S01	1.00 K									
2008267-S02	1.00 K	1.30	1.00 K	1.30						
2008267-S03	1.00 K	2.20	1.00 K	2.20						
2008267-S04	1.00 K	2.50	1.00 K	2.50						
2008267-S05	1.00 K	3.20	1.00 K	1.00 K	1.00 K	1.60	1.00	1.00 K	1.00 K	5.80
2008267-S06	1.00 K	13.30	I	I	1.00 K	4.80	3.00	1.00 K	1.30	22.40
2008267-S07	1.00 K	5.60	1.00 K	1.00 K	1.00 K	1.90	1.60	1.00 K	1.00 K	9.10
2008267-S08	1.00 K	10.80	1.00	1.00 K	1.00 K	5.40	3.60	1.00 K	1.70	22.50
2008267-S09	1.00 K	2.20	1.00 K	2.20						
2008267-S10	1.00 K	24.80	2.20	I	1.00 K	14.50	8.40	2.00	3.70	55.60
No. of Samples:	10	10	10	10	10	10	10	10	10	10
Mean+:	0.500 *	6.640 *	0.7444 *	0.500 *	0.500 *	3.070 *	2.010 *	0.650 *	1.020 *	12.410 *
Median+:	1.000 K	2.850	1.000 K	1.000 K	1.000 K	1.300	1.000	1.000 K	1.000 K	4.150

Q224

@ = Mean and median are calculated using duplicate #1 only.  
+ = Calculated value; not rounded to appropriate number of significant digits.  
\*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
\* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
I = Analytical interference; quantification not possible.  
J = Estimated value; value may not be precise.  
K = Concentration below quantification level shown.  
T = Analysis not conducted due to technical error.  
NQ = Does not meet all quantification requirements.  
RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date:

Jun / 01 / 2008

Location: Munising

Latitude / Longitude:

46.5101/-86.5686

VisitID: 2008268

Notes:

Species	Sample Type	Sex	Age	Length+ (in)	Weight+ (lb)	Comment
<b>Lake Trout</b>						
	2008268-S01	F		16.5	1.6	
	2008268-S02	F		19.4	2.2	
	2008268-S03	F		19.5	2.6	
	2008268-S04	F		19.0	2.4	
	2008268-S05	F	F	20.6	2.6	
	2008268-S06	F	F	22.0	2.8	
	2008268-S07	F	M	22.1	3.7	
	2008268-S08	F	F	22.6	4.0	
	2008268-S09	F	M	24.5	4.7	
No. of Samples:				9	9	
Mean+:				20.7	3.0	
Median+:				20.6	2.6	

F = skin-on fillet  
 Fs = skin-off fillet  
 E = egg only  
 W = whole fish  
 O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: Jun / 01 / 2008

Location: Munising

VisitID: 2008268

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
<b>Lake Trout</b>	<b>F</b>							
2008268-S01	0.90	0.148						0.004
2008268-S02	3.80	0.104						0.020
2008268-S03	3.70	0.082						0.012
2008268-S04	4.60	0.178						0.030
2008268-S05	3.80	0.127						0.022
2008268-S06	2.60	0.410						0.061
2008268-S07	6.80	0.160						0.019
2008268-S08	2.70	0.188						0.019
2008268-S09	4.20	0.142						0.030
<b>No. of Samples:</b>	<b>9</b>	<b>9</b>						<b>9</b>
<b>Mean+:</b>	<b>3.68</b>	<b>0.171</b>						<b>0.0241</b>
<b>Median+:</b>	<b>3.80</b>	<b>0.140</b>						<b>0.020</b>

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: Jun / 01 / 2008

Location: Munising

VisitID: 2008268

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Lake Trout</b>	<b>F</b>					
2008268-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S02	0.001 K	0.001 K	0.003	0.002	0.001 K	0.005
2008268-S03	0.001 K	0.001 K	0.002	0.002	0.001 K	0.004
2008268-S04	0.001	0.001 K	0.004	0.003	0.001	0.009
2008268-S05	0.001 K	0.001 K	0.003	0.002	0.001 K	0.005
2008268-S06	0.001 K	0.001 K	0.008	0.007	0.002	0.017
2008268-S07	0.002	0.001 K	0.005	0.004	0.001	0.012
2008268-S08	0.001 K	0.001 K	0.003	0.003	0.001 K	0.006
2008268-S09	0.001	0.001 K	0.004	0.003	0.001 K	0.008
No. of Samples:						9
Mean+:						0.0074 *
Median+:						0.006

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior  
Location: Munising  
VisitID: 2008268

Collection Date: Jun / 01 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2008268-S01	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008268-S02	0.001 K	0.007	0.001	0.001 K		0.001 K	0.008
2008268-S03	0.001 K	0.004	I	0.001 K		0.001 K	0.004
2008268-S04	0.001 K	0.010	0.001	0.001 K		0.001 K	0.011
2008268-S05	0.001 K	0.008	I	0.001 K		0.001 K	0.008
2008268-S06	0.001 K	0.020	I	0.001 K		0.001 K	0.020
2008268-S07	0.001 K	0.010	I	J		0.001 K	0.010
2008268-S08	0.001 K	0.007	I	0.001 K		0.001 K	0.007
2008268-S09	0.001 K	0.003	I	0.001 K		0.001 K	0.009
No. of Samples:							9
Mean+:							0.0087
Median+:							0.008

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: Jun / 01 / 2008

Location: Munising

VisitID: 2008268

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2008268-S01	0.050 K	0.001 K	0.001	0.001	0.001 K	0.001 K	0.250 K
2008268-S02	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008268-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008268-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008268-S05	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008268-S06	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008268-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.002	0.001 K	0.250 K
2008268-S08	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008268-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	9	9	9	9	9	9	9
Mean+:	0.025 *	0.0005 *	0.0009 *	0.0006 *	0.0007 *	0.0005 *	0.125 *
Median+:	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior

Collection Date: Jun / 01 / 2008

Location: Munising

VisitID: 2008268

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2008268-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008268-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	9	9	9	9	9	9	9
Mean+:	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *	0.0005 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Superior  
 Location: Munising  
 VisitID: 2008268  
 Collection Date: Jun / 01 / 2008

Species Sample #	PBDE Congener Number**										Total PBDE (ppb)		
	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)	Cong. 154 (ppb)			
Lake Trout	F												
2008268-S01	1.00 K	1.10	1.00 K	1.00 K	1.10								
2008268-S02	1.00 K	3.80	1.00 K	1.00 K	1.00 K	1.30	1.00 K	1.00 K	5.10				
2008268-S03	1.00 K	3.00	1.00 K	0.00 K	1.00 K	1.10	1.00 K	1.00 K	4.10				
2008268-S04	1.00 K	4.60	1.00 K	1.00 K	1.00 K	2.00	1.10	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	7.70
2008268-S05	1.00 K	4.00	1.00 K	1.00 K	1.00 K	1.50	1.00	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	6.50
2008268-S06	1.00 K	9.40	1.00 K	1.00 K	1.00 K	5.40	2.80	1.00 K	1.00 K	1.10	1.10	1.10	18.70
2008268-S07	I	5.60	1.00 K	1.00 K	1.00 K	1.90	1.30	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	8.80
2008268-S08	1.00 K	3.80	1.00 K	1.00 K	1.00 K	1.80	1.00	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	6.60
2008268-S09	1.00 K	4.40	1.00 K	1.00 K	1.00 K	1.80	1.10	1.00 K	1.00 K	1.00 K	1.00 K	1.00 K	7.30
No. of Samples:	9	9	9	9	9	9	9	9	9	9	9	9	9
Mean±:	0.500 *	4.4111	0.500 *	0.4445 *	0.500 *	1.9222 *	1.0889 *	0.500 *	0.5667 *	0.5667 *	0.5667 *	0.5667 *	7.3222
Median±:	1.000 K	4.000	1.000 K	1.000 K	1.000 K	1.800	1.000	1.000 K	1.000 K	1.000 K	1.000 K	1.000 K	6.600

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Concentration below quantification level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron	Collection Date: Sep / 12 / 2008
Location: Saginaw Bay	Latitude / Longitude:: 43.783/-83.4362
VisitID: 2008271	Notes:

Species	Sample	Sex	Age	Length+	Weight+	Comment
Sample#:	Type			(in)	(lb)	
<b>Walleye</b>						
2008271-S01	F	F		15.9	1.2	
2008271-S02	F	F		16.4	1.4	
2008271-S03	F	F		16.4	1.4	
2008271-S04	F	F		16.5	1.5	
2008271-S05	F	f		18.5	2.0	
2008271-S06	F	F		18.5	2.1	
2008271-S07	F	F		18.2	1.9	
2008271-S08	F	F		19.4	2.2	
2008271-S09	F	F		19.1	2.3	
2008271-S10	F	F		20.8	2.7	
No. of Samples:				10	10	
Mean+:				18.0	1.9	
Median+:				18.4	1.9	
<b>White Bass</b>						
2008271-S11	F	F		9.6	0.5	
2008271-S12	F	F		10.7	0.7	
2008271-S13	F	M		12.1	0.9	
2008271-S14	F	M		12.7	1.1	
2008271-S15	F	M		12.6	1.0	
2008271-S16	F	M		12.7	1.1	
2008271-S17	F	F		13.0	1.1	
2008271-S18	F	F		13.3	1.3	
2008271-S19	F	F		13.8	1.5	
2008271-S20	F	F		13.9	1.3	
No. of Samples:				10	10	
Mean+:				12.4	1.0	
Median+:				12.7	1.1	

F = skin-on fillet  
Fs = skin-off fillet  
E = egg only  
W = whole fish  
O = other

+ = Calculated value; may not be rounded to appropriate number of significant digits.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
Location: Saginaw Bay  
VisitID: 2008271

Collection Date: Sep / 12 / 2008

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Walleye</b>		<b>F</b>						
2008271-S01	0.10	0.079						0.005
2008271-S02	0.20	0.088						0.006
2008271-S03	0.20	0.029						0.008
2008271-S04	0.30	0.114						0.014
2008271-S05	0.20	0.156						0.015
2008271-S06	0.20	0.209						0.022
2008271-S07	0.40	0.104						0.023
2008271-S08	0.50	0.143						0.025
2008271-S09	0.30	0.157						0.035
2008271-S10	0.20	0.162						0.024
No. of Samples:		10	10					10
Mean+:		0.26	0.124					0.018
Median+:		0.20	0.129					0.019
<b>White Bass</b>		<b>F</b>						
2008271-S11	2.80	0.044						0.151
2008271-S12	4.10	0.052						0.069
2008271-S13	3.60	0.044						0.315
2008271-S14	6.30	0.189						0.503
2008271-S15	1.30	0.176						0.097
2008271-S16	6.00	0.195						0.465
2008271-S17	4.20	0.208						0.301
2008271-S18	7.20	0.173						0.440
2008271-S19	3.30	0.215						0.218
2008271-S20	3.90	0.274						0.250
No. of Samples:		10	10					10
Mean+:		4.27	0.157					0.281
Median+:		4.00	0.183					0.276

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
Location: Saginaw Bay  
VisitID: 2008271

Collection Date: Sep / 12 / 2008

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Walleye</b>						
	F					
2008271-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K
<b>White Bass</b>						
	F					
2008271-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S13	0.001 K	0.001 K	I	0.002	0.001 K	0.002
2008271-S14	0.001 K	0.001 K	I	0.002	0.001 K	0.002
2008271-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S16	0.001 K	0.001 K	I	0.002	0.001 K	0.002
2008271-S17	0.001 K	0.001 K	I	0.001	0.001 K	0.001
2008271-S18	0.001 K	0.001 K	I	0.002	0.001 K	0.002
2008271-S19	0.001 K	0.001 K	I	0.001	0.001 K	0.001
2008271-S20	0.001 K	0.001 K	I	0.001	0.001 K	0.001
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
Location: Saginaw Bay  
VisitID: 2008271

Collection Date: Sep / 12 / 2008

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Walleye</b>							
	F						
2008271-S01	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008271-S02	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008271-S03	0.001 K	0.001 K	0.001 K	0.001 K		0.001 K	0.001 K
2008271-S04	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008271-S05	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008271-S06	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008271-S07	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008271-S08	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008271-S09	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
2008271-S10	0.001 K	0.001	0.001 K	0.001 K		0.001 K	0.001
No. of Samples:							10
Mean+:							0.001 *
Median+:							0.001
<b>White Bass</b>							
	F						
2008271-S11	0.003	0.005	0.001 K	0.001 K		0.001 K	0.008
2008271-S12	0.002	0.004	0.001 K	0.001 K		0.001 K	0.006
2008271-S13	0.005	0.014	0.001 K	0.001 K		0.001 K	0.019
2008271-S14	0.011	0.032	0.001 K	0.002		0.001 K	0.045
2008271-S15	0.002	0.005	0.001 K	0.001 K		0.001 K	0.007
2008271-S16	0.008	0.030	0.001 K	0.001 K		0.001 K	0.038
2008271-S17	0.006	0.021	0.001 K	0.001 K		0.001 K	0.027
2008271-S18	0.012	0.039	0.001	0.002		0.001 K	0.054
2008271-S19	0.003	0.011	0.001 K	0.001 K		0.001 K	0.014
2008271-S20	0.004	0.015	0.001 K	0.001 K		0.001 K	0.019
No. of Samples:							10
Mean+:							0.024
Median+:							0.019

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
Location: Saginaw Bay  
VisitID: 2008271

Collection Date: Sep / 12 / 2008

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Walleye</b>							
	F						
2008271-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
<b>White Bass</b>							
	F						
2008271-S11	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S12	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S13	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S14	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S15	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S16	0.050 K	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S17	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S18	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S19	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008271-S20	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
Location: Saginaw Bay  
VisitID: 2008271

Collection Date: Sep / 12 / 2008

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Walleye F</b>							
2008271-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
<b>White Bass F</b>							
2008271-S11	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S12	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S13	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S14	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S15	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S16	0.001 K	0.001	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S17	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S18	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S19	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008271-S20	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING**  
**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron  
 Location: Saginaw Bay  
 VisitID: 2008271

Collection Date: Sep / 12 / 2008

Species Sample #	Total Dioxin Toxic Equivalents+ (ppt)	2,3,7,8- TCDD (ppt)	1,2,3,7,8- PCDD (ppt)	1,2,3,4,7,8- HxCDD (ppt)	1,2,3,6,7,8- HxCDD (ppt)	1,2,3,7,8,9- HxCDD (ppt)	1,2,3,4,6,7,8- HpCDD (ppt)	OCDD (ppt)
<b>Walleye</b>	<b>F</b>							
2008271-S01	1.35	J 0.13	K 0.06	I	K 0.09	K 0.05	I	J 0.74
2008271-S02	2.20	J 0.24	J 0.12	I	K 0.09	K 0.06	I	J 0.64
2008271-S03	3.25	J 0.27	I	I	J 0.10	K 0.11	I	I
2008271-S04	3.26	J 0.22	J 0.13	I	K 0.10	K 0.10	I	J 0.93
2008271-S05	2.67	J 0.32	J 0.18	I	K 0.09	K 0.09	J 0.11	J 0.63
2008271-S06	4.13	J 0.31	J 0.20	I	J 0.14	K 0.12	K 0.08	J 0.65
2008271-S07	3.56	J 0.30	J 0.18	I	K 0.15	K 0.10	J 0.13	J 0.69
2008271-S08	4.69	0.47	J 0.21	I	I	K 0.08	I	I
2008271-S09	4.37	0.50	J 0.23	I	K 0.09	K 0.08	I	J 0.67
2008271-S10	6.50	0.45	I	I	I	K 0.17	I	J 0.94

No. of Samples: 10  
 Mean+: 3.5976  
 Median+: 3.414

<b>White Bass</b>	<b>F</b>							
2008271-S11	4.70	J 0.30	J 0.16	I	I	K 0.08	I	J 0.71
2008271-S12	10.93	0.74	I	I	J 0.37	K 0.08	J 0.30	J 0.76
2008271-S13	18.32	1.40	J 0.95	I	J 0.48	K 0.11	I	J 0.93
2008271-S14	5.38	J 0.16	J 0.24	I	I	K 0.10	J 0.28	I
2008271-S15	17.57	1.20	J 0.75	I	I	K 0.11	I	J 0.97
2008271-S16	11.97	0.83	J 0.56	I	I	K 0.08	I	J 3.20
2008271-S17	18.03	1.10	J 0.76	I	I	K 0.15	J 0.42	J 1.00
2008271-S18	11.35	0.77	J 0.61	I	I	K 0.12	I	J 1.60
2008271-S19	8.40	0.50	J 0.39	I	J 0.29	K 0.19	J 0.38	J 1.10
2008271-S20	2.58	J 0.23	I	K 0.09	I	K 0.09	J 0.39	J 1.20

No. of Samples: 10  
 Mean+: 10.9224  
 Median+: 11.141

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING**  
**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Huron

Collection Date: Sep / 12 / 2008

Location: Saginaw Bay

VisitID: 2008271

Sample #:	2,3,7,8 -TCDF (ppt)	1,2,3,7,8 -PCDF (ppt)	2,3,4,7,8 -PCDF (ppt)	1,2,3,4,7,8 -HxCDF (ppt)	1,2,3,6,7,8 -HxCDF (ppt)	1,2,3,7,8,9 -HxCDF (ppt)	2,3,4,6,7,8 -HxCDF (ppt)	1,2,3,4,6,7,8 -HpCDF (ppt)	1,2,3,4,7,8,9 -HpCDF (ppt)	OCDF (ppt)							
<b>Walleye</b>																	
	<b>F</b>																
2008271-S01	1.20	I	I	K	0.04	I	K	0.04	K	0.04	I						
2008271-S02	2.30	J	0.42	J	0.26	K	0.05	I	K	0.05	K	0.05	J	0.19			
2008271-S03	4.80	J	0.55	J	0.39	K	0.05	I	K	0.06	K	0.06	J	0.25			
2008271-S04	3.20	J	0.45	J	0.29	K	0.08	I	K	0.06	K	0.08	J	0.23			
2008271-S05	2.80	J	0.42	I		K	0.07	I	K	0.07	K	0.07	J	0.13			
2008271-S06	4.80	J	0.65	J	0.50	K	0.06	I	K	0.06	K	0.10	J	0.17			
2008271-S07	5.10	J	0.51	J	0.33	K	0.09	I	K	0.05	K	0.06	I				
2008271-S08	6.50	J	0.64	J	0.46	K	0.20	I	K	0.07	K	0.08	I				
2008271-S09	5.40	J	0.62	J	0.46	K	0.09	I	K	0.07	J	0.08	I				
2008271-S10	8.40	J	0.91	J	1.30	K	0.11	I	K	0.07	K	0.10	J	0.54			
<b>White Bass</b>																	
	<b>F</b>																
2008271-S11	3.60	J	0.79	J	0.88	K	0.08	I	K	0.06	J	0.11	I	K	0.12	J	0.26
2008271-S12	9.90	J	1.50	J	1.90	K	0.12	I	K	0.07	K	0.07	I	K	0.06	J	0.30
2008271-S13	26.00		3.90		2.00	J	0.53	I	K	0.12	I		I	K	0.10	J	0.17
2008271-S14	4.20	J	0.55	J	0.77	K	0.11	I	K	0.13	K	0.13	I	K	0.11	I	
2008271-S15	22.00	J	1.90		2.80	J	0.33	I	K	0.10	J	0.21	I	K	0.09	J	0.18
2008271-S16	12.00	J	1.30		2.00	K	0.08	I	K	0.08	I		I	K	0.09	I	
2008271-S17	21.00		2.70		3.30	J	0.49	I	K	0.10	J	0.29	I	K	0.12	J	0.12
2008271-S18	15.00	J	1.70	J	1.90	J	0.38	I	K	0.09	K	0.16	I	K	0.16	K	0.08
2008271-S19	11.00	J	1.20	J	1.40	K	0.14	I	K	0.11	K	0.14	I	K	0.11	J	0.17
2008271-S20	2.60	I		J	0.39	K	0.05	I	K	0.07	K	0.06	I	K	0.08	K	0.09

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
I = analytical interference; quantification not possible  
J = estimated value; value may not be precise  
K = undetected at detection level shown  
T = analysis not conducted due to technical error  
N or # = does not meet all quantification requirements

FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

Collection Date: Sep / 12 / 2008

Waterbody Name: Lake Huron  
Location: Saginaw Bay  
VisitID: 2008271

Coplanar  
PCB Congener Number\*\*

Species	Cong. 077 (ppb)	Cong. 081 (ppb)	Cong. 105 (ppb)	Cong. 114 (ppb)	Cong. 118 (ppb)	Cong. 123 (ppb)	Cong. 126 (ppb)	Cong. 156 (ppb)	Cong. 157 (ppb)	Cong. 167 (ppb)	Cong. 169 (ppb)	Cong. 189 (ppb)
<b>Walleye</b>												
2008271-S01	0.08	0.01 J	0.92	0.07	2.07	0.09	0.01 J	0.18	0.05	0.09	0.00 J	0.02
2008271-S02	0.13	I	1.67	0.12	3.76	0.16	0.01	0.30	0.07	0.15	0.00 J	0.03
2008271-S03	0.26	0.01	2.38	0.16	5.33	0.23	0.02	0.39	0.10	0.20	0.00 J	0.04
2008271-S04	0.19	0.01	2.48	0.19	5.65	0.25	0.02	0.48	0.10	0.23	0.00 J	0.05
2008271-S05	0.11	0.01 J	1.92	0.16	4.39	0.22	0.02	0.41	0.09	0.21	0.00 J	0.05
2008271-S06	0.25	0.02	2.72	0.20	6.02	0.17	0.03	0.51	0.11	0.23	0.00 J	0.05
2008271-S07	0.25	0.01 J	2.36	0.17	5.35	0.25	0.02	0.43	0.10	0.22	0.00 J	0.04
2008271-S08	0.27	0.02	2.74	0.22	6.51	0.26	0.03	0.56	0.13	0.27	0.00 J	0.07
2008271-S09	0.24	0.01	2.81	0.21	6.03	0.31	0.03	0.50	0.12	0.25	0.00 J	0.05
2008271-S10	0.48	0.02	4.44	0.35	10.00	0.47	0.04	0.79	0.19	0.36	0.00 J	0.08
<b>No. of Samples:</b>	10	10	10	10	10	10	10	10	10	10	10	10
<b>Mean+:</b>	0.225	0.014 J	2.444	0.184*	5.511	0.241	0.022 J	0.455	0.106	0.222	0.001 J	0.049
<b>Median+:</b>	0.243	0.014	2.430	0.180	5.500	0.237	0.021	0.452	0.101	0.226	0.001 J	0.048
<b>White Bass</b>												
2008271-S11	0.28	0.01 J	2.97	0.24	6.72	0.33	0.03	0.62	0.14	0.31	0.00 J	0.07
2008271-S12	0.67	0.03	7.50	0.67	18.20	0.79	0.07	1.64	0.39	0.88	0.00 J	0.18
2008271-S13	1.28	0.05	11.40	0.91	26.00	1.25	0.11	2.10	0.51	1.17	0.01 J	0.24
2008271-S14	0.29	I	2.84	0.23	6.97	0.28	0.04	0.88	0.23	0.59	0.00 J	0.13
2008271-S15	1.33	0.06	11.00	0.88	25.10	0.99	0.11	2.38	0.55	1.35	0.01 J	0.30
2008271-S16	0.77	0.03	7.37	0.63	17.70	0.78	0.08	1.61	0.41	0.87	0.01 J	0.21

C240

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification.  
 a = AHH inducing congener.  
 J = Analytical interference; quantification not possible.  
 K = Estimated value; value may not be precise.  
 T = Undetected at detection level shown.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.

Waterbody Name: Lake Huron  
 Location: Saginaw Bay  
 VisitID: 2008271

Collection Date: Sep / 12 / 2008

Coplanar  
 PCB Congener Number\*\*

Species Sample #	Cong. 077 (ppb)	Cong. 081 (ppb)	Cong. 105 (ppb)	Cong. 114 (ppb)	Cong. 118 (ppb)	Cong. 123 (ppb)	Cong. 126 (ppb)	Cong. 156 (ppb)	Cong. 157 (ppb)	Cong. 167 (ppb)	Cong. 169 (ppb)	Cong. 189 (ppb)
2008271-S17	1.17	0.06	10.70	0.91	27.30	1.32	0.11	2.36	0.54	1.20	0.01 J	0.27
2008271-S18	0.76	0.03	5.87	0.50	13.70	0.74	0.07	1.43	0.36	0.85	0.00 J	0.20
2008271-S19	0.64	0.03	5.45	0.46	13.40	0.73	0.05	1.14	0.26	0.62	0.00 J	0.13
2008271-S20	0.10	I	2.25	0.16	8.57	0.23	0.02	0.99	0.21	0.50	0.00 J	0.04
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10	10
Mean+:	0.728	0.040 J	6.735	0.559	16.366	0.744	0.068	1.514	0.360	0.832	0.005 J	0.178
Median+:	0.712	0.034	6.620	0.563	15.700	0.762	0.071	1.520	0.375	0.856	0.005 J	0.192

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 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification.  
 a = AHH inducing congener.  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Undetected at detection level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.





**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Oct / 13 / 2008

Location: Lowell Impoundment

VisitID: 2008273

Sample #:	% Fat	Mercury (mg/kg)	PCB A-1242 (mg/kg)	PCB A-1248 (mg/kg)	PCB A-1254 (mg/kg)	PCB A-1260 (mg/kg)	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
<b>Carp</b>	<b>Fs</b>							
2008273-S01	1.80	0.207						0.097
2008273-S02	3.80	0.069						0.213
2008273-S03	1.30	0.063						0.050
2008273-S04	1.10	0.032						0.108
2008273-S05	1.80	0.086						0.183
2008273-S06	5.20	0.195						0.168
2008273-S07	3.40	0.210						0.149
2008273-S08	1.30	0.055						0.087
2008273-S09	9.10	0.102						0.303
2008273-S10	5.40	0.110						0.121
No. of Samples:	10	10						10
Mean+:	3.42	0.113						0.148
Median+:	2.60	0.094						0.135

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Oct / 13 / 2008

Location: Lowell Impoundment

VisitID: 2008273

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Carp</b>	<b>Fs</b>					
2008273-S01	0.002	0.001 K	0.001 K	0.002	0.001 K	0.004
2008273-S02	0.002	0.001	I	0.002	0.001 K	0.005
2008273-S03	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008273-S04	0.001	0.001 K	0.001 K	0.001	0.001 K	0.002
2008273-S05	0.001 K	0.001 K	0.001 K	0.001	0.001 K	0.001
2008273-S06	0.002	0.001 K	0.002	0.003	0.001 K	0.007
2008273-S07	0.001	0.001 K	0.001	0.002	0.001 K	0.004
2008273-S08	0.001	0.001 K	0.001 K	0.002	0.001 K	0.003
2008273-S09	0.003	0.002	0.003	0.006	I	0.014
2008273-S10	0.001	0.001 K	0.002	0.003	0.001 K	0.006
No. of Samples:						10
Mean+:						0.005
Median+:						0.004

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Oct / 13 / 2008

Location: Lowell Impoundment

VisitID: 2008273

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008273-S01	0.004	0.024	0.001 K	0.001 K		0.001 K	0.028
2008273-S02	0.005	0.032	0.001 K	0.001		0.001 K	0.038
2008273-S03	0.002	0.013	0.001 K	0.001 K		0.001 K	0.015
2008273-S04	0.003	0.016	0.001 K	0.001 K		0.001 K	0.019
2008273-S05	0.003	0.031	0.001 K	0.001 K		0.001 K	0.034
2008273-S06	0.005	0.028	0.001 K	0.001 K		0.001 K	0.033
2008273-S07	0.004	0.026	0.001 K	0.001 K		0.001 K	0.030
2008273-S08	0.004	0.021	0.001 K	0.001 K		0.001 K	0.025
2008273-S09	0.010	0.058	0.001 K	0.001		0.001 K	0.069
2008273-S10	0.004	0.024	0.001 K	0.001 K		0.001 K	0.028
No. of Samples:							10
Mean+:							0.032
Median+:							0.029

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Oct / 13 / 2008

Location: Lowell Impoundment

VisitID: 2008273

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008273-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008273-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River

Collection Date: Oct / 13 / 2008

Location: Lowell Impoundment

VisitID: 2008273

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Carp</b>	<b>Fs</b>						
2008273-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001
2008273-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008273-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Flat River  
 Location: Lowell Impoundment  
 VisitID: 2008273  
 Collection Date: Oct / 13 / 2008

Species Sample #	PBDE Congener Number**										Total PBDE (ppb)
	Cong. 028 (ppb)	Cong. 047 (ppb)	Cong. 066 (ppb)	Cong. 077 (ppb)	Cong. 085 (ppb)	Cong. 099 (ppb)	Cong. 100 (ppb)	Cong. 153 (ppb)	Cong. 154 (ppb)		
<b>Carp</b>											
2008273-S01	1.00 K	3.00	1.00 K	1.00 K	3.00						
2008273-S02	1.00 K	4.80	1.00 K	I	1.00 K	1.00 K	4.80				
2008273-S03	1.00 K	2.70	1.00 K	1.00 K	2.70						
2008273-S04	1.00 K	2.10	1.00 K	1.00 K	2.10						
2008273-S05	1.00	5.40	1.00 K	1.00 K	6.40						
2008273-S06	1.00	8.40	1.00 K	1.00 K	1.00 K	1.00 K	I	1.00 K	1.00 K	1.00 K	9.40
2008273-S07	1.10	6.40	1.00 K	1.00 K	1.00 K	1.00 K	I	1.00 K	1.00 K	1.00 K	7.50
2008273-S08	1.00 K	2.60	1.00 K	1.00 K	2.60						
2008273-S09	2.50	19.60	1.00 K	1.00 K	1.00 K	1.00 K	2.40	1.00 K	1.00 K	1.00 K	24.50
2008273-S10	1.00	9.20	1.00 K	1.00 K	1.00 K	1.00 K	1.30	1.00 K	1.00 K	1.00 K	11.50
No. of Samples:	10	10	10	10	10	10	10	10	10	10	10
Mean±:	0.910 *	6.420	0.500 *	0.500 *	0.500 *	0.500 *	0.837 *	0.500 *	0.500 *	0.500 *	7.450
Median±:	1.000	5.100	1.000 K	1.000 K	5.600						

C249

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Concentration below quantification level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008280

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
<b>Smallmouth Bass</b>		<b>F</b>						
2008280-S01	0.70	0.225						0.018
2008280-S02	0.60	0.440						0.016
2008280-S03	0.30	0.295						0.012
2008280-S04	0.30	0.393						0.010
2008280-S05	0.30	0.492						0.008
2008280-S06	0.50	0.643						0.014
2008280-S07	0.30	0.580						0.006
2008280-S08	0.50	0.525						0.011
2008280-S09	0.30	0.276						0.006
2008280-S10	0.20	0.432						0.017
No. of Samples:	10	10						10
Mean+:	0.40	0.430						0.012
Median+:	0.30	0.436						0.012

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008280

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Smallmouth Bass F</b>						
2008280-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:						10
Mean+:						0.001 *
Median+:						0.001 K

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008280

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Smallmouth Bass F</b>							
2008280-S01	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008280-S02	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008280-S03	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008280-S04	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008280-S05	0.001 K	0.002	0.001 K	0.001 K		0.001 K	0.002
2008280-S06	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
2008280-S07	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008280-S08	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008280-S09	0.001 K	0.003	0.001 K	0.001 K		0.001 K	0.003
2008280-S10	0.001 K	0.004	0.001 K	0.001 K		0.001 K	0.004
No. of Samples:							10
Mean+:							0.003
Median+:							0.003

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008280

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Smallmouth Bass F</b>							
2008280-S01	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S02	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S03	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S04	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S05	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S06	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S07	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S08	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S09	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
2008280-S10	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.025 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Lake Michigan

Collection Date: Apr / 22 / 2008

Location: Little Bay De Noc

VisitID: 2008280

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Smallmouth Bass F</b>							
2008280-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S02	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S03	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S04	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S05	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S06	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S07	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S08	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S09	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2008280-S10	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
No. of Samples:	10	10	10	10	10	10	10
Mean+:	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *	0.001 *
Median+:	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K

+ = Calculated value; not rounded to appropriate number of significant digits.

i = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.



**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Sample #:	% Fat	Mercury (mg/kg)	PCB	PCB	PCB	PCB	Total PCB (Arochlor) (mg/kg)	Total PCB (Congeners) (mg/kg)
			A-1242 (mg/kg)	A-1248 (mg/kg)	A-1254 (mg/kg)	A-1260 (mg/kg)		
<b>Lake Trout</b>	<b>F</b>							
2009300-S01	2.10	0.435						0.061
2009300-S02	11.00	0.722						0.188
2009300-S03	11.60	0.646						0.189
2009300-S04	12.20	0.718						0.264
2009300-S05	7.90	1.343						0.337
2009300-S06	10.70	0.581						0.155
2009300-S07	5.80	1.129						0.638
2009300-S08	6.90	1.409						0.362
2009300-S09	6.80	1.442						0.436
2009300-S10	6.00	1.030						0.487
2009300-S11	5.90	1.349						0.497
No. of Samples:	11	11						11
Mean+:	7.90	0.982						0.329
Median+:	6.90	1.030						0.337

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Sample #:	a-Chlordane (mg/kg)	g-Chlordane (mg/kg)	cis- Nonachlor (mg/kg)	trans- Nonachlor (mg/kg)	Oxy- Chlordane (mg/kg)	Total Chlordane+ (mg/kg)
<b>Lake Trout</b>	<b>F</b>					
2009300-S01	0.001	0.001 K	0.004	0.007	0.001 K	0.012
2009300-S02	0.006	0.002	0.015	0.027	0.003	0.053
2009300-S03	0.006	0.001 K	0.015	0.030	0.003	0.054
2009300-S04	0.009	0.002	0.020	0.034	0.004	0.069
2009300-S05	0.007	0.001 K	0.042	0.043	0.006	0.098
2009300-S06	0.005	0.001 K	0.012	0.019	0.002	0.038
2009300-S07	0.008	0.001 K	0.055	0.085	0.010	0.158
2009300-S08	0.006	0.001 K	0.028	0.049	0.007	0.090
2009300-S09	0.008	0.001 K	0.031	0.060	0.009	0.108
2009300-S10	0.007	0.001 K	0.029	0.058	0.004	0.098
2009300-S11	0.007	0.001 K	0.035	0.059	0.005	0.106
No. of Samples:						11
Mean+:						0.080
Median+:						0.090

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Sample #:	4,4'-DDD (mg/kg)	4,4'-DDE (mg/kg)	4,4'-DDT (mg/kg)	2,4'-DDD (mg/kg)	2,4'-DDE (mg/kg)	2,4'-DDT (mg/kg)	Total DDT@+ (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2009300-S01	0.002	0.074	0.006	0.001 K		0.001 K	0.082
2009300-S02	0.005	0.270	0.022	0.001 K		0.002	0.299
2009300-S03	0.007	0.249	0.026	0.001 K		0.004	0.286
2009300-S04	0.008	0.336	0.030	0.001 K		0.005	0.379
2009300-S05	0.006	0.487	0.030	0.001 K		0.004	0.527
2009300-S06	0.005	0.198	0.019	0.001 K		0.003	0.225
2009300-S07	0.011	1.043	0.039	0.001 K		0.007	1.100
2009300-S08	0.006	0.568	0.025	0.001 K		0.004	0.603
2009300-S09	0.008	0.680	0.029	0.001 K		0.006	0.723
2009300-S10	0.009	0.595	0.040	0.001 K		0.005	0.649
2009300-S11	0.012	0.599	0.035	0.001 K		0.005	0.651
No. of Samples:							11
Mean+:							0.502
Median+:							0.527

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Sample #:	Toxaphene# (mg/kg)	Aldrin (mg/kg)	Dieldrin (mg/kg)	Heptachlor (mg/kg)	Heptachlor- Epoxide (mg/kg)	g-BHC (Lindane) (mg/kg)	Terphenyl (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2009300-S01	0.050 K	0.001 K	0.002	0.001 K	0.001 K	0.001 K	0.250 K
2009300-S02	0.050 K	0.001 K	0.007	0.001 K	0.001	0.001 K	0.250 K
2009300-S03	0.050 K	0.001 K	0.006	0.001 K	0.001	0.001 K	0.250 K
2009300-S04	0.050 K	0.001 K	0.007	0.001 K	0.002	0.001 K	0.250 K
2009300-S05	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2009300-S06	0.050 K	0.001 K	0.007	0.001 K	0.001 K	0.001 K	0.250 K
2009300-S07	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2009300-S08	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K
2009300-S09	0.050 K	0.001 K	0.005	0.001 K	0.001	0.001 K	0.250 K
2009300-S10	0.050 K	0.001 K	0.005	0.001 K	0.001 K	0.001 K	0.250 K
2009300-S11	0.050 K	0.001 K	0.004	0.001 K	0.001 K	0.001 K	0.250 K
No. of Samples:	11	11	11	11	11	11	11
Mean+:	0.025 *	0.001 *	0.005	0.001 *	0.001 *	0.001 *	0.125 *
Median+:	0.050 K	0.001 K	0.006	0.001 K	0.001 K	0.001 K	0.250 K

# = Residue exhibits chromatographic characteristics similar to toxaphene.

+ = Calculated value; not rounded to appropriate number of significant figures.

I = Analytical interference; quantification not possible

J = Estimated value; value may not be precise

K = Undetected at detection level shown

T = Analysis not conducted due to technical error

\* = Mean includes samples with concentrations below quantification, which are assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Sample #:	Hexachloro- benzene (mg/kg)	Octachloro- Styrene (mg/kg)	Pentachloro- Styrene (mg/kg)	Hexachloro- Styrene (mg/kg)	Heptachloro- Styrene (mg/kg)	Mirex (mg/kg)	PBB (Firemaster BP-6) (mg/kg)
<b>Lake Trout</b>	<b>F</b>						
2009300-S01	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K	0.001 K
2009300-S02	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.002	0.001 K
2009300-S03	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.002	0.001 K
2009300-S04	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.002	0.002
2009300-S05	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.003	0.002
2009300-S06	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.001	0.001 K
2009300-S07	0.002	0.001	0.001 K	0.001 K	0.001 K	0.006	0.005
2009300-S08	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.003	0.002
2009300-S09	0.003	0.001 K	0.001 K	0.001 K	0.001 K	0.003	0.002
2009300-S10	0.002	0.001	0.001 K	0.001 K	0.001 K	0.003	0.005
2009300-S11	0.002	0.001	0.001 K	0.001 K	0.001 K	0.004	0.006
No. of Samples:	11	11	11	11	11	11	11
Mean+:	0.002 *	0.001 *	0.001 *	0.001 *	0.001 *	0.003 *	0.002 *
Median+:	0.002	0.001 K	0.001 K	0.001 K	0.001 K	0.003	0.002

+ = Calculated value; not rounded to appropriate number of significant digits.

I = Analytical interference; quantification not possible.

J = Estimated value; value may not be precise.

K = Undetected at detection level shown.

T = Analysis not conducted due to technical error.

\* = Mean includes samples with concentrations below quantification, which were assigned a value equal to 1/2 the level of quantification.

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Species Sample #	Total Dioxin Toxic Equivalents+ (ppt)	2,3,7,8- TCDD (ppt)	1,2,3,7,8- PCDD (ppt)	1,2,3,4,7,8- HxCDD (ppt)	1,2,3,6,7,8- HxCDD (ppt)	1,2,3,7,8,9- HxCDD (ppt)	1,2,3,4,6,7,8- HpCDD (ppt)	OCDD (ppt)
<b>Lake Trout</b>	<b>F</b>							
2009300-S01	8.29	J 0.33	J 1.30	K 0.22	J 0.56	I	I	J 1.10
2009300-S02	27.59	1.20	3.70	K 0.30	J 1.30	I	I	I
2009300-S03	20.47	I	2.70	K 0.38	I	K 0.46	I	J 1.10
2009300-S04	28.63	0.80	3.10	K 0.28	I	K 0.42	I	J 1.30
2009300-S05	45.43	1.80	5.60	K 0.44	I	I	I	J 1.00
2009300-S06	24.94	1.10	3.20	K 0.33	I	I	I	J 1.30
2009300-S07	75.65	2.90	7.90	K 0.44	3.30	I	I	I
2009300-S08	47.41	2.10	5.50	K 0.70	I	J 0.81	I	J 0.98
2009300-S09	67.18	2.90	7.20	K 0.66	I	J 0.96	I	J 1.20
2009300-S10	64.32	2.60	6.10	K 0.49	I	J 0.73	I	J 1.10
2009300-S11	59.57	1.60	5.00	K 0.72	I	K 0.75	I	J 0.90

No. of Samples: 11  
 Mean+: 42.6805  
 Median+: 45.428

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
 I = analytical interference; quantification not possible  
 J = estimated value; value may not be precise  
 K = undetected at detection level shown  
 T = analysis not conducted due to technical error  
 N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING**  
**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake

Collection Date: Mar / 15 / 2009

Location: Antrim County

VisitID: 2009300

Sample #:	2,3,7,8 -TCDF (ppt)	1,2,3,7,8 -PCDF (ppt)	2,3,4,7,8 -PCDF (ppt)	1,2,3,4,7,8 -HxCDF (ppt)	1,2,3,6,7,8 -HxCDF (ppt)	1,2,3,7,8,9 -HxCDF (ppt)	2,3,4,6,7,8 -HxCDF (ppt)	1,2,3,4,6,7,8 -HpCDF (ppt)	1,2,3,4,7,8,9 -HpCDF (ppt)	OCDF (ppt)							
Lake Trout	F																
2009300-S01	4.20	I	J	1.10	K	0.13	I	K	0.11	K	0.11	K	0.51	K	0.63	I	
2009300-S02	15.00	I		3.80	J	0.22	I	K	0.45	K	0.33	K	0.23	K	0.33	J	0.25
2009300-S03	11.00	I		2.40	K	0.08	I	J	0.49	K	0.09	I		K	1.00	K	0.29
2009300-S04	15.00	I		3.90	K	0.13	I	I		J	1.10	K	0.25	K	0.36	K	0.21
2009300-S05	22.00	I		6.70	K	0.08	I	J	0.36	J	2.00	K	0.46	K	0.63	J	0.24
2009300-S06	12.00	I		3.60	J	0.21	I	K	0.18	J	0.93	I		K	0.86	K	0.17
2009300-S07	17.00	I		13.00	K	0.30	I	K	0.37	J	1.90	I		K	1.10	I	
2009300-S08	25.00	I		6.60	K	0.39	I	K	0.36	J	1.50	K	0.39	K	0.69	I	
2009300-S09	36.00	I		7.30	K	0.40	I	K	0.27	K	0.17	K	0.46	K	0.70	K	0.32
2009300-S10	21.00	I		9.50	K	0.17	I	K	0.35	K	0.68	K	0.84	K	0.84	K	0.33
2009300-S11	18.00	I		6.30	K	0.30	I	K	0.23	K	0.22	K	1.00	K	1.40	K	0.28

+ = calculated with toxic equivalent factors accepted in the 2005 WHO Re-evaluation of TEFs for Dioxins and Dioxin-like compounds  
I = analytical interference; quantification not possible  
J = estimated value; value may not be precise  
K = undetected at detection level shown  
T = analysis not conducted due to technical error  
N or # = does not meet all quantification requirements

**FISH CONTAMINANT MONITORING  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY**

Waterbody Name: Torch Lake  
Location: Antrim County  
VisitID: 2009300

Collection Date: Mar / 15 / 2009

Coplanar  
PCB Congener Number\*\*

Species Sample #	Cong. 077 (ppb)	Cong. 081 (ppb)	Cong. 105 (ppb)	Cong. 114 (ppb)	Cong. 118 (ppb)	Cong. 123 (ppb)	Cong. 126 (ppb)	Cong. 156 (ppb)	Cong. 157 (ppb)	Cong. 167 (ppb)	Cong. 169 (ppb)	Cong. 189 (ppb)
<b>Lake Trout</b>												
2009300-S01	0.04	1.90	4.50	0.15	0.05	0.86	0.24	0.46	0.02	0.13		
2009300-S02	0.16	8.40	20.00	0.68	0.17	3.20	0.91	1.90	0.06	0.46		
2009300-S03	0.15	5.20	12.00	0.47	0.14	2.40	0.66	1.30	0.04	0.35		
2009300-S04	0.15	8.90	20.00	0.86	0.19	3.70	0.98	2.30	0.06	0.57		
2009300-S05	0.16	16.00	34.00	1.50	0.28	6.40	1.60	4.20	0.12	0.81		
2009300-S06	0.17	5.50	13.00	0.47	0.16	2.50	0.70	1.40	0.05	0.36		
2009300-S07	0.16	28.00	60.00	2.30	0.49	11.00	3.00	6.10	0.21	1.50		
2009300-S08	0.18	17.00	38.00	1.80	0.29	7.80	1.70	4.40	0.13	0.81		
2009300-S09	0.25	25.00	54.00	2.10	0.43	10.00	2.50	5.90	0.17	1.10		
2009300-S10	0.25	22.00	49.00	2.70	0.42	11.00	2.60	5.80	0.19	1.10		
2009300-S11	0.22	19.00	44.00	2.40	0.41	9.30	2.40	5.50	0.19	1.30		
<b>No. of Samples:</b>	11	11	11	11	11	11	11	11	11	11	11	11
<b>Mean+:</b>	0.172	14.264	31.682	1.403	0.275	6.196	1.572	3.569	0.113	0.772		
<b>Median+:</b>	0.160	16.000	34.000	1.500	0.280	6.400	1.600	4.200	0.120	0.810		

@ = Mean and median are calculated using duplicate #1 only.  
 + = Calculated value; not rounded to appropriate number of significant digits.  
 \*\* = International Union of Pure and Applied Chemists (IUPAC) adopted identification numbers.  
 \* = Concentrations below quantification were assigned a value equal to 1/2 the level of quantification.  
 a = AHH inducing congener.  
 I = Analytical interference; quantification not possible.  
 J = Estimated value; value may not be precise.  
 K = Undetected at detection level shown.  
 T = Analysis not conducted due to technical error.  
 NQ = Does not meet all quantification requirements.  
 RT = Not quantifiable. Did not meet retention time criteria.