

# **2013 ANNUAL FISH MONITORING REPORT**

SHEBOYGAN RIVER AND HARBOR SUPERFUND SITE

SME Project Number: 069638.00.002.002

May 12, 2014







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Pablo Valentin United States Environmental Protection Agency, Region 5 77 West Jackson Boulevard Chicago, Illinois 60604-3590

RE: SME Serial Letter #13
Response to Comments
2013 Fish Monitoring Report
Sheboygan River and Harbor Site
SME Project No. 069638.00.002.003

Dear Pablo:

SME is providing the revised 2013 Annual Fish Monitoring report based on your July 29, 2014 letter. The following provides are responses or explanations to your comments. The revised report is enclosed with this letter.

Comment 1: Report Cover. The left hand column of the report cover contains information potentially confusing to the reader and is not relevant to the fish monitoring results documentation. Please remove.

Response 1: SME has revised their cover page with one that does not provide confusing information.

Comment 2: Page 2, Section 1.2, third paragraph. Please add information on the Upper River sediment SWAC from the first post-dredging 5-year sediment sampling event collected in 2012 and contained in the Sediment Monitoring Report (PRS, 2013).

Response 2: This information has been added.

Comment 3: Pages 4 and 5, Section 1.4.1. The Biota to Sediment Accumulation Factor (BSAF) discussion is not relevant to the fish monitoring results documentation. Please keep the paragraph noting the Record of Decision (ROD) fish tissue target levels on page 5, but remove the remaining paragraphs starting with the last paragraph on page 4 through the last paragraph on page 5.

Response 3. This information was removed however SME believes all information relevant to fish tissue concentrations and target levels should be included in the report.

Comment 4: Page 7, Section 1.4.2, second paragraph. A temporary increase in PCB concentration due to remedial action is not unexpected and is well documented in the document referenced (Sediment Dredging at Superfund Megasites, Assessing the Effectiveness, National Academy of Sciences, 2007). Please remove the final three sentences in this paragraph as they are not relevant to the fish monitoring results documentation.

Response 4: The last three sentences were removed.

Comment 5: Page 8, Section 2.1, third paragraph and table. Longnose Dace were not eliminated from sampling. They are found in riffles and require seining with nets instead of electro-fishing to catch. High water in 2013 contributed to riffle flooding and reduced potential of collecting with seine nets. Longnose Dace should be added into the sample collection goals using the appropriate fish collection technique.

Response 5: While I have not been able to find the documentation demonstrating we all agreed to eliminate Longnose Dace as a target species, I do remember when it happened. PRS was unable to catch the species employing both the electroshock and seining methods. The 2012 report made the same statement about eliminating this species and it did not elicit a comment. We will add Longnose Dace to the future sample collection goals. The wording of this sentence and the next sentence was revised.

Comment 6: Page 11, Section 2.3. Deviations from the Plan should also note correspondence between PRS and EPA during the 2013 fish sampling event. PRS communicated several deviations to EPA, including the following communicated by Mark Mather of PRS on June 6, 2013:

- 1. PRS will not be sampling The UPPER RIVER beyond the riffles. The waterflow is in excess of two times the normal rate and it is dangerous.
- 2. Due to the amount of waterflow, and the danger, PRS will possibly select fish samples that are outside the target range. This practice has been used in the past.
- 3. Steve Graziano pointed out that we do not use ice in our on the boats cooler. For safety sake, again, we try to decrease the amount of weight in the boats. Having been in the commercial fishing business, I know that ice is used as a prevention for Pathogens and human consumption issues.

Fish should be kept on ice as a standard field collection procedure.

Response 6: The deviations will be added to the report. According to Ken Aukerman, the fish storage method has been the practice since the start fish collection. This has been observed by Weston for several years and appeared to be an acceptable practice since I never received a comment about it. The fish are placed in a freezer twice a day during the collection period, at lunch and the end of the day.

Commercial fisherman do ice their catch for the reasons stated. They also have much larger boats than can be used on the Sheboygan River for fish collection; a picture of the boat used by PRS is provided below.



SME believes that samples should be kept cold once collected. However we do not believe that the fish sample results are biased when not preserved immediately and the data quality objectives are still met for the following reasons:

- In fish, the half-life of PCBs has been calculated to be 340 to 1,450 days1.
- PCBs have an exceptionally low volatility. The average molecular weight for Aroclor 1260) is 375.7 g/mol; the vapor pressure is 4.05 × 10-5 mm Hg at 25 C2.
- PCBs are very stable and have a long holding time due to this stability. USEPA Method 8082 states *PCBs* are very stable in a variety of matrices, and holding times may be as long as a year.

Based on the foregoing, failure to store fish on ice during the 4-5 hours from the start of collection until they are placed in the freezer at lunch or at the end of the day would not significantly affect the concentrations in the fish. However, SME will evaluate ways to preserve the fish while maintaining the safety of the collection team and make the appropriate recommendations to PRS.

Comment 7: Page 15, Section 4.2, paragraph 4. High river flow at the time of sampling would not cause higher PCB concentrations in fish. Please remove this statement. Also, the reference year for the data collection is listed as 2014, did you intend to list 2013? Please revise accordingly.

Response 7: The edit was made. Several research publications point to PCB levels in the water column as contributing to increased levels of PCBs in fish tissue. High river flow could lead to increases in the PCB levels in the water column due to scouring of the river banks and soft sediment deposits.

Comment 8: Page 16, Section 4.2, paragraphs 1 and 3. High river flow at the time of sampling would not cause higher PCB concentrations in fish tissue. Please remove this statement. Also, the reference year for the data collection is listed as 2014, did you intend to list 2013? Please revise accordingly.

Response 8: The sentence was removed.

RTC+069638.00.002.003+041520153

<sup>&</sup>lt;sup>1</sup> Oost R, Beyer J, Vermeulen N. Fish Bioaccumulation and Biomarkers In Environmental Risk Assessment: A Review. *Environmental Toxicology and Pharmacology*. 2003;13:57-149.

<sup>&</sup>lt;sup>2</sup> Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for Polychlorinated Biphenyls*. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1997.

Comment 9: Page 17, Section 4.2, Middle River Site 2 paragraphs. The text describes PCB increases due to 2012 dredging. However, no dredging was done in the Middle River reach. Please provide further explanation or remove this discussion in support of the PCB concentration increases in the Middle River Site 2.

Response 9: As stated in the report, the increased levels were attributed to the dredging done in the Lower River reach and not the Middle River 2 reach. Much of the fish collected in the Middle River 2 reach were collected near the Lower River and these fish probably move between reaches routinely. The section was revised as requested.

Comment 10: Page 18, Section 4.2, Inner Harbor, First paragraph. The text appears to be missing the word "higher" after "significantly" when describing the adult carp concentration. Please clarify.

Response 10: The sentence was revised.

Comment 11: Page 19, Table. The table should include the Longnose Dace targets consistent with previous sampling plans.

Response 11: EPA agreed to drop Longnose Dace after repeated attempts to collect them failed. The 2012 fish monitoring report did not include Longnose Dace in the same table. SME has added them back to the table.

Comment 12: Tables 2 and 3. The tables have inconsistent number of fish in them. For example, only 6 Adult Carp are listed in Table 2 in the UR1 reach, however, Table 3 has 12 Adult Carp listed as collected for this reach. Table 3 Juvenile White Suckers lists 7 for the MR2 reach, however there are only 6 fish analyzed in Appendix 1. Please revise information provided to eliminate inconsistencies.

Response 12: The tables have revised accordingly.

Comment 13: Tables 2 and 3. Oversight field observations included 1 Juvenile White Sucker in UR1, 6 in MR2, 8 in LR, and 1 Walleye in the LR reach. The laboratory report noted receiving LR Juvenile White Suckers for analysis. The laboratory report also notes a LR Walleye analysis was canceled. Please include an explanation as to why the analysis was canceled. Please double check the quantities of fish documented in the analysis and update the tables and analysis as needed. Note changes in sampled and analyzed fish in Section 2.3, Deviations from the Plan.

Response 13: PRS does not recollect canceling the analysis. The fish may not have met the length requirements and with no other walleyes collected in the Lower River, PRS may have thought that analyzing this single fish was not important. No revisions will be made to the report.

Comment 14: Tables 2 and 3. It seems that there are inconsistencies between how the laboratory analyzes fish sizes when comparing MR2 Juvenile White Sucker sizes analyzed to LR Juvenile White Sucker sizes not analyzed by the laboratory. The LR Juvenile White Sucker lengths are consistent with the MR2 Juvenile White Sucker lengths that were analyzed and sampled in prior years. Clarify in the report the laboratory capabilities to avoid future inconsistencies. Document changes in sampled and analyzed fish in the Section 2.3, Deviations from the Plan and Section 5, Future Phase 1 Monitoring.

Response 14: SME requires clarification of this comment. Once clarification is provided, a letter addendum to the report will be provided.

Comment 15: Table 4. The table on page 3 of 3 is missing all of the Lower River and Inner Harbor data. Please add this information.

Response 15: The information has been added.

Comment 16: Appendix 1. Fish length is required to be documented in the report. Include the fish length in the fish tissue results in Appendix 1. Note any deviations from actual fish length compared to target fish length in the sampling plan. Also, include in the Deviations, Section 2.3.

Response 16: The data has been added.

Comment 17: Appendix 1. UR2 Smallmouth Bass is missing 2 sampling results. Similarly, MR2 Juvenile White Sucker only lists 6 while Table 3 lists 7. Please add these to the Appendix 1 documentation.

Response 17: The information was added as applicable.

Comment 18: Box and Whisker Plots. Please add the remediation target concentration to the graphs for the fish species that were included in the ROD.

Response 18: The target levels have been added.

Comment 19: Box and Whisker Plots. For the MR1 -Juvenile Sucker, no data for 2013 is shown; show zero for the 2013 data if no data was collected. Similarly show zero and add notes for: 2008 MR1-Rock Bass, 2012 MR1-Walleye, MR1-Channel Catfish for the years that these were not collected, 2008 MR2-Carp, LR-Carp, LR-Adult Sucker, LR-Smallmouth Bass, LR-Rock Bass, IHCarp, IH-Adult Sucker, IH-Rock Bass, and IH-Smallmouth Bass.

Response 19: The plots have been revised.

Comment 20: Appendix 5. Please add the additional species that have been tested to the table. Also include the ROD target PCB concentrations for applicable fish species.

Response 20: The revisions have been made as requested.

The requested revisions will be incorporated into the 2014 report as well. Please address questions or comments to me at (513) 319-8918.

Sincerely,

1

Keith Egan Senior Consultant

Enclosure

Distribution: Tom Wentland, WDNR

Mark Mather, PRS

Peter Johnson, Johnson Wright, Inc. Kevin Shanoski, Chubb Corporation

Jason Smith, Tecumseh Products Company

# SHEBOYGAN RIVER AND HARBOR SUPERFUND SITE

# 2013 ANNUAL FISH MONITORING REPORT

May 2014

Prepared for
United States Environmental Protection Agency Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

SME Project No.: 069638.00.002.002

# SHEBOYGAN RIVER AND HARBOR SUPERFUND SITE

# 2013 Annual Fish Monitoring Report

Prepared for
United States Environmental Protection Agency
Region 5

**Prepared By Soil and Materials Engineers, Inc.** 

May 2014

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#### 1.0 INTRODUCTION

Monitoring of post-remedial fish tissue concentrations with polychlorinated biphenyls (PCBs) is being conducted on the Sheboygan River in accordance with the *Post-Remediation Monitoring Plan* (PMP). As stated in the PMP, the monitoring is being conducted in three phases consisting of the following:

- Baseline monitoring after remediation of the Upper River and prior to remediation of the Lower River reaches to determine the mean PCB concentration of each fish species of interest and establish a comparison point for future sampling,
- Phase 1 annual monitoring following remediation of each reach to establish a trend in mean PCB concentration for each fish species and track the progress of the fish in meeting the remedial goals, and
- Phase 2 confirmational sampling to verify the fish have reached the remedial goals.

This 2013 Fish Monitoring Report documents the Phase 1 fish monitoring performed in 2013 on the Upper River, Middle River, Lower River, and Inner Harbor reaches. The Middle River reach fish monitoring was performed as data from the 2009 Pre-Design Investigation indicated remediation would not be performed. This decision was approved by the United States Environmental Protection Agency (USEPA) and Wisconsin Department of Natural Resources (WDNR), hereafter known as the agencies. Remediation of the Lower River and Inner Harbor reaches was completed in 2012 and the 2013 monitoring event is the first Phase 1 monitoring for those reaches.

The data obtained during the Phase 1 annual monitoring will allow post-remedial fish tissue concentrations to be compared to prior annual results to monitor remedial progress. Post-remedial monitoring will occur until fish consumption advisories are lifted by the Wisconsin Department of Health, fish fillet concentrations of PCBs decrease to the target levels specified on page 32 of the *Record of Decision* (ROD), or for 30 years, whichever comes first.

<sup>&</sup>lt;sup>1</sup> The Upper River, Lower River, and Inner Harbor have already been remediated. The first annual event will be used as the baseline event. The *Baseline Upper and Lower River Fish Monitoring Report* documented the fish monitoring performed in 2008 for the Upper River, Middle River, Lower River, and Inner Harbor reaches.



#### 1.1 Site Description

The Sheboygan River and Harbor Superfund Site (the Site) is located on the western shore of Lake Michigan approximately fifty-five miles north of Milwaukee, Wisconsin, in Sheboygan County (Figure 1). The Site includes the former Tecumseh Manufacturing site and the lower fourteen miles of the Sheboygan River from the Sheboygan Falls Dam downstream to, and including, the Inner Harbor. This segment of the river flows west to east through the cities of Sheboygan Falls, Kohler, and Sheboygan before entering Lake Michigan.

During the Remedial Investigations (RI), the river was segmented in separate sections, known as reaches, based on physical characteristics such as average depth, width, and level of polychlorinated biphenyl (PCB) sediment contamination. The Upper River extends from the Sheboygan Falls Dam downstream four miles to the Waelderhaus Dam in Kohler. The Middle River extends seven miles from the Waelderhaus Dam to the former Chicago & Northwestern (C&NW) railroad bridge. The Lower River extends two miles from the C&NW railroad bridge to the Pennsylvania Avenue Bridge in downtown Sheboygan. The Inner Harbor includes the Sheboygan River from the Pennsylvania Avenue Bridge to the river's outlet to the Outer Harbor. Figure 2 provides an overview of each river reach.

# 1.2 Site History

The USEPA placed the Sheboygan River and Harbor Site on the National Priorities List (NPL) in 1986. Remedial Design (RD) and Remedial Action (RA) work at the Site was phased.

Phase I<sup>2</sup> Source work included installing an interceptor trench and removing contaminated soils to reduce potential contaminated groundwater migration to the river. Phase I work was completed in 2004.

Phase II Upper River work included removing contaminated sediment from nine (9) Armored Area Remedial Management Units (RMUs) and 122 Soft Sediment RMUs. The Soft Sediment RMUs and Armored Areas contained the majority of the PCB mass within the Upper River. The Upper River remedial action removed 20,728 cubic yards of contaminated sediment and 552 pounds of PCBs for a total mass removal percentage of 94.1%, which exceeded the ROD PCB mass reduction objective of 88%. The Upper River SWAC was reduced from 5.2 ppm to 1.96 ppm. The Phase II Upper River work was completed in 2006 and 2007. The calculated SWAC in the Upper River following the 2012, 5-year sediment monitoring event was 0.78 ppm.

Phase II Floodplain work included removing contaminated soil from two areas in Floodplain 3, one area in Floodplain 4, and four areas in Floodplain 6. The Floodplain remedial action removed 10 cubic yards of contaminated soil. The Phase II Floodplain work was completed in 2012.

<sup>&</sup>lt;sup>2</sup> Note- the Phase I , Phase II, and Phase III work activities described in Section 1.2 are not associated with the Phase I and Phase II monitoring activities described in Section 1.0.



Phase III Lower River work included removing sediment from 46 grids in the Lower River and 40 in the Inner Harbor. The Lower River remedial action removed 65,475.10 cubic yards of contaminated sediment, exceeding the ROD objective of 53,000 cubic yards. Phase III Lower River work was completed in 2011 and 2012.

#### 1.3 River Characteristics

## 1.3.1 Upper River/Middle River

The Upper River consists of discrete Soft Sediment deposits and non-Soft Sediment areas which include a mix of Soft Sediment, rocks, cobbles, and bare river bottom. The sediment contamination in the Upper River acts as a partial source of PCB-contaminated sediment for the rest of the river system during high river conditions in addition to the other sources identified in the Middle River, Lower River, and Inner Harbor.

The Middle River consists of Soft and non-Soft Sediment areas similar to the Upper River, but due to the hydrodynamics of this reach, the areas of Soft Sediment are shallower and more widely scattered. The Middle River sediments act as a source of PCB-contamination for the rest of the Lower River system in addition to any potential sources in the Lower River and Inner Harbor reaches.

#### 1.3.2 Lower River/Inner Harbor

The flow velocity in the Lower River decreases leading to a more continuous layer of Soft Sediment throughout the reach. Based on the hydrodynamics of this reach, the Lower River is where much of the sediment released in the Middle River is deposited.

The Inner Harbor is generally the river reach where upstream Soft Sediment is deposited. However, while the Inner Harbor is generally depositional, deposition occurs primarily between the 8<sup>th</sup> Street Bridge and the harbor mouth. The area between the Pennsylvania Bridge and 8<sup>th</sup> Street Bridge has little deposition and shows evidence of scour.

### 1.4 Previous Evaluations

#### 1.4.1 Pre-Remediation Evaluation

The consumption of the fish is the primary exposure route for human receptors of the PCBs in the river sediments. The PCBs in the river sediments bioaccumulate in the fish from contact with impacted sediment, surface water, or by ingesting prey that are impacted. An understanding of the process in developing the sediment PCB cleanup goals based on allowable fish PCB concentrations is important in the evaluation of long-term assessment of remedial success.

There is considerable seasonal fishing in the Middle River, Lower River, and Inner Harbor. Fishing is more limited in the Upper River. According to WDNR surveys, most fishing occurs during spring and fall salmon and trout runs. Resident fish which are taken from the Sheboygan



<sup>&</sup>lt;sup>3</sup> As listed in Record of Decision (ROD) for the Upper River, May 2000, page 61 and for the Lower River/Inner Harbor May 2000, page 77).

<sup>&</sup>lt;sup>4</sup> Much of the information presented in this section was obtained from the ROD.

River, between the Sheboygan Falls dam and the mouth of the river, fall into the "do not eat" consumption advisory category. Migrating trout and salmon are subject to Lake Michigan advisories as they obtain most of their PCB body burden from Lake Michigan. One objective of the sediment removal is to reduce the concentrations of PCBs in the fish over time so all the consumption advisories are lifted.

There are several possible pathways of exposure to the contamination in the sediment: dermal contact, ingestion of contaminated surface water or sediment, and consumption of fish contaminated by sediment. However, the human health analysis assumed that for this Site, the pathway presenting the majority of the risk and likely to yield the most protective assessment of risks is consumption of contaminated fish and not dermal contact. This does not imply that no other exposure pathways are occurring at this Site, only that there is a focus on the pathway which contributes the majority of risk, the fish ingestion pathway.

An Interim Monitoring Program (IMP) was performed by Blasland, Bouck, and Lee, Inc. (BBL) that consisted of the collection of smallmouth bass and white suckers at Rochester Park in the Upper River reach and between the dams in the Upper River reach. During the baseline and subsequent post-remedial monitoring, these areas are known as Upper River 1 and Upper River 2 Sites. These fish were also collected near Kiwanis Park or in the Lower River reach. The range of smallmouth bass PCB concentrations detected is as follows:

Upper River 1 2.1 to 10.3 ppm
 Upper River 2 1.1 to 7.3 ppm, and
 Lower River 0.82 to 3.7 ppm.

The PCB concentration decreased between 1994 and 2002. The results for smallmouth bass in the Upper River Site 1 show a general decreasing trend and the regression shows a decrease with a moderate correlation. For Upper River Site 2, the decrease has a very strong correlation for the regression. The range of white sucker concentrations detected is as follows:

Upper River 1 2.7 to 18.3 ppm
 Upper River 2 1.9 to 8.7 ppm, and
 Lower River 1.4 to 3.9 ppm.

In order to address unacceptable risks at the Site, USEPA calculated sediment cleanup goals, protective of human health. The USEPA made a conscious decision to model and be protective of the more contaminated resident fish species of smallmouth bass and carp at the Site. By selecting a cleanup goal protective of bass (or carp), the cleanup will be protective of the lesser contaminated species such as walleye, trout, salmon, and steelhead. Target fish tissue levels corresponding to the SWAC Sediment Cleanup Goal include the following:

Smallmouth Bass
 Walleye
 U.31 ppm (skin on fillet)
 0.63 ppm (skin on fillet)



<sup>&</sup>lt;sup>5</sup> Conducted in 1994, 1995, 1996, 1998, 1999, 2000, 2001, and 2002.

Trout 0.09 ppm (skin on fillet)<sup>6</sup>
 Carp 2.58 ppm (skin on fillet)
 Catfish 2.53 ppm (skin off fillet)

#### 1.4.2 Baseline Evaluation

The mean fish tissue PCB results for the 2008 baseline sampling event are provided below.

	Fish T	Tissue Mean	PCB Resul	ts Per Rive	r Reaches (1	mg/kg)
Fish Species	Upper (Site 1)	Upper (Site 2)	Middle (Site 1)	Middle (Site 2)	Lower	Inner Harbor
Smallmouth Bass	13.0	14.5	8.75	4.30	5.77	3.36
Adult Carp	25.9	14.7	4.44	1.27*	11.3	3.16
Adult White Suckers	12.4	8.92	8.77	3.96	4.31*	N/A
Juvenile White Suckers	6.01	6.82	N/A	1.37	1.04	N/A
Rock Bass	6.94	4.27	2.79*	2.49	2.60	N/A
Longnose Dace	7.67	N/A	9.47	8.51	N/A	N/A
Walleye	N/A	N/A	11.1	N/A	N/A	2.03*
Catfish	N/A	N/A	27.9	8.18	13.7	19.4*

N/A – Not Applicable, insufficient data

For adult White Suckers, the target collection goal was missed in Middle River 1, Lower River, and in the Inner Harbor which was attributed to lack of habitat. Very little areas with vegetation and warm shallows of estuaries and bays, the preferred habitat of white sucker, were observed in the Lower River and none were observed in the Inner Harbor. Information on habitat was obtained from *Fishes of Wisconsin* (1983). The WDNR has also not had much success collecting this species in the Lower River or Inner Harbor reaches.

The Sheboygan River does not appear to provide an abundance of quality habitat for Longnose Dace, being too deep in many areas. However, there are areas of suitable habitat where shallows are present (i.e. Upper River, Site 1 and Middle River, Site 1 and 2). The water is too deep in the Lower River and Inner Harbor reaches to provide suitable habitat. The habitat is also unsuitable in Site 2 of the Upper River reach.

The 2008 adult fish tissue PCB results tended to decrease moving from the Upper River to the Inner Harbor. An exception is that in almost every case, the PCB concentrations were higher in the Lower River reach than the Middle River Site 2. This would correspond to the increase in PCBs in the sediment in the Lower River and Inner Harbor due to the identified sources in these reaches.

Adult carp tended to have the highest mean PCB concentrations of the fish species. Although for the few caught, catfish had the highest mean concentration. These are bottom feeders and the results are not unexpected compared to the sport fish. The results were higher than the most recent Interim Monitoring results. The results were also higher than previous results from the Interim Monitoring Program. Adult carp had the highest mean concentration in the Upper



<sup>\* -</sup> Mean concentration was calculated using 3 fish or less

<sup>&</sup>lt;sup>6</sup> This is a migratory fish species and most PCB burden is from Lake Michigan.

River. However, in both sites of the Middle River, as well as the Lower River and Inner Harbor reaches, carp were the only fish caught where many of the fish results were less than the ROD goal.

The data was compared to the historical data, where available. A non-statistical comparison of the means showed the mean concentrations were higher than the most recent historical result. The differences were most extreme in the Upper River sites, the only areas remediated at the time of the baseline assessment. The smallmouth bass results and Upper River 2 white sucker were higher than the oldest of the Interim Monitoring results.

The statistical evaluation indicated that 5 of the 8 adult fish species evaluated had statistically different results in the Upper River sites compared to historical data. Based on the weight of evidence, it appears that the remediation of the Upper River caused a temporary increase in the PCB concentrations in the fish. Prior to the fish collection, it was anticipated that this may occur due to disturbance of the sediment causing increased suspension of sediment. The increase in biota concentrations following dredging was discussed in *Sediment Dredging at Superfund Megasites*, *Assessing the Effectiveness*(National Academy of Sciences, 2007).



#### 2.0 SAMPLING AND ANALYSIS

## 2.1 Summary of Sampling Plan

The 2013 Phase 1 sampling and analysis of fish species was conducted consistent with the *Post Remedial Monitoring Plan* (PMP) and the *Quality Assurance Project Plan* (QAPP). These plans were conditionally approved with comment on August 13, 2008. The 2012 Annual Fish Monitoring Report determined the number of fish to collect at the two sites within the Upper River and Middle River reaches.

Smallmouth bass, carp, walleye, and catfish were selected as they have assigned target goals in the *Record of Decision* (ROD). According to the ROD, smallmouth bass and carp are the more contaminated resident fish species and the USEPA selected these fish to determine cleanup goals believing that if these fish met the goals, the lesser contaminated species such as walleye, trout, salmon, and steelhead would be protected. Therefore the monitoring included these fish as well as walleye and catfish. Walleye and smallmouth bass will also help evaluate risk reduction for sport fisherman while carp and catfish for sustenance fisherman.

Rock bass were added because catfish and walleye are rarely caught according to WDNR. White suckers were added at the suggestion of the WDNR. The collection efforts have failed to catch Longnose Dace for several years. The following table outlines the final fish species collection goals for 2013.<sup>7</sup>

			Number of	f Samples P	er River Re	ach	
Fish Species	Upper (Site 1)	Upper (Site 2)	Middle (Site 1)	Middle (Site 2)	Lower River	Inner Harbor	Size Range
Smallmouth Bass	12	12	8	8	8	8	10-17 inches
Adult Carp	12	8	8	8	8	8	18-22 inches
Adult Suckers	12	12	8	8	8	8	12-18 inches
Juvenile Suckers	12	12	8	6	8	8	3-8 inches
Rock Bass	12	12	8	8	9	9	5-9 inches
Walleye	0	0	8	0	9	9	12-22 inches

The WDNR requested that the Upper and Middle River be divided into two sites per reach. The rational was stated as "Sampling stations should include the following number of sites per reach in order to represent the amount of contaminated sediment that will be removed and the variability expected. Specimens may be collected at different locations within a reach and

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<sup>&</sup>lt;sup>7</sup> Prior to the 2010 fish collection event, the agencies approved dropping the requirement to collect juvenile carp, walleye, and catfish in the Upper River as a result of two years with unsuccessful collection but required that the number of each fish species be increased from 8 to 12 fish. The 2012 report has stated Longnose Dace would not be collected in the future due to the past inability to collect this species and as such, are also not provided in the table. The USEPA has requested that Longnose Dace collection to resume.

collections sites within a reach can vary in exact location and length of river sampled (distance and location data should be reported in annual reports)." The 2013 Phase 1 collection included two sites in the Upper River – one from the former Tecumseh facility to Riverbend reach and another from the Riverbend to Waelderhaus Dam in Kohler. The 2013 Phase 1 collection also included two sites in the Middle River – one from the Waelderhaus Dam in Kohler to the Kohler Landfill and another from the Kohler Landfill to the C&NW Railroad Bridge in Sheboygan. The Lower River from C&NW Railroad Bridge to Pennsylvania Avenue Bridge and the Inner Harbor from the Pennsylvania Avenue Bridge to the river mouth were also sampled during the 2013 Phase I collection.

The fish collection would target the habitats most conducive for each species. Table 1 presents a summary of the fish species, known habitat, and range. This information was primarily obtained from *Fishes in Wisconsin* (1983) and is intended to provide a summary of the characteristics of the target species and their typical habitat and is not intended to describe the habitats where the target species were actually encountered in the Sheboygan River.

## 2.2 Sampling Procedures

After receipt of the Scientific Collectors permit issued by the WDNR on June 1, 2013, collection began in the Upper River reach, continued to the Middle River reach, then the Lower River Reach, and finally the Inner Harbor reach. The fish collection occurred between June 3, 2013, and June 10, 2013. The discharge in river during the sampling period was up to 250% greater than normal according to United States Geological Survey gaging data. This may have influenced the habits of the fish and affected fish collection efforts. Due to an inability to initially collect all species, the Upper and Middle River reaches were sampled more than once. Table 2 provides a summary of the daily fish collection. Figure 3 and 4 show the locations where fish were collected in each site of the Upper River and Middle River. Figures 5 and 6 show the locations where fish were collected in each site of the Lower River and Inner Harbor.

All fish were collected using electro-fishing equipment. The electro-fishing equipment used to collect fish, a Smith Root, Inc. Model 2.5 GPP, was either a boat-mounted array set-up or a hand held wand, depending on the location and species to collect. Electro-fishing was performed by selecting the appropriate pulsed DC power setting to stun-fish. The appropriate DC pulse setting (30 or 60) was made based on what set-up was used (30 for the wand, 60 for the arrays). At that point the percentage of output power was adjusted from 0-100 to stun the fish size needed without stunning more fish than needed or killing the fish. This percentage was determined by trial and error. Current was then applied to the river water by closure of the operating switch (i.e. foot pedal) while the generator and control equipment were operative. Once fish were stunned, the fish were collected with dip nets. The fish collected in the dip nets were identified for targeted species, measured to confirm they met size requirement, and were either retained in a live well or on ice in an insulated cooler until collection was completed.



All fish samples were processed and packaged in accordance with the procedures described in the WDNR's Division of Environmental Standards Field Procedures Manualin addition to the PMP. During and after collection, samples were held in a live well or on ice in an insulated cooler. Samples remained whole and ungutted. Each fish was numbered and the following recorded in field log book:

- Length,
- Species<sup>8</sup>,
- Sex (if possible),
- Age (if possible),
- Sample location,
- Other distinguishing features,
- Sampler(s), and
- Any unusual skin lesions, tumors, or other irregularities should also be noted.

The individual fish were wrapped in aluminum foil, then in freezer paper, and finally taped securely so that the package did not open during shipment. All samples were frozen as soon as possible after collection. No composite samples were created or analyzed.

For shipment to the laboratory, all fish samples were placed in a Ziploc bag or industrial grade trash bag, a label affixed and placed into second Ziploc bag, and then into a cooler with double bagged ice on the bottom of the cooler. The cooler was filled with fish samples, leaving enough room for double bagged ice on top of samples. A chain-of-custody form was placed in a sealable plastic bag and taped to the inside of cooler lid. The coolers were collected by the laboratory and as such custody seals were not used.

The laboratory prepared and analyzed the samples in accordance with the analytical method USEPA SW846-8082 Modified and Laboratory Standard Operating Procedures (SOPs) developed in accordance with method 8082 including the following:

- GB-L-001, Rev .0 Tissue Preparation
- GB-L-003, Rev. 0 Lipids
- GB-O-031, Rev. 1 Extraction
- GB-O-034, Rev. 1 Sulfuric Acid Cleanup
- GB-O-036, Rev. 1 Florosil Cleanup
- GB-O-026, Rev. 2 PCB Analysis

The analysis to be performed on fish included total PCBs (Aroclor basis), percent lipids, and gender. The PCB method detection limit was 0.019 mg/kg. Laboratory QA/QC samples consisted of a matrix spike and matrix spike duplicate. A minimum of one matrix spike/matrix spike duplicate analysis was performed with every batch of fish being analyzed for PCBs. Batch size was limited to no more than 20 samples. For analysis of PCBs in tissues, the QA procedures in USEPA's *Statement of Work for Organic Analysis* (Feb 1988) was used,

<sup>&</sup>lt;sup>8</sup> Species was determined by SOP #10, Fish Identification.





including laboratory blanks consistent with required detection limits, and initial and continuing calibration to verify recoveries.

#### 2.3 Deviation from Plan

PRS did not be sample the beyond the riffles. The water flow was in excess of two times the normal rate and it was considered dangerous. Due to the amount of water flow, and the danger, PRS selected fish samples that are outside the target range. This practice had been used in the past. This information was communicated to the USEPA on June 6, 2013. These deviations in target range are summarized in the following tables and shown in Appendix 1.

	Number of Target Range Deviations Per River Reach										
Fish Species	Upper (Site 1)		Upper	(Site 2)	Middle	Size Range					
	2013	Range	2013	Range	2013	Range	(inches)				
Smallmouth Bass	3	8 - 9.5	3	8.5 - 9.5	0	NA	10-17				
Adult Carp	1	25.5	2	12 and 27.5	8	28-30.5	15-25				
Adult White Suckers	1	21.3	4	12.5-14.5	6	16.5-18	8-16				
Juvenile White Suckers	NC	NC	NC	NC	NC	NC	3-8				
Rock Bass	0	NA	0	NA	0	NA	5-9				
Walleye	NC	NC	NC	NC	1	28.5	12-22				

NC – None Caught NA – Not Applicable

		Number of Target Range Deviations Per River Reach										
Fish Species	Middle (Site 2)		Lo	wer	Inner	Size Range						
	2013	Range	2013	Range	2013	Range	(inches)					
Smallmouth Bass	1	18	0	NA	5	8.5 and 17.25-19.5	10-17					
Adult Carp	5	16-28	8	25.5-32	7	29.5 - 36	15-25					
Adult White Suckers	6	16.5-18	1	17	6	17.5 - 19.5	8-16					
Juvenile White Suckers	3	8.5-9	NC	NC	NC	NC	3-8					
Rock Bass	0	NA	0	NA	0	NA	5-9					
Walleye	NC	NC	NC	NC	NC	NC	12-22					

NC – None Caught

NA – Not Applicable

Most of the bias was from fish being larger than the target range. Only small mouth bass in the Upper River reaches were below the target range. However, adult carb in The Middle River reach and small mouth bass in the Inner Harbor had fish that were above and below the target range. A qualitative evaluation of the target range bias was performed by either comparing PCB concentrations in the fish which did not meet the target range with those that did and to historical data. It does not appear the data was affected by the target range bias except for adult white suckers in the Upper River 1 reach.



Table 3 provides a summary of the success of the collection process. No juvenile white suckers and only nine rock bass were collected from the Upper River – Site 1. No juvenile white suckers were collected for the Upper River – Site 2. No juvenile white suckers and only three walleye were collected from the Middle River – Site 1. Only seven juvenile white suckers were collected from the Middle River – Site 2. No juvenile white suckers or walleye were collected from the Lower River or Inner Harbor. Only seven adult carp and four rock bass were collected from the Inner Harbor. Fish collection targets were not achieved in these reaches due to the presence of high flow velocity river conditions which limited the number of locations which could be sampled safely. In addition, eight channel catfish were obtained from the Middle River – Site 1 although they were not targeted for assessment. Channel catfish were historically a targeted species. However, the requirement to collect channel catfish was removed after successive years of poor catch rates.

From the Upper River – Site 1, nine adult carp, one smallmouth bass, and one adult sucker were collected at lengths above the target size range. From the Upper River – Site 2, seven adult carp were collected at lengths above the target size range. From the Upper River – Site 2, three smallmouth bass and one adult carp were collected at lengths below the target size range. From the Middle River – Site 1, eight adult carp and one walleye were collected at lengths above the target size range. From the Middle River – Site 1, one adult sucker was collected at a length below the target size range. From the Middle River – Site 2, eight adult carp, three juvenile suckers, and one smallmouth bass were collected at lengths above the target size range. From the Lower River, eight adult carp were collected at lengths above the target size range. From the Inner Harbor, seven adult carp, three adult suckers, and three smallmouth bass were collected at lengths above the target size range. From the Inner Harbor, three smallmouth bass were collected at lengths below the target size range.

The inability to collect the target number of fish of the correct size range for some of the species can increase the chances of a Type II error. The Type II error for this investigation is the belief that the fish tissue PCB results are less than the action level when they are not. Reducing the number of samples reduces the confidence in the decision. For this collection effort, the chance of a Type II error does not significantly affect decision making as no decisions are being made at this time.

To prevent overloading the small boat needed to collect fish in the river, ice was not kept in the cooler. Fish were brought to shore twice a day and placed into a freezer. This practice has been used for years without comment by the USEPA observer. SME does not believe that the fish sample results are biased when not preserved immediately and the project's data quality objectives are still met for the following reasons:

- The half-life of PCBs in fish has been calculated to be 340 to 1,450 days.
- PCBs have an exceptionally low volatility. The average molecular weight for Aroclor

<sup>&</sup>lt;sup>9</sup> Oost R, Beyer J, Vermeulen N. Fish Bioaccumulation and Biomarkers In Environmental Risk Assessment: A Review. *Environmental Toxicology and Pharmacology*, 2003;13:57-149.



1260) is 375.7 g/mol; the vapor pressure is  $4.05 \times 10^5$  mm Hg at 25 C<sup>10</sup>.

• PCBs are very stable and have a long holding time due to this stability. USEPA Method 8082 states *PCBs are very stable in a variety of matrices, and holding times may be as long as a year.* 

Based on the foregoing, failure to store fish on ice during the 4-5 hours from the start of collection until they are placed in the freezer at lunch or at the end of the day would not significantly affect the concentrations in the fish.

There were no deviations from the laboratory method in order to analyze or report the fish tissue results.

<sup>&</sup>lt;sup>10</sup> Agency for Toxic Substances and Disease Registry (ATSDR). *Toxicological Profile for Polychlorinated Biphenyls*. Public Health Service, U.S. Department of Health and Human Services, Atlanta, GA. 1997.



#### 3.0 SAMPLING RESULTS

#### 3.1 Fish Tissue Results

A summary of the 2013 results is provided in Appendix 1 while copies of the analytical reports are provided in Appendix 2 as a compact disc. Except for catfish, all fish samples that were analyzed were skin on fillets. Catfish are analyzed as skin off fillets. The majority of the fish collected were males.

## 3.2 Data Quality

The laboratory performs a validation of the analytical procedure using the quality control sample results, as applicable. This validation is discussed in the Narrative and QC section of each of the 15 lab reports generated by this sampling and analysis event. The laboratory reported the following:

- All samples were extracted and analyzed within the allowable holding time,
- There were no problems with the initial or continuing calibrations,
- All laboratory control spikes were within the allowable range,
- Surrogate recoveries were not compared against control limits in 13 sample batches due to sample dilution,
- Matrix spike/spike duplicate samples were not compared against control limits in 13 sample batches due to sample dilution,
- A matrix spike/spike duplicate analysis was not performed for one sample set as there was insufficient sample volume, and
- PCBs were not detected in the method blanks.

The matrix spike/spike duplicate and surrogate recovery discrepancies noted above do not affect the usability of the data collected as no decisions are being made at this time.



#### 4.0 DATA ANALYSIS

# 4.1 Summary Statistics

Summary statistics are provided with the data in Appendix 1 and in Table 4. The data distribution and upper 95% confidence levels (95% UCL) were calculated using ProUCL. ProUCL documentation is provided in Appendix 4. Consistent with historical results, the variability of the data was rather low and the majority of the data had a normal distribution. The distribution was calculated by ProUCL using a variety of goodness-of-fit methods including Shapiro-Wilk, and Kolmogorov-Smirnov tests. Knowledge of the distribution is needed to determine the proper methods for calculating 95% UCL as well as other statistical tests.

Outliers are inevitable in data sets originating from environmental applications. Outliers are defined to be an observation that does not conform to the pattern established by other observations (Gilbert, 1987). Prior to calculating the UCL, ProUCL recommends an outlier analysis. A few of the results appeared to be outliers because the concentrations were significantly lower or higher than the mean for the same species within the same reach. As such, ProUCL was also used to evaluate the possibility of outliers. ProUCL uses both the Dixon and Rosner outlier tests and uses the Dixon test where the data sets are less than 25 samples.

The outliers could be eliminated when calculating the summary statistics for the fish species within the reach. However, Region V USEPA has requested that this not be done since fish from other reaches can migrate between reaches and represent possible exposure to humans via consumption. As the outliers would only be eliminated in the comparison of fish between sites, reaches, fish species and historical data but not in the covariant analysis, elimination of the outliers has no bearing on protection of human health. Elimination of the outliers allows a clearer understanding of differences between sites, reaches, fish species, and historical data. Regardless, the outliers were not eliminated from the statistical comparisons discussed.

Data analysis included an analysis of means using the t-test. During the baseline event, a one way analysis of variance (ANOVA) was used. The ANOVA was judged to be redundant to the t-test as well as the WDNR suggested Mann-Whitney test. The t-test was performed based on unequal variance after an assessment indicated that was the most appropriate test. As far as the appropriateness of the test, PRS and SME reviewed several publications such as *A Guide for Selecting Statistical Techniques for Analyzing Social Science Data* (The University of Michigan, 1981), *Intuitive Biostatistics* (Oxford University Press, 1995), *Lake and Reservoir Bioassessment and Biocriteria Technical Guidance Document* (USEPA, 1998) and *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*(USEPA, 2007). All of these indicated the t-test was an appropriate method for the comparisons being performed. This was also the test proposed in the approved *Lower Fox River Baseline Monitoring Plan* 

The Mann-Whitney test is a non-parametric test for assessing whether two independent samples of observations come from the same distribution. It is virtually identical to performing an ordinary parametric t-test on the data after ranking over the combined samples. The null hypothesis in the Mann–Whitney test is that the two samples are drawn from a single



population, and therefore that their probability distributions are equal. It requires the two samples to be independent, and the observations to be ordinal or continuous measurements, i.e. one can at least say, of any two observations, which is the greater. We reviewed historic results from the Mann-Whitney test and the t-test for data sets on this site. The t-test was determined to be more likely to produce a 'significant difference' result when comparing historic to current data than the Mann-Whitney test. However, no remedial decisions are currently being made based on the mean PCB concentrations in fish along the river reaches. Once t-test results are obtained which indicate that mean fish PCB concentration levels have met ROD objectives, the need to obtain Mann-Whitney results will be reevaluated. As is, the statistical tests are difficult to interpret. Unless decisions and recommendations based on the statistical tests are accepted, Mann-Whitney test results are currently unnecessary. In addition, the t-test is the USEPA accepted method of the comparison.

Box and whisker plots (boxplots) were also generated and are provided in Appendix 3. In descriptive statistics, a box-and-whisker is a convenient way of graphically depicting groups of numerical data through their five-number summaries (the smallest observation (sample minimum), lower quartile (Q1), median (Q2), upper quartile (Q3), and largest observation (sample maximum). Boxplots can be useful to display differences between populations without making any assumptions of the underlying statistical distribution: they are non-parametric. While the boxplots provide a convenient way of comparing data, they were not used for making decisions concerning the data.

Boxplots were generated using ProUCL then exported to Excel for formatting. The plots were only generated to compare fish species collected in 2013 to the fish collected in 2008, 2009, 2010, 2011, and 2012, where appropriate.

In statistics, the coefficient of variation is a normalized measure of dispersion (variation) in the frequency distribution. It is defined as the ration of the standard deviation ( $\sigma$ ) and the mean ( $\mu$ ). Generally, a coefficient of variation of less than 0.5 demonstrates little variation and a normal distribution while a number between 0.5 and 1.0 showing moderate variation and may or may not indicate a normal distribution. A brief summary of the coefficient of variations follows:

- Coefficient of variations in the Upper River ranged from 0.33 to 1.18 with an average of 0.79. The highest coefficient of variation was observed in rock bass from Upper River, Site 1.
- Coefficient of variation in the Middle River ranged from 0.25 to 0.99 with an average of 0.53. The highest coefficient of variation was observed in walleye from Middle River, Site 1.
- Coefficient of variation in the Lower River ranged from 0.32 to 0.87 with an average of 0.51. The highest coefficient of variation was observed in carp.
- Coefficient of variation in the Inner Harbor ranged from 0.31 to 0.73 with an average of 0.54. The highest coefficient of variation was observed in adult white suckers.

The coefficient of variation results indicate a generally normal distribution.



## 4.2 Data Comparison

Table 4 provides a statistical comparison of PCB concentrations in fish from the 2013 sampling event to the 2008 baseline data. Appendix 3 provides the box plots for 2008 to 2013. In the Inner Harbor reach where PRS was unable to collect a various species during the baseline event, the only box plot provided for those is for 2013<sup>1</sup>. Box plots were generated using ProUCL software and were used to establish the mean PCB concentration trend from 2008 to 2013 by site for each species. ProUCL output documentation is provided in Appendix 4. Statistical data comparing the significance of change from historic PCB results to current is provided in Appendix 5.

Since the baseline event, carp have shown an increase in PCB concentrations in all sites. Adult white suckers have showed little PCB concentration variation in the Upper River sites but show a decreasing trend in concentrations in the remaining reaches. However, juvenile white suckers have shown a decreasing trend in the Upper River sites. The PCB concentrations in smallmouth bass have been decreasing in all reaches with a similar trend for rock bass in all but Site 1 of the Middle River reach where little variation has been observed. Below is a brief summary of PCB concentration changes by reach and site for each species over time:

# **Upper River Site 1**

<u>Adult Carp</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2009, and increases from 2009 to 2013. Based on t-test results, the 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Adult White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2009, increases from 2009 to 2010, decreases from 2010 to 2011, and increases from 2011 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008

<u>Juvenile White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2009, increases from 2009 to 2010, decreases from 2010 to 2011, and remains unchanged from 2011 to 2012. Juvenile white suckers were not obtained from this reach in 2013.

<u>Smallmouth Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2009, remains unchanged from 2009 to 2010, decreases from 2010 to 2011, and increases from 2011 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.



<sup>&</sup>lt;sup>11</sup> Adult White Sucker, Juvenile White Sucker, and Rock Bass.

<u>Rock Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2009, remains unchanged from 2009 to 2011, decreases from 2011 to 2012, and increases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

## **Upper River Site 2**

<u>Adult Carp</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2009, decreases from 2009 to 2010, increases from 2010 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Adult White Sucker</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2009, decreases from 2009 to 2010, remains unchanged from 2010 to 2011, decreases from 2011 to 2012, and increases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Juvenile White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2011. Juvenile white suckers were not obtained from this reach in 2012 or 2013.

<u>Smallmouth Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2009, increases from 2009 to 2010, decreases from 2010 to 2011, and increases from 2011 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

<u>Rock Bass</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2009, decreases from 2009 to 2010, increases from 2010 to 2011, decreases from 2011 to 2012, and increases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

## Middle River Site 1

<u>Adult Carp</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2011, decreases from 2011 to 2012, and increases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Adult White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Juvenile White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2010 to 2011 and increases from 2011 to 2012. Juvenile white suckers were not obtained from this reach in 2013.



<u>Smallmouth Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2010, remains unchanged from 2010 to 2011, increases from 2011 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Rock Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2010, increases from 2010 to 2011, remains unchanged from 2011 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

#### Middle River Site 2

Many of the fish species collected in this reach showed increases in PCB concentrations in 2012 compared to previous years and 2013. The increase in 2012 might be attributed to increased PCB exposure during the Lower River dredging activities in 2011 and 2012. Much of the fish collected in the Middle River 2 reach were collected near the Lower River and fish probably move between reaches routinely.

<u>Adult Carp</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Adult White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2011, increases from 2011 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

<u>Juvenile White Sucker</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2010, decreases from 2010 to 2011, increases from 2011 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

<u>Smallmouth Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2011, increases from 2011 to 2012, and decreases from 2012 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

<u>Rock Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2010, increases from 2010 to 2011, and then decreases from 2011 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

#### Lower River

<u>Adult Carp</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2013. The 2013 PCB concentrations are not significantly different from those detected in 2008.

<u>Adult White Sucker</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.



<sup>&</sup>lt;sup>12</sup> Fish collection in 2011 was completed before dredging began.

<u>Smallmouth Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

<u>Rock Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.

# Inner Harbor

<u>Adult Carp</u> – Box plot shows that the mean PCB concentration increases from 2008 to 2013. The 2013 PCB concentrations are significantly higher than those detected in 2008.

<u>Smallmouth Bass</u> – Box plot shows that the mean PCB concentration decreases from 2008 to 2013. The 2013 PCB concentrations are significantly lower than those detected in 2008.



# 5.0 FUTURE PHASE 1 MONITORING

The table below provides the target number of fish to collect in the Upper River, Middle River, Lower River, and Inner Harbor reach sites for the 2014 post remedial annual monitoring event. The number of fish to be collected is based on the variation of the PCB results. The PCB variability in 2012 was similar to 2011. As such, the number of fish to collect has not changed.

	Number of Samples Per River Reach									
Fish Species	Upper	(Site 1)	Upper	(Site 2)	Middle	(Site 1)	Size Range			
	2013	2014	2013	2014	2013	2014				
Smallmouth Bass	12	12	12	12	8	8	10-17			
Silialilloutii Dass	12	12	12	12	O	O	inches			
Adult Carp	12	12	8	8	8	8	15-25			
Addit Carp	12	12	0	0	O	O	inches			
Adult White	12	12	12	12	8	8	8-16 inches			
Suckers	12	12	12	12	O	O	6-10 inches			
Juvenile White	12	12	12	12	8	8	3-8 inches			
Suckers	12	12	12	12	O	O	5-6 inches			
Rock Bass	12	12	12	12	8	8	5-9 inches			
Walleye	0	0	0	0	8	8	12-22			
vv aneye	U	U	U		8	8	inches			
Longnose Dace	0	12	0	12	0	12	1-4 inches			

			Number o	f Samples l	Per River Re	each	
Fish Species	Middle (Site 2)		Lo	wer	Inner 1	Size Range	
	2013	2014	2013	2014	2013	2014	
Smallmouth Bass	8	0	8	O	0 0	o	10-17
Smanmouth bass	8	8	8	8	8	8	inches
Adult Com	8	8	8	8	8	8	15-25
Adult Carp	0	0	0	0	0	0	inches
Adult White	8	8	8	8	8	8	8-16 inches
Suckers	0	0	0	0	0	0	8-10 menes
Juvenile White	8	8	8	8	8	8	3-8 inches
Suckers	0	0	0	0	0	0	5-6 Hiches
Rock Bass	8	8	9	9	9	9	5-9 inches
Walleye	0	0	9	9	9	9	12-22
Walleye	U	0	9	)	9	9	inches
Longnose Dace	0	8	0	8	0	8	1-4 inches



#### 6.0 REFERENCES

Blasland, Bouck & Lee, Inc. Work Plan/QAPP Interim Monitoring Program. Sept. 1996.

Blasland, Bouck & Lee, Inc. External Source Assessment. Nov. 1999.

Pollution Risk Services, LLC. *Quality Assurance Project Plan (QAPP)*. September 2008.

Pollution Risk Services, LLC. Sheboygan River and Harbor Superfund Site Upper and Lower River Post Remediation Monitoring Plan. September 2008.

Pollution Risk Services, LLC. *Sheboygan River and Harbor Superfund Site 2011 Annual Fish Monitoring Report.* February 2012.

United States Environmental Protection Agency. Statement of Work for Organic Analysis. Feb. 1988.

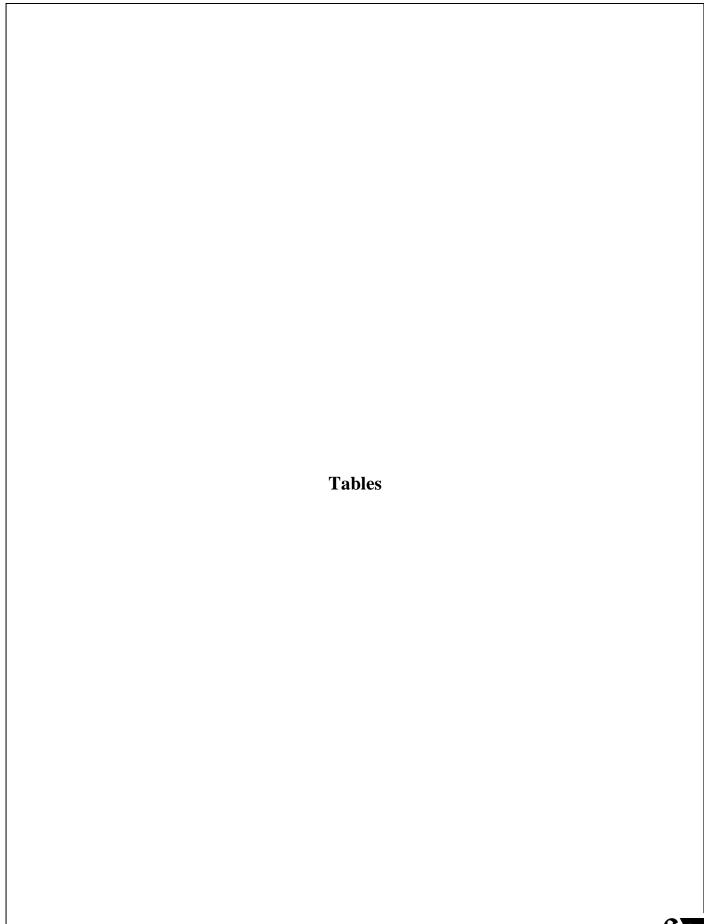
United States Environmental Protection Agency. *Lake and Reservoir Bioassessment and Biocriteria, Technical Guidance Document,* August 1998, <a href="https://www.epa.gov/owow/monitoring/tech/lakes.html">www.epa.gov/owow/monitoring/tech/lakes.html</a>

United States Environmental Protection Agency. *EPA Superfund Record of Decision*. May 2000.

United States Environmental Protection Agency. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* 2007.

Wisconsin Department of Natural Resources. *Division of Environmental Standards Field Procedures Manual*. Sept. 1988.







# **Summary of Targeted Fish Species**

Fish Species	Characteristics	Habitat Targeted fo	r Collection *
•		Upper - Lower River	Inner Harbor
Smallmouth bass	Occurs in all three drainage basins in Wisconsin. A non-migratory fish, they retreat to pools, undercut banks, or fairly deep water to avoid sunlight. Spawn in May through June when the water reaches 55-75°F. The average length of young-of year in Wisconsin is 2.7 inches by the end of September. The fish begin to reach sexual maturity at the ages of 3-4 depending on sex. The usual longevity is 5-7 years.	Area of little soft sediment. Sandy or gravel bottom best. Area of stumps or downed trees.	
Carp	Occurs in all drainage basins in Wisconsin. It is found in a wide variety of habitats but prefer warm turbid water. Spawn in April to August when the water reaches 65-75°F. The average length of young-of year in Wisconsin is 3.7 inches by the end of September. In Wisconsin, carp mature between the ages of 2 and 3 depending on the sex. The usual longevity is 9-15 years. They can have a fairly extensive range and can jump small dams.	Areas with vegetation	
White suckers	Occurs in all drainage basins in Wisconsin and is probably the most widespread of all fish in Wisconsin. It is found in warm shallows of estuaries and bays and can tolerate all stream gradients and a wide range of environmental conditions and pollution. Spawn in April to May when the water reaches about 45°F. The typical length of young-of year in Wisconsin is 2.6 inches by the end of September. The usual longevity is 5 years after maturing between the ages of 2 and 3. They move about extensively.	Areas with vegetation	
Rock Bass	Occurs in all three drainage basins in Wisconsin. It is found in clear water over a gravel or rocky bottom and is often found near breakwaters and stone-armored shorelines. Often found with other sunfish such as smallmouth bass. Spawn in spring when the water reaches 60-70°F. The average length of young-of year in Wisconsin is 1.7 inches by the end of September. They reach maturity between ages 2 and 3. The usual longevity is 6-8 years. They have a limited range.	Prefers clear, rocky, and vegetated stream pools.	Near structures offering protection.
Longnose Dace	Occurs in all drainage basins in Wisconsin. Occurs in riffles or torrential water over a bottom of boulder and gravel; it generally avoids pools and quiet runs. Spawn in late April to mid-June at an average water temperature of 63°F. The average length of young-of year in Wisconsin is 1.7 inches by the end of September. The usual longevity is 3-4 years after reaching maturity at age 2. No information on their range of migration was found. These fish were removed from the sampling requirements for the 2013 sampling event.	Area of little soft sediment. Sandy, gravel or cobble bottom that have some vegetation for cover are best.	Bridge abutment docks, etc.
Walleye	Present throughout Wisconsin. During the day, hovers in shadows of submerged objects or in shadows of deep water. At dusk, emerge to feed over shallow weed beds or rocky shoals. Spawn in mid-April to mid-May when water reaches 42-50°F. The average length of young-of year in Wisconsin is 3 inches by the end of July. Maturity occurs between the ages of 2 to 5 for males and 5 to 7 for females. The usual longevity is 6-7 years. They have a fairly extensive range and can jump small dams.	Area of little soft sediment. Sandy or gravel bottom best. Area of rough water.	
Catfish	Occurs in all three drainage basins in Wisconsin. It is found in a wide variety of habitats but prefer warm water. Spawn in May or June when the water reaches 75°F. The average length of young-of year catfish in Wisconsin is 3.4 inches by the end of September. Sexual maturity varies by body of water but it appears both sexes begin maturing by the age of 5. Few catfish live beyond 8 years. They can have a fairly extensive range.	Prefers some current and deep water with sand, gravel or rubble bottoms. Areas near bank overhangs or downed trees or stumps	

<sup>\* -</sup> General tips on fish locations: outside bends of river, downstream of rocks, area where fast water meets slower water, area of merging currents (streams, brooks, rivers et.) current edges, areas with overhanging trees or branches, drop offs, undercuts, below dams or falls, above springs, riparian zones

# 2013 Phase 1 Daily Fish Collection Summary

Date	River Reach	Adult Carp	Adult White Suckers	Juvenile White Suckers	Small Mouth Bass	Rock Bass	Channel Catfish	Walleye
6/3/2013	UR1	6	12	0	1	4	0	0
6/4/2013	UR1	0	0	0	11	5	0	0
6/5/2013	UR2	11	12	0	12	12	0	0
6/6/2013	LR	8	8	0	8	9	0	0
6/7/2013	MR2	8	8	7	8	8	0	0
6/8/2013	MR1	8	8	8	8	8	0	0
6/9/2013	MR1	0	0	0	0	0	8	3
6/9/2013	UR1	6	0	0	0	0	0	3
6/10/2013	IH	7	8	0	9	4	0	0
TOTAL		54	56	15	57	50	8	6

UR1 – Upper River from former Tecumseh Site to Riverbend Dam

Table 2 Page 1 of 1

UR2 – Upper River from Riverbend Dam to Waelderhaus Dam

MR1 - Middle River from Waelderhaus Dam to Kohler Landfill

MR2 - Middle River from Kohler Landfill to C&NW Railroad Bridge

LR - Lower River from C&NW Railroad Bridge to Pennsylvania Avenue Bridge

IH - Inner Harbor from Pennsylvania Avenue Bridge to Sheboygan River outlet

# 2013 Phase I Fish Collection Summary

	UR1	UR1	UR2	UR2	MR1	MR1	MR2	MR2	LR	LR	IH	IH
Species	Target	Collected										
Adult Carp	12	12	12	11	8	8	8	8	8	8	8	7
Adult White Sucker	12	12	12	12	8	8	8	8	8	8	8	8
Juvenile White Sucker	12	0	12	0	8	0	8	7	8	0	8	0
Smallmouth Bass	12	12	12	12	8	8	8	8	8	8	8	9
Rock Bass	12	9	12	12	8	8	8	8	9	9	9	4
Walleye	0	0	0	0	8	3	0	0	9	0	9	0
Channel Catfish	0	0	0	0	0	8	0	0	0	0	0	0
Total	60	45	60	47	48	43	40	39	50	33	50	28

UR1 – Upper River from former Tecumseh Site to Riverbend Dam

UR2 – Upper River from Riverbend Dam to Waelderhaus Dam

MR1 - Middle River from Waelderhaus Dam to Kohler Landfill

MR2 - Middle River from Kohler Landfill to C&NW Railroad Bridge

LR - Lower River from C&NW Railroad Bridge to Pennsylvania Avenue Bridge

IH - Inner Harbor from Pennsylvania Avenue Bridge to Sheboygan River outlet

# Year by Year Statistical Comparision

UR1 - AC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	25.88	6.04	13.89	17.86	28.46	37.02
Minimum	1.63	0.65	5.27	1.87	4.55	8.27
Maximum	73.13	15.70	34.70	58.90	52.20	100.00
Standard Deviation	21.45	5.38	8.74	17.53	15.78	24.62
Coefficient of Variation	0.83	0.89	0.63	0.98	0.55	0.67
Upper 95% UCL	35.28	8.83	8.83	30.85	36.64	51.44
UR1 - AWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	12.42	10.94	16.23	4.71	10.63	10.68
Minimum	5.74	0.25	3.92	1.67	2.67	2.21
Maximum	20.60	25.30	45.90	16.50	25.20	37.20
Standard Deviation	5.00	8.26	10.90	3.92	6.81	9.61
Coefficient of Variation	0.40	0.76	0.67	0.83	0.64	0.90
Upper 95% UCL	15.77	16.48	16.48	6.73	14.16	16.33
UR1 - JWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	6.01	3.10	9.87	2.32		
Minimum	1.99	1.52	3.94	0.44		
Maximum	9.71	5.81	16.60	5.36		
Standard Deviation	2.85	1.65	4.27	1.71		
Coefficient of Variation	0.47	0.53	0.43	0.74		
Upper 95% UCL	7.92	4.48	4.48	3.53		
UR1 - SB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	12.96	5.75	4.74	3.22	5.80	7.06
Minimum	4.09	1.28	0.52	0.69	2.52	0.14
Maximum	22.20	11.50	7.26	4.77	8.69	21.50
Standard Deviation	7.28	3.51	2.03	1.50	2.17	6.70
Coefficient of Variation	0.56	0.61	0.43	0.47	0.37	0.95
Upper 95% UCL	17.83	8.10	8.10	4.00	6.93	10.53
UR1 - RB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	6.94	2.85	2.85	3.66	3.07	4.03
Minimum	1.22	0.90	0.30	0.41	1.18	0.15
Maximum	16.80	4.80	5.94	12.00	5.94	15.70
Standard Deviation	5.01	1.32	1.97	2.94	1.87	4.79
Coefficient of Variation	0.72	0.46	0.69	5.66	0.61	1.19
Upper 95% UCL	10.30	3.76	3.76	5.66	4.33	9.04
UR2 - AC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	14.72	16.83	7.03	8.84	21.29	19.22
Minimum	1.02	5.04	0.29	2.44	4.65	1.05
Maximum	47.70	37.50	32.90	19.70	36.90	39.00
Standard Deviation	15.04	9.49	11.15	5.68	10.83	12.00
Coefficient of Variation	1.02	0.56	1.59	0.64	0.51	0.62
Upper 95% UCL	24.89	20.99	20.99	12.64	28.55	25.78
UR2 - AWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	8.92	11.58	5.11	4.31	3.71	6.87
Minimum	3.95	2.27	2.82	2.36	1.32	3.66
Maximum	16.60	25.00	11.00	7.69	8.31	12.40
Standard Deviation	4.19	7.69	2.57	1.64	2.50	2.28
Coefficient of Variation	0.47	0.66	0.50	0.38	0.67	0.33
Upper 95% UCL	11.72				5.35	
Opper 95% UCL	11./2	16.73	16.73	5.16	2.33	8.05

Table 4 Page 1 of 6

# Year by Year Statistical Comparision

UR2 - JWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	6.82	2.75	1.97	1.50		
Minimum	3.73	0.71	0.46	0.87		
Maximum	11.50	5.09	3.51	2.41		
Standard Deviation	2.96	1.24	0.94	0.53		
Coefficient of Variation	0.43	0.45	0.48	0.35		
Upper 95% UCL	8.80	3.58	3.58	1.80		
UR2 - SB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	14.52	3.52	4.32	2.28	2.69	2.93
Minimum	3.12	0.54	1.68	0.70	1.25	0.96
Maximum	33.50	9.20	7.72	4.11	9.72	5.80
Standard Deviation	11.11	3.22	1.92	1.17	2.30	1.60
Coefficient of Variation	0.77	0.91	0.44	0.51	0.85	0.54
Upper 95% UCL	21.96	5.68	5.68	2.89	3.80	3.76
UR2 - RB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	4.27	6.70	1.63	2.20	1.18	2.28
Minimum	0.74	0.96	0.53	0.46	0.35	0.78
Maximum	8.72	14.00	3.10	4.80	2.25	9.96
Standard Deviation	2.94	4.91	0.94	1.21	0.68	2.49
Coefficient of Variation	0.69	0.73	0.57	0.55	0.57	1.09
Upper 95% UCL	6.23	9.99	9.99	2.82	1.54	3.55

Table 4 Page 2 of 6

MR1 - AC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	4.44		25.81	17.01	14.19	15.54
Minimum	1.28		3.35	7.80	0.61	8.49
Maximum	22.80		123.00	25.00	24.90	22.90
Standard Deviation	7.43		39.96	5.76	7.27	5.24
Coefficient of Variation	1.67		1.55	0.34	0.51	0.34
Upper 95% UCL	15.89		8.83	20.87	19.06	19.04
MR1 - AWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	8.77		4.16	3.31	2.14	1.78
Minimum	3.24		0.47	0.42	0.68	0.63
Maximum	19.90		8.11	5.94	4.41	4.87
Standard Deviation	5.86		2.44	1.73	1.22	1.39
Coefficient of Variation	0.67		0.59	0.52	0.57	0.78
Upper 95% UCL	13.07		16.48	4.47	2.95	3.01
MR1 - JWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean			2.87	1.12	2.13	
Minimum			1.63	0.63	1.27	
Maximum			3.63	1.84	3.92	
Standard Deviation			0.65	0.39	0.96	
Coefficient of Variation			0.23	0.34	0.45	
Upper 95% UCL			4.48	1.39	2.92	
MR1 - CC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean						12.75
Minimum						5.41
Maximum						18.70
Standard Deviation						4.39
Coefficient of Variation						0.34
Upper 95% UCL						15.69
MR1 - SB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	8.75		3.78	3.29	4.02	2.35
Minimum	4.20		0.69	0.19	1.05	0.35
Maximum	18.20		9.71	8.25	7.44	4.51
Standard Deviation	4.94		2.78	2.52	2.21	1.57
Coefficient of Variation	0.56		0.73	0.77	0.55	0.67
Upper 95% UCL	12.07		8.10	4.98	5.50	3.41
MR1- RB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	2.79		1.26	1.73	1.73	1.36
Minimum	2.79		0.92	0.41	1.15	0.97
Maximum	2.79		1.69	2.83	2.76	2.07
Standard Deviation	NA		0.24	0.83	0.55	0.35
Coefficient of Variation	NA		0.19	0.48	0.32	0.26
Upper 95% UCL	NA		3.76	2.29	2.10	1.60
MR1- W	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	2.79					10.53
Minimum	2.79					4.38
Maximum	2.79					21.10
Standard Deviation	NA					9.20
Coefficient of Variation	NA					0.87
Upper 95% UCL	NA					16.90

Table 4 Page 3 of 6

MR2 - AC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	1.27		5.88	9.83	19.21	15.58
Minimum	1.27		2.42	1.83	6.13	2.09
Maximum	1.27		11.70	20.50	37.00	45.30
Standard Deviation	NA		3.31	6.67	11.72	15.46
Coefficient of Variation	NA		0.56	0.68	0.61	0.99
Upper 95% UCL	NA		20.99	14.29	27.05	25.94
MR2 - AWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	3.96		2.77	2.21	3.21	0.73
Minimum	0.93		1.56	0.70	1.58	0.18
Maximum	6.98		4.08	5.91	4.61	1.31
Standard Deviation	2.01		1.08	1.76	1.22	0.39
Coefficient of Variation	0.51		0.39	0.80	0.38	0.54
Upper 95% UCL	5.31		16.73	3.39	4.02	0.99
MR2 - JWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	1.37		2.31	0.95	2.95	1.49
Minimum	0.98		1.19	0.03	1.41	1.15
Maximum	2.03		3.50	1.28	4.01	1.90
Standard Deviation	0.39		0.88	0.42	0.87	0.37
Coefficient of Variation	0.28		0.38	0.44	0.30	0.25
Upper 95% UCL	1.66		2.91	1.12	3.53	1.87
MR2 - SB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	4.30		2.38	1.34	2.74	1.61
Minimum	2.64		0.89	0.85	1.92	1.03
Maximum	7.65		5.64	2.60	3.89	2.48
Standard Deviation	1.61		1.50	0.58	0.63	0.49
Coefficient of Variation	0.37		0.63	0.44	0.23	0.31
Upper 95% UCL	5.38		5.68	1.75	3.17	1.94
See Notes on Page 3						

Table 4 Page 4 of 6

MR2 - RB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	2.49		1.11	1.71	1.59	0.92
Minimum	1.42		0.43	0.41	1.15	0.45
Maximum	3.70		2.34	3.16	2.07	1.25
Standard Deviation	0.79		0.60	0.84	0.38	0.23
Coefficient of Variation	0.32		0.54	0.49	0.24	0.26
Upper 95% UCL	3.02		9.99	2.27	1.85	1.07
LR - AC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	11.30					17.22
Minimum	0.46					2.17
Maximum	44.90					48.90
Standard Deviation	15.20					14.92
Coefficient of Variation	1.35					0.87
Upper 95% UCL	32.60					27.21
LR - AWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	4.31	(		( <b>gg</b> )	( <del></del> <del></del> <del></del>	1.08
Minimum	3.65					0.61
Maximum	4.96					1.76
Standard Deviation	0.93					0.39
Coefficient of Variation	0.22					0.36
Upper 95% UCL	To few samples					1.35
LR - SB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	5.77					1.34
Minimum	1.78					0.43
Maximum	10.90					2.52
Standard Deviation	3.05					0.75
Coefficient of Variation	0.53					0.56
Upper 95% UCL	7.81					1.84
LR - RB	i	2000 (mg/I/g)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	
	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	2.60					1.30
Minimum	1.40					0.53
Maximum	4.27					1.84
Standard Deviation	1.11					0.42
Coefficient of Variation	0.43					0.32
Upper 95% UCL	3.29					1.56
IH - AC	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	3.16					15.77
Minimum	0.24					9.96
Maximum	9.14					24.70
Standard Deviation	2.81					4.92
Coefficient of Variation	0.89					0.31
Upper 95% UCL	5.05					19.38
IH - AWS	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean						0.91
Minimum						0.34
Maximum						2.03
Standard Deviation						0.66
Coefficient of Variation						0.73
Upper 95% UCL						1.52

Table 4 Page 5 of 6

IH - SB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
Mean	3.36					1.60
Minimum	1.44					0.20
Maximum	4.43					2.91
Standard Deviation	1.04					0.99
Coefficient of Variation	0.31					0.62
Upper 95% UCL	4.06					2.22
IH - RB	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2013 (mg/Kg)
IH - RB Mean	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	<b>2013 (mg/Kg)</b> 2.24
	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	
Mean	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2.24
Mean Minimum	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2.24 1.30
Mean Minimum Maximum	2008 (mg/Kg)	2009 (mg/Kg)	2010 (mg/Kg)	2011 (mg/Kg)	2012 (mg/Kg)	2.24 1.30 3.94

UR1 – Upper River from former Tecumseh Site to Riverbend Dam

UR2 – Upper River from Riverbend Dam to Waelderhaus Dam

MR1 - Middle River from Waelderhaus Dam to Kohler Landfill

MR2 - Middle River from Kohler Landfill to C&NW Railroad Bridge

LR - Lower River from C&NW Railroad Bridge to Pennsylvania Avenue Bridge

IH - Inner Harbor from Pennsylvania Avenue Bridge to Sheboygan River outlet

AC - Adult carp

AWS - Adult white sucker

JWS - Juvenile white sucker

SB - Smallmouth bass

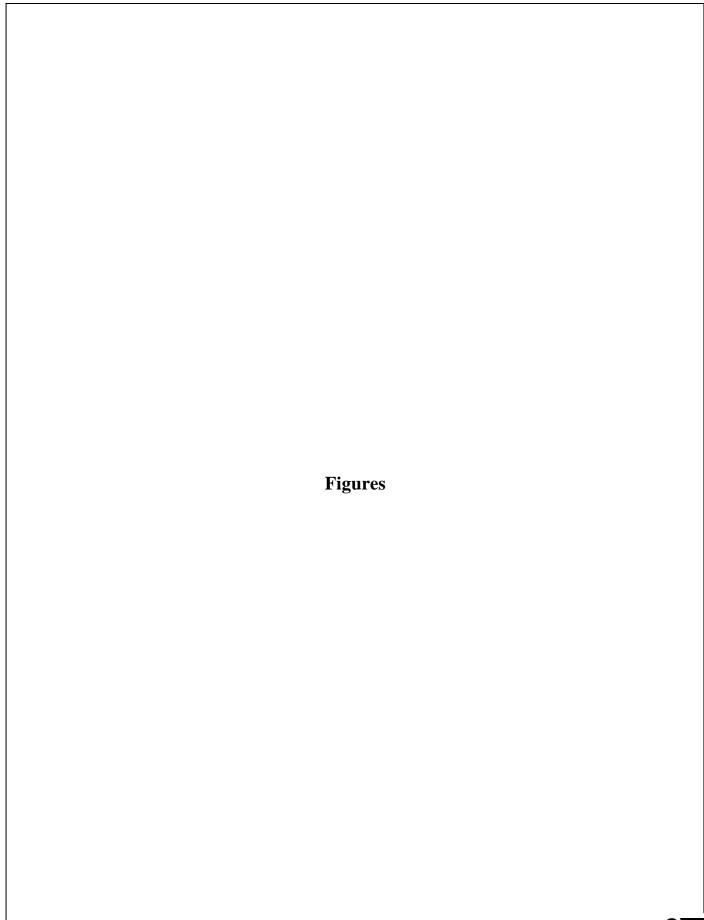
RB - Rock Bass

CC - Channel Catfish

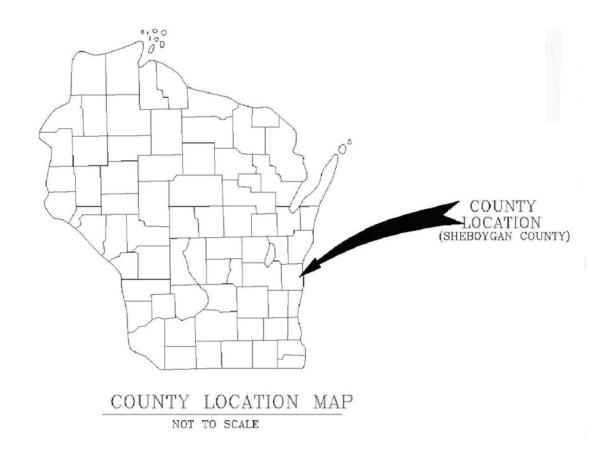
W - Walleye

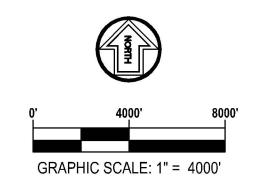
Data not presented where no fish were collected

Table 4 Page 6 of 6

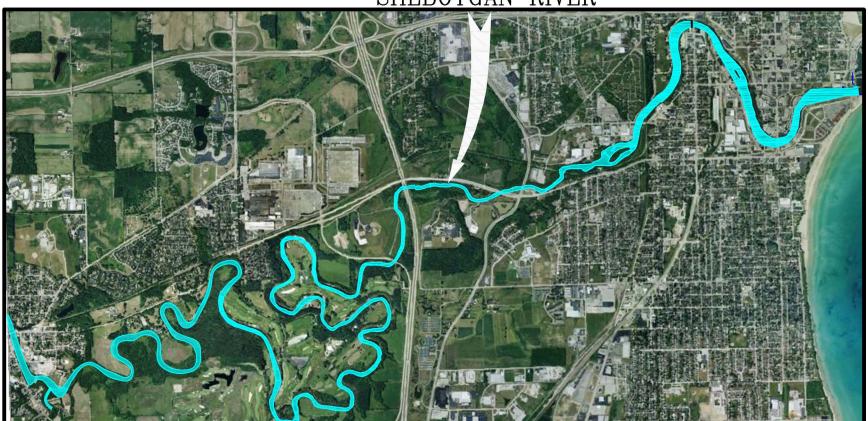








SHEBOYGAN RIVER



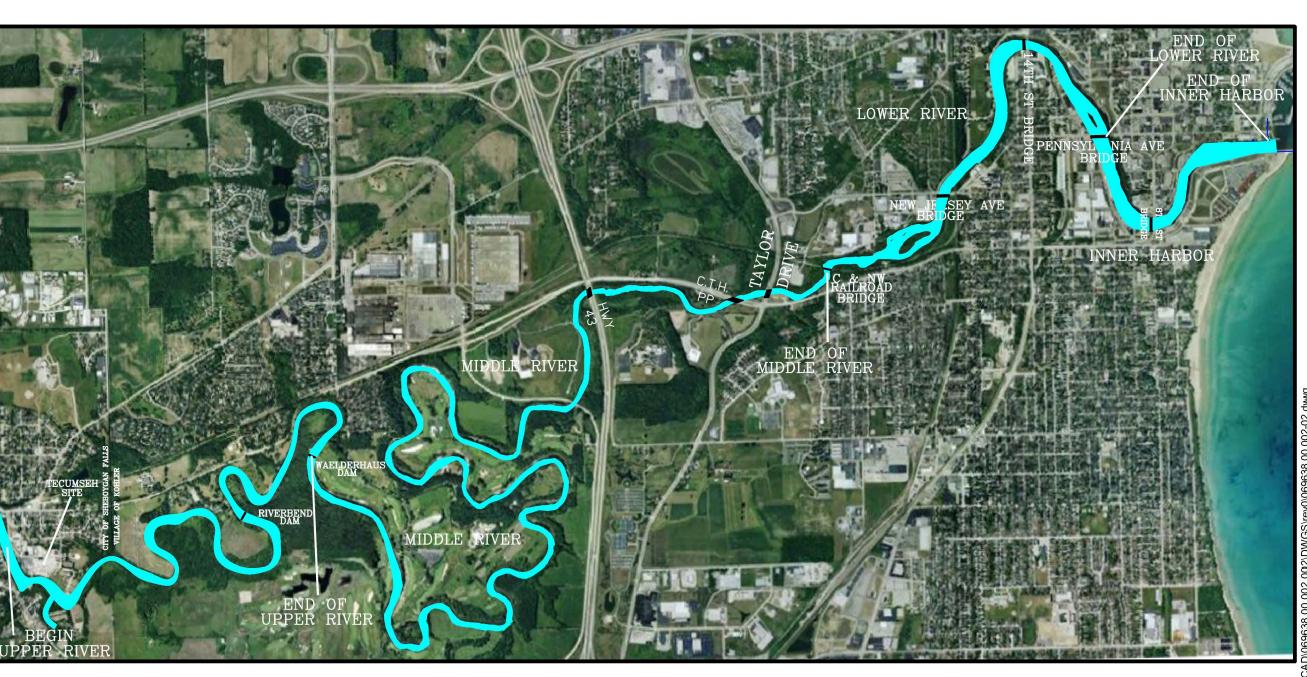
SHEBOYGAN RIVER LOCATION MAP

SAR

1" = 4000'

SHEBOYGAN RIVER AND HARBOR SUPERFUND SITE 2009 PHASE 1 UPPER RIVER FISH MONITORING REPORT SHEBOYGAN FALLS, WISCONSIN

NOTE: DRAWING INFORMATION PROVIDED BY POLLUTION RISK SERVICES.



GRAPHIC SCALE: 1" = 2000'

Apr 25, 2

SAR

1" = 2000

2009 PHASE 1 UPPER RIVER FISH MONITORING REPORT SHEBOYGAN FALLS, WISCONSIN

SHEBOYGAN RIVER AND HARBOR SUPERFUND SITE RIVER REACHES

NOTE: DRAWING INFORMATION PROVIDED BY POLLUTION RISK SERVICES.

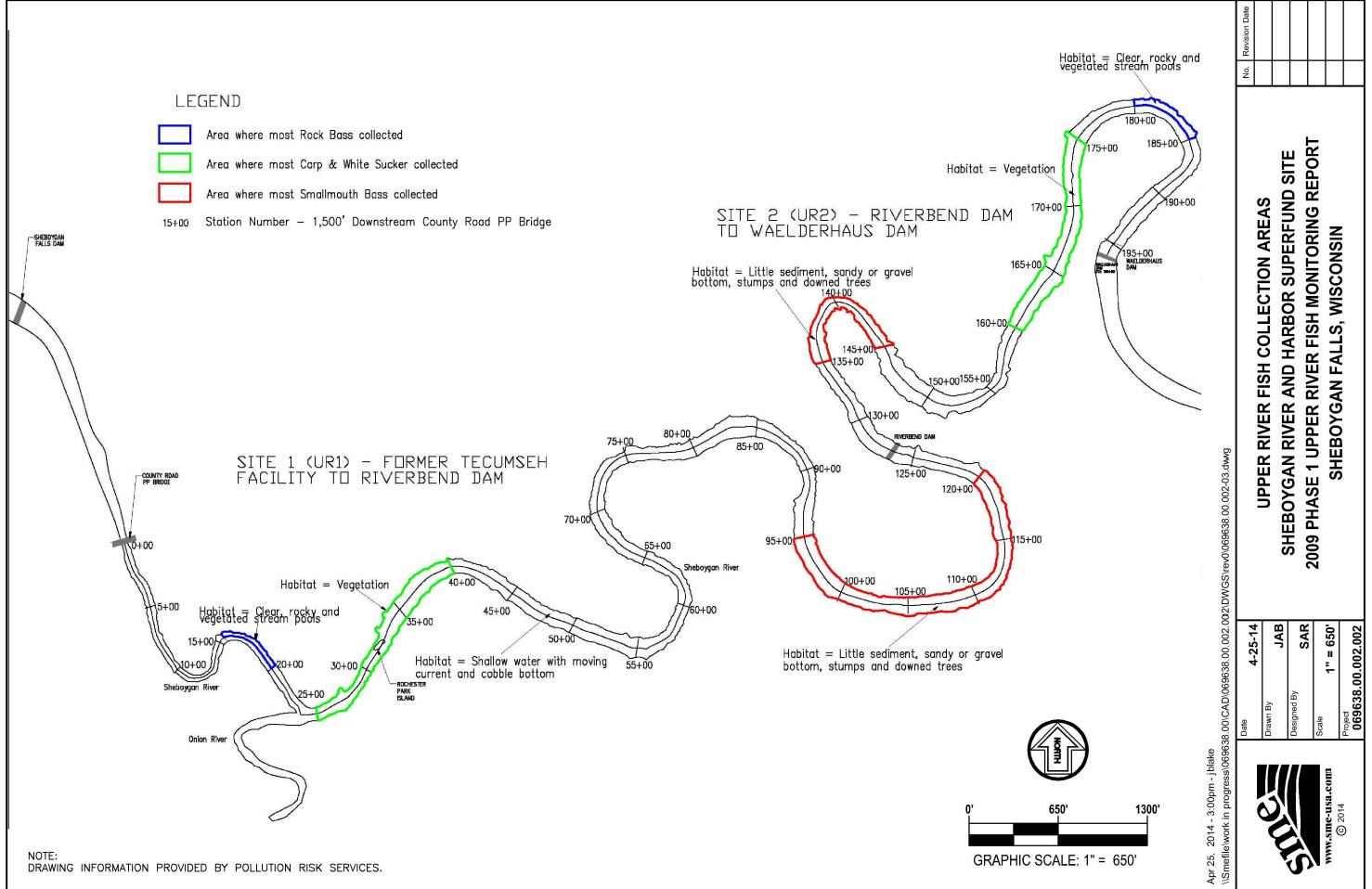


Figure No. 3

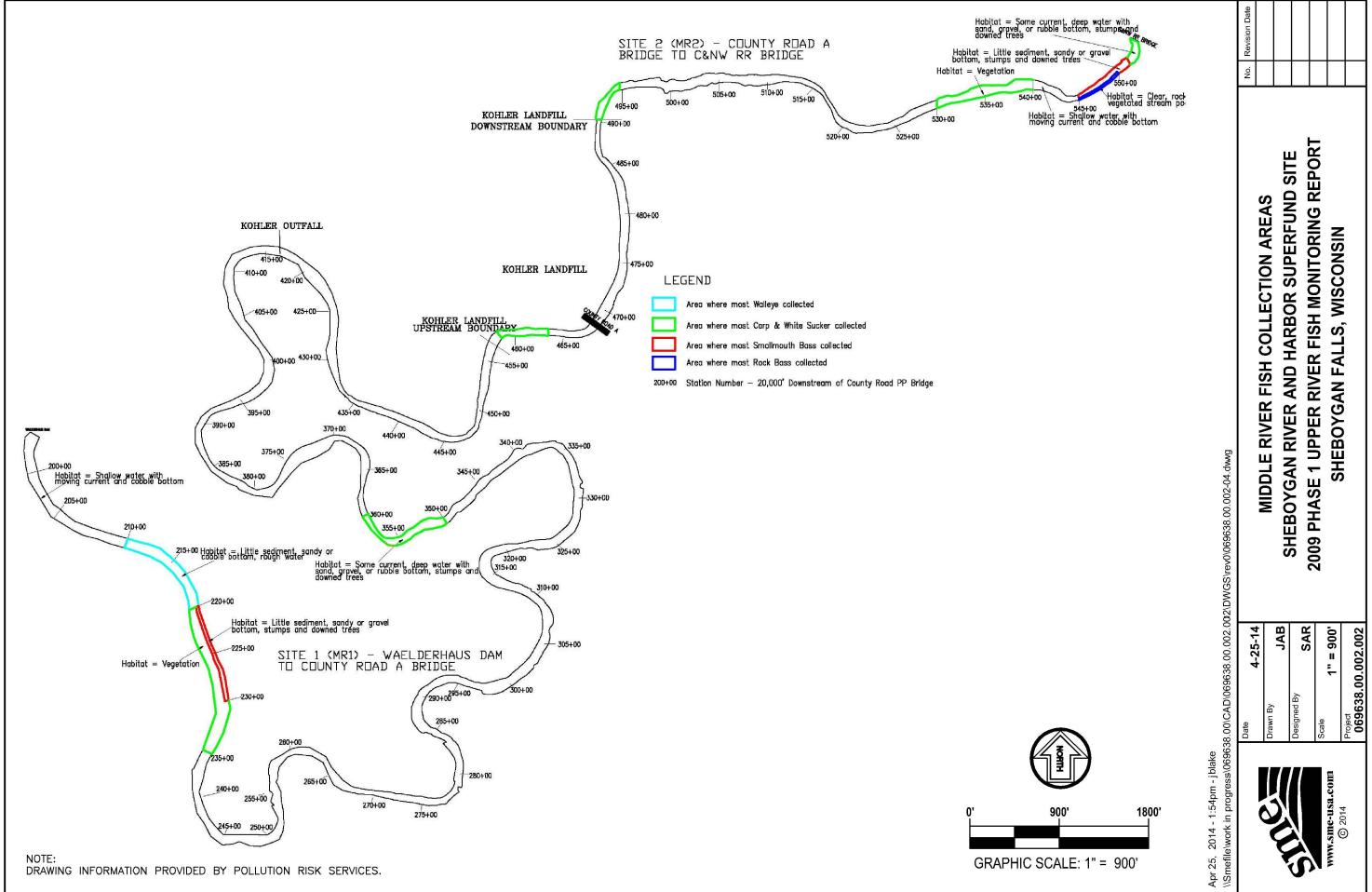


Figure No. 4

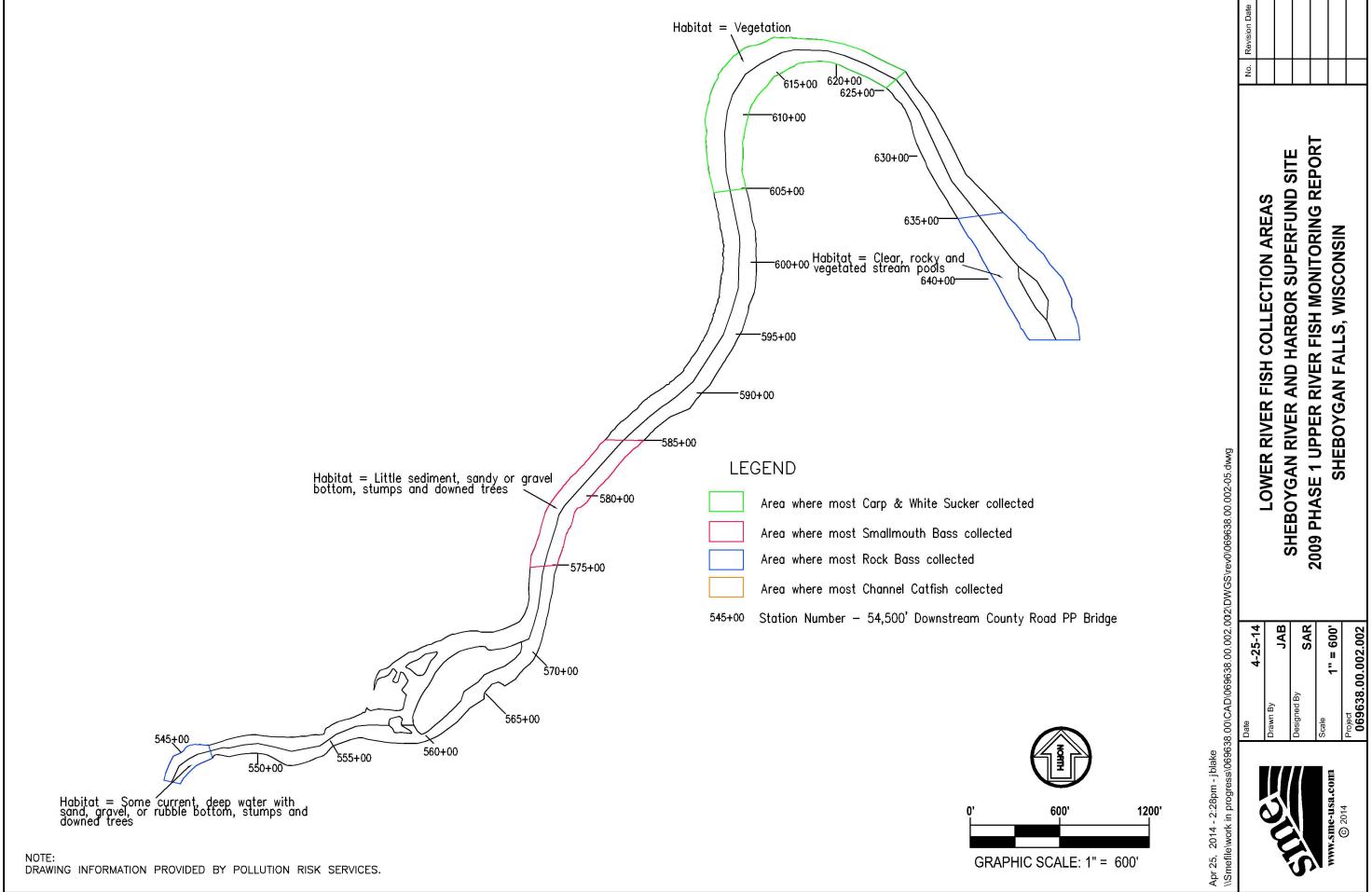


Figure No. 5

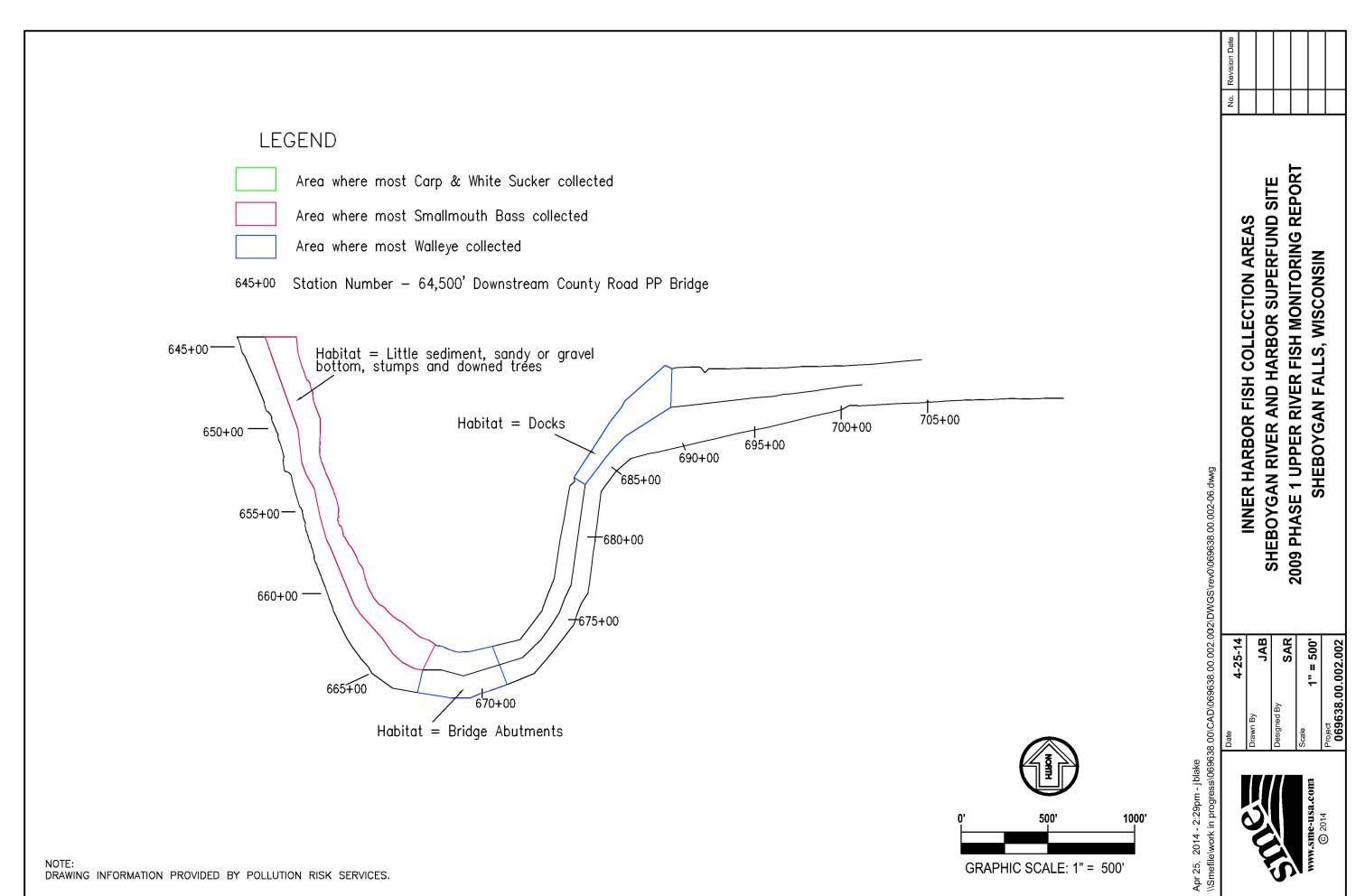
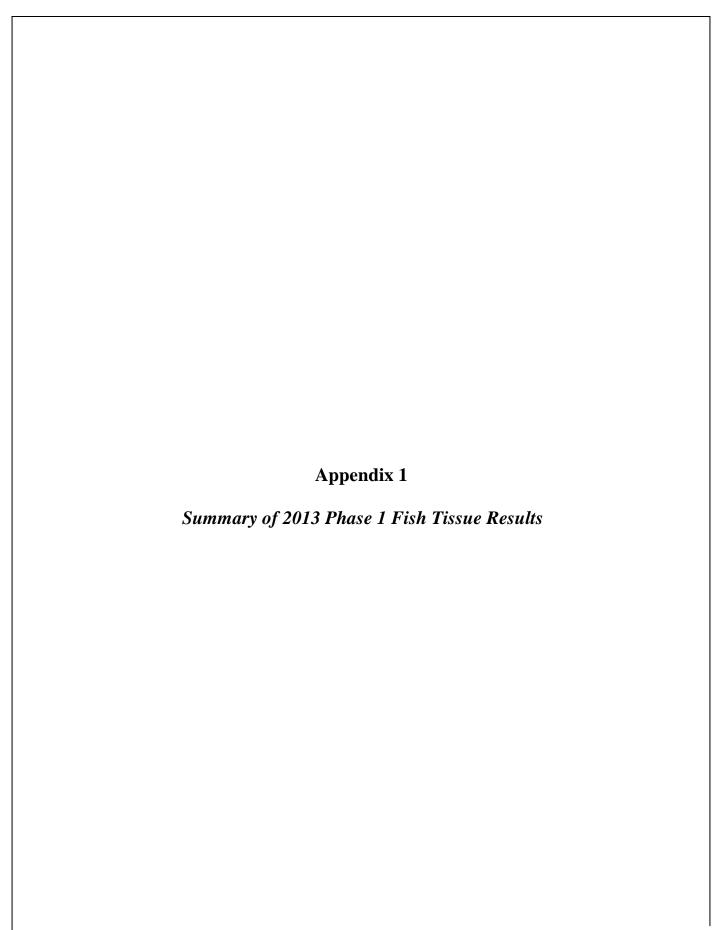


Figure No. 6





2013 FISH	SAMPLE RES	ULTS - U	PPER RI	VER SITI	E 1 (UR1)	
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)
UR1 AC1			F	23.00	4.4%	33.50
UR1 AC2			M	23.50	1.8%	8.27
UR1 AC3			F	23.50	6.1%	28.50
UR1 AC4			F	24.00	17.3%	49.40
UR1 AC5			M	20.50	7.7%	100.00
UR1 AC6	A 1 1 G	0.0	M	24.00	8.0%	33.10
UR1 AC7	Adult Carp	SO	M	20.50	4.6%	28.90
UR1 AC8			F	24.00	2.0%	17.70
UR1 AC9			M	25.00	6.7%	18.90
UR1 AC10			F	25.50	4.7%	43.60
UR1 AC11			F	25.00	9.0%	49.50
UR1 AC12			M	20.00	3.7%	29.30
Mean Result fo	NA	23.21	6.33%	36.72		
Minimum Result	NA	20.00	1.80%	8.27		
Maximum Result	NA	25.50	17.30%	100.00		
Standard Deviation	NA	1.88	4.13%	23.49		
Coefficient of Varia	tion for Adult Car	тр	NA	0.08	0.65	0.64
Upper 95% UCL	for Adult Carp	_	NA	24.27	8.67%	51.44
UR1 AWS1			M	15.50	1.6%	11.80
UR1 AWS2			M	12.00	1.5%	8.33
UR1 AWS3			M	21.30	2.0%	37.20
UR1 AWS4			M	15.00	1.6%	15.80
UR1 AWS5			M	14.00	0.8%	6.88
UR1 AWS6	Adult White		M	15.00	1.7%	11.90
UR1 AWS7	Sucker	SO	M	14.00	1.2%	8.44
UR1 AWS8			M	16.00	1.2%	8.60
UR1 AWS9			M	14.50	1.2%	2.21
UR1 AWS10			M	13.50	2.5%	9.99
UR1 AWS11			M	12.50	1.8%	5.29
UR1 AWS12			M	13.00	1.0%	2.82
Mean Result for A	dult White Sucker		NA	14.69	1.51%	13.90
Minimum Results for	Adult White Suc	ker	NA	12.00	0.78%	2.21
Maximum Results for	Adult White Suc	ker	NA	21.30	2.50%	51.44
Standard Deviation for			NA	2.40	0.47%	14.29
Coefficient of Variation	for Adult White S	Sucker	NA	0.16	0.31	1.03
Upper 95% UCL for	Adult White Suck	cer	NA	16.05	1.77%	16.33

See notes on last page. Page 1 of 13

2013 FISH SA	AMPLE RESU	ULTS - U	PPER RI	VER SITI	E 1 (UR1)	
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)
UR1 SMB1			M	17.50	0.4%	1.11
UR1 SMB2			M	8.00	0.4%	5.26
UR1 SMB3			M	17.00	0.5%	0.56
UR1 SMB4			M	16.00	0.7%	1.25
UR1 SMB5	1		M	14.00	0.8%	21.50
UR1 SMB6	Smallmouth	SO	F	14.00	0.5%	1.16
UR1 SMB7	Bass	30	M	11.50	0.7%	14.00
UR1 SMB8			F	12.00	0.7%	0.14
UR1 SMB9			M	10.50	0.6%	8.56
UR1 SMB10			M	9.00	0.7%	10.10
UR1 SMB11			F	10.00	0.8%	12.10
UR1 SMB12			M	9.50	0.5%	8.94
Mean Result for Sm	NA	12.42	0.60%	7.06		
Minimum Results for S	NA	8.00	0.36%	0.14		
Maximum Results for	NA	17.50	0.82%	21.50		
Standard Deviation for	Smallmouth Ba	iss	NA	3.23	0.15%	6.70
Coefficient of Variation f	or Smallmouth	Bass	NA	0.26	0.25	0.95
Upper 95% UCL for S	Smallmouth Bas	S	NA	14.25	0.69%	10.53
UR1 RB1			M	9.00	0.5%	6.84
UR1 RB2	1		M	8.00	0.6%	2.68
UR1 RB3	1		F	6.50	0.6%	15.70
UR1 RB4	1		F	7.00	0.4%	3.27
UR1 RB5	Rock Bass	SO	M	5.00	0.5%	0.82
UR1 RB6	1		F	6.25	0.4%	3.01
UR1 RB7	1		F	7.75	0.3%	1.11
UR1 RB8	1		M	6.75	0.0%	0.15
UR1 RB9	1		M	7.25	0.3%	2.69
Mean Result for	NA	7.06	0.41%	4.03		
Minimum Results for Rock Bass			NA	5.00	0.04%	0.15
Maximum Results	for Rock Bass		NA	9.00	0.62%	15.70
Standard Deviation	for Rock Bass		NA	1.14	0.19%	4.79
Coefficient of Variation	on for Rock Bas	is	NA	0.16	0.45	1.19
Upper 95% UCL f	or Rock Bass		NA	7.80	0.53%	9.04

See notes on last page. Page 2 of 13

Sample ID   Sample Type   Sample Form*   Gender (MF) (inches)   Fat (%)   PCB (mg/kg)	2013 FISH S	AMPLE RESI	ULTS - U	PPER RI	VER SITI	E 2 (UR2)	
UR2 AC2	Sample ID	Sample Type	-		-	Fat (%)	PCB (mg/kg)
UR2 AC3	UR2 AC1			M	12.00	2.8%	3.55
Nation   N	UR2 AC2	1		F	24.00	6.4%	17.10
Na	UR2 AC3	1		F	20.00	1.4%	5.16
Nation   Coefficient of Variation for Adult Carp   Variation for Adult Carp   Variation for Adult Carp   Variation for Adult White Sucker   Variation for Variation for Variation for Adult White Sucker   Variation for Variation for Variation for Adult White Sucker   Variation for Variation for Variation for Variation for Variati	UR2 AC4	1		M	23.50	4.5%	17.90
The content of the	UR2 AC5	1		M	24.00	10.1%	21.20
M	UR2 AC6	Adult Carp	SO	F	23.00	12.0%	23.10
M   27.50   13.5%   27.30     UR2 AC10   M   21.50   3.4%   1.05     M   20.00   3.0%   39.00     M   20.00   1.40%   1.05     M   1.500   1.00%   1.00     M   1.500   2.4%   6.84     M   1.500   2.4%   6.84     M   1.500   2.6%   5.71     M   1.500   2.6%   5.73     M   1.500   2.5%   6.87     M   1.500   2.5%   6.87     M   1.500   2.5%   6.87     M   1.500   3.66%   7.73     M   1.500   3.66%   7.73     M   1.500   3.60%   12.40     Standard Deviation for Adult White Sucker   NA   1.39   0.74%   2.28     Coefficient of Variation for Adult White Sucker   NA   0.09   0.29   0.33     M   1.500   1.00%   3.66     M   1.5	UR2 AC7	1		F	24.00	20.3%	31.80
M	UR2 AC8	1		M	24.00	12.4%	24.30
M   20.00   3.0%   39.00     Mean Result for Adult Carp   NA   22.14   8.16%   19.22     Minimum Results for Adult Carp   NA   12.00   1.40%   1.05     Maximum Results for Adult Carp   NA   27.50   20.30%   39.00     Standard Deviation for Adult Carp   NA   3.97   5.94%   12.00     Coefficient of Variation for Adult Carp   NA   0.18   0.73   0.62     Upper 95% UCL for Adult Carp   NA   24.48   11.67%   25.78     UR2 AWS1   UR2 AWS2   UR2 AWS4   UR2 AWS6   UR2 AWS7   UR2 AWS9   UR2 AWS9   UR2 AWS1   UR2 AWS9   UR2 AWS1   UR2 AWS9   UR2 AWS10   UR2 AWS10   UR2 AWS10   UR2 AWS11   UR2 AWS10   UR2 AWS12   M   14.00   2.2%   6.98     UR2 AWS10   UR2 AWS11   UR2 AWS12   M   14.50   2.7%   5.33     Mean Result for Adult White Sucker   NA   15.17   2.52%   6.87     Minimum Results for Adult White Sucker   NA   1.39   0.74%   2.28     Coefficient of Variation for Adult White Sucker   NA   1.39   0.74%   2.28     Coefficient of Variation for Adult White Sucker   NA   0.09   0.29   0.33	UR2 AC9	1		M	27.50	13.5%	27.30
Mean Result for Adult Carp         NA         22.14         8.16%         19.22           Minimum Results for Adult Carp         NA         12.00         1.40%         1.05           Maximum Results for Adult Carp         NA         27.50         20.30%         39.00           Standard Deviation for Adult Carp         NA         3.97         5.94%         12.00           Coefficient of Variation for Adult Carp         NA         0.18         0.73         0.62           Upper 95% UCL for Adult Carp         NA         24.48         11.67%         25.78           UR2 AWS1         M         16.50         1.4%         3.66           UR2 AWS2         M         16.50         2.7%         5.82           UR2 AWS3         M         15.00         1.0%         6.64           UR2 AWS6         Adult White Sucker         M         17.00         3.3%         7.75           UR2 AWS9         M         15.00         2.6%         5.71           UR2 AWS10         M         14.00         2.3%         4.55           UR2 AWS11         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87	UR2 AC10	1		M	21.50	3.4%	1.05
Minimum Results for Adult Carp         NA         12.00         1.40%         1.05           Maximum Results for Adult Carp         NA         27.50         20.30%         39.00           Standard Deviation for Adult Carp         NA         3.97         5.94%         12.00           Coefficient of Variation for Adult Carp         NA         0.18         0.73         0.62           Upper 95% UCL for Adult Carp         NA         24.48         11.67%         25.78           UR2 AWS1         M         16.50         1.4%         3.66           UR2 AWS2         W         16.50         2.7%         5.82           UR2 AWS3         W         15.00         1.0%         6.64           UR2 AWS6         Adult White         M         17.00         3.3%         7.75           UR2 AWS6         Adult White         M         15.00         2.6%         5.71           UR2 AWS8         W         15.00         2.6%         5.71           UR2 AWS9         W         14.00         2.2%         6.98           UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS12         M         14.50         2.7%         5.33           <	UR2 AC11	1		M	20.00	3.0%	39.00
Maximum Results for Adult Carp         NA         27.50         20.30%         39.00           Standard Deviation for Adult Carp         NA         3.97         5.94%         12.00           Coefficient of Variation for Adult Carp         NA         0.18         0.73         0.62           Upper 95% UCL for Adult Carp         NA         24.48         11.67%         25.78           UR2 AWS1         M         16.50         1.4%         3.66           UR2 AWS2         M         16.50         2.7%         5.82           UR2 AWS3         M         15.00         1.0%         6.64           UR2 AWS6         Adult White         M         17.00         3.3%         7.75           UR2 AWS7         Sucker         M         15.00         2.6%         5.71           UR2 AWS9         UR2 AWS10         M         14.00         2.2%         6.98           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker <td>Mean Result for</td> <td>Adult Carp</td> <td></td> <td>NA</td> <td>22.14</td> <td>8.16%</td> <td>19.22</td>	Mean Result for	Adult Carp		NA	22.14	8.16%	19.22
Maximum Results for Adult Carp         NA         27.50         20.30%         39.00           Standard Deviation for Adult Carp         NA         3.97         5.94%         12.00           Coefficient of Variation for Adult Carp         NA         0.18         0.73         0.62           Upper 95% UCL for Adult Carp         NA         24.48         11.67%         25.78           UR2 AWS1         M         16.50         1.4%         3.66           UR2 AWS2         M         16.50         2.7%         5.82           UR2 AWS3         M         15.00         1.0%         6.64           UR2 AWS6         Adult White         M         17.00         3.3%         7.75           UR2 AWS7         Sucker         M         15.00         2.6%         5.71           UR2 AWS9         UR2 AWS10         M         14.00         2.2%         6.98           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker <td>Minimum Results</td> <td>NA</td> <td>12.00</td> <td>1.40%</td> <td>1.05</td>	Minimum Results	NA	12.00	1.40%	1.05		
Coefficient of Variation for Adult Carp   NA   0.18   0.73   0.62	_			NA	27.50	20.30%	39.00
Upper 95% UCL for Adult Carp	Standard Deviation for Adult Carp			NA	3.97	5.94%	12.00
UR2 AWS1	Coefficient of Variation	NA	0.18	0.73	0.62		
UR2 AWS2         M         16.50         2.7%         5.82           UR2 AWS3         UR2 AWS4         M         15.00         1.0%         6.64           UR2 AWS5         M         14.50         2.4%         6.84           UR2 AWS6         M         17.00         3.3%         7.75           UR2 AWS7         M         15.50         2.9%         12.40           UR2 AWS8         M         15.00         2.6%         5.71           UR2 AWS9         M         14.00         2.3%         4.55           UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS12         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         15.17         2.52%         6.87           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Ad	Upper 95% UCL f	or Adult Carp	-	NA	24.48	11.67%	25.78
UR2 AWS3           UR2 AWS4         M         15.00         1.0%         6.64           UR2 AWS5         M         14.50         2.4%         6.84           UR2 AWS6         M         17.00         3.3%         7.75           UR2 AWS7         M         15.50         2.9%         12.40           UR2 AWS8         M         15.00         2.6%         5.71           UR2 AWS9         M         17.00         2.3%         4.55           UR2 AWS10         M         14.00         2.2%         6.98           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         15.17         2.52%         6.87           Maximum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Standard Deviation for Adult White Sucker         NA         17.00         3.60%         12.40           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS1			M	16.50	1.4%	3.66
UR2 AWS4         M         14.50         2.4%         6.84           UR2 AWS5         M         17.00         3.3%         7.75           UR2 AWS6         M         15.50         2.9%         12.40           UR2 AWS7         M         15.00         2.6%         5.71           UR2 AWS8         M         17.00         2.3%         4.55           UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS2	1		M	16.50	2.7%	5.82
UR2 AWS5         Adult White Sucker         SO         M         17.00         3.3%         7.75           UR2 AWS6         UR2 AWS7         M         15.50         2.9%         12.40           UR2 AWS8         M         15.00         2.6%         5.71           UR2 AWS9         M         17.00         2.3%         4.55           UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS3	1		M	15.00	1.0%	6.64
UR2 AWS6         Adult White Sucker         SO         M         15.50         2.9%         12.40           UR2 AWS7         M         15.00         2.6%         5.71           UR2 AWS8         M         17.00         2.3%         4.55           M         14.00         2.2%         6.98           UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS12         M         12.50         3.6%         7.73           M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS4	1		M	14.50	2.4%	6.84
UR2 AWS7         Sucker         M         15.00         2.6%         5.71           UR2 AWS8         M         17.00         2.3%         4.55           UR2 AWS9         M         14.00         2.2%         6.98           UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS5	1		M	17.00	3.3%	7.75
UR2 AWS7         Sucker         M         15.00         2.6%         5.71           UR2 AWS8         M         17.00         2.3%         4.55           M         14.00         2.2%         6.98           M         14.00         3.1%         9.01           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS6	Adult White	0.0	M	15.50	2.9%	12.40
UR2 AWS9         M         14.00         2.2%         6.98           UR2 AWS10         M         14.00         3.1%         9.01           M         12.50         3.6%         7.73           M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS7	Sucker	SO	M	15.00	2.6%	5.71
UR2 AWS10         M         14.00         3.1%         9.01           UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS8	1		M	17.00	2.3%	4.55
UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS9	1		M	14.00	2.2%	6.98
UR2 AWS11         M         12.50         3.6%         7.73           UR2 AWS12         M         14.50         2.7%         5.33           Mean Result for Adult White Sucker         NA         15.17         2.52%         6.87           Minimum Results for Adult White Sucker         NA         12.50         1.00%         3.66           Maximum Results for Adult White Sucker         NA         17.00         3.60%         12.40           Standard Deviation for Adult White Sucker         NA         1.39         0.74%         2.28           Coefficient of Variation for Adult White Sucker         NA         0.09         0.29         0.33	UR2 AWS10	1		M	14.00	3.1%	9.01
Mean Result for Adult White SuckerNA15.172.52%6.87Minimum Results for Adult White SuckerNA12.501.00%3.66Maximum Results for Adult White SuckerNA17.003.60%12.40Standard Deviation for Adult White SuckerNA1.390.74%2.28Coefficient of Variation for Adult White SuckerNA0.090.290.33	UR2 AWS11	1		M	12.50	3.6%	7.73
Mean Result for Adult White SuckerNA15.172.52%6.87Minimum Results for Adult White SuckerNA12.501.00%3.66Maximum Results for Adult White SuckerNA17.003.60%12.40Standard Deviation for Adult White SuckerNA1.390.74%2.28Coefficient of Variation for Adult White SuckerNA0.090.290.33	UR2 AWS12	1		M	14.50	2.7%	5.33
Minimum Results for Adult White SuckerNA12.501.00%3.66Maximum Results for Adult White SuckerNA17.003.60%12.40Standard Deviation for Adult White SuckerNA1.390.74%2.28Coefficient of Variation for Adult White SuckerNA0.090.290.33	Mean Result for Adu	ılt White Sucker		NA		2.52%	
Maximum Results for Adult White SuckerNA17.003.60%12.40Standard Deviation for Adult White SuckerNA1.390.74%2.28Coefficient of Variation for Adult White SuckerNA0.090.290.33	Minimum Results for A	Adult White Suc	ker				
Standard Deviation for Adult White Sucker NA 1.39 0.74% 2.28  Coefficient of Variation for Adult White Sucker NA 0.09 0.29 0.33				NA			
Coefficient of Variation for Adult White Sucker NA 0.09 0.29 0.33	Standard Deviation for A	Adult White Suc	ker	NA		0.74%	2.28
							1
					15.95		

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2013 FISH SA	2013 FISH SAMPLE RESULTS - UPPER RIVER SITE 2 (UR2)							
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
UR2 SMB1			F	13.50	0.4%	5.80		
UR2 SMB2	1		M	15.50	0.5%	3.35		
UR2 SMB3	1		F	9.50	0.5%	2.06		
UR2 SMB4	1		M	11.00	0.6%	3.22		
UR2 SMB5	1		M	14.00	1.2%	1.50		
UR2 SMB6	Smallmouth	20	M	9.50	0.7%	2.49		
UR2 SMB7	Bass	SO	M	12.50	0.5%	4.98		
UR2 SMB8			M	12.00	1.0%	3.46		
UR2 SMB9			F	12.00	0.5%	0.96		
UR2 SMB10			F	10.50	0.5%	1.74		
UR2 SMB11			F	13.00	0.4%	0.97		
UR2 SMB12			F	8.50	1.1%	4.63		
Mean Result for Sm	nallmouth Bass		NA	11.79	0.66%	2.93		
Minimum Results for	NA	8.50	0.42%	0.96				
Maximum Results for	NA	15.50	1.20%	5.80				
Standard Deviation for	NA	2.07	0.28%	1.60				
Coefficient of Variation f	or Smallmouth	Bass	NA	0.18	0.43	0.54		
Upper 95% UCL for S	Smallmouth Bas	S	NA	12.96	0.82%	3.76		
UR2 RB1			M	8.00	0.5%	1.79		
UR2 RB2			M	7.50	0.6%	1.46		
UR2 RB3			F	6.00	0.5%	2.10		
UR2 RB4			F	6.00	0.7%	2.00		
UR2 RB5			M	7.50	0.4%	9.96		
UR2 RB6	D 1 D	go.	F	7.50	0.5%	2.57		
UR2 RB7	Rock Bass	SO	F	7.50	0.4%	0.78		
UR2 RB8			F	7.00	0.4%	1.25		
UR2 RB9			M	7.00	0.3%	2.46		
UR2 RB10			M	7.00	0.3%	0.85		
UR2 RB11			F	7.00	0.6%	0.99		
UR2 RB12			F	6.00	0.3%	1.14		
Mean Result for	Rock Bass		NA	7.00	0.45%	2.28		
Minimum Results	for Rock Bass		NA	6.00	0.26%	0.78		
Maximum Results	for Rock Bass		NA	8.00	0.71%	9.96		
Standard Deviation	for Rock Bass		NA	0.67	0.14%	2.49		
Coefficient of Variation	on for Rock Bas	S	NA	0.10	0.30	1.09		
Upper 95% UCL f	For Rock Bass		NA	7.38	0.53%	3.55		

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2013 FISH SAMPLE RESULTS - MIDDLE RIVER SITE 1 (MR1)								
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
MR1 AC1			F	28.50	10.6%	12.40		
MR1 AC2			M	29.50	13.6%	16.60		
MR1 AC3			F	30.50	27.4%	21.50		
MR1 AC4	A dult Com	SO	F	31.00	10.7%	13.00		
MR1 AC5	Adult Carp	30	F	29.00	11.5%	8.49		
MR1 AC6			F	28.00	9.5%	18.80		
MR1 AC7	1		F	29.50	17.1%	22.90		
MR1 AC8	1		F	29.50	15.0%	10.60		
Mean Result for	Adult Carp		NA	29.44	14.43%	15.54		
Minimum Results f	NA	28.00	9.50%	8.49				
Maximum Results f	NA	31.00	27.40%	22.90				
Standard Deviation	NA	0.98	5.83%	5.24				
Coefficient of Variation	n for Adult Car	p	NA	0.03	0.40	0.34		
Upper 95% UCL fo	or Adult Carp		NA	30.12	18.46%	19.04		
MR1 AWS1			F	18.00	2.9%	1.05		
MR1 AWS2	1		M	16.50	2.9%	0.63		
MR1 AWS3	1		M	15.00	3.8%	1.65		
MR1 AWS4	Adult White	SO	M	17.00	4.0%	4.87		
MR1 AWS5	Sucker	30	M	16.50	3.5%	0.72		
MR1 AWS6			M	11.00	3.9%	1.71		
MR1 AWS7			M	18.00	3.5%	2.54		
MR1 AWS8			M	18.00	2.9%	1.09		
Mean Result for Adu	lt White Sucker	•	NA	16.25	3.43%	1.78		
Minimum Results for A	dult White Suc	ker	NA	11.00	2.90%	0.63		
Maximum Results for A	dult White Suc	ker	NA	18.00	4.00%	4.87		
Standard Deviation for A	Adult White Suc	ker	NA	2.36	0.47%	1.39		
Coefficient of Variation for	r Adult White S	lucker	NA	0.15	0.14	0.78		
Upper 95% UCL for Ac	dult White Suck	ter	NA	17.89	3.75%	3.01		

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2013 FISH SA	MPLE RESU	LTS - M	DDLE R	IVER SIT	E 1 (MR1)	)
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)
MR1 CC1			M	22.00	2.2%	5.41
MR1 CC2			M	25.00	3.8%	9.55
MR1 CC3			F	25.00	6.9%	18.70
MR1 CC4	Channel	SOF	F	25.00	5.6%	13.20
MR1 CC5	Catfish	SOF	F	27.00	7.1%	17.80
MR1 CC6			F	24.00	9.7%	11.70
MR1 CC7			M	28.00	6.5%	10.70
MR1 CC8			M	23.50	8.0%	14.90
Mean Result for Ch	annel Catfish		NA	24.94	6.23%	12.75
Minimum Results for	NA	22.00	2.20%	5.41		
Maximum Results for	NA	28.00	9.70%	18.70		
Standard Deviation for	NA	1.90	2.36%	4.39		
Coefficient of Variation	for Channel Cat	fish	NA	0.08	0.38	0.34
Upper 95% UCL for	Channel Catfish	1	NA	26.25	7.86%	15.69
MR1 SMB1			F	13.50	1.5%	4.00
MR1 SMB2			F	15.00	1.1%	1.40
MR1 SMB3			F	13.50	0.8%	1.57
MR1 SMB4	Smallmouth	SO	M	16.50	1.8%	4.51
MR1 SMB5	Bass	30	M	16.00	0.6%	2.84
MR1 SMB6			F	16.00	0.1%	0.66
MR1 SMB7			F	13.50	0.0%	0.35
MR1 SMB8			M	11.00	0.8%	3.50
Mean Result for Sm	allmouth Bass		NA	14.38	0.83%	2.35
Minimum Results for S	Smallmouth Ba	ss	NA	11.00	0.04%	0.35
Maximum Results for	Smallmouth Ba	ss	NA	16.50	1.80%	4.51
Standard Deviation for	Smallmouth Ba	iss	NA	1.85	0.62%	1.57
Coefficient of Variation for	or Smallmouth	Bass	NA	0.13	0.75	0.67
Upper 95% UCL for S	mallmouth Bas	SS	NA	15.65	1.26%	3.41

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2013 FISH SA	MPLE RESU	LTS - M	IDDLE R	IVER SIT	E 1 (MR1)	)
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)
MR1 RB1			F	6.50	0.3%	1.07
MR1 RB2			M	7.50	0.6%	1.25
MR1 RB3			M	7.50	0.6%	0.97
MR1 RB4	Rock Bass	SO	M	8.00	0.3%	1.51
MR1 RB5	ROCK Dass	30	M	8.00	0.4%	1.58
MR1 RB6			M	8.00	0.5%	1.27
MR1 RB7			M	7.50	0.4%	2.07
MR1 RB8			M	8.00	0.5%	1.17
Mean Result for	NA	7.63	0.45%	1.36		
Minimum Results for Rock Bass				6.50	0.27%	0.97
Maximum Results	for Rock Bass		NA	8.00	0.60%	2.07
Standard Deviation	for Rock Bass		NA	0.52	0.11%	0.35
Coefficient of Variation	on for Rock Bas	S	NA	0.07	0.25	0.26
Upper 95% UCL f	or Rock Bass		NA	7.98	0.53%	1.60
MR1 W6			M	18.00	1.8%	4.38
MR1 W7	Walleye	SO	M	21.00	4.8%	21.10
MR1 W8			M	28.50	4.2%	6.10
Mean Result fo	or Walleye		NA	11.32	4.64%	10.53
Minimum Results	for Walleye		NA	0.07	0.11%	4.38
Maximum Results	s for Walleye		NA	28.50	24.80%	21.10
Standard Deviation	n for Walleye		NA	10.16	8.35%	9.20
Coefficient of Variat	ion for Walleye		NA	0.90	1.80	0.87
Upper 95% UCL	for Walleye		NA	18.36	10.42%	16.90

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2013 FISH SA	2013 FISH SAMPLE RESULTS - MIDDLE RIVER SITE 2 (MR2)							
Sample ID	Sample Type	Sample Form*	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
MR2 AC1			F	24.00	7.5%	2.14		
MR2 AC2			F	26.00	14.4%	45.30		
MR2 AC3			F	25.00	4.9%	8.98		
MR2 AC4	A 1 1 G	0.0	M	27.50	1.4%	2.09		
MR2 AC5	Adult Carp	SO	M	22.50	4.4%	12.20		
MR2 AC6			M	28.00	12.6%	23.80		
MR2 AC7			F	28.00	24.2%	2.73		
MR2 AC8			M	27.50	12.6%	27.40		
Mean Result for	Adult Carp		NA	26.06	10.25%	15.58		
Minimum Results f	NA	22.50	1.40%	2.09				
Maximum Results for Adult Carp			NA	28.00	24.20%	45.30		
Standard Deviation	NA	2.06	7.29%	15.46				
Coefficient of Variation	on for Adult Car	р	NA	0.08	0.71	0.99		
Upper 95% UCL fo	or Adult Carp		NA	27.49	15.30%	25.94		
MR2 AWS1			M	16.50	1.8%	0.63		
MR2 AWS2			M	16.00	2.3%	0.98		
MR2 AWS3			F	16.50	1.9%	0.58		
MR2 AWS4	Adult White	SO	F	16.50	2.1%	0.66		
MR2 AWS5	Sucker	30	M	14.50	1.5%	0.18		
MR2 AWS6			M	17.00	1.8%	0.34		
MR2 AWS7			M	17.00	1.7%	1.16		
MR2 AWS8			M	18.00	1.8%	1.31		
Mean Result for Adu	lt White Sucker		NA	16.50	1.86%	0.73		
Minimum Results for A	dult White Suc	ker	NA	14.50	1.50%	0.18		
Maximum Results for A	dult White Suc	ker	NA	18.00	2.30%	1.31		
Standard Deviation for A	Adult White Suc	ker	NA	1.00	0.24%	0.39		
Coefficient of Variation fo	r Adult White S	lucker	NA	0.06	0.13	0.54		
Upper 95% UCL for A	dult White Suck	ter	NA	17.19	2.03%	0.99		

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2013 FISH SAMPLE RESULTS - MIDDLE RIVER SITE 2 (MR2)								
Sample ID	Sample Type	Sample	Gender	Length	Fat (%)	PCB (mg/kg)		
•	~ <i>F</i>	Form*	(M/F)	(inches)	` ′	, , ,		
MR2 JWS2			M	9.00	2.2%	1.90		
MR2 JWS3			M	8.50	1.2%	1.74		
MR2 JWS4	Juvenile	SO	M	7.50	1.7%	1.15		
MR2 JWS5	White Sucker	~ ~	M	8.00	1.5%	1.83		
MR2 JWS6			M	8.50	1.8%	1.15		
MR2 JWS7			M	8.00	1.7%	1.17		
Mean Result for Juven	ile White Sucke	er	NA	8.25	1.68%	1.49		
Minimum Results for Juvenile White Sucker			NA	7.50	1.20%	1.15		
Maximum Results for Juv	enile White Su	cker	NA	9.00	2.20%	1.90		
Standard Deviation for Ju-	venile White Su	ıcker	NA	0.52	0.33%	0.37		
Coefficient of Variation for Juvenile White Sucl			NA	0.06	0.20	0.25		
Upper 95% UCL for Juv	enile White Suc	cker	NA	8.67	1.95%	1.87		
MR2 SMB1			F	16.00	1.1%	1.41		
MR2 SMB2			F	15.00	0.9%	1.38		
MR2 SMB3			F	16.00	1.0%	1.03		
MR2 SMB4	Smallmouth	0.0	F	18.00	2.1%	2.48		
MR2 SMB5	Bass	SO	F	11.50	0.8%	1.36		
MR2 SMB6			M	9.50	0.7%	1.62		
MR2 SMB7			F	10.00	0.5%	1.34		
MR2 SMB8			F	12.00	1.4%	2.23		
Mean Result for Sm	allmouth Bass		NA	13.50	1.06%	1.61		
Minimum Results for S	Smallmouth Bas	SS	NA	9.50	0.54%	1.03		
Maximum Results for S	Smallmouth Ba	SS	NA	18.00	2.10%	2.48		
Standard Deviation for	Smallmouth Ba	ass	NA	3.15	0.49%	0.49		
Coefficient of Variation for	or Smallmouth	Bass	NA	0.23	0.47	0.31		
Upper 95% UCL for S	mallmouth Bas	S	NA	15.68	1.40%	1.94		
MR2 RB1			F	7.00	0.3%	0.45		
MR2 RB2			F	7.00	0.4%	0.85		
MR2 RB3			M	7.50	0.5%	1.25		
MR2 RB4		a.c.	F	7.25	0.6%	0.81		
MR2 RB5	Rock Bass	SO	F	7.00	0.5%	1.07		
MR2 RB6			M	8.50	0.8%	0.97		
MR2 RB7			M	8.00	0.9%	1.03		
MR2 RB8			M	8.50	0.5%	0.90		
Mean Result for	Rock Bass		NA	7.59	0.57%	0.92		
Minimum Results for Rock Bass			NA	7.00	0.26%	0.45		
Maximum Results 1			NA	8.50	0.90%	1.25		
Standard Deviation			NA	0.65	0.20%	0.23		
Coefficient of Variation		S	NA	0.09	0.35	0.26		
Upper 95% UCL fo			NA	8.05	0.70%	1.07		

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2013 FISH SAMPLE RESULTS - LOWER RIVER SITE (LR)								
Sample ID	Sample Type	Sample Form	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
LR AC1			F	28.00	19.3%	24.70		
LR AC2			M	28.50	12.4%	9.12		
LR AC3	1		M	25.50	9.3%	3.94		
LR AC4	Adult Com	SO	F	32.00	13.7%	48.90		
LR AC5	Adult Carp	30	M	28.00	7.1%	13.50		
LR AC6			F	29.00	20.2%	20.50		
LR AC7			M	27.00	12.4%	14.90		
LR AC8			M	26.00	11.0%	2.17		
Mean Result for Adult Carp			NA	28.00	13.18%	17.22		
Minimum Results f	NA	25.50	7.10%	2.17				
Maximum Results f	NA	32.00	20.20%	48.90				
Standard Deviation for Adult Carp			NA	2.02	4.55%	14.92		
Coefficient of Variation for Adult Carp			NA	0.07	0.35	0.87		
Upper 95% UCL fo	or Adult Carp		NA	29.40	16.33%	27.21		
LR AWS1			F	17.00	1.4%	0.77		
LR AWS2	1		M	13.00	0.8%	1.19		
LR AWS3			M	14.00	3.0%	1.24		
LR AWS4	Adult White	SO	M	14.25	1.2%	0.91		
LR AWS5	Sucker	30	M	13.50	1.5%	1.43		
LR AWS6			M	12.50	1.3%	0.75		
LR AWS7	1		M	13.75	1.4%	1.76		
LR AWS8	1		M	12.50	1.1%	0.61		
Mean Result for Adult White Sucker			NA	13.81	1.47%	1.08		
Minimum Results for Adult White Sucker			NA	12.50	0.84%	0.61		
Maximum Results for Adult White Sucker			NA	17.00	3.00%	1.76		
Standard Deviation for A	Adult White Suc	ker	NA	1.44	0.65%	0.39		
Coefficient of Variation fo	r Adult White S	lucker	NA	0.10	0.45	0.36		
Upper 95% UCL for A	dult White Suck	ter	NA	14.81	1.92%	1.35		

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2013 FISH SAMPLE RESULTS - LOWER RIVER SITE (LR)								
Sample ID	Sample Type	Sample Form	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
LR SMB1			F	16.00	2.4%	2.52		
LR SMB2	1		F	16.50	0.5%	1.28		
LR SMB3	1		M	14.00	1.0%	0.55		
LR SMB4	Smallmouth	SO	F	14.50	0.8%	0.97		
LR SMB5	Bass	30	M	15.75	1.6%	1.50		
LR SMB6			F	17.00	0.4%	0.43		
LR SMB7			M	14.00	0.8%	2.28		
LR SMB8			F	16.00	0.9%	1.16		
Mean Result for Sm		NA	15.47	1.05%	1.34			
Minimum Results for S	Smallmouth Ba	ss	NA	14.00	0.43%	0.43		
Maximum Results for Smallmouth Bass			NA	17.00	2.40%	2.52		
Standard Deviation for	NA	1.15	0.65%	0.75				
Coefficient of Variation for	Bass	NA	0.07	0.62	0.56			
Upper 95% UCL for S	mallmouth Bas	S	NA	16.27	1.50%	1.84		
LR RB1			F	7.00	0.6%	1.26		
LR RB2			M	6.50	0.8%	1.10		
LR RB3			M	5.75	1.1%	1.84		
LR RB4			M	8.50	0.6%	1.51		
LR RB5	Rock Bass	SO	F	6.50	0.8%	0.86		
LR RB6			M	7.00	0.9%	1.53		
LR RB7			M	6.25	1.6%	1.36		
LR RB8			M	8.50	0.4%	0.53		
LR RB9			M	8.00	0.7%	1.71		
Mean Result for	Rock Bass		NA	7.11	0.83%	1.30		
Minimum Results for Rock Bass			NA	5.75	0.43%	0.53		
Maximum Results for Rock Bass			NA	8.50	1.60%	1.84		
Standard Deviation	for Rock Bass		NA	1.00	0.35%	0.42		
Coefficient of Variation	on for Rock Bas	is	NA	0.14	0.42	0.32		
Upper 95% UCL fo	or Rock Bass		NA	7.76	1.06%	1.56		

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2013 FISH SAMPLE RESULTS - INNER HARBOR SITE (IH)								
Sample ID	Sample Type	Sample Form	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
IH AC1			F	34.50	16.2%	18.70		
IH AC2	1		M	29.50	10.4%	9.96		
IH AC3	1		F	36.00	34.2%	15.20		
IH AC4	Adult Carp	SO	F	30.50	29.7%	24.70		
IH AC5	1		F	33.00	13.9%	14.20		
IH AC6	1		F	32.00	14.8%	16.30		
IH AC7			F	34.00	18.9%	11.30		
Mean Result for	Adult Carp		NA	32.79	19.73%	15.77		
Minimum Results		NA	29.50	10.40%	9.96			
Maximum Results for Adult Carp			NA	36.00	34.20%	24.70		
Standard Deviation	NA	2.29	8.82%	4.92				
Coefficient of Variation for Adult Carp			NA	0.07	0.45	0.31		
Upper 95% UCL f	or Adult Carp		NA	34.48	26.27%	19.38		
IH AWS1			M	19.50	1.5%	0.72		
IH AWS2	1		M	18.50	1.0%	0.50		
IH AWS3	1		M	18.00	1.3%	1.84		
IH AWS4	Adult White	SO	F	19.50	1.4%	0.46		
IH AWS5	Sucker	30	M	17.50	2.6%	0.94		
IH AWS6	1		M	17.00	2.2%	2.03		
IH AWS7	1		M	16.00	2.4%	0.34		
IH AWS8	1		M	14.50	2.3%	0.44		
Mean Result for Adult White Sucker			NA	17.56	1.84%	0.91		
Minimum Results for A	dult White Suc	ker	NA	14.50	0.98%	0.34		
Maximum Results for Adult White Sucker			NA	19.50	2.60%	2.03		
Standard Deviation for A	Adult White Suc	ker	NA	1.72	0.61%	0.66		
Coefficient of Variation for	or Adult White S	lucker	NA	0.10	0.33	0.73		
Upper 95% UCL for A	dult White Suck	ter	NA	18.75	2.26%	1.52		

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2013 FISH SAMPLE RESULTS - INNER HARBOR SITE (IH)								
Sample ID	Sample Type	Sample Form	Gender (M/F)	Length (inches)	Fat (%)	PCB (mg/kg)		
IH SMB1			F	17.50	2.4%	2.43		
IH SMB2	1		F	19.50	1.9%	1.25		
IH SMB3	1		F	17.25	3.2%	1.96		
IH SMB4	C1141-		F	16.25	1.9%	1.44		
IH SMB5	Smallmouth Bass	SO	M	11.00	1.4%	0.20		
IH SMB6	Dass		M	9.50	0.7%	2.85		
IH SMB7			M	10.00	1.3%	2.91		
IH SMB8			M	8.50	1.2%	0.77		
IH SMB9	1		M	8.50	1.0%	0.61		
Mean Result for Sm	NA	13.11	1.66%	1.60				
Minimum Results for Smallmouth Bass			NA	8.50	0.69%	0.20		
Maximum Results for	Smallmouth Ba	SS	NA	19.50	3.20%	2.91		
Standard Deviation for	Smallmouth Ba	iss	NA	4.43	0.78%	0.99		
Coefficient of Variation for	or Smallmouth	Bass	NA	0.34	0.47	0.62		
Upper 95% UCL for S	mallmouth Bas	S	NA	16.00	2.17%	2.22		
IH RB1			F	6.50	1.2%	1.82		
IH RB2	Rock Bass	SO	F	7.50	0.7%	1.30		
IH RB3	NOCK Dass	30	M	8.50	1.1%	1.91		
IH RB4			M	6.50	1.3%	3.94		
Mean Result for	Rock Bass		NA	7.25	4.92%	2.24		
Minimum Results for Rock Bass			NA	6.50	0.61%	1.30		
Maximum Results for Rock Bass			NA	8.50	46.79%	3.94		
Standard Deviation for Rock Bass			NA	0.96	11.26%	1.16		
Coefficient of Variation	on for Rock Bas	is	NA	0.13	2.29	0.52		
Upper 95% UCL for	or Rock Bass		NA	8.19	9.52%	2.72		

Notes:

Did not meet target range for length

NA - Not applicable

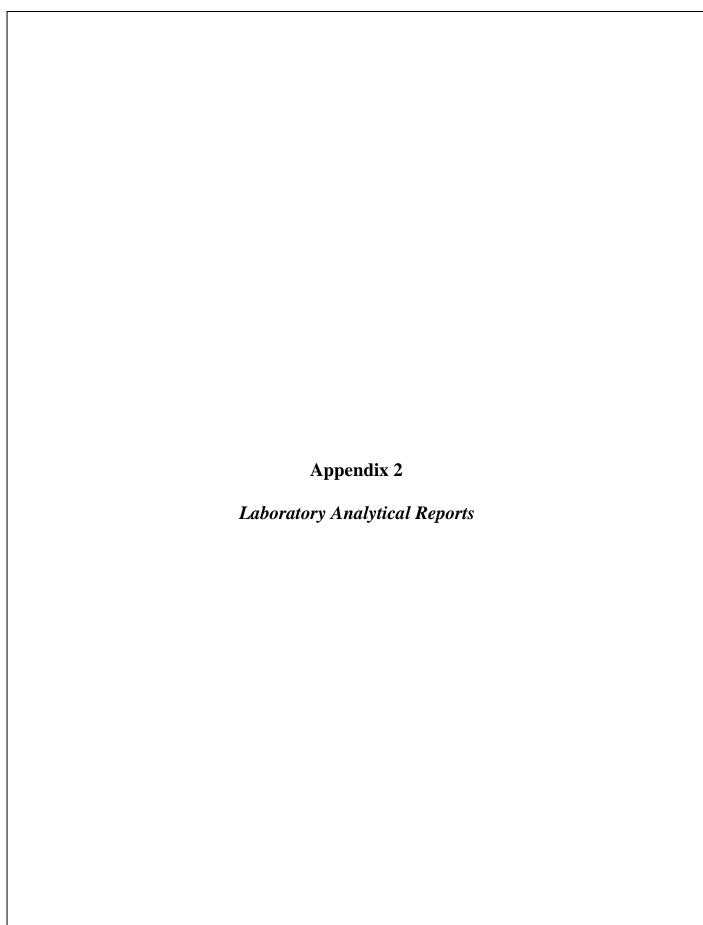
TS - Too small to gender/age

SO - Scale off, skin on fillet

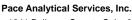
SOF - Skin off fillet

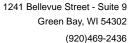
W - Whole fish

See notes on last page. Page 13 of 13











July 11, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

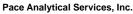
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 





Pace Analytical www.pacelabs.com

1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

### **CERTIFICATIONS**

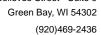
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



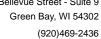


## **SAMPLE SUMMARY**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079173001	LR SMB6	Tissue	06/06/13 00:00	06/06/13 15:00
4079173002	LR SMB7	Tissue	06/06/13 00:00	06/06/13 15:00
4079173003	LR SMB8	Tissue	06/06/13 00:00	06/06/13 15:00
4079173004	LR RB1	Tissue	06/06/13 00:00	06/06/13 15:00
4079173005	LR RB2	Tissue	06/06/13 00:00	06/06/13 15:00
4079173006	LR RB3	Tissue	06/06/13 00:00	06/06/13 15:00
4079173007	LR RB4	Tissue	06/06/13 00:00	06/06/13 15:00
4079173008	LR RB5	Tissue	06/06/13 00:00	06/06/13 15:00
4079173009	LR RB6	Tissue	06/06/13 00:00	06/06/13 15:00
4079173010	LR RB7	Tissue	06/06/13 00:00	06/06/13 15:00
4079173011	LR RB8	Tissue	06/06/13 00:00	06/06/13 15:00
4079173012	LR RB9	Tissue	06/06/13 00:00	06/06/13 15:00
4079174001	UR2 RB12	Tissue	06/05/13 00:00	06/06/13 17:39



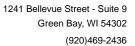


## **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
4079173001	LR SMB6	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173002	LR SMB7	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173003	LR SMB8	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173004	LR RB1	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173005	LR RB2	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173006	LR RB3	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173007	LR RB4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173008	LR RB5	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173009	LR RB6	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173010	LR RB7	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173011	LR RB8	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079173012	LR RB9	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079174001	UR2 RB12	EPA 8082	BLM	10	





## **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Lab ID	Sample ID	Method	Analysts	Analytes Reported
,	•	Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1



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PROJECT NARRATIVE

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 11, 2013

#### **General Information:**

13 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

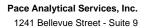
QC Batch: GCSV/9827

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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#### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** July 11, 2013

#### **General Information:**

13 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

## Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

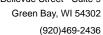
## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





#### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** July 11, 2013

#### **General Information:**

13 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

**Batch Comments:** 

Insufficient volume to perform duplicate analysis.

• QC Batch: OEXT / 18878

Analyte Comments:

QC Batch: OEXT/18756

C0: Result confirmed by second analysis.

- DUP (Lab ID: 813499)
  - Lipid



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## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Method: Pace Lipid Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** July 11, 2013

This data package has been reviewed for quality and completeness and is approved for release.

(920)469-2436



## **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR SMB6 Lab ID: 4079173001 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	12674-11-2	
PCB-1221 (Aroclor 1221)	<12.5 ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	11104-28-2	
PCB-1232 (Aroclor 1232)	<12.5 ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	11141-16-5	
PCB-1242 (Aroclor 1242)	<12.5 ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>209</b> ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>173</b> ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>44.4</b> ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	11096-82-5	
PCB, Total	<b>427</b> ug/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 17:40	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	86 %	44-130		1	06/24/13 10:20	06/26/13 17:40	877-09-8	
Decachlorobiphenyl (S)	90 %	62-130		1	06/24/13 10:20	06/26/13 17:40	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.43 %			1		06/27/13 08:18		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR SMB7 Lab ID: 4079173002 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA	8082 Prepai	ation Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1330</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>849</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>107</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	11096-82-5	
PCB, Total	<b>2280</b> ug	/kg	100	50.0	4	06/24/13 10:20	06/26/13 17:58	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82 %		44-130		4	06/24/13 10:20	06/26/13 17:58	877-09-8	
Decachlorobiphenyl (S)	86 %		62-130		4	06/24/13 10:20	06/26/13 17:58	2051-24-3	
Fish Gender Typing	Analytical N	Method: Pace	Gender Typ	ing					
Gender	Male				1		07/03/13 12:48		
Lipid	Analytical N	Method: Pace	Lipid						
Lipid	0.75 %				1		06/27/13 08:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR SMB8 Lab ID: 4079173003 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>606</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>443</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>110</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	11096-82-5	
PCB, Total	<b>1160</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:16	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		3	06/24/13 10:20	06/26/13 18:16	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		3	06/24/13 10:20	06/26/13 18:16	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.88 %			1		06/27/13 08:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB1 Lab ID: 4079173004 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>685</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>525</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>51.3J</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	11096-82-5	
PCB, Total	<b>1260</b> ug/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:33	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	90 %	44-130		3	06/24/13 10:20	06/26/13 18:33	877-09-8	
Decachlorobiphenyl (S)	93 %	62-130		3	06/24/13 10:20	06/26/13 18:33	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	0.56 %			1		06/27/13 08:19		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB2 Lab ID: 4079173005 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA	8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>643</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>409</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>43.3J</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	11096-82-5	
PCB, Total	<b>1100</b> ug.	/kg	75.0	37.5	3	06/24/13 10:20	06/26/13 18:51	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	92 %		44-130		3	06/24/13 10:20	06/26/13 18:51	877-09-8	
Decachlorobiphenyl (S)	97 %		62-130		3	06/24/13 10:20	06/26/13 18:51	2051-24-3	
Fish Gender Typing	Analytical N	Method: Pace	Gender Typ	ing					
Gender	Male				1		07/03/13 12:48		
Lipid	Analytical N	Method: Pace	Lipid						
Lipid	0.78 %				1		06/27/13 08:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB3 Lab ID: 4079173006 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1030</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>730</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>78.4J</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	11096-82-5	
PCB, Total	<b>1840</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 19:09	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	86 %	44-130		5	06/24/13 10:20	06/26/13 19:09	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		5	06/24/13 10:20	06/26/13 19:09	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	1.1 %			1		06/27/13 08:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

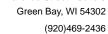
Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB4 Lab ID: 4079173007 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>854</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>587</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>73.8J</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	11096-82-5	
PCB, Total	<b>1510</b> ug/k	g 125	62.5	5	06/24/13 10:20	06/26/13 19:27	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		5	06/24/13 10:20	06/26/13 19:27	877-09-8	
Decachlorobiphenyl (S)	90 %	62-130		5	06/24/13 10:20	06/26/13 19:27	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	0.55 %			1		06/27/13 08:19		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB5 Lab ID: 4079173008 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>496</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>326</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>33.9J</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	11096-82-5	
PCB, Total	<b>856</b> ug/k	g 50.0	25.0	2	06/24/13 10:20	06/26/13 19:44	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		2	06/24/13 10:20	06/26/13 19:44	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		2	06/24/13 10:20	06/26/13 19:44	2051-24-3	
Fish Gender Typing	Analytical Me	ethod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	0.82 %			1		06/27/13 08:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB6 Lab ID: 4079173009 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1020</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>512</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	11096-82-5	
PCB, Total	<b>1530</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:02	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	87 %	44-130		5	06/24/13 10:20	06/26/13 20:02	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		5	06/24/13 10:20	06/26/13 20:02	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.92 %			1		06/27/13 08:20		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB7 Lab ID: 4079173010 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>908</b> U	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>449</b> U	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	11096-82-5	
PCB, Total	<b>1360</b> U	ıg/kg	100	50.0	4	06/24/13 10:20	06/26/13 20:20	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	93 %	%	44-130		4	06/24/13 10:20	06/26/13 20:20	877-09-8	
Decachlorobiphenyl (S)	99 %	%	62-130		4	06/24/13 10:20	06/26/13 20:20	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/03/13 12:48		
Lipid	Analytical	Method: Pad	e Lipid						
Lipid	1.6 %	%			1		06/27/13 08:20		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB8 Lab ID: 4079173011 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	N 8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<12.5 U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<12.5 U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<12.5 U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<12.5 U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>279</b> U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>224</b> U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>30.2</b> U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	11096-82-5	
PCB, Total	<b>532</b> U	ıg/kg	25.0	12.5	1	06/24/13 10:20	06/26/13 20:38	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	89 %	6	44-130		1	06/24/13 10:20	06/26/13 20:38	877-09-8	
Decachlorobiphenyl (S)	92 %	6	62-130		1	06/24/13 10:20	06/26/13 20:38	2051-24-3	
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/03/13 12:48		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	0.43 %	6			1		06/27/13 08:20		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: LR RB9 Lab ID: 4079173012 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>989</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>652</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>69.9J</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	11096-82-5	
PCB, Total	<b>1710</b> ug/kg	125	62.5	5	06/24/13 10:20	06/26/13 20:55	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	93 %	44-130		5	06/24/13 10:20	06/26/13 20:55	877-09-8	
Decachlorobiphenyl (S)	98 %	62-130		5	06/24/13 10:20	06/26/13 20:55	2051-24-3	
Fish Gender Typing	Analytical Metho	od: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	0.74 %			1		06/27/13 08:20		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

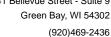
Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Sample: UR2 RB12 Lab ID: 4079174001 Collected: 06/05/13 00:00 Received: 06/06/13 17:39 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	/lethod: EPA	8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.9</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.9</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.9</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.9</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>631</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>474</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>39.1J</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	11096-82-5	
PCB, Total	<b>1140</b> ug/	/kg	51.9	25.9	2	07/02/13 14:24	07/09/13 15:55	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	89 %		44-130		2	07/02/13 14:24	07/09/13 15:55	877-09-8	
Decachlorobiphenyl (S)	98 %		62-130		2	07/02/13 14:24	07/09/13 15:55	2051-24-3	
Fish Gender Typing	Analytical M	/lethod: Pace	Gender Typ	oing					
Gender	Female				1		07/03/13 10:04		
Lipid	Analytical M	Method: Pace	Lipid						
Lipid	0.28 %				1		07/08/13 14:19		





## **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

QC Batch: OEXT/18746 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079173001, 4079173002, 4079173003, 4079173004, 4079173005, 4079173006, 4079173007, 4079173008,

4079173009, 4079173010, 4079173011, 4079173012

METHOD BLANK: 813199 Matrix: Tissue

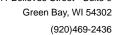
Associated Lab Samples: 4079173001, 4079173002, 4079173003, 4079173004, 4079173005, 4079173006, 4079173007, 4079173008,

 $4079173009,\,4079173010,\,4079173011,\,4079173012$ 

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	06/26/13 16:29	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	06/26/13 16:29	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	06/26/13 16:29	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	06/26/13 16:29	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	06/26/13 16:29	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	06/26/13 16:29	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	06/26/13 16:29	
Decachlorobiphenyl (S)	%	84	62-130	06/26/13 16:29	
Tetrachloro-m-xylene (S)	%	80	44-130	06/26/13 16:29	

LABORATORY CONTROL SAMPLE:	813200					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	223	89	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			85	62-130	
Tetrachloro-m-xylene (S)	%			81	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 81320	1		813202							
	40	079173001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1248 (Aroclor 1248)	ug/kg	209			283	294				4	24	
PCB-1254 (Aroclor 1254)	ug/kg	173	1000	1000	1050	1070	88	90	27-163	1	24	
PCB-1260 (Aroclor 1260)	ug/kg	44.4			<50.0	<50.0					24	
Decachlorobiphenyl (S)	%						89	89	62-130			
Tetrachloro-m-xylene (S)	%						81	83	44-130			





# **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

QC Batch: OEXT/18859 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079174001

METHOD BLANK: 817320 Matrix: Tissue

Associated Lab Samples: 4079174001

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/09/13 15:02	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/09/13 15:02	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/09/13 15:02	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/09/13 15:02	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/09/13 15:02	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/09/13 15:02	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/09/13 15:02	
Decachlorobiphenyl (S)	%	73	62-130	07/09/13 15:02	
Tetrachloro-m-xylene (S)	%	81	44-130	07/09/13 15:02	

LABORATORY CONTROL SAME	PLE & LCSD: 817321		81	7322						
		Spike	LCS	LCSD	LCS	LCSD	% Rec		Max	
Parameter	Units	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5	<12.5					20	
PCB-1221 (Aroclor 1221)	ug/kg		<12.5	<12.5					20	
PCB-1232 (Aroclor 1232)	ug/kg		<12.5	<12.5					20	
PCB-1242 (Aroclor 1242)	ug/kg		<12.5	<12.5					20	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5	<12.5					20	
PCB-1254 (Aroclor 1254)	ug/kg	250	221	246	88	98	61-130	11	20	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5	<12.5					20	
Decachlorobiphenyl (S)	%				80	88	62-130			
Tetrachloro-m-xylene (S)	%				79	87	44-130			



## **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

QC Batch: OEXT/18756 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079173001, 4079173002, 4079173003, 4079173004, 4079173005, 4079173006, 4079173007, 4079173008,

4079173009, 4079173010, 4079173011, 4079173012

METHOD BLANK: 813498 Matrix: Tissue

Associated Lab Samples: 4079173001, 4079173002, 4079173003, 4079173004, 4079173005, 4079173006, 4079173007, 4079173008,

 $4079173009,\, 4079173010,\, 4079173011,\, 4079173012$ 

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lipid % 0.64 06/27/13 08:18

SAMPLE DUPLICATE: 813499

Date: 07/11/2013 09:13 AM

4079173001 Dup Max **RPD** RPD Parameter Units Result Result Qualifiers % 0.43 25 20 C0 Lipid 0.34





**QUALITY CONTROL DATA** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

QC Batch: OEXT/18878 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079174001

METHOD BLANK: 818050 Matrix: Tissue

Associated Lab Samples: 4079174001

Blank Reporting
Parameter Units Result Limit Analyzed Qualifiers

Lipid % 0.54 07/08/13 14:19



## **QUALIFIERS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

## **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

# **BATCH QUALIFIERS**

Batch: OEXT/18878

[1] Insufficient volume to perform duplicate analysis.

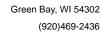
Batch: GCSV/9827

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

## ANALYTE QUALIFIERS

Date: 07/11/2013 09:13 AM

C0 Result confirmed by second analysis.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079173

Date: 07/11/2013 09:13 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079173001	LR SMB6	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
4079173002	LR SMB7	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173003	LR SMB8	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173004	LR RB1	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
4079173005	LR RB2	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
4079173006	LR RB3	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173007	LR RB4	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173008	LR RB5	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173009	LR RB6	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173010	LR RB7	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
1079173011	LR RB8	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
4079173012	LR RB9	EPA 3540	OEXT/18746	EPA 8082	GCSV/9765
4079174001	UR2 RB12	EPA 3540	OEXT/18859	EPA 8082	GCSV/9827
4079173001	LR SMB6	Pace Gender Typing	GRND/2583		
4079173002	LR SMB7	Pace Gender Typing	GRND/2583		
4079173003	LR SMB8	Pace Gender Typing	GRND/2583		
1079173004	LR RB1	Pace Gender Typing	GRND/2583		
4079173005	LR RB2	Pace Gender Typing	GRND/2583		
4079173006	LR RB3	Pace Gender Typing	GRND/2583		
1079173007	LR RB4	Pace Gender Typing	GRND/2583		
4079173008	LR RB5	Pace Gender Typing	GRND/2583		
1079173009	LR RB6	Pace Gender Typing	GRND/2583		
4079173010	LR RB7	Pace Gender Typing	GRND/2583		
4079173011	LR RB8	Pace Gender Typing	GRND/2583		
4079173012	LR RB9	Pace Gender Typing	GRND/2583		
4079174001	UR2 RB12	Pace Gender Typing	GRND/2580		
4079173001	LR SMB6	Pace Lipid	OEXT/18756		
1079173002	LR SMB7	Pace Lipid	OEXT/18756		
4079173003	LR SMB8	Pace Lipid	OEXT/18756		
1079173004	LR RB1	Pace Lipid	OEXT/18756		
1079173005	LR RB2	Pace Lipid	OEXT/18756		
4079173006	LR RB3	Pace Lipid	OEXT/18756		
1079173007	LR RB4	Pace Lipid	OEXT/18756		
1079173008	LR RB5	Pace Lipid	OEXT/18756		
4079173009	LR RB6	Pace Lipid	OEXT/18756		
4079173010	LR RB7	Pace Lipid	OEXT/18756		
4079173011	LR RB8	Pace Lipid	OEXT/18756		
4079173012	LR RB9	Pace Lipid	OEXT/18756		
4079174001	UR2 RB12	Pace Lipid	OEXT/18878		

Intact / Not Intact

Version 6.0 06/14/06

special pricing and release of liability

Date/Time:

Received By:

Present / Not Present

Intact / Not Intact

Date/Time:

Samples on HOLD are subject to

special pricing and release of liability

Relinquished By:

# Pace Analytical ™

# **Sample Condition Upon Receipt**

	1)()	) (		
Client Name	:	\	_ Project #	4079173
Courier: Fed Ex T UPS T USPS T	Client Comme	rcial Pace	Other	
Tracking #:				
•	no Seals	s intact:	no	
Custody Seal on Samples Present: yes	<b>/</b>	s intact:  yes	no	
Packing Material: Bubble Wrap Bubble	•	·	Towns .	
Thermometer Used 5 K 23	,	Blue Dry None ogical Tissue is Fr	*	n ice, cooling process has begun
Cooler Temperature Uncorr: 16/16/17/Corr: 6	5/15/16BIOIC	gical rissue is Fr	no	Porcen evenining centents:
Temp Blank Present: yes no Temp should be above freezing to 6°C for all sample exc	cent Riota		y no	Person examining contents:
Frozen Biota Samples should be received ≤ 0°C.	Sopt Blota.	Comments:		Initials: EMH
Chain of Custody Present:	Yes ONO ON/A	1.		
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.		
Chain of Custody Relinquished:	ØYes □No □N/A	3.		
Sampler Name & Signature on COC:	✓Yes □No □N/A	4.		
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.		
- VOA Samples frozen upon receipt	□Yes □No	Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes ØNo □N/A	6.		
Rush Turn Around Time Requested:	□Yes ☑No □N/A	7.		
Sufficient Volume:	☑Yes □No □N/A			
Correct Containers Used:	□Yes ☑No □N/A	9. Sample I	Ds inside sa	mple buys and not H6/6/13
-Pace Containers Used:	□Yes ☑No □N/A	readily vis	sible im	46/6/13
-Pace IR Containers Used:	□Yes □No ☑N/A	Ü /	L:	
Containers Intact:	✓Yes □No □N/A	10.		
Filtered volume received for Dissolved tests	□Yes □No ☑N/A	11.		
Sample Labels match COC:	✓Yes □No □N/A	12.		
-Includes date/time/ID/Analysis Matrix:				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No ☑N/A	13 F HNO3	B   H2SO4	NaOH NaOH +ZnAct
All containers needing preservation are found to be in		10.		
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No /□N/A			
exceptions: VOA, coliform, TOC, TOX, TOH,	—	Initial when	Lab Std #ID of	Date/
O&G, WIDROW, Phenolics, OTHER:		completed	preservative	Time:
Headspace in VOA Vials ( >6mm):	□Yes □No ☑N/A			
Trip Blank Present:	□Yes □No □N/A	15.		
Trip Blank Custody Seals Present	□Yes □No ,□N/A			
Pace Trip Blank Lot # (if purchased): Client Notification/ Resolution:	<del></del>	l If a	checked, see attach	ed form for additional comments
Person Contacted:	Date/			Lanca
Comments/ Resolution:				
	470000000000000000000000000000000000000			
Project Manager Review:	CH Far T	N	Date: _	6/6/12

	(Please Print Clearly)		]										EST RE			Page 🗡	of 7
Company Nai	me: Pollution Risk Services			<i>y</i>	/	A		_ # ®			MN: 6	12-607-	1700	WI: 920-469-2436		<u> </u>	of 7
Branch/Locat	ion: Sheboygan			_ F	ace	Ana	lytic. celabs.c	ai	8€ and	1]	7				COC No.	24	M9174
Project Conta	act: Mark Mather									Mr				Quote #:			
Phone:	513-678-2137 or 513-387-27	78		C	HA	IN	OF	C	JS'	ΓΟ	DY			Mail To Contact:	Mark Math	ər	
Project Numb	per: SR13-001 Task 10-02000		A=No	ne B=H	CL C=I	H2SO4	Preserva D=HNO3	tion Cod	_	=Methan	ol G=N	laOH		Mail To Company:	PRS - Ass	ured Group	
Project Name	: 2013 Fish Sampling		H=Sc	dium Bisulf	ate Soluti	on	I=Sodiui	m Thiosul	fate J	=Other				Mail To Address:		er Road, Suite	240,
Project State:	: Wiscoinsin		FILTE (YES		Y/N										Cincinnati,	OH 45249	
Sampled By (	(Print): Mark Mather		PRESER (COI		Pick Letter									Invoice To Contact:	Goldie Sha	rp	
Sampled By (	100-0				þŧ									Invoice To Company:	As Above		
PO #:		egulatory rogram:			Requested		S							Invoice To Address:	7870 Kemp	er Road, Suite	240,
	able) MS/MSD		rix Codes		Requ		IVE								Cincinnati,	OH 45249	
☐ EP	A Level III (billable)   B =   C =	Biota Charcoal	DW = Drinki GW = Grour SW = Surface	nd Water	nalyses	8082	PRESERVATIVES							Invoice To Phone:	513-489-67	'89	
LI EP	A Level IV NOT needed on S = your sample S =	Soil Sludge	WW = Wast WP = Wipe		naly	1	SE							CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	ECTION TIME	MATRIX	¥	РСВ	PR							COMMENTS	(Lab l	Jse Only)	
	UR2 RB1	6/5/13		Tissue		X	Α							Whole Fish Sample			
	UR2 RB2	6/5/13		Tissue		X	Α										
	UR2 RB3	6/5/13		Tissue		Х	Α										
	UR2 RB4	6/5/13		Tissue		X	Α										
	UR2 RB5	6/5/13		Tissue		X	Α										
	UR2 RB6	6/5/13		Tissue		Х	Α										
	UR2 RB7	6/5/13		Tissue		Х	Α										
	UR2 RB8	6/5/13		Tissue		Х	Α										
	UR2 RB9	6/5/13		Tissue		Х	Α										
	UR2 RB10	6/5/13		Tissue		X	Α										
	UR2 RB11	6/5/13		Tissue		Х	Α										
001	UR2 RB12	6/5/13		Tissue		Х	Α								1-poly	bay	
				A		<b>7</b>		j	í						1 7	J	
	urnaround Time Requested - Prelims TAT subject to approval/surcharge)	Relin	cuisned by	M	10.	4	Da	te/Time:	//-	>	Received	1800	-Qa	Date/Time:	~ / ~	PACE Pro	ject No.
(INUSI)	Date Needed:	Relin	quished by:	<u> </u>			C	te/Ting	1	<b>&gt;</b>	Received		)	↑ Date/Time:	3-10	40791:	7-4
Transmit Pre	olim Rush Results by (complete what you wan mmather@assuredllc.com	nt):	QUU iquished By:	104			0/0	te/Time:	3/5	00	Received	4el	iny_	Pare B 6/6/13 Date/Time:	1500	Receipt Temp =	5 °c
Email #2:			iquionoa oy.					icor ranto.			7.000.700	. Oj.	/	Dates (inte.		Sample Re	ceipt pH
Telephone:	513-387-2778	Relin	quished By:				Da	te/Time:			Received	l By:		Date/Time:		OK / Adj	
	Samples on HOLD are subject to ecial pricing and release of liability	Relin	quished By:		····		Da	te/Time:			Received	I By:		Date/Time:		Cooler Cus Present (No Intact / No	ot Present
										_	L					Version 6.0 06/14/06	

Pace Analytical Services, Inc. 1241 Bellevue Street, Suite 9 Green Bay, WI 54302

# Pace Analytical"

# Sample Condition Upon Receipt

Client Name	: <u> </u>	75	Project #	4079174
Courier: Fed Ex TUPS TUSPS T	Client Comm	ercial Pace	Other	
Tracking #:		- The state of the		
Custody Seal on Cooler/Box Present: yes		• • •	no	
Custody Seal on Samples Present:  yes		als intact:  yes	, no	
Packing Material: Bubble Wrap Bubble Thermometer Used	•	one Other et Blue Dry None	) Par Complete	n ice, cooling process has begun
Cooler Temperature Uncorr: 6 /Corr:		logical Tissue is F		rice, cooling process has begun
Temp Blank Present: Tyes Ino			no	Person examining contents:
Temp should be above freezing to 6°C for all sample exercise Biota Samples should be received ≤ 0°C.	cept Biota.	Comments:	,	Date: <u>(ク/ 6713</u> Initials: <u>E M H</u>
Chain of Custody Present:	Yes ONO ON	/A 1.		
Chain of Custody Filled Out:	☑Yes ☐No ☐N	/A 2.		
Chain of Custody Relinquished:	ØYes □No □N	/A 3.		
Sampler Name & Signature on COC:	ØYes □No □N	/A 4.		
Samples Arrived within Hold Time:	ØYes □No □N	/A 5.		
- VOA Samples frozen upon receipt	□Yes □No	Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes ØNo □N	/A 6.		
Rush Turn Around Time Requested:	□Yes ☑No □N	/A 7.		
Sufficient Volume:	ØYes □No □N	'A 8.		
Correct Containers Used:	□Yes ☑No □N	alg. Sample I	.Ds inside sa	mple bays and not H6/6/13
-Pace Containers Used:	□Yes ☑No □N	a readily vi	sible IM	H6/6/13
-Pace IR Containers Used:	□Yes □No ☑N	Α /	<i>V</i>	
Containers Intact:	✓Yes □No □N	A 10.	······································	
Filtered volume received for Dissolved tests	□Yes □No ☑N	A 11.	·····	
Sample Labels match COC:	✓Yes □No □N	A 12.		
-Includes date/time/ID/Analysis Matrix:	<u> </u>			
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No ☑N	A 13. THO	3 F H2SO4 F	NaOH NaOH +ZnAct
All containers needing preservation are found to be in		-		
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No ØN/	A		
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	□Yes □No	Initial when completed	Lab Std #ID of preservative	Date/ Time:
Headspace in VOA Vials ( >6mm):	□Yes □No ☑N/	A 14.		
Trip Blank Present:	□Yes □No ☑N/	A 15.		
Trip Blank Custody Seals Present	□Yes □No ØN/	4		
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution: Person Contacted:	Date	TT:		ed form for additional comments
Comments/ Resolution:	Date	, , , , , , , , , , , , , , , , , , , ,		
Project Manager Review:	CH for	w	Date:	6/6/13





July 16, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

# Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

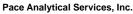
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



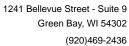


# **SAMPLE SUMMARY**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079169001	LR AC1	Tissue	06/06/13 00:00	06/06/13 15:00
4079169002	LR AC2	Tissue	06/06/13 00:00	06/06/13 15:00
4079169003	LR AC3	Tissue	06/06/13 00:00	06/06/13 15:00
4079169004	LR AC4	Tissue	06/06/13 00:00	06/06/13 15:00
4079169005	LR AC5	Tissue	06/06/13 00:00	06/06/13 15:00
4079169006	LR AC6	Tissue	06/06/13 00:00	06/06/13 15:00
4079169007	LR AC7	Tissue	06/06/13 00:00	06/06/13 15:00
4079169008	LR AWS1	Tissue	06/06/13 00:00	06/06/13 15:00
4079169009	LR AWS2	Tissue	06/06/13 00:00	06/06/13 15:00
4079169010	LR AWS3	Tissue	06/06/13 00:00	06/06/13 15:00
4079169011	LR AWS4	Tissue	06/06/13 00:00	06/06/13 15:00
4079169012	LR AWS5	Tissue	06/06/13 00:00	06/06/13 15:00
4079169013	LR AWS6	Tissue	06/06/13 00:00	06/06/13 15:00
4079169014	LR AWS7	Tissue	06/06/13 00:00	06/06/13 15:00
4079169015	LR AWS8	Tissue	06/06/13 00:00	06/06/13 15:00
4079169016	LR SMB1	Tissue	06/06/13 00:00	06/06/13 15:00
4079169017	LR SMB2	Tissue	06/06/13 00:00	06/06/13 15:00
4079169018	LR SMB3	Tissue	06/06/13 00:00	06/06/13 15:00
4079169019	LR SMB4	Tissue	06/06/13 00:00	06/06/13 15:00
4079169020	LR SMB5	Tissue	06/06/13 00:00	06/06/13 15:00





# **SAMPLE ANALYTE COUNT**

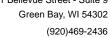
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Marchisean   Lea Act   EPA 8082   BLM   10	Lab ID	Sample ID	Method	Analysts	Analytes Reported
Pace Lipid	4079169001	LR AC1	EPA 8082	BLM	10
4079169002         LR AC2         EPA 8082         BLM         10           4079169003         LR AC3         EPA 8082         BLM         10           4079169004         LR AC3         EPA 8082         BLM         10           4079169004         LR AC4         EPA 8082         BLM         10           4079169004         LR AC4         EPA 8082         BLM         10           4079169005         LR AC5         EPA 8082         BLM         10           4079169006         LR AC5         EPA 8082         BLM         10           4079169007         LR AC6         EPA 8082         BLM         10           4079169008         LR AC7         Pace Gender Typing         JAL         1           4079169007         LR AC7         EPA 8082         BLM         10           4079169007         LR AC7         EPA 8082         BLM         10           4079169007         LR AWS1         EPA 8082         BLM         10           4079169008         LR AWS1         EPA 8082         BLM         10           4079169009         LR AWS2         EPA 8082         BLM         10           4079169010         LR AWS2         EPA 8082			Pace Gender Typing	JAL	1
March   Marc			Pace Lipid	ABF	1
Pace Lipid	4079169002	LR AC2	EPA 8082	BLM	10
March   Marc			Pace Gender Typing	JAL	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid	4079169003	LR AC3	EPA 8082	BLM	10
4079169004       LR AC4       EPA 8082       BLM       10         4079169005       LR AC5       EPA 8082       BLM       10         4079169006       LR AC5       EPA 8082       BLM       10         4079169006       LR AC6       EPA 8082       BLM       10         4079169007       LR AC6       EPA 8082       BLM       10         4079169007       LR AC7       EPA 8082       BLM       10         4079169008       LR AWS1       EPA 8082       BLM       10         4079169008       LR AWS1       EPA 8082       BLM       10         4079169009       LR AWS1       EPA 8082       BLM       10         4079169009       LR AWS2       EPA 8082       BLM       10         4079169010       LR AWS2       EPA 8082       BLM       10         4079169011       LR AWS3       EPA 8082       BLM       10         4079169011       LR AWS4       EPA 8082       BLM       10         4079169012       LR AWS4       EPA 8082       BLM       10         4079169011       LR AWS4       EPA 8082       BLM       10         4079169012       LR AWS5       EPA 8082       BLM			Pace Gender Typing	JAL	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid	4079169004	LR AC4	EPA 8082	BLM	10
4079169005       LR AC5       EPA 8082       BLM       10         4079169006       LR AC6       EPA 8082       BLM       10         4079169006       LR AC6       EPA 8082       BLM       10         4079169007       LR AC7       EPA 8082       BLM       10         4079169007       LR AC7       EPA 8082       BLM       10         4079169008       LR AWS1       EPA 8082       BLM       10         4079169009       LR AWS1       EPA 8082       BLM       10         4079169009       LR AWS2       EPA 8082       BLM       10         4079169010       LR AWS2       EPA 8082       BLM       10         4079169010       LR AWS3       EPA 8082       BLM       10         4079169011       LR AWS4       EPA 8082       BLM       10         4079169011       LR AWS4       EPA 8082       BLM       10         4079169012       LR AWS4       Pace Gender Typing       JAL       1         4079169012       LR AWS4       Pace Gender Typing       JAL       1         4079169012       LR AWS4       Pace Gender Typing       JAL       1         4079169012       LR AWS5       EPA 8082<			Pace Gender Typing	JAL	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid	4079169005	LR AC5	EPA 8082	BLM	10
4079169006 LR AC6 EPA 8082 BLM 10 Pace Lipid ABF 1 4079169007 LR AC7 EPA 8082 BLM 10 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 3 Pace Lipid ABF 1 Pace Gender Typing JAL 3 Pace Lipid ABF 1			Pace Gender Typing	JAL	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid   ABF   1   1   1   1   1   1   1   1   1	4079169006	LR AC6	EPA 8082	BLM	10
4079169007       LR AC7       EPA 8082       BLM       10         Pace Gender Typing       JAL       1         4079169008       LR AWS1       EPA 8082       BLM       10         Pace Gender Typing       JAL       1         4079169009       LR AWS2       EPA 8082       BLM       10         Pace Gender Typing       JAL       1         4079169010       LR AWS3       EPA 8082       BLM       10         Pace Gender Typing       JAL       1         4079169011       LR AWS4       EPA 8082       BLM       10         4079169012       LR AWS5       EPA 8082       BLM       10         Pace Gender Typing       JAL       1       1         4079169012       LR AWS5       EPA 8082       BLM       10         Pace Lipid       ABF       1         4079169012       LR AWS5       EPA 8082       BLM       10         Pace Gender Typing       JAL       1			Pace Gender Typing	JAL	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid   ABF   1	4079169007	LR AC7	EPA 8082	BLM	10
4079169008 LR AWS1 EPA 8082 BLM 10 Pace Gender Typing JAL 1 4079169009 LR AWS2 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Lipid ABF 1  4079169010 LR AWS3 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Gender Typing JAL 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1  4079169011 LR AWS4 EPA 8082 BLM 10 Pace Lipid ABF 1  4079169011 LR AWS4 EPA 8082 BLM 10 Pace Gender Typing JAL 1			Pace Gender Typing	JAL	1
Pace Gender Typing JAL 1 Pace Lipid ABF 1 4079169009 LR AWS2 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Lipid ABF 1 Pace Gender Typing JAL 10 Pace Gender Typing JAL 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1			Pace Lipid	ABF	1
Pace Lipid ABF 1 4079169009 LR AWS2 EPA 8082 BLM 10 Pace Gender Typing JAL 1 4079169010 LR AWS3 EPA 8082 BLM 10 Pace Gender Typing JAL 1 4079169011 LR AWS4 EPA 8082 BLM 10 Pace Lipid ABF 1 4079169011 LR AWS4 EPA 8082 BLM 10 Pace Gender Typing JAL 1	4079169008	LR AWS1	EPA 8082	BLM	10
### AUT9169009 LR AWS2    EPA 8082   BLM   10     Pace Gender Typing   JAL   1     Pace Lipid   ABF   1     4079169010 LR AWS3   EPA 8082   BLM   10     Pace Gender Typing   JAL   1     Pace Lipid   ABF   1     Pace Lipid   ABF   1     4079169011 LR AWS4   EPA 8082   BLM   10     Pace Gender Typing   JAL   1     Pace Gender Typing   JAL   1     Pace Lipid   ABF   1     4079169012 LR AWS5   EPA 8082   BLM   10     Pace Gender Typing   JAL   1     Pace Lipid   ABF   1     Pace Lipid   A			Pace Gender Typing	JAL	1
Pace Gender Typing JAL 1 Pace Lipid ABF 1  4079169010 LR AWS3 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 1			Pace Lipid	ABF	1
Pace Lipid ABF 1 4079169010 LR AWS3 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 4079169011 LR AWS4 EPA 8082 BLM 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 4079169012 LR AWS5 EPA 8082 BLM 10 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 1	4079169009	LR AWS2	EPA 8082	BLM	10
4079169010 LR AWS3 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1  4079169011 LR AWS4 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1  4079169012 LR AWS5 EPA 8082 BLM 10 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Lipid ABF 1			Pace Gender Typing	JAL	1
Pace Gender Typing JAL 1 Pace Lipid ABF 1 4079169011 LR AWS4 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Lipid ABF 1 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1			Pace Lipid	ABF	1
Pace Lipid ABF 1  4079169011 LR AWS4 EPA 8082 BLM 10  Pace Gender Typing JAL 1  Pace Lipid ABF 1  4079169012 LR AWS5 EPA 8082 BLM 10  Pace Gender Typing JAL 1  Pace Gender Typing JAL 1  Pace Gender Typing ABF 1	4079169010	LR AWS3	EPA 8082	BLM	10
4079169011       LR AWS4       EPA 8082       BLM       10         Pace Gender Typing       JAL       1         Pace Lipid       ABF       1         4079169012       LR AWS5       EPA 8082       BLM       10         Pace Gender Typing       JAL       1         Pace Lipid       ABF       1			Pace Gender Typing	JAL	1
Pace Gender Typing JAL 1 Pace Lipid ABF 1 4079169012 LR AWS5 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Gender Typing ABF 1			Pace Lipid	ABF	1
Pace Lipid ABF 1 4079169012 LR AWS5 EPA 8082 BLM 10 Pace Gender Typing JAL 1 Pace Lipid ABF 1	4079169011	LR AWS4	EPA 8082	BLM	10
4079169012         LR AWS5         EPA 8082         BLM         10           Pace Gender Typing         JAL         1           Pace Lipid         ABF         1			Pace Gender Typing	JAL	1
Pace Gender Typing JAL 1 Pace Lipid ABF 1			Pace Lipid	ABF	1
Pace Lipid ABF 1	4079169012	LR AWS5	EPA 8082	BLM	10
			Pace Gender Typing	JAL	1
<b>4079169013 LR AWS6</b> EPA 8082 BLM 10			Pace Lipid	ABF	1
	4079169013	LR AWS6	EPA 8082	BLM	10

# **REPORT OF LABORATORY ANALYSIS**

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# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169014	LR AWS7	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169015	LR AWS8	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169016	LR SMB1	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169017	LR SMB2	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169018	LR SMB3	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169019	LR SMB4	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1
4079169020	LR SMB5	EPA 8082	BLM	10
		Pace Gender Typing	JAL	1
		Pace Lipid	ABF	1



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# **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 16, 2013

## **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

## Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

## **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18696

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- LR AC1 (Lab ID: 4079169001)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- LR AC2 (Lab ID: 4079169002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- LR AC3 (Lab ID: 4079169003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- LR AC4 (Lab ID: 4079169004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- LR AC5 (Lab ID: 4079169005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- LR AC6 (Lab ID: 4079169006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- LR AC7 (Lab ID: 4079169007)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MS (Lab ID: 811346)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MSD (Lab ID: 811347)



## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 16, 2013

QC Batch: OEXT/18696

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

Decachlorobiphenyl (S)Tetrachloro-m-xylene (S)

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/18696

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 4079169001

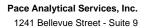
M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 811346)
  - PCB-1254 (Aroclor 1254)
- MSD (Lab ID: 811347)
  - PCB-1254 (Aroclor 1254)

## **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** July 16, 2013

## **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

## **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

## **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

## **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

## Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

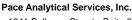
## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

# Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** July 16, 2013

## **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

## Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

## **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

## **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

## **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC1 Lab ID: 4079169001 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual	
8082 GCS PCB, Tissue	Analytical Method: EPA 8082 Preparation Method: EPA 3540								
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	12674-11-2		
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	11104-28-2		
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	11141-16-5		
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	53469-21-9		
PCB-1248 (Aroclor 1248)	<b>13200</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	12672-29-6		
PCB-1254 (Aroclor 1254)	<b>10000</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	11097-69-1		
PCB-1260 (Aroclor 1260)	<b>1560</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	11096-82-5		
PCB, Total	<b>24700</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 02:44	1336-36-3		
Surrogates									
Tetrachloro-m-xylene (S)	0 %	44-130		50	06/20/13 07:02	07/09/13 02:44	877-09-8	S4	
Decachlorobiphenyl (S)	0 %	62-130		50	06/20/13 07:02	07/09/13 02:44	2051-24-3	S4	
Fish Gender Typing	Analytical Method: Pace Gender Typing								
Gender	Female			1		07/03/13 12:48			
Lipid	Analytical Method: Pace Lipid								
Lipid	19.3 %			1		06/25/13 09:48			



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

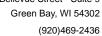
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC2 Lab ID: 4079169002 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepai	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ∪	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ∪	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ∪	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ∪	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3900</b> ს	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3680</b> ι	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>1550</b> ւ	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	11096-82-5	
PCB, Total	<b>9120</b> υ	ıg/kg	750	375	30	06/20/13 07:02	07/09/13 03:01	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	%	44-130		30	06/20/13 07:02	07/09/13 03:01	877-09-8	S4
Decachlorobiphenyl (S)	0 %	%	62-130		30	06/20/13 07:02	07/09/13 03:01	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing								
Gender	Male				1		07/03/13 12:48		
Lipid	Analytical Method: Pace Lipid								
Lipid	12.4 %	%			1		06/25/13 09:48		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

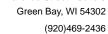
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC3 Lab ID: 4079169003 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>1750</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;250</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1930</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>254J</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	11096-82-5	
PCB, Total	<b>3940</b> ug/kg	500	250	20	06/20/13 07:02	07/09/13 03:19	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	06/20/13 07:02	07/09/13 03:19	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	06/20/13 07:02	07/09/13 03:19	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Method: Pace Lipid							
Lipid	9.3 %			1		06/25/13 09:48		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

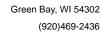
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC4 Lab ID: 4079169004 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	11104-28-2	
PCB-1232 (Aroclor 1232)	<1250 ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	11141-16-5	
PCB-1242 (Aroclor 1242)	<1250 ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>20200</b> ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>25800</b> ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>2830</b> ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	11096-82-5	
PCB, Total	<b>48900</b> ug/kg	2500	1250	100	06/20/13 07:02	07/09/13 03:36	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		100	06/20/13 07:02	07/09/13 03:36	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		100	06/20/13 07:02	07/09/13 03:36	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Method: Pace Lipid							
Lipid	13.7 %			1		06/25/13 09:48		





Project: SR13-001 SHEBOYGAN RIVER

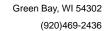
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC5 Lab ID: 4079169005 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>6000</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6590</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>890J</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	11096-82-5	
PCB, Total	<b>13500</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 03:53	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	06/20/13 07:02	07/09/13 03:53	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	06/20/13 07:02	07/09/13 03:53	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Method:	Pace Lipid						
Lipid	7.1 %			1		06/25/13 09:48		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC6 Lab ID: 4079169006 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>12100</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>7490</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>924J</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	11096-82-5	
PCB, Total	<b>20500</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:10	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	06/20/13 07:02	07/09/13 04:10	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	06/20/13 07:02	07/09/13 04:10	2051-24-3	S4
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	20.2 %			1		06/25/13 09:49		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AC7 Lab ID: 4079169007 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>10400</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4510</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;625</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	11096-82-5	
PCB, Total	<b>14900</b> ug/kg	1250	625	50	06/20/13 07:02	07/09/13 04:27	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	06/20/13 07:02	07/09/13 04:27	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	06/20/13 07:02	07/09/13 04:27	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Method:	Pace Lipid						
Lipid	12.4 %			1		06/25/13 09:49		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

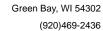
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS1 Lab ID: 4079169008 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>415</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>315</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>39.5J</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	11096-82-5	
PCB, Total	<b>770</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 04:44	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		2	06/20/13 07:02	07/09/13 04:44	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		2	06/20/13 07:02	07/09/13 04:44	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	1.4 %			1		06/25/13 09:49		





Project: SR13-001 SHEBOYGAN RIVER

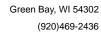
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS2 Lab ID: 4079169009 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	lethod: EPA 8082 Prep	paration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>853</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>341</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	11096-82-5	
PCB, Total	<b>1190</b> ug/	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:36	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130	)	4	06/20/13 07:02	07/09/13 05:36	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130	)	4	06/20/13 07:02	07/09/13 05:36	2051-24-3	
Fish Gender Typing	Analytical M	lethod: Pace Gender T	yping					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical M	lethod: Pace Lipid						
Lipid	0.84 %			1		06/25/13 09:49		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS3 Lab ID: 4079169010 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/k	kg 100	50.0	4	06/20/13 07:02	07/09/13 05:53	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	06/20/13 07:02	07/09/13 05:53	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	06/20/13 07:02	07/09/13 05:53	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	06/20/13 07:02	07/09/13 05:53	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>800</b> ug/k	g 100	50.0	4	06/20/13 07:02	07/09/13 05:53	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>440</b> ug/k	g 100	50.0	4	06/20/13 07:02	07/09/13 05:53	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/k	rg 100	50.0	4	06/20/13 07:02	07/09/13 05:53	11096-82-5	
PCB, Total	<b>1240</b> ug/k	rg 100	50.0	4	06/20/13 07:02	07/09/13 05:53	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	89 %	44-130		4	06/20/13 07:02	07/09/13 05:53	877-09-8	
Decachlorobiphenyl (S)	99 %	62-130		4	06/20/13 07:02	07/09/13 05:53	2051-24-3	
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	3.0 %			1		06/25/13 09:49		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

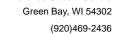
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS4 Lab ID: 4079169011 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>601</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>306</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	11096-82-5	
PCB, Total	<b>908</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 06:10	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		3	06/20/13 07:02	07/09/13 06:10	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		3	06/20/13 07:02	07/09/13 06:10	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	1.2 %			1		06/25/13 09:49		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS5 Lab ID: 4079169012 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>993</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>436</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	11096-82-5	
PCB, Total	<b>1430</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 06:27	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	89 %	44-130		4	06/20/13 07:02	07/09/13 06:27	877-09-8	
Decachlorobiphenyl (S)	98 %	62-130		4	06/20/13 07:02	07/09/13 06:27	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	1.5 %			1		06/25/13 09:49		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

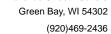
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS6 Lab ID: 4079169013 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>482</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>272</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	11096-82-5	
PCB, Total	<b>754</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 06:45	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		2	06/20/13 07:02	07/09/13 06:45	877-09-8	
Decachlorobiphenyl (S)	92 %	62-130		2	06/20/13 07:02	07/09/13 06:45	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	1.3 %			1		06/25/13 09:50		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS7 Lab ID: 4079169014 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1250</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>517</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	11096-82-5	
PCB, Total	<b>1760</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 07:02	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		4	06/20/13 07:02	07/09/13 07:02	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		4	06/20/13 07:02	07/09/13 07:02	2051-24-3	
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Method	I: Pace Lipid						
Lipid	1.4 %			1		06/25/13 09:50		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

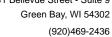
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR AWS8 Lab ID: 4079169015 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>397</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>210</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	11096-82-5	
PCB, Total	<b>606</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 07:19	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		2	06/20/13 07:02	07/09/13 07:19	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		2	06/20/13 07:02	07/09/13 07:19	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.1 %			1		06/25/13 09:50		





Project: SR13-001 SHEBOYGAN RIVER

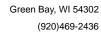
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR SMB1 Lab ID: 4079169016 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metl	nod: EPA 8082 Prepa	aration Meth	od: EP	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/20/13 07:02	07/09/13 07:36	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/20/13 07:02	07/09/13 07:36	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg		62.5	5	06/20/13 07:02	07/09/13 07:36	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg		62.5	5	06/20/13 07:02	07/09/13 07:36	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1080</b> ug/kg	125	62.5	5	06/20/13 07:02	07/09/13 07:36	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1200</b> ug/kg	125	62.5	5	06/20/13 07:02	07/09/13 07:36	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>241</b> ug/kg	125	62.5	5	06/20/13 07:02	07/09/13 07:36	11096-82-5	
PCB, Total	<b>2520</b> ug/kg	125	62.5	5	06/20/13 07:02	07/09/13 07:36	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		5	06/20/13 07:02	07/09/13 07:36	877-09-8	
Decachlorobiphenyl (S)	93 %	62-130		5	06/20/13 07:02	07/09/13 07:36	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	2.4 %			1		06/25/13 09:50		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR SMB2 Lab ID: 4079169017 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>719</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>475</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>82.1</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	11096-82-5	
PCB, Total	<b>1280</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 07:53	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		3	06/20/13 07:02	07/09/13 07:53	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		3	06/20/13 07:02	07/09/13 07:53	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	0.54 %			1		06/25/13 09:50		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

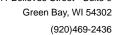
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR SMB3 Lab ID: 4079169018 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>346</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>155</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>43.6J</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	11096-82-5	
PCB, Total	<b>545</b> ug/kg	50.0	25.0	2	06/20/13 07:02	07/09/13 08:10	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	79 %	44-130		2	06/20/13 07:02	07/09/13 08:10	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		2	06/20/13 07:02	07/09/13 08:10	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	1.0 %			1		06/25/13 09:50		





Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR SMB4 Lab ID: 4079169019 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg		37.5	3	06/20/13 07:02	07/09/13 08:28	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>517</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>407</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>50.0J</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	11096-82-5	
PCB, Total	<b>974</b> ug/kg	75.0	37.5	3	06/20/13 07:02	07/09/13 08:28	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		3	06/20/13 07:02	07/09/13 08:28	877-09-8	
Decachlorobiphenyl (S)	92 %	62-130		3	06/20/13 07:02	07/09/13 08:28	2051-24-3	
Fish Gender Typing	Analytical Met	nod: Pace Gender Tyր	oing					
Gender	Female			1		07/03/13 12:48		
Lipid	Analytical Met	nod: Pace Lipid						
Lipid	0.78 %			1		06/25/13 09:50		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

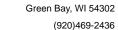
Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Sample: LR SMB5 Lab ID: 4079169020 Collected: 06/06/13 00:00 Received: 06/06/13 15:00 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Inits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>662</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>730</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>110</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	11096-82-5	
PCB, Total	<b>1500</b> ug/kg	100	50.0	4	06/20/13 07:02	07/09/13 08:45	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	84 %	44-130		4	06/20/13 07:02	07/09/13 08:45	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		4	06/20/13 07:02	07/09/13 08:45	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:48		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	1.6 %			1		06/25/13 09:50		





### **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

QC Batch: OEXT/18696 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079169001, 4079169002, 4079169003, 4079169004, 4079169005, 4079169006, 4079169007, 4079169008,

4079169017, 4079169018, 4079169019, 4079169020

METHOD BLANK: 811344 Matrix: Tissue

Associated Lab Samples: 4079169001, 4079169002, 4079169003, 4079169004, 4079169005, 4079169006, 4079169007, 4079169008,

4079169009, 4079169010, 4079169011, 4079169012, 4079169013, 4079169014, 4079169015, 4079169016,

4079169017, 4079169018, 4079169019, 4079169020

		Blank	Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers	
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/09/13 01:35		
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/09/13 01:35		
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/09/13 01:35		
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/09/13 01:35		
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/09/13 01:35		
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/09/13 01:35		
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/09/13 01:35		
Decachlorobiphenyl (S)	%	94	62-130	07/09/13 01:35		
Tetrachloro-m-xylene (S)	%	83	44-130	07/09/13 01:35		

LABORATORY CONTROL SAMPLE:	811345	

Date: 07/16/2013 08:25 AM

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	226	90	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			92	62-130	
Tetrachloro-m-xylene (S)	%			80	44-130	

	41	079169001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD		Qua
PCB-1016 (Aroclor 1016)	ug/kg	<625			<625	<625					24	
PCB-1221 (Aroclor 1221)	ug/kg	<625			<625	<625					24	
PCB-1232 (Aroclor 1232)	ug/kg	<625			<625	<625					24	
PCB-1242 (Aroclor 1242)	ug/kg	<625			<625	<625					24	
PCB-1248 (Aroclor 1248)	ug/kg	13200			12700	13100				3	24	
PCB-1254 (Aroclor 1254)	ug/kg	10000	1000	1000	10700	11200	71	121	27-163	5	24	M6
PCB-1260 (Aroclor 1260)	ug/kg	1560			1560	1630				5	24	
Decachlorobiphenyl (S)	%						0	0	62-130			S4
Tetrachloro-m-xylene (S)	%						0	0	44-130			S4

Green Bay, WI 54302 (920)469-2436



**QUALITY CONTROL DATA** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

QC Batch: OEXT/18709 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079169001, 4079169002, 4079169003, 4079169004, 4079169005, 4079169006, 4079169007, 4079169008,

4079169009, 4079169010, 4079169011, 4079169012, 4079169013, 4079169014, 4079169015, 4079169016,

4079169017, 4079169018, 4079169019, 4079169020

METHOD BLANK: 811644 Matrix: Tissue

Associated Lab Samples: 4079169001, 4079169002, 4079169003, 4079169004, 4079169005, 4079169006, 4079169007, 4079169008,

4079169009, 4079169010, 4079169011, 4079169012, 4079169013, 4079169014, 4079169015, 4079169016,

 $4079169017,\,4079169018,\,4079169019,\,4079169020$ 

Blank Reporting Units Result Limit Analyzed Qualifiers

Lipid % 0.68 06/25/13 09:48

SAMPLE DUPLICATE: 811645

Date: 07/16/2013 08:25 AM

Parameter

4079169001 Dup Max RPD Parameter Units Result Result **RPD** Qualifiers 19.3 % 19.8 3 20 Lipid



### **QUALIFIERS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

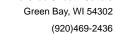
TNI - The NELAC Institute.

# **ANALYTE QUALIFIERS**

Date: 07/16/2013 08:25 AM

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





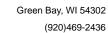
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079169001	LR AC1	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
4079169002	LR AC2	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
4079169003	LR AC3	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
1079169004	LR AC4	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
1079169005	LR AC5	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
1079169006	LR AC6	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
1079169007	LR AC7	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
1079169008	LR AWS1	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
079169009	LR AWS2	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
1079169010	LR AWS3	EPA 3540	OEXT/18696	EPA 8082	GCSV/980
079169011	LR AWS4	EPA 3540	OEXT/18696		GCSV/980
1079169012	LR AWS5	EPA 3540	OEXT/18696		GCSV/980
1079169013	LR AWS6	EPA 3540	OEXT/18696		GCSV/980
1079169014	LR AWS7	EPA 3540	OEXT/18696		GCSV/980
1079169015	LR AWS8	EPA 3540	OEXT/18696		GCSV/980
1079169016	LR SMB1	EPA 3540	OEXT/18696		GCSV/980
1079169017	LR SMB2	EPA 3540	OEXT/18696		GCSV/980
1079169018	LR SMB3	EPA 3540	OEXT/18696		GCSV/980
1079169019	LR SMB4	EPA 3540	OEXT/18696		GCSV/980
079169020	LR SMB5	EPA 3540	OEXT/18696		GCSV/980
079169001	LR AC1	Pace Gender Typing	GRND/2582		
079169002	LR AC2	Pace Gender Typing	GRND/2582		
1079169003	LR AC3	Pace Gender Typing	GRND/2582		
1079169004	LR AC4	Pace Gender Typing	GRND/2582		
1079169005	LR AC5	Pace Gender Typing	GRND/2582		
1079169006	LR AC6	Pace Gender Typing	GRND/2582		
1079169007	LR AC7	Pace Gender Typing	GRND/2582		
1079169008	LR AWS1	Pace Gender Typing	GRND/2582		
1079169009	LR AWS2	Pace Gender Typing	GRND/2582		
1079169010	LR AWS3	Pace Gender Typing	GRND/2582		
1079169011	LR AWS4	Pace Gender Typing	GRND/2582		
1079169012	LR AWS5	Pace Gender Typing	GRND/2582		
1079169013	LR AWS6	Pace Gender Typing	GRND/2582		
1079169014	LR AWS7	Pace Gender Typing	GRND/2582		
1079169015	LR AWS8	Pace Gender Typing	GRND/2582		
1079169016	LR SMB1	Pace Gender Typing	GRND/2582		
1079169017	LR SMB2	Pace Gender Typing	GRND/2582		
1079169018	LR SMB3	Pace Gender Typing	GRND/2582		
1079169019	LR SMB4	Pace Gender Typing	GRND/2582		
1079169020	LR SMB5	Pace Gender Typing	GRND/2582		
079169001	LR AC1	Pace Lipid	OEXT/18709		
1079169002	LR AC2	Pace Lipid	OEXT/18709		
1079169003	LR AC3	Pace Lipid	OEXT/18709		
1079169004	LR AC4	Pace Lipid	OEXT/18709		
1079169005	LR AC5	Pace Lipid	OEXT/18709		
1079169006	LR AC6	Pace Lipid	OEXT/18709		
1079169007	LR AC7	Pace Lipid	OEXT/18709		
4079169008	LR AWS1	Pace Lipid	OEXT/18709		





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079169

Date: 07/16/2013 08:25 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytica Batch
4079169009	LR AWS2	Pace Lipid	OEXT/18709		
4079169010	LR AWS3	Pace Lipid	OEXT/18709		
4079169011	LR AWS4	Pace Lipid	OEXT/18709		
4079169012	LR AWS5	Pace Lipid	OEXT/18709		
4079169013	LR AWS6	Pace Lipid	OEXT/18709		
4079169014	LR AWS7	Pace Lipid	OEXT/18709		
4079169015	LR AWS8	Pace Lipid	OEXT/18709		
4079169016	LR SMB1	Pace Lipid	OEXT/18709		
4079169017	LR SMB2	Pace Lipid	OEXT/18709		
4079169018	LR SMB3	Pace Lipid	OEXT/18709		
4079169019	LR SMB4	Pace Lipid	OEXT/18709		
4079169020	LR SMB5	Pace Lipid	OEXT/18709		

Intact / Not Intact

special pricing and release of liability

Date/Time:

Received By:

Date/Time:

Present (Not Present

Intact / Not Intact

Samples on HOLD are subject to

special pricing and release of liability

Relinquished By:

Intact / Not Intact

special pricing and release of liability

Pace Analytical Services, Inc 1241 Bellevue Street, Suite & Green Bay, WI 54302

# Pace Analytical\*\*

# **Sample Condition Upon Receipt**

		1)[	)		
Client Name	:	M	5	Project #	4079169
Courier: Fed Ex FUPS FUSPS	Client C	Comme	rcial Pace	_ Other	
Tracking #:					
Custody Seal on Cooler/Box Present:	no	Seals	s intact: Tyes	_ no	
Custody Seal on Samples Present:	no	Seals	s intact: Tyes	∫ no	
Packing Material: Bubble Wrap Bubble	ole Bags	Non	e TOther		
Thermometer Used 5 K 23	7. T		Blue Dry None		ice, cooling process has begun
Cooler Temperature Uncorr: 16/16/17 /Corr: 1	5/15/16	Biolo	gical Tissue is Fr		
Temp Blank Present:  yes  no				no	Person examining contents:
Temp should be above freezing to 6°C for all sample exc Frozen Biota Samples should be received ≤ 0°C.	ept Biota.		Comments:		Initials: EMH
Chain of Custody Present:	∐Yes □No	o □n/a			
Chain of Custody Filled Out:	☑Yes □No	DN/A	2.		
Chain of Custody Relinquished:	☑Yes □No	DN/A	3.		
Sampler Name & Signature on COC:	✓Yes □No	DN/A	4		
Samples Arrived within Hold Time:	ZYes □No				
- VOA Samples frozen upon receipt	□Yes □No		Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes ØNo				
Rush Turn Around Time Requested:	□Yes ☑No				
Sufficient Volume:	✓Yes □No				
Correct Containers Used:				Ds inside sa	mple bays and not
-Pace Containers Used:	DVoc ZNc		Cooli	ible -	mple bags and not H6/6/13
-Pace IR Containers Used:	□Yes □No		1 readily 01:	EM,	H6/6/13
Containers Intact:	✓Yes □No		10.		
Filtered volume received for Dissolved tests	□Yes □No				
Sample Labels match COC:	✓Yes □No			10.44	
-Includes date/time/ID/Analysis Matrix:	\(\begin{align*} \begin{align*} \beg		1 6		
All containers needing preservation have been checked.			HNO:	R I LISCON F	NaOH   NaOH +ZnAct
(Non-Compliance noted in 13.)	□Yes □No	_	13. TINOS	) ј. п2304 ј	NaOH   NaOH ZIACE
All containers needing preservation are found to be in compliance with EPA recommendation.	□Yes □No	PIN/A			
(HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)			Initialbon	11 - 1 014 #10 - 4	(Date/
exceptions: VOA, coliform, TOC, TOX, TOH, D&G, WIDROW, Phenolics, OTHER:	□Yes □No		Initial when completed	Lab Std #ID of preservative	Time:
Headspace in VOA Vials ( >6mm):	□Yes □No	ØN/A	14.		
Trip Blank Present:	□Yes □No	ØŅ/A	15.		
Frip Blank Custody Seals Present	□Yes □No	Z N/A			
Pace Trip Blank Lot # (if purchased):					
Client Notification/ Resolution:		D = 1 = 5		checked, see attache	ed form for additional comments
Person Contacted:  Comments/ Resolution:	<del></del>	_Date/	ime:		
Comments/ Nesolution.					
		<u> </u>			
Project Manager Review	04/	1 200 1		Date:	10/6/13





Green Bay, WI 54302 (920)469-2436

July 16, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

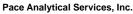
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

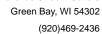
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



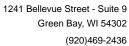


# **SAMPLE SUMMARY**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079170001	UR1 SMB3	Tissue	06/04/13 00:00	06/06/13 17:26
4079170002	UR1 SMB4	Tissue	06/04/13 00:00	06/06/13 17:26
4079170003	UR1 SMB5	Tissue	06/04/13 00:00	06/06/13 17:26
4079170004	UR1 SMB6	Tissue	06/04/13 00:00	06/06/13 17:26
4079170005	UR1 SMB7	Tissue	06/04/13 00:00	06/06/13 17:26
4079170006	UR1 SMB8	Tissue	06/04/13 00:00	06/06/13 17:26
4079170007	UR1 SMB9	Tissue	06/04/13 00:00	06/06/13 17:26
4079170008	UR1 SMB10	Tissue	06/04/13 00:00	06/06/13 17:26
4079170009	UR1 SMB11	Tissue	06/04/13 00:00	06/06/13 17:26
4079170010	UR1 SMB12	Tissue	06/04/13 00:00	06/06/13 17:26
4079170011	UR1 RB1	Tissue	06/04/13 00:00	06/06/13 17:26
4079170012	UR1 RB2	Tissue	06/04/13 00:00	06/06/13 17:26
4079170013	UR1 RB3	Tissue	06/04/13 00:00	06/06/13 17:26
4079170014	UR1 RB4	Tissue	06/04/13 00:00	06/06/13 17:26
4079170015	UR1 RB5	Tissue	06/04/13 00:00	06/06/13 17:26



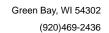


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
4079170001	UR1 SMB3	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170002 UR	UR1 SMB4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170003 U	UR1 SMB5	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170004 UR	UR1 SMB6	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170005	UR1 SMB7	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170006 U	UR1 SMB8	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170007 UR1 SMB9	UR1 SMB9	EPA 8082	BLM	10	
	Pace Gender Typing	ABF	1		
		Pace Lipid	ABF	1	
4079170008 UR1 SMB10	UR1 SMB10	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170009	UR1 SMB11	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170010	UR1 SMB12	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170011	UR1 RB1	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170012	UR1 RB2	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170013	UR1 RB3	EPA 8082	BLM	10	



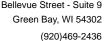


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170014	UR1 RB4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079170015	UR1 RB5	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	





### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 16, 2013

### **General Information:**

15 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

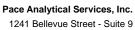
### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18747

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- UR1 RB1 (Lab ID: 4079170011)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 RB3 (Lab ID: 4079170013)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB10 (Lab ID: 4079170008)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB11 (Lab ID: 4079170009)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB12 (Lab ID: 4079170010)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB5 (Lab ID: 4079170003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB7 (Lab ID: 4079170005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB9 (Lab ID: 4079170007)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)



Green Bay, WI 54302 (920)469-2436



### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 16, 2013

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

# **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

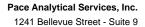
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** July 16, 2013

### **General Information:**

15 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

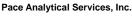
# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** July 16, 2013

### **General Information:**

15 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB3 Lab ID: 4079170001 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	12674-11-2	
PCB-1221 (Aroclor 1221)	<12.5 ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>322</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>205</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>34.9</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	11096-82-5	
PCB, Total	<b>562</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 22:06	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		1	06/24/13 07:09	07/08/13 22:06	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		1	06/24/13 07:09	07/08/13 22:06	2051-24-3	
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.48 %			1		06/26/13 08:51		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

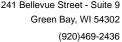
Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB4 Lab ID: 4079170002 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>831</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>383</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>38.3J</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	11096-82-5	
PCB, Total	<b>1250</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 22:24	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		3	06/24/13 07:09	07/08/13 22:24	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		3	06/24/13 07:09	07/08/13 22:24	2051-24-3	
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Methor	od: Pace Lipid						
Lipid	0.68 %			1		06/26/13 08:51		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB5 Lab ID: 4079170003 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Inits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg		625	50	06/24/13 07:09	07/08/13 22:42	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>11100</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9330</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>996J</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	11096-82-5	
PCB, Total	<b>21500</b> ug/kg	1250	625	50	06/24/13 07:09	07/08/13 22:42	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	06/24/13 07:09	07/08/13 22:42	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	06/24/13 07:09	07/08/13 22:42	2051-24-3	S4
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	0.80 %			1		06/26/13 08:52		



Green Bay, WI 54302 (920)469-2436

# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB6 Lab ID: 4079170004 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>771</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>347</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>37.5J</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	11096-82-5	
PCB, Total	<b>1160</b> ug/kg	75.0	37.5	3	06/24/13 07:09	07/08/13 23:00	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		3	06/24/13 07:09	07/08/13 23:00	877-09-8	
Decachlorobiphenyl (S)	96 %	62-130		3	06/24/13 07:09	07/08/13 23:00	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:53		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.54 %			1		06/26/13 08:52		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB7 Lab ID: 4079170005 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>6870</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6530</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>613J</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	11096-82-5	
PCB, Total	<b>14000</b> ug/kg	750	375	30	06/24/13 07:09	07/08/13 23:17	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	06/24/13 07:09	07/08/13 23:17	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	06/24/13 07:09	07/08/13 23:17	2051-24-3	S4
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Method	: Pace Lipid						
Lipid	0.74 %			1		06/26/13 08:52		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB8 Lab ID: 4079170006 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>23.6J</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>78.2</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>39.1</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	11096-82-5	
PCB, Total	<b>141</b> ug/kg	25.0	12.5	1	06/24/13 07:09	07/08/13 23:35	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		1	06/24/13 07:09	07/08/13 23:35	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		1	06/24/13 07:09	07/08/13 23:35	2051-24-3	
Fish Gender Typing	Analytical Metho	od: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:53		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	0.66 %			1		06/26/13 08:52		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB9 Lab ID: 4079170007 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units L	.OQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	Method: EPA 8082	2 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/	/kg	750	375	30	06/24/13 07:09	07/09/13 00:28	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/	/kg	750	375	30	06/24/13 07:09	07/09/13 00:28	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/		750	375	30	06/24/13 07:09	07/09/13 00:28	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/		750	375	30	06/24/13 07:09	07/09/13 00:28	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>4190</b> ug/	/kg	750	375	30	06/24/13 07:09	07/09/13 00:28	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3870</b> ug/	/kg	750	375	30	06/24/13 07:09	07/09/13 00:28	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>495J</b> ug/	/kg	750	375	30	06/24/13 07:09	07/09/13 00:28	11096-82-5	
PCB, Total	<b>8560</b> ug/	/kg	750	375	30	06/24/13 07:09	07/09/13 00:28	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	4	14-130		30	06/24/13 07:09	07/09/13 00:28	877-09-8	S4
Decachlorobiphenyl (S)	0 %	6	52-130		30	06/24/13 07:09	07/09/13 00:28	2051-24-3	S4
Fish Gender Typing	Analytical M	lethod: Pace Ge	nder Typ	oing					
Gender	Male				1		07/03/13 12:53		
Lipid	Analytical M	lethod: Pace Lipi	id						
Lipid	0.58 %				1		06/26/13 08:52		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB10 Lab ID: 4079170008 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5270</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4330</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>531J</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	11096-82-5	
PCB, Total	<b>10100</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 00:46	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	06/24/13 07:09	07/09/13 00:46	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	06/24/13 07:09	07/09/13 00:46	2051-24-3	S4
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Method	: Pace Lipid						
Lipid	0.66 %			1		06/26/13 08:52		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB11 Lab ID: 4079170009 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>6330</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5100</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>630J</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	11096-82-5	
PCB, Total	<b>12100</b> ug/kg	1250	625	50	06/24/13 07:09	07/09/13 01:04	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	06/24/13 07:09	07/09/13 01:04	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	06/24/13 07:09	07/09/13 01:04	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:53		
Lipid	Analytical Method:	Pace Lipid						
Lipid	0.82 %			1		06/26/13 08:52		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

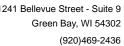
Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 SMB12 Lab ID: 4079170010 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg		375	30	06/24/13 07:09	07/09/13 01:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>4440</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4000</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>507J</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	11096-82-5	
PCB, Total	<b>8940</b> ug/kg	750	375	30	06/24/13 07:09	07/09/13 01:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	06/24/13 07:09	07/09/13 01:21	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	06/24/13 07:09	07/09/13 01:21	2051-24-3	S4
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	0.54 %			1		06/26/13 08:52		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 RB1 Lab ID: 4079170011 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3380</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3160</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>308J</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	11096-82-5	
PCB, Total	<b>6840</b> ug/kg	500	250	20	06/24/13 07:09	07/09/13 01:39	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	06/24/13 07:09	07/09/13 01:39	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	06/24/13 07:09	07/09/13 01:39	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.54 %			1		06/26/13 08:53		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

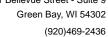
Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 RB2 Lab ID: 4079170012 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	12674-11-2	
PCB-1221 (Aroclor 1221)	<125 ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1020</b> ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1480</b> ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>175J</b> ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	11096-82-5	
PCB, Total	<b>2680</b> ug/kg	250	125	10	06/24/13 07:09	07/09/13 01:57	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	80 %	44-130		10	06/24/13 07:09	07/09/13 01:57	877-09-8	
Decachlorobiphenyl (S)	100 %	62-130		10	06/24/13 07:09	07/09/13 01:57	2051-24-3	
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Method	I: Pace Lipid						
Lipid	0.62 %			1		06/26/13 08:53		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 RB3 Lab ID: 4079170013 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytica	l Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;406</b> (	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;406</b> \	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;406</b> \	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;406</b> \	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>9670</b> ເ	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5490</b> (	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>541J</b> (	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	11096-82-5	
PCB, Total	<b>15700</b> (	ug/kg	812	406	30	06/24/13 07:09	07/09/13 02:15	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 9	%	44-130		30	06/24/13 07:09	07/09/13 02:15	877-09-8	S4
Decachlorobiphenyl (S)	0 9	%	62-130		30	06/24/13 07:09	07/09/13 02:15	2051-24-3	S4
Fish Gender Typing	Analytica	l Method: Pad	e Gender Typ	ing					
Gender	Female				1		07/03/13 12:53		
Lipid	Analytica	l Method: Pad	e Lipid						
Lipid	0.62	%			1		06/26/13 08:53		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 RB4 Lab ID: 4079170014 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;137</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;137</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;137</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;137</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1430</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1600</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>243J</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	11096-82-5	
PCB, Total	<b>3270</b> ug/kg	273	137	10	06/24/13 07:09	07/09/13 02:32	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	79 %	44-130		10	06/24/13 07:09	07/09/13 02:32	877-09-8	
Decachlorobiphenyl (S)	97 %	62-130		10	06/24/13 07:09	07/09/13 02:32	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:53		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	0.43 %			1		06/26/13 08:53		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

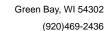
Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Sample: UR1 RB5 Lab ID: 4079170015 Collected: 06/04/13 00:00 Received: 06/06/13 17:26 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;26.8</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;26.8</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;26.8</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;26.8</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>322</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>447</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>50.9J</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	11096-82-5	
PCB, Total	<b>820</b> ug/kg	53.6	26.8	1	06/24/13 07:09	07/09/13 02:50	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	86 %	44-130		1	06/24/13 07:09	07/09/13 02:50	877-09-8	
Decachlorobiphenyl (S)	98 %	62-130		1	06/24/13 07:09	07/09/13 02:50	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Male			1		07/03/13 12:53		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.47 %			1		06/26/13 08:53		





#### **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

QC Batch: OEXT/18747 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079170001, 4079170002, 4079170003, 4079170004, 4079170005, 4079170006, 4079170007, 4079170008,

4079170009, 4079170010, 4079170011, 4079170012, 4079170013, 4079170014, 4079170015

METHOD BLANK: 813203 Matrix: Tissue

Associated Lab Samples: 4079170001, 4079170002, 4079170003, 4079170004, 4079170005, 4079170006, 4079170007, 4079170008,

4079170009, 4079170010, 4079170011, 4079170012, 4079170013, 4079170014, 4079170015

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/08/13 20:56	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/08/13 20:56	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/08/13 20:56	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/08/13 20:56	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/08/13 20:56	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/08/13 20:56	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/08/13 20:56	
Decachlorobiphenyl (S)	%	85	62-130	07/08/13 20:56	
Tetrachloro-m-xylene (S)	%	82	44-130	07/08/13 20:56	

LABORATORY CONTROL SAMPLE:	813204					
Demonstra	11.20	Spike	LCS	LCS	% Rec	0
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	234	94	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			88	62-130	
Tetrachloro-m-xylene (S)	%			81	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 81320	5		813206							
	4	079170001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5			<50.0	<50.0					24	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	1000	1000	1080	1050	108	105	27-163	3	24	
PCB-1248 (Aroclor 1248)	ug/kg	322			<50.0	<50.0					24	
PCB-1254 (Aroclor 1254)	ug/kg	205			337	300				11	24	
PCB-1260 (Aroclor 1260)	ug/kg	34.9			<50.0	<50.0					24	
Decachlorobiphenyl (S)	%						92	92	62-130			
Tetrachloro-m-xylene (S)	%						88	87	44-130			



#### **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

QC Batch: OEXT/18757 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079170001, 4079170002, 4079170003, 4079170004, 4079170005, 4079170006, 4079170007, 4079170008,

4079170009, 4079170010, 4079170011, 4079170012, 4079170013, 4079170014, 4079170015

METHOD BLANK: 813500 Matrix: Tissue

%

Associated Lab Samples: 4079170001, 4079170002, 4079170003, 4079170004, 4079170005, 4079170006, 4079170007, 4079170008,

0.47

4079170009, 4079170010, 4079170011, 4079170012, 4079170013, 4079170014, 4079170015

Blank Reporting

06/26/13 08:51

Parameter Units Result Limit Analyzed Qualifiers

SAMPLE DUPLICATE: 813501

Date: 07/16/2013 08:16 AM

Lipid

4079170001 Dup Max **RPD** Parameter Units Result Result **RPD** Qualifiers % 0.48 Lipid 0.58 19 20





**QUALIFIERS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

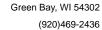
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **ANALYTE QUALIFIERS**

Date: 07/16/2013 08:16 AM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079170

Date: 07/16/2013 08:16 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079170001	UR1 SMB3	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170002	UR1 SMB4	EPA 3540	OEXT/18747		GCSV/9810
4079170003	UR1 SMB5	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170004	UR1 SMB6	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170005	UR1 SMB7	EPA 3540	OEXT/18747		GCSV/9810
4079170006	UR1 SMB8	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170007	UR1 SMB9	EPA 3540	OEXT/18747		GCSV/9810
4079170008	UR1 SMB10	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170009	UR1 SMB11	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170010	UR1 SMB12	EPA 3540	OEXT/18747		GCSV/9810
4079170011	UR1 RB1	EPA 3540	OEXT/18747	EPA 8082	GCSV/9810
4079170012	UR1 RB2	EPA 3540	OEXT/18747		GCSV/9810
4079170013	UR1 RB3	EPA 3540	OEXT/18747		GCSV/9810
4079170014	UR1 RB4	EPA 3540	OEXT/18747		GCSV/9810
4079170015	UR1 RB5	EPA 3540	OEXT/18747		GCSV/9810
4079170001	UR1 SMB3	Pace Gender Typing	GRND/2584		
4079170002	UR1 SMB4	Pace Gender Typing	GRND/2584		
4079170003	UR1 SMB5	Pace Gender Typing	GRND/2584		
1079170004	UR1 SMB6	Pace Gender Typing	GRND/2584		
4079170005	UR1 SMB7	Pace Gender Typing	GRND/2584		
4079170006	UR1 SMB8	Pace Gender Typing	GRND/2584		
4079170007	UR1 SMB9	Pace Gender Typing	GRND/2584		
4079170008	UR1 SMB10	Pace Gender Typing	GRND/2584		
4079170009	UR1 SMB11	Pace Gender Typing	GRND/2584		
4079170010	UR1 SMB12	Pace Gender Typing	GRND/2584		
4079170011	UR1 RB1	Pace Gender Typing	GRND/2584		
4079170012	UR1 RB2	Pace Gender Typing	GRND/2584		
4079170013	UR1 RB3	Pace Gender Typing	GRND/2584		
4079170014	UR1 RB4	Pace Gender Typing	GRND/2584		
4079170015	UR1 RB5	Pace Gender Typing	GRND/2584		
4079170001	UR1 SMB3	Pace Lipid	OEXT/18757		
4079170002	UR1 SMB4	Pace Lipid	OEXT/18757		
4079170003	UR1 SMB5	Pace Lipid	OEXT/18757		
4079170004	UR1 SMB6	Pace Lipid	OEXT/18757		
4079170005	UR1 SMB7	Pace Lipid	OEXT/18757		
4079170006	UR1 SMB8	Pace Lipid	OEXT/18757		
1079170007	UR1 SMB9	Pace Lipid	OEXT/18757		
4079170008	UR1 SMB10	Pace Lipid	OEXT/18757		
4079170009	UR1 SMB11	Pace Lipid	OEXT/18757		
4079170010	UR1 SMB12	Pace Lipid	OEXT/18757		
4079170011	UR1 RB1	Pace Lipid	OEXT/18757		
4079170012	UR1 RB2	Pace Lipid	OEXT/18757		
4079170013	UR1 RB3	Pace Lipid	OEXT/18757		
4079170014	UR1 RB4	Pace Lipid	OEXT/18757		
4079170015	UR1 RB5	Pace Lipid	OEXT/18757		

Version 6.0 06/14/06

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Data Packa	ige Op		MS/MSD	A = Air		ix Codes W = Water		Requ		]VE								Cincinnat	ti, OH 45249		
☐ EP	A Level A Level	111	On your sample (billable) NOT needed on	B = Biota C = Charco O = Oil	l lsc ?	DW = Drinkir GW = Groun SW = Surfac	d Water e Water	Analyses	- 8082	RVAT							Invoice To Phone:	513-489-	6789		
PACE LAB #	A Level		your sample T FIELD ID	<u> </u>	COLLEG		e Water MATRIX	Anal	PCB - 8	PRESERVATIVES							CLIENT COMMENTS	1	COMMENTS Use Only)	Pro	ofile#
			1 SMB1		TE	TIME			X	A	<b></b>						Whole Fish Sample	\	, esc omy,		
13001/				6/3	3/13		Tissue		<u> </u>	<b></b>							TTTOIC TOTT CUTTIPIC	<del>                                     </del>			
2007	· · ·		1 SMB2	6/4	/13		Tissue		X	A								ļ. <u>.     </u>	1 / / /		
043	00	UR	1 SMB3	6/4	/13		Tissue		X	Α								1-Zip	lock/poly	1bag	
d04	002	UR	1 SMB4	6/4	/13		Tissue		Х	Α								i ,			
005	003	UR	1 SMB5	6/4	/13		Tissue		Х	Α	<u> </u>										
60	004	UR	1 SMB6	6/4	/13		Tissue		X	Α											
015		UR	1 SMB7	6/4	/13		Tissue		Х	Α											
006		UR	1 SMB8	6/4	/13		Tissue		Х	Α											
007		UR	1 SMB9	6/4	/13		Tissue		Х	Α											
008		UR1	1 SMB10	6/4	/13		Tissue		Х	Α											
009		UR1	1 SMB11	6/4	/13		Tissue		Х	Α											
010		UR1	1 SMB12	6/4	/13		Tissue		Х	Α									<u> </u>		
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	513-38	7-2778			Relinq	uished By:				Da	te/Time:			Received	By:		Date/Time:			djusted	
Fax:	Samples	on HOLD are	subject to		Relinq	uished By:				Da	te/Time:			Received	By:	***************************************	Date/Time:		Cooler Cu Present		
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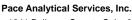
	(Please Print Clearly)		]	-							UPPE	R MIDWE	ST RE	GION		Page 4	of 4
Company Nam	e: Pollution Risk Services			<i>y</i> .				. 60			MN: 6	12-607-1	700	<b>N</b> I: 920-469-2436		, (	,
Branch/Locatio	on: Sheboygan		1 /	_ P	ace		lytic								COC No.	Page 4	4170
Project Contac	t: Mark Mather					vs vv. pc		<b></b>						Quote #:			
Phone:	513-678-2137 or 513-387-277	8		C	HA	IN	OF	C	US'	TO	DY	,	İ	Mail To Contact:	Mark Math	er	, , , , , , , , , , , , , , , , , , ,
Project Numbe	er: SR13-001 Task 10-02000		A=No		CL C=			tion Cod	es	=Methar		NaOH	I	Mail To Company:	PRS - Ass	ured Group	
Project Name:	2013 Fish Sampling		H=Sc FILTE	odium Bisulf	ate Soluti	on	I=Sodiu	m Thiosul	lfate .	i=Other			[	Mail To Address:		per Road, Suite	240,
Project State:	Wiscoinsin		(YES	3/NO)	Y/N										Cincinnati,		
	rint): Mark Mather		(CO	RVATION DE)*	Pick Letter			ļ						Invoice To Contact:	Goldie Sha	rp	
Sampled By (S		\			eq									Invoice To Company:	As Above		
PO #:	Pı	gulatory ogram:	<u> </u>		quested		S							Invoice To Address:		per Road, Suite	240,
Data Packag	ole) On your sample A=A	dr	rix Codes W = Water		Red		) M								Cincinnati,	OF 40249	
	Lovel III	Charcoal	DW = Drinki GW = Groun SW = Surface	nd Water ce Water	yses	8082	PRESERVATIVES							Invoice To Phone:	513-489-67	789	
CFA	your sample SI =	Sludge	WW = Was		Analys	- 1	ESE						[	CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	ECTION TIME	MATRIX		PCB	PR							COMMENTS	(Lab l	Jse Only)	
011	UR1 RB1	6/4/13		Tissue		Х	Α							Whole Fish Sample	1-poly	bag	
012	UR1 RB2	6/4/13		Tissue	1.5	Х	Α										
013	UR1 RB3	6/4/13		Tissue		X	Α										
014	UR1 RB4	6/4/13		Tissue		Х	Α										
015	UR1 RB5	6/4/13		Tissue		Х	Α								V	/	
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	m Rush Results by (complete what you want nmather@assuredlic.com	<u>):</u>	Iquished By:	AL_		<i>پ</i>		te/Time:	150	10_	Received	~ ~ ~ ~ ~ ~	1 10	100 B WWW.	5 1 200	Receipt Temp =	() o
Email #2:								***************************************								Sample Re	
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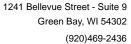
Pace Analytical Services, Inc. 1241 Bellevue Street, Suite 9 Green Bay, WI 54302

# Pace Analytical \*\*

# Sample Condition Upon Receipt

Client Name	<b>:</b>	M	15	Project #	4,79170
Courier: Fed Ex T UPS T USPS T	Client I	Comme	rcial Pace	Other	
Tracking #:		-			
Custody Seal on Cooler/Box Present:	7	Seal	s intact: 🦵 yes	_ no	
Custody Seal on Samples Present:  yes			s intact:  yes	no	
Packing Material: Bubble Wrap Bubble Thermometer Used 5 R 23		Nor			
Cooler Temperature Uncorr: 7 /Corr:	ype or i		Blue Dry None ogical Tissue is Fi		n ice, cooling process has begun
Temp Blank Present:  yes no	<i></i>		<b></b>	no [	Person examining contents:
Temp should be above freezing to 6°C for all sample exercise Biota Samples should be received ≤ 0°C.	cept Biota.		Comments:		Date: <u>(タ/ タ/13</u> Initials: <u>E M ル</u>
Chain of Custody Present:	Yes 🗆	No □N/A	1.		
Chain of Custody Filled Out:	☑Yes □	No □N/A	2.		
Chain of Custody Relinquished:	ØYes □	No □N/A	3.		
Sampler Name & Signature on COC:	ØYes □	No □N/A	4.		
Samples Arrived within Hold Time:	☑Yes □	No □N/A	5.		i
- VOA Samples frozen upon receipt	□Yes □	No	Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes Ø	No □N/A	6.		
Rush Turn Around Time Requested:	□Yes Ø	/ No □N/A	7.		
Sufficient Volume:	☑Yes □		1 -		
Correct Containers Used:	□Yes Ø	No □N/A	9. Sample I	Ds inside sa	mple buys and not
-Pace Containers Used:	□Yes Øi	√o □N/A	readily vis	sible im	mple buys and not H6/6/13
-Pace IR Containers Used:	□Yes □I			E . ,	110/01.5
Containers Intact:	∕ Yes □	No □N/A	10.		
Filtered volume received for Dissolved tests	□Yes □t	NO ZNIA	11.		
Sample Labels match COC:	ØYes □	No □N/A	12.		
-Includes date/time/ID/Analysis Matrix:	<u> </u>				
All containers needing preservation have been checked. Non-Compliance noted in 13.)	□Yes □I	10 ZNIA	13. T HNO3	3 F H2SO4 F	NaOH NaOH+ZnAct
All containers needing preservation are found to be in					
compliance with EPA recommendation. HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □N	lo ÆN/A			
xceptions: VOA, coliform, TOC, TOX, TOH, 0&G, WIDROW, Phenolics, OTHER:	□Yes □N	lo	Initial when completed	Lab Std #ID of preservative	Date/ Time:
Headspace in VOA Vials ( >6mm):	□Yes □N	lo ZÍN/A	14.		
rip Blank Present:	□Yes □N	lo ZN/A	15.		
rip Blank Custody Seals Present	□Yes □N	10 ZN/A			
Pace Trip Blank Lot # (if purchased):					
Client Notification/ Resolution: Person Contacted:		Date/		checked, see attache	ed form for additional comments
Comments/ Resolution:		Date/	, ,,,,,,		
Project Manager Review:	I he &	<u> </u>		Date:	6/4/13







July 17, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

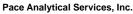
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 





Pace Analytical www.pacelabs.com

1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

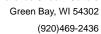
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



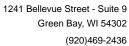


# **SAMPLE SUMMARY**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079172001	UR2 SMB4	Tissue	06/05/13 00:00	06/06/13 17:35
4079172002	UR2 SMB5	Tissue	06/05/13 00:00	06/06/13 17:35
4079172003	UR2 SMB6	Tissue	06/05/13 00:00	06/06/13 17:35
4079172004	UR2 SMB7	Tissue	06/05/13 00:00	06/06/13 17:35
4079172005	UR2 SMB8	Tissue	06/05/13 00:00	06/06/13 17:35
4079172006	UR2 SMB9	Tissue	06/05/13 00:00	06/06/13 17:35
4079172007	UR2 SMB10	Tissue	06/05/13 00:00	06/06/13 17:35
4079172008	UR2 SMB11	Tissue	06/05/13 00:00	06/06/13 17:35
4079172009	UR2 SMB12	Tissue	06/05/13 00:00	06/06/13 17:35
4079172010	UR2 RB1	Tissue	06/05/13 00:00	06/06/13 17:35
4079172011	UR2 RB2	Tissue	06/05/13 00:00	06/06/13 17:35
4079172012	UR2 RB3	Tissue	06/05/13 00:00	06/06/13 17:35
4079172013	UR2 RB4	Tissue	06/05/13 00:00	06/06/13 17:35
4079172014	UR2 RB5	Tissue	06/05/13 00:00	06/06/13 17:35
4079172015	UR2 RB6	Tissue	06/05/13 00:00	06/06/13 17:35
4079172016	UR2 RB7	Tissue	06/05/13 00:00	06/06/13 17:35
4079172017	UR2 RB8	Tissue	06/05/13 00:00	06/06/13 17:35
4079172018	UR2 RB9	Tissue	06/05/13 00:00	06/06/13 17:35
4079172019	UR2 RB10	Tissue	06/05/13 00:00	06/06/13 17:35
4079172020	UR2 RB11	Tissue	06/05/13 00:00	06/06/13 17:35





# **SAMPLE ANALYTE COUNT**

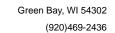
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079172001	UR2 SMB4	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172002	UR2 SMB5	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172003	UR2 SMB6	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172004	UR2 SMB7	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172005	UR2 SMB8	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172006	UR2 SMB9	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172007	UR2 SMB10	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172008	UR2 SMB11	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172009	UR2 SMB12	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172010	UR2 RB1	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172011	UR2 RB2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172012	UR2 RB3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172013	UR2 RB4	EPA 8082	BLM	10

# **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc..



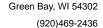


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172014	UR2 RB5	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172015	UR2 RB6	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172016	UR2 RB7	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172017	UR2 RB8	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172018	UR2 RB9	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172019	UR2 RB10	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079172020	UR2 RB11	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1





#### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 17, 2013

#### **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

# Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18806

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- UR2 RB5 (Lab ID: 4079172014)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 RB6 (Lab ID: 4079172015)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 SMB12 (Lab ID: 4079172009)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 SMB7 (Lab ID: 4079172004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xvlene (S)
- UR2 SMB8 (Lab ID: 4079172005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

#### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.



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# **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 17, 2013

# **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



Green Bay, WI 54302 (920)469-2436



#### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** July 17, 2013

#### **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

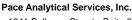
# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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#### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

Date: July 17, 2013

#### **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB4 Lab ID: 4079172001 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1080</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1880</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>257</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	11096-82-5	
PCB, Total	<b>3220</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 13:22	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	70 %	44-130		10	06/28/13 11:16	07/11/13 13:22	877-09-8	
Decachlorobiphenyl (S)	83 %	62-130		10	06/28/13 11:16	07/11/13 13:22	2051-24-3	
Fish Gender Typing	Analytical Method:	: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:37		
Lipid	Analytical Method:	: Pace Lipid						
Lipid	0.64 %			1		07/02/13 12:11		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB5 Lab ID: 4079172002 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>765</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>659</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>80.8J</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	11096-82-5	
PCB, Total	<b>1500</b> ug/k	g 125	62.5	5	06/28/13 11:16	07/11/13 13:39	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		5	06/28/13 11:16	07/11/13 13:39	877-09-8	
Decachlorobiphenyl (S)	84 %	62-130		5	06/28/13 11:16	07/11/13 13:39	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:37		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	1.2 %			1		07/02/13 12:11		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB6 Lab ID: 4079172003 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1100</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1250</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>132</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	11096-82-5	
PCB, Total	<b>2490</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 13:56	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	68 %	44-130		5	06/28/13 11:16	07/11/13 13:56	877-09-8	
Decachlorobiphenyl (S)	81 %	62-130		5	06/28/13 11:16	07/11/13 13:56	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:37		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	0.74 %			1		07/02/13 12:11		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB7 Lab ID: 4079172004 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1840</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2830</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>319J</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	11096-82-5	
PCB, Total	<b>4980</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:13	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	06/28/13 11:16	07/11/13 14:13	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	06/28/13 11:16	07/11/13 14:13	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:38		
Lipid	Analytical Method:	Pace Lipid						
Lipid	0.46 %			1		07/02/13 12:11		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB8 Lab ID: 4079172005 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1630</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1830</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	11096-82-5	
PCB, Total	<b>3460</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 14:30	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	06/28/13 11:16	07/11/13 14:30	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	06/28/13 11:16	07/11/13 14:30	2051-24-3	S4
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:38		
Lipid	Analytical Method	: Pace Lipid						
Lipid	0.99 %			1		07/02/13 12:11		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB9 Lab ID: 4079172006 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA	8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>486</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>476</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	11096-82-5	
PCB, Total	<b>962</b> ug	/kg	100	50.0	4	06/28/13 11:16	07/11/13 14:47	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	76 %		44-130		4	06/28/13 11:16	07/11/13 14:47	877-09-8	
Decachlorobiphenyl (S)	82 %		62-130		4	06/28/13 11:16	07/11/13 14:47	2051-24-3	
Fish Gender Typing	Analytical N	Method: Pac	e Gender Typ	ing					
Gender	Female				1		07/03/13 12:38		
Lipid	Analytical N	Method: Pac	e Lipid						
Lipid	0.49 %				1		07/02/13 12:11		



ANALYTICAL RESULTS

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB10 Lab ID: 4079172007 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results l	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>803</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>825</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>112J</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	11096-82-5	
PCB, Total	<b>1740</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 15:05	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		5	06/28/13 11:16	07/11/13 15:05	877-09-8	
Decachlorobiphenyl (S)	83 %	62-130		5	06/28/13 11:16	07/11/13 15:05	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:38		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.46 %			1		07/02/13 12:11		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

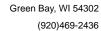
Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB11 Lab ID: 4079172008 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results l	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg		50.0	4	06/28/13 11:16	07/11/13 15:22	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>514</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>397</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>61.1J</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	11096-82-5	
PCB, Total	<b>972</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 15:22	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	69 %	44-130		4	06/28/13 11:16	07/11/13 15:22	877-09-8	
Decachlorobiphenyl (S)	77 %	62-130		4	06/28/13 11:16	07/11/13 15:22	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:38		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.42 %			1		07/02/13 12:12		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 SMB12 Lab ID: 4079172009 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2640</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1980</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	11096-82-5	
PCB, Total	<b>4630</b> ug/kg	500	250	20	06/28/13 11:16	07/11/13 16:13	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	06/28/13 11:16	07/11/13 16:13	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	06/28/13 11:16	07/11/13 16:13	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:38		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.1 %			1		07/02/13 12:12		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB1 Lab ID: 4079172010 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metl	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>820</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>970</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	11096-82-5	
PCB, Total	<b>1790</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		5	06/28/13 11:16	07/11/13 16:31	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		5	06/28/13 11:16	07/11/13 16:31	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:38		
Lipid	Analytical Meth	hod: Pace Lipid						
Lipid	0.54 %			1		07/02/13 12:12		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB2 Lab ID: 4079172011 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>699</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>759</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	11096-82-5	
PCB, Total	<b>1460</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 16:48	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		5	06/28/13 11:16	07/11/13 16:48	877-09-8	
Decachlorobiphenyl (S)	84 %	62-130		5	06/28/13 11:16	07/11/13 16:48	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:39		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	0.55 %			1		07/02/13 12:12		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB3 Lab ID: 4079172012 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1120</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>988</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	11096-82-5	
PCB, Total	<b>2100</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 17:05	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	73 %	44-130		10	06/28/13 11:16	07/11/13 17:05	877-09-8	
Decachlorobiphenyl (S)	85 %	62-130		10	06/28/13 11:16	07/11/13 17:05	2051-24-3	
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:39		
Lipid	Analytical Method	: Pace Lipid						
Lipid	0.50 %			1		07/02/13 12:12		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB4 Lab ID: 4079172013 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1040</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>880</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>79.4J</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	11096-82-5	
PCB, Total	<b>2000</b> ug/kg	125	62.5	5	06/28/13 11:16	07/11/13 17:22	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		5	06/28/13 11:16	07/11/13 17:22	877-09-8	
Decachlorobiphenyl (S)	88 %	62-130		5	06/28/13 11:16	07/11/13 17:22	2051-24-3	
Fish Gender Typing	Analytical Met	nod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:39		
Lipid	Analytical Met	nod: Pace Lipid						
Lipid	0.71 %			1		07/02/13 12:12		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB5 Lab ID: 4079172014 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepai	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3340</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6610</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;375</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	11096-82-5	
PCB, Total	<b>9960</b> u	ıg/kg	750	375	30	06/28/13 11:16	07/11/13 17:39	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	6	44-130		30	06/28/13 11:16	07/11/13 17:39	877-09-8	S4
Decachlorobiphenyl (S)	0 %	6	62-130		30	06/28/13 11:16	07/11/13 17:39	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/03/13 12:43		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	0.40 %	6			1		07/02/13 12:12		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB6 Lab ID: 4079172015 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	12674-11-2	
PCB-1221 (Aroclor 1221)	<188 ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1060</b> ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1510</b> ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	11097-69-1	
PCB-1260 (Aroclor 1260)	<188 ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	11096-82-5	
PCB, Total	<b>2570</b> ug/kg	375	188	15	06/28/13 11:16	07/11/13 17:57	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	06/28/13 11:16	07/11/13 17:57	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	06/28/13 11:16	07/11/13 17:57	2051-24-3	S4
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:41		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.50 %			1		07/02/13 12:12		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

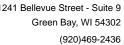
Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB7 Lab ID: 4079172016 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>450</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>288</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>39.4J</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	11096-82-5	
PCB, Total	<b>778</b> ug/k	g 75.0	37.5	3	06/28/13 11:16	07/11/13 18:14	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		3	06/28/13 11:16	07/11/13 18:14	877-09-8	
Decachlorobiphenyl (S)	88 %	62-130		3	06/28/13 11:16	07/11/13 18:14	2051-24-3	
Fish Gender Typing	Analytical Me	ethod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:41		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	0.42 %			1		07/02/13 12:12		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

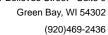
Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB8 Lab ID: 4079172017 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>604</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>582</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>66.9J</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	11096-82-5	
PCB, Total	<b>1250</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 18:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		4	06/28/13 11:16	07/11/13 18:31	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		4	06/28/13 11:16	07/11/13 18:31	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:43		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.40 %			1		07/02/13 12:13		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB9 Lab ID: 4079172018 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>989</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1470</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	11096-82-5	
PCB, Total	<b>2460</b> ug/kg	250	125	10	06/28/13 11:16	07/11/13 18:48	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	73 %	44-130		10	06/28/13 11:16	07/11/13 18:48	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		10	06/28/13 11:16	07/11/13 18:48	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:43		
Lipid	Analytical Method:	Pace Lipid						
Lipid	0.26 %			1		07/02/13 12:13		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

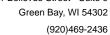
Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB10 Lab ID: 4079172019 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results l	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>432</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>415</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	11097-69-1	
PCB-1260 (Aroclor 1260)	<37.5 ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	11096-82-5	
PCB, Total	<b>847</b> ug/kg	75.0	37.5	3	06/28/13 11:16	07/11/13 19:06	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	79 %	44-130		3	06/28/13 11:16	07/11/13 19:06	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		3	06/28/13 11:16	07/11/13 19:06	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:43		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.28 %			1		07/02/13 12:13		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Sample: UR2 RB11 Lab ID: 4079172020 Collected: 06/05/13 00:00 Received: 06/06/13 17:35 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>585</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>406</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	11096-82-5	
PCB, Total	<b>991</b> ug/kg	100	50.0	4	06/28/13 11:16	07/11/13 19:23	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		4	06/28/13 11:16	07/11/13 19:23	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		4	06/28/13 11:16	07/11/13 19:23	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:43		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.58 %			1		07/02/13 12:13		



## **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

QC Batch: OEXT/18806 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

 $Associated \ Lab \ Samples: \quad 4079172001, \ 4079172002, \ 4079172003, \ 4079172004, \ 4079172005, \ 4079172006, \ 4079172007, \ 4079172008, \ 4079172007, \ 4079172008,$ 

4079172009, 4079172010, 4079172011, 4079172012, 4079172013, 4079172014, 4079172015, 4079172016,

4079172017, 4079172018, 4079172019, 4079172020

METHOD BLANK: 815037 Matrix: Tissue

Associated Lab Samples: 4079172001, 4079172002, 4079172003, 4079172004, 4079172005, 4079172006, 4079172007, 4079172008,

4079172009, 4079172010, 4079172011, 4079172012, 4079172013, 4079172014, 4079172015, 4079172016,

 $4079172017,\,4079172018,\,4079172019,\,4079172020$ 

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/11/13 12:13	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/11/13 12:13	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/11/13 12:13	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/11/13 12:13	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/11/13 12:13	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/11/13 12:13	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/11/13 12:13	
Decachlorobiphenyl (S)	%	89	62-130	07/11/13 12:13	
Tetrachloro-m-xylene (S)	%	78	44-130	07/11/13 12:13	

LABORATORY CONTROL SAM	PLE: 815038					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	221	88	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			88	62-130	
Tetrachloro-m-xylene (S)	%			83	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 81503	9		815040							
			MS	MSD								
	40	079172001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qua
PCB-1016 (Aroclor 1016)	ug/kg	<125			<125	<125					24	
PCB-1221 (Aroclor 1221)	ug/kg	<125			<125	<125					24	
PCB-1232 (Aroclor 1232)	ug/kg	<125			<125	<125					24	
PCB-1242 (Aroclor 1242)	ug/kg	<125	1000	1000	994	1030	99	103	27-163	4	24	
PCB-1248 (Aroclor 1248)	ug/kg	1080			<125	<125					24	
PCB-1254 (Aroclor 1254)	ug/kg	1880			1810	1910				6	24	
PCB-1260 (Aroclor 1260)	ug/kg	257			234J	250					24	
Decachlorobiphenyl (S)	%						78	85	62-130			
Tetrachloro-m-xylene (S)	%						73	74	44-130			

Green Bay, WI 54302 (920)469-2436



**QUALITY CONTROL DATA** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

QC Batch: OEXT/18817 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079172001, 4079172002, 4079172003, 4079172004, 4079172005, 4079172006, 4079172007, 4079172008,

4079172009, 4079172010, 4079172011, 4079172012, 4079172013, 4079172014, 4079172015, 4079172016,

4079172017, 4079172018, 4079172019, 4079172020

METHOD BLANK: 815431 Matrix: Tissue

%

Associated Lab Samples: 4079172001, 4079172002, 4079172003, 4079172004, 4079172005, 4079172006, 4079172007, 4079172008,

0.54

4079172009, 4079172010, 4079172011, 4079172012, 4079172013, 4079172014, 4079172015, 4079172016, 4079172016, 4079172017, 407917017017, 4079172017, 4079172017, 4079172017, 4079172017, 4079172017, 4079172017, 4079172017, 40

07/02/13 12:10

 $4079172017,\,4079172018,\,4079172019,\,4079172020$ 

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

SAMPLE DUPLICATE: 815432

Date: 07/17/2013 09:56 AM

Lipid

4079172001 Dup Max RPD Parameter Units Result Result **RPD** Qualifiers 0.64 % 0.62 2 20 Lipid





## **QUALIFIERS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

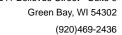
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## **ANALYTE QUALIFIERS**

Date: 07/17/2013 09:56 AM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





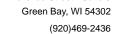
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079172001	UR2 SMB4	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
4079172002	UR2 SMB5	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
1079172003	UR2 SMB6	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
1079172004	UR2 SMB7	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172005	UR2 SMB8	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
1079172006	UR2 SMB9	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
1079172007	UR2 SMB10	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172008	UR2 SMB11	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172009	UR2 SMB12	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172010	UR2 RB1	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172011	UR2 RB2	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172012	UR2 RB3	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172013	UR2 RB4	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172014	UR2 RB5	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172015	UR2 RB6	EPA 3540	OEXT/18806		GCSV/983
1079172016	UR2 RB7	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172017	UR2 RB8	EPA 3540	OEXT/18806		GCSV/983
1079172018	UR2 RB9	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172019	UR2 RB10	EPA 3540	OEXT/18806	EPA 8082	GCSV/983
079172020	UR2 RB11	EPA 3540	OEXT/18806		GCSV/983
079172001	UR2 SMB4	Pace Gender Typing	GRND/2581		
079172002	UR2 SMB5	Pace Gender Typing	GRND/2581		
079172003	UR2 SMB6	Pace Gender Typing	GRND/2581		
079172004	UR2 SMB7	Pace Gender Typing	GRND/2581		
079172005	UR2 SMB8	Pace Gender Typing	GRND/2581		
1079172006	UR2 SMB9	Pace Gender Typing	GRND/2581		
079172007	UR2 SMB10	Pace Gender Typing	GRND/2581		
1079172008	UR2 SMB11	Pace Gender Typing	GRND/2581		
1079172009	UR2 SMB12	Pace Gender Typing	GRND/2581		
079172010	UR2 RB1	Pace Gender Typing	GRND/2581		
1079172011	UR2 RB2	Pace Gender Typing	GRND/2581		
1079172012	UR2 RB3	Pace Gender Typing	GRND/2581		
1079172013	UR2 RB4	Pace Gender Typing	GRND/2581		
1079172014	UR2 RB5	Pace Gender Typing	GRND/2581		
079172015	UR2 RB6	Pace Gender Typing	GRND/2581		
1079172016	UR2 RB7	Pace Gender Typing	GRND/2581		
079172017	UR2 RB8	Pace Gender Typing	GRND/2581		
079172018	UR2 RB9	Pace Gender Typing	GRND/2581		
1079172019	UR2 RB10	Pace Gender Typing	GRND/2581		
079172020	UR2 RB11	Pace Gender Typing	GRND/2581		
079172001	UR2 SMB4	Pace Lipid	OEXT/18817		
1079172002	UR2 SMB5	Pace Lipid	OEXT/18817		
1079172003	UR2 SMB6	Pace Lipid	OEXT/18817		
079172004	UR2 SMB7	Pace Lipid	OEXT/18817		
1079172005	UR2 SMB8	Pace Lipid	OEXT/18817		
1079172006	UR2 SMB9	Pace Lipid	OEXT/18817		
079172007	UR2 SMB10	Pace Lipid	OEXT/18817		
1079172008	UR2 SMB11	Pace Lipid	OEXT/18817		





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079172

Date: 07/17/2013 09:56 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079172009	UR2 SMB12	Pace Lipid	OEXT/18817		
4079172010	UR2 RB1	Pace Lipid	OEXT/18817		
4079172011	UR2 RB2	Pace Lipid	OEXT/18817		
4079172012	UR2 RB3	Pace Lipid	OEXT/18817		
4079172013	UR2 RB4	Pace Lipid	OEXT/18817		
4079172014	UR2 RB5	Pace Lipid	OEXT/18817		
4079172015	UR2 RB6	Pace Lipid	OEXT/18817		
4079172016	UR2 RB7	Pace Lipid	OEXT/18817		
4079172017	UR2 RB8	Pace Lipid	OEXT/18817		
4079172018	UR2 RB9	Pace Lipid	OEXT/18817		
4079172019	UR2 RB10	Pace Lipid	OEXT/18817		
4079172020	UR2 RB11	Pace Lipid	OEXT/18817		

Page	3	of	
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MN:	612-607-1700	WI:	920-469-24

Company Nar	ne:   Pollution Risk Services		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<u>.</u>	A		6			MIN: 0	12-607-	1700	VVI: 920-469-2436		$\sim$	•
Branch/Locat	ion: Sheboygan		/_*	ace	Ana	llytic acelabs.c	al iom	EM	1/					COC No.	<u> </u>	407917
Project Conta	ct: Mark Mather												Quote #:			
Phone:	513-678-2137 or 513-3	87-2778		HA	IN	OF	CI	US.	TO	DY			Mail To Contact:	Mark Mathe	er	
Project Numb	per: SR13-001 Task 10-020	000	A=None B=F	ICL C=	H2SO4	*Preserva D=HNO3	ition Cod		=Methar	iol G=N	аОН		Mail To Company:	PRS - Assı	ired Group	
Project Name			H=Sodium Bisul		ion	1=Sodiu	m Thiosul	fate .	J=Other				Mail To Address:	7870 Kemp Cincinnati,	er Road, Suite :	240,
Project State:			(YES/NO)	Y/N										On Chinau,		
Sampled By (	Print): Mark Mather		PRESERVATION (CODE)*	Pick Letter									Invoice To Contact:	Goldie Shai	р	
Sampled By (	sign):	7		- D									Invoice To Company:	As Above		
PO #:		Regulatory Program:		luested		S							Invoice To Address:	1	er Road, Suite	240,
Data Packa		A = A!=	rix Codes  W = Water  DW = Drinking Water  GW = Ground Water	es Requ	32	PRESERVATIVES							Invoice To Phone:	Cincinnati, 513-489-67	· · · · · · · · · · · · · · · · · · ·	
☐ EP/	A Level IV NOT needed	on O=Oil	SW = Surface Water WW = Waste Water	Analyse	8082	ER										
PACE LAB#	your sample	SI = Sludge	WP = Wipe ECTION MATRIX	An	PCB	PRES							CLIENT COMMENTS	1	OMMENTS Jse Only)	Profile #
	UR2 SMB1	6/5/13	Tissue		Х	Α							Whole Fish Sample			
	UR2 SMB2	6/5/13	Tissue	<b></b>	X	A							***************************************			
	UR2 SMB3	6/5/13	Tissue		X	A									······································	
001	UR2 SMB4				X	A								1-Zip1	ac4/poly	has
002	UR2 SMB5	6/5/13	Tissue		X	A								1 0 101	WO-11 Pory	Day
202	UR2 SMB6	6/5/13	Tissue	<del>                                     </del>	X	A								-		
003		6/5/13	Tissue	<del> </del>		<del> </del>										
004	UR2 SMB7	6/5/13	Tissue		X	A										· · · · · · · · · · · · · · · · · · ·
005	UR2 SMB8	6/5/13	Tissue	ļ	×	A										
006	UR2 SMB9	6/5/13	Tissue	ļ	X	A										
007	UR2 SMB10	6/5/13	Tissue		X	A										
006	UR2 SMB11	6/5/13	Tissue		X	Α										
009	UR2 SMB12	6/5/13	Tissue		X	Α									/	
			1					,			_					
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	lim Rush Results by (complete what		Heidy			iel4	13	150	<i><u> </u></i>	89	Jelling	Pac	e6B 6/6/1	3 /500	Receipt Temp =	5 °c
Email #1:	mmather@assuredlic.com	Relin	nquished By:			Da	ite/Time:			Received			Date/Time:			$\mathcal{L}$
Email #2: Telephone:	513-387-2778	Reli	nguished By:		,	Da	ite/Time:			Received	By:		Date/Time:		Sample Re OK / Adj	
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	Samples on HOLD are subject to ecial pricing and release of liability	Relir	nquished By:			Da	ate/Time:			Received	Ву:		Date/Time:		Present / No	ot Present

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Version 6.0 06/14/06

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Project Conta	ict: N	Mark Mather		1			110111.000		~~						Quote #:					
hone:	ε	513-678-2137 or 513-387-	2778	1	C	HA	IN	OF	CI	US.	TO	DY	•		Mail To Contact:	Mark	k Mathe	r		
Project Numb	per: S	SR13-001 Task 10-02000		A=N		ICL C=			ition Cod	es		ol G=N			Mail To Company:	PRS	- Assu	red Group		
Project Name		2013 Fish Sampling			Sodium Bisulf ERED?	ate Soluti		l≖Sodiu	m Thiosul		J=Other				Mail To Address:			er Road, Suit	e 240,	
Project State:	: \\	Viscoinsin		(YE	S/NO)	Y/N		ļ								Cirici	ırırıau, C	OH 45249		
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<sup>2</sup> O #:			Regulator Program:			uested		S							Invoice To Address:	7870	) Kempı	er Road, Suit	te 240,	
Data Packa	ige Opt		M: A = Air	atrix Code		Redu		IVE								Cinci	innati, C	OH 45249		
☐ EP/	A Level I	(billable)	B = Biota C = Charcoal O = Oil	DW = Drint GW = Grou SW = Surfa	king Water und Water	รู	8082	PRESERVATIVE							Invoice To Phone:	513-	489-678	89		
11 EP/	A Level I	11011100000	S = Soil SI = Sludge	WW = Wa: WP = Wipe	ste Water	Analys		ESE							CLIENT	L/	AB CC	OMMENTS	Profile	e #
PACE LAB#		CLIENT FIELD ID	DATE	LLECTION	MATRIX	4	PCB	PR							COMMENTS	(	Lab U	lse Only)		
010		UR2 RB1	6/5/13	3	Tissue		X	Α							Whole Fish Sample	1-	poly	bag		
011		UR2 RB2	6/5/13	3	Tissue		X	Α									1	7		
012		UR2 RB3	6/5/1:	3	Tissue		Х	Α												
013		UR2 RB4	6/5/13	3	Tissue		X	Α									1			
014		UR2 RB5	6/5/13	3	Tissue		X	Α									1			
015		UR2 RB6	6/5/1:	3	Tissue	Ī .	X	Α								1				
016		UR2 RB7	6/5/1:	3	Tissue		X	А						-		1	1		Programme of the control of the cont	
017		UR2 RB8	6/5/13	3	Tissue		X	Α								1	1	**************************************	<del></del>	
018		UR2 RB9	6/5/1:	3	Tissue		X	Α								T				
019		UR2 RB10	6/5/1:	3	Tissue		X	Α								1	1			
020		UR2 RB11	6/5/1:		Tissue		×	A								1	1/			
		UR2 RB12	6/5/1:		Tissue		X	Α								1	<u> </u>			······································
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Email #1:	mmather	@assuredlic.com	Re	elinquished By	<i>r</i> :			b	ate/Time:			Received		<del>-</del>	Date/Time:			Receipt Temp =	$\mathcal{L}$	°C
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Fax:													<del> , ,</del>		water (MIIO)		ŀ		ustody Seal	
	-	n HOLD are subject to	Re	linquished By	<i>(</i> :			Da	ate/Time:			Received	d By:		Date/Time:				Not Presen	ıt)

Pace Analytical Services, Inc 1241 Bellevue Street, Suite 9 Green Bay, WI 54302

# Pace Analytical

# Sample Condition Upon Receipt

Client Name	<b>:</b> :	M	ίS	Project #	4079172
Courier: Fed Ex T UPS T USPS T	Client C	omme	rcial Pace	Other	
Tracking #:		·			
Custody Seal on Cooler/Box Present:  yes	/		s intact: 🦵 yes		
Custody Seal on Samples Present:  yes	· · · · · ·	/	s intact: f yes	no	
Packing Material: Bubble Wrap Bubble Thermometer Used 5 R 23		Non	e Other Blue Dry None	) g-ac Cl	
Cooler Temperature Uncorr: 6 /Corr:	_		gical Tissue is F		ice, cooling process has begun
Temp Blank Present: yes no				no	Person examining contents:
Temp should be above freezing to 6°C for all sample exercise Biota Samples should be received ≤ 0°C.	cept Biota.		Comments:	,	Date: <u>(タ/タ/13</u> Initials: <u>EMU</u>
Chain of Custody Present:	Yes □No	□n/a	1.		
Chain of Custody Filled Out:	☑Yes □No	□n/a	2.		
Chain of Custody Relinquished:	☑Yes □No	□n/a	3.		
Sampler Name & Signature on COC:	ZYes □No	□n/a	4.		
Samples Arrived within Hold Time:	☑Yes □No	□N/A	5.		
<ul> <li>VOA Samples frozen upon receipt</li> </ul>	□Yes □No		Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes ☑No	□n/a	6.		
Rush Turn Around Time Requested:	□Yes ☑No	□n/a	7.		
Sufficient Volume:	☑Yes □No				
Correct Containers Used:	□Yes ☑No	□n/A	9. Sample I	Ds inside sa	mple buys and not H6/6/13
-Pace Containers Used:	□Yes ☑No	□n/a	readily vi	sible FM	46/6/13
-Pace IR Containers Used:	□Yes □No	ØN/A	Ů,	V	
Containers Intact:	☑Yes □No	□n/a	10.		
Filtered volume received for Dissolved tests	□Yes □No	⊠N/A	11.		
Sample Labels match COC:	∠Yes □No	□n/a	12.		
-Includes date/time/ID/Analysis Matrix:	B				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No	ØN/A	13. T HNO:	3   H2SO4	NaOH   NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation.					
(HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☐Yes ☐No	N/A الطر			
exceptions: VOA, coliform, TOC, TOX, TOH, 0&G, WIDROW, Phenolics, OTHER:	□Yes □No		Initial when completed	Lab Std #ID of preservative	Date/ Time:
Headspace in VOA Vials ( >6mm):	□Yes □No	<b>⊠</b> N/A	14.		
Trip Blank Present:	□Yes □No	ØŊ/A	15.		
Trip Blank Custody Seals Present	□Yes □No	ÆN/A			
Pace Trip Blank Lot # (if purchased):			1.5	shooked assistance	ed form for additional comments
Client Notification/ Resolution:  Person Contacted:		Date/1		checked, see allache	A TOTAL TOL AUGILIONAL CONTINUENTS
Comments/ Resolution:		<del>-</del>			
					A CONTRACTOR OF THE CONTRACTOR
		~		-	1.1.0
Project Manager Review:	CH fo	2 TO	<i>y</i>	Date: _	6/6/13



Green Bay, WI 54302 (920)469-2436



July 18, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

## Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

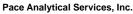
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

## **CERTIFICATIONS**

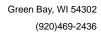
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



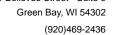


# **SAMPLE SUMMARY**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079171001	UR2 AC1	Tissue	06/05/13 00:00	06/06/13 17:31
4079171002	UR2 AC2	Tissue	06/05/13 00:00	06/06/13 17:31
4079171003	UR2 AC3	Tissue	06/05/13 00:00	06/06/13 17:31
4079171004	UR2 AC4	Tissue	06/05/13 00:00	06/06/13 17:31
4079171005	UR2 AC5	Tissue	06/05/13 00:00	06/06/13 17:31
4079171006	UR2 AWS1	Tissue	06/05/13 00:00	06/06/13 17:31
4079171007	UR2 AWS2	Tissue	06/05/13 00:00	06/06/13 17:31
4079171008	UR2 AWS3	Tissue	06/05/13 00:00	06/06/13 17:31
4079171009	UR2 AWS4	Tissue	06/05/13 00:00	06/06/13 17:31
4079171010	UR2 AWS5	Tissue	06/05/13 00:00	06/06/13 17:31
4079171011	UR2 AWS6	Tissue	06/05/13 00:00	06/06/13 17:31
4079171012	UR2 AWS7	Tissue	06/05/13 00:00	06/06/13 17:31
4079171013	UR2 AWS8	Tissue	06/05/13 00:00	06/06/13 17:31
4079171014	UR2 AWS9	Tissue	06/05/13 00:00	06/06/13 17:31
4079171015	UR2 AWS10	Tissue	06/05/13 00:00	06/06/13 17:31
4079171016	UR2 AWS11	Tissue	06/05/13 00:00	06/06/13 17:31
4079171017	UR2 AWS12	Tissue	06/05/13 00:00	06/06/13 17:31
4079171018	UR2 SMB1	Tissue	06/05/13 00:00	06/06/13 17:31
4079171019	UR2 SMB2	Tissue	06/05/13 00:00	06/06/13 17:31
4079171020	UR2 SMB3	Tissue	06/05/13 00:00	06/06/13 17:31



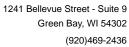


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
4079171001	UR2 AC1	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171002	UR2 AC2	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171003	UR2 AC3	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171004	UR2 AC4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171005	UR2 AC5	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171006	UR2 AWS1	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171007	UR2 AWS2	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171008	UR2 AWS3	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171009	UR2 AWS4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171010	UR2 AWS5	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171011	UR2 AWS6	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171012	UR2 AWS7	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079171013	UR2 AWS8	EPA 8082	BLM	10	





# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171014	UR2 AWS9	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171015	UR2 AWS10	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171016	UR2 AWS11	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171017	UR2 AWS12	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171018	UR2 SMB1	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171019	UR2 SMB2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079171020	UR2 SMB3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 18, 2013

## **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

## Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18805

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- UR2 AC2 (Lab ID: 4079171002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AC4 (Lab ID: 4079171004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AC5 (Lab ID: 4079171005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AWS10 (Lab ID: 4079171015)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AWS11 (Lab ID: 4079171016)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AWS5 (Lab ID: 4079171010)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AWS6 (Lab ID: 4079171011)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AWS9 (Lab ID: 4079171014)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

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## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** July 18, 2013

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

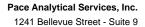
## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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**PROJECT NARRATIVE** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** July 18, 2013

## **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

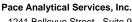
#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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## **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** July 18, 2013

## **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

## **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AC1 Lab ID: 4079171001 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	nod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2480</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1070</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	11096-82-5	
PCB, Total	<b>3550</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 20:51	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	79 %	44-130		10	06/27/13 14:05	07/10/13 20:51	877-09-8	
Decachlorobiphenyl (S)	85 %	62-130		10	06/27/13 14:05	07/10/13 20:51	2051-24-3	
Fish Gender Typing	Analytical Met	nod: Pace Gender Tyլ	ping					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Met	nod: Pace Lipid						
Lipid	2.8 %			1		07/02/13 12:06		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AC2 Lab ID: 4079171002 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>11400</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5700</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	11096-82-5	
PCB, Total	<b>17100</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:08	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	06/27/13 14:05	07/10/13 21:08	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	06/27/13 14:05	07/10/13 21:08	2051-24-3	S4
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:55		
Lipid	Analytical Method							
Lipid	6.4 %			1		07/02/13 12:07		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AC3 Lab ID: 4079171003 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3990</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1170</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	11096-82-5	
PCB, Total	<b>5160</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 21:25	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	73 %	44-130		10	06/27/13 14:05	07/10/13 21:25	877-09-8	
Decachlorobiphenyl (S)	81 %	62-130		10	06/27/13 14:05	07/10/13 21:25	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:55		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	1.4 %			1		07/02/13 12:07		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AC4 Lab ID: 4079171004 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>11000</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6920</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;375</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	11096-82-5	
PCB, Total	<b>17900</b> ug/kg	750	375	30	06/27/13 14:05	07/10/13 21:42	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	06/27/13 14:05	07/10/13 21:42	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	06/27/13 14:05	07/10/13 21:42	2051-24-3	S4
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method							
Lipid	4.5 %			1		07/02/13 12:07		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AC5 Lab ID: 4079171005 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/l	kg 750	375	30	06/27/13 14:05	07/10/13 22:34	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>13700</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>7570</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;375</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	11096-82-5	
PCB, Total	<b>21200</b> ug/l	rg 750	375	30	06/27/13 14:05	07/10/13 22:34	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	06/27/13 14:05	07/10/13 22:34	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	06/27/13 14:05	07/10/13 22:34	2051-24-3	S4
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	10.1 %			1		07/02/13 12:07		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS1 Lab ID: 4079171006 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1930</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1580</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>145</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	11096-82-5	
PCB, Total	<b>3660</b> ug/kg	125	62.5	5	06/27/13 14:05	07/10/13 22:51	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		5	06/27/13 14:05	07/10/13 22:51	877-09-8	
Decachlorobiphenyl (S)	81 %	62-130		5	06/27/13 14:05	07/10/13 22:51	2051-24-3	
Fish Gender Typing	Analytical Method:	oing						
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.4 %			1		07/02/13 12:07		



Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS2 Lab ID: 4079171007 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

**ANALYTICAL RESULTS** 

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3420</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2210</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>185J</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	11096-82-5	
PCB, Total	<b>5820</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:08	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		10	06/27/13 14:05	07/10/13 23:08	877-09-8	
Decachlorobiphenyl (S)	83 %	62-130		10	06/27/13 14:05	07/10/13 23:08	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	2.7 %			1		07/02/13 12:07		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

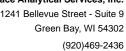
Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS3 Lab ID: 4079171008 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3320</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3020</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>306</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	11096-82-5	
PCB, Total	<b>6640</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:26	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		10	06/27/13 14:05	07/10/13 23:26	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		10	06/27/13 14:05	07/10/13 23:26	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.0 %			1		07/02/13 12:07		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS4 Lab ID: 4079171009 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3810</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2770</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>254</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	11096-82-5	
PCB, Total	<b>6840</b> ug/kg	250	125	10	06/27/13 14:05	07/10/13 23:43	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	86 %	44-130		10	06/27/13 14:05	07/10/13 23:43	877-09-8	
Decachlorobiphenyl (S)	95 %	62-130		10	06/27/13 14:05	07/10/13 23:43	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	2.4 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS5 Lab ID: 4079171010 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>4900</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2850</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;188</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	11096-82-5	
PCB, Total	<b>7750</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 00:00	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	06/27/13 14:05	07/11/13 00:00	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	06/27/13 14:05	07/11/13 00:00	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	3.3 %			1		07/02/13 12:08		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS6 Lab ID: 4079171011 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5550</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6220</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>598</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	11096-82-5	
PCB, Total	<b>12400</b> ug/kg	500	250	20	06/27/13 14:05	07/11/13 00:17	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	06/27/13 14:05	07/11/13 00:17	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	06/27/13 14:05	07/11/13 00:17	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	2.9 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS7 Lab ID: 4079171012 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/ł	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	12674-11-2	
PCB-1221 (Aroclor 1221)	<125 ug/k	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/k	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/k	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3470</b> ug/l	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2240</b> ug/ł	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/l	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	11096-82-5	
PCB, Total	<b>5710</b> ug/ł	kg 250	125	10	06/27/13 14:05	07/11/13 00:34	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		10	06/27/13 14:05	07/11/13 00:34	877-09-8	
Decachlorobiphenyl (S)	85 %	62-130		10	06/27/13 14:05	07/11/13 00:34	2051-24-3	
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	2.6 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS8 Lab ID: 4079171013 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2790</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1760</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	11096-82-5	
PCB, Total	<b>4550</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 00:51	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	72 %	44-130		10	06/27/13 14:05	07/11/13 00:51	877-09-8	
Decachlorobiphenyl (S)	83 %	62-130		10	06/27/13 14:05	07/11/13 00:51	2051-24-3	
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	2.3 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS9 Lab ID: 4079171014 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;188</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;188</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;188</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5080</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1910</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;188</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	11096-82-5	
PCB, Total	<b>6980</b> ug/k	g 375	188	15	06/27/13 14:05	07/16/13 20:02	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	06/27/13 14:05	07/16/13 20:02	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	06/27/13 14:05	07/16/13 20:02	2051-24-3	S4
Fish Gender Typing	Analytical Me	ethod: Pace Gender Typ	ping					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	2.2 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS10 Lab ID: 4079171015 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	12674-11-2	
PCB-1221 (Aroclor 1221)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>4670</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3940</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>401</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	11096-82-5	
PCB, Total	<b>9010</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:26	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	06/27/13 14:05	07/11/13 01:26	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	06/27/13 14:05	07/11/13 01:26	2051-24-3	S4
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method	: Pace Lipid						
Lipid	3.1 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS11 Lab ID: 4079171016 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	12674-11-2	
PCB-1221 (Aroclor 1221)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5320</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2420</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	11097-69-1	
PCB-1260 (Aroclor 1260)	<188 ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	11096-82-5	
PCB, Total	<b>7730</b> ug/kg	375	188	15	06/27/13 14:05	07/11/13 01:43	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	06/27/13 14:05	07/11/13 01:43	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	06/27/13 14:05	07/11/13 01:43	2051-24-3	S4
Fish Gender Typing	Analytical Metho	od: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	3.6 %			1		07/02/13 12:08		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 AWS12 Lab ID: 4079171017 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3560</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1780</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	11096-82-5	
PCB, Total	<b>5330</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:00	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	74 %	44-130		10	06/27/13 14:05	07/11/13 02:00	877-09-8	
Decachlorobiphenyl (S)	85 %	62-130		10	06/27/13 14:05	07/11/13 02:00	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/03/13 12:55		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	2.7 %			1		07/02/13 12:09		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 SMB1 Lab ID: 4079171018 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	12674-11-2	
PCB-1221 (Aroclor 1221)	<125 ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1700</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3630</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>469</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	11096-82-5	
PCB, Total	<b>5800</b> ug/kg	250	125	10	06/27/13 14:05	07/11/13 02:18	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	73 %	44-130		10	06/27/13 14:05	07/11/13 02:18	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		10	06/27/13 14:05	07/11/13 02:18	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	0.44 %			1		07/02/13 12:09		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 SMB2 Lab ID: 4079171019 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1300</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1780</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>268</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	11096-82-5	
PCB, Total	<b>3350</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:35	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		5	06/27/13 14:05	07/11/13 02:35	877-09-8	
Decachlorobiphenyl (S)	81 %	62-130		5	06/27/13 14:05	07/11/13 02:35	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Female			1		07/03/13 12:55		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.48 %			1		07/02/13 12:09		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

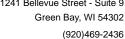
Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Sample: UR2 SMB3 Lab ID: 4079171020 Collected: 06/05/13 00:00 Received: 06/06/13 17:31 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Inits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	aration Meth	od: EP	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>698</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1220</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>144</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	11096-82-5	
PCB, Total	<b>2060</b> ug/kg	125	62.5	5	06/27/13 14:05	07/11/13 02:52	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	74 %	44-130		5	06/27/13 14:05	07/11/13 02:52	877-09-8	
Decachlorobiphenyl (S)	82 %	62-130		5	06/27/13 14:05	07/11/13 02:52	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	ping					
Gender	Female			1		07/03/13 12:55		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	0.50 %			1		07/02/13 12:09		





# **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

QC Batch: OEXT/18805 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079171001, 4079171002, 4079171003, 4079171004, 4079171005, 4079171006, 4079171007, 4079171008,

4079171009, 4079171010, 4079171011, 4079171012, 4079171013, 4079171014, 4079171015, 4079171016,

4079171017, 4079171018, 4079171019, 4079171020

METHOD BLANK: 815025 Matrix: Tissue

Associated Lab Samples: 4079171001, 4079171002, 4079171003, 4079171004, 4079171005, 4079171006, 4079171007, 4079171008,

4079171009, 4079171010, 4079171011, 4079171012, 4079171013, 4079171014, 4079171015, 4079171016,

4079171017, 4079171018, 4079171019, 4079171020

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/10/13 19:42	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/10/13 19:42	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/10/13 19:42	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/10/13 19:42	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/10/13 19:42	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/10/13 19:42	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/10/13 19:42	
Decachlorobiphenyl (S)	%	79	62-130	07/10/13 19:42	
Tetrachloro-m-xylene (S)	%	76	44-130	07/10/13 19:42	

LABORATORY CONTROL SAMPLE	: 815026					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	202	81	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			80	62-130	
Tetrachloro-m-xylene (S)	%			76	44-130	

MATRIX SPIKE & MATRIX SF	IKE DUPLICAT	E: 81502	7		815028							
			MS	MSD								
	40	79171001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<125			<125	<125					24	
PCB-1221 (Aroclor 1221)	ug/kg	<125			<125	<125					24	
PCB-1232 (Aroclor 1232)	ug/kg	<125			<125	<125					24	
PCB-1242 (Aroclor 1242)	ug/kg	<125			<125	<125					24	
PCB-1248 (Aroclor 1248)	ug/kg	2480			2790	2600				7	24	
PCB-1254 (Aroclor 1254)	ug/kg	1070	1000	1000	1810	1720	74	66	27-163	5	24	
PCB-1260 (Aroclor 1260)	ug/kg	<125			<125	<125					24	
Decachlorobiphenyl (S)	%						78	77	62-130			
Tetrachloro-m-xylene (S)	%						72	73	44-130			

Green Bay, WI 54302 (920)469-2436



**QUALITY CONTROL DATA** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

QC Batch: OEXT/18816 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079171001, 4079171002, 4079171003, 4079171004, 4079171005, 4079171006, 4079171007, 4079171008,

4079171009, 4079171010, 4079171011, 4079171012, 4079171013, 4079171014, 4079171015, 4079171016,

4079171017, 4079171018, 4079171019, 4079171020

METHOD BLANK: 815429 Matrix: Tissue

Associated Lab Samples: 4079171001, 4079171002, 4079171003, 4079171004, 4079171005, 4079171006, 4079171007, 4079171008,

4079171009, 4079171010, 4079171011, 4079171012, 4079171013, 4079171014, 4079171015, 4079171016, 4079171016, 4079171017, 4079

4079171017, 4079171018, 4079171019, 4079171020

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers
Lipid % 0.61 07/02/13 12:06

SAMPLE DUPLICATE: 815430

Date: 07/18/2013 08:46 AM

4079171001 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers 2.8 % 2.7 3 20 Lipid





### **QUALIFIERS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

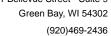
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 07/18/2013 08:46 AM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





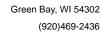
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079171001	UR2 AC1	EPA 3540	OEXT/18805	EPA 8082	GCSV/9826
4079171002	UR2 AC2	EPA 3540	OEXT/18805	EPA 8082	GCSV/9826
4079171003	UR2 AC3	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171004	UR2 AC4	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171005	UR2 AC5	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171006	UR2 AWS1	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171007	UR2 AWS2	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171008	UR2 AWS3	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171009	UR2 AWS4	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
1079171010	UR2 AWS5	EPA 3540	OEXT/18805	EPA 8082	GCSV/982
079171011	UR2 AWS6	EPA 3540	OEXT/18805		GCSV/982
079171012	UR2 AWS7	EPA 3540	OEXT/18805		GCSV/982
079171013	UR2 AWS8	EPA 3540	OEXT/18805		GCSV/9820
079171014	UR2 AWS9	EPA 3540	OEXT/18805		GCSV/982
1079171015	UR2 AWS10	EPA 3540	OEXT/18805		GCSV/982
1079171016	UR2 AWS11	EPA 3540	OEXT/18805		GCSV/982
1079171017	UR2 AWS12	EPA 3540	OEXT/18805		GCSV/982
1079171018	UR2 SMB1	EPA 3540	OEXT/18805		GCSV/982
1079171019	UR2 SMB2	EPA 3540	OEXT/18805		GCSV/982
079171020	UR2 SMB3	EPA 3540	OEXT/18805		GCSV/982
1079171001	UR2 AC1	Pace Gender Typing	GRND/2585		
1079171002	UR2 AC2	Pace Gender Typing	GRND/2585		
1079171003	UR2 AC3	Pace Gender Typing	GRND/2585		
1079171004	UR2 AC4	Pace Gender Typing	GRND/2585		
1079171005	UR2 AC5	Pace Gender Typing	GRND/2585		
1079171006	UR2 AWS1	Pace Gender Typing	GRND/2585		
1079171007	UR2 AWS2	Pace Gender Typing	GRND/2585		
1079171008	UR2 AWS3	Pace Gender Typing	GRND/2585		
1079171009	UR2 AWS4	Pace Gender Typing	GRND/2585		
1079171010	UR2 AWS5	Pace Gender Typing	GRND/2585		
1079171011	UR2 AWS6	Pace Gender Typing	GRND/2585		
079171012	UR2 AWS7	Pace Gender Typing	GRND/2585		
1079171013	UR2 AWS8	Pace Gender Typing	GRND/2585		
1079171014	UR2 AWS9	Pace Gender Typing	GRND/2585		
1079171015	UR2 AWS10	Pace Gender Typing	GRND/2585		
1079171016	UR2 AWS11	Pace Gender Typing	GRND/2585		
1079171017	UR2 AWS12	Pace Gender Typing	GRND/2585		
079171018	UR2 SMB1	Pace Gender Typing	GRND/2585		
079171019	UR2 SMB2	Pace Gender Typing	GRND/2585		
1079171020	UR2 SMB3	Pace Gender Typing	GRND/2585		
079171001	UR2 AC1	Pace Lipid	OEXT/18816		
1079171002	UR2 AC2	Pace Lipid	OEXT/18816		
1079171003	UR2 AC3	Pace Lipid	OEXT/18816		
1079171004	UR2 AC4	Pace Lipid	OEXT/18816		
1079171005	UR2 AC5	Pace Lipid	OEXT/18816		
1079171006	UR2 AWS1	Pace Lipid	OEXT/18816		
1079171007	UR2 AWS2	Pace Lipid	OEXT/18816		
4079171008	UR2 AWS3	Pace Lipid	OEXT/18816		





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079171

Date: 07/18/2013 08:46 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079171009	UR2 AWS4	Pace Lipid	OEXT/18816	•	
4079171010	UR2 AWS5	Pace Lipid	OEXT/18816		
4079171011	UR2 AWS6	Pace Lipid	OEXT/18816		
4079171012	UR2 AWS7	Pace Lipid	OEXT/18816		
4079171013	UR2 AWS8	Pace Lipid	OEXT/18816		
4079171014	UR2 AWS9	Pace Lipid	OEXT/18816		
4079171015	UR2 AWS10	Pace Lipid	OEXT/18816		
4079171016	UR2 AWS11	Pace Lipid	OEXT/18816		
4079171017	UR2 AWS12	Pace Lipid	OEXT/18816		
4079171018	UR2 SMB1	Pace Lipid	OEXT/18816		
4079171019	UR2 SMB2	Pace Lipid	OEXT/18816		
4079171020	UR2 SMB3	Pace Lipid	OEXT/18816		

Version 6.0 06/14/06

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Branch/Locati			1 /	San Company	uoo	www.pa	celabs.c	al ®	€6	ullV			F		COC No.		
Project Contac	ct: Mark Mather													Quote #:			
Phone:	513-678-2137 or 513-387-	2778	l	<u> </u>	HA	<u>IIN</u>		CI		<u>TO</u>	<u>DY</u>			Mail To Contact:	Mark Math	ər	
Project Numbe	er: SR13-001 Task 10-02000		A=No			H2SO4	D=HNO3			F=Methar	nol G=N	laOH		Mail To Company:	PRS - Ass	ured Group	
Project Name: Project State:	2013 Fish Sampling Wiscoinsin		H=So	RED?	ate Soluti	ion	I=Sodiu	m Thiosul	fate .	J=Other				Mail To Address:	7870 Kemp Cincinnati,	oer Road, Suite 2 OH 45249	240,
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	Print): Mark Mather		(cot		Letter									Invoice To Contact:	Goldie Sha	·	
Sampled By (S	sign):				þ								1	Invoice To Company:	As Above		
PO #: Data Packa	ge Options MS/MSD	Regulatory Program: Mat	rix Codes	ı	Requested		ÆS							Invoice To Address:	7870 Kemp Cincinnati,	oer Road, Suite 2 OH 45249	240,
(billat	on your sample (billable)	A = Air B = Biota C = Charcoal O = Oil	W = Water DW = Drinkii GW = Grour SW = Surfac	nd Water	Analyses R	- 8082	PRESERVATIVES							Invoice To Phone:	513-489-67	 789	
_ EPA	Level IV	S = Soil SI = Sludge	WW = Wast		nai	8-8	SEI						ļ	CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID		ECTION TIME	MATRIX	ď	PCB	PRE							COMMENTS	(Lab l	Jse Only)	
001	UR2 AC1	6/5/13		Tissue		Х	Α							Whole Fish Sample	1-pc	lybay	-
002	UR2 AC2	6/5/13		Tissue		Х	Α								1	1	
003	UR2 AC3	6/5/13		Tissue		Х	Α										
004	UR2 AC4	6/5/13		Tissue		Х	Α										
005	UR2 AC5	6/5/13		Tissue		Х	Α									/	
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Version 6.0 06/14/06

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PO #:	The state of the s	Regulatory Program:			Requested							***************************************	Invoice	To Address:	7870 )	Kemne	er Road, Suit	te 240	
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L EPA	A Level IV NOT needed on S	) = Oil i = Soil	SW = Surface WW = Waste	e Water	Analyses	- 8082	SER							LIENT			MMENTS	Profil	1 - 41
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007	UR2 AWS2	6/5/13	1	Tissue		X	A								+-+	<u> </u>	bag		
008	UR2 AWS3	6/5/13	<del>                                     </del>	Tissue		X	A								+	+-			
	UR2 AWS4	6/5/13		Tissue		X	A								+	+-			
009	UR2 AWS5	6/5/13	1	Tissue		X	A								-	+-			
016	UR2 AWS6	6/5/13		Tissue		×	A									+			
	UR2 AWS7	6/5/13	-	Tissue		ļ	A								<del> </del>	<del> </del>	<del></del>		
012	UR2 AWS8	6/5/13	-	Tissue		X	<b>-</b>								+	├	***************************************		
013		6/5/13		Tissue		X	A						_		+-+	<u> </u>	**************************************		
$\frac{O14}{O14}$	UR2 AWS9	6/5/13	<del>  </del>	Tissue		X	A						_		1	<u> </u>			
015	UR2 AWS10	6/5/13	<b> </b>	Tissue		X	A								1	ļ			
016	UR2 AWS11	6/5/13	<u> </u>	Tissue		X	A								1-1	······································	#		
017	UR2 AWS12	6/5/13		Tissue		Х	A								1				
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☐ EP/	A Level III (billable) C=	Biota Charcoal	DW = Drink GW = Grou SW = Surfa	ind Water		8082	PRESERVATIVES						Invo	ice To Phone:	513-489-67	89	
LI EP	A Level IV NOT needed on S = your sample S =		WV = Surta	ste Water	Analyses	1	SEF							CLIENT	LAB CO	MMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	ECTION TIME	MATRIX	<b>A</b>	PCB	PRE						CC	MMENTS	(Lab U	se Only)	
018	UR2 SMB1	6/5/13		Tissue		Х	Α						Who	ole Fish Sample	1-00	oly bag	3
019	UR2 SMB2	6/5/13		Tissue		Х	Α									7	
020	UR2 SMB3	6/5/13		Tissue		Х	Α										
	UR2 SMB4	6/5/13		Tissue		Х	Α										***************************************
	UR2 SMB5	6/5/13		Tissue		Х	Α									***************************************	**************************************
	UR2 SMB6	6/5/13		Tissue		Х	Α										
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	UR2 SMB11	6/5/13		Tissue		Х	Α									***************************************	<del>~</del>
	UR2 SMB12	6/5/13		Tissue		X	Α										***************************************
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	I Samples on HOLD are subject to ecial pricing and release of liability	Relii	nquished By	:			D	ate/Time:			Received E	Ву:		Date/Time:			ot Present

Pace Analytical Services, Inc 1241 Bellevue Street, Suite & Green Bay, WI 54302

# Pace Analytical"

# **Sample Condition Upon Receipt**

		0	>			
Client Name	):	11	Ś	Project #	4079171	
Courier: Fed Ex F UPS F USPS F	Client C	omme	rcial Pace	Other		
Tracking #:						
Custody Seal on Cooler/Box Present:  yes			s intact: yes			
Custody Seal on Samples Present:  yes	,	manual.	s intact:  yes	no		
Packing Material: Bubble Wrap Bubble Thermometer Used		Non	,	Space Control		
Cooler Temperature Uncorr: 2/6 /Corr:	1 /		Blue Dry None  gical Tissue is Fr		ice, cooling process has	begun
Temp Blank Present: Tyes Ino	10		giodi 1133de 1311	no [	Person examining	contents:
Temp should be above freezing to 6°C for all sample exc	cent Biota			<i>y</i>	Date: <u>6/6//</u>	3
Frozen Biota Samples should be received ≤ 0°C.			Comments:		Initials: <u>EMH</u>	
Chain of Custody Present:	Yes 🗆 No	□N/A	1.			
Chain of Custody Filled Out:	☑Yes ☐No	DN/A	2.			
Chain of Custody Relinquished:	☑Yes ☐No	□N/A	3.			
Sampler Name & Signature on COC;	ØYes □No	□N/A	4.			
Samples Arrived within Hold Time:	☑Yes □No	□ N/A	5.			
- VOA Samples frozen upon receipt	□Yes □No	1	Date/Time:			
Short Hold Time Analysis (<72hr):	□Yes ØNo	□ N/A	6.			
Rush Turn Around Time Requested:	□Yes ☑No	□ N/A	7.			
Sufficient Volume:	☑Yes □No	□ N/A	8.			
Correct Containers Used:	□Yes ☑No	□n/a	9. Sample II	Ds inside sai	mple bays and 46/6/13	not
-Pace Containers Used:	□Yes ☑No	□n/a	read Lyvis	sible smi	46/6/13	
-Pace IR Containers Used:	□Yes □No		1 55.07 19	Ewi		
Containers Intact:	☑Yes □No	□n/a	10.			
Filtered volume received for Dissolved tests	□Yes □No	⊠n/a	11.			
Sample Labels match COC:	✓Yes □No	□n/a	12.			
-Includes date/time/ID/Analysis Matrix:	<u> </u>					
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No	ØN/A	13. THNO3	H2SO4 F	NaOH   NaOH +	-ZnAct
All containers needing preservation are found to be in			13.			
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No	ZIN/A				
exceptions: VOA, coliform, TOC, TOX, TOH,			Initial when	Lab Std #ID of	Date/	
D&G, WIDROW, Phenolics, OTHER:	□Yes □No			preservative	Time:	
Headspace in VOA Vials ( >6mm):	☐Yes ☐No					
Гrip Blank Present:	□Yes □No	-/	15.			
Frip Blank Custody Seals Present	□Yes □No	.Æ]N/A				
Pace Trip Blank Lot # (if purchased): Client Notification/ Resolution:	-		15	shooked ago ottooba	d form for additional com	monts []
Person Contacted:		Date/T	"!		a form for additional cost	micina []
Comments/ Resolution:						
Project Manager Review:	P 14 1	07	1)	Date:	6/6/13	



Green Bay, WI 54302 (920)469-2436



August 05, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

## Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

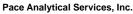
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

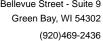
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



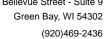


# **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079392001	MR2 AC1	Tissue	06/07/13 00:00	06/10/13 15:30
4079392002	MR2 AC2	Tissue	06/07/13 00:00	06/10/13 15:30
4079392003	MR2 AC3	Tissue	06/07/13 00:00	06/10/13 15:30
4079392004	MR2 AC4	Tissue	06/07/13 00:00	06/10/13 15:30
4079392005	MR2 AC5	Tissue	06/07/13 00:00	06/10/13 15:30
4079392006	MR2 AC6	Tissue	06/07/13 00:00	06/10/13 15:30
4079392007	MR2 AC7	Tissue	06/07/13 00:00	06/10/13 15:30
4079392008	MR2 AC8	Tissue	06/07/13 00:00	06/10/13 15:30
4079392009	MR2 AWS1	Tissue	06/07/13 00:00	06/10/13 15:30
4079392010	MR2 AWS2	Tissue	06/07/13 00:00	06/10/13 15:30
4079392011	MR2 AWS3	Tissue	06/07/13 00:00	06/10/13 15:30
4079392012	MR2 AWS4	Tissue	06/07/13 00:00	06/10/13 15:30
4079392013	MR2 AWS5	Tissue	06/07/13 00:00	06/10/13 15:30
4079392014	MR2 AWS6	Tissue	06/07/13 00:00	06/10/13 15:30
4079392015	MR2 AWS7	Tissue	06/07/13 00:00	06/10/13 15:30
4079392016	MR2 AWS8	Tissue	06/07/13 00:00	06/10/13 15:30
4079392017	MR2 JWS2	Tissue	06/07/13 00:00	06/10/13 15:30
4079392018	MR2 JWS3	Tissue	06/07/13 00:00	06/10/13 15:30
4079392019	MR2 JWS4	Tissue	06/07/13 00:00	06/10/13 15:30
4079392020	MR2 JWS5	Tissue	06/07/13 00:00	06/10/13 15:30



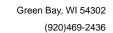


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
4079392001	MR2 AC1	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392002	MR2 AC2	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392003	MR2 AC3	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392004	MR2 AC4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392005	MR2 AC5	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392006	MR2 AC6	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392007	MR2 AC7	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392008	MR2 AC8	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392009	MR2 AWS1	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392010	MR2 AWS2	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392011	MR2 AWS3	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392012	MR2 AWS4	EPA 8082	BLM	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079392013	MR2 AWS5	EPA 8082	BLM	10	





# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079392014	MR2 AWS6	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
1079392015	MR2 AWS7	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079392016	MR2 AWS8	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079392017	MR2 JWS2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079392018	MR2 JWS3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079392019	MR2 JWS4	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079392020	MR2 JWS5	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18978

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MR2 AC2 (Lab ID: 4079392002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR2 AC3 (Lab ID: 4079392003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR2 AC5 (Lab ID: 4079392005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR2 AC6 (Lab ID: 4079392006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xvlene (S)
- MR2 AC8 (Lab ID: 4079392008)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

### Method Blank:

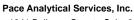
All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





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# **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Method: EPA 8082

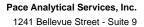
**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

# **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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**PROJECT NARRATIVE** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

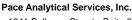
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

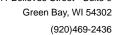
Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC1 Lab ID: 4079392001 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>782</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	53469-21-9	
PCB-1248 (Aroclor 1248)	<125 ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1020</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>338</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	11096-82-5	
PCB, Total	<b>2140</b> ug/kg	250	125	10	07/15/13 10:22	07/19/13 23:54	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		10	07/15/13 10:22	07/19/13 23:54	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		10	07/15/13 10:22	07/19/13 23:54	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Female			1		07/15/13 07:24		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	7.5 %			1		07/17/13 08:49		





# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC2 Lab ID: 4079392002 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method: EPA 8082 Preparation Method: EPA 3540							
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>17900</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>24400</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>2980J</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	11096-82-5	
PCB, Total	<b>45300</b> ug/kg	5000	2500	200	07/15/13 10:22	07/20/13 00:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		200	07/15/13 10:22	07/20/13 00:12	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		200	07/15/13 10:22	07/20/13 00:12	2051-24-3	S4
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Female			1		07/15/13 07:24		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	14.4 %			1		07/17/13 08:49		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC3 Lab ID: 4079392003 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	8082 Prepar	ation Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5010</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3540</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>418J</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	11096-82-5	
PCB, Total	<b>8980</b> ug	g/kg	500	250	20	07/15/13 10:22	07/20/13 00:29	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	D	44-130		20	07/15/13 10:22	07/20/13 00:29	877-09-8	S4
Decachlorobiphenyl (S)	0 %	, )	62-130		20	07/15/13 10:22	07/20/13 00:29	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Female				1		07/15/13 07:24		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	4.9 %				1		07/17/13 08:49		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC4 Lab ID: 4079392004 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>524</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	53469-21-9	
PCB-1248 (Aroclor 1248)	<125 ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1140</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>423</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	11096-82-5	
PCB, Total	<b>2090</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 00:46	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		10	07/15/13 10:22	07/20/13 00:46	877-09-8	
Decachlorobiphenyl (S)	88 %	62-130		10	07/15/13 10:22	07/20/13 00:46	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.4 %			1		07/17/13 08:49		





Project: SR13-001 2013 FISH SAMPLING

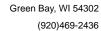
Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC5 Lab ID: 4079392005 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7030</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4690</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>449J</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	11096-82-5	
PCB, Total	<b>12200</b> u	g/kg	750	375	30	07/15/13 10:22	07/20/13 01:38	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	, o	44-130		30	07/15/13 10:22	07/20/13 01:38	877-09-8	S4
Decachlorobiphenyl (S)	0 %	, 0	62-130		30	07/15/13 10:22	07/20/13 01:38	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/15/13 07:24		
Lipid	Analytical	Method: Pad	e Lipid						
Lipid	4.4 %	, 6			1		07/17/13 08:49		





Project: SR13-001 2013 FISH SAMPLING

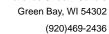
Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC6 Lab ID: 4079392006 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho							
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>13300</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9150</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>1330</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	11096-82-5	
PCB, Total	<b>23800</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 01:55	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/15/13 10:22	07/20/13 01:55	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/15/13 10:22	07/20/13 01:55	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	12.6 %			1		07/17/13 08:49		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC7 Lab ID: 4079392007 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;125</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>422</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1370</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>938</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	11096-82-5	
PCB, Total	<b>2730</b> ug/kg	250	125	10	07/15/13 10:22	07/20/13 02:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	69 %	44-130		10	07/15/13 10:22	07/20/13 02:12	877-09-8	
Decachlorobiphenyl (S)	115 %	62-130		10	07/15/13 10:22	07/20/13 02:12	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/15/13 07:24		
Lipid	Analytical Method:	Pace Lipid						
Lipid	24.2 %			1		07/17/13 08:49		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AC8 Lab ID: 4079392008 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>13100</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>12800</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>1470</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	11096-82-5	
PCB, Total	<b>27400</b> ug/kg	1250	625	50	07/15/13 10:22	07/20/13 02:29	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/15/13 10:22	07/20/13 02:29	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/15/13 10:22	07/20/13 02:29	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Method:	Pace Lipid						
Lipid	12.6 %			1		07/17/13 08:50		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS1 Lab ID: 4079392009 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>265</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>269</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>97.8</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	11096-82-5	
PCB, Total	<b>632</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 02:47	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		3	07/15/13 10:22	07/20/13 02:47	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		3	07/15/13 10:22	07/20/13 02:47	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	1.8 %			1		07/17/13 08:50		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS2 Lab ID: 4079392010 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>638</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>341</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	11096-82-5	
PCB, Total	<b>979</b> ug/kg	75.0	37.5	3	07/15/13 10:22	07/20/13 03:04	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	93 %	44-130		3	07/15/13 10:22	07/20/13 03:04	877-09-8	
Decachlorobiphenyl (S)	95 %	62-130		3	07/15/13 10:22	07/20/13 03:04	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	2.3 %			1		07/17/13 08:50		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS3 Lab ID: 4079392011 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>261</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>321</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	11096-82-5	
PCB, Total	<b>582</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	80 %	44-130		4	07/15/13 10:22	07/20/13 03:21	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		4	07/15/13 10:22	07/20/13 03:21	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/15/13 07:24		
Lipid	Analytical Method:							
Lipid	1.9 %			1		07/17/13 08:50		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS4 Lab ID: 4079392012 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>317</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>279</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>62.5J</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	11096-82-5	
PCB, Total	<b>658</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 03:38	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	85 %	44-130		4	07/15/13 10:22	07/20/13 03:38	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		4	07/15/13 10:22	07/20/13 03:38	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Tyլ	ping					
Gender	Female			1		07/15/13 07:24		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	2.1 %			1		07/17/13 08:50		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS5 Lab ID: 4079392013 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>94.7</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	53469-21-9	
PCB-1248 (Aroclor 1248)	<12.5 ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>87.6</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	11096-82-5	
PCB, Total	<b>182</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 03:55	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	100 %	44-130		1	07/15/13 10:22	07/20/13 03:55	877-09-8	
Decachlorobiphenyl (S)	104 %	62-130		1	07/15/13 10:22	07/20/13 03:55	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.5 %			1		07/17/13 08:50		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS6 Lab ID: 4079392014 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	12674-11-2	
PCB-1221 (Aroclor 1221)	<12.5 ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>122</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	53469-21-9	
PCB-1248 (Aroclor 1248)	<12.5 ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>194</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>22.4J</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	11096-82-5	
PCB, Total	<b>338</b> ug/kg	25.0	12.5	1	07/15/13 10:22	07/20/13 04:13	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	89 %	44-130		1	07/15/13 10:22	07/20/13 04:13	877-09-8	
Decachlorobiphenyl (S)	97 %	62-130		1	07/15/13 10:22	07/20/13 04:13	2051-24-3	
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Method	: Pace Lipid						
Lipid	1.8 %			1		07/17/13 08:50		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS7 Lab ID: 4079392015 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results l	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>594</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>507</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>55.8J</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	11096-82-5	
PCB, Total	<b>1160</b> ug/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:30	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		4	07/15/13 10:22	07/20/13 04:30	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		4	07/15/13 10:22	07/20/13 04:30	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Tyլ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	1.7 %			1		07/17/13 08:50		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 AWS8 Lab ID: 4079392016 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>550</b> υ	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>660</b> ι	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>102</b> υ	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	11096-82-5	
PCB, Total	<b>1310</b> ւ	ıg/kg	100	50.0	4	07/15/13 10:22	07/20/13 04:47	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	80 %	%	44-130		4	07/15/13 10:22	07/20/13 04:47	877-09-8	
Decachlorobiphenyl (S)	87 %	%	62-130		4	07/15/13 10:22	07/20/13 04:47	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/15/13 07:24		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	1.8 %	%			1		07/17/13 08:50		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 JWS2 Lab ID: 4079392017 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1250</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>647</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	11096-82-5	
PCB, Total	<b>1900</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:04	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	85 %	6	44-130		5	07/15/13 10:22	07/20/13 05:04	877-09-8	
Decachlorobiphenyl (S)	88 %	6	62-130		5	07/15/13 10:22	07/20/13 05:04	2051-24-3	
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/15/13 07:24		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	2.2 %				1		07/17/13 08:51		





# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 JWS3 Lab ID: 4079392018 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1130</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>614</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	11096-82-5	
PCB, Total	<b>1740</b> u	g/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:21	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82 %	, D	44-130		5	07/15/13 10:22	07/20/13 05:21	877-09-8	
Decachlorobiphenyl (S)	87 %	, D	62-130		5	07/15/13 10:22	07/20/13 05:21	2051-24-3	
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/15/13 07:24		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	1.2 %				1		07/17/13 08:51		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 JWS4 Lab ID: 4079392019 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;52.1</b> U	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;52.1</b> ∪	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;52.1</b> ∪	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;52.1</b> ∪	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>803</b> U	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>350</b> U	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;52.1</b> ∪	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	11096-82-5	
PCB, Total	<b>1150</b> U	ıg/kg	104	52.1	4	07/15/13 10:22	07/20/13 05:39	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	88 %	6	44-130		4	07/15/13 10:22	07/20/13 05:39	877-09-8	
Decachlorobiphenyl (S)	92 %	6	62-130		4	07/15/13 10:22	07/20/13 05:39	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/15/13 07:24		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	<b>1.7</b> %	6			1		07/17/13 08:51		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

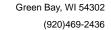
Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Sample: MR2 JWS5 Lab ID: 4079392020 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1240</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>589</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	11096-82-5	
PCB, Total	<b>1830</b> ug/kg	125	62.5	5	07/15/13 10:22	07/20/13 05:56	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	84 %	44-130		5	07/15/13 10:22	07/20/13 05:56	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		5	07/15/13 10:22	07/20/13 05:56	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Male			1		07/15/13 07:24		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	1.5 %			1		07/17/13 08:51		





### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

QC Batch: OEXT/18978 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079392001, 4079392002, 4079392003, 4079392004, 4079392005, 4079392006, 4079392007, 4079392008,

4079392017, 4079392018, 4079392019, 4079392020

METHOD BLANK: 823127 Matrix: Tissue

Associated Lab Samples: 4079392001, 4079392002, 4079392003, 4079392004, 4079392005, 4079392006, 4079392007, 4079392008,

4079392009, 4079392010, 4079392011, 4079392012, 4079392013, 4079392014, 4079392015, 4079392016,

4079392017, 4079392018, 4079392019, 4079392020

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/19/13 22:45	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/19/13 22:45	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/19/13 22:45	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/19/13 22:45	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/19/13 22:45	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/19/13 22:45	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/19/13 22:45	
Decachlorobiphenyl (S)	%	91	62-130	07/19/13 22:45	
Tetrachloro-m-xylene (S)	%	89	44-130	07/19/13 22:45	

LABORATORY CONTROL SAMPLE:	823128					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Farameter				/0 Nec	LIIIIII -	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	246	98	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			86	62-130	
Tetrachloro-m-xylene (S)	%			88	44-130	

	40	079392001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<125			<125	<125					24	
PCB-1221 (Aroclor 1221)	ug/kg	<125			<125	<125					24	
PCB-1232 (Aroclor 1232)	ug/kg	<125			<125	<125					24	
PCB-1242 (Aroclor 1242)	ug/kg	782	1000	1000	1890	1770	111	99	27-163	7	24	
PCB-1248 (Aroclor 1248)	ug/kg	<125			<125	<125					24	
PCB-1254 (Aroclor 1254)	ug/kg	1020			1270	1160				8	24	
PCB-1260 (Aroclor 1260)	ug/kg	338			392	361				8	24	
Decachlorobiphenyl (S)	%						92	90	62-130			
Tetrachloro-m-xylene (S)	%						82	80	44-130			

Green Bay, WI 54302 (920)469-2436



QUALITY CONTROL DATA

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

QC Batch: OEXT/18997 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079392001, 4079392002, 4079392003, 4079392004, 4079392005, 4079392006, 4079392007, 4079392008,

4079392009, 4079392010, 4079392011, 4079392012, 4079392013, 4079392014, 4079392015, 4079392016,

4079392017, 4079392018, 4079392019, 4079392020

METHOD BLANK: 823446 Matrix: Tissue

%

Associated Lab Samples: 4079392001, 4079392002, 4079392003, 4079392004, 4079392005, 4079392006, 4079392007, 4079392008,

0.56

4079392009, 4079392010, 4079392011, 4079392012, 4079392013, 4079392014, 4079392015, 4079392016,

07/17/13 08:48

 $4079392017,\,4079392018,\,4079392019,\,4079392020$ 

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

SAMPLE DUPLICATE: 823447

Date: 08/05/2013 08:49 AM

Lipid

4079392001 Dup Max RPD Parameter Units Result Result **RPD** Qualifiers 7.5 % 8.9 17 20 Lipid



Pace Analytical www.pacelabs.com

**QUALIFIERS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

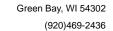
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 08/05/2013 08:49 AM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





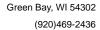
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079392001	MR2 AC1	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392002	MR2 AC2	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392003	MR2 AC3	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392004	MR2 AC4	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392005	MR2 AC5	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392006	MR2 AC6	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392007	MR2 AC7	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392008	MR2 AC8	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392009	MR2 AWS1	EPA 3540	OEXT/18978	EPA 8082	GCSV/9882
4079392010	MR2 AWS2	EPA 3540	OEXT/18978		GCSV/9882
4079392011	MR2 AWS3	EPA 3540	OEXT/18978		GCSV/9882
4079392012	MR2 AWS4	EPA 3540	OEXT/18978		GCSV/9882
4079392013	MR2 AWS5	EPA 3540	OEXT/18978		GCSV/9882
4079392014	MR2 AWS6	EPA 3540	OEXT/18978		GCSV/9882
4079392015	MR2 AWS7	EPA 3540	OEXT/18978		GCSV/9882
4079392016	MR2 AWS8	EPA 3540	OEXT/18978		GCSV/9882
4079392017	MR2 JWS2	EPA 3540	OEXT/18978		GCSV/9882
4079392018	MR2 JWS3	EPA 3540	OEXT/18978		GCSV/9882
4079392019	MR2 JWS4	EPA 3540	OEXT/18978		GCSV/9882
4079392020	MR2 JWS5	EPA 3540	OEXT/18978		GCSV/9882
1079392001	MR2 AC1	Pace Gender Typing	GRND/2597		
4079392002	MR2 AC2	Pace Gender Typing	GRND/2597		
4079392003	MR2 AC3	Pace Gender Typing	GRND/2597		
4079392004	MR2 AC4	Pace Gender Typing	GRND/2597		
4079392005	MR2 AC5	Pace Gender Typing	GRND/2597		
4079392006	MR2 AC6	Pace Gender Typing	GRND/2597		
4079392007	MR2 AC7	Pace Gender Typing	GRND/2597		
4079392008	MR2 AC8	Pace Gender Typing	GRND/2597		
4079392009	MR2 AWS1	Pace Gender Typing	GRND/2597		
4079392010	MR2 AWS2	Pace Gender Typing	GRND/2597		
4079392011	MR2 AWS3	Pace Gender Typing	GRND/2597		
4079392012	MR2 AWS4	Pace Gender Typing	GRND/2597		
4079392013	MR2 AWS5	Pace Gender Typing	GRND/2597		
4079392014	MR2 AWS6	Pace Gender Typing	GRND/2597		
4079392015	MR2 AWS7	Pace Gender Typing	GRND/2597		
4079392016	MR2 AWS8	Pace Gender Typing	GRND/2597		
4079392017	MR2 JWS2	Pace Gender Typing	GRND/2597		
4079392018	MR2 JWS3	Pace Gender Typing	GRND/2597		
4079392019	MR2 JWS4	Pace Gender Typing	GRND/2597		
4079392020	MR2 JWS5	Pace Gender Typing	GRND/2597		
4079392001	MR2 AC1	Pace Lipid	OEXT/18997		
4079392002	MR2 AC2	Pace Lipid	OEXT/18997		
4079392003	MR2 AC3	Pace Lipid	OEXT/18997		
4079392004	MR2 AC4	Pace Lipid	OEXT/18997		
4079392005	MR2 AC5	Pace Lipid	OEXT/18997		
4079392006	MR2 AC6	Pace Lipid	OEXT/18997		
4079392007	MR2 AC7	Pace Lipid	OEXT/18997		
		·	,		





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079392

Date: 08/05/2013 08:49 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079392009	MR2 AWS1	Pace Lipid	OEXT/18997		
4079392010	MR2 AWS2	Pace Lipid	OEXT/18997		
4079392011	MR2 AWS3	Pace Lipid	OEXT/18997		
4079392012	MR2 AWS4	Pace Lipid	OEXT/18997		
4079392013	MR2 AWS5	Pace Lipid	OEXT/18997		
4079392014	MR2 AWS6	Pace Lipid	OEXT/18997		
4079392015	MR2 AWS7	Pace Lipid	OEXT/18997		
4079392016	MR2 AWS8	Pace Lipid	OEXT/18997		
4079392017	MR2 JWS2	Pace Lipid	OEXT/18997		
4079392018	MR2 JWS3	Pace Lipid	OEXT/18997		
4079392019	MR2 JWS4	Pace Lipid	OEXT/18997		
4079392020	MR2 JWS5	Pace Lipid	OEXT/18997		

Version 6.0 06/14/06

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00/			MR2 AC1		6/7/	/13		Tissue		Х	Α						Whole Fish Sample	1-	polubaa	A
002			MR2 AC2		6/7/	/13		Tissue		Х	Α								177	
003			MR2 AC3		6/7/	/13		Tissue		Х	Α								1	
004			MR2 AC4	-	6/7/	/13		Tissue		Х	Α									
005			MR2 AC5		6/7/	/13		Tissue		Х	Α									
006			MR2 AC6		6/7/	/13		Tissue		X	Α			***						T
007			MR2 AC7		6/7/	/13		Tissue		Х	Α									
008			MR2 AC8	_	6/7/	/13		Tissue		X	Α								7	
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Email #1:	mmathe	@assu	redllc.com			Ŕelinqui	ished By:				Da	te/Time:			Réceived By	<i>f</i> : (	Date/Time!			20°C
	513-387	2778				Relinqui	shed By:		<del></del>		Da	te/Time:			Received By	<i>f</i> :	Date/Time:		Sample R OK / Ac	, ,
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Company Name:	Pollution Risk Services			<i>,</i>				. ®			MN: 61	12-607-1	700	<b>NI</b> : 920-469-2436			
Branch/Location:	Sheboygan		/		ace.		lytica celabs.ca						_		COC No	. 7 4	W79392
Project Contact:	Mark Mather					rimir.po	60/803.64	0,1,						Quote #:			
Phone:	513-678-2137 or 513-387-27	78		C	HA	IN	OF	CI	JS'	ΓΟ	DY		l	Mail To Contact:	Mark Math	ner	
Project Number:	SR13-001 Task 10-02000		A=No			12504	Preservat D=HNO3	tion Code	es	=Methan				Mail To Company:	PRS - Ass	sured Group	
Project Name:	2013 Fish Sampling		l ——	odium Bisulf	ate Soluti	on	l=Sodiur	n Thiosulf	fate J	=Other				Mail To Address:		per Road, Sui	te 240,
Project State:	Wiscoinsin		FILTE (YES		Y/N										Cincinnati	, OH 45249	
Sampled By (Print):	Mark Mather		PRESER (COI		Pick Letter									Invoice To Contact:	Goldie Sh	arp	
Sampled By (Sign):					-D									Invoice To Company:	As Above		
PO #:	1	egulatory Program:			Requested		တ							Invoice To Address:	7870 Kem	per Road, Sui	te 240,
Data Package O			rix Codes W = Water		Regi		!VE								Cincinnati	, OH 45249	
☐ EPA Leve	EPA Level IV (billable) C=C  NOT needed on your sample S=S S=S			ng Water nd Water ce Water		- 8082	PRESERVATIVES						Ì	Invoice To Phone:	513-489-6	3789	
EPA Leve	1 300000	Soil Sludge	WW = Wast WP = Wipe		Analyses	B - 8	ESE							CLIENT	LAB C	OMMENTS	Profile #
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X02 01	0 MR2 AWS2	6/7/13		Tissue		Х	Α								1	<i>'</i>	J
203 01	/ MR2 AWS3	6/7/13		Tissue		Х	Α										
004/01	2 MR2 AWS4	6/7/13		Tissue		Х	Α										
005 01	3 MR2 AWS5	6/7/13		Tissue		Х	Α										
006 01	4 MR2 AWS6	6/7/13		Tissue		X	Α										
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Telephone: 513-38	37-2778	Relin	quished By:	· · · · · · · · · · · · · · · · · · ·			Dat	te/Time:			Received	Ву:		Date/Time:		OK /	Adjusted
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Company Nan	ne: Pollution Risk Services			<b>/</b>		4					MN: 612-607	-1700	WI: 920-469-2436		-7	
Branch/Locati	ion: Sheboygan		/	1	ace		lytic celabs.c							COC No.	1 4	1579390
Project Contac	ct: Mark Mather					mm.pa		.0,1,7					Quote #:			
Phone:	513-678-2137 or 513-387-277	78		C	HA	IN	OF	C C	US	TO	DY		Mail To Contact:	Mark Mathe	er	
Project Numbe	er: SR13-001 Task 10-02000		A=No			12804		tion Cod	les	==Methan			Mail To Company:	PRS - Assu	ured Group	
Project Name:	: 2013 Fish Sampling		H=So	dium Bisulf	ate Soluti	on	I=Sodiu	m Thiosu	ifate .	J=Other		]	Mail To Address:	7870 Kemp	er Road, Suite	240,
Project State:	Wiscoinsin		FILTE (YES		Y/N									Cincinnati,	OH 45249	
Sampled By (F	Print): Mark Mather		PRESER (CO		Pick Letter								Invoice To Contact:	Goldie Shar	р	
Sampled By (S	Sign):				p								Invoice To Company:	As Above		
PO #:		gulatory rogram:			este								Invoice To Address:	7870 Kemp	er Road, Suite	240.
Data Packad	ge Options MS/MSD	Matr	ix Codes		Requested		IVES							Cincinnati,		,
	Level III (billable) B= E	Biota Charcoal	W = Water DW = Drinkin GW = Groun SW = Surface	nd Water		8082	ZVAT						Invoice To Phone:	513-489-67	'89	
PACE LAB#	Level IV S=S	Soil Sludge COLLE	WW = Wast WP = Wipe ECTION	e Water	Analyses	PCB - 8	PRESERVATIVES						CLIENT COMMENTS	1	OMMENTS Jse Only)	Profile #
201	017 MR2 JWS2	6/7/13	TIME	Tissue	······································	X	A					<b></b>	Whole Fish Sample	<del>                                     </del>	oluba	A
A12	OLS MR2 JWS3	6/7/13				Х	Α		<b>-</b>			-		<del>                                     </del>	1 Just	) ' /
1002	019 MR2 JWS4			Tissue		X	Α		-						1	<del>4</del>
00//	020 MR2 JWS5	6/7/13		Tissue		X	A		<u> </u>			<del> </del>			<del> </del>	
009	MR2 JWS6	6/7/13		Tissue		X	A					<del> </del>			<del> </del>	
001	MR2 JWS7	6/7/13		Tissue	-	X	A		ļ							
-00 Q		6/7/13		Tissue			<u> </u>	-	ļ					1	<u> </u>	
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Email #1:	mmather@assuredlic.com	Relind	quished By:				' Da	ite/Time:			Received By:		Date/Time:		Sample R	
	513-387-2778	Relino	quished By:				Da	te/Time:			Received By:		Date/Time:			djusted
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	Samples on HOLD are subject to cities and release of liability	Relind	quished By:				Da	ite/Time:			Received By:		Date/Time:			ot Present

# Pace Analytical<sup>™</sup>

# Sample Condition Upon Receipt

Client Name	:	PK	05	Project # 4/29392
Courier: Fed Ex F UPS F USPS F	Client	Cor	mmer	
Tracking #:	Oneric 7	. 001		
Custody Seal on Cooler/Box Present: yes	⋉no		Seals	intact: Tyes T no
Custody Seal on Samples Present:  yes	no		Seals	intact: Tyes Tono
Packing Material: Bubble Wrap Bubb	ole Bags	X	None	Other
Thermometer Used SRI3	Type of	lce;		Blue Dry None Samples on ice, cooling process has begun
Cooler Temperature Uncorr: 20 /Corred	0		Biolo	gical Tissue is Frozen: Tyes 4/1/13
Temp Blank Present: Tyes Tho				Person examining contents:
Temp should be above freezing to 6°C for all sample exc Frozen Biota Samples should be received ≤ 0°C.	cept Biota.			Comments:  Date:
Chain of Custody Present:	)K⊈Yes [	⊒Νο	□n/a	1.
Chain of Custody Filled Out:	K∮Yes □	]No	□N/A	2.
Chain of Custody Relinquished:	√aYes □	JNo	□n/a	3.
Sampler Name & Signature on COC:	□Yes	No	□n/a	4.
Samples Arrived within Hold Time:	17√1¥es □	]No	□n/A	<b>5</b> .
- VOA Samples frozen upon receipt	□Yes □	ЭNo		Date/Time:
Short Hold Time Analysis (<72hr):	□Yes √	ŽÑo	□n/A	6.
Rush Turn Around Time Requested:	□Yes	Μo	□n/A	7.
Sufficient Volume:	<b>Ø</b> Yes □	]No	□n/A	8.
Correct Containers Used:	√ Yes □	ONC	□n/a	9.
-Pace Containers Used:	⊡́Yes 🖟	МÓ	□n/a	
-Pace IR Containers Used:	□Yes □	No	[ZHV/A	
Containers Intact:	Yes [	No	□n/a	10.
Filtered volume received for Dissolved tests	□Yes □	No	ØN/A	11.
Sample Labels match COC:	Î <b>⊠</b> Yes □	ON [	□n/a	12.
-Includes date/time/ID/Analysis Matrix:		<u>ろ</u>		
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □	]No	N/A	13. THNO3 TH2SO4 TNaOH TNaOH+ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □	]No	Zin/a	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	—	(No		Initial when Lab Std #ID of Date/ completed preservative Time:
Headspace in VOA Vials ( >6mm):	□Yes □		ØN/A	
Trip Blank Present:	□Yes □		DA(N/A	
Trip Blank Custody Seals Present	□Yes □		ØN/A	
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:	**************************************			If checked, see attached form for additional comments
Person Contacted:	-1		Date/∏	Fime:
Comments/ Resolution:	Mess	re	ez.	Caught same day
		·,	_//	0/11/13
				3/4/
Project Manager Review:	for Vi	ſ		Date: 6/14/13





Green Bay, WI 54302 (920)469-2436

August 05, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

## Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

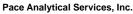
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

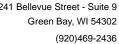
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



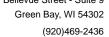


# **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079489001	MR1 AC1	Tissue	06/08/13 00:00	06/10/13 15:30
4079489002	MR1 AC2	Tissue	06/08/13 00:00	06/10/13 15:30
4079489003	MR1 AC3	Tissue	06/08/13 00:00	06/10/13 15:30
4079489004	MR1 AC4	Tissue	06/08/13 00:00	06/10/13 15:30
4079489005	MR1 AC5	Tissue	06/08/13 00:00	06/10/13 15:30
4079489006	MR1 AC6	Tissue	06/08/13 00:00	06/10/13 15:30
4079489007	MR1 AC7	Tissue	06/08/13 00:00	06/10/13 15:30
4079489008	MR1 AC8	Tissue	06/08/13 00:00	06/10/13 15:30



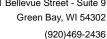


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Lab ID Sample ID		Method	Analysts	Analytes Reported	
4079489001	MR1 AC1	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489002	MR1 AC2	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489003	MR1 AC3	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489004	MR1 AC4	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489005	MR1 AC5	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489006	MR1 AC6	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489007	MR1 AC7	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079489008	MR1 AC8	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	





### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

8 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

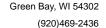
### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19156

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MR1 AC1 (Lab ID: 4079489001)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC2 (Lab ID: 4079489002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC3 (Lab ID: 4079489003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC4 (Lab ID: 4079489004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC5 (Lab ID: 4079489005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC6 (Lab ID: 4079489006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC7 (Lab ID: 4079489007)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 AC8 (Lab ID: 4079489008)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MS (Lab ID: 828425)





# **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

QC Batch: OEXT/19156

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- Decachlorobiphenyl (S)
- Tetrachloro-m-xylene (S)
- MSD (Lab ID: 828426)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/19156

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 4079489001

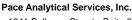
M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 828425)
  - PCB-1254 (Aroclor 1254)
- MSD (Lab ID: 828426)
  - PCB-1254 (Aroclor 1254)

# **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

8 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

# **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

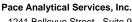
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

8 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC1 Lab ID: 4079489001 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7630</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4380</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	11097-69-1	M6
PCB-1260 (Aroclor 1260)	<b>408J</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	11096-82-5	
PCB, Total	<b>12400</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 19:16	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	07/30/13 19:16	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	07/30/13 19:16	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Female			1		07/10/13 11:34		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	10.6 %			1		07/29/13 12:22		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC2 Lab ID: 4079489002 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	11104-28-2	
PCB-1232 (Aroclor 1232)	<625 ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	11141-16-5	
PCB-1242 (Aroclor 1242)	<625 ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7470</b> ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>8340</b> ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>827J</b> ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	11096-82-5	
PCB, Total	<b>16600</b> ug/kg	1250	625	50	07/25/13 12:00	07/30/13 19:35	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/25/13 12:00	07/30/13 19:35	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/25/13 12:00	07/30/13 19:35	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:34		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	13.6 %			1		07/29/13 12:22		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC3 Lab ID: 4079489003 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA 8	082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>12900</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>8630</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	11096-82-5	
PCB, Total	<b>21500</b> ug	ı/kg	2500	1250	100	07/25/13 12:00	07/30/13 19:53	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		100	07/25/13 12:00	07/30/13 19:53	877-09-8	S4
Decachlorobiphenyl (S)	0 %		62-130		100	07/25/13 12:00	07/30/13 19:53	2051-24-3	S4
Fish Gender Typing	Analytical N	Method: Pace	Gender Typ	ing					
Gender	Female				1		07/10/13 11:34		
Lipid	Analytical N	Method: Pace	Lipid						
Lipid	27.4 %				1		07/29/13 12:22		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC4 Lab ID: 4079489004 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units LOQ LOI		LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	<b>&lt;375</b> ug/kg 750		30	07/25/13 12:00	07/30/13 20:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 20:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 20:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 20:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7380</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 20:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5120</b> ug/kg			30	07/25/13 12:00	07/30/13 20:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>449J</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 20:12	11096-82-5	
PCB, Total	<b>13000</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 20:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	07/30/13 20:12	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	07/30/13 20:12	2051-24-3	S4
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	ping					
Gender	Female			1		07/10/13 11:34		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	10.7 %			1		07/29/13 12:22		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC5 Lab ID: 4079489005 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units LOQ LOI		LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5240</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3240</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;375</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	11096-82-5	
PCB, Total	<b>8490</b> ug/k	g 750	375	30	07/25/13 12:00	07/30/13 20:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	07/30/13 20:31	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	07/30/13 20:31	2051-24-3	S4
Fish Gender Typing	Analytical Me	ethod: Pace Gender Typ	ping					
Gender	Female			1		07/10/13 11:34		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	11.5 %			1		07/29/13 12:22		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC6 Lab ID: 4079489006 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	lethod: EPA 8082 Pre	paration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>10800</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>7970</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> ug/	<b>&lt;1250</b> ug/kg 2500		100	07/25/13 12:00	07/30/13 20:50	11096-82-5	
PCB, Total	<b>18800</b> ug/	kg 2500	1250	100	07/25/13 12:00	07/30/13 20:50	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130	)	100	07/25/13 12:00	07/30/13 20:50	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130	)	100	07/25/13 12:00	07/30/13 20:50	2051-24-3	S4
Fish Gender Typing	Analytical M	lethod: Pace Gender 1	yping					
Gender	Female			1		07/10/13 11:34		
Lipid	Analytical M	lethod: Pace Lipid						
Lipid	9.5 %			1		07/29/13 12:23		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC7 Lab ID: 4079489007 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>12900</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9980</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> ug/l	<b>&lt;1250</b> ug/kg 2500		100	07/25/13 12:00	07/30/13 21:09	11096-82-5	
PCB, Total	<b>22900</b> ug/l	kg 2500	1250	100	07/25/13 12:00	07/30/13 21:09	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		100	07/25/13 12:00	07/30/13 21:09	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		100	07/25/13 12:00	07/30/13 21:09	2051-24-3	S4
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Female			1		07/10/13 11:34		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	17.1 %			1		07/29/13 12:23		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

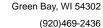
Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Sample: MR1 AC8 Lab ID: 4079489008 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	Units LOQ LO		DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5600</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4540</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>442J</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	11096-82-5	
PCB, Total	<b>10600</b> ug/kg	750	375	30	07/25/13 12:00	07/30/13 21:27	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	07/30/13 21:27	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	07/30/13 21:27	2051-24-3	S4
Fish Gender Typing	Analytical Metho	od: Pace Gender Typ	ping					
Gender	Female			1		07/10/13 11:34		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	15.0 %			1		07/29/13 12:23		





### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

LABORATORY CONTROL SAMPLE:

Date: 08/05/2013 08:49 AM

QC Batch: OEXT/19156 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079489001, 4079489002, 4079489003, 4079489004, 4079489005, 4079489006, 4079489007, 4079489008

METHOD BLANK: 828423 Matrix: Tissue

828424

Associated Lab Samples: 4079489001, 4079489002, 4079489003, 4079489004, 4079489005, 4079489006, 4079489007, 4079489008

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/30/13 18:03	
Decachlorobiphenyl (S)	%	79	62-130	07/30/13 18:03	
Tetrachloro-m-xylene (S)	%	83	44-130	07/30/13 18:03	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)			<12.5			
PCB-1016 (Alociol 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	205	82	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			

Decachlorobiphenyl (S)	%	78	62-130
Tetrachloro-m-xylene (S)	%	82	44-130

MATRIX SPIKE & MATRIX SF	11.2 201 210/11	E: 82842	MS	MSD	828426							
	40	079489001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<375			<375	<375			-		24	
PCB-1221 (Aroclor 1221)	ug/kg	<375			<375	<375					24	
PCB-1232 (Aroclor 1232)	ug/kg	<375			<375	<375					24	
PCB-1242 (Aroclor 1242)	ug/kg	<375			<375	<375					24	
PCB-1248 (Aroclor 1248)	ug/kg	7630			7280	6680				9	24	
PCB-1254 (Aroclor 1254)	ug/kg	4380	1000	1000	4910	4630	53	25	27-163	6	24	M6
PCB-1260 (Aroclor 1260)	ug/kg	408J			399J	<375					24	
Decachlorobiphenyl (S)	%						0	0	62-130			S4
Tetrachloro-m-xylene (S)	%						0	0	44-130			S4

Green Bay, WI 54302 (920)469-2436



### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

QC Batch: OEXT/19169 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079489001, 4079489002, 4079489003, 4079489004, 4079489005, 4079489006, 4079489007, 4079489008

METHOD BLANK: 829179 Matrix: Tissue

Associated Lab Samples: 4079489001, 4079489002, 4079489003, 4079489004, 4079489005, 4079489006, 4079489007, 4079489008

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers
Lipid % 0.54 07/29/13 12:21

SAMPLE DUPLICATE: 829180

Date: 08/05/2013 08:49 AM

4079489001 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers Lipid % 10.6 11.9 12 20



**QUALIFIERS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

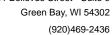
TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 08/05/2013 08:49 AM

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079489

Date: 08/05/2013 08:49 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079489001	MR1 AC1	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489002	MR1 AC2	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489003	MR1 AC3	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489004	MR1 AC4	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489005	MR1 AC5	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489006	MR1 AC6	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489007	MR1 AC7	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489008	MR1 AC8	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079489001	MR1 AC1	Pace Gender Typing	GRND/2591		
4079489002	MR1 AC2	Pace Gender Typing	GRND/2591		
4079489003	MR1 AC3	Pace Gender Typing	GRND/2591		
4079489004	MR1 AC4	Pace Gender Typing	GRND/2591		
4079489005	MR1 AC5	Pace Gender Typing	GRND/2591		
4079489006	MR1 AC6	Pace Gender Typing	GRND/2591		
4079489007	MR1 AC7	Pace Gender Typing	GRND/2591		
4079489008	MR1 AC8	Pace Gender Typing	GRND/2591		
4079489001	MR1 AC1	Pace Lipid	OEXT/19169		
4079489002	MR1 AC2	Pace Lipid	OEXT/19169		
4079489003	MR1 AC3	Pace Lipid	OEXT/19169		
4079489004	MR1 AC4	Pace Lipid	OEXT/19169		
4079489005	MR1 AC5	Pace Lipid	OEXT/19169		
4079489006	MR1 AC6	Pace Lipid	OEXT/19169		
4079489007	MR1 AC7	Pace Lipid	OEXT/19169		
4079489008	MR1 AC8	Pace Lipid	OEXT/19169		

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Company Nam	ne: Polluti	on Risk Ser	vices			Pace Analytical ®									1700	WI: 920-469-2436		/		•
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Project Numbe	er: SR13-	-001 Task 1	0-02000		A=N	one B=H	ICL C=	-	Preserva D=HNO3	tion Code E≂DI\		=Methan	ol G=N	laOH		Mail To Company:	PRS - Assı	red Group		
Project Name:	2013	Fish Sampli	ng		H=S	odium Bisulf	ate Solut	ion	I=Sodiur	m Thiosulf	fate J	=Other				Mail To Address:	7870 Kemp	er Road, S	uite 24	
Project State:	Wisco	insin				RED? S/NO)	Y/N										Cincinnati, OH 45249			
Sampled By (P	Print): Mark	Mather				RVATION DE)*	Pick Letter									Invoice To Contact:	ntact: Goldie Sharp			
Sampled By (S	ign):						2									Invoice To Company:	As Above			
PO #:				Regulato Progran	- 1		este									Invoice To Address:	7870 Kemper Road, Suite 24		Ю.	
Data Packag		MS/M		P	Matrix Code:	<b>3</b>	Requested		IVES		1						Cincinnati,			
arrand .	Level III	On your (billa	sample	A = Air B = Biota C = Charcoa O = Oil	W = Water DW = Drink al GW = Grou SW = Surfa	nd Water		8082	RVAT							Invoice To Phone:	513-489-6789			
PACE LAB#	Level IV	NOT ne your s	ample	S = Soil SI = Sludge	WW = Was WP = Wipe OLLECTION	te Water	Analyses	PCB - 8	PRESERVATIVES							CLIENT COMMENTS	LAB COMMENTS P			Profile #
007		MR1 AC1	9	6/8/		Tissue		X	A							Whole Fish Sample	1-0	plish		A
1002		MR1 AC2	ě.	6/8/		Tissue		Х	Α								1	<u>usys</u>	<u> </u>	
003		MR1 AC3		6/8/		Tissue		Х	Α									<del>                                     </del>		
004		MR1 AC4		6/8/		Tissue		Х	Α											
005		MR1 AC5	ð	6/8/		Tissue		Х	Α						***************************************					
006		MR1 AC6		6/8/		Tissue		Х	Α											
007		MR1 AC7	e	6/8/		Tissue		Х	Α										·····	
008		MR1 AC8	ą.	6/8/		Tissue		X	Α							MR 444 MARK 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1	1		
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Telephone: 5 <sup>-</sup> Fax:	13-387-2778			F	Relinquished By:				Dat	te/Time:		· · · · · · · · · · · · · · · · · · ·					/ Adjus			
Sa	amples on HOLD	-	ty	F	Relinquished By:				Dat	te/Time:	-	Received By: Date/Time: Cooler Custod Present / Not I					Present			
																		Version 6.0 06/14	UNG	



# Sample Condition Upon Receipt

Pace Analytical Services, Inc
1241 Bellevue Street, Suite
Green Bay, WI 5430.

Client Name	: PRS	<u> </u>	Project #	
Courier: Fed Ex UPS USPS Tracking #:	Client Comme	rcial 😿 Pace	Other	
Custody Seal on Cooler/Box Present:  yes Custody Seal on Samples Present:  yes Packing Material:  Bubble Wrap Bubble	no Seal			
Thermometer Used SR13	Type of Ice: We	,	4.0	n ice, cooling process has begun
Cooler Temperature Uncorr: 20 /Corred	Blok	ogical Tissue is Fi	1	<u> </u>
Temp Blank Present: Jyes 7000 Temp should be above freezing to 6°C for all sample exc	cept Biota.		(Eno)	Person examining contents:  Date: 6 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1
Frozen Biota Samples should be received ≤ 0°C.	<b>A.</b>	Comments:		
Chain of Custody Present:	ØYes □No □N/A			
Chain of Custody Filled Out:	ØYes □No □N/A	<del></del>		
Chain of Custody Relinquished:	₩Yes □No □N/A			
Sampler Name & Signature on COC:	□Yes ₽No □N/A			
Samples Arrived within Hold Time:	'∮4¥es □No □N/A	5.		
- VOA Samples frozen upon receipt	□Yes □No	Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes Ų̇́No □N/A	6.		
Rush Turn Around Time Requested:	□Yes □No □N/A	7.		
Sufficient Volume:	✓ Yes □No □N/A	8.		
Correct Containers Used:	Yes □No □N/A	9.		
-Pace Containers Used:	□Yes DiNo □N/A			
-Pace IR Containers Used:	□Yes □No ØN/A			
Containers Intact:	√EYes □No □N/A	10.		
Filtered volume received for Dissolved tests	□Yes □No ØN/A	11.		
Sample Labels match COC:	DAYes □No □N/A			
-Includes date/time/ID/Analysis Matrix:	13			
All containers needing preservation have been checked. (Non-Compliance noted in 13.)  All containers needing preservation are found to be in compliance with EPA recommendation.	□Yes □No ØN/A □Yes □No ØN/A	13. T HNO3	3   H2SO4   T	NaOH   NaOH + ZnAct
(HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12) exceptions: VOA, coliform, TOC, TOX, TOH,		Initial when	Lab Std #ID of	Date/
O&G, WIDROW, Phenolics, OTHER:  Headspace in VOA Vials ( >6mm):	☐Yes ☐No ØN/A	completed	preservative	Time:
Trip Blank Present:	□Yes □No DAN/A			
Trip Blank Custody Seals Present	□Yes □No ØN/A	10.		
Pace Trip Blank Lot # (if purchased):	TIES TIMO METANA			
Client Notification/ Resolution:  Person Contacted:  Comments/ Resolution:	hestly.		checked, see attache	Day 6/11/13
Project Manager Review:	It for ta		Date:	Ce[12]/3





Green Bay, WI 54302 (920)469-2436

August 05, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

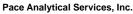
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

### **CERTIFICATIONS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



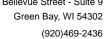


## **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079490001	MR1 AWS1	Tissue	06/08/13 00:00	06/10/13 15:30
4079490002	MR1 AWS2	Tissue	06/08/13 00:00	06/10/13 15:30
4079490003	MR1 AWS3	Tissue	06/08/13 00:00	06/10/13 15:30
4079490004	MR1 AWS4	Tissue	06/08/13 00:00	06/10/13 15:30
4079490005	MR1 AWS5	Tissue	06/08/13 00:00	06/10/13 15:30
4079490006	MR1 AWS6	Tissue	06/08/13 00:00	06/10/13 15:30
4079490007	MR1 AWS7	Tissue	06/08/13 00:00	06/10/13 15:30
4079490008	MR1 AWS8	Tissue	06/08/13 00:00	06/10/13 15:30
4079490009	MR1 SMB1	Tissue	06/08/13 00:00	06/10/13 15:30
4079490010	MR1 SMB2	Tissue	06/08/13 00:00	06/10/13 15:30
4079490011	MR1 SMB3	Tissue	06/08/13 00:00	06/10/13 15:30
4079490012	MR1 SMB4	Tissue	06/08/13 00:00	06/10/13 15:30
4079490013	MR1 SMB5	Tissue	06/08/13 00:00	06/10/13 15:30
4079490014	MR1 SMB6	Tissue	06/08/13 00:00	06/10/13 15:30
4079490015	MR1 SMB7	Tissue	06/08/13 00:00	06/10/13 15:30
4079490016	MR1 SMB8	Tissue	06/08/13 00:00	06/10/13 15:30
4079490017	MR1 RB1	Tissue	06/08/13 00:00	06/10/13 15:30
4079490018	MR1 RB2	Tissue	06/08/13 00:00	06/10/13 15:30
4079490019	MR1 RB3	Tissue	06/08/13 00:00	06/10/13 15:30
4079490020	MR1 RB4	Tissue	06/08/13 00:00	06/10/13 15:30



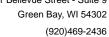


## **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Pace Gender Typing	Lab ID	Sample ID	Method	Analysts	Analytes Reported
Pace Lipid   ABF   1	4079490001	MR1 AWS1	EPA 8082	BLM	10
MR1 AWS2   EPA 8082   BLM   10			Pace Gender Typing	ABF	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid	4079490002	MR1 AWS2	EPA 8082	BLM	10
MR1 AWS3   EPA 8082   BLM   10			Pace Gender Typing	ABF	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid	4079490003	MR1 AWS3	EPA 8082	BLM	10
MR1 AWS4   EPA 8082   BLM   10			Pace Gender Typing	ABF	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid   ABF   1   1   1   1   1   1   1   1   1	4079490004	MR1 AWS4	EPA 8082	BLM	10
MR1 AWS5   EPA 8082   BLM   10			Pace Gender Typing	ABF	1
Pace Gender Typing			Pace Lipid	ABF	1
Pace Lipid ABF 1 4079490006 MR1 AWS6 EPA 8082 BLM 10 4079490007 MR1 AWS7 EPA 8082 BLM 10 4079490007 MR1 AWS7 EPA 8082 BLM 10 4079490008 MR1 AWS8 EPA 8082 BLM 10 4079490008 MR1 AWS8 EPA 8082 BLM 10 4079490009 MR1 SMB1 EPA 8082 BLM 10 4079490000 MR1 SMB1 EPA 8082 BLM 10 4079490000 MR1 SMB1 EPA 8082 BLM 10 4079490010 MR1 SMB2 EPA 8082 BLM 10 4079490010 MR1 SMB3 EPA 8082 BLM 10 4079490011 MR1 SMB3 EPA 8082 BLM 10 4079490011 MR1 SMB3 EPA 8082 BLM 10 4079490012 Pace Gender Typing ABF 1 4079490012 BLM 10 4079490012 ABF 1 4079490010 ABF 1 4079490010 ABF 1 4079490010 ABF 1 4079490010 ABF 1 4	4079490005	MR1 AWS5	EPA 8082	BLM	10
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4079490011         MR1 SMB3         EPA 8082         BLM         10           Pace Gender Typing         ABF         1           Pace Lipid         ABF         1           4079490012         MR1 SMB4         EPA 8082         BLM         10           Pace Gender Typing         ABF         1           Pace Lipid         ABF         1           Pace Lipid         ABF         1			Pace Gender Typing	ABF	1
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Pace Gender Typing ABF 1 Pace Lipid ABF 1			Pace Lipid	ABF	1
Pace Lipid ABF 1	4079490012	MR1 SMB4	EPA 8082	BLM	10
·			Pace Gender Typing	ABF	1
<b>4079490013 MR1 SMB5</b> EPA 8082 BLM 10			Pace Lipid	ABF	1
	4079490013	MR1 SMB5	EPA 8082	BLM	10



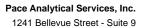


## **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079490014	MR1 SMB6	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079490015	MR1 SMB7	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
1079490016	MR1 SMB8	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079490017	MR1 RB1	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079490018	MR1 RB2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079490019	MR1 RB3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079490020	MR1 RB4	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



Green Bay, WI 54302 (920)469-2436



### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18943

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MR1 AWS4 (Lab ID: 4079490004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

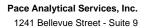
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



Green Bay, WI 54302 (920)469-2436



### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

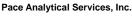
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

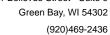
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS1 Lab ID: 4079490001 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>569</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>421</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>56.7J</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	11096-82-5	
PCB, Total	<b>1050</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/16/13 21:28	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		4	07/11/13 12:00	07/16/13 21:28	877-09-8	
Decachlorobiphenyl (S)	79 %	62-130		4	07/11/13 12:00	07/16/13 21:28	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:32		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	2.9 %			1		07/15/13 07:16		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS2 Lab ID: 4079490002 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>386</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>215</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>27.1J</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	11096-82-5	
PCB, Total	<b>628</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 22:20	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		2	07/11/13 12:00	07/16/13 22:20	877-09-8	
Decachlorobiphenyl (S)	79 %	62-130		2	07/11/13 12:00	07/16/13 22:20	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Method:	Pace Lipid						
Lipid	2.9 %			1		07/15/13 07:16		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS3 Lab ID: 4079490003 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical I	Method: EPA	.8082 Prepai	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1100</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>547</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	11096-82-5	
PCB, Total	<b>1650</b> ug	g/kg	100	50.0	4	07/11/13 12:00	07/16/13 22:37	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	83 %		44-130		4	07/11/13 12:00	07/16/13 22:37	877-09-8	
Decachlorobiphenyl (S)	84 %		62-130		4	07/11/13 12:00	07/16/13 22:37	2051-24-3	
Fish Gender Typing	Analytical I	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:32		
Lipid	Analytical I	Method: Pac	e Lipid						
Lipid	3.8 %				1		07/15/13 07:17		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS4 Lab ID: 4079490004 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;188</b> ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2170</b> ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2420</b> ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>281J</b> ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	11096-82-5	
PCB, Total	<b>4870</b> ug/kg	375	188	15	07/11/13 12:00	07/16/13 22:55	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	07/11/13 12:00	07/16/13 22:55	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	07/11/13 12:00	07/16/13 22:55	2051-24-3	S4
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	4.0 %			1		07/15/13 07:17		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS5 Lab ID: 4079490005 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>438</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>258</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>27.7J</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	11096-82-5	
PCB, Total	<b>724</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/16/13 23:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		2	07/11/13 12:00	07/16/13 23:12	877-09-8	
Decachlorobiphenyl (S)	79 %	62-130		2	07/11/13 12:00	07/16/13 23:12	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	3.5 %			1		07/15/13 07:17		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS6 Lab ID: 4079490006 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>987</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>724</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	11096-82-5	
PCB, Total	<b>1710</b> ug/kg	125	62.5	5	07/11/13 12:00	07/16/13 23:29	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	74 %	44-130		5	07/11/13 12:00	07/16/13 23:29	877-09-8	
Decachlorobiphenyl (S)	74 %	62-130		5	07/11/13 12:00	07/16/13 23:29	2051-24-3	
Fish Gender Typing	Analytical Met	nod: Pace Gender Tyր	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Met	nod: Pace Lipid						
Lipid	3.9 %			1		07/15/13 07:17		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS7 Lab ID: 4079490007 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1340</b> ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1200</b> ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	11096-82-5	
PCB, Total	<b>2540</b> ug/kg	250	125	10	07/11/13 12:00	07/16/13 23:46	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		10	07/11/13 12:00	07/16/13 23:46	877-09-8	
Decachlorobiphenyl (S)	78 %	62-130		10	07/11/13 12:00	07/16/13 23:46	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	3.5 %			1		07/15/13 07:17		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 AWS8 Lab ID: 4079490008 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>638</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>449</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	11096-82-5	
PCB, Total	<b>1090</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:04	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	86 %	6	44-130		4	07/11/13 12:00	07/17/13 00:04	877-09-8	
Decachlorobiphenyl (S)	85 %	6	62-130		4	07/11/13 12:00	07/17/13 00:04	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:32		
Lipid	Analytical	Method: Pad	e Lipid						
Lipid	2.9 %	6			1		07/15/13 07:17		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

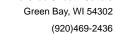
Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB1 Lab ID: 4079490009 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2000</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1810</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>189J</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	11096-82-5	
PCB, Total	<b>4000</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 00:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		10	07/11/13 12:00	07/17/13 00:21	877-09-8	
Decachlorobiphenyl (S)	84 %	62-130		10	07/11/13 12:00	07/17/13 00:21	2051-24-3	
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:32		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	1.5 %			1		07/15/13 07:17		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB2 Lab ID: 4079490010 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>620</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>647</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>134</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	11096-82-5	
PCB, Total	<b>1400</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 00:38	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	84 %	44-130		4	07/11/13 12:00	07/17/13 00:38	877-09-8	
Decachlorobiphenyl (S)	83 %	62-130		4	07/11/13 12:00	07/17/13 00:38	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:32		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	1.1 %			1		07/15/13 07:18		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB3 Lab ID: 4079490011 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results I	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>748</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>718</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>102</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	11096-82-5	
PCB, Total	<b>1570</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 01:30	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	71 %	44-130		4	07/11/13 12:00	07/17/13 01:30	877-09-8	
Decachlorobiphenyl (S)	78 %	62-130		4	07/11/13 12:00	07/17/13 01:30	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	ping					
Gender	Female			1		07/10/13 11:32		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.78 %			1		07/15/13 07:18		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB4 Lab ID: 4079490012 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2110</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2170</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>237J</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	11096-82-5	
PCB, Total	<b>4510</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 01:47	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	71 %	44-130		10	07/11/13 12:00	07/17/13 01:47	877-09-8	
Decachlorobiphenyl (S)	78 %	62-130		10	07/11/13 12:00	07/17/13 01:47	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	1.8 %			1		07/15/13 07:18		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB5 Lab ID: 4079490013 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1370</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1310</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>150J</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	11096-82-5	
PCB, Total	<b>2840</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:05	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	71 %	44-130		10	07/11/13 12:00	07/17/13 02:05	877-09-8	
Decachlorobiphenyl (S)	77 %	62-130		10	07/11/13 12:00	07/17/13 02:05	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.57 %			1		07/15/13 07:18		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

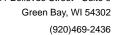
Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB6 Lab ID: 4079490014 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytica	l Method: EPA	A 8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> (	ıg/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ∪	ıg/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> (	ug/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;25.0</b> (	ug/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>287</b> (	ug/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>324</b> (		50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>51.4</b> (	ug/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	11096-82-5	
PCB, Total	<b>662</b> (	ug/kg	50.0	25.0	2	07/11/13 12:00	07/17/13 02:22	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	76 9	%	44-130		2	07/11/13 12:00	07/17/13 02:22	877-09-8	
Decachlorobiphenyl (S)	77 9	%	62-130		2	07/11/13 12:00	07/17/13 02:22	2051-24-3	
Fish Gender Typing	Analytica	l Method: Pad	ce Gender Typ	ing					
Gender	Female				1		07/10/13 11:32		
Lipid	Analytica	l Method: Pac	ce Lipid						
Lipid	0.080	%			1		07/15/13 07:18		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB7 Lab ID: 4079490015 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<12.5 ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<12.5 ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>138</b> ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<12.5 ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>185</b> ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>27.6</b> ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	11096-82-5	
PCB, Total	<b>351</b> ug/kg	25.0	12.5	1	07/11/13 12:00	07/17/13 02:39	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		1	07/11/13 12:00	07/17/13 02:39	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		1	07/11/13 12:00	07/17/13 02:39	2051-24-3	
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:32		
Lipid	Analytical Method	: Pace Lipid						
Lipid	0.035 %			1		07/15/13 07:19		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 SMB8 Lab ID: 4079490016 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2020</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1480</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	11096-82-5	
PCB, Total	<b>3500</b> ug/kg	250	125	10	07/11/13 12:00	07/17/13 02:56	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		10	07/11/13 12:00	07/17/13 02:56	877-09-8	
Decachlorobiphenyl (S)	82 %	62-130		10	07/11/13 12:00	07/17/13 02:56	2051-24-3	
Fish Gender Typing	Analytical Method:	: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Method:	: Pace Lipid						
Lipid	0.79 %			1		07/15/13 07:18		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 RB1 Lab ID: 4079490017 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/ł	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/k	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/k	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;37.5</b> ug/k	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>545</b> ug/k	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>465</b> ug/k	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>58.6J</b> ug/l	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	11096-82-5	
PCB, Total	<b>1070</b> ug/k	rg 75.0	37.5	3	07/11/13 12:00	07/17/13 03:14	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	86 %	44-130		3	07/11/13 12:00	07/17/13 03:14	877-09-8	
Decachlorobiphenyl (S)	86 %	62-130		3	07/11/13 12:00	07/17/13 03:14	2051-24-3	
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Female			1		07/10/13 11:32		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	0.27 %			1		07/15/13 07:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 RB2 Lab ID: 4079490018 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>638</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>546</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>63.3J</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	11096-82-5	
PCB, Total	<b>1250</b> ug/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	80 %	44-130		4	07/11/13 12:00	07/17/13 03:31	877-09-8	
Decachlorobiphenyl (S)	85 %	62-130		4	07/11/13 12:00	07/17/13 03:31	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	ping					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	0.60 %			1		07/15/13 07:19		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

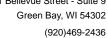
Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 RB3 Lab ID: 4079490019 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>503</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>463</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	11096-82-5	
PCB, Total	<b>966</b> U	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 03:48	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	79 %	%	44-130		4	07/11/13 12:00	07/17/13 03:48	877-09-8	
Decachlorobiphenyl (S)	82 %	%	62-130		4	07/11/13 12:00	07/17/13 03:48	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:32		
Lipid	Analytical	Method: Pad	e Lipid						
Lipid	0.56 %	%			1		07/15/13 07:19		





Project: SR13-001 2013 FISH SAMPLING

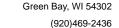
Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Sample: MR1 RB4 Lab ID: 4079490020 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> (	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>830</b> ເ	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>678</b> ι	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	11096-82-5	
PCB, Total	<b>1510</b> ւ	ıg/kg	100	50.0	4	07/11/13 12:00	07/17/13 04:05	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	80 %	%	44-130		4	07/11/13 12:00	07/17/13 04:05	877-09-8	
Decachlorobiphenyl (S)	85 %	%	62-130		4	07/11/13 12:00	07/17/13 04:05	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:32		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	0.32	%			1		07/15/13 07:20		





## **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

QC Batch: OEXT/18943 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079490001, 4079490002, 4079490003, 4079490004, 4079490005, 4079490006, 4079490007, 4079490008,

4079490009, 4079490010, 4079490011, 4079490012, 4079490013, 4079490014, 4079490015, 4079490016,

4079490017, 4079490018, 4079490019, 4079490020

METHOD BLANK: 820821 Matrix: Tissue

Associated Lab Samples: 4079490001, 4079490002, 4079490003, 4079490004, 4079490005, 4079490006, 4079490007, 4079490008,

4079490009, 4079490010, 4079490011, 4079490012, 4079490013, 4079490014, 4079490015, 4079490016,

4079490017, 4079490018, 4079490019, 4079490020

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/16/13 20:19	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/16/13 20:19	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/16/13 20:19	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/16/13 20:19	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/16/13 20:19	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/16/13 20:19	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/16/13 20:19	
Decachlorobiphenyl (S)	%	66	62-130	07/16/13 20:19	
Tetrachloro-m-xylene (S)	%	67	44-130	07/16/13 20:19	

LABORATORY CONTROL SAMPLE:	820822					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	224	90	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			83	62-130	
Tetrachloro-m-xylene (S)	%			85	44-130	

	40	079490001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<50.0			<50.0	<50.0					24	
PCB-1221 (Aroclor 1221)	ug/kg	<50.0			<50.0	<50.0					24	
PCB-1232 (Aroclor 1232)	ug/kg	<50.0			<50.0	<50.0					24	
PCB-1242 (Aroclor 1242)	ug/kg	<50.0	1000	1000	994	1140	99	114	27-163	14	24	
PCB-1248 (Aroclor 1248)	ug/kg	569			<50.0	<50.0					24	
PCB-1254 (Aroclor 1254)	ug/kg	421			421	499				17	24	
PCB-1260 (Aroclor 1260)	ug/kg	56.7J			<50.0	57.9J					24	
Decachlorobiphenyl (S)	%						72	82	62-130			
Tetrachloro-m-xylene (S)	%						72	83	44-130			

Green Bay, WI 54302 (920)469-2436



## **QUALITY CONTROL DATA**

SR13-001 2013 FISH SAMPLING Project:

Pace Project No.: 4079490

QC Batch: OEXT/18961 Analysis Method: Pace Lipid QC Batch Method: Pace Lipid Analysis Description:

4079490001, 4079490002, 4079490003, 4079490004, 4079490005, 4079490006, 4079490007, 4079490008, Associated Lab Samples:

4079490009, 4079490010, 4079490011, 4079490012, 4079490013, 4079490014, 4079490015, 4079490016,

4079490017, 4079490018, 4079490019, 4079490020

METHOD BLANK: 821794 Matrix: Tissue

Associated Lab Samples: 4079490001, 4079490002, 4079490003, 4079490004, 4079490005, 4079490006, 4079490007, 4079490008,

4079490009, 4079490010, 4079490011, 4079490012, 4079490013, 4079490014, 4079490015, 4079490016,

4079490017, 4079490018, 4079490019, 4079490020

Blank Reporting Units Result Limit Analyzed

Qualifiers % Lipid 1.0 07/15/13 07:16

SAMPLE DUPLICATE: 821795

Date: 08/05/2013 08:49 AM

Parameter

4079490001 Dup Max RPD Parameter Units Result Result **RPD** Qualifiers 2.9 % 2.8 20 Lipid 4





## **QUALIFIERS**

Project: **SR13-001 2013 FISH SAMPLING** 

Pace Project No.: 4079490

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

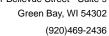
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## **ANALYTE QUALIFIERS**

Date: 08/05/2013 08:49 AM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





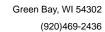
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079490001	MR1 AWS1	EPA 3540	OEXT/18943	EPA 8082	GCSV/9860
1079490002	MR1 AWS2	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490003	MR1 AWS3	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490004	MR1 AWS4	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490005	MR1 AWS5	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490006	MR1 AWS6	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490007	MR1 AWS7	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490008	MR1 AWS8	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490009	MR1 SMB1	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490010	MR1 SMB2	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490011	MR1 SMB3	EPA 3540	OEXT/18943	EPA 8082	GCSV/986
1079490012	MR1 SMB4	EPA 3540	OEXT/18943		GCSV/986
1079490013	MR1 SMB5	EPA 3540	OEXT/18943	EPA 8082	GCSV/9860
1079490014	MR1 SMB6	EPA 3540	OEXT/18943		GCSV/9860
1079490015	MR1 SMB7	EPA 3540	OEXT/18943		GCSV/9860
1079490016	MR1 SMB8	EPA 3540	OEXT/18943		GCSV/9860
1079490017	MR1 RB1	EPA 3540	OEXT/18943		GCSV/986
1079490018	MR1 RB2	EPA 3540	OEXT/18943		GCSV/986
1079490019	MR1 RB3	EPA 3540	OEXT/18943		GCSV/986
079490020	MR1 RB4	EPA 3540	OEXT/18943		GCSV/986
079490001	MR1 AWS1	Pace Gender Typing	GRND/2590		
079490002	MR1 AWS2	Pace Gender Typing	GRND/2590		
079490003	MR1 AWS3	Pace Gender Typing	GRND/2590		
1079490004	MR1 AWS4	Pace Gender Typing	GRND/2590		
1079490005	MR1 AWS5	Pace Gender Typing	GRND/2590		
1079490006	MR1 AWS6	Pace Gender Typing	GRND/2590		
1079490007	MR1 AWS7	Pace Gender Typing	GRND/2590		
1079490008	MR1 AWS8	Pace Gender Typing	GRND/2590		
1079490009	MR1 SMB1	Pace Gender Typing	GRND/2590		
1079490010	MR1 SMB2	Pace Gender Typing	GRND/2590		
1079490011	MR1 SMB3	Pace Gender Typing	GRND/2590		
1079490012	MR1 SMB4	Pace Gender Typing	GRND/2593		
1079490013	MR1 SMB5	Pace Gender Typing	GRND/2593		
1079490014	MR1 SMB6	Pace Gender Typing	GRND/2590		
1079490015	MR1 SMB7	Pace Gender Typing	GRND/2590		
1079490016	MR1 SMB8	Pace Gender Typing	GRND/2590		
1079490017	MR1 RB1	Pace Gender Typing	GRND/2590		
1079490018	MR1 RB2	Pace Gender Typing	GRND/2590		
1079490019	MR1 RB3	Pace Gender Typing	GRND/2590		
079490020	MR1 RB4	Pace Gender Typing	GRND/2590		
1079490001	MR1 AWS1	Pace Lipid	OEXT/18961		
1079490002	MR1 AWS2	Pace Lipid	OEXT/18961		
1079490003	MR1 AWS3	Pace Lipid	OEXT/18961		
1079490004	MR1 AWS4	Pace Lipid	OEXT/18961		
1079490005	MR1 AWS5	Pace Lipid	OEXT/18961		
1079490006	MR1 AWS6	Pace Lipid	OEXT/18961		
4079490007	MR1 AWS7	Pace Lipid	OEXT/18961		





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079490

Date: 08/05/2013 08:49 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079490008	MR1 AWS8	Pace Lipid	OEXT/18961		
4079490009	MR1 SMB1	Pace Lipid	OEXT/18961		
4079490010	MR1 SMB2	Pace Lipid	OEXT/18961		
4079490011	MR1 SMB3	Pace Lipid	OEXT/18961		
4079490012	MR1 SMB4	Pace Lipid	OEXT/18961		
4079490013	MR1 SMB5	Pace Lipid	OEXT/18961		
4079490014	MR1 SMB6	Pace Lipid	OEXT/18961		
4079490015	MR1 SMB7	Pace Lipid	OEXT/18961		
4079490016	MR1 SMB8	Pace Lipid	OEXT/18961		
4079490017	MR1 RB1	Pace Lipid	OEXT/18961		
4079490018	MR1 RB2	Pace Lipid	OEXT/18961		
4079490019	MR1 RB3	Pace Lipid	OEXT/18961		
4079490020	MR1 RB4	Pace Lipid	OEXT/18961		

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Sampled By (	(Print): Mark Mather	·····	PRESER (CO		Pick Letter									Invoice To Contact:	Goldie Sha	rp		
Sampled By (		**************************************			ba									Invoice To Company:	As Above			
PO #:		egulatory Program:			Requested		S							Invoice To Address:	7870 Kemp	er Road, Su	ite 240,	
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☐ EP	A Level III   La On your sample   B =   C =	Biota Charcoal	DW = Drinki GW = Grout SW = Surfa	nd Water	nalyses l	8082	RVAT							Invoice To Phone:	513-489-67	'89	,	
PACE LAB#	A Level IV NOT needed on your sample SI=	Soil Sludge	WW = Was WP = Wipe ECTION TIME	te Water	Analy	PCB - 8	PRESERVATIVES							CLIENT COMMENTS	ı	OMMENTS Jse Only)	S Pro	ofile#
00/	MR1 AWS1	6/8/13	1445	Tissue		×	A							Whole Fish Sample	<u> </u>	-pale	haa	A
007	MR1 AWS2	6/8/13		Tissue		Х	Α									Pour		
003	MR1 AWS3	6/8/13		Tissue		Х	Α											
004	MR1 AWS4	6/8/13		Tissue		Х	Α			w.v				And the second s				
005	MR1 AWS5	6/8/13		Tissue		X	Α							- Mariana		,		
006	MR1 AWS6	6/8/13		Tissue		X	Α											
007	MR1 AWS7	6/8/13		Tissue		Х	Α											
008	MR1 AWS8	6/8/13		Tissue		Х	Α									$\overline{\phi}$		
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Telephone:	513-387-2778	Reli	nquished By:				Da	te/Time:			Received	I By:	W	Date/Time:		OK /	Adjusted	
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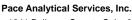
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:	2013 F	ish Sampling	****											Mail To Address:	7870 Kempe	er Road, Suite	240.
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Print):	Mark M	lather	·····	PRESE	RVATION	Pick Letter								Invoice To Contact:	Goldie Shar	9	
Sign):					·									Invoice To Company:	As Above	***************************************	
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A Leve		(billable)	C = Charcoal	GW = Grou	ind Water	i .	082	RVATI						Invoice To Phone:	513-489-678	39	**************************************
- Leve		your sample	S = Soil Si = Sludge co	WW = Was WP = Wipe LLECTION	ste Water	Anal	1	RESE						CLIENT COMMENTS	1		Profile #
100	G M	R1 SMB1			Tiesue		<del> </del>	A			<b>†</b>			Whole Fish Sample		77	4
		R1 SMB2					×	A							1 pe	<del>young</del>	
01	·	R1 SMB3			<del></del>		×	Α			<b></b>				<u> </u>	1	
DI	<b>2</b> M	R1 SMB4				-	X	Α									
DI		R1 SMB5			T		X	A		<b></b>			_				
DI	1 M	R1 SMB6					×	Α			<b>†</b>						· · · · · · · · · · · · · · · · · · ·
4	<del></del>	R1 SMB7					×	A			<b> </b>		<u> </u>				
<del></del>	<u>ر</u> M و	R1 SMB8			<b>1</b>		<del> </del>	A		<u> </u>							
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10	)				<b>†</b>		<b> </b>				ļ						
W. T.											<b>†</b>						
							<b> </b>		<b></b>		<b>†</b>					W	<del></del>
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								Da	ite/Time:	- 1 -				Date/Time:			<u>20°</u>
513-38	7-2778		Re	linguished By:				Da	te/Time:			Received By	·	Date/Time*		•	
		· · · · · · · · · · · · · · · · · · ·		,			****							23.5, 1110.		Cooler Cus	tody Seal
		•	Re	linquished By				Da	ite/Time:			Received By		Date/Time:		Intagt / No	
	rnaroi TAT si Immath  513-38	rmaround Time  CLIEF  OO M  O M  O M  O M  O M  O M  O M  O	ion: Sheboygan ict: Mark Mather 513-678-2137 or 513-387- ier: SR13-001 Task 10-02000 : 2013 Fish Sampling     Wiscoinsin  Print): Mark Mather Sign):    Ge Options   MS/MSD	Pollution Risk Services	Pollution Risk Services	me: Pollution Risk Services ion: Sheboygan ict: Mark Mather  513-678-2137 or 513-387-2778  per: SR13-001 Task 10-02000  : 2013 Fish Sampling  Wiscoinsin  Print): Mark Mather  Sign):    Regulatory Program:	me: Pollution Risk Services ion: Sheboygan  cet: Mark Mather  513-678-2137 or 513-387-2778  per: SR13-001 Task 10-02000  : 2013 Fish Sampling  Wiscoinsin  Print): Mark Mather  Regulatory Program:  Ge Options A Level III  A Level IV  MR1 SMB1  MR1 SMB2  MR1 SMB2  MR1 SMB2  MR1 SMB4  MR1 SMB4  MR1 SMB4  MR1 SMB5  MR1 SMB5  MR1 SMB6  MR1 SMB6  MR1 SMB6  MR1 SMB6  MR1 SMB7  MR1 SMB6  MR1 SMB7  MR1 SMB8  MR1 SMB7  MR1 SMB8  MR1 SMB8  MR1 SMB7  MR1 SMB8  MR1 SMB9  MR1 SMB9  MR1 SMB6  MR1 SMB6  MR1 SMB7  MR1 SMB8  MR1	me: Pollution Risk Services ion: Sheboygan  iot: Mark Mather  513-678-2137 or 513-387-2778  Eer: SR13-001 Task 10-02000  1: 2013 Fish Sampling  Wiscoinsin  Print): Mark Mather  Sign):    Regulatory Program:	me: Pollution Risk Services  ion: Sheboygan  ct: Mark Mather  513-678-2137 or 513-387-2778  rer: SR13-001 Task 10-02000  :: 2013 Fish Sampling  Wiscoinsin  Print): Mark Mather    Print): Mark Mather   Print): Mark Mather	me: Pollution Risk Services lon: Sheboygan lot: Mark Mather  513-678-2137 or 513-387-2778  lor: SR13-001 Task 10-02000  : 2013 Fish Sampling    Wiscoinsin	me: Pollution Risk Services ion: Sheboygan  ct: Mark Mather  513-678-2137 or 513-387-2778  eer: SR13-001 Task 10-02000  : 2013 Fish Sampling  Wiscoinsin  Print): Mark Mather  Sign):  Regulatory  Program:  Ge Options  ibit)  A Level III  A Level III  A Level IV  MR1 SMB1  GR13  GR13  GR13  GR13  GR13  GR13  GR3/13  GR	The image is a proper of the image is a proper	me: Pollution Risk Services  ion: Sheboygan  ct: Mark Mather  513-678-2137 or 513-387-2778  eer: SR13-001 Task 10-02000  : 2013 Fish Sampling  Print): Mark Mather  Wiscoinsin  Print): Mark Mather  Regulatory:    Polymen   Poly	me: Pollution Risk Services  lon: Sheboygan  ct: Mark Mather  513-678-2137 or 513-387-2778  eer: SR13-001 Task 10-02000  Print: Mark Mather  Wiscoinsin  Print: Mark Mather  Wiscoinsin  Print: Mark Mather  Wiscoinsin  Print: Mark Mather    Wiscoinsin   Print: Mark Mather   Preservices   Preservic	me: Pollution Risk Services  ion: Shebbygan  etc. Mark Mather  513-678-2137 or 513-387-2778  etc. SR13-001 Task 10-02000  1: 2013 Fish Sampling  Wiseoinsin  Print; Mark Mather  Find; Mark Mather  Print; Mar	Pollution Risk Services   Invoice To Company:   Mile 920-489-2438	Mail To Company   Piss - Assured Group   Mail To Contact:   Mark Mather   Mail To Contact:   Mark Mather   Mail To Company   Piss - Assured Group   Pis

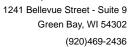


# Sample Condition Upon Receipt

Pace Analytical Services, Inc 1241 Bellevue Street, Suite § Green Bay, WI 54302

Client Name	e: <u>Pk</u>	25	>	_ Project #		4079490
Courier: Fed Ex T UPS T USPS T	Client Cor	nmer	cial 😿 Pace	Other		
Tracking #:		0	1-4-4	·		
Custody Seal on Cooler/Box Present: yes Custody Seal on Samples Present: yes	* *		intact:			
Packing Material:  Bubble Wrap  Bub			intact: yes Other	1 no		
Thermometer Used SR13	-		Blue Dry None	Samples on	ica coo	ling process has begun
Cooler Temperature Uncorr: 20 /Corred	177	//	, -	ozen: Tyes 6/1/	/	ing process has begun
Temp Blank Present: Tyes (2000)			-	(Eno)		on examining contents:
Temp should be above freezing to 6°C for all sample ex	cept Biota.				Date: Initia	6-11-13
Frozen Biota Samples should be received ≤ 0°C.			Comments:			5.
Chain of Custody Present:	X Yes □No	□n/a	1.			
Chain of Custody Filled Out:	Ø Yes □ No	□n/a	2.			
Chain of Custody Relinquished:	<del>√</del> Yes □No	□N/A	3.			
Sampler Name & Signature on COC:	□Yes ☑No	□n/a	4.			
Samples Arrived within Hold Time:	15√E¥es □No I	□n/a	5.			
- VOA Samples frozen upon receipt	□Yes □No		Date/Time:			
Short Hold Time Analysis (<72hr):	□Yes ☑Ño I	□N/A	6.			
Rush Turn Around Time Requested:	□Yes ☑No I	□n/a	7.			
Sufficient Volume:	<b>Æ</b> Yes □No [	□N/A	8			
Correct Containers Used:	√Yes □No [	□n/a	9.			
-Pace Containers Used:	□Yes ØNo [	□N/A				
-Pace IR Containers Used:	□Yes □No [	A/M/A				
Containers Intact:	yes □No [	□n/a	10.			
Filtered volume received for Dissolved tests	□Yes □No [	ZİN/A	11.			
Sample Labels match COC:	ĎAYes □No [	□N/A	12.			
-Includes date/time/ID/Analysis Matrix:	B	.				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No 🎉	MN/A	HNO3	H2SO4	NaOl	I
All containers needing preservation are found to be in			13.	•		
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No 🎉	ZNA			1	
exceptions: VOA, coliform, TOC, TOX, TOH,		- 1	nitial when	Lab Std #ID of		Date/
O&G, WIDROW, Phenolics, OTHER:	□Yes (ANO		completed	preservative		Time:
Headspace in VOA Vials ( >6mm):		M/A	· · · · · · · · · · · · · · · · · · ·			
Trip Blank Present:		Ø(N/A )	15.			
Trip Blank Custody Seals Present	□Yes □No 🖟	ŽIN/A				
Pace Trip Blank Lot # (if purchased): Client Notification/ Resolution:			If A	chacked see attached	d form fo	or additional comments
Person Contacted:	, D	Date/Ti		onconca, see attachet	O	additional dominionto
Comments/ Resolution: + + >	Bestle	y,	(augh)	& Same of	oe,	7
· /		//			9	6/11/13
· · · · · · · · · · · · · · · · · · ·		<u></u>				SUL_
Project Manager Review:	MIT	In	CIN	Date:	6	12.13
	•	1	· •			Page 37 of 37







August 05, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

## Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

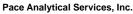
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



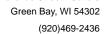


# **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079491001	IH AC1	Tissue	06/10/13 00:00	06/10/13 15:30
4079491002	IH AC2	Tissue	06/10/13 00:00	06/10/13 15:30
4079491003	IH AC3	Tissue	06/10/13 00:00	06/10/13 15:30
4079491004	IH AC4	Tissue	06/10/13 00:00	06/10/13 15:30
4079491005	IH AC5	Tissue	06/10/13 00:00	06/10/13 15:30
4079491006	IH AC6	Tissue	06/10/13 00:00	06/10/13 15:30
4079491007	IH AC7	Tissue	06/10/13 00:00	06/10/13 15:30
4079491008	IH AWS1	Tissue	06/10/13 00:00	06/10/13 15:30
4079491009	IH AWS2	Tissue	06/10/13 00:00	06/10/13 15:30
4079491010	IH AWS3	Tissue	06/10/13 00:00	06/10/13 15:30
4079491011	IH AWS4	Tissue	06/10/13 00:00	06/10/13 15:30
4079491012	IH AWS5	Tissue	06/10/13 00:00	06/10/13 15:30
4079491013	IH AWS6	Tissue	06/10/13 00:00	06/10/13 15:30
4079491014	IH AWS7	Tissue	06/10/13 00:00	06/10/13 15:30
4079491015	IH AWS8	Tissue	06/10/13 00:00	06/10/13 15:30
4079491016	IH SMB1	Tissue	06/10/13 00:00	06/10/13 15:30
4079491017	IH SMB2	Tissue	06/10/13 00:00	06/10/13 15:30
4079491018	IH SMB3	Tissue	06/10/13 00:00	06/10/13 15:30
4079491019	IH SMB4	Tissue	06/10/13 00:00	06/10/13 15:30
4079491020	IH SMB5	Tissue	06/10/13 00:00	06/10/13 15:30



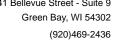


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079491001	IH AC1	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491002	IH AC2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491003	IH AC3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491004	IH AC4	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491005	IH AC5	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491006	IH AC6	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491007	IH AC7	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491008	IH AWS1	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491009	IH AWS2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491010	IH AWS3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491011	IH AWS4	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491012	IH AWS5	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079491013	IH AWS6	EPA 8082	BLM	10



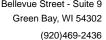


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

_ab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
1079491014	IH AWS7	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
1079491015	IH AWS8	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
1079491016	IH SMB1	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079491017	IH SMB2	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079491018	IH SMB3	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079491019	IH SMB4	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079491020	IH SMB5	EPA 8082	BLM	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1





## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

### **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

## Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

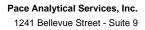
## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/18944

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- IH AC1 (Lab ID: 4079491001)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH AC2 (Lab ID: 4079491002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH AC3 (Lab ID: 4079491003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH AC4 (Lab ID: 4079491004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH AC5 (Lab ID: 4079491005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH AC6 (Lab ID: 4079491006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH AC7 (Lab ID: 4079491007)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MS (Lab ID: 820831)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MSD (Lab ID: 820832)



Green Bay, WI 54302 (920)469-2436



## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 05, 2013

QC Batch: OEXT/18944

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

Decachlorobiphenyl (S)Tetrachloro-m-xylene (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/18944

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 4079491001

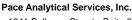
M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 820831)
  - PCB-1254 (Aroclor 1254)
- MSD (Lab ID: 820832)
  - PCB-1254 (Aroclor 1254)

## **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

## **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

## **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

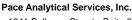
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

# Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 05, 2013

## **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

## Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

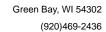
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC1 Lab ID: 4079491001 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>9200</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>8470</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	11097-69-1	M6
PCB-1260 (Aroclor 1260)	<b>1060J</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	11096-82-5	
PCB, Total	<b>18700</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 06:51	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/11/13 12:00	07/26/13 06:51	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/11/13 12:00	07/26/13 06:51	2051-24-3	S4
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	16.2 %			1		07/15/13 07:10		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

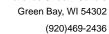
Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC2 Lab ID: 4079491002 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> t	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ≀		750	375	30	07/11/13 12:00	07/26/13 07:09	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ≀	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ≀	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5870</b> ι	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3560</b> ს	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>540J</b> ι	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	11096-82-5	
PCB, Total	<b>9960</b> ເ	ıg/kg	750	375	30	07/11/13 12:00	07/26/13 07:09	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	%	44-130		30	07/11/13 12:00	07/26/13 07:09	877-09-8	S4
Decachlorobiphenyl (S)	0 %	%	62-130		30	07/11/13 12:00	07/26/13 07:09	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:37		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	10.4 %	%			1		07/15/13 07:12		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC3 Lab ID: 4079491003 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>9130</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5240</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>789J</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	11096-82-5	
PCB, Total	<b>15200</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:29	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/11/13 12:00	07/26/13 07:29	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/11/13 12:00	07/26/13 07:29	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Method:	Pace Lipid						
Lipid	34.2 %			1		07/15/13 07:12		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC4 Lab ID: 4079491004 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>13700</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9820</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>1220J</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	11096-82-5	
PCB, Total	<b>24700</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 07:48	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/11/13 12:00	07/26/13 07:48	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/11/13 12:00	07/26/13 07:48	2051-24-3	S4
Fish Gender Typing	Analytical Method	d։ Pace Gender Tyր	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	29.7 %			1		07/15/13 07:12		





Project: SR13-001 2013 FISH SAMPLING

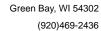
Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC5 Lab ID: 4079491005 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>8180</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5300</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>683J</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	11096-82-5	
PCB, Total	<b>14200</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 08:07	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/11/13 12:00	07/26/13 08:07	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/11/13 12:00	07/26/13 08:07	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Method:	Pace Lipid						
Lipid	13.9 %			1		07/15/13 07:13		





Project: SR13-001 2013 FISH SAMPLING

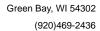
Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC6 Lab ID: 4079491006 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>9190</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6510</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>640J</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	11096-82-5	
PCB, Total	<b>16300</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:03	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/11/13 12:00	07/26/13 09:03	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/11/13 12:00	07/26/13 09:03	2051-24-3	S4
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	ping					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	14.8 %			1		07/15/13 07:13		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AC7 Lab ID: 4079491007 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5460</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5120</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>772J</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	11096-82-5	
PCB, Total	<b>11300</b> ug/kg	1250	625	50	07/11/13 12:00	07/26/13 09:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/11/13 12:00	07/26/13 09:21	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/11/13 12:00	07/26/13 09:21	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Method:	Pace Lipid						
Lipid	18.9 %			1		07/15/13 07:13		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

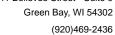
Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS1 Lab ID: 4079491008 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>304</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>412</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	11096-82-5	
PCB, Total	<b>717</b> ug/kg	g 100	50.0	4	07/11/13 12:00	07/26/13 09:40	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	84 %	44-130		4	07/11/13 12:00	07/26/13 09:40	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		4	07/11/13 12:00	07/26/13 09:40	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	1.5 %			1		07/15/13 07:13		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS2 Lab ID: 4079491009 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>211</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>291</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;37.5</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	11096-82-5	
PCB, Total	<b>501</b> ug/k	g 75.0	37.5	3	07/11/13 12:00	07/26/13 09:59	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		3	07/11/13 12:00	07/26/13 09:59	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		3	07/11/13 12:00	07/26/13 09:59	2051-24-3	
Fish Gender Typing	Analytical Me	ethod: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	0.98 %			1		07/15/13 07:13		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS3 Lab ID: 4079491010 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	8082 Prepai	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>618</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1090</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>129</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	11096-82-5	
PCB, Total	<b>1840</b> ug	g/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:17	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	78 %		44-130		5	07/11/13 12:00	07/26/13 10:17	877-09-8	
Decachlorobiphenyl (S)	86 %		62-130		5	07/11/13 12:00	07/26/13 10:17	2051-24-3	
Fish Gender Typing	Analytical I	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:37		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	1.3 %				1		07/15/13 07:13		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS4 Lab ID: 4079491011 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>185</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>276</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;37.5</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	11096-82-5	
PCB, Total	<b>461</b> ug/kg	75.0	37.5	3	07/11/13 12:00	07/26/13 10:36	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		3	07/11/13 12:00	07/26/13 10:36	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		3	07/11/13 12:00	07/26/13 10:36	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	1.4 %			1		07/15/13 07:13		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS5 Lab ID: 4079491012 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>382</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>559</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	11096-82-5	
PCB, Total	<b>941</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 10:54	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	79 %	44-130		5	07/11/13 12:00	07/26/13 10:54	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		5	07/11/13 12:00	07/26/13 10:54	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	2.6 %			1		07/15/13 07:13		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS6 Lab ID: 4079491013 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1040</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>906</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>93.0J</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	11096-82-5	
PCB, Total	<b>2030</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 11:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		5	07/11/13 12:00	07/26/13 11:12	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		5	07/11/13 12:00	07/26/13 11:12	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:32		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	2.2 %			1		07/15/13 07:14		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS7 Lab ID: 4079491014 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>217</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>126</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	11096-82-5	
PCB, Total	<b>343</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	88 %	44-130		2	07/11/13 12:00	07/26/13 11:31	877-09-8	
Decachlorobiphenyl (S)	91 %	62-130		2	07/11/13 12:00	07/26/13 11:31	2051-24-3	
Fish Gender Typing	Analytical Methor	od: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Methor	od: Pace Lipid						
Lipid	2.4 %			1		07/15/13 07:14		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH AWS8 Lab ID: 4079491015 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>173</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;25.0</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>187</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>80.2</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	11096-82-5	
PCB, Total	<b>440</b> ug/kg	50.0	25.0	2	07/11/13 12:00	07/26/13 11:49	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	82 %	44-130		2	07/11/13 12:00	07/26/13 11:49	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		2	07/11/13 12:00	07/26/13 11:49	2051-24-3	
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Method	: Pace Lipid						
Lipid	2.3 %			1		07/15/13 07:14		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH SMB1 Lab ID: 4079491016 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1180</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1040</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>204</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	11096-82-5	
PCB, Total	<b>2430</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:07	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		5	07/11/13 12:00	07/26/13 12:07	877-09-8	
Decachlorobiphenyl (S)	93 %	62-130		5	07/11/13 12:00	07/26/13 12:07	2051-24-3	
Fish Gender Typing	Analytical Methor	od: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Methor	od: Pace Lipid						
Lipid	2.4 %			1		07/15/13 07:14		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH SMB2 Lab ID: 4079491017 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units		LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	nod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>625</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>519</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>107</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	11096-82-5	
PCB, Total	<b>1250</b> ug/kg	100	50.0	4	07/11/13 12:00	07/26/13 12:25	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	87 %	44-130		4	07/11/13 12:00	07/26/13 12:25	877-09-8	
Decachlorobiphenyl (S)	93 %	62-130		4	07/11/13 12:00	07/26/13 12:25	2051-24-3	
Fish Gender Typing	Analytical Met	nod: Pace Gender Tyր	ping					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Met	nod: Pace Lipid						
Lipid	1.9 %			1		07/15/13 07:14		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

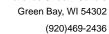
Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH SMB3 Lab ID: 4079491018 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Inits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>975</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>796</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>191</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	11096-82-5	
PCB, Total	<b>1960</b> ug/kg	125	62.5	5	07/11/13 12:00	07/26/13 12:44	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		5	07/11/13 12:00	07/26/13 12:44	877-09-8	
Decachlorobiphenyl (S)	92 %	62-130		5	07/11/13 12:00	07/26/13 12:44	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:37		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	3.2 %			1		07/15/13 07:14		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH SMB4 Lab ID: 4079491019 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters Results		Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>702</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>598</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>136</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	11096-82-5	
PCB, Total	<b>1440</b> u	ıg/kg	100	50.0	4	07/11/13 12:00	07/26/13 13:02	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	83 %	6	44-130		4	07/11/13 12:00	07/26/13 13:02	877-09-8	
Decachlorobiphenyl (S)	90 %	6	62-130		4	07/11/13 12:00	07/26/13 13:02	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Female				1		07/10/13 11:37		
Lipid	Analytical	Method: Pad	e Lipid						
Lipid	1.9 %	6			1		07/15/13 07:14		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

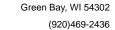
Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Sample: IH SMB5 Lab ID: 4079491020 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Parameters Results Units		LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;12.5</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>88.0</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;12.5</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>95.3</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>14.4J</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	11096-82-5	
PCB, Total	<b>198</b> ug/k	g 25.0	12.5	1	07/11/13 12:00	07/26/13 13:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	89 %	44-130		1	07/11/13 12:00	07/26/13 13:21	877-09-8	
Decachlorobiphenyl (S)	88 %	62-130		1	07/11/13 12:00	07/26/13 13:21	2051-24-3	
Fish Gender Typing	Analytical Me	ethod: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:37		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	1.4 %			1		07/15/13 07:14		





#### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

QC Batch: OEXT/18944 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079491001, 4079491002, 4079491003, 4079491004, 4079491005, 4079491006, 4079491007, 4079491008,

4079491009, 4079491010, 4079491011, 4079491012, 4079491013, 4079491014, 4079491015, 4079491016,

4079491017, 4079491018, 4079491019, 4079491020

METHOD BLANK: 820829 Matrix: Tissue

Associated Lab Samples: 4079491001, 4079491002, 4079491003, 4079491004, 4079491005, 4079491006, 4079491007, 4079491008,

4079491009, 4079491010, 4079491011, 4079491012, 4079491013, 4079491014, 4079491015, 4079491016,

4079491017, 4079491018, 4079491019, 4079491020

		Blank	Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers	
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/26/13 05:37		
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/26/13 05:37		
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/26/13 05:37		
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/26/13 05:37		
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/26/13 05:37		
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/26/13 05:37		
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/26/13 05:37		
Decachlorobiphenyl (S)	%	88	62-130	07/26/13 05:37		
Tetrachloro-m-xylene (S)	%	89	44-130	07/26/13 05:37		

LABORATORY CONTROL SAMPLE:	820830					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	256	103	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			93	62-130	
Tetrachloro-m-xylene (S)	%			92	44-130	

MATRIX SPIKE & MATRIX SP	PIKE DUPLICAT	E: 82083	1		820832							
			MS	MSD								
	40	079491001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<625			<625	<625					24	
PCB-1221 (Aroclor 1221)	ug/kg	<625			<625	<625					24	
PCB-1232 (Aroclor 1232)	ug/kg	<625			<625	<625					24	
PCB-1242 (Aroclor 1242)	ug/kg	<625			<625	<625					24	
PCB-1248 (Aroclor 1248)	ug/kg	9200			8380	9190				9	24	
PCB-1254 (Aroclor 1254)	ug/kg	8470	1000	1000	8190	9020	-28	55	27-163	10	24	M6
PCB-1260 (Aroclor 1260)	ug/kg	1060J			984J	1080J					24	
Decachlorobiphenyl (S)	%						0	0	62-130			S4
Tetrachloro-m-xylene (S)	%						0	0	44-130			S4

Green Bay, WI 54302 (920)469-2436



# **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

QC Batch: OEXT/18962 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079491001, 4079491002, 4079491003, 4079491004, 4079491005, 4079491006, 4079491007, 4079491008,

4079491009, 4079491010, 4079491011, 4079491012, 4079491013, 4079491014, 4079491015, 4079491016,

4079491017, 4079491018, 4079491019, 4079491020

METHOD BLANK: 821803 Matrix: Tissue

%

Associated Lab Samples: 4079491001, 4079491002, 4079491003, 4079491004, 4079491005, 4079491006, 4079491007, 4079491008,

4079491009, 4079491010, 4079491011, 4079491012, 4079491013, 4079491014, 4079491015, 4079491016, 4079491016, 4079491019, 4079

07/15/13 07:11

 $4079491017,\,4079491018,\,4079491019,\,4079491020$ 

Blank Reporting
Units Result Limit Analyzed Qualifiers

0.61

SAMPLE DUPLICATE: 821804

Date: 08/05/2013 08:57 AM

Lipid

Parameter

		4079491001	Dup		Max	
Parameter	Units	Result	Result	RPD	RPD	Qualifiers
Lipid	<u></u>	16.2	16.7		20	



#### **QUALIFIERS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

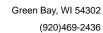
TNI - The NELAC Institute.

# **ANALYTE QUALIFIERS**

Date: 08/05/2013 08:57 AM

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

Surrogate recovery not evaluated against control limits due to sample dilution.





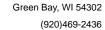
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch		
4079491001	IH AC1	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
4079491002	IH AC2	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
1079491003	IH AC3	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
1079491004	IH AC4	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491005	IH AC5	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
1079491006	IH AC6	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491007	IH AC7	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491008	IH AWS1	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491009	IH AWS2	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491010	IH AWS3	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491011	IH AWS4	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491012	IH AWS5	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491013	IH AWS6	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491014	IH AWS7	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
1079491015	IH AWS8	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
1079491016	IH SMB1	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
1079491017	IH SMB2	EPA 3540	OEXT/18944		GCSV/989		
1079491018	IH SMB3	EPA 3540	OEXT/18944		GCSV/989		
1079491019	IH SMB4	EPA 3540	OEXT/18944	EPA 8082	GCSV/989		
079491020	IH SMB5	EPA 3540	OEXT/18944		GCSV/989		
079491001	IH AC1	Pace Gender Typing	GRND/2593				
079491002	IH AC2	Pace Gender Typing	GRND/2593				
079491003	IH AC3	Pace Gender Typing	GRND/2593				
079491004	IH AC4	Pace Gender Typing	GRND/2593				
079491005	IH AC5	Pace Gender Typing	GRND/2593				
1079491006	IH AC6	Pace Gender Typing	GRND/2593				
1079491007	IH AC7	Pace Gender Typing	GRND/2593				
1079491008	IH AWS1	Pace Gender Typing	GRND/2593				
1079491009	IH AWS2	Pace Gender Typing	GRND/2593				
079491010	IH AWS3	Pace Gender Typing	GRND/2593				
1079491011	IH AWS4	Pace Gender Typing	GRND/2593				
079491012	IH AWS5	Pace Gender Typing	GRND/2590				
1079491013	IH AWS6	Pace Gender Typing	GRND/2590				
079491014	IH AWS7	Pace Gender Typing	GRND/2593				
079491015	IH AWS8	Pace Gender Typing	GRND/2593				
079491016	IH SMB1	Pace Gender Typing	GRND/2593				
079491017	IH SMB2	Pace Gender Typing	GRND/2593				
1079491018	IH SMB3	Pace Gender Typing	GRND/2593				
079491019	IH SMB4	Pace Gender Typing	GRND/2593				
079491020	IH SMB5	Pace Gender Typing	GRND/2593				
079491001	IH AC1	Pace Lipid	OEXT/18962				
1079491002	IH AC2	Pace Lipid	OEXT/18962				
1079491003	IH AC3	Pace Lipid	OEXT/18962				
1079491004	IH AC4	Pace Lipid	OEXT/18962				
1079491005	IH AC5	Pace Lipid	OEXT/18962				
079491006	IH AC6	Pace Lipid	OEXT/18962				
1079491007	IH AC7	Pace Lipid	OEXT/18962				





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079491

Date: 08/05/2013 08:57 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079491008	IH AWS1	Pace Lipid	OEXT/18962		
4079491009	IH AWS2	Pace Lipid	OEXT/18962		
4079491010	IH AWS3	Pace Lipid	OEXT/18962		
4079491011	IH AWS4	Pace Lipid	OEXT/18962		
4079491012	IH AWS5	Pace Lipid	OEXT/18962		
4079491013	IH AWS6	Pace Lipid	OEXT/18962		
4079491014	IH AWS7	Pace Lipid	OEXT/18962		
4079491015	IH AWS8	Pace Lipid	OEXT/18962		
4079491016	IH SMB1	Pace Lipid	OEXT/18962		
4079491017	IH SMB2	Pace Lipid	OEXT/18962		
4079491018	IH SMB3	Pace Lipid	OEXT/18962		
4079491019	IH SMB4	Pace Lipid	OEXT/18962		
4079491020	IH SMB5	Pace Lipid	OEXT/18962		

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Branch/Locati	on: Sheboygan		] /		ace		lytica celabs.c						_		COC No.	5	4079491
Project Contac	ct: Mark Mather					-							I	Quote #:			
Phone:	513-678-2137 or 513-387-	2778	<u> </u>	С	HA	<u>IIN</u>	OF	CI	<u>JS</u>	ΓΟ	<u>DY</u>			Mail To Contact:	Mark Mathe	er	
Project Numbe	er: SR13-001 Task 10-02000		A=No	ine B=H	ICL C=	H2SO4	*Preserva D=HNO3	tion Code		=Methan	ol G=N	laOH		Mail To Company:	PRS - Assu	red Group	
Project Name:	2013 Fish Sampling		H=So	dium Bisulf	fate Solut	ion	l=Sodiur	m Thiosul	fate J	=Other				Mail To Address:		er Road, Suit	e 240,
Project State:	Wiscoinsin		FILTE (YES	/NO)	Y/N										Cincinnati,	OH 45249	
Sampled By (F	Print): Mark Mather			ESERVATION (CODE)*										Invoice To Contact:	Goldie Sha	р	
Sampled By (S	Sign):		8						Invoice To Company: As Abov		**************************************						
PO #:		Regulatory Program:			lested		S							Invoice To Address:	7870 Kemp	er Road, Suite	e 240,
Data Packag	LILLY .	Mat A = Air	rix Codes W = Water		Redu		IVË.								Cincinnati,	OH 45249	
☐ EPA	Level III (billable)	B = Biota C = Charcoal O = Oil	DW = Drinkii GW = Groun SW = Surfac	nd Water	S	8082	RVAT							Invoice To Phone:	513-489-67	89	
	your sample	S = Soil SI = Sludge	WP = Wipe	e Water	Analyse	1	PRESERVATIVES							CLIENT	ł	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	TIME	MATRIX		PCB								COMMENTS	1	ise Only)	
00/	IH AC1. —	6/10/13		Tissue		×	Α							Whole Fish Sample	1-ρ.	oly bas	
002	IH AC2	6/10/13		Tissue		×	Α					-				1	
003	IH AC3. —	6/10/13		Tissue		X	Α										
004	IH AC4 —	6/10/13		Tissue		X	Α									<u> </u>	
003	IH AC5 —	6/10/13	ļ	Tissue		X	Α										
006	IH AC6	6/10/13		Tissue		X	Α										
007	IH AC7 -—	6/10/13		Tissue		X	A									<u> </u>	
	IH AC8	6/10/13		Tissue		×	Α										
					0												
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Telephone:	513-387-2778	Relin	Receive Nate/Time: Receive				Received By: Date/Time:				OK / Adjusted  Cooler-Custody Seal						
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spe	cial pricing and release of liability										l					Intact / I Version 6.0 06/14/06	Not Intact

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Company Name:	Pollution Risk Services			<b>/</b>		A	1. al: a	-1®			MN: 6	312-607-1	700	WI: 920-469-2436		$\bigcirc$	
Branch/Location:	Sheboygan		/	1	ace		lytic.								COC No.	<u>. 8</u>	457949
Project Contact:	Mark Mather													Quote #:			
Phone:	513-678-2137 or 513-387-2	778		C	HA	IN	OF	CI	US'	TO	DY	<b>,</b>		Mail To Contact:	Mark Math	ner	
Project Number:	SR13-001 Task 10-02000		A=No	one B=H	CL C=	H2SO4	Preserva D=HNO3	tion Code		=Methar	nol G=I	NaOH		Mail To Company:	PRS - Ass	sured Group	
Project Name:	2013 Fish Sampling		H=Sc	odium Bisulf	ate Soluti	on	I=Sodiu	m Thiosul	fate .	=Other				Mail To Address:	7870 Kem	per Road, Suite	240,
Project State:	Wiscoinsin		FILTE (YES		Y/N										Cincinnati,	OH 45249	
Sampled By (Print	): Mark Mather		PRESER (CO		Pick Letter									Invoice To Contact:	Goldie Sha	arp	
Sampled By (Sign	):				Ţ,									Invoice To Company:	As Above	10-11-1-1	
PO #:	l i	Regulatory Program:			Requested		<i>(</i> 0							Invoice To Address:	7870 Kem	per Road, Suite	240,
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(billable)  EPA Lev	rel III (billable) B	= Biota = Charcoal	W = Water DW = Drinki GW = Grour SW = Surface	nd Water	S	8082	RVAT							Invoice To Phone:	513-489-6	789	
EPA Lev	your sample s	= Soil	WW = Wast WP = Wipe		Analyse	PCB - 8	PRESERVATIVE							CLIENT		OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	TIME	MAIRIA										COMMENTS	(Lab	Use Only)	<u> </u>
80/ a	)% IH AWS1	6/10/13		Tissue		X	A					1		Whole Fish Sample		polyber	<del>) / )</del>
902 Q	50) IH AWS2	6/10/13		Tissue		X	A								<u> </u>	100	
003, 0	IH AWS3	6/10/13		Tissue		X	A								<b> </b>		
009 0	// IH AWS4	6/10/13		Tissue		X	Α										
003 01	1 IH AWS5	6/10/13		Tissue		X	Α				ļ						
00/0 0	13 IH AWS6	6/10/13		Tissue		X	Α										
007 0	14 IH AWS7	6/10/13		Tissue		Х	Α										
O O M. 1	15 IH AWS8	6/10/13		Tissue		X	Α									7	
4013																•	
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	ush Results by (complete what you wa		quisited by:	2			11.	6/1/3	/ 5	30	A	a by: (DOA)	VII	Use 6/10/3	1530		
Email #1: mma	ther@assuredllc.com		quished By:				<del></del>	te/Time:			Receive	d By:	<u> </u>	Date/Fime:		Receipt Temp =	20°C
	887-2778	Relino	quished By:	·			Da	te/Time:			Receive	d By:	·····	Date/Time:			djusted
	es on HOLD are subject to ricing and release of liability	Relind	quished By:				Da	te/Time:			Receive	d By:		Date/Time:		Intact / N	stody Seal Not Present Not Intact
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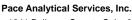
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Company Nar	ne:	Polluti	on Risk Services						Ana	h dia	al®			MN: (	612-607-1700	WI: 920-469-2436		$\bigcirc$	
Branch/Locati	on:	Shebo	ygan					ace		lytic.							COC No.	<u> </u>	4079491
Project Conta	ct:	Mark	Mather						.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,00,000						Quote #:			
Phone:		513-6	78-2137 or 513-387-	-2778			C	HA	IN	OF	C	US'	TO	DY	7	Mail To Contact:	Mark Math	er	
Project Numb	er:	SR13-	-001 Task 10-02000	)		A=No	ne B=H	CL C=	H2SO4	*Preserva D=HNO3	tion Cod		==Methan	ol G=	NaOH	Mail To Company:	PRS - Ass	ured Group	
Project Name		2013	Fish Sampling			H=Sc	odium Bisulf	ate Solut	ion	l=Sodiu	m Thiosul	lfate .	J=Other			Mail To Address:	7870 Kem	per Road, Suite	240,
Project State:		Wisco	pinsin			FILTE (YES		Y/N									Cincinnati,	OH 45249	
Sampled By (	Print):	Mark	Mather			PRESER (COI		Pick Letter								Invoice To Contact:	Goldie Sha	rp	
Sampled By (	Sign):							p								Invoice To Company:	As Above		
PO #:				Regulat Progra				ested								Invoice To Address:	7870 Kemi	oer Road, Suite	240.
Data Packa		ions	MS/MSD			Codes		Requ		IVE8							Cincinnati,		,
☐ EPA	\ Level		On your sample (billable)	A = Air B = Biota C = Charco O = Oil	oal G	~ vvater W = Drinki W = Grour N = Surfac	nd Water	nalyses F	8082	PRESERVATIVES						Invoice To Phone:	513-489-67	789	
	Level		NOT needed on your sample	S = Soil SI = Studge		W = Wast P = Wipe		Anal)		ESE						CLIENT	1	OMMENTS	Profile #
PACE LAB#		CLIE	NT FIELD ID		ATE	TIME	MATRIX		PCB	R.						COMMENTS	(Lab l	Jse Only)	
<i>QO</i> /	01	<i>ما</i>	IH SMB1	6/10	0/13		Tissue		Х	Α						Whole Fish Sample	1-	Polishad	3 A
002	Ol	7	IH SMB2	6/10	0/13		Tissue		Х	Α							/	1	7
003	01.	\$	IH SMB3	6/10	0/13	···	Tissue		Х	Α									
004	019	I	IH SMB4	6/10	0/13		Tissue		X	Α									
005	02	0	IH SMB5	6/10	0/13		Tissue		Х	Α							2		
000			IH SMB6	6/10	0/13		Tissue		Х	Α							1		
007			IH SMB7	6/10	0/13		Tissue		Х	Α									
008			IH SMB8	6/10	0/13		Tissue		Х	Α									
000			IH SMB9	6/10	0/14		Tissue		Х	Α								A	
$\Delta$																		1/6/10/13	
																		150	
			****																
												<i>j</i>							
	'AT su		ne Requested - Preli to approval/surcharg ted:	e)		shed By	///U	$\mathcal{M}$	1		te/Time: te/Time:	101	13	Receive		Date/Time; 6/(0/1	3 1415	PACE Pro	
	im Rush	Result	s by (complete what you	want):	10	<u>e</u>	An			6/0	0/1	3 /:	570	Redeive	www	-Wile 6/10/13	1530	Receipt Temp =	7997 °C
Email #1: Email #2:	mmathe	r@assu	iredlic.com		Relinqu	shed By:				Da	te/Time:			Rećeive	ed By:	Deter/ime:		Sample Re	
	513-387	-2778			Relinqu	shed By:				Da	te/Time:			Receive	ed By:	Date/Time:		OK / Ad	
Fax:		- 401	One outliest to		Dalin m	ob a d C					h . CT: .				-1 D			Cooler Cus	
			are subject to release of liability		Kelinqui	shed By:				Da	te/Time:			Receive	ea By:	Date/Time:		Present / N Intact / N	
·											•			<u> </u>				Version 6.0 06/14/06	

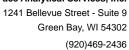
Pace Analytical"

# Sample Condition Upon Receipt

Pace Analytical Services, Ir 1241 Bellevue Street, Suite Green Bay, WI 543I

Client Nam	ne: $PR \leq$	Project #	4079491
Courier: Fed Ex TUPS TUSPS	Client Commercial		
Tracking #:	J. Olient 3 Commercial	x race offici	
Custody Seal on Cooler/Box Present: Ty	es no Seals intac	t: Tives Tino	
Custody Seal on Samples Present:  yes		t: Tyes T no	
Packing Material:   Bubble Wrap   Bu	******	Other	
Thermometer Used SR13	Type of Ice: Well Blue	***************************************	n içe, cooling process has begun
Cooler Temperature Uncorr: 20 /Corr	1777	Tissue is Frozen: Xyes 6/	<i>z</i> /
Temp Blank Present:  yes  no	<u> </u>	(Ino)	Person examining contents:
Temp should be above freezing to 6°C for all sample	excent Biota		Date: 6-15-13
Frozen Biota Samples should be received ≤ 0°C.		ments:	Initials:
Chain of Custody Present:	KAYes □No □N/A 1.		
Chain of Custody Filled Out:	ØYes □No □N/A 2.		
Chain of Custody Relinquished:	₩es □No □N/A 3.		
Sampler Name & Signature on COC:	□Yes 🗐No □N/A 4.		
Samples Arrived within Hold Time:	Yes □No □N/A 5.		
- VOA Samples frozen upon receipt	□Yes □No Date/	Γime:	
Short Hold Time Analysis (<72hr):	□Yes QÍNO □N/A 6.		
Rush Turn Around Time Requested:	□Yes QNo □N/A 7.		
Sufficient Volume:	ØYes □No □N/A 8.		
Correct Containers Used:	ØYes □No □N/A 9.		
-Pace Containers Used:	☐Yes ØNO □N/A		
-Pace IR Containers Used:	□Yes □No 万NA		
Containers Intact:	yes □No □N/A 10.		
Filtered volume received for Dissolved tests	□Yes □No ØN/A 11.		
Sample Labels match COC:	DYes □No □N/A 12.		
-Includes date/time/ID/Analysis Matrix:			
All containers needing preservation have been checker Non-Compliance noted in 13.)		T HNO3   H2SO4	NaOH   NaOH +ZnAct
All containers needing preservation are found to be in	LIYes LINo MANA 13.		
compliance with EPA recommendation.	□Yes □No ØN/A		
HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)xceptions: VOA, coliform TOC, TOX, TOH.	Initial v	vhen Lab Std #ID of	
08G, WIDROW, Phenolics, OTHER:	□Yes DNo comple	4	Time:
leadspace in VOA Vials ( >6mm):	□Yes □No ØN/A 14.		
rip Blank Present:	□Yes □No ΦN/A 15.		The second secon
rip Blank Custody Seals Present	□Yes □No ØNHA		
Pace Trip Blank Lot # (if purchased):			
Client Notification/ Resolution:  Person Contacted:	/ Date/Time:	If checked, see attache	ed form for additional comments
Comments/ Resolution: 7	Date/ line.	aucht Dame	Does .
The state of the s	yamy, c	and the country of	6/11/13,
<i>J</i>	<u> </u>		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	011		P 1 1 1 2
Project Manager Review:	It for tw	Date:	Page 38 of 38
	•		Have 38 01 38







August 06, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

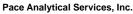
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

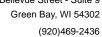
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



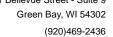


# **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079393001	MR2 JWS6	Tissue	06/07/13 00:00	06/10/13 15:30
4079393002	MR2 JWS7	Tissue	06/07/13 00:00	06/10/13 15:30
4079393003	MR2 SMB1	Tissue	06/07/13 00:00	06/10/13 15:30
4079393004	MR2 SMB2	Tissue	06/07/13 00:00	06/10/13 15:30
4079393005	MR2 SMB3	Tissue	06/07/13 00:00	06/10/13 15:30
4079393006	MR2 SMB4	Tissue	06/07/13 00:00	06/10/13 15:30
4079393007	MR2 SMB5	Tissue	06/07/13 00:00	06/10/13 15:30
4079393008	MR2 SMB6	Tissue	06/07/13 00:00	06/10/13 15:30
4079393009	MR2 SMB7	Tissue	06/07/13 00:00	06/10/13 15:30
4079393010	MR2 SMB8	Tissue	06/07/13 00:00	06/10/13 15:30
4079393011	MR2 RB1	Tissue	06/07/13 00:00	06/10/13 15:30
4079393012	MR2 RB2	Tissue	06/07/13 00:00	06/10/13 15:30
4079393013	MR2 RB3	Tissue	06/07/13 00:00	06/10/13 15:30
4079393014	MR2 RB4	Tissue	06/07/13 00:00	06/10/13 15:30
4079393015	MR2 RB5	Tissue	06/07/13 00:00	06/10/13 15:30
4079393016	MR2 RB6	Tissue	06/07/13 00:00	06/10/13 15:30
4079393017	MR2 RB7	Tissue	06/07/13 00:00	06/10/13 15:30
4079393018	MR2 RB8	Tissue	06/07/13 00:00	06/10/13 15:30



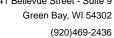


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079393001	MR2 JWS6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393002	MR2 JWS7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393003	MR2 SMB1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393004	MR2 SMB2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393005	MR2 SMB3	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393006	MR2 SMB4	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393007	MR2 SMB5	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393008	MR2 SMB6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393009	MR2 SMB7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393010	MR2 SMB8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393011	MR2 RB1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393012	MR2 RB2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079393013	MR2 RB3	EPA 8082	BDS	10



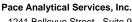


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079393014	MR2 RB4	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079393015	MR2 RB5	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079393016	MR2 RB6	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079393017	MR2 RB7	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	
4079393018	MR2 RB8	EPA 8082	BDS	10	
		Pace Gender Typing	ABF	1	
		Pace Lipid	ABF	1	



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#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 06, 2013

#### **General Information:**

18 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

# Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19004

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MR2 SMB6 (Lab ID: 4079393008)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR2 SMB8 (Lab ID: 4079393010)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

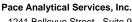
#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 06, 2013

#### **General Information:**

18 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

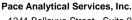
#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

# Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 06, 2013

#### **General Information:**

18 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 JWS6 Lab ID: 4079393001 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>712</b> U	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>443</b> U	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> U	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	11096-82-5	
PCB, Total	<b>1150</b> U	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:27	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82 %	%	44-130		4	07/16/13 14:59	07/27/13 04:27	877-09-8	
Decachlorobiphenyl (S)	93 %	%	62-130		4	07/16/13 14:59	07/27/13 04:27	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/16/13 08:58		
Lipid	Analytical	Method: Pad	e Lipid						
Lipid	1.8 %	%			1		07/18/13 07:32		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 JWS7 Lab ID: 4079393002 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>722</b> u	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>448</b> ι	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	11096-82-5	
PCB, Total	<b>1170</b> ւ	ıg/kg	100	50.0	4	07/16/13 14:59	07/27/13 04:44	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	81 %	%	44-130		4	07/16/13 14:59	07/27/13 04:44	877-09-8	
Decachlorobiphenyl (S)	93 %	%	62-130		4	07/16/13 14:59	07/27/13 04:44	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/16/13 08:58		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	1.7 %	%			1		07/18/13 07:29		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB1 Lab ID: 4079393003 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Inits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>674</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>617</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>116J</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	11096-82-5	
PCB, Total	<b>1410</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:02	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	80 %	44-130		5	07/16/13 14:59	07/27/13 05:02	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		5	07/16/13 14:59	07/27/13 05:02	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	1.1 %			1		07/18/13 07:29		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB2 Lab ID: 4079393004 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	thod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>686</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>605</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>85.5J</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	11096-82-5	
PCB, Total	<b>1380</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:19	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		5	07/16/13 14:59	07/27/13 05:19	877-09-8	
Decachlorobiphenyl (S)	96 %	62-130		5	07/16/13 14:59	07/27/13 05:19	2051-24-3	
Fish Gender Typing	Analytical Met	thod: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Met	thod: Pace Lipid						
Lipid	0.88 %			1		07/18/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

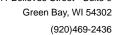
Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB3 Lab ID: 4079393005 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>322</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;62.5</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>597</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>107J</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	11096-82-5	
PCB, Total	<b>1030</b> ug	g/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:37	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	79 %	•	44-130		5	07/16/13 14:59	07/27/13 05:37	877-09-8	
Decachlorobiphenyl (S)	94 %	•	62-130		5	07/16/13 14:59	07/27/13 05:37	2051-24-3	
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Female				1		07/16/13 08:58		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	0.95 %	•			1		07/18/13 07:29		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB4 Lab ID: 4079393006 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1080</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1200</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>198</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	11096-82-5	
PCB, Total	<b>2480</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 05:54	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		5	07/16/13 14:59	07/27/13 05:54	877-09-8	
Decachlorobiphenyl (S)	98 %	62-130		5	07/16/13 14:59	07/27/13 05:54	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	2.1 %			1		07/18/13 07:29		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB5 Lab ID: 4079393007 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<125 ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>703</b> ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<125 ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>661</b> ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	11096-82-5	
PCB, Total	<b>1360</b> ug/kg	250	125	10	07/16/13 14:59	07/27/13 06:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		10	07/16/13 14:59	07/27/13 06:12	877-09-8	
Decachlorobiphenyl (S)	96 %	62-130		10	07/16/13 14:59	07/27/13 06:12	2051-24-3	
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	0.80 %			1		07/18/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB6 Lab ID: 4079393008 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical I	Method: EPA	8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;188</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;188</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>964</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;188</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>658</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;188</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	11096-82-5	
PCB, Total	<b>1620</b> ug	g/kg	375	188	15	07/16/13 14:59	07/27/13 06:29	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		15	07/16/13 14:59	07/27/13 06:29	877-09-8	S4
Decachlorobiphenyl (S)	0 %		62-130		15	07/16/13 14:59	07/27/13 06:29	2051-24-3	S4
Fish Gender Typing	Analytical I	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/16/13 08:58		
Lipid	Analytical I	Method: Pac	e Lipid						
Lipid	0.70 %				1		07/18/13 07:30		





# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB7 Lab ID: 4079393009 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	thod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>838</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>499</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	11096-82-5	
PCB, Total	<b>1340</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 07:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	77 %	44-130		5	07/16/13 14:59	07/27/13 07:21	877-09-8	
Decachlorobiphenyl (S)	84 %	62-130		5	07/16/13 14:59	07/27/13 07:21	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	0.54 %			1		07/18/13 07:30		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 SMB8 Lab ID: 4079393010 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>1230</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;250</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1010</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	11096-82-5	
PCB, Total	<b>2230</b> ug/kg	500	250	20	07/16/13 14:59	07/27/13 07:39	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/16/13 14:59	07/27/13 07:39	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/16/13 14:59	07/27/13 07:39	2051-24-3	S4
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	1.4 %			1		07/18/13 07:30		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

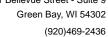
Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB1 Lab ID: 4079393011 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;12.5</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>224</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>209</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>17.8J</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	11096-82-5	
PCB, Total	<b>450</b> ug/kg	25.0	12.5	1	07/16/13 14:59	07/27/13 07:56	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	85 %	44-130		1	07/16/13 14:59	07/27/13 07:56	877-09-8	
Decachlorobiphenyl (S)	98 %	62-130		1	07/16/13 14:59	07/27/13 07:56	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.26 %			1		07/18/13 07:30		





Project: SR13-001 2013 FISH SAMPLING

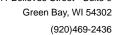
Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB2 Lab ID: 4079393012 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	N 8082 Prepai	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>441</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>405</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	11096-82-5	
PCB, Total	<b>846</b> u	g/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:14	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	82 %	, D	44-130		4	07/16/13 14:59	07/27/13 08:14	877-09-8	
Decachlorobiphenyl (S)	94 %	, D	62-130		4	07/16/13 14:59	07/27/13 08:14	2051-24-3	
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Female				1		07/16/13 08:58		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	0.44 %	, o			1		07/18/13 07:30		





Project: SR13-001 2013 FISH SAMPLING

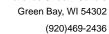
Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB3 Lab ID: 4079393013 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results I	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>543</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>651</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>55.0J</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	11096-82-5	
PCB, Total	<b>1250</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 08:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	85 %	44-130		4	07/16/13 14:59	07/27/13 08:31	877-09-8	
Decachlorobiphenyl (S)	94 %	62-130		4	07/16/13 14:59	07/27/13 08:31	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Male			1		07/16/13 08:58		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.50 %			1		07/18/13 07:30		





Project: SR13-001 2013 FISH SAMPLING

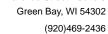
Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB4 Lab ID: 4079393014 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>456</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>358</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	11096-82-5	
PCB, Total	<b>814</b> ug/k	g 100	50.0	4	07/16/13 14:59	07/27/13 08:49	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	79 %	44-130		4	07/16/13 14:59	07/27/13 08:49	877-09-8	
Decachlorobiphenyl (S)	89 %	62-130		4	07/16/13 14:59	07/27/13 08:49	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Ty	ping					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	0.62 %			1		07/18/13 07:30		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB5 Lab ID: 4079393015 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	aration Meth	od: EF	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>634</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>441</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	11096-82-5	
PCB, Total	<b>1070</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:06	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		5	07/16/13 14:59	07/27/13 09:06	877-09-8	
Decachlorobiphenyl (S)	88 %	62-130		5	07/16/13 14:59	07/27/13 09:06	2051-24-3	
Fish Gender Typing	Analytical Met	hod: Pace Gender Tyր	ping					
Gender	Female			1		07/16/13 08:58		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	0.50 %			1		07/18/13 07:30		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB6 Lab ID: 4079393016 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Inits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>243</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>653</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>71.4J</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	11096-82-5	
PCB, Total	<b>968</b> ug/kg	125	62.5	5	07/16/13 14:59	07/27/13 09:24	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		5	07/16/13 14:59	07/27/13 09:24	877-09-8	
Decachlorobiphenyl (S)	92 %	62-130		5	07/16/13 14:59	07/27/13 09:24	2051-24-3	
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Male			1		07/16/13 08:58		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	0.76 %			1		07/18/13 07:30		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB7 Lab ID: 4079393017 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>543</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>486</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	11096-82-5	
PCB, Total	<b>1030</b> ug/kg	100	50.0	4	07/16/13 14:59	07/27/13 09:41	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	81 %	44-130		4	07/16/13 14:59	07/27/13 09:41	877-09-8	
Decachlorobiphenyl (S)	87 %	62-130		4	07/16/13 14:59	07/27/13 09:41	2051-24-3	
Fish Gender Typing	Analytical Methor	od: Pace Gender Typ	oing					
Gender	Male			1		07/16/13 08:58		
Lipid	Analytical Methor	od: Pace Lipid						
Lipid	0.90 %			1		07/18/13 07:31		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Sample: MR2 RB8 Lab ID: 4079393018 Collected: 06/07/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/l		125	10	07/16/13 14:59	07/27/13 09:59	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>348</b> ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;125</b> ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>547</b> ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	11096-82-5	
PCB, Total	<b>895</b> ug/l	kg 250	125	10	07/16/13 14:59	07/27/13 09:59	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	75 %	44-130		10	07/16/13 14:59	07/27/13 09:59	877-09-8	
Decachlorobiphenyl (S)	95 %	62-130		10	07/16/13 14:59	07/27/13 09:59	2051-24-3	
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/16/13 08:58		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	0.54 %			1		07/18/13 07:31		



#### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

QC Batch: OEXT/19004 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079393001, 4079393002, 4079393003, 4079393004, 4079393005, 4079393006, 4079393007, 4079393008,

4079393009, 4079393010, 4079393011, 4079393012, 4079393013, 4079393014, 4079393015, 4079393016, 407939016, 4079016, 4

4079393017, 4079393018

METHOD BLANK: 823748 Matrix: Tissue

Associated Lab Samples: 4079393001, 4079393002, 4079393003, 4079393004, 4079393005, 4079393006, 4079393007, 4079393008,

4079393009, 4079393010, 4079393011, 4079393012, 4079393013, 4079393014, 4079393015, 4079393016,

4079393017, 4079393018

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/31/13 14:33	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/31/13 14:33	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/31/13 14:33	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/31/13 14:33	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/31/13 14:33	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/31/13 14:33	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/31/13 14:33	
Decachlorobiphenyl (S)	%	97	62-130	07/31/13 14:33	
Tetrachloro-m-xylene (S)	%	88	44-130	07/31/13 14:33	

LABORATORY CONTROL SAMPLE:	823749					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	252	101	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			99	62-130	
Tetrachloro-m-xylene (S)	%			89	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 82375	0		823751							
			MS	MSD								
	40	079393001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<50.0			<62.5	<62.5					24	
PCB-1221 (Aroclor 1221)	ug/kg	<50.0			<62.5	<62.5					24	
PCB-1232 (Aroclor 1232)	ug/kg	<50.0			<62.5	<62.5					24	
PCB-1242 (Aroclor 1242)	ug/kg	<50.0			<62.5	<62.5					24	
PCB-1248 (Aroclor 1248)	ug/kg	712			988	1180				18	24	
PCB-1254 (Aroclor 1254)	ug/kg	443	1000	1000	1370	1550	92	111	27-163	13	24	
PCB-1260 (Aroclor 1260)	ug/kg	<50.0			<62.5	<62.5					24	
Decachlorobiphenyl (S)	%						83	92	62-130			
Tetrachloro-m-xylene (S)	%						73	81	44-130			

Green Bay, WI 54302 (920)469-2436



#### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

QC Batch: OEXT/19025 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079393001, 4079393002, 4079393003, 4079393004, 4079393005, 4079393006, 4079393007, 4079393008,

4079393009, 4079393010, 4079393011, 4079393012, 4079393013, 4079393014, 4079393015, 4079393016,

4079393017, 4079393018

METHOD BLANK: 824242 Matrix: Tissue

Associated Lab Samples: 4079393001, 4079393002, 4079393003, 4079393004, 4079393005, 4079393006, 4079393007, 4079393008,

4079393009, 4079393010, 4079393011, 4079393012, 4079393013, 4079393014, 4079393015, 4079393016,

4079393017, 4079393018

Parameter Units Blank Reporting Result Limit Analyzed Qualifiers 0.36 07/18/13 07:28

SAMPLE DUPLICATE: 824243

Date: 08/06/2013 05:11 PM

Lipid

 Parameter
 Units
 4079393001 Result
 Dup Result
 RPD
 Max RPD
 Qualifiers

 Lipid
 %
 1.8
 1.9
 1
 20





**QUALIFIERS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

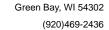
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### **ANALYTE QUALIFIERS**

Date: 08/06/2013 05:11 PM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





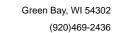
## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079393001	MR2 JWS6	EPA 3540	OEXT/19004	EPA 8082	GCSV/9929
4079393002	MR2 JWS7	EPA 3540	OEXT/19004	EPA 8082	GCSV/9929
4079393003	MR2 SMB1	EPA 3540	OEXT/19004	EPA 8082	GCSV/9929
1079393004	MR2 SMB2	EPA 3540	OEXT/19004	EPA 8082	GCSV/9929
4079393005	MR2 SMB3	EPA 3540	OEXT/19004	EPA 8082	GCSV/9929
4079393006	MR2 SMB4	EPA 3540	OEXT/19004	EPA 8082	GCSV/9929
4079393007	MR2 SMB5	EPA 3540	OEXT/19004		GCSV/9929
4079393008	MR2 SMB6	EPA 3540	OEXT/19004		GCSV/9929
4079393009	MR2 SMB7	EPA 3540	OEXT/19004		GCSV/9929
1079393010	MR2 SMB8	EPA 3540	OEXT/19004		GCSV/9929
4079393011	MR2 RB1	EPA 3540	OEXT/19004		GCSV/9929
1079393012	MR2 RB2	EPA 3540	OEXT/19004		GCSV/9929
4079393013	MR2 RB3	EPA 3540	OEXT/19004		GCSV/9929
4079393014	MR2 RB4	EPA 3540	OEXT/19004		GCSV/9929
4079393015	MR2 RB5	EPA 3540	OEXT/19004		GCSV/9929
4079393016	MR2 RB6	EPA 3540	OEXT/19004		GCSV/9929
4079393017	MR2 RB7	EPA 3540	OEXT/19004		GCSV/9929
4079393018	MR2 RB8	EPA 3540	OEXT/19004		GCSV/9929
4079393001	MR2 JWS6	Pace Gender Typing	GRND/2602		
4079393002	MR2 JWS7	Pace Gender Typing	GRND/2602		
1079393003	MR2 SMB1	Pace Gender Typing	GRND/2602		
1079393004	MR2 SMB2	Pace Gender Typing	GRND/2602		
4079393005	MR2 SMB3	Pace Gender Typing	GRND/2602		
1079393006	MR2 SMB4	Pace Gender Typing	GRND/2602		
4079393007	MR2 SMB5	Pace Gender Typing	GRND/2602		
4079393008	MR2 SMB6	Pace Gender Typing	GRND/2602		
4079393009	MR2 SMB7	Pace Gender Typing	GRND/2602		
4079393010	MR2 SMB8	Pace Gender Typing	GRND/2602		
4079393011	MR2 RB1	Pace Gender Typing	GRND/2602		
4079393012	MR2 RB2	Pace Gender Typing	GRND/2602		
4079393013	MR2 RB3	Pace Gender Typing	GRND/2602		
4079393014	MR2 RB4	Pace Gender Typing	GRND/2602		
4079393015	MR2 RB5	Pace Gender Typing	GRND/2602		
4079393016	MR2 RB6	Pace Gender Typing	GRND/2602		
4079393017	MR2 RB7	Pace Gender Typing	GRND/2602		
4079393018	MR2 RB8	Pace Gender Typing	GRND/2602		
4079393001	MR2 JWS6	Pace Lipid	OEXT/19025		
4079393002	MR2 JWS7	Pace Lipid	OEXT/19025		
4079393003	MR2 SMB1	Pace Lipid	OEXT/19025		
1079393004	MR2 SMB2	Pace Lipid	OEXT/19025		
4079393005	MR2 SMB3	Pace Lipid	OEXT/19025		
4079393006	MR2 SMB4	Pace Lipid	OEXT/19025		
4079393007	MR2 SMB5	Pace Lipid	OEXT/19025		
4079393008	MR2 SMB6	Pace Lipid	OEXT/19025		
4079393009	MR2 SMB7	Pace Lipid	OEXT/19025		
4079393010 4079393010	MR2 SMB8	Pace Lipid	OEXT/19025		
4079393010 4079393011	MR2 RB1	Pace Lipid	OEXT/19025		
TOLOGOULI	17111/2 11/2 1	i acc Lipiu	OLA 1/ 13023		





## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079393

Date: 08/06/2013 05:11 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079393013	MR2 RB3	Pace Lipid	OEXT/19025		
4079393014	MR2 RB4	Pace Lipid	OEXT/19025		
4079393015	MR2 RB5	Pace Lipid	OEXT/19025		
4079393016	MR2 RB6	Pace Lipid	OEXT/19025		
4079393017	MR2 RB7	Pace Lipid	OEXT/19025		
4079393018	MR2 RB8	Pace Lipid	OEXT/19025		

Version 6.0 06/14/06

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Company Name:	Pollution Risk Services			<b>/</b>				. 6		V	MN: 612	2-607-1700	WI: 920-469-2436		<del></del> 7	
Branch/Location:	Sheboygan		/-	P			lytica celabs.co							COC No.	7 45	79393
Project Contact:	Mark Mather					·						706	Quote #:			
Phone:	513-678-2137 or 513-387-27	778		C	HA	IN	OF	Cl	JS'	TOI	YC	•	Mail To Contact:	Mark Mather	r	
Project Number:	SR13-001 Task 10-02000		A=Nor			*	Preservat D=HNO3	ion Code	s	==Methano		ЭН	Mail To Company:	PRS - Assur	red Group	
Project Name:	2013 Fish Sampling			dium Bisulf	ate Solution	on	T=Sodiun	n Thiosulf	ate	J=Other			Mail To Address:	1	er Road, Suite 2	240,
Project State:	Wiscoinsin		FILTER (YES/	NO)	Y/N									Cincinnati, C	JH 45249	
Sampled By (Print):	Mark Mather		PRESER\		Pick Letter								Invoice To Contact:	Goldie Shar	ρ	
Sampled By (Sign):					2								Invoice To Company:	As Above		
PO #:	1	legulatory Program:			ieste		, S				Ì		Invoice To Address:	7870 Kempi	er Road, Suite :	240,
Data Package O		Mati = Air	rix Codes W = Water		Requested		IVE							Cincinnati, C	DH 45249	
☐ EPA Leve	(billable)	= Biota = Charcoal = Oil	DW = Drinkir GW = Ground SW = Surfac	d Water		- 8082	RVAT						Invoice To Phone:	513-489-678	89	
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Telephone: 513-38 Fax:	37-2778	Relin	quished By:				Da	te/Time:			Received 8	Эу:	Date/Time:		OK / Ad	
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Version 6.0 06/14/06

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Company Name	: Pollution Risk Services			<b>/</b>		4					MN: 61	2-607-1700	WI: 920-469-2436			
Branch/Location	n: Sheboygan		/.	4			lytic celabs.c							COC No.	7 4	1579391
Project Contact:	: Mark Mather					7717W. pa		ion?					Quote #:			
Phone:	513-678-2137 or 513-387	-2778		C	HA	IN	OF	: Cl	JS.	ΓΟ	DY		Mail To Contact:	Mark Mathe	er .	
Project Number:	: SR13-001 Task 10-02000	)	A=Nor			H2SO4		ation Code	es	=Methan		юн	Mail To Company:	PRS - Assu	red Group	
Project Name:	2013 Fish Sampling		H=Soc	dium Bisulfa	ate Soluti	on	I=Sodiu	m Thiosulf	fate J	=Other			Mail To Address:	7870 Kemp	er Road, Suite	240,
Project State:	Wiscoinsin		FILTER (YES/		Y/N									Cincinnati,	OH 45249	
Sampled By (Pri	int): Mark Mather		PRESER\		Pick Letter								Invoice To Contact:	Goldie Shar	ъ	
Sampled By (Sig	gn):	***************************************			p								Invoice To Company:	As Above		
PO #:		Regulatory Program:			ested								Invoice To Address:	7870 Kemr	er Road, Suite	240.
Data Package		Matr	rix Codes		nba		VES							Cincinnati,	•	,
	evel III (billable)	A = Air B = Biota C = Charcoal	W = Water DW = Drinkin GW = Ground SW = Surface	d Water	ses R	- 8082	PRESERVATIVES						Invoice To Phone:	513-489-67	'89	
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PACE LAB#	CLIENT FIELD ID	DATE	ECTION TIME	MATRIX	⋖	РСВ	PRE						COMMENTS	(Lab l	Jse Only)	
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Version 6.0 06/14/06

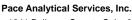
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Branch/Location:	Sheboygan		/_	P	ace.		lytic.						_		COC No.	· + L	107939
Project Contact:	Mark Mather		The same of the sa			•								Quote #:		-	
Phone:	513-678-2137 or 513-387-27	78		C	HA	IN	OF	CI	JS'	TO	DY		Ī	Mail To Contact:	Mark Math	ner	
Project Number:	SR13-001 Task 10-02000		A=None	B=HC		12504		tion Cod	es	=Methar		aOH		Mail To Company:	PRS - Ass	sured Group	
Project Name:	2013 Fish Sampling		H=Sodiun	n Bisulfa	te Solution	on	l=Sodiu	m Thiosul	fate J	=Other			ſ	Mail To Address:	7870 Kem	per Road, Suite	240,
Project State:	Wiscoinsin		FILTERED (YES/NO)		Y/N										Cincinnati	, OH 45249	
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Sampled By (Sign	):				<b>D</b>		[							Invoice To Company:	As Above		
PO #:	1 1	egulatory rogram:			este								Ī	Invoice To Address:	7870 Kem	per Road, Suite	240.
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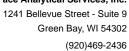
# Sample Condition Upon Receipt

Pace Analytical Services, Inc 1241 Bellevue Street, Suite 9 Green Bay, WI 5430:

(	Client Name	: <i>F</i>	RS	<u></u>	_ Project #	40	29393
Courier: Fed Ex	UPS T USPS T	Client I C	omme	rcial 😿 Pace	Other		
Tracking #:			<u>.</u>				
Custody Seal on Cooler/B				s intact:			
Custody Seal on Samples Packing Material: Bu	· · · · · · · · · · · · · · · · · · ·			s intact:	r no		
Thermometer Used	SR13			Blue Dry None	Samples or	lice con	ling process has begun
<del></del>	Incorr: 20 /Corred	0,		/	rozen: Tyes 6/1	, /	process nas began
Temp Blank Present:	yes Zno				no	Pers	on examining contents:
Temp should be above freezing Frozen Biota Samples should be		ept Biota.		Comments:		Date: Initial	s:
Chain of Custody Present:		<b>j</b> ŠlYes □No	o □N/A	1.			
Chain of Custody Filled Out	t:	ØiYes □No	o □N/A	2.			
Chain of Custody Relinquisl	hed:	<del>√</del> ZYes □No	o □n/a	3.			·
Sampler Name & Signature	on COC:	□Yes 🗐 No	DN/A	4.			
Samples Arrived within Hold	d Time:	17√1¥es □No	D □N/A	5.			
- VOA Samples froze	en upon receipt	☐Yes ☐No	)	Date/Time:			
Short Hold Time Analysis	(<72hr):	□Yes ☑Ño	□ N/A	6.			
Rush Turn Around Time R	Requested:	□Yes ☑No	□N/A	7.			
Sufficient Volume:		ØYes □No	□N/A	8.			·
Correct Containers Used:		√Yes □No	□N/A	9.			
-Pace Containers Used:		□Yes ØNo	□N/A			1	
-Pace IR Containers Use	ed:	□Yes □No					
Containers Intact:	***************************************	√ Yes □ No		10.			
Filtered volume received for	Dissolved tests	☐Yes ☐No					
Sample Labels match COC:		ĎA¥es □No					
-Includes date/time/ID/Ar		B				Administration	
All containers needing preserva		□Yes □No	ØN/∆	T HNO	3 F H2SO4 F	~ NaOH	NaOH +ZnAct
(Non-Compliance noted in 13.) All containers needing preserval	tion are found to be in			13.			ŕ
compliance with EPA recommer (HNO3, H2SO4 ≤2; NaOH+ZnA	ndation.	□Yes □No	ZÓN/A				
exceptions: VOA, coliform, TOC, TO	ох, тон,			Initial when	Lab Std #ID of		Date/
O&G, WIDROW, Phenolics,	OTHER:	□Yes (5410)		completed	preservative		Time:
Headspace in VOA Vials ( >	6mm):	□Yes □No	Z N/A				
Trip Blank Present:		□Yes □No		15.			
Trip Blank Custody Seals Pro		□Yes □No	ØN/A				
Pace Trip Blank Lot # (if pure Client Notification/ Resolut		<u> </u>		<u>I</u> If	checked, see attache	ed form fo	or additional comments
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Dunio of Manager David		0	l l		Data		1/13
Project Manager Review	:	FOC KL	<u>'</u>		Date: _	(0//	Page 35 of 35
							1 age 33 01 33







August 06, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

#### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

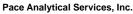
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

Enclosures







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

## **CERTIFICATIONS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



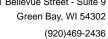
Green Bay, WI 54302 (920)469-2436

## **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079492001	IH SMB6	Tissue	06/10/13 00:00	06/10/13 15:30
4079492002	IH SMB7	Tissue	06/10/13 00:00	06/10/13 15:30
4079492003	IH SMB8	Tissue	06/10/13 00:00	06/10/13 15:30
4079492004	IH SMB9	Tissue	06/10/13 00:00	06/10/13 15:30
4079492005	IH RB1	Tissue	06/10/13 00:00	06/10/13 15:30
4079492006	IH RB2	Tissue	06/10/13 00:00	06/10/13 15:30
4079492007	IH RB3	Tissue	06/10/13 00:00	06/10/13 15:30
4079492008	IH RB4	Tissue	06/10/13 00:00	06/10/13 15:30





## **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

_ab ID	Sample ID	Method	Analysts	Analytes Reported
1079492001	IH SMB6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492002	IH SMB7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492003	IH SMB8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492004	IH SMB9	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492005	IH RB1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492006	IH RB2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492007	IH RB3	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
079492008	IH RB4	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 06, 2013

#### **General Information:**

8 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

## Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19156

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- IH RB1 (Lab ID: 4079492005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH RB2 (Lab ID: 4079492006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- IH SMB7 (Lab ID: 4079492002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MS (Lab ID: 828425)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MSD (Lab ID: 828426)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

#### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

## Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





**PROJECT NARRATIVE** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 06, 2013

QC Batch: OEXT/19156

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 4079489001

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

• MS (Lab ID: 828425)

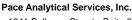
PCB-1254 (Aroclor 1254)MSD (Lab ID: 828426)

• PCB-1254 (Aroclor 1254)

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 06, 2013

#### **General Information:**

8 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

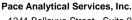
#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 06, 2013

#### **General Information:**

8 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

#### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH SMB6 Lab ID: 4079492001 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	od: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1410</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1440</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	11096-82-5	
PCB, Total	<b>2850</b> ug/kg	250	125	10	07/25/13 12:00	07/30/13 22:23	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	76 %	44-130		10	07/25/13 12:00	07/30/13 22:23	877-09-8	
Decachlorobiphenyl (S)	93 %	62-130		10	07/25/13 12:00	07/30/13 22:23	2051-24-3	
Fish Gender Typing	Analytical Meth	od: Pace Gender Ty	ping					
Gender	Male			1		07/10/13 11:35		
Lipid	Analytical Meth	od: Pace Lipid						
Lipid	0.69 %			1		07/29/13 12:23		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH SMB7 Lab ID: 4079492002 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	A 8082 Prepar	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ∪	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ∪	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ∪	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ∪	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1900</b> U	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1020</b> U	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> U	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	11096-82-5	
PCB, Total	<b>2910</b> U	ıg/kg	500	250	20	07/25/13 12:00	07/30/13 22:42	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	6	44-130		20	07/25/13 12:00	07/30/13 22:42	877-09-8	S4
Decachlorobiphenyl (S)	0 %	6	62-130		20	07/25/13 12:00	07/30/13 22:42	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/10/13 11:35		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	1.3 %	6			1		07/29/13 12:23		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH SMB8 Lab ID: 4079492003 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>344</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>426</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	11096-82-5	
PCB, Total	<b>770</b> ug/kg	125	62.5	5	07/25/13 12:00	07/30/13 23:00	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	90 %	44-130		5	07/25/13 12:00	07/30/13 23:00	877-09-8	
Decachlorobiphenyl (S)	97 %	62-130		5	07/25/13 12:00	07/30/13 23:00	2051-24-3	
Fish Gender Typing	Analytical Metho	od: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:35		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	1.2 %			1		07/29/13 12:23		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH SMB9 Lab ID: 4079492004 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOC	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA 8082 P	reparation Met	hod: EF	PA 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>293</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;50.0</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>314</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	11096-82-5	
PCB, Total	<b>607</b> ug/	/kg 1	00 50.0	4	07/25/13 12:00	07/30/13 23:19	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	90 %	44-1	30	4	07/25/13 12:00	07/30/13 23:19	877-09-8	
Decachlorobiphenyl (S)	97 %	62-1	30	4	07/25/13 12:00	07/30/13 23:19	2051-24-3	
Fish Gender Typing	Analytical M	Method: Pace Gende	r Typing					
Gender	Male			1		07/10/13 11:35		
Lipid	Analytical M	Method: Pace Lipid						
Lipid	0.98 %			1		07/29/13 12:24		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

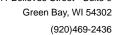
Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH RB1 Lab ID: 4079492005 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>1010</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>811</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	11096-82-5	
PCB, Total	<b>1820</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:38	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/25/13 12:00	07/30/13 23:38	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/25/13 12:00	07/30/13 23:38	2051-24-3	S4
Fish Gender Typing	Analytical Method	d: Pace Gender Typ	oing					
Gender	Female			1		07/10/13 11:35		
Lipid	Analytical Method	d: Pace Lipid						
Lipid	1.2 %			1		07/29/13 12:24		





## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH RB2 Lab ID: 4079492006 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>648</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>648</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	11096-82-5	
PCB, Total	<b>1300</b> ug/kg	500	250	20	07/25/13 12:00	07/30/13 23:57	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/25/13 12:00	07/30/13 23:57	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/25/13 12:00	07/30/13 23:57	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Female			1		07/10/13 11:35		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.72 %			1		07/29/13 12:24		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH RB3 Lab ID: 4079492007 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1180</b> ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>727</b> ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	11097-69-1	
PCB-1260 (Aroclor 1260)	<125 ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	11096-82-5	
PCB, Total	<b>1910</b> ug/kg	250	125	10	07/25/13 12:00	07/31/13 00:15	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	88 %	44-130		10	07/25/13 12:00	07/31/13 00:15	877-09-8	
Decachlorobiphenyl (S)	98 %	62-130		10	07/25/13 12:00	07/31/13 00:15	2051-24-3	
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:35		
Lipid	Analytical Method	: Pace Lipid						
Lipid	1.1 %			1		07/29/13 12:24		



## **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

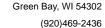
Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Sample: IH RB4 Lab ID: 4079492008 Collected: 06/10/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;131</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;131</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;131</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;131</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1470</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2290</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>180J</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	11096-82-5	
PCB, Total	<b>3940</b> ug/kg	261	131	10	07/25/13 12:00	07/31/13 00:33	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	83 %	44-130		10	07/25/13 12:00	07/31/13 00:33	877-09-8	
Decachlorobiphenyl (S)	95 %	62-130		10	07/25/13 12:00	07/31/13 00:33	2051-24-3	
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/10/13 11:35		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.3 %			1		07/29/13 12:24		





## **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

QC Batch: OEXT/19156 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079492001, 4079492002, 4079492003, 4079492004, 4079492005, 4079492006, 4079492007, 4079492008

METHOD BLANK: 828423 Matrix: Tissue

Associated Lab Samples: 4079492001, 4079492002, 4079492003, 4079492004, 4079492005, 4079492006, 4079492007, 4079492008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
- arameter				Analyzed	———
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/30/13 18:03	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/30/13 18:03	
Decachlorobiphenyl (S)	%	79	62-130	07/30/13 18:03	
Tetrachloro-m-xylene (S)	%	83	44-130	07/30/13 18:03	

LABORATORY CONTROL SAMPLE:	828424					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	205	82	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			78	62-130	
Tetrachloro-m-xylene (S)	%			82	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 82842	5		828426	•	•	•				
		70.40000.4	MS	MSD		1400		1400	0/ <b>D</b>			
Danamatan		079489001	Spike	Spike	MS	MSD	MS	MSD	% Rec	DDD	Max	0
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<375			<375	<375					24	
PCB-1221 (Aroclor 1221)	ug/kg	<375			<375	<375					24	
PCB-1232 (Aroclor 1232)	ug/kg	<375			<375	<375					24	
PCB-1242 (Aroclor 1242)	ug/kg	<375			<375	<375					24	
PCB-1248 (Aroclor 1248)	ug/kg	7630			7280	6680				9	24	
PCB-1254 (Aroclor 1254)	ug/kg	4380	1000	1000	4910	4630	53	25	27-163	6	24	M6
PCB-1260 (Aroclor 1260)	ug/kg	408J			399J	<375					24	
Decachlorobiphenyl (S)	%						0	0	62-130			S4
Tetrachloro-m-xylene (S)	%						0	0	44-130			S4



**QUALITY CONTROL DATA** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

QC Batch: OEXT/19169 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079492001, 4079492002, 4079492003, 4079492004, 4079492005, 4079492006, 4079492007, 4079492008

METHOD BLANK: 829179 Matrix: Tissue

Associated Lab Samples: 4079492001, 4079492002, 4079492003, 4079492004, 4079492005, 4079492006, 4079492007, 4079492008

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lipid % 0.54 07/29/13 12:21

SAMPLE DUPLICATE: 829180

Date: 08/06/2013 05:11 PM

4079489001 Dup Max Parameter Units Result Result **RPD RPD** Qualifiers Lipid % 10.6 11.9 12 20



**QUALIFIERS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

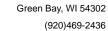
TNI - The NELAC Institute.

## **ANALYTE QUALIFIERS**

Date: 08/06/2013 05:11 PM

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079492

Date: 08/06/2013 05:11 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079492001	IH SMB6	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492002	IH SMB7	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492003	IH SMB8	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492004	IH SMB9	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492005	IH RB1	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492006	IH RB2	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492007	IH RB3	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492008	IH RB4	EPA 3540	OEXT/19156	EPA 8082	GCSV/9944
4079492001	IH SMB6	Pace Gender Typing	GRND/2592		
4079492002	IH SMB7	Pace Gender Typing	GRND/2592		
4079492003	IH SMB8	Pace Gender Typing	GRND/2592		
4079492004	IH SMB9	Pace Gender Typing	GRND/2592		
4079492005	IH RB1	Pace Gender Typing	GRND/2592		
4079492006	IH RB2	Pace Gender Typing	GRND/2592		
4079492007	IH RB3	Pace Gender Typing	GRND/2592		
4079492008	IH RB4	Pace Gender Typing	GRND/2592		
4079492001	IH SMB6	Pace Lipid	OEXT/19169		
4079492002	IH SMB7	Pace Lipid	OEXT/19169		
4079492003	IH SMB8	Pace Lipid	OEXT/19169		
4079492004	IH SMB9	Pace Lipid	OEXT/19169		
4079492005	IH RB1	Pace Lipid	OEXT/19169		
4079492006	IH RB2	Pace Lipid	OEXT/19169		
4079492007	IH RB3	Pace Lipid	OEXT/19169		
4079492008	IH RB4	Pace Lipid	OEXT/19169		

	(Please Print Clearly)		<u>!</u>								UPPER	MIDWEST F	REGION		Page 4	of 4
Company Nar				95							MN: 61	2-607-1700	WI: 920-469-2436	•		/
Branch/Locat			/	_ F	ace		lytic							COC No.	8 4	of 4 1079492
Project Conta	ct: Mark Mather					www.pc	icelabs.c	Om					Quote #:			
Phone:	513-678-2137 or 513-387-2	778	,	C	HA	١N	OF	CI	US'	TO	DY		Mail To Contact:	Mark Math	er	
Project Numb	er: SR13-001 Task 10-02000		A=No					tion Code	es			OH	Mail To Company:	PRS - Ass	ured Group	
Project Name	: 2013 Fish Sampling				B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH n Bisulfate Solution I=Sodium Thiosulfate J=Other						Mail To Address:	7870 Kemper Road, Suite 240,		240		
Project State:	Wiscoinsin		FILTERED? (YES/NO)		Y/N								<b>.</b>	Cincinnati,		2.0,
Sampled By (	Print): Mark Mather		PRESER (COI	VATION	Pick Letter								Invoice To Contact:	Goldie Sha	rp	
Sampled By (	Sign):		,	,									Invoice To Company:	As Above		
PO #:		Regulatory Program:			este	] 							Invoice To Address:	7870 Kemr	per Road, Suite	240
Data Packa	· · · · · · · · · · · · · · · · · · ·	Matr	ix Codes		Requested		IVES							Cincinnati,		, 240,
☐ EP/	A Level III (billable)	s = Biota = Charcoal	W = Water DW = Drinki GW = Grour SW = Surface	nd Water		8082	PRESERVATIVES						Invoice To Phone:	513-489-67	789	
LI EP/	Level IV Is	S = Soil	WW = Wast WP = Wipe		Analyses	1	SE						CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	CTION TIME	MATRIX	⋖ 	PCB	PRE						COMMENTS	(Lab l	Jse Only)	
005	IH RB1	6/10/13		Tissue		Х	Α						Whole Fish Sample	1-001	ybas	
006	IH RB2	6/10/13		Tissue		Х	Α							1 1	<del>J                                    </del>	
007	IH RB3	6/10/13		Tissue		X	Α									
7	IH RB4	6/10/13		Tissue		Х	Α									
		3.10.10														
						<u> </u>										
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Rush Tu	ırnaround Time Requested - Prelim	ns Relind	quished By:	- 1	()		Da	ite/Time.		12-	Received	Bv:	Date/Time:		PACE P	oject No.
	TAT subject to approval/surcharge	)		Y/U	XX.	1	7	61	[0]	13	Kan	<u> </u>	6/10/13	1415	40294	(60
Transmit Pro	Date Needed: lim Rush Results by (complete what you w		quished By.		-			te/Time/ '	7 / <	530	Received	By:	Clube 6/10/13	150		
	mmather@assuredllc.com		uished By:				Da	te/Time:		<i>,</i> , c	Received	By:	Date/Time:		Receipt Temp =	20 %
Email #2:												•	U		Sample R	eceipt pH
	513-387-2778	Relino	quished By:	·····			Da	te/Time:			Received	By:	Date/Time:		OK / A	djusted
Fax:															<u>Ç</u> øéler Cu	stody Seal
	Samples on HOLD are subject to	Relind	quished By:				Da	te/Time:			Received	Ву:	Date/Time:		(Present / N	
spe	ecial pricing and release of liability							*			<u> </u>			·	Intact / N Version 6.0 06/14/06	lot Intact

55	_
Pace	Analytical **

Pace Analytical Services, I	r
1241 Bellevue Street, Suit	e
Green Bay, WI 543	31

Pace Analytical	Sample C	ondition Upor	n Receipt	
Client Nam	e: <i>PR</i>	5	Project #	4079492
Courier: Fed Ex T UPS T USPS T	Client Comm	ercial 😿 Pace	Other	
Tracking #:				
Custody Seal on Cooler/Box Present: ye	, ,	lls intact:  yes		
Custody Seal on Samples Present: yes		ds intact:  yes	∫ no	
Packing Material: Bubble Wrap Bull Thermometer Used		ne Cother Blue Dry None	& Camples of	n içe, cooling process has begun
Cooler Temperature Uncorr: 20 /Corre		logical Tissue is F		
Temp Blank Present:  yes  no	The second secon	J	(kno)	Person examining contents:
Temp should be above freezing to 6°C for all sample e	xcept Biota.			Date: 6-15-15
Frozen Biota Samples should be received ≤ 0°C.		Comments:		miliats.
Chain of Custody Present:	Yes □No □N	A 1.		
Chain of Custody Filled Out:	ØYes □No □N	A 2.		
Chain of Custody Relinquished:	-∰Yes □No □N/	A 3.		
Sampler Name & Signature on COC:	□Yes PaNo □N/	A 4.		
Samples Arrived within Hold Time:	1 <del>2Í</del> ¥es □No □N/	A 5.		
- VOA Samples frozen upon receipt	□Yes □No	Date/Time:		y) (1
Short Hold Time Analysis (<72hr):	□Yes QÎNo □N/	A 6.		
Rush Turn Around Time Requested:	□Yes ☑No □N/	A 7.		
Sufficient Volume:	✓Yes □No □N/			
Correct Containers Used:	√Yes □No □N/			
-Pace Containers Used:		Į.		
-Pace IR Containers Used:	□Yes □No □N/			
Containers Intact:	y⊈yes □No □N/	10.		1
Filtered volume received for Dissolved tests	□Yes □No ØN	11.		
Sample Labels match COC:	ĎSYes □No □N//			
-Includes date/time/ID/Analysis Matrix:	B			: ' 
All containers needing preservation have been checked Non-Compliance noted in 13.)	. □Yes □No 🎉 N//	13. T HNO:	3   H2SO4	NaOH   NaOH + ZnAct
All containers needing preservation are found to be in		- 1		
ompliance with EPA recommendation. HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No ⊅W			
xceptions: VOA, coliform, TOC, TOX, TOH, &G, WIDROW, Phenolics, OTHER:	□Yes (Auo	Initial when completed	Lab Std #ID of preservative	Date/   Time:
leadspace in VOA Vials ( >6mm):	□Yes □No ØN/A	14.		
rip Blank Present:	□Yes □No ŒN/A	15.		
rip Blank Custody Seals Present	□Yes □No 121N/A			
ace Trip Blank Lot # (if purchased):				
Rient Notification/ Resolution: Person Contacted:	/ Date	If Time:	checked, see attache	ed form for additional comments
Comments/ Resolution:	trestles	( Buch	+ Dame	laen.
				6/11/13
<i>V</i>				<u> </u>
Project Manager Review:	Cet for TO		Date:	6/12/13
		σ		Page 23 of 23



Green Bay, WI 54302 (920)469-2436



August 14, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

# Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Revised to correct lipid value on sample 007

If you have any questions concerning this report, please feel free to contact me.

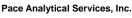
Sincerely,

Tod Noltemeyer

tod.noltemeyer@pacelabs.com Project Manager

Enclosures







1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

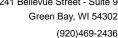
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001



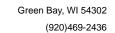


# SAMPLE SUMMARY

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

		Matrix	Date Collected	Date Received
4079391001	UR1 AC7	Tissue	06/09/13 00:00	06/10/13 15:30
4079391002	UR1 AC8	Tissue	06/09/13 00:00	06/10/13 15:30
4079391003	UR1 AC9	Tissue	06/09/13 00:00	06/10/13 15:30
4079391004	UR1 AC10	Tissue	06/09/13 00:00	06/10/13 15:30
4079391005	UR1 AC11	Tissue	06/09/13 00:00	06/10/13 15:30
4079391006	UR1 AC12	Tissue	06/09/13 00:00	06/10/13 15:30
4079391007	UR1 RB6	Tissue	06/09/13 00:00	06/10/13 15:30
4079391008	UR1 RB7	Tissue	06/09/13 00:00	06/10/13 15:30
4079391009	UR1 RB8	Tissue	06/09/13 00:00	06/10/13 15:30
4079391010	UR1 RB9	Tissue	06/09/13 00:00	06/10/13 15:30
4079391011	UR2 AC6	Tissue	06/09/13 00:00	06/10/13 15:30
4079391012	UR2 AC7	Tissue	06/09/13 00:00	06/10/13 15:30
4079391013	UR2 AC8	Tissue	06/09/13 00:00	06/10/13 15:30
4079391014	UR2 AC9	Tissue	06/09/13 00:00	06/10/13 15:30
4079391015	UR2 AC10	Tissue	06/09/13 00:00	06/10/13 15:30
4079391016	UR2 AC11	Tissue	06/09/13 00:00	06/10/13 15:30
	00	1589.00		





# **SAMPLE ANALYTE COUNT**

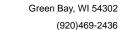
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079391001	UR1 AC7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391002	UR1 AC8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391003	UR1 AC9	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391004	UR1 AC10	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391005	UR1 AC11	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391006	UR1 AC12	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391007	UR1 RB6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391008	UR1 RB7 UR1 RB8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391009	UR1 RB8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391010	UR1 RB9	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391011	UR2 AC6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391012	UR2 AC7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391013	UR2 AC8	EPA 8082	BDS	10

# **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc..





# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391014	UR2 AC9	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391015	UR2 AC10	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079391016	UR2 AC11	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



# **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 14, 2013

## **General Information:**

16 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

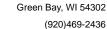
## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19003

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 823746)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MSD (Lab ID: 823747)
  - · Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC10 (Lab ID: 4079391004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC11 (Lab ID: 4079391005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC12 (Lab ID: 4079391006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC7 (Lab ID: 4079391001)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC8 (Lab ID: 4079391002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC9 (Lab ID: 4079391003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AC11 (Lab ID: 4079391016)





# **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 14, 2013

QC Batch: OEXT/19003

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- Decachlorobiphenyl (S)
- Tetrachloro-m-xylene (S)
- UR2 AC6 (Lab ID: 4079391011)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AC7 (Lab ID: 4079391012)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AC8 (Lab ID: 4079391013)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR2 AC9 (Lab ID: 4079391014)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### **Matrix Spikes:**

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: OEXT/19003

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 4079391001

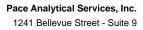
M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 823746)
  - PCB-1242 (Aroclor 1242)
- MSD (Lab ID: 823747)
  - PCB-1242 (Aroclor 1242)

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



Green Bay, WI 54302 (920)469-2436



## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 14, 2013

## **General Information:**

16 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

# **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

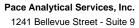
# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

# **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



Green Bay, WI 54302 (920)469-2436



## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 14, 2013

## **General Information:**

16 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

## **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## **Duplicate Sample:**

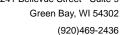
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.





Project: SR13-001 2013 FISH SAMPLING

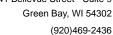
Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 AC7 Lab ID: 4079391001 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual		
8082 GCS PCB, Tissue	Analytica	al Method: EP	A 8082 Prepa	ation Meth	od: EPA	A 3540					
PCB-1016 (Aroclor 1016)	<1250	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	12674-11-2			
PCB-1221 (Aroclor 1221)	<1250	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	11104-28-2			
PCB-1232 (Aroclor 1232)	<1250	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	11141-16-5			
PCB-1242 (Aroclor 1242)	<1250	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	53469-21-9	M6		
PCB-1248 (Aroclor 1248)	20200	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	12672-29-6			
PCB-1254 (Aroclor 1254)	8670	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	11097-69-1			
PCB-1260 (Aroclor 1260)	<1250	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	11096-82-5			
PCB, Total	28900	ug/kg	2500	1250	100	07/16/13 12:00	07/27/13 12:01	1336-36-3			
Surrogates											
Tetrachloro-m-xylene (S)	0 '		44-130		100	07/16/13 12:00	07/27/13 12:01		S4		
Decachlorobiphenyl (S)	0 '	%	62-130		100	07/16/13 12:00	07/27/13 12:01	2051-24-3	S4		
Fish Gender Typing	Analytica	Analytical Method: Pace Gender Typing									
Gender	Male			. D	1		07/16/13 08:56				
Lipid	Analytica	al Method: Pa	ce Lipid		_						
Lipid	4.6		08		1		07/18/13 07:19				
	80										





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 AC8 Lab ID: 4079391002 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> u	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 12:18	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> u	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 12:18	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> u	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 12:18		
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> u	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 12:18	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>11900</b> u	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 12:18	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5860</b> u		1250	625	50	07/16/13 12:00	07/27/13 12:18	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;625</b> u		1250	625	50	07/16/13 12:00	07/27/13 12:18	11096-82-5	
PCB, Total	<b>17700</b> u	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 12:18	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	6	44-130		50	07/16/13 12:00	07/27/13 12:18	877-09-8	S4
Decachlorobiphenyl (S)	0 %	6	62-130		50	07/16/13 12:00	07/27/13 12:18	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Female				1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid						
Lipid	2.0 %	6	28		1		07/18/13 07:19		
			0						
		~ (C)							
	20								

(920)469-2436



# **ANALYTICAL RESULTS**

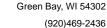
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 AC9 Lab ID: 4079391003 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP/	N 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> u	g/kg	1250	625	50	07/16/13 12:00	07/27/13 12:36	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> u	g/kg	1250	625	50	07/16/13 12:00	07/27/13 12:36	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> u		1250	625	50	07/16/13 12:00	07/27/13 12:36	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> u		1250	625	50	07/16/13 12:00	07/27/13 12:36	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>11300</b> u	g/kg	1250	625	50	07/16/13 12:00	07/27/13 12:36	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>7600</b> u	g/kg	1250	625	50	07/16/13 12:00	07/27/13 12:36	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;625</b> u	g/kg	1250	625	50	07/16/13 12:00	07/27/13 12:36	11096-82-5	
PCB, Total	<b>18900</b> u	g/kg	1250	625	50	07/16/13 12:00	07/27/13 12:36	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		50		07/27/13 12:36		S4
Decachlorobiphenyl (S)	0 %	, D	62-130		50	07/16/13 12:00	07/27/13 12:36	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	e Gender Typ	ing					
Gender	Male			. D	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	e Lipid		~				
Lipid	6.7 %		08		1		07/18/13 07:19		





Project: SR13-001 2013 FISH SAMPLING

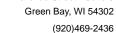
Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 AC10 Lab ID: 4079391004 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>30400</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>13200</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	11096-82-5	
PCB, Total	<b>43600</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 12:53	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	6	44-130		300	07/16/13 12:00	07/27/13 12:53	877-09-8	S4
Decachlorobiphenyl (S)	0 %	6	62-130		300	07/16/13 12:00	07/27/13 12:53	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Female			. D	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid	V	•				
Lipid	4.7 %		08		1		07/18/13 07:20		
•	Revi								





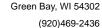
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 AC11 Lab ID: 4079391005 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;3750</b> u		7500	3750	300	07/16/13 12:00	07/27/13 13:11	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>31100</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>18300</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;3750</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	11096-82-5	
PCB, Total	<b>49500</b> u	g/kg	7500	3750	300	07/16/13 12:00	07/27/13 13:11	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		300	07/16/13 12:00			S4
Decachlorobiphenyl (S)	0 %	6	62-130		300	07/16/13 12:00	07/27/13 13:11	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Female			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid						
Lipid	9.0 %		08		1		07/18/13 07:20		
	e di	5							





Project: SR13-001 2013 FISH SAMPLING

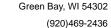
Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 AC12 Lab ID: 4079391006 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytica	Method: EP	A 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>21200</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>8130</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> (		5000	2500	200	07/16/13 12:00	07/27/13 13:28	11096-82-5	
PCB, Total	<b>29300</b> (	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 13:28	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 9	%	44-130		200	07/16/13 12:00	07/27/13 13:28	877-09-8	S4
Decachlorobiphenyl (S)	0 9	%	62-130		200	07/16/13 12:00	07/27/13 13:28	2051-24-3	S4
Fish Gender Typing	Analytica	Method: Pad	ce Gender Typ	ing					
Gender	Male			. 6	1		07/16/13 08:56		
Lipid	Analytica	Method: Pad	ce Lipid	V					
Lipid	3.7 9	5	08		1		07/18/13 07:20		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 RB6 Lab ID: 4079391007 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP/	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;106</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;106</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;106</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;106</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1730</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1150</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>125J</b> u		213	106	5	07/16/13 12:00	07/27/13 13:46	11096-82-5	
PCB, Total	<b>3010</b> u	ıg/kg	213	106	5	07/16/13 12:00	07/27/13 13:46	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	76 %	6	44-130		5	07/16/13 12:00	07/27/13 13:46	877-09-8	
Decachlorobiphenyl (S)	85 %	6	62-130		5	07/16/13 12:00	07/27/13 13:46	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	oing					
Gender	Female			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid						
Lipid	0.36 %	6	08		1		07/18/13 07:20		
	Revi	50'							

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**ANALYTICAL RESULTS** 

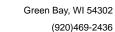
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 RB7 Lab ID: 4079391008 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 14:03	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪		100	50.0	4	07/16/13 12:00	07/27/13 14:03	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 14:03	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 14:03	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>635</b> ເ	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 14:03	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>415</b> u	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 14:03	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>59.3J</b> ւ		100	50.0	4	07/16/13 12:00	07/27/13 14:03		
PCB, Total	<b>1110</b> ເ		100	50.0	4	07/16/13 12:00	07/27/13 14:03		
Surrogates		3 3							
Tetrachloro-m-xylene (S)	81 9	%	44-130		4	07/16/13 12:00	07/27/13 14:03	877-09-8	
Decachlorobiphenyl (S)	94 %	%	62-130		4	07/16/13 12:00	07/27/13 14:03	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Female			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid						
Lipid	0.28 %	%	08		1		07/18/13 07:20		
	e vi	500							





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 RB8 Lab ID: 4079391009 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;12.5</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;12.5</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;12.5</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;12.5</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>82.3</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>70.7</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;12.5</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	11096-82-5	
PCB, Total	<b>153</b> u	ıg/kg	25.0	12.5	1	07/16/13 12:00	07/27/13 14:56	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	53 %	6	44-130		1 (		07/27/13 14:56		
Decachlorobiphenyl (S)	63 %	6	62-130		1	07/16/13 12:00	07/27/13 14:56	2051-24-3	
Fish Gender Typing	Analytical	Method: Pa	ce Gender Typ	ing					
Gender	Male			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pa	ce Lipid						
Lipid	0.035 %	6	08		1		07/18/13 07:20		
	Revi	50							



Green Bay, WI 54302 (920)469-2436

# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

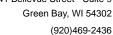
Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR1 RB9 Lab ID: 4079391010 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ∪	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ∪	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ∪	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;125</b> ∪	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1160</b> ւ	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1530</b> ւ	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;125</b> υ	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	11096-82-5	
PCB, Total	<b>2690</b>	ıg/kg	250	125	10	07/16/13 12:00	07/27/13 15:13	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	71 %	%	44-130		10	07/16/13 12:00	07/27/13 15:13	877-09-8	
Decachlorobiphenyl (S)	94 %	6	62-130		10	07/16/13 12:00	07/27/13 15:13	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Male			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid	V					
Lipid	<b>0.34</b> 9	<b>%</b>	08		1		07/18/13 07:20		
	Revi	50							





Project: SR13-001 2013 FISH SAMPLING

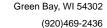
Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR2 AC6 Lab ID: 4079391011 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Analytica	Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
<b>&lt;625</b> (	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	12674-11-2	
<b>&lt;625</b> (	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	11104-28-2	
		1250	625	50	07/16/13 12:00	07/27/13 15:31	11141-16-5	
<b>&lt;625</b> (	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	53469-21-9	
<b>18700</b> (	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	12672-29-6	
<b>4440</b> (	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	11097-69-1	
<b>&lt;625</b> ≀	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	11096-82-5	
<b>23100</b> t	ıg/kg	1250	625	50	07/16/13 12:00	07/27/13 15:31	1336-36-3	
		44-130		50				S4
0 9	%	62-130		50	07/16/13 12:00	07/27/13 15:31	2051-24-3	S4
Analytica	Method: Pac	ce Gender Typ	ing					
Female			. D	1		07/16/13 08:56		
Analytica	Method: Pac	ce Lipid		*				
		08		1		07/18/13 07:20		
	<625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <625 (c) <62	<625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg 18700 ug/kg 18700 ug/kg 4440 ug/kg <625 ug/kg 23100 ug/kg  0 % 0 % Analytical Method: Pace Female Analytical Method: Pace 12.0 %	<625 ug/kg 1250 <625 ug/kg 1250 <625 ug/kg 1250 <625 ug/kg 1250 <625 ug/kg 1250 18700 ug/kg 1250 4440 ug/kg 1250 <625 ug/kg 1250 <625 ug/kg 1250 23100 ug/kg 1250 0 % 44-130 0 % 62-130 Analytical Method: Pace Gender Typ Female Analytical Method: Pace Lipid	<625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg <625 ug/kg  <625 ug/kg  <625 ug/kg	<625 ug/kg 1250 625 ug/kg 1250 625 50 <625 ug/kg 1250 625 50 <625 ug/kg 1250 625 50 18700 ug/kg 1250 625 50 4440 ug/kg 1250 625 50 <625 ug/kg 1250 625 50 <625 ug/kg 1250 625 50 <625 ug/kg 1250 625 50 23100 ug/kg 1250 625 50 Ad4-130 50 % 44-130 50 W 62-130 Analytical Method: Pace Gender Typing Female 1 Analytical Method: Pace Lipid 12.0 % 1	<625 ug/kg	-625 ug/kg	<625 ug/kg





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR2 AC7 Lab ID: 4079391012 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> u	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 15:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> u	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 15:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> u		5000	2500	200	07/16/13 12:00	07/27/13 15:48		
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> u	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 15:48	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>20500</b> u	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 15:48	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>11300</b> u		5000	2500	200	07/16/13 12:00	07/27/13 15:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> u	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 15:48	11096-82-5	
PCB, Total	<b>31800</b> u	ıg/kg	5000	2500	200	07/16/13 12:00	07/27/13 15:48	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	6	44-130		200	07/16/13 12:00	07/27/13 15:48	877-09-8	S4
Decachlorobiphenyl (S)	0 %	6	62-130		200	07/16/13 12:00	07/27/13 15:48	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Female			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid	V					
Lipid	20.3 %	6	0		1		07/18/13 07:20		
	Reji	500	700	)`					

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**ANALYTICAL RESULTS** 

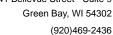
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR2 AC8 Lab ID: 4079391013 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Metho	od: EPA	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> u		2500	1250	100	07/16/13 12:00	07/31/13 14:51	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>15200</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9090</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	11096-82-5	
PCB, Total	<b>24300</b> u	g/kg	2500	1250	100	07/16/13 12:00	07/31/13 14:51	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		100	07/16/13 12:00	07/31/13 14:51		S4
Decachlorobiphenyl (S)	0 %	0	62-130		100	07/16/13 12:00	07/31/13 14:51	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Male			. 0	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid		~				
Lipid	12.4 %		08		1		07/18/13 07:21		





Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR2 AC9 Lab ID: 4079391014 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> u	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ∪	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> t	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> ∪	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>16000</b> ւ	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>11300</b> ι	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> ι		2500	1250	100	07/16/13 12:00	07/27/13 16:23	11096-82-5	
PCB, Total	<b>27300</b> t	ıg/kg	2500	1250	100	07/16/13 12:00	07/27/13 16:23	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		100	07/16/13 12:00			S4
Decachlorobiphenyl (S)	0 %	%	62-130		100	07/16/13 12:00	07/27/13 16:23	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Male			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid	V	•				
Lipid	13.5 9	%	08		1		07/18/13 07:21		

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# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

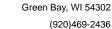
Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR2 AC10 Lab ID: 4079391015 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EP	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>764</b> u	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>289</b> ເ	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ∪	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	11096-82-5	
PCB, Total	<b>1050</b> ւ	ıg/kg	100	50.0	4	07/16/13 12:00	07/27/13 16:41	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	83 %	%	44-130		4	07/16/13 12:00	07/27/13 16:41	877-09-8	
Decachlorobiphenyl (S)	94 %	%	62-130		4	07/16/13 12:00	07/27/13 16:41	2051-24-3	
Fish Gender Typing	Analytical	Method: Pad	ce Gender Typ	ing					
Gender	Male			. 6	1		07/16/13 08:56		
Lipid	Analytical	Method: Pad	ce Lipid						
Lipid	3.4 %	%	08		1		07/18/13 07:21		
	Resi	500							





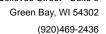
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Sample: UR2 AC11 Lab ID: 4079391016 Collected: 06/09/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytica	l Method: EP	A 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	< <b>2500</b> t	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> (	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> (	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	11141-16-5	
PCB-1242 (Aroclor 1242)	<2500	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>28400</b> (	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>10500</b> t	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> t	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	11096-82-5	
PCB, Total	<b>39000</b> t	ug/kg	5000	2500	200	07/16/13 12:00	07/27/13 16:58	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 (		44-130		200	07/16/13 12:00			S4
Decachlorobiphenyl (S)	0 (	%	62-130		200	07/16/13 12:00	07/27/13 16:58	2051-24-3	S4
Fish Gender Typing	Analytica	l Method: Pad	ce Gender Typ	ing					
Gender	Male			. D	1		07/16/13 08:56		
Lipid	Analytica	l Method: Pad	ce Lipid		•				
Lipid	3.0		08		1		07/18/13 07:21		
	60°								





## **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

QC Batch: OEXT/19003 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079391001, 4079391002, 4079391003, 4079391004, 4079391005, 4079391006, 4079391007, 4079391008,

4079391009, 4079391010, 4079391011, 4079391012, 4079391013, 4079391014, 4079391015, 4079391016

METHOD BLANK: 823744 Matrix: Tissue

Associated Lab Samples: 4079391001, 4079391002, 4079391003, 4079391004, 4079391005, 4079391006, 4079391007, 4079391008,

4079391009, 4079391010, 4079391011, 4079391012, 4079391013, 4079391014, 4079391015, 4079391016

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/27/13 10:51	<b>*</b>
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/27/13 10:51	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/27/13 10:51	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/27/13 10:51	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/27/13 10:51	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/27/13 10:51	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/27/13 10:51	
Decachlorobiphenyl (S)	%	86	62-130	07/27/13 10:51	
Tetrachloro-m-xylene (S)	%	78	44-130	07/27/13 10:51	

LABORATORY CONTROL SAMPLE:	823745					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	208	83	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			89	62-130	
Tetrachloro-m-xylene (S)	%			76	44-130	

MATRIX SPIKE & MATRIX SP	PIKE DUPLICA	TE: 82374	6		823747							
		1079391001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<1250			<1250	<1250					24	
PCB-1221 (Aroclor 1221)	ug/kg	<1250			<1250	<1250					24	
PCB-1232 (Aroclor 1232)	ug/kg	<1250			<1250	<1250					24	
PCB-1242 (Aroclor 1242)	ug/kg	<1250	1000	1000	<1250	<1250	0	0	27-163		24	M6
PCB-1248 (Aroclor 1248)	ug/kg	20200			21100	20400				4	24	
PCB-1254 (Aroclor 1254)	ug/kg	8670			8680	8490				2	24	
PCB-1260 (Aroclor 1260)	ug/kg	<1250			<1250	<1250					24	
Decachlorobiphenyl (S)	%						0	0	62-130			S4
Tetrachloro-m-xylene (S)	%						0	0	44-130			S4

Green Bay, WI 54302 (920)469-2436



**QUALITY CONTROL DATA** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

QC Batch: OEXT/19024 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079391001, 4079391002, 4079391003, 4079391004, 4079391005, 4079391006, 4079391007, 4079391008,

4079391009, 4079391010, 4079391011, 4079391012, 4079391013, 4079391014, 4079391015, 4079391016

METHOD BLANK: 824240 Matrix: Tissue

Associated Lab Samples: 4079391001, 4079391002, 4079391003, 4079391004, 4079391005, 4079391006, 4079391007, 4079391008,

4079391009, 4079391010, 4079391011, 4079391012, 4079391013, 4079391014, 4079391015, 4079391016

Blank Reporting

Parameter Units Result Limit Analyzed Qualifiers

Lipid % 0.46 07/18/13 07:19

SAMPLE DUPLICATE: 824241

Date: 08/14/2013 09:13 AM

Parameter Units Result Reput RPD Max RPD Qualifiers

Lipid % 4.6 4.4 5 20

(920)469-2436



## **QUALIFIERS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

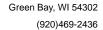
TNI - The NELAC Institute.

## **ANALYTE QUALIFIERS**

Date: 08/14/2013 09:13 AM

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079391001	UR1 AC7	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391002	UR1 AC8	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391003	UR1 AC9	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391004	UR1 AC10	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391005	UR1 AC11	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391006	UR1 AC12	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391007	UR1 RB6	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391008	UR1 RB7	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391009	UR1 RB8	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
4079391010	UR1 RB9	EPA 3540	OEXT/19003	EPA 8082	GCSV/9925
1079391011	UR2 AC6	EPA 3540	OEXT/19003		GCSV/9925
4079391012	UR2 AC7	EPA 3540	OEXT/19003		GCSV/9925
4079391013	UR2 AC8	EPA 3540	OEXT/19003		GCSV/9925
4079391014	UR2 AC9	EPA 3540	OEXT/19003		GCSV/9925
4079391015	UR2 AC10	EPA 3540	OEXT/19003		GCSV/9925
4079391016	UR2 AC11	EPA 3540	OEXT/19003		GCSV/9925
4079391001	UR1 AC7	Pace Gender Typing	GRND/2601		
4079391002	UR1 AC8	Pace Gender Typing	GRND/2601		
4079391003	UR1 AC9	Pace Gender Typing	GRND/2601		
4079391004	UR1 AC10	Pace Gender Typing	GRND/2601		
4079391005	UR1 AC11	Pace Gender Typing	GRND/2601		
4079391006	UR1 AC12	Pace Gender Typing	GRND/2601		
4079391007	UR1 RB6	Pace Gender Typing	GRND/2601		
4079391008	UR1 RB7	Pace Gender Typing	GRND/2601		
4079391009	UR1 RB8	Pace Gender Typing	GRND/2601		
4079391010	UR1 RB9	Pace Gender Typing	GRND/2601		
4079391011	UR2 AC6	Pace Gender Typing	GRND/2601		
4079391012	UR2 AC7	Pace Gender Typing	GRND/2601		
4079391013	UR2 AC8	Pace Gender Typing	GRND/2601		
4079391014	UR2 AC9	Pace Gender Typing	GRND/2601		
4079391015	UR2 AC10	Pace Gender Typing	GRND/2601		
4079391016	UR2 AC11	Pace Gender Typing	GRND/2601		
4079391001	UR1 AC7	Pace Lipid	OEXT/19024		
4079391002	UR1 AC8	Pace Lipid	OEXT/19024		
4079391003	UR1 AC9	Pace Lipid	OEXT/19024		
4079391004	UR1 AC10	Pace Lipid	OEXT/19024		
4079391005	UR1 AC11	Pace Lipid	OEXT/19024		
4079391006	UR1 AC12	Pace Lipid	OEXT/19024		
1079391007	UR1 RB6	Pace Lipid	OEXT/19024		
1079391008	UR1 RB7	Pace Lipid	OEXT/19024		
1079391009	UR1 RB8	Pace Lipid	OEXT/19024		
4079391010	UR1 RB9	Pace Lipid	OEXT/19024		
4079391011	UR2 AC6	Pace Lipid	OEXT/19024		
4079391012	UR2 AC7	Pace Lipid	OEXT/19024		
4079391013	UR2 AC8	Pace Lipid	OEXT/19024		
4079391014	UR2 AC9	Pace Lipid	OEXT/19024		
4079391015	UR2 AC10	Pace Lipid	OEXT/19024		
	UR2 AC11	i doc Lipid	OLX1/10024		



Green Bay, WI 54302 (920)469-2436

## **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079391

Date: 08/14/2013 09:13 AM

**Analytical** Lab ID Sample ID **QC Batch Method** QC Batch Batch **Analytical Method** Revised 0811AIN3 09: A



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Company Name:	Pollution Risk Services					A	1. 21.	. 1 6			MN: 6	12-607-170	00 V	VI: 920-469-2436		April 1	
Branch/Location:	Sheboygan		1 /	P			lytica celabs.c								COC No.	_5	
Project Contact:	Mark Mather					•						JBF	· [	Quote #:			
Phone:	513-678-2137 or 513-387-27	78		C	HA	IN	OF	Cl	JS	ΓΟ	DY			Mail To Contact:	Mark Math	er	
Project Number:	SR13-001 Task 10-02000		A=No		CL C=I			tion Code	s	≃Methan			ľ	Mail To Company:	PRS - Ass	ured Group	
Project Name:	2013 Fish Sampling		H=Sc	odium Bisulfa	ate Soluti	on	l=Sodiu	n Thiosulf	ate J	=Other			ſ	Mail To Address:	7870 Kem	per Road, Suite	240,
Project State:	Wiscoinsin		FILTE (YES	RED? (NO)	Y/N										Cincinnati,	OH 45249	
Sampled By (Prin	nt): Mark Mather		PRESER (CO		Pick Letter								1	Invoice To Contact:	Goldie Sha	rp	
Sampled By (Sig	n):				Ð									Invoice To Company:	As Above		
PO #:		egulatory Program:			este									Invoice To Address:	7870 Kemi	per Road, Suite	240.
Data Package (billable)	Options MS/MSD	Mat	rix Codes W = Water		Requested		IVES		1						Cincinnati,		,
EPA Le	evel III (billable)   B =   C =	Air Biota Charcoal	DW = Drinki GW = Groun SW = Surface	nd Water ce Water		8082	RVAT							Invoice To Phone:	513-489-67	789	
PACE LAB #	i i i i i i i i i i i i i i i i i i i		WW = Wast WP = Wipe ECTION	te Water MATRIX	Analyses	PCB - 8	PRESERVATIVES						Ī	CLIENT COMMENTS	1	OMMENTS Jse Only)	Profile #
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002	UR1 AC8	6/9/13		Tissue		X	Α						_		F	Mybag	· · · · · · · · · · · · · · · · · · ·
003	UR1 AC9	6/9/13		Tissue		X	Α								<u> </u>	1	
	UR1 AC10	6/9/13		Tissue		X	A						-	,		<del> </del>	
004	UR1 AC11	6/9/13	<u> </u>	Tissue		X	Α						-		l — — — — — — — — — — — — — — — — — — —		
006	UR1 AC12	6/9/13		Tissue		L							_	*	1		
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Company Name: Pollution Risk Services											MN: 6	MN: 612-607-1700 WI: 920-469-2436				Page 2	
Branch/Location: Sheboygan				Pace Analytical *										4	679391 COC No.	5	
Project Contact:	Mark Mather	www.pacelabs.com									Quote #:						
Phone: 513-678-2137 or 513-387-2778				CHAIN OF CUSTODY								Mail To Contact:	Mark Math	er			
Project Number: SR13-001 Task 10-02000			*Preservation Codes									łaOH	Mail To Company:		PRS - Assured Group		
Project Name:	2013 Fish Sampling			odium Bisulf			1=Sodiu	m Thiosulf		J=Other			ı	Mail To Address:	7870 Kem	er Road, Suite	240,
Project State:	Wiscoinsin		FILTERED? (YES/NO)		Y/N										Cincinnati,	OH 45249	
Sampled By (Print)	: Mark Mather		PRESER (COI		Pick Letter									Invoice To Contact:	Goldie Sharp		
Sampled By (Sign)			]											Invoice To Company:	As Above		
PO #:		egulatory rogram:			Requested									Invoice To Address:	7870 Kem	per Road, Suite	240
Data Package O	ptions MS/MSD	Mat	rix Codes		edn		VES								Cincinnati,		,
(billable)  EPA Leve		Air Biota Charcoal	W = Water DW = Drinki GW = Grour		S	22	/ATI							Invoice To Phone:	513-489-6	789	
☐ EPA Leve	NOT needed on S=	Oil Soil	SW = Surfac	ce Water te Water	Analyse	- 8082	SER							CLIENT		OMMENTS	Duefile #
PACE LAB#	your sample  S  =  CLIENT FIELD ID	Sludge COLL DATE	WP = Wipe	MATRIX	An	PCB	PRESERVATIVES							COMMENTS	i	Jse Only)	Profile #
201 00		6/9/13	TIME	Tissue		X	A							Whole Fish Sample		olypag.	4
	)	6/9/13		Tissue		Х	Α								-'- <i> </i> '	1)	
	() 4) UR1 RB8	6/9/13		Tissue		X	Α										
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	subject to approval/surcharge) te Needed:	Relin	gaished By:	104	$X/\!\!/$	$\sim$	Da	ite/Time;	6/1	10/2013	Received	<u>~</u> /	2_	6/10/13 Date/Time:	1415	407939	1
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Email #2:											Daniel De					Sample R	, ,
Telephone: 513-3 Fax:	01-2110	Relin	quished By:				Da	ite/Time:			Received By:			Date/Time:		OK / Ac	
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																Version 6.0 06/14/06	

Version 6.0 06/14/06

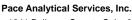
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Company Name:									MN: 612	MN: 612-607-1700 WI: 920-469-2436			./			
Branch/Location:	nch/Location: Sheboygan				Pace Analytical *									COC No.	5 4	1049391
Project Contact:	Mark Mather		The same of the sa			mwa.pc	ceraba.c						Quote #:			
Phone: 513-678-2137 or 513-387-2778			1	C	HA	IN	OF	CL	JS'	ΓΟ	DY		Mail To Contact:	Mark Math	er	
Project Number: SR13-001 Task 10-02000			*Preservation Codes           A=None         B=HCL         C=H2SO4         D=HNO3         E=DI Water         F=Methanol         G=NaOH								Mail To Company:	PRS - Ass	ured Group			
Project Name:	Project Name: 2013 Fish Sampling		H=Sc	odium Bisulf	ate Soluti	ion	l=Sodiu	m Thiosulfa	ite J	=Other			Mail To Address:	7870 Kemper Road, Suite 240,		
Project State:	Wiscoinsin		FILTE (YES		Y/N									Cincinnati,	OH 45249	
Sampled By (Print): Mark Mather			PRESERVATION (CODE)*		Pick Letter								Invoice To Contact:	Goldie Sha	rp	
Sampled By (Sign):	jn):				9								Invoice To Company:	As Above		
PO #:		Regulatory Program:			Requested								Invoice To Address:	7870 Kem	per Road, Suite	240,
Data Package Op		Ma:	trix Codes W = Water				]   							Cincinnati, OH 45249		
EPA Level	(billable)	= Biota = Charcoal = Oil	DW = Drinki GW = Grour SW = Surface	nd Water	S	8082	PRESERVATIVES						Invoice To Phone:	513-489-67	789	
EPA Level	IV I NOT HOODED ON IS	i = Soil i = Sludge	WW = Wast WP = Wipe		Analyse	1 1	ESE						CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	LECTION TIME	MATRIX	4	PCB	A.						COMMENTS	(Lab l	Jse Only)	
\$01 01	/ ) UR2 AC6	6/9/13		Tissue		X	Α						Whole Fish Sample	1-0	olybant	4
002 01	UR2 AC7	6/9/13		Tissue		X	Α									
003 0	13 UR2 AC8	6/9/13		Tissue		X	Α									
DOY 0	UR2 AC9	6/9/13		Tissue		Х	Α									
00\$ 0	6 UR2 AC10	6/9/13		Tissue		Х	Α								*	
006 0	UR2 AC11	6/9/13		Tissue		Х	Α							Į	7	
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Transmit Prelim Rush Results by (complete what you want):			on	12			6/0	0/13	15	530		Mank Unw 4/10/13 /530 Receipt Temp = 2			<i>?</i> ?? °°	
			elinquished By: Date/Time:								Received By: Park Date/Time:					
Telephone: 513-38	7-2778	Reli	Refinquished By: Date/Time:							Received By: Date/Time:				Sample Receipt pH OK / Adjusted		
Fax:									Cooler Custody So							
	on HOLD are subject to sing and release of liability	Reli	nquished By:				Da	ite/Time:			Received E	Зу:	Date/Time:		Present / N Intact / N	, ,



# Sample Condition Upon Receipt

Pace Analytical Services,	inc
1241 Bellevue Street, Su	ite
Green Bay, WI 5	430

	_				
Client Nam	e: $PRS$	<u></u>	Project #	4/079391	
Courier: Fed Ex FUPS FUSPS F	Client Comme	rcial 😿 Pace	Other		
Custody Seal on Cooler/Box Present: ye	s Xno Seal	s intact:	r no		
Custody Seal on Samples Present: yes		s intact: Tyes			
Packing Material: Bubble Wrap Bul	* *	•	,		
Thermometer Used SRI3	Type of Ice: Well		Samples on	içe, cooling process has begun	
Cooler Temperature Uncorr: 20 /Correct	1 7	,	rozen: Tyes 6/11	1/13	
Temp Blank Present: yes Mono			(Ino)	Person examining contents:	
Temp should be above freezing to 6°C for all sample e	xcept Biota.			Date: 6-15	_
Frozen Biota Samples should be received ≤ 0°C.		Comments:		Initials:	
Chain of Custody Present:	<b>X</b> Yes □No □N/A	1.			
Chain of Custody Filled Out:	ØYes □No □N/A	2.			
Chain of Custody Relinquished:	₩Yes □No □N/A	3.			
Sampler Name & Signature on COC:	□Yes ANo □N/A	4.			
Samples Arrived within Hold Time:	19 <sup>4</sup> ¥es □No □N/A	5.			
- VOA Samples frozen upon receipt	□Yes □No	Date/Time:			
Short Hold Time Analysis (<72hr):	□Yes <b>⊉</b> Ño □N/A	6.			
Rush Turn Around Time Requested:	□Yes ☑No □N/A				
Sufficient Volume:	☑Yes ☐No ☐N/A				
Correct Containers Used:	√QYes □No □N/A	9.			
-Pace Containers Used:	□Yes DANO □N/A				
-Pace IR Containers Used:	□Yes □No Ø₩/A				
Containers Intact:	√es □No □N/A	10.			
Filtered volume received for Dissolved tests	□Yes □No ØTN/A	11.			
Sample Labels match COC:	ÒAYes □No □N/A	12.			
-Includes date/time/ID/Analysis Matrix:	B				
All containers needing preservation have been checked	□Yes □No <b>A</b> N/A	I HNO3	B I H2SO4 I	NaOH   NaOH +ZnAct	
(Non-Compliance noted in 13.)  All containers needing preservation are found to be in		13.	, ,	•	
compliance with EPA recommendation.	□Yes □No ⊅N/A			·	
(HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)exceptions: VOA, coliform, TOC, TOX, TOH,		Initial when	Lab Std #ID of	Date/	
0&G, WIDROW, Phenolics, OTHER:	□Yes (AMO	completed	preservative	Time:	
Headspace in VOA Vials ( >6mm):	□Yes □No ØN/A	14.			
Trip Blank Present:	□Yes □No DANA	15.			
Trip Blank Custody Seals Present	□Yes □No <b>Øn</b> ⊬A				
Pace Trip Blank Lot # (if purchased):					
Client Notification/ Resolution:			checked, see attache	d form for additional comments	
Person Contacted:  Comments/ Resolution:	Date/I	ime:	+ Anne	Done	
Comments resolution.	premicy.	i accept	r xunc (	10/11/13	
	<i>U</i>			(Mu)	
Project Manager Review:	f for W		Date:	6/11/13	
	•				







August 14, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

# Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

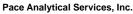
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

Enclosures





Pace Analytical www.pacelabs.com

1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **CERTIFICATIONS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



Green Bay, WI 54302 (920)469-2436

# **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079488001	LR AC8	Tissue	06/06/13 00:00	06/10/13 15:30
4079488002	LR JWS1	Tissue	06/06/13 00:00	06/10/13 15:30
4079488003	LR JWS2	Tissue	06/06/13 00:00	06/10/13 15:30
4079488004	LR JWS3	Tissue	06/06/13 00:00	06/10/13 15:30
4079488005	LR JWS4	Tissue	06/06/13 00:00	06/10/13 15:30
4079488006	LR JWS5	Tissue	06/06/13 00:00	06/10/13 15:30
4079488007	LR JWS6	Tissue	06/06/13 00:00	06/10/13 15:30
4079488008	LR JWS7	Tissue	06/06/13 00:00	06/10/13 15:30
4079488009	LR JWS8	Tissue	06/06/13 00:00	06/10/13 15:30
4079488010	LR W1 - CANCELLED	Tissue	06/06/13 00:00	06/10/13 15:30



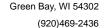
1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079488001	LR AC8	EPA 8082	BDS	10
		Pace Lipid	ABF	1





#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 14, 2013

#### **General Information:**

1 sample was analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

## Surrogates:

All surrogates were within QC limits with any exceptions noted below.

## Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

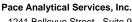
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

## **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

Samples LR JWS1 to LR JWS8 on the COC were to small to get fillets with enough mass for PCB analysis.



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#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 14, 2013

#### **General Information:**

1 sample was analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

Samples LR JWS1 to LR JWS8 on the COC were to small to get fillets with enough mass for PCB analysis.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

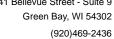
Pace Project No.: 4079488

Date: 08/14/2013 10:48 AM

Sample: LR AC8 Lab ID: 4079488001 Collected: 06/06/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LC	)Q	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082	Prepara	ation Metho	d: EPA	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/k	κg	250	125	10	07/25/13 12:00	08/03/13 07:42	12674-11-2	
PCB-1221 (Aroclor 1221)	<125 ug/k	g	250	125	10	07/25/13 12:00	08/03/13 07:42	11104-28-2	
PCB-1232 (Aroclor 1232)	<125 ug/k	g	250	125	10	07/25/13 12:00	08/03/13 07:42	11141-16-5	
PCB-1242 (Aroclor 1242)	<125 ug/k	g	250	125	10	07/25/13 12:00	08/03/13 07:42	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>427</b> ug/l	g	250	125	10	07/25/13 12:00	08/03/13 07:42	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1440</b> ug/l	(g	250	125	10	07/25/13 12:00	08/03/13 07:42	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>304</b> ug/l	(g	250	125	10	07/25/13 12:00	08/03/13 07:42	11096-82-5	
PCB, Total	<b>2170</b> ug/l	(g	250	125	10	07/25/13 12:00	08/03/13 07:42	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	81 %	44	1-130		10	07/25/13 12:00	08/03/13 07:42	877-09-8	
Decachlorobiphenyl (S)	98 %	62	2-130		10	07/25/13 12:00	08/03/13 07:42	2051-24-3	
Lipid	Analytical M	ethod: Pace Lipid	Į						
Lipid	11.0 %				1		08/01/13 10:41		





# **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

QC Batch: OEXT/19155 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079488001

METHOD BLANK: 828419 Matrix: Tissue

Associated Lab Samples: 4079488001

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	08/03/13 06:32	
Decachlorobiphenyl (S)	%	106	62-130	08/03/13 06:32	
Tetrachloro-m-xylene (S)	%	98	44-130	08/03/13 06:32	

LABORATORY	CONTROL	SAMPLE:	828420

Date: 08/14/2013 10:48 AM

		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	247	99	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			107	62-130	
Tetrachloro-m-xylene (S)	%			97	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 82842	1		828422							
Parameter	40 Units	079488001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec	RPD	Max RPD	Qual
	Offics	_ <del></del> -	COIIC.	COIIC.	Kesuit	Nesuit	/0 NEC	/0 KeC	LIIIIII	MFD		Quai
PCB-1016 (Aroclor 1016)	ug/kg	<125			<125	<125					24	
PCB-1221 (Aroclor 1221)	ug/kg	<125			<125	<125					24	
PCB-1232 (Aroclor 1232)	ug/kg	<125			<125	<125					24	
PCB-1242 (Aroclor 1242)	ug/kg	<125	1000	1000	1180	1190	118	119	27-163	1	24	
PCB-1248 (Aroclor 1248)	ug/kg	427			<125	<125					24	
PCB-1254 (Aroclor 1254)	ug/kg	1440			1590	1550				3	24	
PCB-1260 (Aroclor 1260)	ug/kg	304			325	315				3	24	
Decachlorobiphenyl (S)	%						102	103	62-130			
Tetrachloro-m-xylene (S)	%						82	84	44-130			

Green Bay, WI 54302 (920)469-2436



## **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

QC Batch: OEXT/19168 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079488001

METHOD BLANK: 829177 Matrix: Tissue

Associated Lab Samples: 4079488001

ParameterUnitsBlank Reporting ResultReporting LimitAnalyzedQualifiersLipid%0.6808/01/13 10:41

SAMPLE DUPLICATE: 829178

Date: 08/14/2013 10:48 AM

Parameter	Units	4079488001 Result	Dup Result	RPD	Max RPD	Qualifiers
Lipid	<u></u> %	11.0	11.9	8	20	



#### **QUALIFIERS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

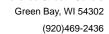
U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Date: 08/14/2013 10:48 AM





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079488

Date: 08/14/2013 10:48 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079488001	LR AC8	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079488001	LR AC8	Pace Lipid	OFXT/19168		

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Branch/Loca	tion:	Sheboy	/gan			/.	_#	ace										COC No.	74	074 <del>4</del> 82 <u>5</u>
Project Cont	act: /	Mark M	lather			<i>f</i>			www.pa	celabs c	2012						Quote #:			Page
Phone:		513-67	8-2137 or 513-387-	2778	8		C	HA	IN	OF	CI	US'	TO	DY			Mall To Contact:	Mark Mathe	er	
Project Num	ber:	SR13-(	001 Task 10-02000			A=No		ICL C=			ation Cod	es	F=Methen		$\neg \neg$		Mail To Company:	PRS - Assi	ured Group	
Project Name	e: :	2013 F	ish Sampling				dium Bisuif				Thiosulf		≃Otner				Mail To Address:	7870 Kemi	per Road, Suite	240.
Project State	): '	Wiscoi	nsin			FILTE		Y/N										Cincinnati,		
Sampled By	(Print):	Mark N	Mather	··············		PRESER (CO	VATION	Pick						_			Invoice To Contact:	Goldie Sha	ırp	
Sampled By	(Sign):				<u></u>	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	)= <i>)</i>	Letter			-	<u> </u>					Invoice To Company:	As Above		
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Data Pack	age Opt	lons	MS/MSD	Pr	ogram: Met	rix Codes		Requested		ES								Cincinnati,	•	; 240,
(6)	lable) A Level		On your sample	A = Al B = Bl		W = Water DW = Drinkir GW = Groun		1	22	PRESERVATIVES							Involce To Phone:	513-489-6		
CI EF	A Level	ıv	NOT needed on	0 = 0 S = S	off	SW = Surfect WW = West	e Water	nalyses	- 8082	Ä									OMMENTS	Profile #
PACE LAB #		CLIE	your sample NT FIELD ID	<u> SI≖S</u>		WP = Wipe ECTION	MATRIX	₹	PCB	NES							CLIENT COMMENTS	1	Jse Only)	Ligite#
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			R AWS2	$\dashv$	6/6/13		Tissue		X	A	<del>                                     </del>									
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<del></del>	<b>-</b>		LR AWS4	$\dashv$	6/6/13		Tissue	1	X	A	<del> </del>									
	<u> </u>		LR AWS5	$\dashv$	6/6/13		Tissue		X	A	+-	<del>                                     </del>								
			LR AWS6	-+	6/6/13	<b>_</b>	Tissue		X	A	_	<u> </u>								
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Project Contact:	: Mark Mather		1			www.pa	celabs c	XXXII					Quote #:			Page
Phone:	513-678-2137 or 513-387-277	78		C	HA	IN	OF	C	US	TO	DY		Mall To Contact:	Mark Mathe	Γ	
Project Number	r: SR13-001 Task 10-02000		A=No		ICL C=I	-	Preserva	ation Cod E=DI	es	F=Methar			Mail To Company:	PRS - Assu	red Group	
Project Name:	2013 Fish Sampling		H≃So	odium Bisulf	ate Solution	n	I=Sodiur	n Thiosulf	ate J	=Other			Mail To Address:		er Road, Suite	e 240,
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Sampled By (Pr	rint): Mark Mather		PRESER (COI		Pick Letter								Involce To Contact:	Goldie Shar	p	
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003	LR JWS2	6/6/14		Tissue		Х	Α							1	J 6	ノ
004	LR JWS3	6/6/15		Tissue		Х	Α				<u> </u>					
005	LR JWS4	6/6/16	<u> </u>	Tissue		X	А	ļ				<del>                                     </del>				
006	LR JWS5	6/6/17		Tissue		Х	Α									
007	LR JWS6	6/6/18	<b>†</b>	Tissue		Х	Α									
008	LR JWS7	6/6/19		Tissue		Х	Α									
009	LR JWS8	6/6/20		Tissue		Х	Α							1		
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Project Conta	ct: Mark Malher	<u></u>		1			www.be	icelabs c	xom					Quote #:			קטמ	
Phone:	513-678-2137 or 513-	387-2778			C	HA	IN	OF	C	US'	TO	DY		Mail To Contact:	Mark Mathe	∍r		
Project Numb	er: SR13-001 Task 10-02	2000		A=No		KCL C=			ation Cod	les	F=Methar	******	laOH	Mail To Company:	PRS - Assu	red Group		
Project Name	: 2013 Fish Sampling	····			dium Bisulf				m Thiosuli		=Other			Mail To Address:	7870 Kemr	oer Road, Suite	240.	
Project State:	Wiscoinsin			FILTE (YES		Y/N	T								Cincinnati,		,	
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	LR SMB4		6/6/16		Tissue	<b>†</b>	X	A		<del>                                     </del>								
	LR SMB5		6/6/17		Tissue	1	X	A	<del> </del> -	<del>                                     </del>	<del>                                     </del>	<b></b>						
	LR SMB6		6/6/18		Tissue		×	A	<del>                                     </del>	<b>†</b>								
	LR SMB7		6/6/19		Tissue		×	A	<del>                                     </del>	<del>                                     </del>					+		) <del>************************************</del>	
	LR SMB8						X	A	†	<del>                                     </del>		<u> </u>					***************************************	
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PACE LAB#	CLIENT FIELD ID	DATE	ECTION TIME	MATRIX	◀	PCB	H. H.							COMMENTS	(Lab	Use Only)	
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	LR RB2	6/6/13		Tissue		X	Α										
	LR RB3	6/6/13		Tissue		Х	Α										
	LR RB4	6/6/13		Tissue		×	A	1									
	LR RB5	6/6/13		Tissue		Х	Α										
	LR RB6	6/6/13		Tissue		Х	Α				_						
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	Samples on HOLD are subject to ecial pricing and release of liability	Retir	nquished By:				D	ale/Time.			Receive	d By:		Date/Time:		Present / N Intact / N	lot Present lot intact

# Christopher Hyska - PRS Sheboygan fish from yesterday

From:

Tod Noltemeyer

To:

WI Sample Receiving; Wylie, Susan

Date:

6/12/2013 9:20 AM

**Subject:** PRS Sheboygan fish from yesterday

CC:

Hyska, Christopher

I talked to Mark Mather at PRS about the items below. The answers from him are in red.

We do not have fish 1HAC8 (does not exist, cross off COC) and IHRB4 (this one should be there) which were listed on the COCs.

We received fish that we do not have on COCs: LRW1, LRAC8 (do not run these two) and LRJWS1 to 8 (run these, he will send COC as noted in comment below).

We did not receive COCs for LR fish samples (he will e-mail COC).

We also have a COC for MRJWS1 to 8, but there is no fish for that. (thse do not exist so cross off COC. He may send a COC indicating that also).

Can you provide some insight on those?

Thanks, Tod

Project Manager Pace Analytical - WI 6409 Odana Road Suite E Madison, WI 53719 (608) 232-3300

Tod.Noltemeyer@pacelabs.com

Project Manager Pace Analytical - WI 6409 Odana Road Suite E Madison, WI 53719 (608) 232-3300

Tod.Noltemeyer@pacelabs.com

# Christopher Hyska - RE: PRS Sheboygan fish from yesterday

From:

"Mark Mather" <mmather@assuredllc.com>

To:

"Tod Noltemeyer" < Tod. Noltemeyer@pacelabs.com>

Date:

6/12/2013 9:36 AM

Subject:

RE: PRS Sheboygan fish from yesterday

CC:

"Alee Her" < Alee.Her@pacelabs.com>, "Brenda Fritsch" < Brenda.Fritsch@pac...

Attachments: COC 4 June 6 Fish Samples -Lower River.pdf

Please see attached Lower River (LR) Sample COC's. Regretfully, S 1-15, S17, S 19-23, and S-25 will include asphaltic concrete.

Samples, S-16, S-18, S-24 and PS -26 should not have asphaltic materials.

With regard to the issues, below,

Mark,

A few issues with the fish we picked up yesterday:

We do not have fish 1HAC8 and IHRB4 which were listed on the COCs.

There is no IH AC8. Regrets on the PRS error.

IH RB4, we indicate as being shipped. If it was not, then I am sure that the packing error was PRS.

We received fish that we do not have on COCs: LRW1, LRAC8 and LRJWS1 to 8.

We did not receive COCs for LR fish samples

See attached COC. DO NOT RUN LR W1.

We also have a COC for MRJWS1 to 8, but there is no fish for that.

Again, in error PRS included a COC without the samples. Please accept this note as a correction.

Can you provide some insight on those?

Thanks, Tod

Project Manager Pace Analytical - WI 6409 Odana Road Suite E Madison, WI 53719 (608) 232-3300

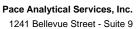
Tod.Noltemeyer@pacelabs.com

# Pace Analytical"

# Sample Condition Upon Receipt

Pace Analytical Services,	Ir
1241 Bellevue Street, Su	ite
Green Bay, WI 54	131

/ doc/marytical						
Client Name	e:	RS	>	_ Project #		4079488
Courier: Fed Ex T UPS T USPS T	Client C	omme	rcial 😿 Pace	Other		
Tracking #:	N	<del></del>				
Custody Seal on Semples Present:  yes			s intact:  yes	no		
Custody Seal on Samples Present:  yes Packing Material:  Bubble Wrap Bubble		Sear Non	s intact: Tyes	J no		
Thermometer Used SR13			e Cother Blue Dry None	Samples or	, ico, coo	ing process has begun
Cooler Temperature Uncorr: 20 /Corred	7 )	• /	,	rozen: Tyes 6//		ing process has begun
Temp Blank Present: Tyes Mo				(Eno)	<b>'</b>	on examining contents:
Temp should be above freezing to 6°C for all sample exc Frozen Biota Samples should be received ≤ 0°C.	cept Biota.		Comments:		Date: Initial	6-11-13 5: 5NO
Chain of Custody Present:	<b>X</b> Yes □No	□n/a	1.		describer describer	
Chain of Custody Filled Out:	Ø Yes □ No	□n/a	2.		and an area	
Chain of Custody Relinquished:	<b>∳</b> Yes □No	□n/a	3.			
Sampler Name & Signature on COC:	□Yes <b>∄</b> No	□n/a	4.		: :	
Samples Arrived within Hold Time:	Ø¥es □No	□n/a	5.			
- VOA Samples frozen upon receipt	☐Yes ☐No		Date/Time:		!!	
Short Hold Time Analysis (<72hr):	□Yes Ū̇̀No	□n/a	6.			
Rush Turn Around Time Requested:	□Yes ☑No	□n/a	7.			
Sufficient Volume:	ZYes □No	□n/a	8.			
Correct Containers Used:	√ Yes □No	□n/a	9.		!!	
-Pace Containers Used:	□Yes ØNo	□n/a				
-Pace IR Containers Used:	□Yes □No	<b>∏</b> AN/A			1	
Containers Intact:	yes □No	/ □n/a	10.			
Filtered volume received for Dissolved tests	□Yes □No	ØN/A	11.			
Sample Labels match COC:	i⊋Yes □No				1:	
-Includes date/time/ID/Analysis Matrix:	B					
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No	<b>Ž</b> ÎN/A	13 T HNO	3 J H2SO4 J	NaOH	☐ NaOH +ZnAct
All containers needing preservation are found to be in			13.		TOTAL CONTRACTOR	
compliance with EPA recommendation. HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No	MIA				
exceptions: VOA, coliform, TOC, TOX, TOH, 0&G, WIDROW, Phenolics, OTHER:	□Yes (ANO		Initial when completed	Lab Std #ID of preservative		Date/ Time:
Headspace in VOA Vials ( >6mm):	□Yes □No	<b>Ø</b> N/A	14.			
Frip Blank Present:	□Yes □No	DA(N/A	15.			
rip Blank Custody Seals Present	□Yes □No	ØN/A			4	
Pace Trip Blank Lot # (if purchased):	_					
Client Notification/ Resolution:  Person Contacted:	,	Date/Т		checked, see attache	d form fo	additional comments
Comments/ Resolution:	Book	laceri La	( Buch	A same	Doe	h
1,000						6/11/13
						<u> </u>
Project Manager Review:	AT for	TN		Date: _	6	12.13
—————————————————————————————————————		,				Dogo 10 of 10





Green Bay, WI 54302 (920)469-2436

August 14, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

## Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 10, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

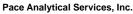
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 





Pace Analytical www.pacelabs.com

1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

## **CERTIFICATIONS**

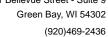
Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750



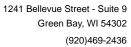


# **SAMPLE SUMMARY**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079493005	MR1 RB5	Tissue	06/08/13 00:00	06/10/13 15:30
4079493006	MR1 RB6	Tissue	06/08/13 00:00	06/10/13 15:30
4079493007	MR1 RB7	Tissue	06/08/13 00:00	06/10/13 15:30
4079493008	MR1 RB8	Tissue	06/08/13 00:00	06/10/13 15:30
4079493009	MR1 CC1	Tissue	06/08/13 00:00	06/10/13 15:30
4079493010	MR1 CC2	Tissue	06/08/13 00:00	06/10/13 15:30
4079493011	MR1 CC3	Tissue	06/08/13 00:00	06/10/13 15:30
4079493012	MR1 CC4	Tissue	06/08/13 00:00	06/10/13 15:30
4079493013	MR1 CC5	Tissue	06/08/13 00:00	06/10/13 15:30
4079493014	MR1 CC6	Tissue	06/08/13 00:00	06/10/13 15:30
4079493015	MR1 CC7	Tissue	06/08/13 00:00	06/10/13 15:30
4079493016	MR1 CC8	Tissue	06/08/13 00:00	06/10/13 15:30
4079493017	MR1 W6	Tissue	06/08/13 00:00	06/10/13 15:30
4079493018	MR1 W7	Tissue	06/08/13 00:00	06/10/13 15:30
4079493019	MR1 W8	Tissue	06/08/13 00:00	06/10/13 15:30



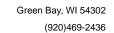


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079493005	MR1 RB5	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493006	MR1 RB6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493007	MR1 RB7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493008	MR1 RB8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493009	MR1 CC1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493010	MR1 CC2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493011	MR1 CC3	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493012	MR1 CC4	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493013	MR1 CC5	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493014	MR1 CC6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493015	MR1 CC7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493016	MR1 CC8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493017	MR1 W6	EPA 8082	BDS	10





# **SAMPLE ANALYTE COUNT**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493018	MR1 W7	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079493019	MR1 W8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

## **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 14, 2013

#### **General Information:**

15 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19155

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MR1 CC1 (Lab ID: 4079493009)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC2 (Lab ID: 4079493010)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC3 (Lab ID: 4079493011)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC4 (Lab ID: 4079493012)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC5 (Lab ID: 4079493013)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC6 (Lab ID: 4079493014)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC7 (Lab ID: 4079493015)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 CC8 (Lab ID: 4079493016)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 RB5 (Lab ID: 4079493005)



Green Bay, WI 54302 (920)469-2436

#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 14, 2013

QC Batch: OEXT/19155

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- Decachlorobiphenyl (S)
- Tetrachloro-m-xylene (S)
- MR1 W6 (Lab ID: 4079493017)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 W7 (Lab ID: 4079493018)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MR1 W8 (Lab ID: 4079493019)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

#### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

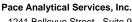
# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

# **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



Pace Analytical www.pacelabs.com

1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 14, 2013

#### **General Information:**

15 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates

All surrogates were within QC limits with any exceptions noted below.

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

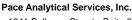
# Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.





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#### **PROJECT NARRATIVE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 14, 2013

#### **General Information:**

15 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

#### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

#### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

#### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

#### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

#### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

#### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

#### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

#### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

#### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 RB5 Lab ID: 4079493005 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/k	ig 375	188	15	07/25/13 12:00	08/03/13 08:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;188</b> ug/k	g 375	188	15	07/25/13 12:00	08/03/13 08:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;188</b> ug/k	g 375	188	15	07/25/13 12:00	08/03/13 08:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>742</b> ug/k	g 375	188	15	07/25/13 12:00	08/03/13 08:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>&lt;188</b> ug/k	g 375	188	15	07/25/13 12:00	08/03/13 08:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>839</b> ug/k	ig 375	188	15	07/25/13 12:00	08/03/13 08:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;188</b> ug/k	g 375	188	15	07/25/13 12:00	08/03/13 08:00	11096-82-5	
PCB, Total	<b>1580</b> ug/k	g 375	188	15	07/25/13 12:00	08/03/13 08:00	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	07/25/13 12:00	08/03/13 08:00	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	07/25/13 12:00	08/03/13 08:00	2051-24-3	S4
Fish Gender Typing	Analytical Me	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	0.44 %			1		08/01/13 10:41		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 RB6 Lab ID: 4079493006 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>667</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>599</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;62.5</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	11096-82-5	
PCB, Total	<b>1270</b> ug/kg	125	62.5	5	07/25/13 12:00	08/03/13 08:17	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	84 %	44-130		5	07/25/13 12:00	08/03/13 08:17	877-09-8	
Decachlorobiphenyl (S)	92 %	62-130		5	07/25/13 12:00	08/03/13 08:17	2051-24-3	
Fish Gender Typing	Analytical Methor	od: Pace Gender Typ	oing					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Methor	od: Pace Lipid						
Lipid	0.50 %			1		08/01/13 10:41		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 RB7 Lab ID: 4079493007 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	lethod: EPA 8082 Prep	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1010</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>993</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>72.3J</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	11096-82-5	
PCB, Total	<b>2070</b> ug/	kg 125	62.5	5	07/25/13 12:00	08/03/13 08:35	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	91 %	44-130		5	07/25/13 12:00	08/03/13 08:35	877-09-8	
Decachlorobiphenyl (S)	103 %	62-130		5	07/25/13 12:00	08/03/13 08:35	2051-24-3	
Fish Gender Typing	Analytical M	lethod: Pace Gender Ty	yping					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical M	lethod: Pace Lipid						
Lipid	0.44 %			1		08/01/13 10:41		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 RB8 Lab ID: 4079493008 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	°A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;65.3</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;65.3</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;65.3</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;65.3</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>672</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>501</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;65.3</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	11096-82-5	
PCB, Total	<b>1170</b> ug/kg	131	65.3	5	07/25/13 12:00	08/03/13 08:52	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	88 %	44-130		5	07/25/13 12:00	08/03/13 08:52	877-09-8	
Decachlorobiphenyl (S)	110 %	62-130		5	07/25/13 12:00	08/03/13 08:52	2051-24-3	
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	0.49 %			1		08/01/13 10:42		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

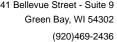
Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC1 Lab ID: 4079493009 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Mo	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2590</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2540</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>275J</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	11096-82-5	
PCB, Total	<b>5410</b> ug/k	g 500	250	20	07/25/13 12:00	08/03/13 09:10	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/25/13 12:00	08/03/13 09:10	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/25/13 12:00	08/03/13 09:10	2051-24-3	S4
Fish Gender Typing	Analytical Mo	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Mo	ethod: Pace Lipid						
Lipid	2.2 %			1		08/01/13 10:42		





# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC2 Lab ID: 4079493010 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA	8082 Prepar	ation Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>4840</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4310</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>399J</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	11096-82-5	
PCB, Total	<b>9550</b> ug/l	kg	750	375	30	07/25/13 12:00	08/03/13 10:02	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		30	07/25/13 12:00	08/03/13 10:02	877-09-8	S4
Decachlorobiphenyl (S)	0 %		62-130		30	07/25/13 12:00	08/03/13 10:02	2051-24-3	S4
Fish Gender Typing	Analytical M	ethod: Pace	Gender Typ	ing					
Gender	Male				1		07/12/13 07:06		
Lipid	Analytical M	ethod: Pace	Lipid						
Lipid	3.8 %				1		08/01/13 10:42		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC3 Lab ID: 4079493011 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method: EPA 8082 Preparation Method: EPA 3540							
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>8700</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9140</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>836J</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	11096-82-5	
PCB, Total	<b>18700</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:20	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/25/13 12:00	08/03/13 10:20	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/25/13 12:00	08/03/13 10:20	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Female			1		07/12/13 07:06		
Lipid	Analytical Method: Pace Lipid							
Lipid	6.9 %			1		08/01/13 10:42		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

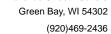
Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC4 Lab ID: 4079493012 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>6300</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>6350</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>546J</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	11096-82-5	
PCB, Total	<b>13200</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 10:37	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	08/03/13 10:37	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	08/03/13 10:37	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Female			1		07/12/13 07:06		
Lipid	Analytical Method: Pace Lipid							
Lipid	5.6 %			1		08/01/13 10:43		





# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC5 Lab ID: 4079493013 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method: EPA 8082 Preparation Method: EPA 3540							
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>8850</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>8290</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>708J</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	11096-82-5	
PCB, Total	<b>17800</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 10:54	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/25/13 12:00	08/03/13 10:54	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/25/13 12:00	08/03/13 10:54	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Female			1		07/12/13 07:06		
Lipid	Analytical Method: Pace Lipid							
Lipid	7.1 %			1		08/01/13 10:43		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC6 Lab ID: 4079493014 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5510</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5530</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>619J</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	11096-82-5	
PCB, Total	<b>11700</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:12	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	08/03/13 11:12	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	08/03/13 11:12	2051-24-3	S4
Fish Gender Typing	Analytical Method: Pace Gender Typing							
Gender	Female			1		07/12/13 07:06		
Lipid	Analytical Method: Pace Lipid							
Lipid	9.7 %			1		08/01/13 10:43		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC7 Lab ID: 4079493015 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Meth	nod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;375</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5600</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4590</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>474J</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	11096-82-5	
PCB, Total	<b>10700</b> ug/kg	750	375	30	07/25/13 12:00	08/03/13 11:30	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/25/13 12:00	08/03/13 11:30	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/25/13 12:00	08/03/13 11:30	2051-24-3	S4
Fish Gender Typing	Analytical Meth	nod: Pace Gender Typ	oing					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Meth	nod: Pace Lipid						
Lipid	6.5 %			1		08/01/13 10:43		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 CC8 Lab ID: 4079493016 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical	Method: EPA	N 8082 Prepai	ration Metho	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7030</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>7050</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>783J</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	11096-82-5	
PCB, Total	<b>14900</b> u	g/kg	1250	625	50	07/25/13 12:00	08/03/13 11:47	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %	, 0	44-130		50	07/25/13 12:00	08/03/13 11:47	877-09-8	S4
Decachlorobiphenyl (S)	0 %	0	62-130		50	07/25/13 12:00	08/03/13 11:47	2051-24-3	S4
Fish Gender Typing	Analytical	Method: Pac	e Gender Typ	ing					
Gender	Male				1		07/12/13 07:06		
Lipid	Analytical	Method: Pac	e Lipid						
Lipid	8.0 %	ó			1		08/01/13 10:43		



**ANALYTICAL RESULTS** 

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 W6 Lab ID: 4079493017 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;188</b> ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2330</b> ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1860</b> ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>191J</b> ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	11096-82-5	
PCB, Total	<b>4380</b> ug/kg	375	188	15	07/25/13 12:00	08/03/13 12:04	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	07/25/13 12:00	08/03/13 12:04	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	07/25/13 12:00	08/03/13 12:04	2051-24-3	S4
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	1.8 %			1		08/01/13 10:44		



# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

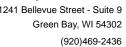
Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 W7 Lab ID: 4079493018 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>10300</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9870</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>993J</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	11096-82-5	
PCB, Total	<b>21100</b> ug/kg	1250	625	50	07/25/13 12:00	08/03/13 12:22	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/25/13 12:00	08/03/13 12:22	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/25/13 12:00	08/03/13 12:22	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/12/13 07:06		
Lipid	Analytical Method:	Pace Lipid						
Lipid	4.8 %			1		08/01/13 10:44		





# **ANALYTICAL RESULTS**

Project: SR13-001 2013 FISH SAMPLING

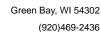
Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Sample: MR1 W8 Lab ID: 4079493019 Collected: 06/08/13 00:00 Received: 06/10/13 15:30 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytica	l Method: EPA	A 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> (	ıg/kg	500	250	20	07/25/13 12:00	08/03/13 12:39	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> (	ug/kg	500	250	20	07/25/13 12:00	08/03/13 12:39	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> (	ug/kg	500	250	20	07/25/13 12:00	08/03/13 12:39	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> (	ug/kg	500	250	20	07/25/13 12:00	08/03/13 12:39	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2940</b> (	ug/kg	500	250	20	07/25/13 12:00	08/03/13 12:39	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2690</b> (		500	250	20	07/25/13 12:00	08/03/13 12:39	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>461J</b> (	ug/kg	500	250	20	07/25/13 12:00	08/03/13 12:39	11096-82-5	
PCB, Total	<b>6100</b> (		500	250	20	07/25/13 12:00	08/03/13 12:39	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 9	%	44-130		20	07/25/13 12:00	08/03/13 12:39	877-09-8	S4
Decachlorobiphenyl (S)	0 9	%	62-130		20	07/25/13 12:00	08/03/13 12:39	2051-24-3	S4
Fish Gender Typing	Analytica	l Method: Pad	e Gender Typ	ing					
Gender	Male				1		07/12/13 07:06		
Lipid	Analytica	l Method: Pac	e Lipid						
Lipid	4.2	%			1		08/01/13 10:44		





### **QUALITY CONTROL DATA**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

QC Batch: OEXT/19155 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079493005, 4079493006, 4079493007, 4079493008, 4079493009, 4079493010, 4079493011, 4079493012,

4079493013, 4079493014, 4079493015, 4079493016, 4079493017, 4079493018, 4079493019

METHOD BLANK: 828419 Matrix: Tissue

Associated Lab Samples: 4079493005, 4079493006, 4079493007, 4079493008, 4079493009, 4079493010, 4079493011, 4079493012,

4079493013, 4079493014, 4079493015, 4079493016, 4079493017, 4079493018, 4079493019

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	08/03/13 06:32	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	08/03/13 06:32	
Decachlorobiphenyl (S)	%	106	62-130	08/03/13 06:32	
Tetrachloro-m-xylene (S)	%	98	44-130	08/03/13 06:32	

LABORATORY CONTROL SAMPLE:	828420					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg	250	247	99	61-130	
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg		<12.5			
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			107	62-130	
Tetrachloro-m-xylene (S)	%			97	44-130	

MATRIX SPIKE & MATRIX SF	PIKE DUPLICAT	E: 82842	1		828422							
_		079488001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<125			<125	<125					24	
PCB-1221 (Aroclor 1221)	ug/kg	<125			<125	<125					24	
PCB-1232 (Aroclor 1232)	ug/kg	<125			<125	<125					24	
PCB-1242 (Aroclor 1242)	ug/kg	<125	1000	1000	1180	1190	118	119	27-163	1	24	
PCB-1248 (Aroclor 1248)	ug/kg	427			<125	<125					24	
PCB-1254 (Aroclor 1254)	ug/kg	1440			1590	1550				3	24	
PCB-1260 (Aroclor 1260)	ug/kg	304			325	315				3	24	
Decachlorobiphenyl (S)	%						102	103	62-130			
Tetrachloro-m-xylene (S)	%						82	84	44-130			

Green Bay, WI 54302 (920)469-2436



### **QUALITY CONTROL DATA**

SR13-001 2013 FISH SAMPLING Project:

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Lipid

QC Batch: OEXT/19168 Analysis Method: Pace Lipid QC Batch Method: Pace Lipid Analysis Description:

4079493005, 4079493006, 4079493007, 4079493008, 4079493009, 4079493010, 4079493011, 4079493012, Associated Lab Samples:

4079493013, 4079493014, 4079493015, 4079493016, 4079493017, 4079493018, 4079493019

METHOD BLANK: 829177 Matrix: Tissue

Associated Lab Samples:

4079493013, 4079493014, 4079493015, 4079493016, 4079493017, 4079493018, 4079493019

08/01/13 10:41

Blank Reporting

0.68

Units Limit Parameter Result Analyzed Qualifiers

%

SAMPLE DUPLICATE: 829178 4079488001 Dup Max **RPD** Parameter Units Result Result **RPD** Qualifiers % 11.0 Lipid 11.9 20 8





### **QUALIFIERS**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

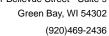
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### **ANALYTE QUALIFIERS**

Date: 08/14/2013 11:05 AM

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 2013 FISH SAMPLING

Pace Project No.: 4079493

Date: 08/14/2013 11:05 AM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079493005	MR1 RB5	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493006	MR1 RB6	EPA 3540	OEXT/19155		GCSV/9962
4079493007	MR1 RB7	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493008	MR1 RB8	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493009	MR1 CC1	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493010	MR1 CC2	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493011	MR1 CC3	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493012	MR1 CC4	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493013	MR1 CC5	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493014	MR1 CC6	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493015	MR1 CC7	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493016	MR1 CC8	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493017	MR1 W6	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493018	MR1 W7	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493019	MR1 W8	EPA 3540	OEXT/19155	EPA 8082	GCSV/9962
4079493005	MR1 RB5	Pace Gender Typing	GRND/2595		
4079493006	MR1 RB6	Pace Gender Typing	GRND/2595		
4079493007	MR1 RB7	Pace Gender Typing	GRND/2595		
4079493008	MR1 RB8	Pace Gender Typing	GRND/2595		
4079493009	MR1 CC1	Pace Gender Typing	GRND/2595		
4079493010	MR1 CC2	Pace Gender Typing	GRND/2595		
4079493011	MR1 CC3	Pace Gender Typing	GRND/2595		
4079493012	MR1 CC4	Pace Gender Typing	GRND/2595		
4079493013	MR1 CC5	Pace Gender Typing	GRND/2595		
4079493014	MR1 CC6	Pace Gender Typing	GRND/2595		
4079493015	MR1 CC7	Pace Gender Typing	GRND/2595		
4079493016	MR1 CC8	Pace Gender Typing	GRND/2595		
4079493017	MR1 W6	Pace Gender Typing	GRND/2595		
4079493018	MR1 W7	Pace Gender Typing	GRND/2595		
4079493019	MR1 W8	Pace Gender Typing	GRND/2595		
4079493005	MR1 RB5	Pace Lipid	OEXT/19168		
4079493006	MR1 RB6	Pace Lipid	OEXT/19168		
4079493007	MR1 RB7	Pace Lipid	OEXT/19168		
4079493008	MR1 RB8	Pace Lipid	OEXT/19168		
4079493009	MR1 CC1	Pace Lipid	OEXT/19168		
4079493010	MR1 CC2	Pace Lipid	OEXT/19168		
4079493011	MR1 CC3	Pace Lipid	OEXT/19168		
4079493012	MR1 CC4	Pace Lipid	OEXT/19168		
4079493013	MR1 CC5	Pace Lipid	OEXT/19168		
4079493014	MR1 CC6	Pace Lipid	OEXT/19168		
4079493015	MR1 CC7	Pace Lipid	OEXT/19168		
4079493016	MR1 CC8	Pace Lipid	OEXT/19168		
4079493017	MR1 W6	Pace Lipid	OEXT/19168		
4079493018	MR1 W7	Pace Lipid	OEXT/19168		
4079493019	MR1 W8	Pace Lipid	OEXT/19168		

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Company Name	e: Pollution Risk Services					1	l. 41 -	_18			MN: 61	2-607-17	700 <b>WI</b> : 9	20-469-2436		1	
Branch/Locatio	n: Sheboygan		/	1	ace	Anai									COC No.	6 4	079493
Project Contact	t: Mark Mather					www.pa	LE/803.C	0111						Quote #:			
Phone:	513-678-2137 or 513-387-277	78		C	HA	IN	OF	CI	UST	ΓΟ	DY		М	ail To Contact:	Mark Mathe	r	
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Project State:	Wiscoinsin		FILTE (YES		Y/N										Cincinnati,	OH 45249	
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005	MR1 RB5	6/8/13		Tissue		X	Α										
006	MR1 RB6	6/8/13		Tissue		×	Α							<del></del>			
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Project Contact:	Mark Mather		] /			•							Quote #:				7
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	MR1 JWS3	6/8/13		Tissue		X	Α								***************************************		1
	MR1 JWS4	6/8/13	<b>†</b>	Tissue		Х	A	<b></b>									1
	MR1 JWS5		+			×	A										٦
	MR1 JWS6	6/8/13	+	Tissue		X	A								<b></b>		┨
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Branch/Location	n: Sheboygan		] /			Ana.									COC No.	0 4	073493
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Phone:	513-678-2137 or 513-387-2	778		C	HA	IN	OF	Cl	JS'	ΓΟ	DY	•		Mail To Contact:	Mark Math	er .	
Project Number	: SR13-001 Task 10-02000		A=No			H2SO4		tion Code	e <u>s</u>	=Methan		laOH		Mail To Company:	PRS - Ass	ured Group	
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Project Contact:	Mark Mather					irrin.pu	JC/ <b>LU</b> G.U	<b></b>						Quote #:			
Phone:	513-678-2137 or 513-387-277	78	<u> </u>	C	HA	IN	<u>OF</u>	C	<u>US</u>	TO	DY			Mail To Contact:	Mark Mathe	r	
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# Pace Analytical<sup>™</sup>

# Sample Condition Upon Receipt

Pace Analytical Services, Inc
1241 Bellevue Street, Suite
Green Bay, WI 5430

Client Name	· PP	<	Project #	4079493
Courier: Fed Ex T UPS T USPS T		mercial 7 Page	Other	617
Tracking #:	Chefit I Com	neiciai px Face	Other	
Custody Seal on Cooler/Box Present:	no Se	eals intact: Tyes	no no	
Custody Seal on Samples Present: yes	no Se	eals intact:   yes	no	
Packing Material:   Bubble Wrap   Bubble		~		
Thermometer Used SKI2		Vel Blue Dry None		e, cooling process has begun
Cooler Temperature Uncorr: 20 /Corred	<u>B</u>	ological Tissue is F	rozen: Tyes 6/1//	
Temp Blank Present: 1 yes 700	ant Dist		Eno	Person examining contents:
Temp should be above freezing to 6°C for all sample expression and samples should be received ≤ 0°C.	ерт вюта.	Comments:		Initials:
Chain of Custody Present:	)ŠiYes □No □	N/A 1.		
Chain of Custody Filled Out:	ØYes □No □	N/A 2.		
Chain of Custody Relinquished:	₩ Yes □No □	N/A 3.		·
Sampler Name & Signature on COC:	□Yes ☑No □	N/A 4.		
Samples Arrived within Hold Time:	194Yes □No □	N/A 5.		
<ul> <li>VOA Samples frozen upon receipt</li> </ul>	□Yes □No	Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes ☑Ño □	N/A 6.		·
Rush Turn Around Time Requested:	□Yes QNo □	N/A 7.		
Sufficient Volume:	Yes 🗆 No 🗆	N/A 8.		
Correct Containers Used:	ØYes □No □	N/A 9.		
-Pace Containers Used:	□Yes DANO □	N/A		
-Pace IR Containers Used:	□Yes □No [24	N/A		
Containers Intact:	√AYes □No □I	N/A 10.		
Filtered volume received for Dissolved tests	□Yes □No Ø	N/A 11.		
Sample Labels match COC:	Maryes □No □I	N/A 12.		
-Includes date/time/ID/Analysis Matrix:	13			
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No 🍂	VA 13. THNO:	3   H2SO4   1	NaOH   NaOH +ZnAct
All containers needing preservation are found to be in		_		
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No ⊅	ńν		
exceptions: VOA, coliform, TOC, TOX, TOH, D&G, WIDROW, Phenolics, OTHER:	□Yes (ĀNo	Initial when completed	Lab Std #ID of preservative	Date/  Time:
Headspace in VOA Vials ( >6mm):		I/A 14.		
Trip Blank Present:		I/A 15.		
Frip Blank Custody Seals Present	□Yes □No Ø	1		
Pace Trip Blank Lot # (if purchased):				
Client Notification/ Resolution:			checked, see attached to	form for additional comments
Person Contacted:  Comments/ Resolution:	Book Dat	te/Time:	+ Dono A	101 2
		1 cull	, con c	6/11/13
				1 514)
Project Manager Review:	( V)		Date:	Call 2/13
	Variation	1		Page 33 of 33





Green Bay, WI 54302 (920)469-2436

August 06, 2013

Mark Mather Pollution Risk Services 7870 East Kemper Road Suite 240 Cincinnati, OH 45249

RE: Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

### Dear Mark Mather:

Enclosed are the analytical results for sample(s) received by the laboratory on June 06, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

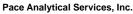
Tod Noltemeyer

Tod nolteneya

tod.noltemeyer@pacelabs.com Project Manager

**Enclosures** 





Pace Analytical www.pacelabs.com

1241 Bellevue Street - Suite 9 Green Bay, WI 54302 (920)469-2436

### **CERTIFICATIONS**

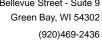
Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

**Green Bay Certification IDs** 

1241 Bellevue Street, Green Bay, WI 54302 Florida/NELAP Certification #: E87948 Illinois Certification #: 200050 Kentucky Certification #: 82 Louisiana Certification #: 04168 Minnesota Certification #: 055-999-334

New York Certification #: 11888 North Dakota Certification #: R-150 South Carolina Certification #: 83006001 US Dept of Agriculture #: S-76505 Wisconsin Certification #: 405132750





# **SAMPLE SUMMARY**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Lab ID	Sample ID	Matrix	Date Collected	Date Received
4079168001	UR1 AC1	Tissue	06/03/13 00:00	06/06/13 17:09
4079168002	UR1 AC2	Tissue	06/03/13 00:00	06/06/13 17:09
4079168003	UR1 AC3	Tissue	06/03/13 00:00	06/06/13 17:09
4079168004	UR1 AC4	Tissue	06/03/13 00:00	06/06/13 17:09
4079168005	UR1 AC5	Tissue	06/03/13 00:00	06/06/13 17:09
4079168006	UR1 AC6	Tissue	06/03/13 00:00	06/06/13 17:09
4079168007	UR1 AWS1	Tissue	06/03/13 00:00	06/06/13 17:09
4079168008	UR1 AWS2	Tissue	06/03/13 00:00	06/06/13 17:09
4079168009	UR1 AWS3	Tissue	06/03/13 00:00	06/06/13 17:09
4079168010	UR1 AWS4	Tissue	06/03/13 00:00	06/06/13 17:09
4079168011	UR1 AWS5	Tissue	06/03/13 00:00	06/06/13 17:09
4079168012	UR1 AWS6	Tissue	06/03/13 00:00	06/06/13 17:09
4079168013	UR1 AWS7	Tissue	06/03/13 00:00	06/06/13 17:09
4079168014	UR1 AWS8	Tissue	06/03/13 00:00	06/06/13 17:09
4079168015	UR1 AWS9	Tissue	06/03/13 00:00	06/06/13 17:09
4079168016	UR1 AWS10	Tissue	06/03/13 00:00	06/06/13 17:09
4079168017	UR1 AWS11	Tissue	06/03/13 00:00	06/06/13 17:09
4079168018	UR1 AWS12	Tissue	06/03/13 00:00	06/06/13 17:09
4079168019	UR1 SMB1	Tissue	06/03/13 00:00	06/06/13 17:09
4079168020	UR1 SMB2	Tissue	06/04/13 00:00	06/06/13 17:09

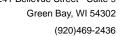


# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Lab ID	Sample ID	Method	Analysts	Analytes Reported
4079168001	UR1 AC1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168002	UR1 AC2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168003	UR1 AC3	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168004	UR1 AC4	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168005	UR1 AC5	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168006	UR1 AC6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168007	UR1 AWS1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168008	UR1 AWS2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168009	UR1 AWS3	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168010	UR1 AWS4	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168011	UR1 AWS5	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168012	UR1 AWS6	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168013	UR1 AWS7	EPA 8082	BDS	10





# **SAMPLE ANALYTE COUNT**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168014	UR1 AWS8	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168015	UR1 AWS9	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168016	UR1 AWS10	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168017	UR1 AWS11	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168018	UR1 AWS12	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168019	UR1 SMB1	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1
4079168020	UR1 SMB2	EPA 8082	BDS	10
		Pace Gender Typing	ABF	1
		Pace Lipid	ABF	1



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### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 06, 2013

### **General Information:**

20 samples were analyzed for EPA 8082. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Sample Preparation:

The samples were prepared in accordance with EPA 3540 with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: OEXT/19047

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 825328)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- MSD (Lab ID: 825329)
  - · Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC1 (Lab ID: 4079168001)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC2 (Lab ID: 4079168002)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC3 (Lab ID: 4079168003)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC4 (Lab ID: 4079168004)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC5 (Lab ID: 4079168005)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AC6 (Lab ID: 4079168006)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS1 (Lab ID: 4079168007)



### PROJECT NARRATIVE

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 06, 2013

QC Batch: OEXT/19047

S4: Surrogate recovery not evaluated against control limits due to sample dilution.

- Decachlorobiphenyl (S)
- Tetrachloro-m-xylene (S)
- UR1 AWS10 (Lab ID: 4079168016)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS11 (Lab ID: 4079168017)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS2 (Lab ID: 4079168008)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS3 (Lab ID: 4079168009)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS4 (Lab ID: 4079168010)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS5 (Lab ID: 4079168011)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS6 (Lab ID: 4079168012)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS7 (Lab ID: 4079168013)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 AWS8 (Lab ID: 4079168014)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)
- UR1 SMB2 (Lab ID: 4079168020)
  - Decachlorobiphenyl (S)
  - Tetrachloro-m-xylene (S)

# Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.





**PROJECT NARRATIVE** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Method: EPA 8082

**Description:** 8082 GCS PCB, Tissue **Client:** POLLUTION RISK SERVICES

**Date:** August 06, 2013

QC Batch: OEXT/19047

A matrix spike and matrix spike duplicate (MS/MSD) were performed on the following sample(s): 4079168001

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

• MS (Lab ID: 825328)

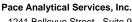
PCB-1254 (Aroclor 1254)MSD (Lab ID: 825329)

• PCB-1254 (Aroclor 1254)

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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### **PROJECT NARRATIVE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Method: Pace Gender Typing
Description: Fish Gender Typing

Client: POLLUTION RISK SERVICES

**Date:** August 06, 2013

### **General Information:**

20 samples were analyzed for Pace Gender Typing. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

# Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

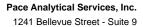
### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Additional Comments:**

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.



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PROJECT NARRATIVE

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Method: Pace Lipid
Description: Lipid

Client: POLLUTION RISK SERVICES

**Date:** August 06, 2013

### **General Information:**

20 samples were analyzed for Pace Lipid. All samples were received in acceptable condition with any exceptions noted below.

### **Hold Time:**

The samples were analyzed within the method required hold times with any exceptions noted below.

### Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

### **Continuing Calibration:**

All criteria were within method requirements with any exceptions noted below.

### **Internal Standards:**

All internal standards were within QC limits with any exceptions noted below.

### Surrogates:

All surrogates were within QC limits with any exceptions noted below.

### Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

### **Laboratory Control Spike:**

All laboratory control spike compounds were within QC limits with any exceptions noted below.

### Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

### **Duplicate Sample:**

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

### Additional Comments:

Workorder Comments:

Fish sex is determined by the visual presence of eggs or not.

This data package has been reviewed for quality and completeness and is approved for release.



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

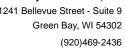
Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AC1 Lab ID: 4079168001 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results L	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	11104-28-2	
PCB-1232 (Aroclor 1232)	<2500 ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	11141-16-5	
PCB-1242 (Aroclor 1242)	<2500 ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>22300</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>11200</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	11096-82-5	
PCB, Total	<b>33500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 17:46	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		200	07/18/13 12:00	07/31/13 17:46	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		200	07/18/13 12:00	07/31/13 17:46	2051-24-3	S4
Fish Gender Typing	Analytical Met	nod: Pace Gender Typ	oing					
Gender	Female			1		07/17/13 07:55		
Lipid	Analytical Met	nod: Pace Lipid						
Lipid	4.4 %			1		07/23/13 07:27		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AC2 Lab ID: 4079168002 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5470</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2810</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	11096-82-5	
PCB, Total	<b>8270</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 18:03	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/18/13 12:00	07/31/13 18:03	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/18/13 12:00	07/31/13 18:03	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.8 %			1		07/23/13 07:27		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

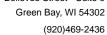
Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AC3 Lab ID: 4079168003 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> ug/k	kg 5000	2500	200	07/18/13 12:00	07/31/13 18:21	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>18200</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>10300</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	11096-82-5	
PCB, Total	<b>28500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 18:21	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		200	07/18/13 12:00	07/31/13 18:21	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		200	07/18/13 12:00	07/31/13 18:21	2051-24-3	S4
Fish Gender Typing	Analytical Me	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	6.1 %			1		07/23/13 07:28		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AC4 Lab ID: 4079168004 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results U	Jnits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Met	hod: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>30900</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>18500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	11096-82-5	
PCB, Total	<b>49400</b> ug/kg	5000	2500	200	07/18/13 12:00	07/31/13 18:38	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		200	07/18/13 12:00	07/31/13 18:38	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		200	07/18/13 12:00	07/31/13 18:38	2051-24-3	S4
Fish Gender Typing	Analytical Met	hod: Pace Gender Typ	oing					
Gender	Female			1		07/17/13 07:55		
Lipid	Analytical Met	hod: Pace Lipid						
Lipid	17.3 %			1		07/23/13 07:28		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AC5 Lab ID: 4079168005 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>71500</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>28600</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	11096-82-5	
PCB, Total	<b>100000</b> ug/kg	5000	2500	200	07/18/13 12:00	08/01/13 12:43	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		200	07/18/13 12:00	08/01/13 12:43	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		200	07/18/13 12:00	08/01/13 12:43	2051-24-3	S4
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	7.7 %			1		07/23/13 07:28		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AC6 Lab ID: 4079168006 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA	8082 Prepar	ration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>21800</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>11200</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	11096-82-5	
PCB, Total	<b>33100</b> ug	/kg	2500	1250	100	07/18/13 12:00	07/31/13 19:13	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	0 %		44-130		100	07/18/13 12:00	07/31/13 19:13	877-09-8	S4
Decachlorobiphenyl (S)	0 %		62-130		100	07/18/13 12:00	07/31/13 19:13	2051-24-3	S4
Fish Gender Typing	Analytical N	Method: Pace	e Gender Typ	ing					
Gender	Male				1		07/17/13 07:55		
Lipid	Analytical N	Method: Pace	e Lipid						
Lipid	8.0 %				1		07/23/13 07:28		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS1 Lab ID: 4079168007 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;375</b> ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;375</b> ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	11104-28-2	
PCB-1232 (Aroclor 1232)	<375 ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	11141-16-5	
PCB-1242 (Aroclor 1242)	<375 ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>6580</b> ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4740</b> ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>444J</b> ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	11096-82-5	
PCB, Total	<b>11800</b> ug/kg	750	375	30	07/18/13 12:00	07/31/13 19:31	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		30	07/18/13 12:00	07/31/13 19:31	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		30	07/18/13 12:00	07/31/13 19:31	2051-24-3	S4
Fish Gender Typing	Analytical Method	: Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method	: Pace Lipid						
Lipid	1.6 %			1		07/23/13 07:28		



**ANALYTICAL RESULTS** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS2 Lab ID: 4079168008 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3320</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4440</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>567</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	11096-82-5	
PCB, Total	<b>8330</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 19:48	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/18/13 12:00	07/31/13 19:48	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/18/13 12:00	07/31/13 19:48	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	1.5 %			1		07/23/13 07:28		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS3 Lab ID: 4079168009 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>28100</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>9160</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;2500</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	11096-82-5	
PCB, Total	<b>37200</b> ug/k	g 5000	2500	200	07/18/13 12:00	07/31/13 20:41	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		200	07/18/13 12:00	07/31/13 20:41	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		200	07/18/13 12:00	07/31/13 20:41	2051-24-3	S4
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	2.0 %			1		07/23/13 07:28		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS4 Lab ID: 4079168010 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical M	ethod: EPA 8082 Prepa	aration Meth	od: EP/	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;1250</b> ug/l	cg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;1250</b> ug/l	cg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>10400</b> ug/l	kg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>5370</b> ug/l	kg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;1250</b> ug/l	kg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	11096-82-5	
PCB, Total	<b>15800</b> ug/l	kg 2500	1250	100	07/18/13 12:00	07/31/13 20:58	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		100	07/18/13 12:00	07/31/13 20:58	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		100	07/18/13 12:00	07/31/13 20:58	2051-24-3	S4
Fish Gender Typing	Analytical M	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical M	ethod: Pace Lipid						
Lipid	1.6 %			1		07/23/13 07:28		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS5 Lab ID: 4079168011 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>3740</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2880</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>263J</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	11096-82-5	
PCB, Total	<b>6880</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:16	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/18/13 12:00	07/31/13 21:16	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/18/13 12:00	07/31/13 21:16	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	0.78 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS6 Lab ID: 4079168012 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Un	its LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7250</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>4660</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	11096-82-5	
PCB, Total	<b>11900</b> ug/kg	1250	625	50	07/18/13 12:00	07/31/13 21:33	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/18/13 12:00	07/31/13 21:33	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/18/13 12:00	07/31/13 21:33	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	1.7 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS7 Lab ID: 4079168013 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Uni	ts LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	d: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5050</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>3140</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>251J</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	11096-82-5	
PCB, Total	<b>8440</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 21:50	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/18/13 12:00	07/31/13 21:50	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/18/13 12:00	07/31/13 21:50	2051-24-3	S4
Fish Gender Typing	Analytical Metho	d: Pace Gender Typ	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Metho	d: Pace Lipid						
Lipid	1.2 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS8 Lab ID: 4079168014 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>5910</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2690</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	11096-82-5	
PCB, Total	<b>8600</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 22:08	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/18/13 12:00	07/31/13 22:08	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/18/13 12:00	07/31/13 22:08	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	1.2 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS9 Lab ID: 4079168015 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;62.5</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1390</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>756</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>62.7J</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	11096-82-5	
PCB, Total	<b>2210</b> ug/k	g 125	62.5	5	07/18/13 12:00	07/31/13 22:25	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	80 %	44-130		5	07/18/13 12:00	07/31/13 22:25	877-09-8	
Decachlorobiphenyl (S)	93 %	62-130		5	07/18/13 12:00	07/31/13 22:25	2051-24-3	
Fish Gender Typing	Analytical Me	ethod: Pace Gender Ty	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Me	ethod: Pace Lipid						
Lipid	1.2 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS10 Lab ID: 4079168016 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Unit	s LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method	l: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	12674-11-2	
PCB-1221 (Aroclor 1221)	<625 ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	11104-28-2	
PCB-1232 (Aroclor 1232)	<625 ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	11141-16-5	
PCB-1242 (Aroclor 1242)	<625 ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>7700</b> ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2300</b> ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;625</b> ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	11096-82-5	
PCB, Total	<b>9990</b> ug/kg	1250	625	50	07/18/13 12:00	08/01/13 15:20	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		50	07/18/13 12:00	08/01/13 15:20	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		50	07/18/13 12:00	08/01/13 15:20	2051-24-3	S4
Fish Gender Typing	Analytical Method	l: Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method	l: Pace Lipid						
Lipid	2.5 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS11 Lab ID: 4079168017 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Ur	nits LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Metho	od: EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;188</b> ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	12674-11-2	
PCB-1221 (Aroclor 1221)	<188 ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	11104-28-2	
PCB-1232 (Aroclor 1232)	<188 ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	11141-16-5	
PCB-1242 (Aroclor 1242)	<188 ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>4020</b> ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1270</b> ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	11097-69-1	
PCB-1260 (Aroclor 1260)	<188 ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	11096-82-5	
PCB, Total	<b>5290</b> ug/kg	375	188	15	07/18/13 12:00	07/31/13 23:00	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		15	07/18/13 12:00	07/31/13 23:00	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		15	07/18/13 12:00	07/31/13 23:00	2051-24-3	S4
Fish Gender Typing	Analytical Metho	od: Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Metho	od: Pace Lipid						
Lipid	1.8 %			1		07/23/13 07:29		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

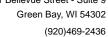
Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 AWS12 Lab ID: 4079168018 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Me	ethod: EPA 8082 Prepa	aration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;125</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;125</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;125</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;125</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>1790</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>1030</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;125</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	11096-82-5	
PCB, Total	<b>2820</b> ug/k	g 250	125	10	07/18/13 12:00	07/31/13 23:18	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	78 %	44-130		10	07/18/13 12:00	07/31/13 23:18	877-09-8	
Decachlorobiphenyl (S)	100 %	62-130		10	07/18/13 12:00	07/31/13 23:18	2051-24-3	
Fish Gender Typing	Analytical Me	thod: Pace Gender Typ	ping					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Me	thod: Pace Lipid						
Lipid	1.0 %			1		07/23/13 07:29		





# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 SMB1 Lab ID: 4079168019 Collected: 06/03/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical N	Method: EPA 8	082 Prepai	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>747</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>360</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;50.0</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	11096-82-5	
PCB, Total	<b>1110</b> ug	/kg	100	50.0	4	07/18/13 12:00	07/31/13 23:35	1336-36-3	
Surrogates									
Tetrachloro-m-xylene (S)	78 %		44-130		4	07/18/13 12:00	07/31/13 23:35	877-09-8	
Decachlorobiphenyl (S)	97 %		62-130		4	07/18/13 12:00	07/31/13 23:35	2051-24-3	
Fish Gender Typing	Analytical N	Method: Pace	Gender Typ	ing					
Gender	Male				1		07/17/13 07:55		
Lipid	Analytical N	Method: Pace	Lipid						
Lipid	0.36 %				1		07/23/13 07:30		



# **ANALYTICAL RESULTS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Sample: UR1 SMB2 Lab ID: 4079168020 Collected: 06/04/13 00:00 Received: 06/06/13 17:09 Matrix: Tissue

Results reported on a "wet-weight" basis

Parameters	Results Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8082 GCS PCB, Tissue	Analytical Method:	EPA 8082 Prepa	ration Meth	od: EP	A 3540			
PCB-1016 (Aroclor 1016)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	12674-11-2	
PCB-1221 (Aroclor 1221)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	11104-28-2	
PCB-1232 (Aroclor 1232)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	11141-16-5	
PCB-1242 (Aroclor 1242)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	53469-21-9	
PCB-1248 (Aroclor 1248)	<b>2830</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	12672-29-6	
PCB-1254 (Aroclor 1254)	<b>2430</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	11097-69-1	
PCB-1260 (Aroclor 1260)	<b>&lt;250</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	11096-82-5	
PCB, Total	<b>5260</b> ug/kg	500	250	20	07/18/13 12:00	07/31/13 23:53	1336-36-3	
Surrogates								
Tetrachloro-m-xylene (S)	0 %	44-130		20	07/18/13 12:00	07/31/13 23:53	877-09-8	S4
Decachlorobiphenyl (S)	0 %	62-130		20	07/18/13 12:00	07/31/13 23:53	2051-24-3	S4
Fish Gender Typing	Analytical Method:	Pace Gender Typ	oing					
Gender	Male			1		07/17/13 07:55		
Lipid	Analytical Method:	Pace Lipid						
Lipid	0.36 %			1		07/23/13 07:30		

Green Bay, WI 54302 (920)469-2436



#### **QUALITY CONTROL DATA**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

QC Batch: OEXT/19047 Analysis Method: EPA 8082

QC Batch Method: EPA 3540 Analysis Description: 8082 GCS Tissue Pesticides

Associated Lab Samples: 4079168001, 4079168002, 4079168003, 4079168004, 4079168005, 4079168006, 4079168007, 4079168008,

4079168009, 4079168010, 4079168011, 4079168012, 4079168013, 4079168014, 4079168015, 4079168016, 407916016, 407916016, 4079160160016, 4079160016, 40791600160016, 4079160016, 4079160016, 4079160016, 4079160016, 40791600000

4079168017, 4079168018, 4079168019, 4079168020

METHOD BLANK: 825326 Matrix: Tissue

Associated Lab Samples: 4079168001, 4079168002, 4079168003, 4079168004, 4079168005, 4079168006, 4079168007, 4079168008,

4079168009, 4079168010, 4079168011, 4079168012, 4079168013, 4079168014, 4079168015, 4079168016,

4079168017, 4079168018, 4079168019, 4079168020

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	<12.5	25.0	07/31/13 16:36	
PCB-1221 (Aroclor 1221)	ug/kg	<12.5	25.0	07/31/13 16:36	
PCB-1232 (Aroclor 1232)	ug/kg	<12.5	25.0	07/31/13 16:36	
PCB-1242 (Aroclor 1242)	ug/kg	<12.5	25.0	07/31/13 16:36	
PCB-1248 (Aroclor 1248)	ug/kg	<12.5	25.0	07/31/13 16:36	
PCB-1254 (Aroclor 1254)	ug/kg	<12.5	25.0	07/31/13 16:36	
PCB-1260 (Aroclor 1260)	ug/kg	<12.5	25.0	07/31/13 16:36	
Decachlorobiphenyl (S)	%	95	62-130	07/31/13 16:36	
Tetrachloro-m-xylene (S)	%	86	44-130	07/31/13 16:36	

LABORATORY CONTROL SAMPL	E: 825327					
		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg		<12.5			
PCB-1221 (Aroclor 1221)	ug/kg		<12.5			
PCB-1232 (Aroclor 1232)	ug/kg		<12.5			
PCB-1242 (Aroclor 1242)	ug/kg		<12.5			
PCB-1248 (Aroclor 1248)	ug/kg		<12.5			
PCB-1254 (Aroclor 1254)	ug/kg	250	249	99	61-130	
PCB-1260 (Aroclor 1260)	ug/kg		<12.5			
Decachlorobiphenyl (S)	%			100	62-130	
Tetrachloro-m-xylene (S)	%			89	44-130	

MATRIX SPIKE & MATRIX SP	PIKE DUPLICAT	E: 82532	8		825329							
_		079168001	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	<2500			<2500	<2500					24	
PCB-1221 (Aroclor 1221)	ug/kg	<2500			<2500	<2500					24	
PCB-1232 (Aroclor 1232)	ug/kg	<2500			<2500	<2500					24	
PCB-1242 (Aroclor 1242)	ug/kg	<2500			<2500	<2500					24	
PCB-1248 (Aroclor 1248)	ug/kg	22300			22900	23400				2	24	
PCB-1254 (Aroclor 1254)	ug/kg	11200	1000	1000	12300	12300	115	118	27-163	0	24	M6
PCB-1260 (Aroclor 1260)	ug/kg	<2500			<2500	<2500					24	
Decachlorobiphenyl (S)	%						0	0	62-130			S4
Tetrachloro-m-xylene (S)	%						0	0	44-130			S4

Green Bay, WI 54302 (920)469-2436



**QUALITY CONTROL DATA** 

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

QC Batch: OEXT/19075 Analysis Method: Pace Lipid
QC Batch Method: Pace Lipid Analysis Description: LIPID

Associated Lab Samples: 4079168001, 4079168002, 4079168003, 4079168004, 4079168005, 4079168006, 4079168007, 4079168008,

4079168009, 4079168010, 4079168011, 4079168012, 4079168013, 4079168014, 4079168015, 4079168016,

4079168017, 4079168018, 4079168019, 4079168020

METHOD BLANK: 826756 Matrix: Tissue

Associated Lab Samples: 4079168001, 4079168002, 4079168003, 4079168004, 4079168005, 4079168006, 4079168007, 4079168008,

4079168009, 4079168010, 4079168011, 4079168012, 4079168013, 4079168014, 4079168015, 4079168016,

Qualifiers

 $4079168017,\,4079168018,\,4079168019,\,4079168020$ 

Blank Reporting
Units Result Limit Analyzed

Lipid % 0.56 07/23/13 07:27

SAMPLE DUPLICATE: 826757

Date: 08/06/2013 05:10 PM

Parameter

 Parameter
 Units
 4079168001 Result
 Dup Result
 Max RPD
 Max RPD
 Qualifiers

 Lipid
 %
 4.4
 4.4
 1
 20



#### **QUALIFIERS**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

#### **DEFINITIONS**

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

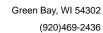
TNI - The NELAC Institute.

#### **ANALYTE QUALIFIERS**

Date: 08/06/2013 05:10 PM

M6 Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

S4 Surrogate recovery not evaluated against control limits due to sample dilution.





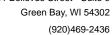
# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079168001	UR1 AC1	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
4079168002	UR1 AC2	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
4079168003	UR1 AC3	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
1079168004	UR1 AC4	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
1079168005	UR1 AC5	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
1079168006	UR1 AC6	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
1079168007	UR1 AWS1	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
1079168008	UR1 AWS2	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
1079168009	UR1 AWS3	EPA 3540	OEXT/19047	EPA 8082	GCSV/9937
079168010	UR1 AWS4	EPA 3540	OEXT/19047		GCSV/9937
1079168011	UR1 AWS5	EPA 3540	OEXT/19047		GCSV/9937
1079168012	UR1 AWS6	EPA 3540	OEXT/19047		GCSV/9937
1079168013	UR1 AWS7	EPA 3540	OEXT/19047		GCSV/9937
1079168014	UR1 AWS8	EPA 3540	OEXT/19047		GCSV/9937
1079168015	UR1 AWS9	EPA 3540	OEXT/19047		GCSV/9937
1079168016	UR1 AWS10	EPA 3540	OEXT/19047		GCSV/9937
1079168017	UR1 AWS11	EPA 3540	OEXT/19047		GCSV/9937
1079168018	UR1 AWS12	EPA 3540	OEXT/19047		GCSV/9937
1079168019	UR1 SMB1	EPA 3540	OEXT/19047		GCSV/9937
1079168020	UR1 SMB2	EPA 3540	OEXT/19047		GCSV/9937
1079168001	UR1 AC1	Pace Gender Typing	GRND/2603		
1079168002	UR1 AC2	Pace Gender Typing	GRND/2603		
1079168003	UR1 AC3	Pace Gender Typing	GRND/2603		
079168004	UR1 AC4	Pace Gender Typing	GRND/2603		
1079168005	UR1 AC5	Pace Gender Typing	GRND/2603		
1079168006	UR1 AC6	Pace Gender Typing	GRND/2603		
1079168007	UR1 AWS1	Pace Gender Typing	GRND/2603		
1079168008	UR1 AWS2	Pace Gender Typing	GRND/2603		
1079168009	UR1 AWS3	Pace Gender Typing	GRND/2603		
1079168010	UR1 AWS4	Pace Gender Typing	GRND/2603		
4079168011	UR1 AWS5	Pace Gender Typing	GRND/2603		
4079168012	UR1 AWS6	Pace Gender Typing	GRND/2603		
4079168013	UR1 AWS7	Pace Gender Typing	GRND/2603		
1079168014	UR1 AWS8	Pace Gender Typing	GRND/2603		
1079168015	UR1 AWS9	Pace Gender Typing	GRND/2603		
1079168016	UR1 AWS10	Pace Gender Typing	GRND/2603		
1079168017	UR1 AWS11	Pace Gender Typing  Pace Gender Typing	GRND/2603		
1079168018	UR1 AWS12	Pace Gender Typing	GRND/2603		
1079168019	UR1 SMB1	Pace Gender Typing	GRND/2603		
1079168020	UR1 SMB2	Pace Gender Typing	GRND/2603		
4079168001	UR1 AC1	Pace Lipid	OEXT/19075		
4079168002	UR1 AC2	Pace Lipid	OEXT/19075		
4079168002 4079168003	UR1 AC3	Pace Lipid	OEXT/19075		
4079168003 4079168004	UR1 AC4	Pace Lipid Pace Lipid	OEXT/19075 OEXT/19075		
1079168004 1079168005	UR1 AC5	Pace Lipid	OEXT/19075		
		•			
4079168006 4070468007	UR1 AC6	Pace Lipid	OEXT/19075		
4079168007	UR1 AWS1	Pace Lipid	OEXT/19075		
4079168008	UR1 AWS2	Pace Lipid	OEXT/19075		





# **QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: SR13-001 SHEBOYGAN RIVER

Pace Project No.: 4079168

Date: 08/06/2013 05:10 PM

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
4079168009	UR1 AWS3	Pace Lipid	OEXT/19075		
4079168010	UR1 AWS4	Pace Lipid	OEXT/19075		
4079168011	UR1 AWS5	Pace Lipid	OEXT/19075		
4079168012	UR1 AWS6	Pace Lipid	OEXT/19075		
4079168013	UR1 AWS7	Pace Lipid	OEXT/19075		
4079168014	UR1 AWS8	Pace Lipid	OEXT/19075		
4079168015	UR1 AWS9	Pace Lipid	OEXT/19075		
4079168016	UR1 AWS10	Pace Lipid	OEXT/19075		
4079168017	UR1 AWS11	Pace Lipid	OEXT/19075		
4079168018	UR1 AWS12	Pace Lipid	OEXT/19075		
4079168019	UR1 SMB1	Pace Lipid	OEXT/19075		
4079168020	UR1 SMB2	Pace Lipid	OEXT/19075		

Version 6.0 06/14/06

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Company Nar											MN: 6	12-607-17	700 V	VI: 920-469-2436	06165		
Branch/Locat			Pace Analytical *											40	79/G& COC No.	1	LAB
Project Conta	act: Mark Mather					www.pa	ice/abs.c	:om	CWI	11/			Γ	Quote #:			
Phone: 513-678-2137 or 513-387-2778			CHAIN OF CUSTO								DY	Mail To Contact: Mark Mather					
Project Numb	per: SR13-001 Task 10-02000		A=N	lone B=H		*Preservation Codes								Mail To Company:	PRS - Ass	ured Group	
Project Name	: 2013 Fish Sampling				Bisulfate Solution I=Sodium Thiosulfate					=Other			I	Mail To Address:	7870 Kemper Road, Suite 240,		
Project State:	Wiscoinsin			ERED? S/NO)	Y/N									Cincinnati, OH 45249			
Sampled By (	Print): Mark Mather			RVATION DDE)*	Pick Letter									Invoice To Contact:	Goldie Sha	rp	
Sampled By (	Sign): /////				Ę.									Invoice To Company:	As Above		
PO #:	•	Regulatory Program:			Requested		S						ſ	Invoice To Address:	7870 Kemper Road, Suite 240,		
Data Packa		Mat	rix Codes W = Water		Sequ		K								Cincinnati, OH 45249		
☐ EP/	A Level III (billable)	= Air = Biota = Charcoal = Oil	DW = Drink GW = Grou SW = Surfa	king Water und Water	S	8082	PRESERVATIVE						-	Invoice To Phone:	513-489-67	789	
LA EF		= Soil = Sludge	WW = Was WP = Wipe	ste Water	nalys		ESE						Ī	CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID	DATE	ECTION TIME	MATRIX	۷	PCB	R.							COMMENTS	(Lab l	Jse Only)	
001	UR1 AC1	6/3/13		Tissue		X	Α							Whole Fish Sample	1- pol-	y bag	
002	UR1 AC2	6/3/13		Tissue		Х	Α									, <del>-</del>	
003	UR1 AC3	6/3/13		Tissue		Х	Α										
004	UR1 AC4	6/3/13		Tissue		Х	Α										
00/5	UR1 AC5	6/3/13		Tissue		Х	Α										
006	UR1 AC6	6/3/13		Tissue		Х	Α										
				1				j								***************************************	
	ırnaround Time Requested - Prelim	S Relin	quished By	ALL	7		9	ite/Vime			Recaived	By 0 (1)	M	Date/Time:	1.511	PACE Pro	ject No.
(Rush	TAT subject to approval/surcharge) Date Needed:	Relin	atished By:				- (c)	te/Tithe:	. , , , ,	• -	Reserved By: Detertine: 4079165				ہخ		
Transmit Feliar Results by (complete what you want):					٦			7 `	15	<u> (U)</u>				1500	Receipt Temp = 2		
Email #1: Email #2:	mmather@assuredlic.com	Relin	Relinquished By: Date/Time:								Received By: Date/Time:					Sample Re	
	513-387-2778	Relin	quished By:				Da	ite/Time:			Received By: Date/Time: OK / Adjusted					justed	
Fax:	Samples on HOLD are subject to	Relin	quished By:				Da	ite/Time:			Received	By:		Date/Time:		Cooler Cus Present No	
spe	ecial pricing and release of liability	J									Intact / Not Intact						1 I

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(Please Print Clearly)											UPPER MIDWEST REGION						Page 🔬	of T	
Company Name: Pollution Risk Services				Pace Analytical®									MN: 612-607-1700 WI: 920-469-2436					•	
Branch/Location: Sheboygan				www.pacelabs.com									P		<u>_</u> C	OC No.			
Project Conta	act: Mark Mather			_										Quote #:					
Phone:	513-678-2137 or 513-387-27	78		<u> </u>	HA	<u> </u>				TO	DY			Mail To Contact:	: N	Mark Mather			
Project Num	ber: SR13-001 Task 10-02000		<u>*Preservation Codes</u> A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methand								nol G=N	aOH		Mail To Company	/: P	'RS - Ass	ured Group		
Project Name				H=Sodium Bisulfate Solution I=Sodium Thiosulfate  FILTERED?							I I		_	Mail To Address	- 1'	7870 Kemper Road, Suite 240, Cincinnati, OH 45249			
Project State			(YES/NO) PRESERVATIO		Y/N Pick			<u> </u>											
	(Print): Mark Mather		(COI	DE)*	Letter			ļ						Invoice To Contac		Soldie Sha	1 <b>p</b>		
Sampled By		egulatory			ested								l	Invoice To Compar	ny: A	As Above			
PO#:	1	rogram:	rix Codes		Request		ËS							Invoice To Addres	- 1'	•	per Road, Suite : OH 45249	240,	
(bill	A Level III On your sample B=		W = Water DW = Drinki GW = Grour	ng Water	Sa	22	PRESERVATIVES							Invoice To Phone		513-489-6			
☐ EP	A Level IV NOT needed on S=	Oil	SW = Surface WW = Wast WP = Wipe	ce Water	nalys	- 8082	SER					***************************************	-	CLIENT			OMMENTS	Profile #	
PACE LAB #	CLIENT FIELD ID		ECTION TIME	MATRIX	Ai	PCB	PRE							COMMENTS	;		Use Only)		
007	UR1 AWS1	6/3/13		Tissue		Х	Α							Whole Fish Sample	e	1-polyt			_
008	UR1 AWS2	6/3/13		Tissue		Х	Α							· · · · · · · · · · · · · · · · · · ·		1	<del>ug</del>		_
009	UR1 AWS3	6/3/13		Tissue		Х	Α												_
010	UR1 AWS4	6/3/13		Tissue		×	Α										***************************************		
011	UR1 AWS5	6/3/13		Tissue		X	Α												_
012	UR1 AWS6	6/3/13		Tissue		X	А												_
013	UR1 AWS7	6/3/13		Tissue		X	Α												
014	UR1 AWS8	6/3/13		Tissue		Х	Α											******	_
015	UR1 AWS9	6/3/13		Tissue		Х	Α								1				
016	UR1 AWS10	6/3/13		Tissue		X	Α										***************************************	***************************************	_
017	UR1 AWS11	6/3/13		Tissue		Х	Α												
018	UR1 AWS12	6/3/13		Tissue		Х	Α												_
									1										_
	urnaround Time Requested - Prelims TAT subject to approval/surcharge) Date Needed:	<u> </u>	nquished By:	M	7	7		ite/Time/	16		Received	Uls	É	Date/Tir	me A 1	3136	PACE Pro	•	
Transmit Pro	elim Rush Results by (complete what you war		XVIA)	D_			alle	113'	15	$\mathcal{D}$	Received	Oliu Pa	æ	Date/Tir	3 1	1500	f	, , ,	
Email #1:	mmather@assuredlic.com		nquished By:				Da	ite/Time:			Received		-	Date/Tir	me:		Receipt Temp = 2	7770	<i>;</i> —
Email #2: Felephone:	513-387-2778	Relie	nguished By:				U s	ite/Time:		····	Received	Bv.		Date/Tir	me.		Sample Re OK / Adj		
ax:		T Telli	rquioneu dy.				O	·····			, .eceivea	<b>.</b> ,.		Date/III	no.		Cooler Cust		_
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special pricing and release of liability

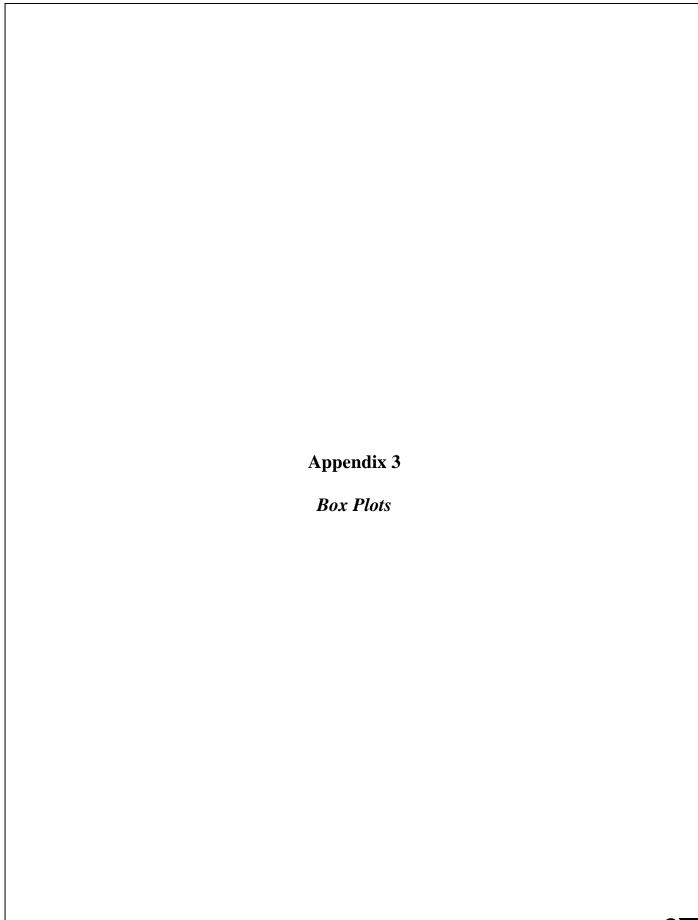
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Company Nan		and the second s									12-607-17	00	NI: 920-469-2436		•	ľ	
Branch/Location			Pace Analytical®												COC No.	1 Ust	9168
Project Contact	ct: Mark Mather		1 /			www.pa	celabs.c	om						Quote #:		<u> </u>	<u> </u>
Phone:	513-678-2137 or 513-387-277	78	CHAIN OF CUSTODY										l	Mail To Contact:	Mark Mathe	ar	
			Preservation Codes								יע				<del> </del>		
Project Numb	er: SR13-001 Task 10-02000		A=None B=HCL C=H2SO4 D=HNO3							=Methan	ol G=N	laOH		Mail To Company:	PRS - Assured Group		
Project Name:	2013 Fish Sampling		<u>  [H=50</u>	odium Bisuit	ate Soluti	Uri	I=Sodium Thiosulfate J=Other							Mail To Address:	7870 Kemper Road, Suite 240,		240,
Project State:	Wiscoinsin		FILTERED? (YES/NO)		Y/N:										Cincinnati,	OH 45249	
Sampled By (F	Print): Mark Mather		PRESER (CO		Pick Letter									Invoice To Contact:	Goldie Sha	rp .	
Sampled By (	1/00/			·	ρε									Invoice To Company:	As Above		
PO #:	1	gulatory rogram:					s							Invoice To Address:	7870 Kemper Road, Suite 240,		
Data Packa			trix Codes	3	Requested		Š								Cincinnati, OH 45249		
	Level III (billable)   B = 1	Biota Charcoal	W = Water DW = Drinki GW = Grou SW = Surfa	nd Water	Analyses F	8082	PRESERVATIVES							Invoice To Phone:	513-489-67	<sup>7</sup> 89	
☐ EPA	Level IV S=:		WW = Was	te Water	nal)		SE							CLIENT	LAB C	OMMENTS	Profile #
PACE LAB#	CLIENT FIELD ID		LECTION	MATRIX	Ā	PCB	PRE							COMMENTS	(Lab l	Jse Only)	
019	UR1 SMB1	6/3/13		Tissue		Х	Α							Whole Fish Sample	1-100	ybay	
020	UR1 SMB2	6/4/13		Tissue		X	Α								1	/ <del>0.</del> g	
	UR1 SMB3	6/4/13		Tissue		X	Α							<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	<u>V</u>		
	UR1 SMB4	6/4/13	<u> </u>	Tissue	<u> </u>	X	Α										
	UR1 SMB5	6/4/13	<del> </del>	Tissue	<u> </u>	Х	Α										
	UR1 SMB6	6/4/13		Tissue		Х	Α	<b> </b>									
	UR1 SMB7	6/4/13	<del>                                     </del>	Tissue		X	Α	1	<u> </u>								
	UR1 SMB8	6/4/13		Tissue		X	Α	<del> </del>								***************************************	
	UR1 SMB9	6/4/13		Tissue		X	A								<del>                                     </del>		<del> </del>
	UR1 SMB10	6/4/13		Tissue		X	A	<del> </del>					- w				
	UR1 SMB11	6/4/13	1	Tissue	<u> </u>	X	Α	<u> </u>									
	UR1 SMB12	6/4/13	<del>                                     </del>	Tissue		X	А						<del></del>				
				1	1				<b>_</b>	,							
Rush Tu	rnaround Time Requested - Prelims	Reii	nquished By:	1/1		1/1	Da	ate/Tingre:	1//	1,	Received	By:	<u> </u>	Date/Time:	,	PACE Pro	ject No.
(Rush T	FAT subject to approval/surcharge)	<u> </u>		W	00	<i>v</i> C	7	-61	LO,	43		lese	<u>ル</u>	410113 13'	40	11.061	C 1
Transmit Proj	Date Needed: lim Rush Results by (complete what you war	Reli	nguished By:	, D	<u> </u>		Ä	te/Time/	3/5	135°	Received	-,-,,,	11	CGB 6/6/13	1500	407911	
	mmather@assuredlic.com		nquished By:	<del></del>				ate/Time:	70	00	Received		IM	Date/Time:		Receipt Temp =	°C
Email #2:												•			•	Sample Re	ceipt pH
	513-387-2778	Rei	nquished By:	:			Da	te/Time:			Received	d By:		Date/Time:	Date/Time:		usted
Fax:																Cooler Cus	
i	Samples on HOLD are subject to ecial pricing and release of liability	Reli	inquished By:	:			Da	ate/Time:			Received By: Date/Time:					Present / No Intact / No	
																Version 6.0 06/14/06	

Pace Analytical Services, Inc 1241 Bellevue Street, Suite § Green Bay, WI 54302

# Pace Analytical"

# **Sample Condition Upon Receipt**

	1)	$\bigcirc$		
Client Name	:	175	Project #	4079168
Courier: Fed Ex T UPS T USPS T	Client   Com	nercial Pace	 Other	
Tracking #:				
Custody Seal on Cooler/Box Present:	,	eals intact: 🦵 yes	∏ no	
Custody Seal on Samples Present:  yes		eals intact:  yes	no	
Packing Material: Bubble Wrap Bubble	- ,	·		
Thermometer Used $\frac{5 \text{ K} 23}{3 \text{ M} / 3}$		/et Blue Dry None		n ice, cooling process has begun
Cooler Temperature Uncorr: 3/4/7/Corr:	2/3/6 BI	ological Tissue is F	rozen: j yes no	
Temp Blank Present:  yes  no	ant Dista		1/110	Person examining contents:
Temp should be above freezing to 6°C for all sample exc Frozen Biota Samples should be received ≤ 0°C.	ері Біоіа.	Comments:		Initials: <u>EMリ</u>
Chain of Custody Present:	ZYes □No □	N/A 1.		
Chain of Custody Filled Out:	Øyes □No □	N/A 2.		
Chain of Custody Relinquished:	☑Yes □No □	N/A 3.	·	
Sampler Name & Signature on COC:	✓Yes □No □	N/A 4.		
Samples Arrived within Hold Time:	ØYes □No □	N/A 5.		
<ul> <li>VOA Samples frozen upon receipt</li> </ul>	□Yes □No	Date/Time:		
Short Hold Time Analysis (<72hr):	□Yes ☑No □	N/A 6.		
Rush Turn Around Time Requested:	□Yes ☑No □	N/A 7.		
Sufficient Volume:		N/A 8.		
Correct Containers Used:	□Yes ☑No □	NA 9. Sample I	Ds inside sa	imple buys and not H6/6/13
-Pace Containers Used:	□Yes ☑No □	WA readily VI	isible IM	46/6/13
-Pace IR Containers Used:	□Yes □No Ø		L *	
Containers Intact:	✓Yes □No □	N/A 10.		
Filtered volume received for Dissolved tests	□Yes □No ☑	√/A 11.		
Sample Labels match COC:	✓Yes □No □	√A 12.		
-Includes date/time/ID/Analysis Matrix:				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	□Yes □No Øi	N/A 13.	3 F H2SO4 F	NaOH   NaOH + ZnAct
All containers needing preservation are found to be in				
compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	□Yes □No ∠	1/A		
exceptions: VOA, coliform, TOC, TOX, TOH,		Initial when	Lab Std #ID of	Date/
O&G, WIDROW, Phenolics, OTHER:	□Yes □No	completed	preservative	Time:
Headspace in VOA Vials ( >6mm):	□Yes □No ☑I			
Trip Blank Present:	□Yes □No □I	1		
Trip Blank Custody Seals Present Pace Trip Blank Lot # (if purchased):	□Yes □No .□N	I/A		
Client Notification/ Resolution:			f checked, see attache	ed form for additional comments
Person Contacted:		te/Time:	-	· · · · · · · · · · · · · · · · · · ·
Comments/ Resolution: 070 These were	2 bags of	fish for thi	s sample po	int EMU 6/6/13
A 12				
Project Manager Review:	Fac Ton		Date: _	6/6/13

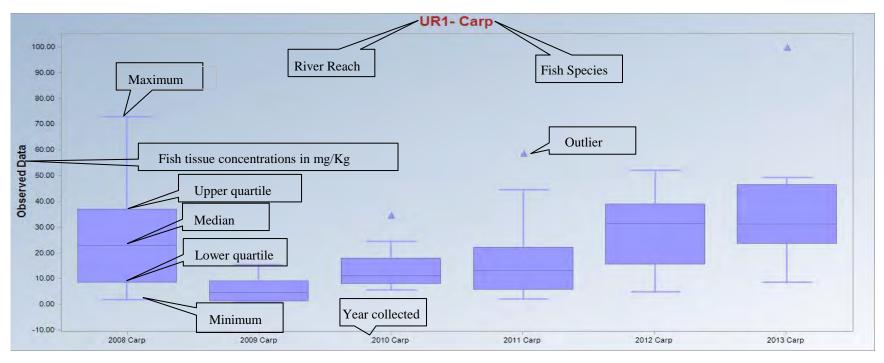




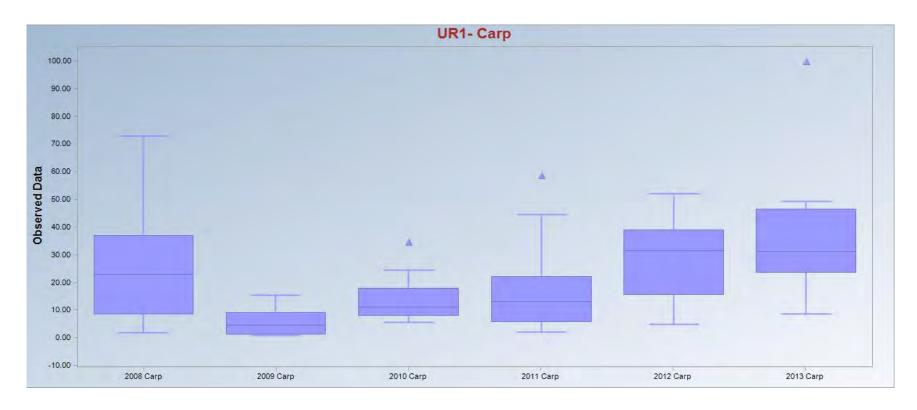
# **Box Plot Key**

- UR1 Upper River from former Tecumseh Site to Riverbend Dam
- UR2 Upper River from Riverbend Dam to Waelderhaus Dam
- MR1 Middle River from Waelderhaus Dam to Kohler Landfill
- MR2 Middle River from Kohler Landfill to C&NW Railroad Bridge
- LR Lower River from C&NW Railroad Bridge to Pennsylvania Avenue Bridge
- IH Inner Harbor from Pennsylvania Avenue Bridge to Sheboygan River outlet

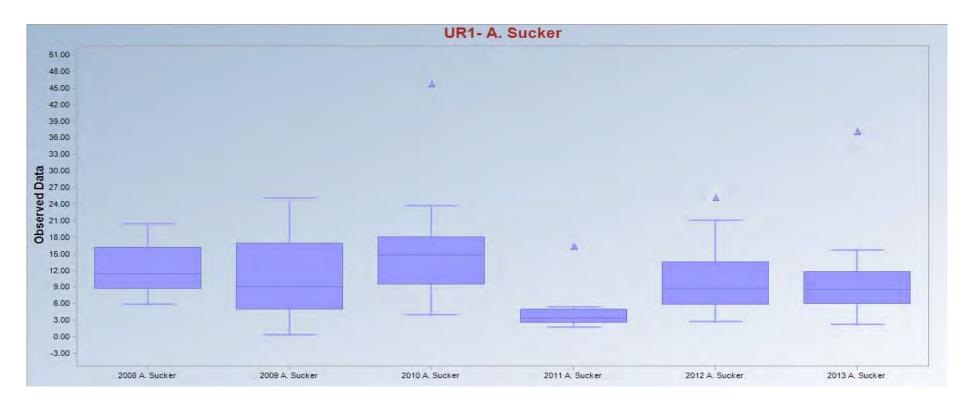




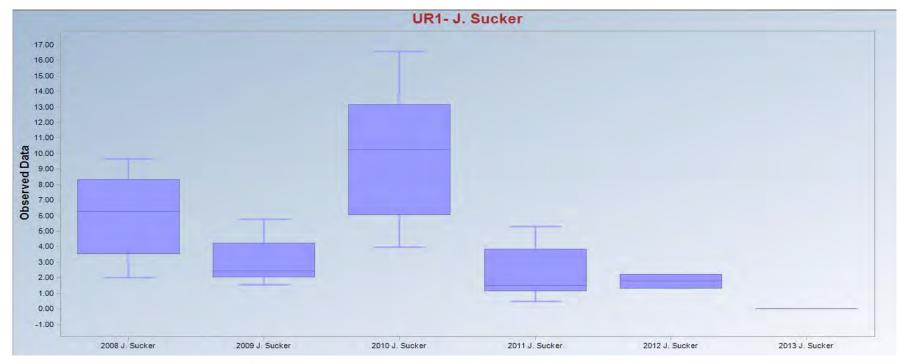
**Box Plot Key** 



Remediation target concentration- 2.58ppm

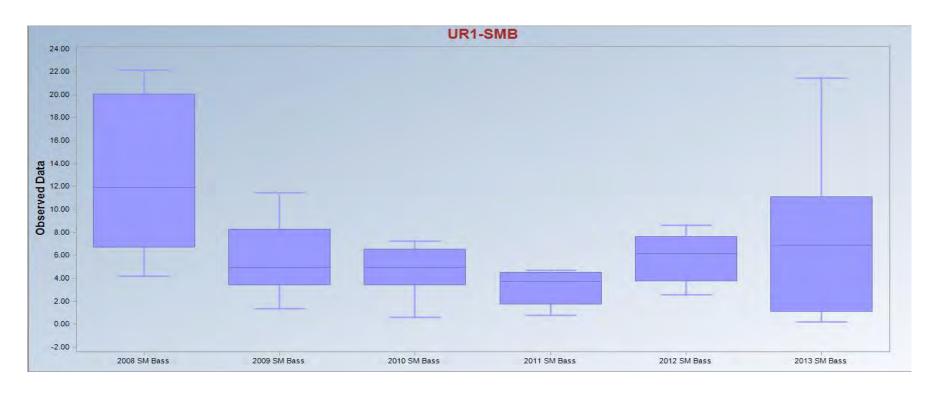


There is no remediation target for Adult White Suckers

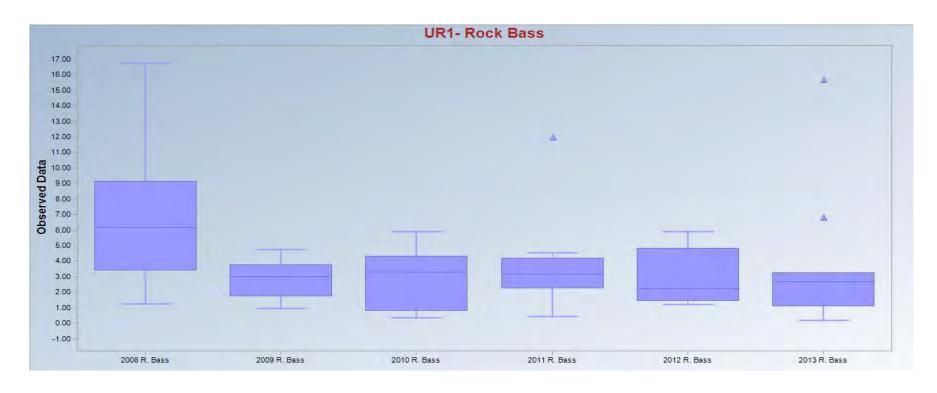


No juvenile white suckers were obtained from this reach in 2013.

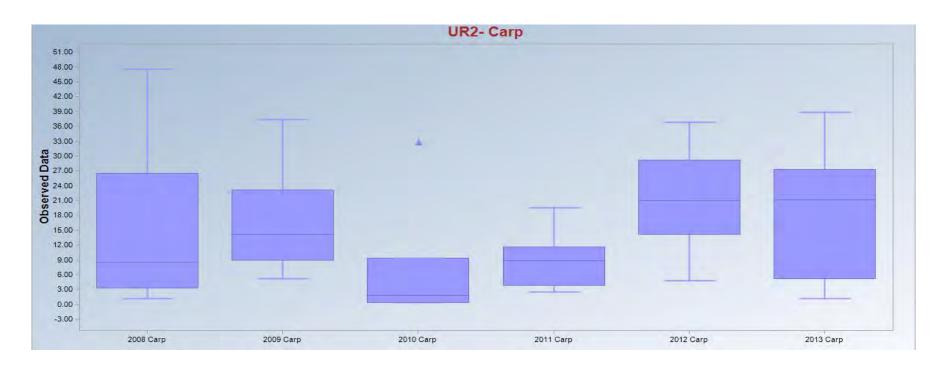
There is no remediation target for Juvenile White Suckers



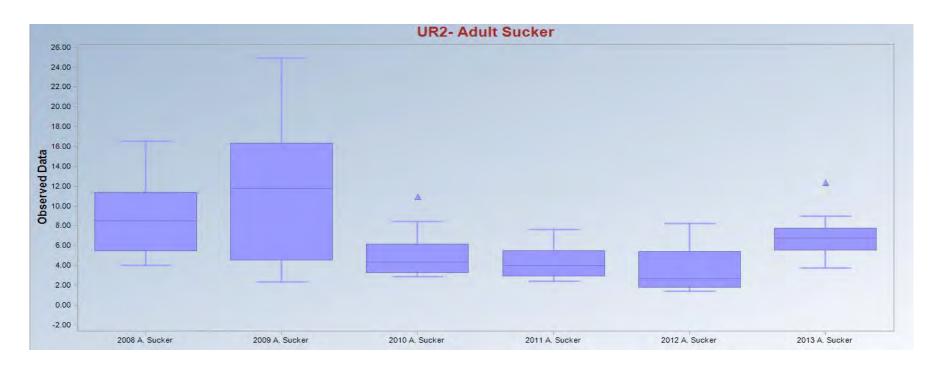
Remediation target concentration- 0.31 ppm



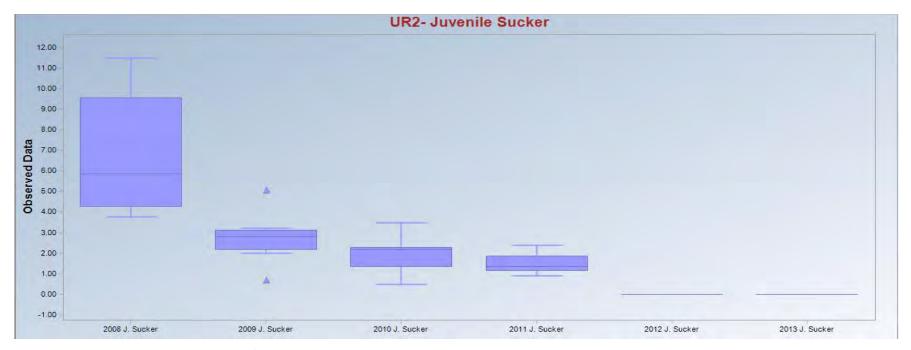
There is no remediation target for Rock Bass.



Remediation target concentration- 2.58ppm

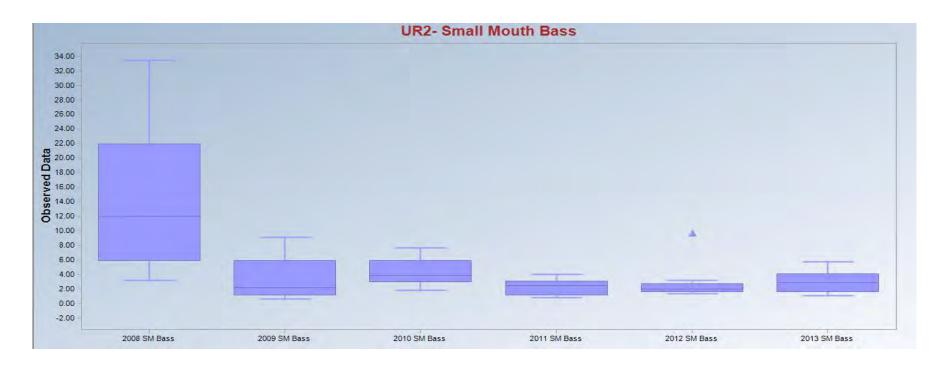


There is no remediation target for Adult White Suckers

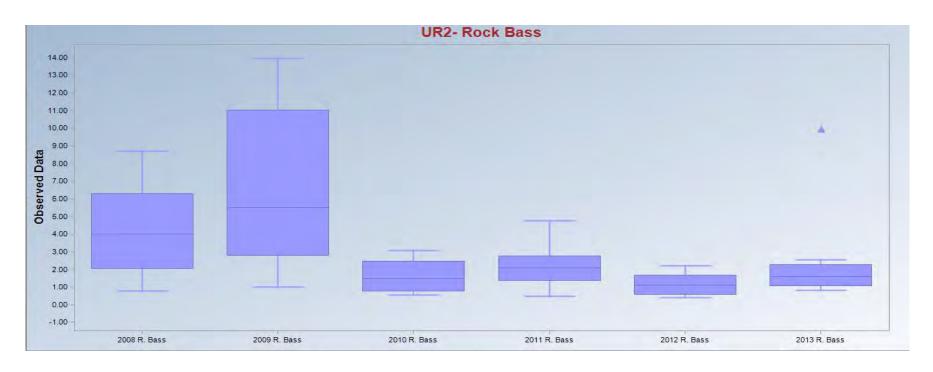


No juvenile white suckers were obtained from this reach in 2012 or 2013.

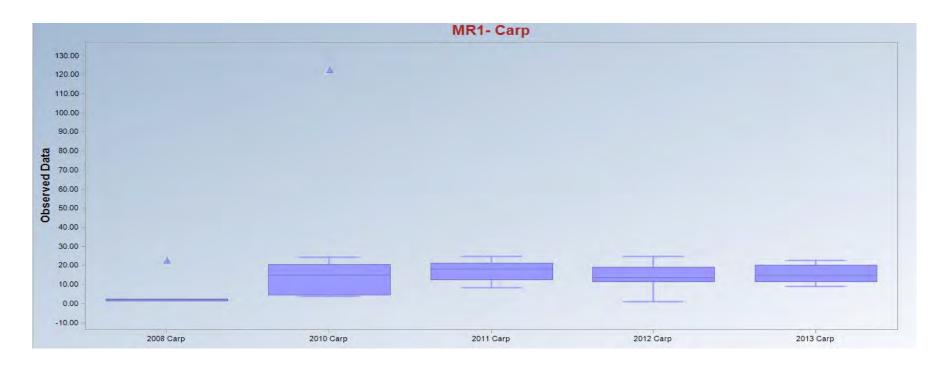
There is no remediation target for Juvenile White Suckers



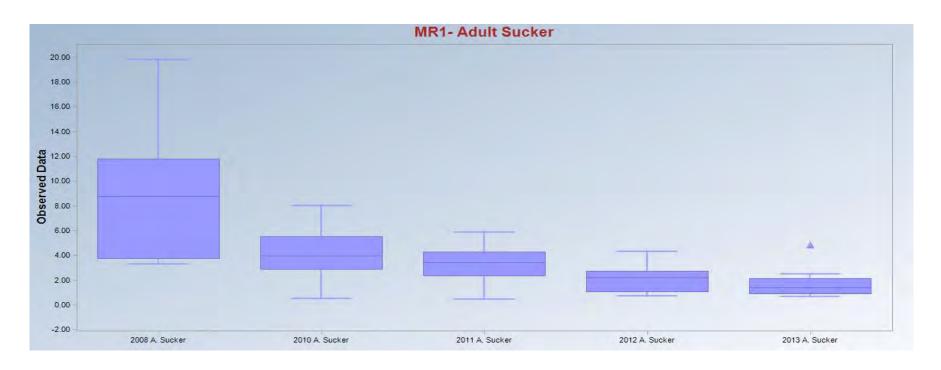
Remediation target concentration- 0.31 ppm



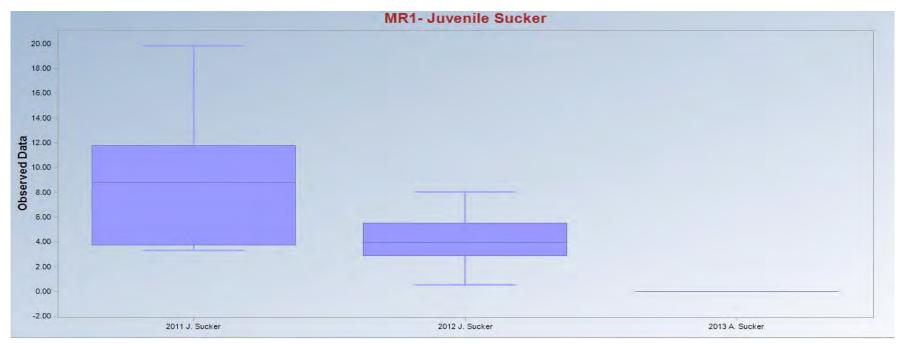
There is no remediation target for Rock Bass.



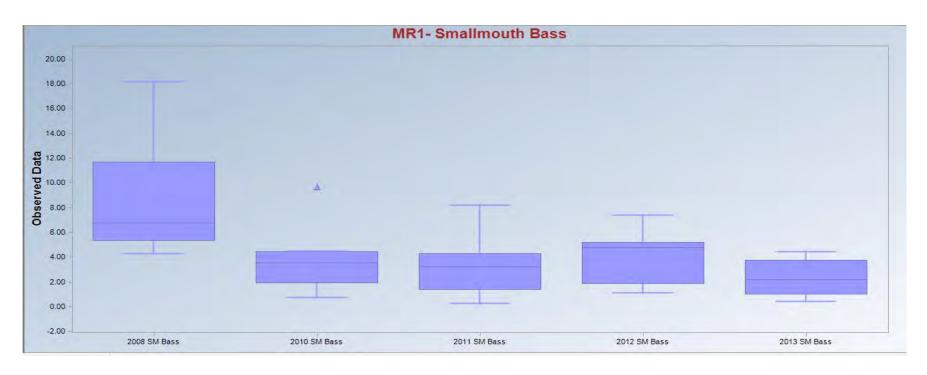
Remediation target concentration- 2.58ppm



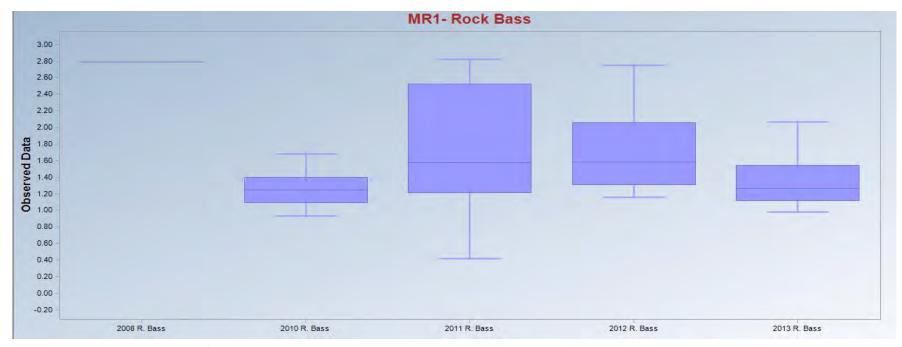
There is no remediation target for Adult White Suckers



No juvenile suckers were obtained from this reach in 2013 There is no remediation target for Juvenile White Suckers

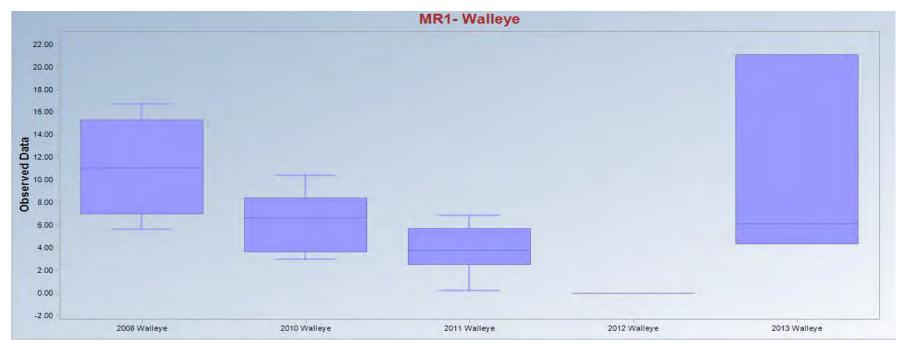


Remediation target concentration- 0.31 ppm

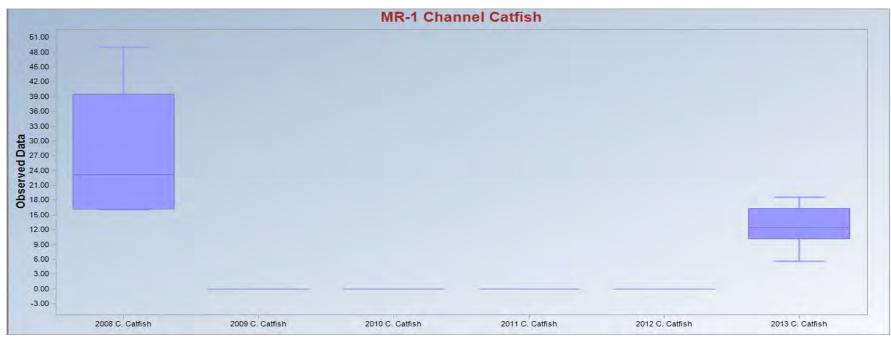


Only one rock bass was obtained from this reach in 2008.

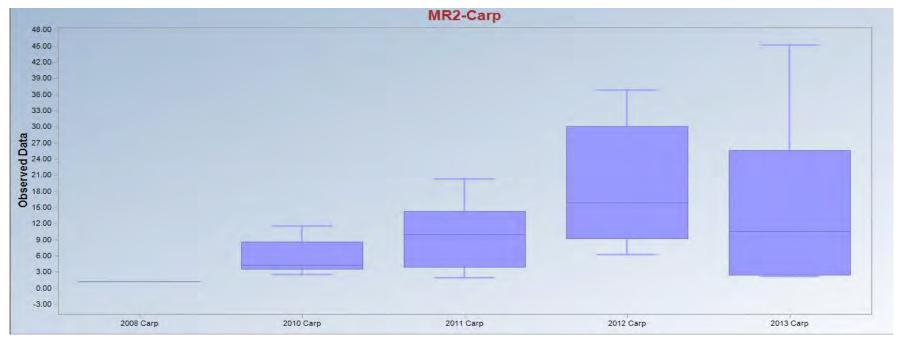
There is no remediation target for Rock Bass.



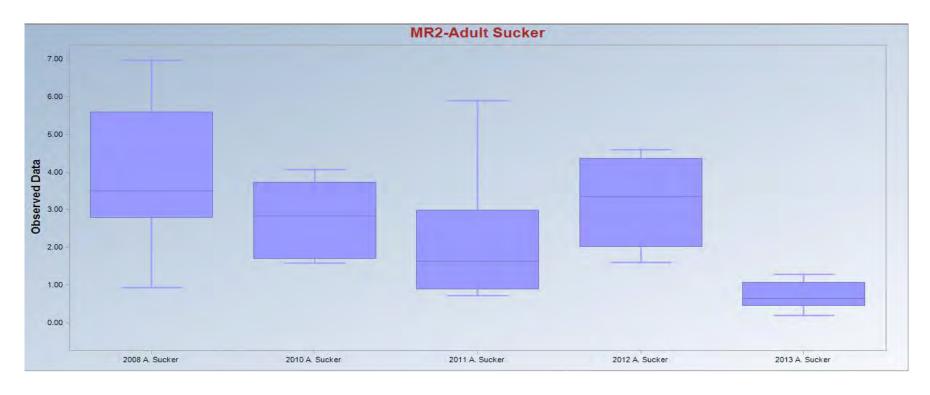
No walleye were obtained from this reach in 2012 Remediation target concentration- 0.63 ppm



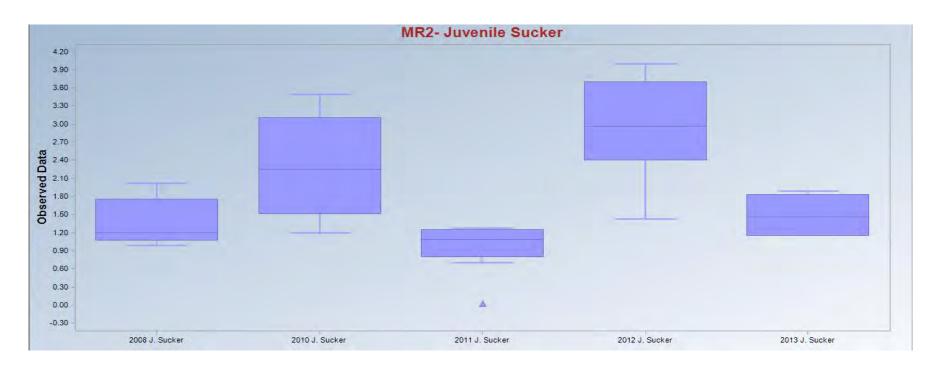
No channel catfish were obtained from this reach in 2009, 2010, 2011, and 2012. Remediation target concentration- 2.53 ppm



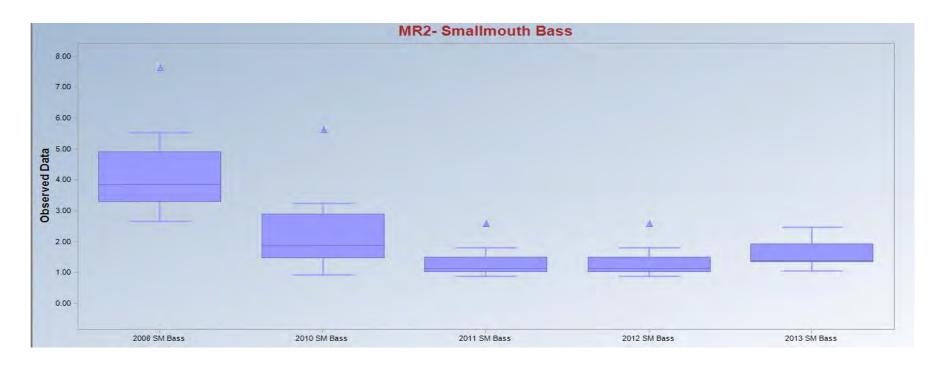
Only one carp sample was obtained from this reach in 2008. Remediation target concentration- 2.58ppm



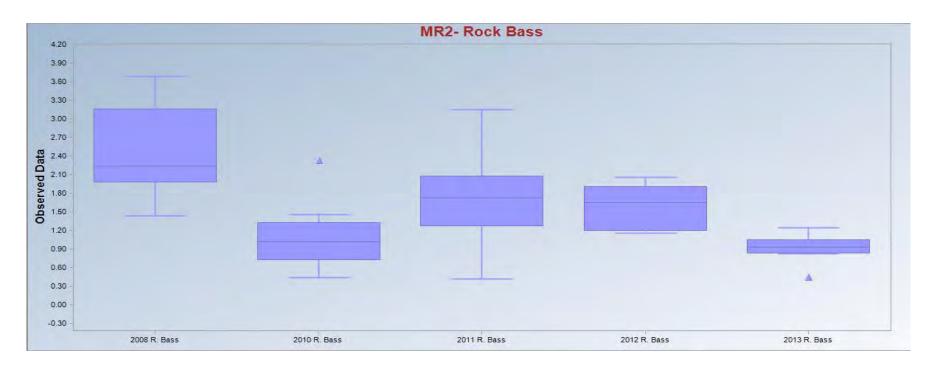
There is no remediation target for Adult White Suckers



There is no remediation target for Juvenile White Suckers



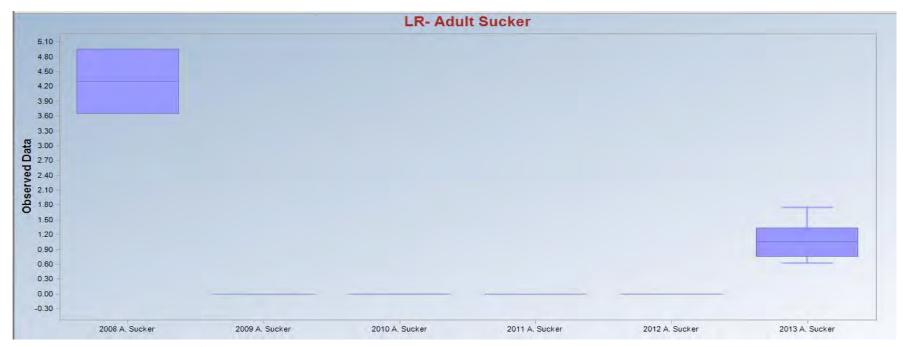
Remediation target concentration- 0.31 ppm



There is no remediation target for Rock Bass.



No carp were obtained from this reach in 2009, 2010, 2011, and 2012. Remediation target concentration- 2.58ppm

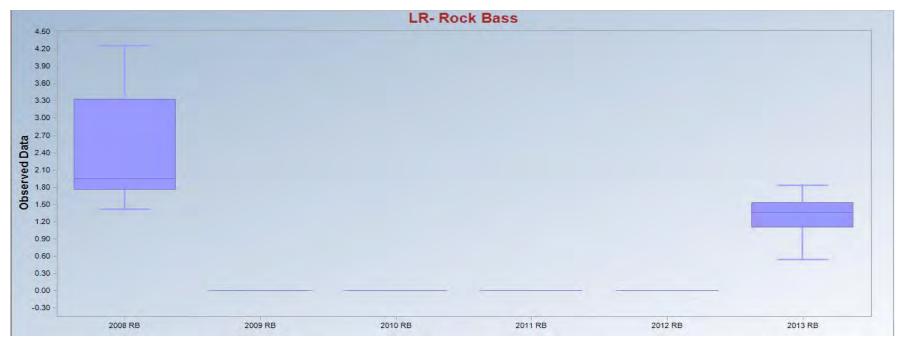


No adult suckers were obtained from this reach in 2009, 2010, 2011, and 2012.

There is no remediation target for Adult White Suckers

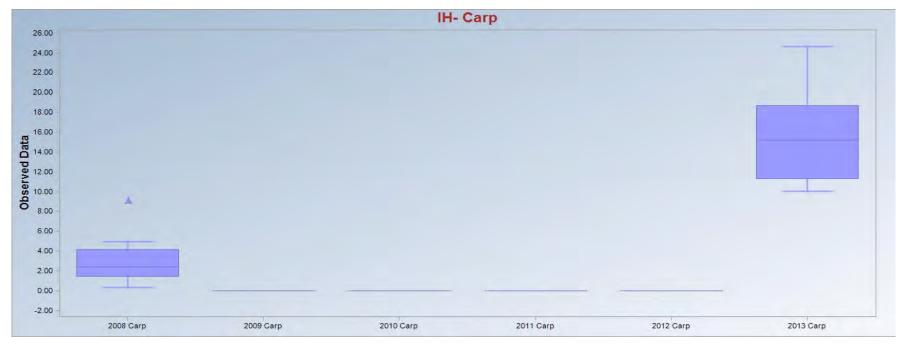


No smallmouth bass were obtained from this reach in 2009, 2010, 2011, and 2012. Remediation target concentration- 0.31 ppm

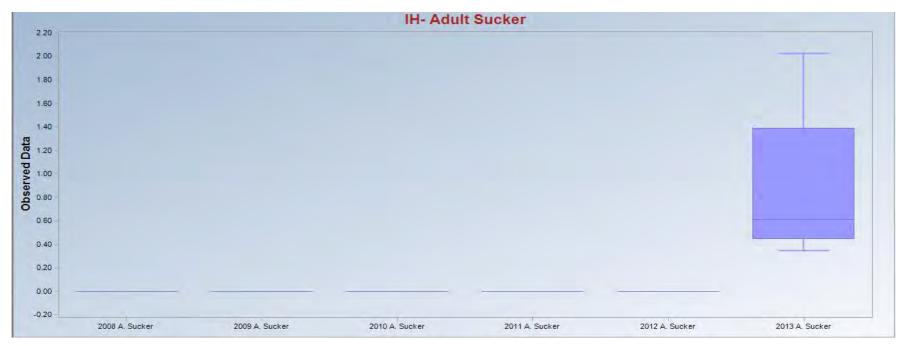


No rock bass were obtained from this reach in 2009, 2010, 2011, and 2012.

There is no remediation target for Rock Bass.

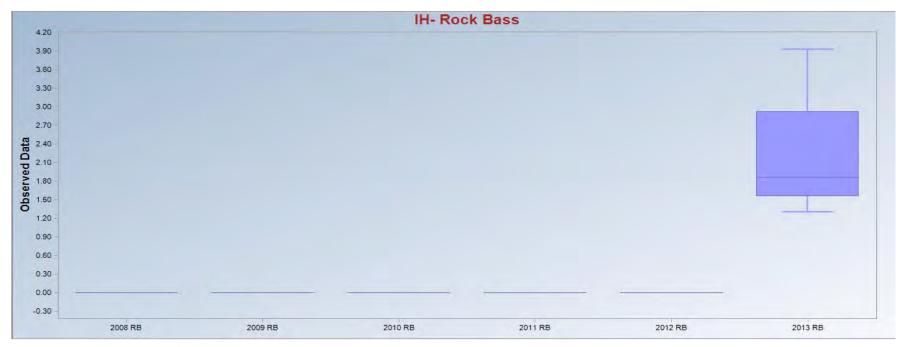


No carp were obtained from this reach in 2009, 2010, 2011, and 2012. Remediation target concentration- 2.58ppm



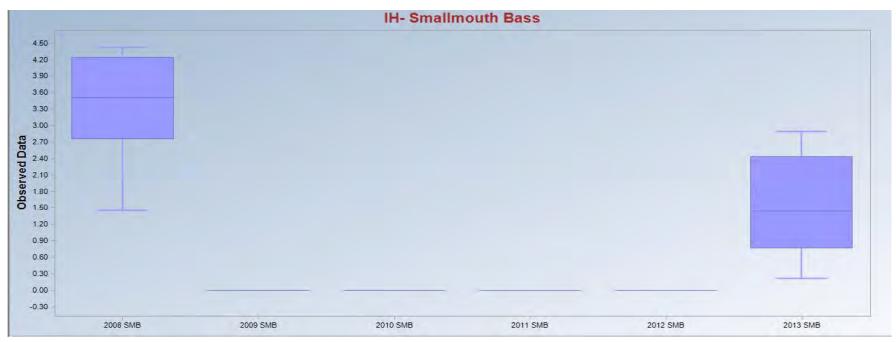
No adult suckers were obtained from this reach in 2008, 2009, 2010, 2011, and 2012.

There is no remediation target for Adult White Suckers

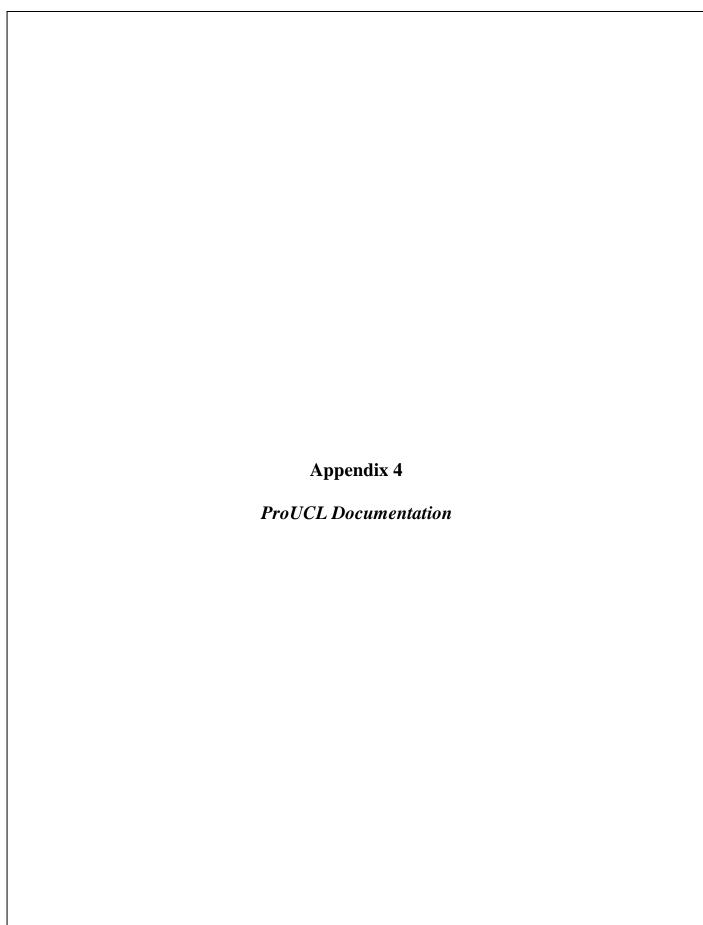


No rock bass were obtained from this reach in 2008, 2009, 2010, 2011, and 2012.

There is no remediation target for Rock Bass.



No smallmouth bass were obtained from this reach in 2009, 2010, 2011, and 2012. Remediation target concentration- 0.31 ppm





	A	В	С	D General IIC	E 1 Statistics	F for Full Data	G a Sets	Н	I	J	K	L
1		User Sele	ected Options		Glausucs							
2		0001 0010	From File		ork in progre	ess\069448.0	0\Fish Moni	toring\2013\B	ox and Whis	sker Plot files	s\IH A. Suckei	.wst
3		Fu	ull Precision	OFF								
4		Confidence	Coefficient	95%								
5 6	Number	of Bootstrap	Operations	2000								
7		·		1								
8												
9	2013 A. Su	cker										
10												
11							Statistics					
12			Numb	ber of Valid C	)bservations	s 8			Numbe	er of Distinct	Observations	8
13												
14			Raw St	tatistics					Log-transfor			
15					Minimum						m of Log Data	
16					Maximum						m of Log Data	
17						n 0.909					an of log Data	
18					Mediar						SD of log Data	0.672
19						0.663						
20					rror of Mear							
21				Coefficient	t of Variation Skewness		<del> </del>					
22					Skewness	3 1.100						
23												
24					Warning:	There are o	nlv 8 Value	s in this data				
25			Note: It sho	ould be note				ds may be pe		this data se	 et,	
26 27								nough to drav			<u>·</u>	
28												
29		-	The literature	suggests to	use bootsti	rap methods	on data set	ts having moi	re than 10-1	5 observatio	ons.	
30												
31						Relevant U	ICL Statistic	s				
32			Normal Dist	tribution Test	t			l	Lognormal D	istribution T	Test Test	
33				Shapiro Wilk T						·	Test Statistic	
34				hapiro Wilk C		9 0.818					Critical Value	
35		Data no	ot Normal at 5	i% Significar	nce Level			Data appea	ır Lognorma	l at 5% Sign	nificance Leve	·I
36												
37		A	ssuming Norr			1.050		Ass	suming Logn	ormal Distri		1 000
38		050	/ LIOL - /		dent's-t UCL	_ 1.353			050/	Cheburt	95% H-UCL	
39		95%	% UCLs (Adju		•	\ 1 200				•	(MVUE) UCL	
40			95% Adjuste	ed-CLT UCL ( ed-t UCL (Joh			<del> </del>				(MVUE) UCL	
41				OCF (10L	1115011-1978	1.300	1		99% 		(INIVUE) UCL	3.04
42			Gamma Dist	tribution Tee			<del>                                     </del>		Data D	istribution		
43					as corrected	) 1.671	Da	ta appear Ga			Significance	 Level
44					Theta Sta	*	+					
45				<u>N</u>	ALE of Mear		+					
46			M	LE of Standa			+					
47						r 26.73	+					
10							+		Nonnonom	etric Statistic		
48 49			Approximat	e Chi Square	e Value (.05	) 15.95			Nonparame	enic Stansuc	CS	
48									NIOS SOS	atria Statisti		

	Α	В	С	D	E	F	G	Н		J	K	L
51			Ad	ljusted Chi S	quare Value	13.88				95% .	Jackknife UCL	1.353
52									95%	Standard I	Bootstrap UCL	1.264
53			Anders	son-Darling 1	est Statistic	0.572				95% B	ootstrap-t UCL	1.918
54			Anderson-l	Darling 5% C	ritical Value	0.723			9	95% Hall's I	Bootstrap UCL	3.451
55			Kolmogoro	ov-Smirnov T	est Statistic	0.241			95%	Percentile I	Bootstrap UCL	1.273
56		Ko	olmogorov-S	mirnov 5% C	ritical Value	0.297				95% BCA I	Bootstrap UCL	1.353
57	Data	a appear Gar	nma Distribu	ited at 5% S	ignificance	Level			95% Ch	nebyshev(N	Mean, Sd) UCL	1.93
58									97.5% Cł	nebyshev(N	Mean, Sd) UCL	2.372
59		Ass	suming Gam	ma Distribu	ion				99% Cł	nebyshev(N	Mean, Sd) UCL	3.239
60			95% A	pproximate C	amma UCL	1.524						
61			959	% Adjusted C	amma UCL	1.75						
62												
63			Potential U	JCL to Use					Use 95% A	Approximate	e Gamma UCL	1.524
64												
65	No	te: Suggesti	ons regardir	ng the select	ion of a 95%	UCL are p	provided to hel	p the user to	select the	most appro	opriate 95% U	CL.
66		These recom	nmendations	are based (	pon the res	ults of the	simulation stud	dies summa	rized in Sing	gh, Singh,	and laci (2002)	)
67			and Singh	and Singh (2	2003). For	additional i	nsight, the use	er may want	to consult a	statisticia	n.	
68												

	A	В	С	D General UC	E L Statistics	F for Full Data	G Sets	Н	I	J	K	L
2		User Selec	cted Options									
3			From File	\\Smefile\wo	ork in progres	ss\069448.00	)\Fish Monito	ring\2013\Bo	ox and Whisk	er Plot files\l	H Carp.wst	
4		Fu	Il Precision	OFF								
5		Confidence	Coefficient	95%								
6	Number c	of Bootstrap	Operations	2000								
7												
8												
9	2013 Carp											
10												
11						General	Statistics					
12			Numl	oer of Valid O	bservations	7			Number	of Distinct C	bservations	7
13												
14			Raw S	tatistics				I	_og-transfori	ned Statistic		
15					Minimum	9.96				Minimum	of Log Data	2.299
16					Maximum	24.7					of Log Data	
17						15.77					of log Data	
18					Median					SE	of log Data	0.304
19						4.918						
20				Std. E	rror of Mean	1.859						
21				Coefficient	of Variation	0.312						
22					Skewness	0.882						
23												
24												
25	٧	Varning: A s	ample size o	of 'n' = 7 may	not adequa	te enough to	compute me	eaningful an	d reliable tes	st statistics a	nd estimate	s!
26												
27				uggested to d				_				
28		If p	ossible com	pute and coll	ect Data Qu	ality Objecti	ves (DQO) b	ased sampl	e size and a	nalytical res	ults.	
29												
30												
31							nly 7 Values					
32				ould be noted		_	-					
33				the resulting	calculations	s may not be	reliable end	ough to draw	conclusions	<b>.</b>		
34			FL - 12					L	. d 46.45	- h		
35		1	The literature	suggests to	use bootstra	ap methods	on data sets	naving more	e tnan 10-15	observation	S.	
36						Delevent III	Ol Osasiasia					
37			Name of Diri	ribution Test		Relevant U	CL Statistics			adullar di a T	-4	
38						0.047		L		stribution Te		0.083
39				hapiro Wilk T						hapiro Wilk T		
40		Deto once		hapiro Wilk C		0.003		Data annas		hapiro Wilk C		
41		vata appe	ear Normal a	. J70 SIGNITIC	ance Level			vara appea	Lognormal	at 5% Signif	icalice Leve	71
42		As	ssuming Nor	mal Distributi	ion			Ass	umina Loana	ormal Distrib	ution	
43		7.0			dent's-t UCL	19.38		,,,,,			95% H-UCL	20.9
44		95%	UCLs (Adju						95%	Chebyshev (		
45			95% Adjuste		•	19.49				Chebyshev (	,	
46				ed-t UCL (Joh						Chebyshev (	,	
47				(- 2.		_				<i>y</i> = (	, - 3-	<u> </u>
48			Gamma Dis	tribution Test	t				Data Dis	stribution		
49					s corrected)	7.32		Data appe		t 5% Signific	ance Level	
50				(-:-								

	Α	В	С	D	Е	F	G	Н	I	J	K	L
51					Theta Star	2.154						
52				N	ILE of Mean	15.77						
53			MI	LE of Standa	ard Deviation	5.827						
54					nu star	102.5						
55			Approximat	e Chi Square	e Value (.05)	80.13			Nonparame	tric Statistic	S	
56			Adjus	ted Level of	Significance	0.0158				9:	5% CLT UCL	18.82
57			Ad	ljusted Chi S	quare Value	74.17				95% Ja	ackknife UCL	19.38
58									95%	Standard Bo	ootstrap UCL	18.58
59			Anders	son-Darling	Test Statistic	0.183				95% Boo	otstrap-t UCL	20.6
60			Anderson-l	Darling 5% C	Critical Value	0.708			S	95% Hall's Bo	ootstrap UCL	24.12
61			Kolmogoro	ov-Smirnov	Test Statistic	0.133			95%	Percentile Bo	ootstrap UCL	18.77
62		K	olmogorov-S	mirnov 5% C	Critical Value	0.312				95% BCA B	ootstrap UCL	18.93
63	Data	appear Gar	mma Distribu	ited at 5% S	Significance	Level			95% Cł	nebyshev(Me	ean, Sd) UCL	23.87
64									97.5% Cł	nebyshev(Me	ean, Sd) UCL	27.37
65		As	suming Gam	ma Distribu	tion				99% Ct	nebyshev(Me	ean, Sd) UCL	34.26
66			95% A	pproximate (	Gamma UCL	20.16						
67			959	% Adjusted (	Gamma UCL	21.78						
68												
69			Potential U	JCL to Use						Use 95% Stu	ıdent's-t UCL	19.38
70												
71	No	te: Suggesti	ons regardir	ng the select	tion of a 95%	UCL are p	rovided to he	lp the user t	o select the	most approp	oriate 95% U	CL.
72	,	These recon	nmendations	are based	upon the res	ults of the s	imulation stu	dies summa	rized in Sing	gh, Singh, aı	nd laci (2002	)
73			and Singh	and Singh (	2003). For	additional ir	nsight, the use	er may want	to consult a	statistician.	:	
74												

	Α	В	С	D	Е	F	G	Н	I	J	K	L
1				General UC	L Statistics	for Full Data	Sets					
2		User Sele	cted Options									
3			From File	\\Smefile\wo	ork in progres	ss\069448.00	\Fish Monito	ring\2013\Bo	ox and Whisk	er Plot files\l	IH R. Bass.v	vst
4		Fu	II Precision	OFF								
5		Confidence	Coefficient	95%								
6	Number	of Bootstrap	Operations	2000								
7												
8												
9	2013 R. Ba	ss										
10												
11						General	Statistics					
12			Numl	per of Valid C	Observations	4			Number	of Distinct C	bservations	4
13												
14												
15					Warning: T	his data set o	only has 4 ol	bservations!				
16			Dat	a set is too s	small to com	pute reliable	and meanin	gful statistic	s and estima	ates!		
17				The	data set for	variable 201	3 R. Bass wa	as not proce	ssed!			
18												
19			It is sugg	ested to coll	ect at least 8	to 10 obser	vations befo	re using the	se statistical	methods!		
20		lf p	ossible, com	pute and col	lect Data Qu	uality Objecti	ves (DQO) l	pased sampl	e size and a	nalytical res	ults.	
21												
22												

	A	В	С	D General UC	E L Statistics	F for Full Date	G	Н	I	J	K	L
1		User Sele	cted Options	deneral UC	L GIGUSUUS	ioi ruii Dala	3 0513					
2		0301 0010	From File	\\Smefile\wo	rk in progre	ss\069448.0	0∖Fish Monit	toring\2013\B	ox and Whis	ker Plot files	s\IH SM Bass	wst
3		Fu	II Precision	OFF	TK III progra				Ox and Time			
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6												
7												
<u>8</u> 9	2013 SMB											
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	9			Numbe	r of Distinct	Observations	9
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.2				Minimu	m of Log Data	-1.609
16					Maximum	2.91				Maximui	m of Log Data	1.068
17					Mean	1.602				Mea	an of log Data	0.211
18					Median	1.44				S	SD of log Data	0.878
19					SD	0.992						
20				Std. Er	ror of Mean	0.331						
21				Coefficient	of Variation	0.619						
22					Skewness	0.0714						
23							-					
24												
25								s in this data				
26				ould be noted							t,	
27				the resulting	calculation	s may not be	e reliable er	nough to drav	v conclusion	s		
28												
29		7	The literature	suggests to	use bootstr	ap methods	on data set	s having moi	e than 10-15	observation	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test				l	ognormal D			
33				hapiro Wilk T							Test Statistic	
34				hapiro Wilk C		0.829					Critical Value	
35		Data appe	ear Normal a	t 5% Significa	ance Level			Data appea	r Lognormal	at 5% Sign	ificance Leve	<b>)</b>
36				mal Disk " · ·					umale = 1 · ·	amasi Dini	h	
37		A	ssuming Nori	mal Distribution		2 247		Ass	suming Logn	ormai Distri		4 500
38		050	/ LIOL - / '		lent's-t UCL	2.21/			050/	Chaburt -	95% H-UCL	
39			• •	sted for Skev	•	2.155				•	(MVUE) UCL	
40				d-CLT UCL (	· ·						(MVUE) UCL	
41			95% IVIODITIE	ed-t UCL (Joh	nson-1978)	Z.Z I 8			99%	Chebysnev	(MVUE) UCL	0.889
42			Gamma Dio	tribution Test					Data Di	stribution		
43			Gamma DIS		s corrected)	1 455		Data ann			icance Level	
44				n stat (blas	Theta Star			Data appl	Jul 1401111ai a	. o /o Gigiiiii	Carlos Level	
45				N/I	LE of Mean							
46			M	LE of Standar								
47			IVI	LE OI OIGITUAL	nu star							
48			Approximat	e Chi Square					Nonparame	tric Statistic	ns.	
49				sted Level of S					· tonparame		95% CLT UCL	2.146
50			Aujus	neu Level Ol 3	Jigriilicarice	0.0231					75 /0 OLI UCL	2.140

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ad	ljusted Chi S	quare Value	13.82				95% 、	Jackknife UCL	2.217
52									95%	Standard I	Bootstrap UCL	2.108
53			Anders	son-Darling 1	est Statistic	0.286				95% Bo	ootstrap-t UCL	2.211
54			Anderson-l	Darling 5% C	Critical Value	0.73			Ş	95% Hall's E	Bootstrap UCL	2.082
55			Kolmogoro	ov-Smirnov 1	est Statistic	0.146			95%	Percentile I	Bootstrap UCL	2.126
56		Ko	olmogorov-S	mirnov 5% C	Critical Value	0.282				95% BCA I	Bootstrap UCL	2.134
57	Data	appear Gar	nma Distribu	ited at 5% S	ignificance	Level			95% Cł	nebyshev(M	lean, Sd) UCL	3.044
58									97.5% Cł	nebyshev(M	lean, Sd) UCL	3.667
59		Ass	suming Gam	ma Distribu	tion				99% Cł	nebyshev(M	lean, Sd) UCL	4.893
60			95% A	pproximate C	Gamma UCL	2.703						
61			959	% Adjusted C	Gamma UCL	3.036						
62												
63			Potential U	JCL to Use					Ī	Use 95% S	tudent's-t UCL	2.217
64												
65	No	te: Suggesti	ons regardir	ng the select	ion of a 95%	6 UCL are p	rovided to hel	lp the user to	select the	most appro	opriate 95% U	CL.
66		These recon	nmendations	are based (	upon the res	ults of the	simulation stud	dies summa	rized in Sing	gh, Singh, a	and laci (2002	)
67			and Singh	and Singh (2	2003). For	additional i	nsight, the use	er may want	to consult a	statisticia	n.	
68												

	A	В	С	D General UC	E L Statistics	F for Full Date	G	Н		J	K	L
1		liser Sele	cted Options	General UC	L Statistics	ioi ruii Data	2 OEIS					
2		0351 3516	From File	\\Smefile\wo	rk in nroare	ss\069448 0	0∖Fish Monit	toring\2013\R	ox and Whie	ker Plot files	s\LR A. Sucke	r wst
3		Fu	III Precision	OFF	TK III progre	331003440.0	0 (1 1311 1010111)	loning (2010 lb)	OX and wind	KCI I IOI IIICS	MEIT A. OUCKO	
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6		o. 2001011.up										
7												
<u>8</u> 9	2013 A. Su	cker										
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.61				Minimur	m of Log Data	-0.494
16					Maximum	1.76				Maximur	m of Log Data	0.565
17					Mean	1.083				Mea	an of log Data	0.0218
18					Median	1.05				S	D of log Data	0.363
19					SD	0.392						
20				Std. Er	ror of Mean	0.139						
21				Coefficient	of Variation	0.362						
22					Skewness	0.568						
23						1						
24												
25								s in this data				
26								ds may be pe			t,	
27				the resulting	calculation	s may not be	e reliable er	ough to draw	v conclusion	s		
28												
29		-	The literature	suggests to	use bootstr	ap methods	on data set	s having mor	e than 10-15	observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		T		L	ognormal D			
33				hapiro Wilk T							Test Statistic	
34				napiro Wilk C		0.818					Critical Value	
35		Data appo	ear Normal a	5% Significa	ance Level			Data appea	r Lognormal	at 5% Sign	ificance Leve	4
36			oouwelmer blee	mal District	lan.			A	umain = 1 = = :	ownel Dist	hutio-	
37		A	ssuming Nor			1 245		ASS	uming Logn	ormai Distri		1 405
38		OF0	/ IIOI ~ /^ =		dent's-t UCL	1.345			050/	Chohuch	95% H-UCL (MVUE) UCL	
39		90%	6 UCLs (Adju	d-CLT UCL (	•	1 2/				•	(MVUE) UCL	
40				ed-t UCL (Joh							(MVUE) UCL	
41			ಶು /o IVIOUITI6	u-i UCL (JON	1115011-1978)	1.33			99%	Cilebysfiev	(IVIVUE) UCL	2.4/4
42			Gamma Die	tribution Test	<u> </u>				Data Di	stribution		
43			Guillia Dis		s corrected)	5 623		Data anna			cance Level	
44				n stat (bld	Theta Star			Pala appe	Jai Hollial a	o /o Gigiilli	COLICE LEVEL	
45				N/	ILE of Mean							
46			M	LE of Standar								
47			141	0. 0.0.1001	nu star							
48			Approximat	e Chi Square					Nonparame	tric Statistic	es es	
49				ted Level of							5% CLT UCL	1.311
50			Aujus	LEVEI UI	Jigimicanice	0.0130					570 OL 1 UCL	1.011

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ac	ljusted Chi S	quare Value	64.48				95% J	ackknife UCL	1.345
52									95%	Standard E	Bootstrap UCL	1.294
53			Anders	son-Darling	Test Statistic	0.245				95% Bo	otstrap-t UCL	1.384
54			Anderson-	Darling 5% C	Critical Value	0.716			Ś	95% Hall's E	Bootstrap UCL	1.342
55			Kolmogor	ov-Smirnov	Test Statistic	0.176			95%	Percentile E	Bootstrap UCL	1.309
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.294				95% BCA E	Bootstrap UCL	1.318
57	Data	a appear Ga	mma Distrib	uted at 5% S	ignificance	Level			95% CI	nebyshev(M	ean, Sd) UCL	1.687
58									97.5% Cl	nebyshev(M	ean, Sd) UCL	1.949
59		As	suming Gam	ma Distribu	tion	l .			99% CI	nebyshev(M	ean, Sd) UCL	2.463
60			95% A	pproximate (	Gamma UCL	1.409						
61			95	% Adjusted (	Gamma UCL	1.51						
62												
63			Potential l	JCL to Use						Use 95% St	udent's-t UCL	1.345
64												
65	No	ote: Suggest	ions regardir	ng the select	tion of a 95%	UCL are p	rovided to he	lp the user t	o select the	most appro	priate 95% U	CL.
66		These recor	mmendations	are based	upon the res	ults of the	simulation stu	dies summa	rized in Sin	gh, Singh, a	nd laci (2002)	)
67		and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.										
68												

	A	В	С	D General UC	E I Statistics	F for Full Date	G	Н	I	J	K	L
1		liser Sele	cted Options	deneral UC	L Statistics	ioi ruii Data	3 SEIS					
2		0351 3516	From File	\\Smefile\wo	rk in nroare	ss\069448 0	0\Fish Monit	toring\2013\R	ox and Whiel	ker Plot files	\LR Carp.wst	
3		Fu	II Precision	OFF	TK III progre	331003440.0		Lorring (2010 lb	OX and winsi	NOT I TOT THOS	TEN Oarp.wst	
4		Confidence		95%								
5	Number o	of Bootstrap		2000								
6		о. 200 ю. ар										
7												
8 9	2013 Carp											
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statisti	cs	
15					Minimum	2.17				Minimur	n of Log Data	0.775
16					Maximum	48.9				Maximur	n of Log Data	3.89
17					Mean	17.22				Mea	an of log Data	2.472
18					Median	14.2				S	D of log Data	1.006
19					SD	14.92						
20				Std. Er	ror of Mean	5.275						
21				Coefficient	of Variation	0.867						
22					Skewness	1.487						
23						1						II.
24												
25								s in this data				
26								ds may be pe			t,	
27				the resulting	calculation	s may not be	e reliable er	nough to drav	v conclusion:	s		
28												
29		7	The literature	suggests to	use bootstr	ap methods	on data set	s having mor	e than 10-15	observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		I		L	ognormal Di			
33				hapiro Wilk T							Test Statistic	
34		D.:		napiro Wilk C		0.818		D.:			Critical Value	
35		Data appe	ear Normal a	5% Significa	ance Level			Data appea	r Lognormal	at 5% Sign	ificance Leve	l
36		Α.	nouming No	mal Distribut	on.			A = =	umina Laa-	ormal Dist	hution	
37		As	ssuming Nori	mal Distribution	on lent's-t UCL	27 21		ASS	uming Logn	ormai Distri	95% H-UCL	72 66
38		OE0/	. IICI = /^di	sted for Skev		21.21			0.50/	Chehychou	(MVUE) UCL	
39			• •	d-CLT UCL (	•	28 85				•	(MVUE) UCL	
40				ed-t UCL (Joh							(MVUE) UCL	
41			JJ 70 MOUITE	.a-t UOL (UUII		27.07			33 /0	OHODYSHEV	(IVIVOL) OCL	00.40
42			Gamma Dist	tribution Test	<u> </u>				Data Di	stribution		
43			DIO		s corrected)	1.01		Data anne	ear Normal a		cance Level	
44				2.0. (2.00	Theta Star			_ = = = app				
45				M	LE of Mean							
46			М	LE of Standar								
47 48					nu star							
			Approximat	e Chi Square					Nonparame	tric Statistic	es es	
49				ted Level of S							5% CLT UCL	25.89
50					. gcanoo							

	Α	В	С	D	Е	F	G	Н	I	J	K	L
51			Ac	ljusted Chi S	quare Value	6.682				95% J	ackknife UCL	27.21
52									95%	Standard B	Sootstrap UCL	25.25
53			Anders	son-Darling	Test Statistic	0.169				95% Bo	otstrap-t UCL	33.01
54			Anderson-	Darling 5% C	Critical Value	0.729			9	95% Hall's B	Bootstrap UCL	65.75
55			Kolmogor	ov-Smirnov	Test Statistic	0.124			95%	Percentile B	Bootstrap UCL	25.87
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.299				95% BCA B	Sootstrap UCL	28.37
57	Data	a appear Ga	mma Distrib	uted at 5% S	Significance	Level			95% Cł	nebyshev(M	ean, Sd) UCL	40.21
58									97.5% Cł	nebyshev(M	ean, Sd) UCL	50.16
59		As	suming Gam	ma Distribu	tion				99% Cł	nebyshev(M	ean, Sd) UCL	69.7
60			95% A	pproximate (	Gamma UCL	34.45						
61			95	% Adjusted (	Gamma UCL	41.64						
62												
63			Potential (	JCL to Use						Use 95% St	udent's-t UCL	27.21
64												
65	Ne	ote: Suggest	ions regardir	ng the select	tion of a 95%	UCL are p	provided to he	p the user t	o select the	most appro	priate 95% U	CL.
66		These recor	mmendations	are based	upon the res	ults of the	simulation stu	dies summa	rized in Sin	gh, Singh, a	nd laci (2002	)
67			and Singh	and Singh (	2003). For	additional i	nsight, the use	er may want	to consult a	statistician	<b>l.</b>	
68												

	A	В	С	D General UCL	E	F for Full Date	G	Н	I	J	K	L
1		User Sele	cted Options	deneral UCL	L SIGUSUCS	ioi Puli Data	3 3618					
2		0351 351B	From File	\\Smefile\wor	rk in progres	ss\069448 0	0\Fish Monit	oring\2013\R	ox and Whie	ker Plot files	NRR Rass	wst
3		Fu	Il Precision	OFF	in progres	33.003440.0	011 1311 14101111	omigizo 1010	OX and Willo	KCI I IOI IIICS	TEITT. Dass.	N3t
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6												
7												
<u>8</u> 9	2013 RB											
10												
11						General	Statistics					
12			Numl	per of Valid Ob	bservations	9			Numbe	r of Distinct	Observations	9
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.53				Minimu	m of Log Data	-0.635
16					Maximum	1.84				Maximui	m of Log Data	0.61
17					Mean	1.3				Mea	an of log Data	0.204
18					Median	1.36				5	D of log Data	0.391
19					SD	0.417						+
20				Std. En	ror of Mean	0.139						
21				Coefficient	of Variation	0.32						
22					Skewness	-0.671						
23							1					
24												
25					Warning:	There are o	nly 9 Values	s in this data				
26			Note: It sho	ould be noted	that even t	hough boots	strap metho	ds may be pe	erformed on	this data se	t,	
27				the resulting	calculation	s may not be	e reliable en	ough to drav	v conclusion	s		
28												
29		7	The literature	suggests to ι	use bootstr	ap methods	on data set	s having mor	e than 10-15	observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		T		L	ognormal D			
33				hapiro Wilk Te						•	Test Statistic	
34				napiro Wilk Cr		0.829				•	Critical Value	
35		Data appe	ear Normal a	5% Significa	ince Level			Data appea	r Lognormal	at 5% Sign	ificance Leve	<b>;</b>
36											1	
37		A:	ssuming Nori	mal Distribution		4.550		Ass	uming Logn	ormal Distri		14 770
38		050	1101 - /4 "		ent's-t UCL	1.558			0501	Oh ale !	95% H-UCL	
39			, -	sted for Skew	•	1 405				•	(MVUE) UCL	
40				d-CLT UCL (C							(MVUE) UCL	
41			95% IVIODITIE	ed-t UCL (Joh	nson-1978)	1.553			99%	Criebysnev	(MVUE) UCL	3.025
42			Gamma Dia	tribution Test					Data Di	stribution		
43			danima Dis		s corrected)	5 940		Doto co-			icance Level	
44				r stat (Dias	Theta Star			раца арре	sai NUITTALA	ii 070 Olgrilli	Level	
45				I A I	LE of Mean							
46			NA.	LE of Standar								
47			IVI	LE OI OIGITUATI	nu star							
48			Annrovimat	e Chi Square					Nonparame	tric Statistic	~s	
49				ted Level of S					. tonparame		95% CLT UCL	1.528
50			Aujus	LEVELUI S	ngi iiiicalice	0.0231					70 70 OL1 UCL	1.020

	Α	В	С	D	Е	F	G	Н	I	J	K	L		
51			Ac	ljusted Chi S	quare Value	78.38				95% Ja	ckknife UCL	1.558		
52									95%	Standard Bo	ootstrap UCL	1.52		
53			Anders	son-Darling 1	est Statistic	0.37		95% Bootstrap-t UCL						
54			Anderson-	Darling 5% C	critical Value	0.722		95% Hall's Bootstrap UCL						
55			Kolmogor	ov-Smirnov 7	est Statistic	0.176			95%	Percentile Bo	ootstrap UCL	1.513		
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.279				95% BCA Bo	ootstrap UCL	1.5		
57	Data	appear Ga	mma Distrib	ited at 5% S	ignificance l	Level			95% Cł	nebyshev(Me	an, Sd) UCL	1.905		
58									97.5% Cł	nebyshev(Me	an, Sd) UCL	2.167		
59		As	suming Gam	ma Distribu	tion	1			99% Cł	nebyshev(Me	an, Sd) UCL	2.682		
60			95% A	pproximate (	Gamma UCL	1.657								
61			95	% Adjusted 0	Gamma UCL	1.746								
62														
63			Potential l	JCL to Use						Use 95% Stu	dent's-t UCL	1.558		
64														
65	No	te: Suggest	ions regardir	ng the select	ion of a 95%	UCL are p	rovided to he	lp the user t	o select the	most approp	riate 95% U	CL.		
66		These recor	nmendations	are based	upon the res	ults of the s	imulation stu	dies summa	rized in Sing	gh, Singh, ar	nd laci (2002	)		
67			and Singh	and Singh (2	2003). For	additional ir	nsight, the use	er may want	to consult a	statistician.				
68														
69				Not	e: For highly	negative-s	kewed data, o	confidence l	imits					
70				(e.g.	, Chen, Johr	nson, Logno	rmal, and Ga	ımma) may ı	not be					
71					reliable. Ch	en's and Jo	hnson's meth	hods provide	)					
72					adjustme	nts for posit	tvely skewed	data sets.						
73														

	A	В	С	D General III	E Cl Statistics	F for Full Data	G	Н	I	J	K	L
1		User Sele	cted Options	General UC	JE GIGUSUCS	o ioi cuii Dali	a 0619					
2			From File	\\Smefile\wo	ork in progre	ess\069448.0	0∖Fish Monit	orina\2013\B	ox and Whis	sker Plot files	s\LR SM Bas	s.wst
3		Fu	III Precision	OFF	. , ,							
4		Confidence	Coefficient	95%								
5 6	Number	of Bootstrap	Operations	2000								
7												
8												
	2013 SMB											
10												
11							Statistics					
12			Numl	per of Valid C	Observations	s 8			Numbe	er of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfo	rmed Statist		
15					Minimun						m of Log Data	
16					Maximun						m of Log Data	
17						n 1.336					an of log Data	
18					Media						SD of log Data	1 0.622
19				0-1 -	SL Error of Mear	0.749						
20					t of Variation							
21				Coefficien	Skewnes							
22					Skewnes	5 0.552						<u> </u>
23												
24					Warning:	There are o	nly 8 Values	s in this data				
25 26			Note: It sho	ould be note		though boots				this data se	rt,	
27						ns may not b						
28												
29		7	The literature	suggests to	use bootst	rap methods	on data set	s having mo	re than 10-1	5 observation	ons.	
30												
31						Relevant U	CL Statistic	s				
32			Normal Dist					l	•	Distribution T		
33				hapiro Wilk							Test Statistic	
34				hapiro Wilk (						•	Critical Value	
35		Data appe	ear Normal a	t 5% Signific	cance Level			Data appea	ar Lognorma	ıl at 5% Sign	ificance Leve	<b>∌</b> l
36					u!						la calla	
37		A:	ssuming Nor			1 020		Ass	suming Logn	normal Distri		2 5 4 2
38		OE0/	6 UCLs (Adju		ident's-t UCI	1.838			OE0/	Chobyoba	95% H-UCI	
39			95% Adjuste		•	\ 1 027				•	' '	
40				ed-t UCL (Jo							(MVUE) UCI	
41			30 /0 IVIUUIIIE	su-i UCL (JO	19/8	1.047			33%	o chebyshev	(INIVUE) UCI	- +.04/
42			Gamma Dis	tribution Tes	st				Data D	istribution		
43					as corrected	) 2.195		Data app			icance Level	
44 45				(3.6	Theta Sta	*						
45				N	MLE of Mear							
46			М	LE of Standa	ard Deviation	n 0.902						
						r 35.11						
42					nu sta	.   00						
48 49			Approximat	e Chi Square					Nonparame	etric Statistic	cs	

	Α	В	С	D	Е	F	G	Н		J	K	L		
51			Ac	ljusted Chi S	quare Value	20.05				95% J	ackknife UCL	1.838		
52									95%	Standard E	Bootstrap UCL	1.735		
53			Anders	son-Darling	Γest Statistic	0.224		95% Bootstrap-t UCL						
54			Anderson-	Darling 5% C	Critical Value	0.72			9	95% Hall's E	Bootstrap UCL	2.176		
55			Kolmogor	ov-Smirnov	Test Statistic	0.145			95%	Percentile E	Bootstrap UCL	1.746		
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.296		95% BCA Bootstrap UC						
57	Data	a appear Ga	mma Distrib	uted at 5% S	ignificance l	Level			95% Cł	nebyshev(M	ean, Sd) UCL	2.49		
58									97.5% Cł	nebyshev(M	ean, Sd) UCL	2.99		
59		As	suming Gam	ma Distribu	tion				99% Cł	nebyshev(M	ean, Sd) UCL	3.971		
60			95% A	pproximate (	Gamma UCL	2.08								
61			95	% Adjusted (	Gamma UCL	2.34								
62														
63			Potential (	JCL to Use						Use 95% St	udent's-t UCL	1.838		
64														
65	No	ote: Suggest	ions regardir	ng the select	ion of a 95%	UCL are p	rovided to he	lp the user to	select the	most appro	priate 95% U	CL.		
66	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)										)			
67			and Singh	and Singh (	2003). For	additional i	nsight, the use	er may want	to consult a	a statisticiar	) <b>.</b>			
68														

	A	В	С	D General IIC	E 1 Statistics	F for Full Data	G	Н	l	J	K	L
1		User Sele	cted Options	General UC	L Glausucs	ioi ruii Dala	2 OE13					
2			From File	\\Smefile\wo	ork in progre	ss\069448.0	0∖Fish Moni	toring\2013\B	ox and Whis	ker Plot files	MR1 A. Suc	ker.wst
3		Fu	III Precision	OFF	1-3-							
4		Confidence	Coefficient	95%								
5 6	Number	of Bootstrap	Operations	2000								
7		•										
8												
	2013 A. Su	cker										
10												
11						General	Statistics					
12			Numb	oer of Valid C	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor			
15					Minimum						m of Log Data	
16					Maximum						m of Log Data	
17						1.783					an of log Data	
18					Mediar					S	D of log Data	0.676
19						1.394						
20					rror of Mear							
21				Coefficient	t of Variation							
22					Skewness	1.857						
23												
24					\A/a!	Th	mb. O \/aliva	- !- 46!- 4-4-				
25			Nata: It als:					s in this data				
26								ds may be pe			τ,	
27				tne resulting	calculation	s may not be	e reliable er	nough to draw	/ conclusion	s 		
28		-	The literature	euggeete to	use hootetr	an methode	on data set	ts having mor	e than 10-15	Sobsenvetio	ne	
29		-	ine illerature	suggests to	use bootsu	ap memous	On data set	is naving mor	e ulali 10-10	ODSEIVALIO	1113.	
30						Relevant U	CI Statistic	`e				
31			Normal Dist	ribution Test	<u> </u>	T C C Varie O	OL Oldusuo		.ognormal D	istribution T	est	
32				hapiro Wilk T		0.795					Test Statistic	0.953
33				hapiro Wilk C						· ·	Critical Value	
34		Data no	t Normal at 5	•				Data appea			ificance Leve	
35									<u> </u>			
36 37		A	ssuming Nor	mal Distribut	ion			Ass	uming Logn	ormal Distri	bution	
38					dent's-t UCL	2.716			<u> </u>		95% H-UCL	3.582
39		95%	6 UCLs (Adju	sted for Ske	wness)				95%	Chebyshev	(MVUE) UCL	3.593
40			95% Adjuste	d-CLT UCL (	(Chen-1995)	2.939			97.5%	Chebyshev	(MVUE) UCL	4.393
41			95% Modifie	ed-t UCL (Jol	nnson-1978)	2.77			99%	Chebyshev	(MVUE) UCL	5.962
42						1						1
43			Gamma Dis	tribution Tes	t				Data Di	stribution		
44				k star (bia	s corrected)	1.627	Da	ta appear Ga	mma Distrib	uted at 5%	Significance	Level
45					Theta Star	1.096						
46				N	ILE of Mear	1.783						
47			M	LE of Standa	rd Deviation	1.397						
48						26.03						
49				e Chi Square					Nonparame			
50			Adjus	sted Level of	Significance	0.0195				9	5% CLT UCL	2.593

	Α	В	С	D	Е	F	G	Н	I	J	K	L		
51			Ac	ljusted Chi S	quare Value	13.38				95% J	ackknife UCL	2.716		
52									95%	Standard B	Sootstrap UCL	2.557		
53			Anders	son-Darling	Test Statistic	0.351		95% Bootstrap-t UCL						
54			Anderson-	Darling 5% C	Critical Value	0.723			9	95% Hall's B	Bootstrap UCL	6.445		
55			Kolmogor	ov-Smirnov	Test Statistic	0.191		95% Percentile Bootstrap UCL						
56		K	Colmogorov-S	mirnov 5% C	Critical Value	0.297		95% BCA Bootstrap UCI						
57	Data	a appear Ga	mma Distrib	uted at 5% S	ignificance l	Level			95% Cł	nebyshev(M	ean, Sd) UCL	3.931		
58									97.5% Ch	nebyshev(M	ean, Sd) UCL	4.86		
59		As	suming Gam	ma Distribu	tion				99% Cł	nebyshev(M	ean, Sd) UCL	6.686		
60			95% A	pproximate (	Gamma UCL	3.012								
61			95	% Adjusted 0	Gamma UCL	3.468								
62														
63			Potential l	JCL to Use					Use 95% A	pproximate	Gamma UCL	3.012		
64														
65	No	te: Suggest	ions regardir	ng the select	ion of a 95%	UCL are p	provided to he	p the user t	o select the	most appro	priate 95% U	CL.		
66	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and laci (2002)										)			
67			and Singh	and Singh (	2003). For	additional i	nsight, the use	er may want	to consult a	a statistician	<b>l.</b>			
68														

	A	В	С	D General UC	E L Statistics	F for Full Data	G	Н		J	K	L.
1		liser Sele	cted Options	General UC	L Statistics	ioi ruii Data	3 SEIS					
2		0351 3516	From File	\\Smefile\wo	rk in nroare	ss\069448 0	0\Fish Monit	toring\2013\R	ox and Whie	ker Plot files	s\MR1 Carp.w	st
3		Fu	II Precision	OFF	TK III progre	331003440.0		toring (2010 to	OX and Wins	NCI I IOI IIIC	ouvirti Gaip.w	
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6		о. 200 ю. ар										
7												
8 9	2013 Carp											
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	8.49				Minimu	m of Log Data	2.139
16					Maximum	22.9				Maximui	m of Log Data	3.131
17					Mean	15.54				Mea	an of log Data	2.691
18					Median	14.8				S	D of log Data	0.352
19					SD	5.235						
20				Std. E	rror of Mean	1.851						
21				Coefficient	of Variation	0.337						
22					Skewness	0.173						
23						1						1
24												
25								s in this data				
26								ds may be p			t,	
27				the resulting	calculation	s may not be	e reliable er	nough to drav	v conclusion	s		
28												
29		7	The literature	suggests to	use bootstr	ap methods	on data set	s having mo	e than 10-15	5 observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		T			ognormal D			T
33				hapiro Wilk T						· ·	Test Statistic	
34				napiro Wilk C		0.818					Critical Value	
35		Data appe	ear Normal a	5% Significa	ance Level			Data appea	ır Lognormal	at 5% Sign	ificance Leve	)I
36			naumelm a Al-	mal District	lan			A	umical	ownel Dist	hutio-	
37		A:	ssuming Nor			10.04		Ass	suming Logn	ormai Distri		20.82
38		OE0	( I I O   ~ / A = 1		dent's-t UCL	19.04			050/	Chobyeta	95% H-UCL (MVUE) UCL	
39			UCLs (Adju 95% Adjuste			10 7				•	(MVUE) UCL	
40				ed-t UCL (Joh							(MVUE) UCL	
41			30 /₀ IVIOUITIE	u-i UCL (JOP	1115011-1978)	13.00			99%	Chebysnev	(IVIVUE) UCL	34.34
42			Gamma Dis	tribution Teet	1				Data Di	stribution		
43					s corrected)	6.13		Data ann			cance Level	
44				otai (bia	Theta Star			- Jaka app	1101111a1 a	0 /0 Olgi IIII		
45				N.	ILE of Mean							
46			M	LE of Standa								
47			.,,,		nu star							
48			Approximat	e Chi Square					Nonparame	tric Statistic	es es	
49				ted Level of							5% CLT UCL	18.58
50			, tajac		g	2.0.00						. 5.50

	Α	В	С	D	Е	F	G	Н	I	J	K	L			
51			Ac	ljusted Chi S	quare Value	71.37				95% J	ackknife UCL	19.04			
52									95%	Standard B	ootstrap UCL	18.42			
53			Anders	son-Darling 1	est Statistic	0.237				95% Bo	otstrap-t UCL	19.43			
54			Anderson-	Darling 5% C	Critical Value	0.715			9	95% Hall's B	ootstrap UCL	18.37			
55			Kolmogor	ov-Smirnov 7	est Statistic	0.166			95%	Percentile B	ootstrap UCL	18.49			
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.294		95% BCA Bootstrap UC							
57	Dat	a appear Ga	mma Distribu	ited at 5% S	ignificance l	Level			95% Ch	nebyshev(M	ean, Sd) UCL	23.6			
58									97.5% Ch	nebyshev(M	ean, Sd) UCL	27.1			
59		As	suming Gam	ma Distribu	tion				99% Ch	nebyshev(M	ean, Sd) UCL	33.95			
60			95% A	pproximate (	Gamma UCL	19.99									
61			959	% Adjusted 0	Gamma UCL	21.35									
62															
63			Potential U	JCL to Use					ı	Use 95% St	udent's-t UCL	19.04			
64															
65	N	ote: Suggest	ions regardir	ng the select	ion of a 95%	UCL are p	provided to hel	p the user to	select the	most appro	priate 95% U	CL.			
66	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and laci (2002)								)						
67			and Singh	and Singh (2	2003). For	additional i	nsight, the use	er may want	to consult a	statistician	l <b>.</b>				
68															

	A	В	С	D General UC	E I Statistics	F for Full Date	G	Н	I	J	K	L
1		User Sele	cted Options	General UC	L GIGUSUCS	ioi ruii Dala	3 0513					
2		0301 0010	From File	\\Smefile\wo	rk in progre	ss\069448.0	0∖Fish Monit	toring\2013\B	ox and Whis	ker Plot files	s\MR1 C. Catf	ish wst
3		Fu	II Precision	OFF	p. og. o							
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6												
7												
8 9	2013 C. Ca	ıtfish										
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	5.41				Minimu	m of Log Data	1.688
16					Maximum	18.7				Maximui	m of Log Data	2.929
17					Mean	12.75				Mea	an of log Data	2.483
18					Median	12.45				S	SD of log Data	0.398
19					SD	4.394						
20				Std. Er	ror of Mean	1.554						
21				Coefficient	of Variation	0.345						
22					Skewness	-0.194						
23						1						
24												
25								s in this data				
26								ds may be pe			t,	
27				the resulting	calculation	s may not be	e reliable er	nough to drav	v conclusion	s		
28												
29			The literature	suggests to	use bootstr	ap methods	on data set	s having mor	e than 10-15	observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		T		L	ognormal D			T
33				hapiro Wilk T							Test Statistic	
34				napiro Wilk C		0.818				•	Critical Value	
35		Data appe	ear Normal a	5% Significa	ance Level			Data appea	r Lognormal	at 5% Sign	ificance Leve	1
36				mal Dist (f. 17					umale = 1 · ·	amasi Dini	h. dia	
37		A:	ssuming Nor			15.00		Ass	suming Logn	ormai Distri		10.00
38		050	( I I O   ~ / A = 1		dent's-t UCL	15.09			050/	Chohyeka	95% H-UCL (MVUE) UCL	
39		90%	UCLs (Adju 95% Adjuste		•	15 10				•	(MVUE) UCL	
40				ed-t UCL (Joh							(MVUE) UCL	
41			30 /₀ IVIOUITIE	u-i UCL (JON	1115011-1978)	13.07			99%	Chebysnev	(IVIVUE) UCL	30.91
42			Gamma Dis	tribution Teet	<u> </u>				Data Di	stribution		
43					s corrected)	5 214		Data anne			icance Level	
44				K Star (bia	Theta Star			Data appe	1101111a1 a	o /o Gigiiiii	Carlos Level	
45				N/	ILE of Mean							
46			M	LE of Standar								
47			141		nu star							
48			Approximat	e Chi Square					Nonparame	tric Statistic	cs	
49				ted Level of					. to iparanic		95% CLT UCL	15.3
50			Aujus	LEVEI UI	Jigimicanice	0.0130					,5 /0 OLT UCL	10.0

	Α	В	С	D	E	F	G	Н	1	J	K	L		
51		•	A	djusted Chi S	Square Value	58.96		•	•	95% J	ackknife UCL	15.69		
52									95%	6 Standard E	Bootstrap UCL	15.11		
53			Ander	son-Darling	Test Statistic	0.227		95% Bootstrap-t UCL						
54			Anderson-	-Darling 5% (	Critical Value	0.716				95% Hall's E	Bootstrap UCL	15.91		
55			Kolmogo	rov-Smirnov	Test Statistic	0.127		95% Percentile Bootstrap UCL						
56		K	olmogorov-S	Smirnov 5% (	Critical Value	0.295		95% BCA Bootstrap UCL 1						
57	Data	a appear Ga	mma Distrib	uted at 5% S	Significance l	Level			95% C	hebyshev(M	ean, Sd) UCL	19.52		
58									97.5% C	hebyshev(M	ean, Sd) UCL	22.45		
59		As	suming Gar	nma Distribu	ution				99% C	hebyshev(M	ean, Sd) UCL	28.2		
60			95% A	pproximate	Gamma UCL	16.78								
61			95	% Adjusted	Gamma UCL	18.03								
62														
63			Potential	UCL to Use						Use 95% St	udent's-t UCL	15.69		
64														
65						•	provided to he							
66		These recor	mmendation	s are based	upon the res	ults of the	simulation stu	dies summa	arized in Sin	gh, Singh, a	nd laci (2002)	)		
67			and Singh	and Singh (	(2003). For	additional i	nsight, the use	er may want	t to consult a	a statisticiar	1.			
68														
69							skewed data, o							
70				(e.g.			ormal, and Ga							
71	reliable. Chen's and Johnson's methods provide													
72					adjustme	nts for pos	itvely skewed	data sets.						
73														

	Α	В	С	D General LIC	E L Statistics	F for Full Data	G	Н	I	J	K	L
1		ligar Sala	cted Options	deneral UC	L อเสมรมเตร	ioi ruii Data	2 0612					
2		0351 3516	From File	\\Smefile\wo	ork in progre	ss\069448 0	0∖Fish Moni	toring\2013\R	ox and Whiel	ker Plot files	MR1 R. Bas	s wst
3		Fu	II Precision	OFF	nk in progre	331003440.0	O (1 1311 IVIOIII	toring (2010 to	OX and Willis	KCI I IOU IIICO	MINITE IN. DUS	J.W3t
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6												
7												
8	2013 R. Ba	ss										
10												
11						General	Statistics					
12			Numl	oer of Valid C	bservations	8			Numbe	r of Distinct	Observations	8
13						1	1					1
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.97				Minimu	n of Log Data	-0.0305
16					Maximum	2.07				Maximui	n of Log Data	0.728
17					Mear	1.361				Mea	an of log Data	0.282
18					Mediar					S	D of log Data	0.242
19						0.352						
20					rror of Mear							
21				Coefficient	of Variation							
22					Skewness	1.205						
23												
24												
25								s in this data				
26								ds may be po			t, 	
27				the resulting	calculation	s may not be	e reliable er	nough to draw	v conclusion	S 		
28		-	The literature	ourrente to	baatat		on data sat	a havina ma	than 10 15	- choon otic		
29			The literature	suggests to	use Dootsti	ap metnods	on data set	s naving moi	e than 10-15	ooservatio	ns.	
30						Relevant U	CI Statistic	<u> </u>				
31			Normal Diet	ribution Test	•	Nelevanii O	UL Statistic		_ognormal D	istribution T	·oet	
32				hapiro Wilk T		0 908		<b>.</b>	-		Test Statistic	0 958
33				hapiro Wilk C						· ·	Critical Value	
34		Data appe	ear Normal a	<u> </u>		0.010		Data appea			ificance Leve	
35		abb						appor				-
36 37		A:	ssuming Nori	mal Distribut	ion			Ass	suming Logn	ormal Distri	bution	
38					dent's-t UCL	1.597					95% H-UCL	1.637
39		95%	UCLs (Adju	sted for Ske	wness)				95%	Chebyshev	(MVUE) UCL	
40			95% Adjuste		•	1.623				•	(MVUE) UCL	
41				ed-t UCL (Joh					99%	Chebyshev	(MVUE) UCL	2.522
42						1						<u> </u>
43			Gamma Dis	tribution Tes	t				Data Di	stribution		
44				k star (bia	s corrected)	11.88		Data app	ear Normal a	t 5% Signifi	cance Level	
45					Theta Star	0.115						
46				N	ILE of Mear	1.361						
47			М	LE of Standa	rd Deviation	0.395						
48					nu stai							
49				e Chi Square					Nonparame			
50			Adjus	ted Level of	Significance	0.0195				9	5% CLT UCL	1.566

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ad	ljusted Chi S	quare Value	152				95% .	Jackknife UCL	1.597
52									95%	Standard I	Bootstrap UCL	1.552
53			Anders	son-Darling 7	est Statistic	0.276				95% B	ootstrap-t UCL	1.694
54			Anderson-l	Darling 5% C	critical Value	0.716			Ç	95% Hall's I	Bootstrap UCL	1.844
55			Kolmogoro	ov-Smirnov 7	est Statistic	0.212			95%	Percentile I	Bootstrap UCL	1.56
56		Ko	olmogorov-S	mirnov 5% C	Critical Value	0.294				95% BCA I	Bootstrap UCL	1.591
57	Data	Data appear Gamma Distributed at 5% Significance Level 95% Chebyshev(Mean, Sd) UCL 97.5% Chebyshev(Mean, Sd) UCL 200 U								1.904		
58								lean, Sd) UCL	2.139			
59		Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 2 95% Approximate Gamma UCL 1.625								2.6		
60			95% A <sub>l</sub>	pproximate (	Gamma UCL	1.625						
61			959	% Adjusted 0	Gamma UCL	1.702						
62												
63			Potential U	JCL to Use						Use 95% S	tudent's-t UCL	1.597
64												
65	No	te: Suggesti	ons regardir	ng the select	ion of a 95%	UCL are p	provided to hel	lp the user to	o select the	most appro	opriate 95% U	CL.
66		These recon	nmendations	are based	upon the res	ults of the	simulation stud	dies summa	rized in Sin	gh, Singh,	and laci (2002)	)
67			and Singh	and Singh (2	2003). For	additional i	nsight, the use	er may want	to consult a	a statisticia	n.	
68												

	A	В	С	D General UCI	E L Statistica	F For Full Date	G Soto	Н	I	J	K	L
1		User Sele	cted Options	deneral UCI	L SIGUSUCS	ioi ruii Data	2 OEIS					
2		0361 3616	From File	\\Smefile\wo	rk in nroare	ss\069448 0	0∖Fish Moni	toring\2013\R	ox and Whie	ker Plot files	NR1 SM Ba	ss wst
3		Fı	III Precision	OFF	TK III progre	331003440.0		toring (2013)D	OX dila VVIIIS	NCI I IOI IIIC	- TOWN DO	
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6												
7												
<u>8</u> 9	2013 SM B	ass										
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.35				Minimu	m of Log Data	-1.05
16					Maximum	4.51				Maximui	m of Log Data	1.506
17					Mean	2.354				Mea	an of log Data	0.564
18					Median	2.205				S	D of log Data	0.918
19					SD	1.573						
20				Std. Er	ror of Mean	0.556						
21				Coefficient	of Variation	0.668						
22					Skewness	0.0908						
23						1						1
24												
25								s in this data				
26				ould be noted							t,	
27				the resulting	calculation	s may not be	e reliable er	nough to drav	v conclusion	s		
28												
29		•	The literature	suggests to	use bootstr	ap methods	on data set	s having moi	e than 10-15	5 observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		10.000		<b>_</b>	ognormal D			
33				hapiro Wilk To						· ·	Test Statistic	
34				napiro Wilk Cı		0.818					Critical Value	
35		Data app	ear Normal a	5% Significa	ance Level			Data appea	ır Lognormal	at 5% Sign	ificance Leve	)I
36			oouwelme Ale	mal Distribut	<b></b>			A	umain = 1 ·	ownel Dist	hutio-	
37		A	ssuming Nori	mal Distribution		2.407		Ass	uming Logn	ormai Distri		0.000
38		OE0	/ IIOI ~ /^ =		lent's-t UCL	3.40/			050/	Chobyeta	95% H-UCL (MVUE) UCL	
39		95%	` -	sted for Skev d-CLT UCL (	•	2 200				•	(MVUE) UCL	
40			=	ed-t UCL (Joh	•						(MVUE) UCL	
41			ಶು /o IVIOUITI6	u-i UCL (JON	115011-1978)	3.41			99%	Chebysnev	(IVIVUE) UCL	10.70
42			Gamma Die	tribution Test					Data Di	stribution		
43			Guillia Dis		s corrected)	1 247		Data ann			cance Level	
44				it stat (blas	Theta Star			Data appl		o /o Gigiiiii	COLICE LEVEL	
45				M	LE of Mean							
46			M	LE of Standar								
47			141	0. 0.0.1001	nu star							
48			Approximat	e Chi Square					Nonparame	etric Statistic	es es	
49				ted Level of S					. to iparame		5% CLT UCL	3.268
50			Aujus	LEVELUI C	J.g. IIIICarice	0.0130					570 OL 1 UCL	J.200

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ac	ljusted Chi S	quare Value	9.158				95% J	ackknife UCL	3.407
52									95%	Standard B	Bootstrap UCL	3.174
53			Anders	son-Darling	Test Statistic	0.321				95% Bo	otstrap-t UCL	3.388
54			Anderson-	Darling 5% C	Critical Value	0.725			(	95% Hall's B	Bootstrap UCL	3.121
55			Kolmogor	ov-Smirnov	Test Statistic	0.194			95%	Percentile B	Bootstrap UCL	3.229
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.298				95% BCA B	Bootstrap UCL	3.238
57	Data	a appear Ga	mma Distrib	uted at 5% S	ignificance	Level			95% CI	nebyshev(M	ean, Sd) UCL	4.778
58									97.5% CI	nebyshev(M	ean, Sd) UCL	5.827
59		As	suming Gam	ma Distribu	t 5% Significance Level 95% Chebyshev(Mean, Sd) UCL 4.7 97.5% Chebyshev(Mean, Sd) UCL 5.8 istribution 99% Chebyshev(Mean, Sd) UCL 7.8 mate Gamma UCL 4.343							
60			95% A	pproximate (	Gamma UCL	4.343						
61			95	% Adjusted (	Gamma UCL	5.126						
62												
63			Potential (	JCL to Use						Use 95% St	udent's-t UCL	3.407
64												
65	No	ote: Suggest	ions regardir	ng the select	ion of a 95%	UCL are p	provided to he	p the user t	o select the	most appro	priate 95% U	CL.
66		These recor	mmendations	are based	upon the res	ults of the	simulation stu	dies summa	rized in Sin	gh, Singh, a	ınd laci (2002	)
67			and Singh	and Singh (	2003). For	additional i	nsight, the use	er may want	to consult a	a statistician	<b>l.</b>	
68												

	A	В	С	D General UCI	E	F Full Date	G	Н	I	J	K	L
1		liser Sele	cted Options	General UCL	L SIGUSUCS	ioi Puli Data	3 3 5 6 5					
2		0351 3516	From File	\\Smefile\wor	rk in progre	ss\069448 0	0\Fish Monit	toring\2013\R	ox and Whiel	ker Plot files	s\MR2 A. Suck	ker wst
3		Fu	II Precision	OFF	- Progre	331003440.01		toring (2013)D	OX and Willis	NCI I IOI IIICO		
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6		o. 200.0ap										
7												
<u>8</u> 9	2013 A. Su	cker										
10												
11						General	Statistics					
12			Numl	per of Valid Ol	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.18				Minimur	m of Log Data	-1.715
16					Maximum	1.31				Maximur	m of Log Data	0.27
17					Mean	0.73				Mea	an of log Data	-0.477
18					Median	0.645				S	SD of log Data	0.661
19					SD	0.392						
20				Std. En	ror of Mean	0.139						
21				Coefficient	of Variation	0.537						
22					Skewness	0.189						
23							1					-
24												
25								s in this data				
26				ould be noted							t,	
27				the resulting	calculation	s may not be	e reliable er	nough to drav	v conclusion	s		
28												
29			The literature	suggests to t	use bootstr	ap methods	on data set	s having moi	re than 10-15	observatio	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test	. 6	0.057		l.	ognormal D			10.000
33				hapiro Wilk Te						· ·	Test Statistic	
34				napiro Wilk Cr		0.818					Critical Value	
35		uata appe	ear Normal a	:5% Significa	ince Level			Data appea	ır Lognormal	at 5% Sign	ificance Leve	4
36		<b>A</b> .	nouming No	nol Distributi	on.			A .= =	umina I sa-	ormal Distri	hution	
37		A	ssuming Nori	mal Distribution	on ent's-t UCL	0.003		ASS	suming Logn	ormai Distri	95% H-UCL	1 400
38		OE0/	. IICI = /^di	sted for Skew		0.553			0.50/	Chehychov	(MVUE) UCL	
39		<del>3</del> 0%	• •	d-CLT UCL (		U 068				•	(MVUE) UCL	
40			=	ed-t UCL (John	•						(MVUE) UCL	
41			JJ 70 MOUITE	A-LOOL (JUII	13011-1370)	J.JJ4			33/0	Oncoysiiev		2.010
42			Gamma Dist	ribution Test					Data Di	stribution		
43					s corrected)	2.105		Data ann			cance Level	
44				5.6. (5.66	Theta Star			_ a.a app				
45				M	LE of Mean							
46			М	LE of Standar								
47					nu star							
48			Approximat	e Chi Square					Nonparame	tric Statistic		
49				ted Level of S							55% CLT UCL	0.958
50			Aujus	.50 20101010	g	3.0100						3.000

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ac	ljusted Chi S	quare Value	18.97				95% J	ackknife UCL	0.993
52									95%	Standard B	Bootstrap UCL	0.942
53			Anders	son-Darling	Test Statistic	0.251				95% Bo	otstrap-t UCL	1.027
54			Anderson-	Darling 5% C	Critical Value	0.721			(	95% Hall's B	Bootstrap UCL	0.975
55			Kolmogor	ov-Smirnov	Test Statistic	0.167			95%	Percentile B	Bootstrap UCL	0.95
56		K	olmogorov-S	mirnov 5% C	Critical Value	0.296				95% BCA B	Bootstrap UCL	0.956
57	Data	a appear Ga	mma Distrib	uted at 5% S	ignificance	Level			95% CI	nebyshev(M	ean, Sd) UCL	1.334
58									97.5% CI	nebyshev(M	ean, Sd) UCL	1.596
59		As	97.5% Chebyshev(Mean, Sd) UCL 1.59  Assuming Gamma Distribution 99% Chebyshev(Mean, Sd) UCL 2.10  95% Approximate Gamma UCL 1.148								2.109	
60			95% A	pproximate (	Gamma UCL	1.148						
61			95	% Adjusted (	Gamma UCL	1.296						
62												
63			Potential (	JCL to Use						Use 95% St	udent's-t UCL	0.993
64												
65	No	ote: Suggest	ions regardir	ng the select	ion of a 95%	UCL are p	provided to he	p the user t	o select the	most appro	priate 95% U	CL.
66		These recor	mmendations	are based	upon the res	ults of the	simulation stu	dies summa	rized in Sin	gh, Singh, a	ınd laci (2002	)
67			and Singh	and Singh (	2003). For	additional i	nsight, the use	er may want	to consult a	a statistician	<b>l.</b>	
68												

	Α	В	С	D		E	F for Full Data	G		Н	I	J		K		L
1		Hear Sale	ected Options		JL Stat	usucs	tor Full Data	a Sets								
2		USEI SEI	From File		ork in r	roare	ss\069448 0	∩\Fish Mon	itorino	n\2013\B	ox and Whis	ker Plot file	s\MR2 (	arn w	et .	
3		F	ull Precision	OFF	JIK III F	, og i c	301000110.0			91201010	OX GIIG TTIIO	NOT 1 TOT THE	5 (WII 12 C	Jui p. W.		
4			e Coefficient	95%												
5	Number		Operations	2000												
6	- 10															
7																
8	2013 Carp	)														
10	•															
11							General	Statistics								
12			Num	ber of Valid C	Observ	ations	8				Numbe	er of Distinct	t Observ	ations	8	
13							1									
14			Raw S	tatistics							Log-transfor	med Statis	tics			
15					Mir	nimum	2.09					Minimu	ım of Lo	g Data	0.737	,
16					Max	kimum	45.3					Maximu	ım of Lo	g Data	3.813	;
17						Mean	15.58					Me	ean of lo	g Data	2.187	,
18					N		10.59						SD of lo	g Data	1.225	;
19							15.46									
20							5.466									
21				Coefficien												
22					Ske	wness	1.089									
23																
24																
25							There are o						_			
26			Note: It sh	ould be note									et,			
27				tne resulting	g caicu	liation	s may not be	e reliable e	enoug	n to arav	v conclusion	S				
28			The literature	euggoete to	uso h	ootetr	on mothode	on data sa	ate ho	vina moi	o than 10 15	5 obsorvativ	one			
29			THE IIICIALUIC	suggesis io	use D	OOlSII	ap memous	On uata se	is iia	virig illoi	e ulali 10-10	ODSEIVALI	ulis.			
30							Relevant U	CI Statisti	ics							
31			Normal Dist	tribution Tes	t		Trelevant O	UL Otatisti			_ognormal D	istribution <sup>-</sup>	Test			
32				Shapiro Wilk		atistic	0.863			•	-	Shapiro Will		tatistic	0.893	 }
33				hapiro Wilk C								Shapiro Wilk				
34		Data apr	pear Normal a						Dat	ta appea	ır Lognormal					
35				<b></b>								3-				
36 37		-	Assuming Nor	mal Distribut	tion					Ass	suming Logn	ormal Distr	ibution			
38				95% Stu	dent's-	t UCL	25.94				-		95% l	H-UCL	120.3	,
39		959	% UCLs (Adju	sted for Ske	wness	3)	1				95%	Chebyshev	/ (MVUE	) UCL	48.15	;
40			95% Adjuste	ed-CLT UCL	(Chen-	-1995)	26.82				97.5%	Chebyshev	/ (MVUE	) UCL	61.86	;
41			95% Modifie	ed-t UCL (Jo	hnson-	-1978)	26.29				99%	Chebyshev	/ (MVUE	) UCL	88.78	,
42							1								I	
43			Gamma Dis	tribution Tes	t						Data Di	istribution				
44				k star (bia	as corr	ected)	0.726		D	ata app	ear Normal a	nt 5% Signif	ficance	Level		
45							21.46									
46							15.58									
47			M	LE of Standa												
48							11.62									
49				te Chi Square							Nonparame					
50			Adjus	sted Level of	Signifi	cance	0.0195						95% CL	TUCL	24.57	1

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ac	ljusted Chi S	quare Value	3.934				95%	Jackknife UCL	25.94
52									95%	Standard	Bootstrap UCL	24.05
53			Anders	son-Darling 1	est Statistic	0.372				95% B	ootstrap-t UCL	30.58
54			Anderson-	Darling 5% C	ritical Value	0.735			Ş	95% Hall's	Bootstrap UCL	26.2
55			Kolmogor	ov-Smirnov 7	est Statistic	0.22			95%	Percentile	Bootstrap UCL	24.14
56		K	olmogorov-S	mirnov 5% C	ritical Value	0.301				95% BCA	Bootstrap UCL	26.52
57	Data	a appear Gai	mma Distribu	ited at 5% S	ignificance l	Level			95% Cł	nebyshev(N	Mean, Sd) UCL	39.41
58									97.5% Cł	nebyshev(N	Mean, Sd) UCL	49.72
59		As	suming Gam	ıma Distribu	tion				99% Cł	nebyshev(N	Mean, Sd) UCL	69.97
60			95% A	pproximate (	amma UCL	36.37						
61			95	% Adjusted 0	amma UCL	46						
62												
63			Potential U	JCL to Use						Use 95% S	student's-t UCL	25.94
64												
65	No	ote: Suggesti	ons regardir	ng the select	ion of a 95%	UCL are p	rovided to hel	p the user to	o select the	most appre	opriate 95% U	CL.
66		These recon	nmendations	are based	pon the res	ults of the s	simulation stud	dies summa	rized in Sing	gh, Singh,	and laci (2002	)
67			and Singh	and Singh (	2003). For	additional i	nsight, the use	er may want	to consult a	statisticia	n.	
68										-		

	Α	В	С	D General UC	E I Statistics	F for Full Data	G Sets	Н	I	J	K	L
1		User Sele	cted Options									
2			From File		rk in progres	ss\069448.00	)\Fish Monito	ring\2013\Bo	ox and Whis	ker Plot files\	MR2 J. Suck	er.wst
3		Fυ	ıll Precision	OFF								
5		Confidence	Coefficient	95%								
6	Number o	of Bootstrap	Operations	2000								
7												
8												
9	2013 J. Sud	cker										
10												
11						General	Statistics					
12			Numb	ber of Valid O	bservations	6			Numbe	er of Distinct C	bservations	5
13												
14			Raw S	tatistics				ı	_og-transfo	rmed Statistic		
15					Minimum						of Log Data	
16					Maximum						of Log Data	
17					Mean						n of log Data	
18					Median					SI	of log Data	0.251
19						0.369						
20					ror of Mean							
21				Coefficient	of Variation							
22					Skewness	0.0746						
23												
24												
25	٧	Narning: A s	sample size o	ıf 'n' = 6 may	not adequa	te enough to	compute me	eaningful an	d reliable te	est statistics a	nd estimate	)s! 
26												
27				uggested to c				•			-10-	
28			ossible com	pute and colle	ect Data Qu	iality Objecti	ves (DQO) b	ased sampl	e size and a	analytical res	Jits.	
29												
30					\Morning:	There are or	alv 6 Values	in this data				
31			Note: It sh	ould be noted					rformed on	this data set,		
32				the resulting			•			•		
33						- Illay Hot be		agii to uraw	CONCIUSION	15		
34		-	The literature	Suggests to	use hootstr	an methods	on data sets	having more	e than 10-1	5 observation	<u> </u>	
35									- a.a.i 10-1			
36						Relevant U	CL Statistics					
37			Normal Dist	tribution Test					ognormal D	Distribution Te	est	
38				hapiro Wilk T		0.769				Shapiro Wilk		0.758
40				hapiro Wilk C						Shapiro Wilk C		
41		Data no	ot Normal at 5	% Significan	ce Level			Data not L	.ognormal a	at 5% Signific	ance Level	1
42												
43		A	ssuming Nori	mal Distributi	on			Ass	uming Logn	normal Distrib	ution	
44				95% Stuc	dent's-t UCL	1.793					95% H-UCL	1.905
45		95%	6 UCLs (Adju		•				95%	Chebyshev (	MVUE) UCL	2.154
46			95% Adjuste	ed-CLT UCL (	Chen-1995)	1.743			97.5%	Chebyshev (	MVUE) UCL	2.442
47			95% Modifie	ed-t UCL (Joh	nson-1978)	1.794			99%	Chebyshev (	MVUE) UCL	3.007
48												
									Doto D	istribution		
49			Gamma Dist	tribution Test					Data D	istribution		

	Α	В	С	D	Е	F	G	Н	I	J	K	L
51					Theta Star	0.152						
52				١	MLE of Mean	1.49						
53			M	LE of Standa	ard Deviation	0.476						
54					nu star							
55			Approximat	e Chi Squar	e Value (.05)	93.61			Nonparame	etric Statisti	cs	
56			Adjus	ted Level of	Significance	0.0122				ć	5% CLT UCL	1.738
57			Ac	ljusted Chi S	Square Value	85.87				95% J	ackknife UCL	1.793
58									95%	Standard E	Bootstrap UCL	1.715
59			Anders	son-Darling	Test Statistic	0.815				95% Bo	otstrap-t UCL	1.788
60			Anderson-	Darling 5% (	Critical Value	0.697			!	95% Hall's E	Bootstrap UCL	1.617
61			Kolmogor	ov-Smirnov	Test Statistic	0.328			95%	Percentile E	Bootstrap UCL	1.725
62		K	olmogorov-S	mirnov 5% (	Critical Value	0.332				95% BCA E	Bootstrap UCL	1.71
63	Data fo	llow Appr. G	amma Distr	ibution at 59	% Significand	ce Level			95% C	hebyshev(M	ean, Sd) UCL	2.146
64									97.5% C	hebyshev(M	ean, Sd) UCL	2.43
65		As	suming Gam	nma Distribu	ition	1			99% C	hebyshev(M	ean, Sd) UCL	2.988
66			95% A	pproximate (	Gamma UCL	1.873						
67			959	% Adjusted (	Gamma UCL	2.041						
68												
69			Potential U	JCL to Use					Use 95% A	Approximate	Gamma UCL	1.873
70												
71	No	te: Suggest	ions regardir	ng the selec	tion of a 95%	UCL are p	rovided to he	p the user t	o select the	most appro	priate 95% U	CL.
72		These recor	mmendations	s are based	upon the res	ults of the s	simulation stu	dies summa	rized in Sin	gh, Singh, a	nd laci (2002	2)
73			and Singh	and Singh (	2003). For	additional ir	nsight, the use	er may want	to consult a	a statisticiar	).	
74												

	A	В	С	D General UC	E L Statistics	F Full Date	G	Н	I	J	K	L
1		User Sele	cted Options	deneral UC	L SIGUSTICS	ioi ruii Data	2 OEIS					
2		0351 3516	From File	\\Smefile\wo	rk in nroare	ss\069448 0	0∖Fish Monit	toring\2013\R	ox and Whie	ker Plot files	s\MR2 R. Bas	s wst
3		Fu	II Precision	OFF	- Progres			toring (2010).D	OX GIIG VVIIIO	NOT I TOT THOS	TIVIT (Z T (. Buo)	5.4451
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6		о. 200 ю. ар										
7												
<u>8</u> 9	2013 R. Ba	ISS										
10												
11						General	Statistics					
12			Numl	per of Valid O	bservations	8			Numbe	r of Distinct	Observations	8
13												
14			Raw S	tatistics					Log-transfor	med Statist	ics	
15					Minimum	0.45				Minimu	m of Log Data	-0.799
16					Maximum	1.25				Maximui	m of Log Data	0.223
17					Mean	0.916				Mea	an of log Data	-0.123
18					Median	0.935				S	SD of log Data	0.306
19					SD	0.234						
20				Std. Er	ror of Mean	0.0828						
21				Coefficient	of Variation	0.256						
22					Skewness	-0.895						
23							-1					
24												
25								s in this data				
26				ould be noted							t,	
27				the resulting	calculation	s may not be	e reliable en	nough to drav	v conclusion	s		
28												
29		7	The literature	suggests to	use bootstr	ap methods	on data set	s having mor	e than 10-15	observation	ns.	
30												
31						Relevant U	CL Statistic					
32				ribution Test		T		L	ognormal D			T
33				hapiro Wilk T							Test Statistic	
34				napiro Wilk C		0.818					Critical Value	
35		Data appe	ear Normal a	5% Significa	ance Level			Data appea	r Lognormal	at 5% Sign	ificance Leve	)
36				mal District					ale = 1 · ·	amasi Dini	h. dia	
37		A:	ssuming Nori	mal Distribution		1.070		Ass	uming Logn	ormai Distri		1 170
38		050	/ LIOL - / '		lent's-t UCL	1.0/3			050/	Chaburt -	95% H-UCL	
39			` -	sted for Skev	•	1.004				•	(MVUE) UCL	
40				d-CLT UCL (							(MVUE) UCL	
41			95% IVIODITIE	ed-t UCL (Joh	iiison-1978)	1.009			99%	Chebysnev	(MVUE) UCL	1.915
42			Gamma Dia	tribution Test	•				Data Di	stribution		
43			Gamina DIS		s corrected)	0 000		Doto one			icance Level	
44				r stat (Digs	Theta Star			nara ahbe	sai NUIIIIII 8	to /o oigiilli	Carice Level	
45				N /1	LE of Mean							
46			M	LE of Standar								
47			IVI	LE OI OIdHUdl	nu star							
48			Annrovimat	e Chi Square					Nonparame	tric Statistic	~e	
49				ted Level of S					Montparante		05% CLT UCL	1 052
50			Aajus	ieu Level of S	ognincance	0.0195					00 /0 OLT UCL	1.002

	Α	В	С	D	E	F	G	Н	l	J	K	L
51			Ad	djusted Chi S	Square Value	109.5				95% .	Jackknife UCL	1.073
52									95%	Standard E	Bootstrap UCL	1.044
53			Ander	son-Darling	Test Statistic	0.471				95% Bo	ootstrap-t UCL	1.053
54			Anderson-	Darling 5% (	Critical Value	0.715			9	5% Hall's E	Bootstrap UCL	1.046
55			Kolmogor	ov-Smirnov	Test Statistic	0.233			95%	Percentile E	Bootstrap UCL	1.033
56		K	olmogorov-S	mirnov 5% (	Critical Value	0.294				95% BCA E	Bootstrap UCL	1.02
57	Data	a appear Gai	mma Distrib	uted at 5% S	Significance I	Level			95% Ch	nebyshev(M	lean, Sd) UCL	1.277
58									97.5% Ch	nebyshev(M	lean, Sd) UCL	1.434
59		As	suming Gan	nma Distribu	ıtion				99% Ch	nebyshev(M	lean, Sd) UCL	1.74
60			95% A	pproximate	Gamma UCL	1.127						
61			95	% Adjusted	Gamma UCL	1.189						
62												
63			Potential (	JCL to Use					Į	Jse 95% S	tudent's-t UCL	1.073
64												
65						· ·		·			opriate 95% U	
66		These recor			•						and laci (2002	)
67			and Singh	and Singh (	(2003). For	additional i	nsight, the use	er may want	to consult a	statisticia	n.	
68												
69					• •		skewed data, o					
70				(e.g.			ormal, and Ga					
71							ohnson's meth	•	•			
72					adjustme	nts for posi	tvely skewed	data sets.				
73												

	A	В	С	D		E	F for Full Data	G		Н	I	J	K		L	
1		Heer Cole	cted Options		JL Sta	tistics	tor Full Data	a Sets								
2		USEI SEIE	From File		ork in i	orogra	cc\060448 0	∩\Eish Mon	itorin	~\2013\B	ox and Whis	kar Dlat filo	c/MD2 SN/	l Bac	e wet	
3		Eı	III Precision	OFF	OIK III Į	Jiogie	55\003440.0	ON ISH MICH	IIIOIIII	y (2013)D	ox and wins	Kei Flot ille	SIVITYZ GIVI		.s.wsi	
4			Coefficient	95%												
5	Number	of Bootstrap		2000												
6	Number	ОГВООІЗПАР	Орегацопъ	2000												
7																
8	2013 SM	Rass														
9	2010 011															
10							General	Statistics								
11 12			Numl	ber of Valid (	Observ	ations	8				Numbe	er of Distinct	Observat	ions	8	
13																
14			Raw S	tatistics							Log-transfor	med Statist	tics			
15					Mir	nimum	1.03					Minimu	m of Log [	Data	0.0296	 3
16					Ma	ximum	2.48						m of Log [			
17						Mean	1.606						an of log [			
18					N	/ledian	1.395						SD of log [			-
19						SD	0.494									
20				Std. E	rror of	Mean	0.175									
21				Coefficien	t of Va	riation	0.307									
22					Ske	wness	1.053									
23							1									
24																
25					War	ning:	There are o	nly 8 Value	es in t	his data						
26			Note: It she	ould be note	d that	even 1	hough boots	strap metho	ods m	ay be pe	rformed on	this data se	∍t,			
27				the resulting	g calcu	ulation	s may not b	e reliable e	noug	h to drav	conclusion	s				
28																
29		•	The literature	suggests to	use b	ootstr	ap methods	on data se	ets ha	ving mor	e than 10-15	5 observation	ons.			
30																
31							Relevant U	ICL Statisti	ics							
32				tribution Tes						L	ognormal D					
33				hapiro Wilk								Shapiro Will				
34				hapiro Wilk (			0.818					Shapiro Wilk				
35		Data app	ear Normal a	t 5% Signific	cance	Level			Da	ta appea	r Lognormal	at 5% Sigr	nificance L	.evel		
36																
37		Α	ssuming Nor				1.00=			Ass	uming Logn	ormal Distr			0 0 : -	
38		A == -	/ LIO!	95% Stu			1.937					01 1 1	95% H-I			
39		95%	6 UCLs (Adju			•	1.000	-				Chebyshev	` ,			
40			95% Adjuste		-							Chebyshev	` ,			
41			95% Modifie	ed-t UCL (Jo	nnson	- 19/8)	1.948	1			99%	Chebyshev	(INIVUE)	JUL	3.238	
42			Gamma Dis	tribution To-	.+						Doto D	stribution				
43			Gaillilla DIS	k star (bia		.octo4/	Q 122			late ann			ioanac I -			
44				k star (Dia		ta Star			L	ака арре	ear Normal a	ıı ə% əignii		VEI		
45				N.			1.606	-								
46			N /1	LE of Standa				-								
47			IVI	LL UI SIdIIU			134.9									
48			Δnnrovimo	te Chi Squar							Nonparame	atric Staticti	ce			
49			• • •	sted Level of		. ,					Homparame		95% CLT I	וורי	1 202	
50			Aajus	sieu Level Of	Signif	icarice	0.0195					,	ງວ% ULI U	JUL	1.893	

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ad	ljusted Chi S	quare Value	103.2				95% .	Jackknife UCL	1.937
52									95%	Standard I	Bootstrap UCL	1.877
53			Anders	son-Darling	est Statistic	0.579				95% B	ootstrap-t UCL	2.34
54			Anderson-l	Darling 5% C	Critical Value	0.715			9	95% Hall's I	Bootstrap UCL	4.21
55			Kolmogoro	ov-Smirnov 7	est Statistic	0.271			95%	Percentile I	Bootstrap UCL	1.89
56		Ko	olmogorov-S	mirnov 5% C	Critical Value	0.294				95% BCA I	Bootstrap UCL	1.924
57	Data	a appear Gar	nma Distribu	ited at 5% S	ignificance l	Level			95% Cł	nebyshev(N	lean, Sd) UCL	2.367
58									97.5% Cł	nebyshev(N	lean, Sd) UCL	2.696
59		Ass	suming Gam	ma Distribu	tion				99% Cł	nebyshev(N	lean, Sd) UCL	3.343
60			95% A	pproximate (	Gamma UCL	1.987						
61			959	% Adjusted 0	Gamma UCL	2.1						
62												
63			Potential U	JCL to Use						Use 95% S	tudent's-t UCL	1.937
64												
65	No	te: Suggesti	ons regardir	ng the select	ion of a 95%	UCL are p	rovided to hel	p the user to	select the	most appro	opriate 95% U	CL.
66		These recon	nmendations	are based	upon the res	ults of the	simulation stud	dies summa	rized in Sin	gh, Singh,	and laci (2002)	)
67			and Singh	and Singh (2	2003). For	additional i	nsight, the use	er may want	to consult a	statisticia	n.	
68												

	A	В	С	D General UCL	E Statistics	F for Full Data	G <b>Sets</b>	Н	I	J	K	L
2		User Selec	cted Options									
3			From File	\\Smefile\work	in progres	ss\069448.00	\Fish Monito	oring\2013\Bo	x and Whisk	er Plot files\l	JR1 A. Sucl	ker.wst
4		Fu	Il Precision	OFF								
5		Confidence	Coefficient	95%								
6	Number	of Bootstrap	Operations	2000								
7												
8												
9	2013 A. Su	cker										
10												
11						General	Statistics					
12			Numb	per of Valid Obs	servations	12			Number	of Distinct C	bservations	12
13						<u> </u>	-					
14			Raw S	tatistics				L	.og-transfori	ned Statistic	S	
15					Minimum	2.21				Minimum	of Log Data	0.793
16					Maximum	37.2					of Log Data	
17					Mean						of log Data	
18					Median					SE	of log Data	0.745
19						9.168						
20					or of Mean							
21				Coefficient of								
22				;	Skewness	2.435						
23												
24						Relevant U	CL Statistics					
25				ribution Test				L		stribution Te		
26				hapiro Wilk Tes						hapiro Wilk 1		
27				hapiro Wilk Crit		0.859				napiro Wilk C		
28		Data no	t Normal at 5	% Significance	e Level			Data appear	Lognormal	at 5% Signif	icance Leve	
29				181.11.11								
30		As	ssuming Nori	mal Distribution		·		Assı	uming Logno	ormal Distrib		1.0.00
31				95% Stude		15.52					95% H-UCL	
32			` •	sted for Skewr	•					Chebyshev (	,	
33			-	d-CLT UCL (CI	•					Chebyshev (		
34			95% Modifie	ed-t UCL (John:	son-1978)	15.83			99%	Chebyshev (	vivuE) UCL	J4.08
35			Comme Di-	tribution Test					Data Di	stribution		
36			daniina Disi	k star (bias	corrected)	1 634	Data	a appear Gai			ianificanas	Level
37				•	Theta Star		Date	appear dar	mna DiStriDi	uteu at 3% S	igimicatice	FGAGI
38					E of Mean							
39			K A I	LE of Standard								
40			IVI	LL UI SIAIIUAIU	nu star							
41			Annrovimet	e Chi Square V					Nonnaramo	tric Statistics	•	
42				ted Level of Si	` '				i voriparanie		% CLT UCL	15 12
43				ljusted Chi Squ							ckknife UCL	
44			AC	gustou OIII Oqu	and value	_TU			Q5%	Standard Bo		
45			Ander	son-Darling Tes	st Statistic	0.43			35/0		tstrap-t UCL	
46				Darling 5% Crit					0	5% Hall's Bo		
47				ov-Smirnov Tes						Percentile Bo		
48		K		mirnov 5% Crit						95% BCA Bo		
49	Date			uted at 5% Sig						ebyshev(Me		
50	Date	a appear Ga	יייייייייייייייייייייייייייייייייייייי	atou at 0 /0 Oly	cance L	-0401			33 /0 CI	SDYSHEV(IVIE	an, ou, oct	- LE.UI

	Α	В	С	D	E	F	G	Н		J	K	L
51									97.5% Ch	nebyshev(Me	an, Sd) UCL	27.3
52		Ass	suming Gan	nma Distribu	ution	•			99% Ch	nebyshev(Me	an, Sd) UCL	37.1
53			95% A	pproximate	Gamma UCL	16.33						
54			95	% Adjusted	Gamma UCL	17.44						
55												
56			Potential l	JCL to Use					Use 95% A	pproximate (	Gamma UCL	16.33
57												
58	No	te: Suggesti	ons regardiı	ng the selec	tion of a 95%	6 UCL are pr	ovided to he	lp the user t	o select the	most approp	riate 95% U	CL.
59		These recon	nmendations	s are based	upon the res	sults of the si	mulation stu	dies summa	rized in Sing	gh, Singh, ar	nd laci (2002	)
60			and Singh	and Singh	(2003). For	additional in	sight, the use	er may want	to consult a	statistician.		
61												

	A	В	С	D General UCL	E Statistics	F for Full Data	G <b>Sets</b>	Н	I	J	K	L
2		User Selec	cted Options									
3			From File	\\Smefile\work	in progres	ss\069448.00	\Fish Monito	oring\2013\Bo	x and Whisk	er Plot files\l	JR1 A. Sucl	ker.wst
4		Fu	Il Precision	OFF								
5		Confidence	Coefficient	95%								
6	Number	of Bootstrap	Operations	2000								
7												
8												
9	2013 A. Su	cker										
10												
11						General	Statistics					
12			Numb	per of Valid Obs	servations	12			Number	of Distinct C	bservations	12
13						<u> </u>	-					
14			Raw S	tatistics				L	.og-transfori	ned Statistic	S	
15					Minimum	2.21				Minimum	of Log Data	0.793
16					Maximum	37.2					of Log Data	
17					Mean						of log Data	
18					Median					SE	of log Data	0.745
19						9.168						
20					or of Mean							
21				Coefficient of								
22				;	Skewness	2.435						
23												
24						Relevant U	CL Statistics					
25				ribution Test				L		stribution Te		
26				hapiro Wilk Tes						hapiro Wilk 1		
27				hapiro Wilk Crit		0.859				napiro Wilk C		
28		Data no	t Normal at 5	% Significance	e Level			Data appear	Lognormal	at 5% Signif	icance Leve	
29				181.11.11								
30		As	ssuming Nori	mal Distribution		·		Assı	uming Logno	ormal Distrib		1.0.00
31				95% Stude		15.52					95% H-UCL	
32			` •	sted for Skewr	•					Chebyshev (	,	
33			-	d-CLT UCL (CI	•					Chebyshev (		
34			95% Modifie	ed-t UCL (John:	son-1978)	15.83			99%	Chebyshev (	vivuE) UCL	J4.08
35			Comme Di-	tribution Test					Data Di	stribution		
36			daniina Disi	k star (bias	corrected)	1 634	Data	a appear Gai			ianificanas	Level
37				•	Theta Star		Date	appear dar	mna DiStriDi	uteu at 3% S	igimicatice	FGAGI
38					E of Mean							
39			K A I	LE of Standard								
40			IVI	LL UI SIAIIUAIU	nu star							
41			Annrovimet	e Chi Square V					Nonnaramo	tric Statistics	•	
42				ted Level of Si	` '				i voriparanie		% CLT UCL	15 12
43				ljusted Chi Squ							ckknife UCL	
44			AC	gustou OIII Oqu	and value	_TU			Q5%	Standard Bo		
45			Ander	son-Darling Tes	st Statistic	0.43			35/0		tstrap-t UCL	
46				Darling 5% Crit					0	5% Hall's Bo		
47				ov-Smirnov Tes						Percentile Bo		
48		K		mirnov 5% Crit						95% BCA Bo		
49	Date			uted at 5% Sig						ebyshev(Me		
50	Date	a appear Ga	יייייייייייייייייייייייייייייייייייייי	atou at 0 /0 Oly	cance L	-0401			33 /0 CI	SDYSHEV(IVIE	an, ou, oct	- LE.UI

	Α	В	С	D	E	F	G	Н		J	K	L
51									97.5% Ch	nebyshev(Me	an, Sd) UCL	27.3
52		Ass	suming Gan	nma Distribu	ution	•			99% Ch	nebyshev(Me	an, Sd) UCL	37.1
53			95% A	pproximate	Gamma UCL	16.33						
54			95	% Adjusted	Gamma UCL	17.44						
55												
56			Potential l	JCL to Use					Use 95% A	pproximate (	Gamma UCL	16.33
57												
58	No	te: Suggesti	ons regardiı	ng the selec	tion of a 95%	6 UCL are pr	ovided to he	lp the user t	o select the	most approp	riate 95% U	CL.
59		These recon	nmendations	s are based	upon the res	sults of the si	mulation stu	dies summa	rized in Sing	gh, Singh, ar	nd laci (2002	)
60			and Singh	and Singh	(2003). For	additional in	sight, the use	er may want	to consult a	statistician.		
61												

	Α	В	С	D General IIC	E 1 Statistics	F for Full Data	G	Н	I	J	K	L
1		User Sele	cted Options	General UC	L Glausucs	ioi ruii Dali	3 0513					
2			From File	\\Smefile\wo	ork in progre	ess\069448.0	0∖Fish Moni	torina\2013\B	ox and Whis	ker Plot files	s\UR1 R. Bas	s.wst
3		Fu	III Precision	OFF	1 1 3 1							
4		Confidence	Coefficient	95%								
5 6	Number	of Bootstrap	Operations	2000								
7		•										
8												
9	2013 R. Ba	ss										
10												
11							Statistics					
12			Numb	oer of Valid C	bservations	9			Numbe	er of Distinct	Observations	9
13											_	
14			Raw S	tatistics		T			Log-transfor			T
15					Minimum						m of Log Data	
16					Maximum	_					m of Log Data	
17						4.03					an of log Data	
18					Mediar						SD of log Data	1.329
19				C+1 L	rror of Mear	4.785						
20					rror of Mear							
21				Coemcieni	Skewness							
22					Skewness	2.103						
23												
24					Warning:	There are o	nly 9 Value	s in this data				
25 26			Note: It sho	ould be note				ds may be pe		this data se	t,	
27				the resulting	calculation	ns may not be	e reliable er	nough to drav	v conclusion	S		
28												
29		7	The literature	suggests to	use bootsti	rap methods	on data set	ts having moi	e than 10-1	5 observatio	ns.	
30												
31						Relevant U	CL Statistic					
32			Normal Dist					l	_ognormal D			
33				hapiro Wilk 1							Test Statistic	
34				hapiro Wilk C		0.829				•	Critical Value	
35		Data no	t Normal at 5	% Significar	nce Level			Data appea	r Lognorma	ı at 5% Sign	ificance Leve	<b>)</b>
36		Α.	ooumina Na	mal Distribut	ion			A .= =	umina I se-	ormal Dist	hution	
37		A	ssuming Nor		dent's-t UCL	6 996		ASS	suming Logn	Ulliai Distri	95% H-UCL	3/1 51
38		05%	ပ် UCLs (Adju			0.990			95%	Chehyshey	(MVUE) UCL	
39		90%	95% Adjuste		•	7 894				•	(MVUE) UCL	
40				ed-t UCL (Jol							(MVUE) UCL	
41			Jo .o mount			,,				555,5116V	52, 552	
42 43			Gamma Dis	tribution Tes	t				Data Di	istribution		
44					s corrected	0.698	Da	ta appear Ga			Significance	Level
45					Theta Sta							
46				N	ILE of Mear	4.03						
47			М	LE of Standa	rd Deviation	1 4.824						
48					nu sta	r 12.56						
49			Approximat	e Chi Square	e Value (.05	5.599			Nonparame	etric Statistic	cs	
-			Adjus	ted Level of	Significance	0.0231				9	5% CLT UCL	6.654

	Α	В	С	D	Е	F	G	Н		J	K	L
51			Ad	ljusted Chi S	quare Value	4.657				95%	Jackknife UCL	6.996
52									95%	Standard	Bootstrap UCL	6.553
53			Anders	son-Darling	est Statistic	0.31				95% B	ootstrap-t UCL	12.75
54			Anderson-l	Darling 5% C	Critical Value	0.746			Ç	95% Hall's	Bootstrap UCL	20.98
55			Kolmogoro	ov-Smirnov 7	est Statistic	0.215			95%	Percentile	Bootstrap UCL	6.821
56		Ko	olmogorov-S	mirnov 5% C	Critical Value	0.288				95% BCA	Bootstrap UCL	7.809
57	Data	a appear Gar	nma Distribu	ited at 5% S	ignificance	Level			95% CI	hebyshev(N	Mean, Sd) UCL	10.98
58									97.5% CI	hebyshev(N	Mean, Sd) UCL	13.99
59		Ass	suming Gam	ma Distribu	tion				99% CI	hebyshev(N	Mean, Sd) UCL	19.9
60			95% A <sub>l</sub>	pproximate (	Gamma UCL	9.041						
61			959	% Adjusted 0	Gamma UCL	10.87						
62												
63			Potential U	JCL to Use					Use 95% A	Approximate	e Gamma UCL	9.041
64												
65	No	te: Suggesti	ons regardir	ng the select	ion of a 95%	6 UCL are p	rovided to hel	p the user to	o select the	most appro	opriate 95% U	CL.
66		These recon	nmendations	are based	upon the res	ults of the s	simulation stud	dies summa	rized in Sin	gh, Singh,	and laci (2002	)
67			and Singh	and Singh (2	2003). For	additional ii	nsight, the use	er may want	to consult a	a statisticia	n.	
68												

	A	В	С	D General UCL	E Statistics	F for Full Data	G <b>Sets</b>	Н	I	J	K	L
1		User Selec	cted Options									
2			From File	\\Smefile\work	in progres	s\069448.00	\Fish Monito	oring\2013\Bo	x and Whisk	ker Plot files\	JR1 SM Bas	s.wst
3		Fu	II Precision	OFF								
4		Confidence	Coefficient	95%								
5	Number o	of Bootstrap	Operations	2000								
6 7		<u> </u>	<u>'</u>									
8												
9	2013 SM B	ass										
10												
11						General	Statistics					
12			Numb	per of Valid Ob	servations	12			Number	r of Distinct C	bservations	12
13						L	L					1
14			Raw S	tatistics				L	.og-transfori	med Statistic	s	
15					Minimum	0.14				Minimum	of Log Data	-1.966
16					Maximum	21.5				Maximum	of Log Data	3.068
17					Mean	7.057				Mear	n of log Data	1.203
18					Median	6.91				SE	of log Data	1.567
19					SD	6.704						
20				Std. Erro	or of Mean	1.935						
21				Coefficient of	f Variation	0.95						
22				;	Skewness	0.83						
23						11	11					1
24						Relevant U	CL Statistics	;				
25			Normal Dist	ribution Test				L	ognormal Di	stribution Te	st	
26			S	hapiro Wilk Te	st Statistic	0.889			S	hapiro Wilk 1	est Statistic	0.898
27			SI	napiro Wilk Crit	tical Value	0.859			S	hapiro Wilk C	ritical Value	0.859
28		Data appe	ear Normal at	5% Significan	ce Level	1		Data appear	Lognormal	at 5% Signif	icance Leve	İ
29												
30		As	ssuming Nori	mal Distribution				Assı	uming Logno	ormal Distrib		
31				95% Stude		10.53					95% H-UCL	76.54
32			` •	sted for Skewr	•					Chebyshev (	•	
33				d-CLT UCL (C						Chebyshev (	·	
34			95% Modifie	ed-t UCL (John	son-1978)	10.61			99%	Chebyshev (	MVUE) UCL	56.12
35												
36			Gamma Dist	tribution Test		r				stribution		
37				k star (bias	,			Data appe	ar Normal a	t 5% Signific	ance Level	
38					Theta Star							
39					E of Mean							
40			M	LE of Standard								
41					nu star							
42				e Chi Square V	` '				Nonparame	tric Statistics		1.0.0.
43				ted Level of Si							% CLT UCL	
44			Ac	ljusted Chi Squ	are Value	6.839					ckknife UCL	
45						0.40.			95%	Standard Bo	•	
46				son-Darling Te							tstrap-t UCL	
47				Darling 5% Crit						5% Hall's Bo		
48				ov-Smirnov Te						Percentile Bo	•	
49				mirnov 5% Crit						95% BCA Bo		
50	Data	a appear Ga	mma Distribu	uted at 5% Sig	niticance l	_evel			95% Ch	ebyshev(Me	an, Sd) UCL	15.49

	Α	В	С	D	Е	F	G	Н		J	K	L
51									97.5% Cł	nebyshev(Me	an, Sd) UCL	19.14
52		Ass	suming Gan	nma Distribi	ution	•			99% Cł	nebyshev(Me	an, Sd) UCL	26.31
53			95% A	pproximate	Gamma UCL	14.34						
54			95	% Adjusted	Gamma UCL	16.08						
55												
56			Potential l	UCL to Use						Use 95% Stu	dent's-t UCL	10.53
57												
58	No	te: Suggesti	ons regardiı	ng the selec	tion of a 95%	6 UCL are pr	ovided to he	lp the user t	o select the	most approp	riate 95% U	CL.
59		These recon	nmendations	s are based	upon the res	sults of the s	imulation stu	dies summa	rized in Sing	gh, Singh, ar	nd laci (2002)	)
60			and Singh	and Singh	(2003). For	additional in	sight, the us	er may want	to consult a	statistician.		
61												

	A	В	С	D General UCL	E Statistics	F for Full Data	G <b>Sets</b>	Н	I	J	K	L
2		User Selec	cted Options									
3			From File	\\Smefile\work	in progres	ss\069448.00	\Fish Monito	oring\2013\Bo	x and Whisk	er Plot files\l	JR2 A. Suck	er.wst
4		Fu	Il Precision	OFF								
5		Confidence	Coefficient	95%								
6	Number	of Bootstrap	Operations	2000								
7												
8												
9	2013 A. Su	cker										
10												
11						General	Statistics					
12			Numb	per of Valid Obs	servations	12			Number	of Distinct C	bservations	12
13						<u> </u>	-					
14			Raw S	tatistics				L	.og-transfori	ned Statistic	S	
15					Minimum	3.66					of Log Data	
16					Maximum						of Log Data	
17					Mean						of log Data	
18					Median					SE	of log Data	0.319
19						2.281						
20					r of Mean							
21				Coefficient of	Variation	0.332						
22				(	Skewness	1.181						
23												
24						Relevant U	CL Statistics					
25				ribution Test				L		stribution Te		
26				hapiro Wilk Tes						hapiro Wilk 1		
27				napiro Wilk Crit		0.859				napiro Wilk C		
28		Data appe	ear Normal at	5% Significan	ce Level			Data appear	Lognormal	at 5% Signif	icance Leve	e <b>l</b>
29												
30		As	ssuming Nori	mal Distribution				Assı	uming Logno	ormal Distrib		1001
31				95% Stude		8.051					95% H-UCL	
32			` •	sted for Skewn	•	0.400				Chebyshev (	•	
33				d-CLT UCL (CI						Chebyshev (	·	
34			95% Modifie	ed-t UCL (Johns	son-19/8)	გ.ეგ <u>გ</u>			99%	Chebyshev (	vivuE) UCL	13.21
35			Comme Di-	tribution Test					Data Di	ntributio-		
36			Garnma Dist	k star (bias o	20rro 24 1\	0 122		Doto com		stribution	onoe l suci	
37				•	,			Data appe	ar inormal a	t 5% Signific	ance Level	
38					Theta Star E of Mean							
39			B 41									
40			IVI	LE of Standard								
41			Approximat	o Chi Causana M	nu star				Nonnorem	tria Ctationico		
42				e Chi Square V ted Level of Sig	, ,				ivoliparame	tric Statistics	% CLT UCL	7.052
43				ljusted Chi Squ							ckknife UCL	
44			AC	ijusi <del>c</del> u OIII SQU	are value	103.0			OE0/	Standard Bo		
45			Andor	son-Darling Tes	t Statistic	0.205			95%		tstrap UCL	
46				Darling 5% Crit					0	95% B00 5% Hall's Bo		
47				ov-Smirnov Tes						Percentile Bo		
48		L/	•	mirnov 5% Crit						95% BCA Bo	•	
49	Det.			uted at 5% Sig						ebyshev(Me		
50	Date	a ahheai ag	טוווום טואוווום	atou at 0 /0 Olyl	micanice L	-6461			95 /0 CI	CDYSHEV(IVIE	un, ouj och	3.733

	Α	В	С	D	E	F	G	Н		J	K	L
51									97.5% Cł	nebyshev(Me	an, Sd) UCL	10.98
52		Ass	suming Gan	nma Distribu	ution				99% Cł	nebyshev(Me	an, Sd) UCL	13.42
53			95% A	pproximate	Gamma UCL	8.181						
54			95	% Adjusted	Gamma UCI	8.406						
55												
56			Potential l	UCL to Use						Use 95% Stu	dent's-t UCL	8.051
57												
58	No	te: Suggesti	ons regardiı	ng the selec	tion of a 959	6 UCL are pr	ovided to he	lp the user t	o select the	most approp	riate 95% U	CL.
59		These recom	nmendations	s are based	upon the res	sults of the si	imulation stu	dies summa	rized in Sing	gh, Singh, ar	nd laci (2002)	)
60			and Singh	and Singh	(2003). For	additional in	sight, the us	er may want	to consult a	statistician.		
61												

	Α	В	С	D General UCL	E Statistics	F for Full Data	G Sets	Н	I	J	K	L
1		User Sele	cted Options	adiloidi dol	Otationoo	ioi i dii Dala						
2			From File	\\Smefile\worl	c in progres	ss\069448 00	\Fish Monito	ring\2013\Bo	ox and Whis	ker Plot files\l	JR2 Carn ws	st
3		Fu	II Precision	OFF	· p. og. o.			9.20.0.20				
4		Confidence		95%								
5	Number o	of Bootstrap		2000								
6	- 10	2001011.up										
7												
8	2013 Carp											
9												
11						General	Statistics					
12			Numb	oer of Valid Ob	servations	11			Numbe	r of Distinct C	bservations	11
13												
14			Raw S	tatistics				ı	og-transfor	med Statistic	s	
15					Minimum	1.05				Minimum	of Log Data	0.0488
16					Maximum	39				Maximum	of Log Data	3.664
17					Mean	19.22				Mear	n of log Data	2.59
18					Median	21.2				SE	of log Data	1.121
19					SD	12						
20				Std. Err	or of Mean	3.617						
21				Coefficient of	of Variation	0.624						
22					Skewness	-0.156						
23						1						
24						Relevant U	CL Statistics					
25			Normal Dist	ribution Test				L	ognormal D	istribution Te	st	
26			S	hapiro Wilk Te	st Statistic	0.952			S	Shapiro Wilk 1	est Statistic	0.813
27			SI	napiro Wilk Cri	tical Value	0.85			S	hapiro Wilk C	critical Value	0.85
28		Data appe	ear Normal at	5% Significa	nce Level	1		Data not L	ognormal a	t 5% Significa	ance Level	
29												
30		As	ssuming Nori	mal Distributio				Ass	uming Logn	ormal Distrib		
31				95% Stude		25.78					95% H-UCL	
32		95%	, ,	sted for Skew	•					Chebyshev (	•	
33				d-CLT UCL (C						Chebyshev (		
34			95% Modifie	ed-t UCL (Johr	ison-1978)	25.75			99%	Chebyshev (	MVUE) UCL	105.6
35												
36			Gamma Dist	tribution Test		1				stribution		
37				k star (bias	•			Data appe	ar Normal a	t 5% Signific	ance Level	
38					Theta Star							
39					E of Mean							
40			M	LE of Standard								
41				0110	nu star				N			
42				e Chi Square \	` '				Nonparame	tric Statistics		05.47
43				ted Level of S							% CLT UCL	
44			Ac	ljusted Chi Sq	uare Value	13./2			<b></b>		ckknife UCL	
45				B " =	-1 0: :: ::	0.745			95%	Standard Bo		
46				son-Darling Te							tstrap-t UCL	
47				Darling 5% Cri						95% Hall's Bo		
48				ov-Smirnov Te						Percentile Bo		
49	D 1			mirnov 5% Cri						95% BCA Bo	· · · · · · · · · · · · · · · · · · ·	
50	Data fo	DIIOW Appr. (	amma Distr	ibution at 5%	Significand	ce Level			95% Cr	nebyshev(Me	an, Sd) UCL	34.99

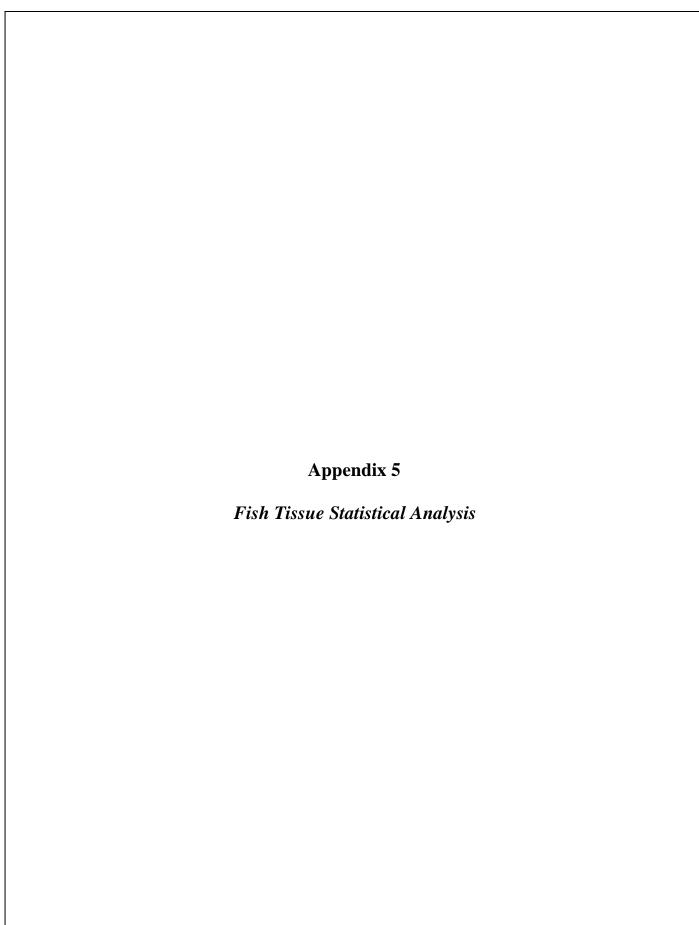
	Α	В	С	D	Е	F	G	Н	I	J	K	L		
51									97.5% CI	hebyshev(Me	ean, Sd) UCL	41.81		
52		As	suming Gam	nma Distribu	tion				99% CI	hebyshev(Me	ean, Sd) UCL	55.21		
53			95% A	pproximate (	Gamma UCL	32.68								
54			95	% Adjusted 0	Gamma UCL	35.77								
55														
56			Potential l	JCL to Use						Use 95% Stu	ıdent's-t UCL	25.78		
57														
58	N	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL												
59		These recor	mmendations	s are based	upon the res	ults of the si	mulation stu	dies summa	arized in Sin	gh, Singh, aı	nd laci (2002	)		
60			and Singh	and Singh (2	2003). For	additional in	sight, the use	er may want	t to consult a	a statistician.	•			
61														
62				Not	e: For highly	negative-sk	ewed data, o	confidence l	limits					
63				(e.g.	, Chen, Johr	nson, Lognor	mal, and Ga	mma) may	not be					
64					reliable. Ch	en's and Jo	hnson's meth	nods provide	е					
65					adjustme	nts for posit	vely skewed	data sets.						
66														

	A	В	С	D General UCL	E Statistics	F for Full Data	G <b>Sets</b>	Н	I	J	K	L				
1		User Selec	cted Options													
2			From File	\\Smefile\work	in progres	s\069448.00	\Fish Monito	oring\2013\Bo	x and Whisk	er Plot files\l	JR2 R. Bass	s.wst				
3		Fu	Il Precision	OFF												
4		Confidence	Coefficient	95%												
5 6	Number	of Bootstrap	Operations	2000												
7		<u> </u>	<u>'</u>													
8																
9	2013 R. Ba	SS														
10																
11						General	Statistics									
12			Numb	per of Valid Ob	servations	12			Number	of Distinct C	bservations	12				
13						I	I					1				
14			Raw S	tatistics				L	.og-transfori	med Statistic	s					
15					Minimum	0.78				Minimum	of Log Data	-0.248				
16					Maximum	9.96				Maximum	of Log Data	2.299				
17						2.279					n of log Data					
18					Median	1.625				SE	of log Data	0.685				
19						2.494										
20					or of Mean											
21				Coefficient o	f Variation	1.094										
22				,	Skewness	3.103										
23																
24						Relevant U	CL Statistics									
25			Normal Dist	ribution Test				L	ognormal Di	stribution Te	st					
26				hapiro Wilk Te						hapiro Wilk T						
27				napiro Wilk Cri		0.859				hapiro Wilk C						
28		Data no	t Normal at 5	% Significanc	e Level		Data appear Lognormal at 5% Significance Level									
29																
30		As	ssuming Nori	mal Distributio		T	Assuming Lognormal Distribution									
31				95% Stude		3.572		95% H-UCL 3.554 95% Chebyshev (MVUE) UCL 4.02								
32			, ,	sted for Skewi	•	· ·				• ,	,					
33				d-CLT UCL (C			97.5% Chebyshev (MVUE) UCL 4.842 99% Chebyshev (MVUE) UCL 6.458									
34			95% Modifie	ed-t UCL (John	son-1978)	3.68			99%	Chebyshev (I	MVUE) UCL	6.458				
35			000000000000000000000000000000000000000	udhdi T					D-4 F:	adulla - 41 -						
36			Gamma Dist	tribution Test	00rrt1\	1 400		Dote		stribution	leenes I == :	<u>,                                    </u>				
37				k star (bias	•			Data appear	Lognormal	at 5% Signif	icance Leve	<b>;</b> 1				
38					Theta Star E of Mean											
39			B 41													
40			IVI	LE of Standard	nu star											
41			Approximat	e Chi Square \					Nonnarama	trio Statistica	<u> </u>					
42				ted Level of Si	, ,				ivonparame	tric Statistics	% CLT UCL	3 161				
43				ljusted Chi Squ							ckknife UCL					
44			AC	ijusi <del>c</del> u OIII SQL	Jaie value	21.40			OE0/	Standard Bo						
45			Andor	son-Darling Te	et Statistic	U 08			95%		tstrap-t UCL					
46				Darling 5% Cri					0	95% B00 5% Hall's Bo	•					
47				ov-Smirnov Te						Percentile Bo						
48		IZ		mirnov 5% Cri						95% BCA Bo	•					
49	D.			ed at 5% Signi						ebyshev(Me	•					
50	יט	ala HUL GAM	ווום טוטנווטענפ	ou at 0% SIYNI	iicalice Le	v CI			90 % CN	enysilev(ivie	an, Suj UCL	J.410				

	Α	В	С	D	Е	F	G	Н		J	K	L			
51								an, Sd) UCL	6.776						
52		As	suming Gam	nma Distribu	tion				99% Ch	ebyshev(Me	an, Sd) UCL	9.444			
53			95% A	pproximate (	Gamma UCL	3.534									
54			95	% Adjusted (	Gamma UCL	3.788									
55															
56			Potential (	JCL to Use					Use	95% H-UCL	3.554				
57															
58		ProUCL computes and outputs H-statistic based UCLs for historical reasons only.													
59		H-statistic	often results	s in unstable	(both high a	and low) valu	es of UCL9!	5 as shown i	n examples	in the Techn	ical Guide.				
60			lt	is therefore	recommend	ed to avoid t	he use of H-	statistic bas	ed 95% UCI	₋s.					
61	Us	e of nonpara	ametric meth	ods are pre	ferred to con	npute UCL9	for skewed	data sets w	hich do not f	ollow a gam	ma distributi	on.			
62															
63	No	te: Suggest	ions regardir	ng the select	ion of a 95%	UCL are pr	ovided to he	lp the user t	o select the	most approp	riate 95% U	CL.			
64		These recor	nmendations	are based	upon the res	ults of the si	mulation stu	dies summa	rized in Sinç	jh, Singh, an	nd laci (2002	)			
65			and Singh	and Singh (	2003). For	additional in	sight, the us	er may want	to consult a	statistician.					
66															

	Α	В	С	D General UCL	E Statistics	F for Full Data	G Sets	Н	I	J	K	L
1		User Sele	cted Options	donorar occ	. Otationoo	lor r all Data						
2			From File	\\Smefile\wor	k in progres	ss\069448 00	\Fish Monito	ring\2013\Bo	ox and Whisl	ker Plot files\l	JR2 SM Bas	s wst
3		Fu	III Precision	OFF	p. og. oc			9.20.0.20				
4		Confidence		95%								
5	Number	of Bootstrap		2000								
6	- 10											
7												
8	2013 SM E	Bass										
9												
11						General	Statistics					
12			Numb	per of Valid Ob	servations	12			Numbe	r of Distinct C	bservations	12
13												
14			Raw S	tatistics				L	_og-transfor	med Statistic	s	
15					Minimum	0.96				Minimum	of Log Data	-0.0408
16					Maximum	5.8				Maximum	of Log Data	1.758
17					Mean	2.93				Mear	n of log Data	0.92
18					Median	2.855				SE	of log Data	0.608
19					SD	1.596						
20				Std. Err	or of Mean	0.461						
21				Coefficient of	of Variation	0.545						
22					Skewness	0.454						
23												I
24						Relevant U	CL Statistics					
25			Normal Dist	ribution Test				L	ognormal Di	istribution Te	st	
26			S	hapiro Wilk Te	est Statistic	0.94			S	Shapiro Wilk 1	est Statistic	0.941
27			SI	napiro Wilk Cr	itical Value	0.859			S	hapiro Wilk C	Critical Value	0.859
28		Data appe	ear Normal at	5% Significa	nce Level			Data appea	r Lognormal	at 5% Signif	icance Leve	İ
29												
30		A:	ssuming Nori	mal Distributio				Ass	uming Logno	ormal Distrib		
31					ent's-t UCL	3.757					95% H-UCL	
32		95%	, -	sted for Skew	•	ı				Chebyshev (	•	
33				d-CLT UCL (C	· · · · · · · · · · · · · · · · · · ·					Chebyshev (		
34			95% Modifie	ed-t UCL (Johr	nson-1978)	3.767			99%	Chebyshev (	MVUE) UCL	8.311
35									<b></b>			
36			Gamma Dist	tribution Test		0.504				stribution		
37				k star (bias				uata appe	ar Normal a	t 5% Signific	ance Level	
38					Theta Star							
39					E of Mean							
40			M	LE of Standard								
41			Λ m m m m m · · · · · · · · ·	o Chi Carran	nu star				Nonnere:	tmio C4041-41-		
42				e Chi Square	, ,				Nonparame	tric Statistics		2 600
43				ited Level of S							% CLT UCL	
44			Ac	ljusted Chi Sq	uare value	42.03			OE0/		ckknife UCL	
45			۸ م.d	son-Darling Te	net Statistis	0.242			95%	Standard Bo	tstrap-t UCL	
46				Darling 5% Cr						95% B00 95% Hall's Bo		
47				ov-Smirnov Te						Percentile Bo		
48		17	•	mirnov 5% Cr						95% BCA Bo		
49	Det			uted at 5% Sig						ebyshev(Me	· · · · · · · · · · · · · · · · · · ·	
50	Dat	a appear Ga	IIIIIII DISTIIDI	ueu at 5% SI(	Junicance I	_evel			95% Cr	ienysnev(IVIe	an, Sü) UCL	4.938

	Α	В	С	D	E	F	G	Н		J	K	L		
51								5.806						
52		Ass	suming Gan	nma Distribu	ution	•		an, Sd) UCL	7.513					
53			95% A	pproximate	Gamma UCI	4.045								
54			95	% Adjusted	Gamma UCI	4.254								
55														
56			Potential l	UCL to Use			Use 95% Student's-t UCL 3							
57														
58	No	te: Suggesti	ons regardiı	ng the selec	tion of a 959	6 UCL are pr	ovided to he	lp the user t	o select the	most approp	riate 95% U	CL.		
59		These recon	nmendations	s are based	upon the res	sults of the si	imulation stu	dies summa	rized in Sing	gh, Singh, ar	nd laci (2002	)		
60			and Singh	and Singh	(2003). For	additional in	sight, the us	er may want	to consult a	statistician.				
61														





## Appendix 5 Fish Tissue Statistical Analysis

		arp	A dult	Sucker	Invenil	e Sucker	Smallma	outh Bass	Doel	k Bass	We	lleye	Channel Catfish		Longnose Dace		
	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	
Upper River 1	2000	2013	2000	2013	2000	2013	2000	2013	2000	2013	2008	2013	2000	2013	2000	2013	
Mean	25.90	37.01545	12.40	10.68	6.01	NC	13.00	7.06	6.94	4.03			1		7.67	NC	
Standard Deviation	21.40	24.61796	5.00	9.61	2.85	NC	7.28	6.70	5.01	4.79					6.85	NC	
	16	12	8	12	8	NC NC	8.00	12.00	8.00	9.00					6	NC NC	
Count		.25		.52		IA		85		.22	Not C	ollected	Not C	Collected		IA	
Critcal Value at t <sub>0.1/2</sub>		.75		.32 .78		JA		78		.83	1					JA	
											-						
Significant Difference	1	No	1	No	ľ	IA.	I	es	Γ	No					N	JA.	
	2008	2012	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	
II Di 2	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	
Upper River 2	14.70	19.22364	8.92	6.87	6.82	NC	14.50	2.93	4.27	2.28	-		1				
Mean										1							
Standard Deviation	15.00	11.99663	4.19	2.28	2.96	NC NC	11.10	1.60	2.94	2.49							
Count	16	11	8	12	8	NC	8.00	12.00	8.00	12.00	Not C	ollected	Not Collected		Not Co	ollected	
Colored Webser et d		.87		.27		IA		93		.57	-						
Critcal Value at t <sub>0.1/2</sub>		.75		.78		IA	1	78		.78							
Significant Difference	1	No	Γ	No	N	IA .	Y	es	Γ	No							
	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	
M: 1 II. D: 1	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	
Middle River 1	14.19	15.54	2.14	1.78	1		4.02	2.35	1.73	1.36	11.10	10.53	27.90	12.75	9.47	NC	
Mean	7.27	5.24	1.22	1.78			2.21	1.57								NC NC	
Standard Deviation					1				0.55	0.35	4.63 9.20		15.60	4.39	4.15		
Count	8	8	8	8	Not C	ollected	8	8	8	8	8	3	4	8	7	NC NC	
t Critical Value at t		.43	0.54				1.74 1.86		1.57 1.86			.10		.90		JA	
Critcal Value at t <sub>0.1/2</sub>		.86	1.86						No			.86		.86		IA	
Significant Difference	1	No	No				N	NO	11/0		Γ	No		Yes	N	IA .	
	2012	2012	2012	2012	2012	2012	2012	2012	2012	2013	2000	2012	2000	2012	2000	2012	
M: 1 II - D: 2	2012	2013	2012	2013	2012 2013		2012	2013	2012 2013		2008	2013	2008	2013	2008 2013		
Middle River 2	19.21	15.58	3.21	0.73	2.95	1.49	2.74	1.61	1.59	0.92	-		8.18	NC	8.51	NC	
Mean Standard Deviation	11.72	15.46	1.22	0.73	0.87	0.37	0.63	0.49	0.38	0.92	1		6.62	NC NC	2.25	NC NC	
	8	8				7	8						4	NC NC	8	NC NC	
Count		.53	8	8	8			8	8	8	Not C	ollected					
Critari Value et t				.48	4.31		4.01		4.26		4		NA NA		NA NA		
Critcal Value at t <sub>0.1/2</sub>		.86		.86	1.86 Yes		1.86		1.86		4		NA NA		NA NA		
Significant Difference	1	No	)	'es	Y	es	Yes		Yes					NA	NA		
	2000	2012	2000	2012	2000	2012	2000	2012	2000	2012	2008	2012	2000	2012	2000	2012	
Lower River	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	
	11.20	17.22	4.21	1.00	1.04	NC	5 77	1.24	2.60	1.20	-		12.70	NC			
Mean Standard Deviation	11.30 15.20	17.22 14.92	4.31 0.93	1.08 0.39	1.04 0.43	NC NC	5.77 3.05	1.34 0.75	2.60	1.30 0.42			13.70	NC NC			
	9			<del>                                     </del>					9	<b>+</b>				1			
Count		.81	2	.81	5 N	NC IA	8	99		.29	Not C	ollected	5	NC NA	Not C	ollected	
t Critcal Value at t <sub>0.1/2</sub>		.83		.86		IA IA	<del>-</del>			.83	1		<b></b>	NA NA			
								86			1						
Significant Difference	1	No	)	es	l N	IA	<u>Y</u>	es	<u> </u>	es			<u> </u>	NA			
	2008	2013	2000	2013	2000	2013	2000	2013	2000	2013	2000	2013	2008	2013	2000	2012	
Inner Harbor	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	2008	2013	∠008	2013	2008	2013	
Mean	3.16	15.77					3.36	1.6			2.03	NC	19.40	NC			
Standard Deviation	2.81	4.92					1.04	0.99	1		0.86	NC NC	0.00	NC NC			
	9	7					8	9	ł		3	NC NC	1	NC NC			
Count			Not C	ollected	Not C	ollected			Not C	ollected		•	1 ,		Not C	ollected	
t Critcal Value at t <sub>0.1/2</sub>	6.06						3.56				NA NA		NA NA				
		1.83 Yes						1.83 Yes				NA NA		NA NA		$\dashv$	
Significant Difference	<u>'</u>	CS			<u> </u>		<u> </u>	CS	<u> </u>		<u> </u>	N/A	<u>.                                    </u>	N/A			

Mean and Standard Deviation values are PCB concentrations in mg/Kg

Values in Red exceed the Critical Value and the means for the data sets are significantly different.

ROD tissue PCB concentrations for target fish species are as follows: Smallmouth Bass- 0.31 ppm; Walleye- 0.63 ppm; Trout- 0.09 ppm; Carp- 2.58 ppm, Catfish- 2.53 ppm.

NC = Fish not collected, NA = Not applicable



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