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Comparison of PCBs in East Chicago, Indiana and Columbus Junction, Iowa in indoor and outdoor air

Timothy J. Schulz
University of Iowa

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COMPARISON OF PCBS IN EAST CHICAGO, INDIANA AND COLUMBUS
JUNCTION, IOWA IN INDOOR AND OUTDOOR AIR

by
Timothy J. Schulz

A thesis submitted in partial fulfillment
of the requirements for the Master of
Science degree in Civil and Environmental Engineering
in the Graduate College of
The University of Iowa

May 2012

Thesis Supervisor: Professor Keri C. Hornbuckle

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Graduate College
The University of Iowa
Iowa City, Iowa

CERTIFICATE OF APPROVAL

MASTER'S THESIS

This is to certify that the Master's thesis of

Timothy J. Schulz

has been approved by the Examining Committee
for the thesis requirement for the Master of Science
degree in Civil and Environmental Engineering at the May 2012 graduation.

Thesis Committee: _____
Keri C. Hornbuckle, Thesis Supervisor

Peter Thorne

Craig Just

To my parents

The world is indeed full of peril, and in it there are many dark places; but still there is much that is fair, and though in all lands love is now mingled with grief, it grows perhaps the greater.

J.R.R. Tolkien
The Lord of the Rings

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CHAPTER 1 INTRODUCTION AND BACKGROUND INFORMATION

1.1 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are a group of 209 compounds that have been banned from commercial use in the United States since 1979. They are categorized by the number of chlorines that are attached to the two phenyl rings in place of hydrogen ions. PCBs were manufactured in mixtures and used for a variety of industrial purposes. The properties of these PCBs that made them useful also make them classifiable as persistent as demonstrated by their continued presence in environmental matrices even more than 30 years after their ban[1].

Although a full review of the toxicology of PCBs is beyond the scope of this thesis, there are several generally accepted conclusions regarding the hazards PCBs present to humans and other animals. The toxicological profile provided by Agency for Toxic Substances and Disease Registry (ATSDR) suggests that high levels of exposure to PCBs can cause skin conditions, irritations in the respiratory and digestive system, changes in the liver and in blood and other conditions such as depression and fatigue. They have also shown in animals studies that exposure to PCBs can produce organ failure[2]. The International Agency for Research on Cancer states the PCBs are a probable carcinogen as shown from population studies[3]. A group of 12 PCB congeners are classified as dioxin-like for which dioxin-like toxicity equivalent factors (TEFs) have been calculated and continually examined[4, 5].

PCBs were sold as commercial mixtures in the United States known as Aroclor mixtures. These mixtures were named by the amount of chlorine that was present. Aroclor 1242 (a common mixture in the United States) contained 42% chlorine by mass. Congener profile comparisons between samples and Aroclor mixtures can act as an

indication of a historical source, although weathering in the environment and metabolism in organisms can change the distribution of PCBs significantly[1]. PCBs tend to bioaccumulate and congeners that are not metabolized may increase in concentration up the food chain. For this reason, concentrations of PCBs are monitored in fish and fish consumption advisories due to PCB contamination are common in Great Lakes states[1].

In addition to being toxic and bioaccumulative, PCBs are semi-volatile and sparingly soluble. The degree to which congeners volatilize or dissolve is a function of the number of chlorines. Lighter PCBs, or those with less chlorines, are more volatile and more soluble. The octanol-air coefficient (K_{oa}) is a surrogate measurement of organic compounds' tendency to partition between the sorbed phase to the gas phase. K_{oa} values for PCB congeners range from 10⁷ for PCBs with one chlorine (mono) to 10¹² for PCBs with ten chlorines.

1.2 Objectives and Hypotheses

The purpose of this study was to compare PCB concentrations in indoor and outdoor air for the two communities, to compare the two cities, and provide concentrations in ambient air to assess exposure levels. Total PCB concentrations in the air and congener profiles were compared for study categories. Several hypotheses were formed regarding this experiment. These hypotheses are related to hypotheses proposed by Project 6¹ and the Project 4² of the Iowa Superfund Research Program.

¹ From Project 6: Residents of East Chicago have significantly higher exposures to atmospheric PCBs than people living in rural Iowa.

² From Project 4: Sediment of the IHSC is a major source of airborne PCB congeners to the community of East Chicago, Indiana.

From Project 4: PCBs are released and/or produced in the environment due to ongoing human activity or physical-chemical processes.

From Project 4: Airborne PCBs are a function of measureable and quantifiable characteristics of the physical-chemical characteristics of the compounds and exposed environmental surfaces on which the PCBs reside.

- PCB concentrations for indoor air are greater than concentrations for outdoor air.
- East Chicago has higher PCB air concentrations than Columbus Junction for outdoor air given historical input and proximity to Lake Michigan and the Indiana Harbor Ship Canal.
- The congener profile for Columbus Junction will show a higher portion of PCBs with less chlorine ions (lighter PCBs) comprising the total masses quantified relative to East Chicago.

1.3 East Chicago, Indiana and Columbus Junction, Iowa

The two communities involved in this study are East Chicago, IN and Columbus Junction, IA. The two communities are part of the Iowa Superfund Basic Research Group Project 6 and were chosen by the Project Leaders for their similarity in socioeconomic demographics and different industrial histories. East Chicago is an urban community near the southern shore of Lake Michigan. It is historically industrial and surrounds the IHSC which is contaminated with PCBs. It is the site of a large steel mill and a large gas refinery. The U.S. Army Corps of Engineers plans to dredge the IHSC for navigational purposes. At the time of this writing, the dredging is scheduled to begin in the summer of 2012 and will continue for as many as 30 years. Columbus Junction is located in eastern Iowa about 15 miles west of the Mississippi River. The school district in which the study encompasses is a group of rural communities with no known historical source of PCBs.

We expected indoor concentrations to be higher than outdoor air for the same residence because of several reports. The difference in indoor and outdoor air concentrations and profiles would then be a function of source, weather conditions, air

flow exchange, concentration gradient and what is leaving the system as well[6, 7]. For indoor air, the sources would be from building materials as studied by various sources including sealants and paint[8, 9]. Age of the building also plays a role because of the history of the usage of PCBs as studied by Wallace et al[10]. Indoor weather conditions are assumed to be more consistent than outdoor weather and the air exchange is a factor associated with the ventilation system. Zhang et al has quantified and compared concentrations of PCBs in indoor air ranging from 0.8 ng m^{-3} to 130 ng m^{-3} for indoor air with mean and median values being around 10 ng m^{-3} [6].

Most outdoor PCB input is associated with a body of water that has been historically contaminated. Palmer et al has studied communities around the Hudson River[11]. Holsen et al has looked at trends around Lake Ontario. Concentrations from this study were around 1.6 ng m^{-3} [12]. Lake Michigan is heavily studied and included in this study is the Indiana Harbor Ship Canal in East Chicago, Indiana which has been studied by Martinez et al[7]. Building materials can also be considered a potential source for PCB input into outdoor air as shown by the discovery of the non-Aroclor PCB 11 in pigment of household paints[8].

1.4 Experimental Approach

The overall strategy to accomplish the experimental objectives involved deploying and collecting air samples from the two communities. Passive air samplers were deployed indoors and outdoors of participating homes in collaboration with the project. PCBs were extracted from sampling media and analyzed for the full suite of congeners. Comparisons between communities were made between indoor and outdoor levels of both communities.

Starting in 2008 passive air samplers equipped with polyurethane foam disks (PAS-PUF) were deployed in approximately 60 homes in East Chicago and 60 homes in Columbus Junction as part of a volunteer program in which participants were compensated for participation. PAS-PUF were installed inside and outside the homes and deployed consecutively for approximately 90 days. For this study, 133 samples from Columbus Junction and 144 samples from East Chicago were analyzed. A schematic of the extent of sampling is shown for Columbus Junction (Figure 1-1) and East Chicago (Figure 1-2). The x-axis displays the date and the y-axis is an ordering of samples by deployment date. Each bar represents the deployment period of one air sample.

PUF disks ($\frac{1}{2}$ " thick, 5 $\frac{1}{2}$ " diameter) were cleaned in the lab via Soxhlet extraction with 16 to 24 hours of hexane, 16 to 24 hours of acetone, and 16 to 24 hours of 1:1 mixture by volume of hexane and acetone. The PUF disks were dried in a desiccator for 24 hours and stored in a clean media refrigerator in plastic bags until they were ready to be sent out for sampling. Clean PUF disks were sent out to project staff members in each the two communities for sample deployment. A 90 day deployment period was intended although the actual deployment period was documented for each sample. A sampler deployed in an outdoor environment is shown in Figure 1-3.

The overall method to quantify PCB masses from the PUFs is outlined in Figure 1-4. Samples are identified, placed into a cell ready for extraction, and spiked with surrogate standard to measure recovery. PCBs were extracted from the samples evaporated and cleaned, injected with internal standard for quantification of PCB masses using a GC/MS/MS instrument.

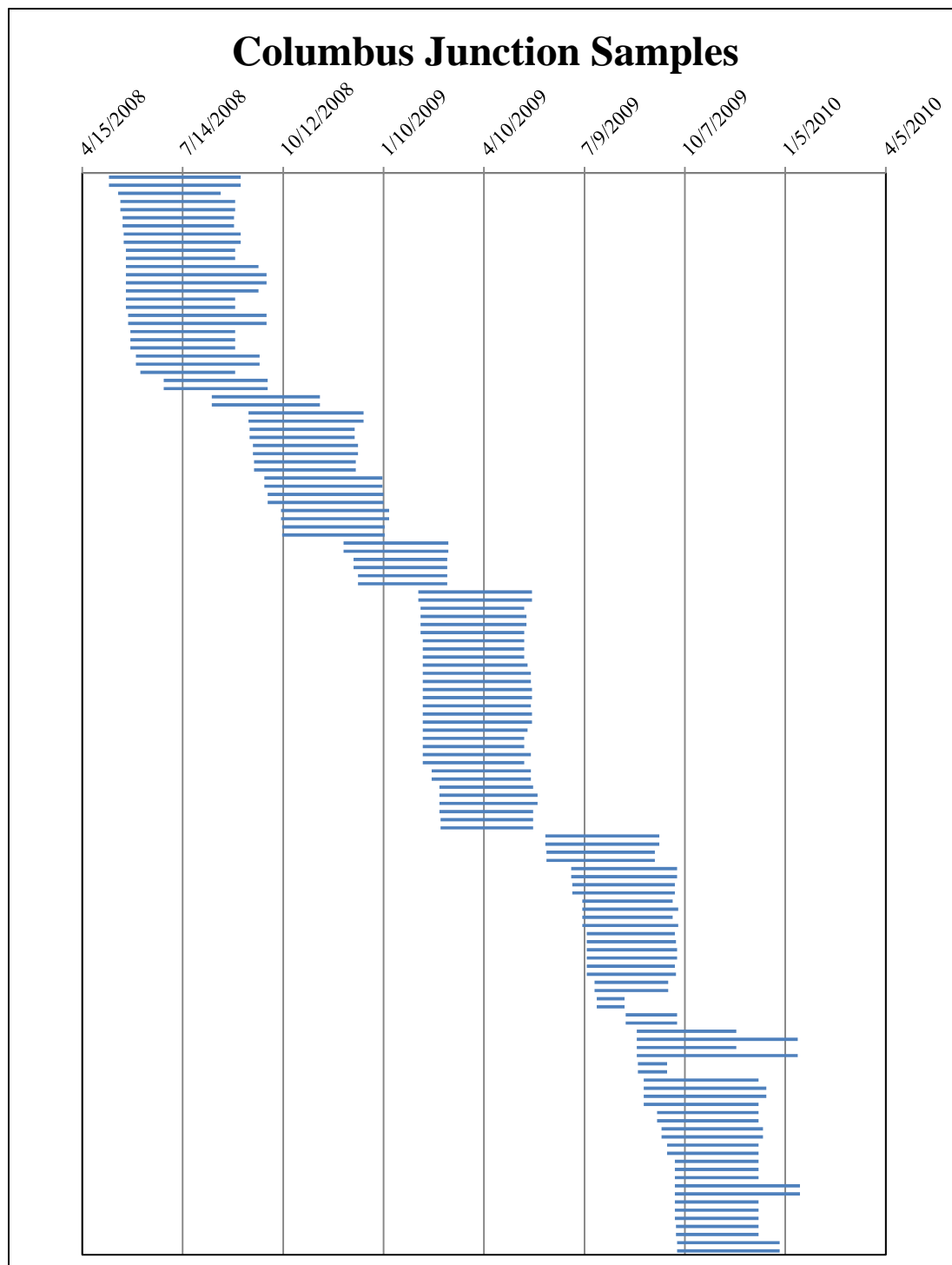


Figure 1-1: Sampling schematic for Columbus Junction, IA The x-axis shows the date and the y-axis represents the samples ordered by deployment date

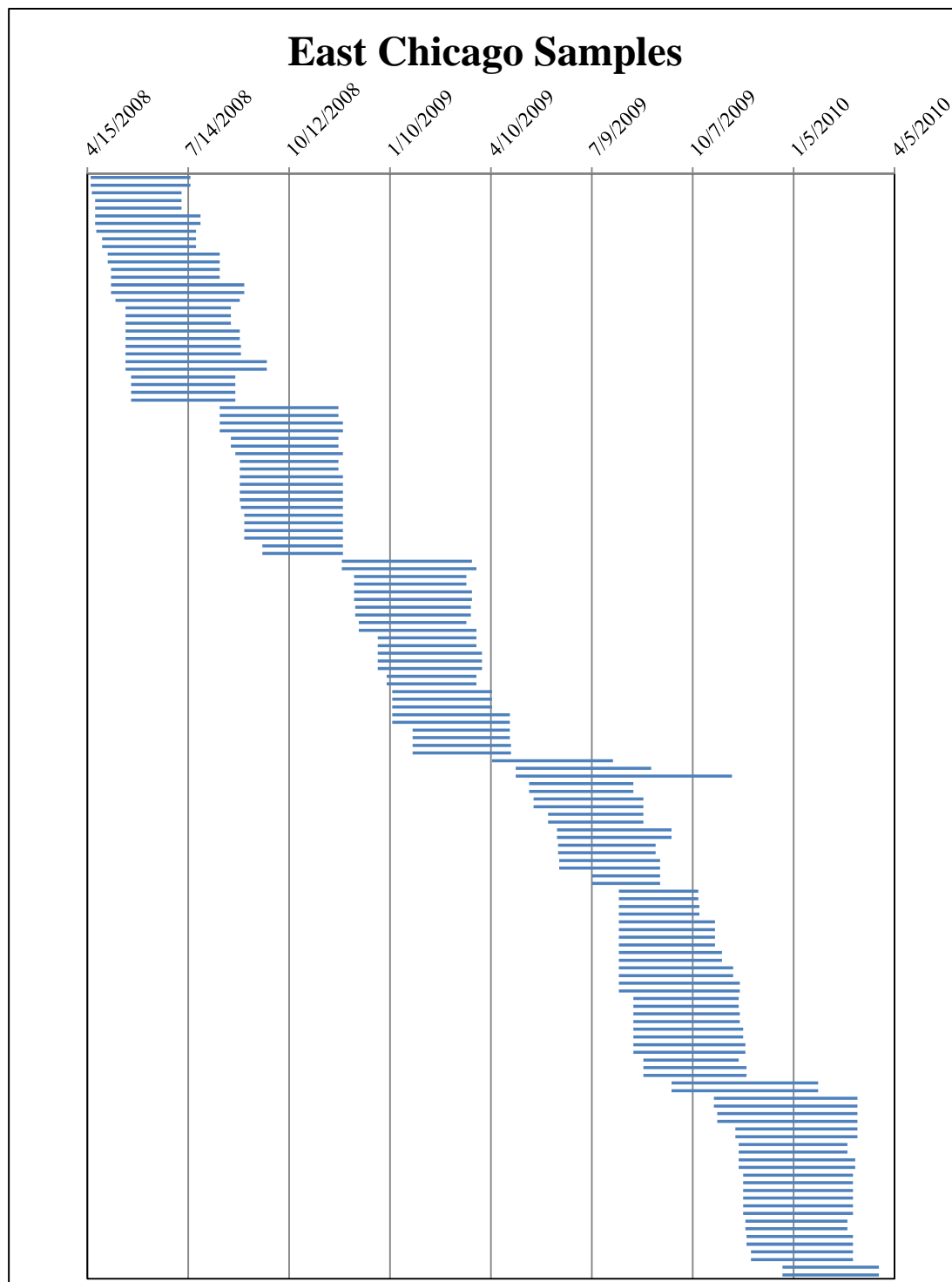


Figure 1-2: Sampling schematic for East Chicago, IN. The x-axis shows the date and the y-axis represents the samples ordered by deployment date



Figure 1-3: Passive sampling device in outdoor environment

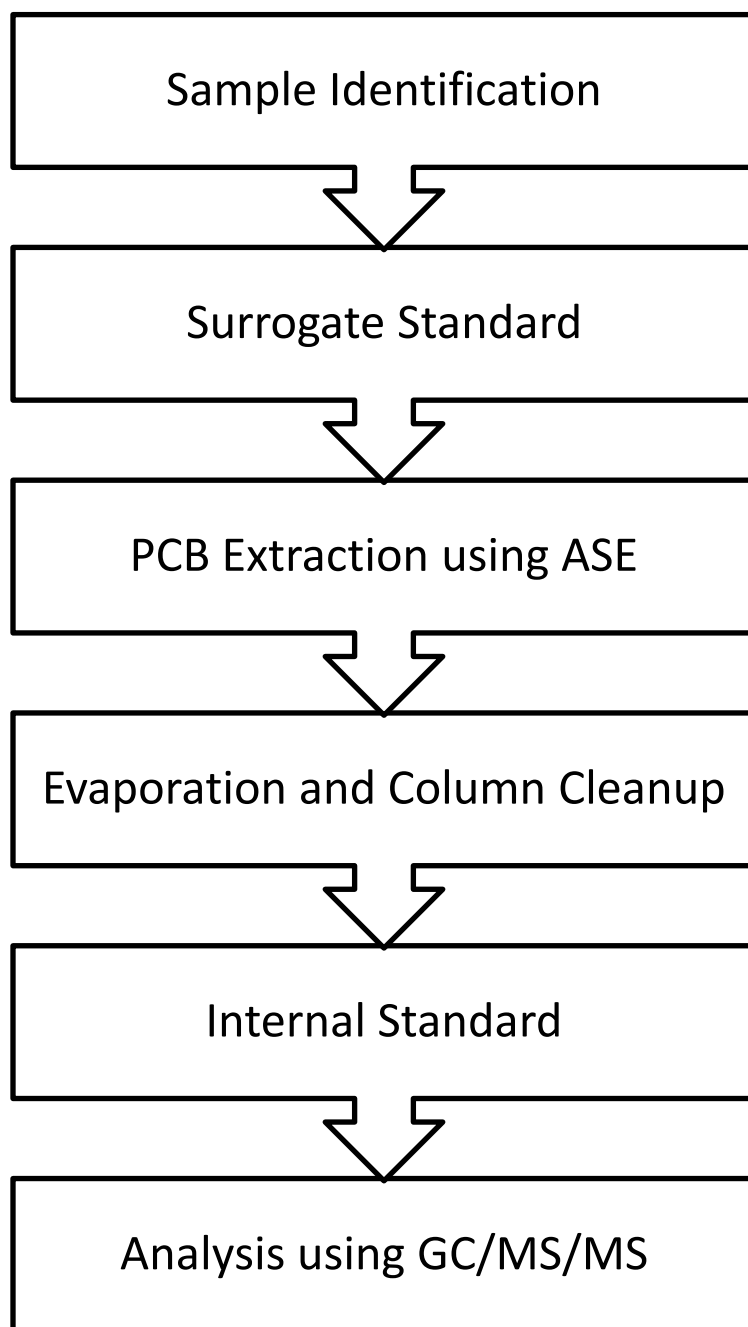


Figure 1-4: Overall method for PCB quantification of PUF samples used in this study

CHAPTER 2 COLLECTION AND QUANTIFICATION METHOD FOR AIRBORNE PCBS

2.1 Passive Air Sampling

Passive air sampling (PAS) refers to a method of sampling air that does not control air flow but rather, the sampling apparatus containing collection media is deployed and the volume of air that is sampled is estimated. There are various advantages and disadvantages to passive sampling compared to active sampling. Passive samplers are less expensive, have a smaller physical footprint, and allow for a larger number of samples to be collected in terms of spatial and temporal ranges. The major drawback of passive sampling is the uncertainty of the volume of air that is sampled during a deployment period[13].

The air sampling media used in this study is polyurethane foam (PUF). The sampling apparatus is illustrated in Figure 2-1 with a PUF disk. The device used for sampling allows for air to flow through gaps and through the PUF before exiting. These devices are easily suspended for deployment. The sampler was developed by Harner et al[14] and is commonly abbreviated PAS-PUF. The sampler design used for the study is the same as used by Persoon et al in a study of PAS-PUF sampling rates. They also showed that 90 days was in the linear uptake phase of most PCB congeners[13].

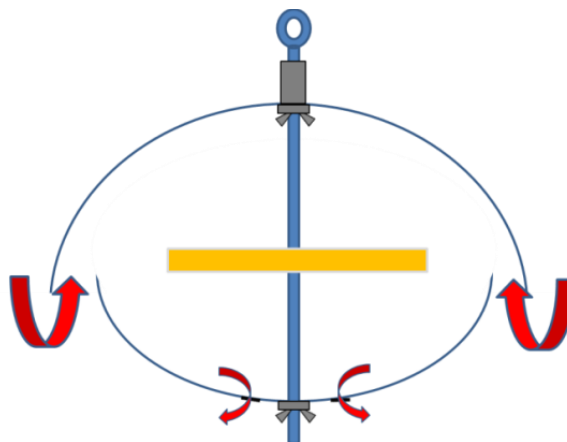


Figure 2-1: Illustration of passive air sampling device used showing PUF disk in the center and arrows showing air flow through. Figure is not to scale.

Airborne PCBs accumulate on the PUF disk as air passes through during the deployment period. Both gas-phase and particle-associated PCBs can be captured. Previous studies have shown that more than 90% of airborne PCBs in most ambient environments are in the gas-phase[15]. For this study, most samplers were deployed for approximately 90 days. Deviation from the 90 day sampling period occurred because of differences in availability of subjects in the sampling program. For this reason, specific deployment records were recorded on the samples and in the sample database. The specific deployment period for each sample is listed in the appendix. This mass can be transformed into a concentration if the volume of air sampled is known as shown in Equation 1-1 below. This volume can be calculated from an estimated sampling associated with the sampler and the conditions.

Equation 1-1

$$\text{Concentration (ng/m}^3\text{)} = \frac{\text{Mass(ng)}}{\text{Sampling Rate, R(m}^3\text{/day) * Deployment Period, T(days)}}$$

The determination of the sampling rate for the sampler design used has been the subject of several investigations[6, 13, 14, 16]. Table 2-1 lists the sampling rates reported from these studies. Hazarati and Harrad concluded that sampling rates are dependent on sampling device used, environmental conditions, and may be congener specific[17]. The sampling rate and the variability for indoor air are smaller than the sampling rate and variability for outdoor air. This is expected because of the much lower turbulence and wind speed variability in indoor environments. For indoor air, this study uses a sampling rate of 2.6 m³ day⁻¹. For outdoor air, a median value of 6.2 m³ day⁻¹ was used[13]. Ongoing research is continuing to better predict sampling rates as a function of local and regional meteorology (Hornbuckle group, unpublished). For this reason, raw data is reported in the appendix of this thesis as congener mass per sample along with the specific deployment periods which hover around 90 days.

Table 2-1: Comparison of various sampling rates from literature.

Study	Sampling Rate (m ³ day ⁻¹)	
	Indoor	Outdoor
Persoon, Hornbuckle (2009)	2.6	4.4-8.4
Zhang et al (2011)	0.7-1.27	n/a
Bohlin et al (2008)	2.5	3.5

2.2 Sample Set Determination

Because of the large number of samples that have been collected, a prioritized sample set was chosen based on several criteria. A time frame was selected, and a plausible total number of samples was determined. Equal numbers of samples were chosen from both communities and for congruent calendar dates of deployment to increase comparability. Equal indoor and outdoor samples were chosen. Samples were analyzed in pairs to assure congruency. We also prioritized toward homes where blood samples were collected for another component of the larger study. The final air sample set described here consists of 137 samples from Columbus Junction and 141 samples from East Chicago.

2.3 Extraction Method

PCBs were extracted from the samples using EPA Method 3545 with an automated solvent extraction (ASE) instrument using a 1:1 mixture of hexane to acetone[18]. A Dionex ASE 300 instrument was used for extraction (100°C and 1500 psi). Cells were prepared with a glass fiber filter at the base, a PUF sample folded and inserted on top, and spiked with surrogate recovery standard containing 50 ng of PCB 14 (3,5-dichlorobiphenyl, D-65(2,3,5,6-tetrachlorobiphenyl d5), and 166 (2,3,4,4',5,6-hexachlorobiphenyl), and a glass fiber filter on top. Approximately 50 mL of extract was collected from each sample extraction and concentrated to approximately 5 mL by Turbovap under nitrogen stream (Figure 2-2). The exact volume of solvent at any point was not needed using the internal standard method. Extractions were eluted with 15 mL hexane through glass pipet columns packed with 10:1 acidified silica to silica gel (Figure

2-3). The resulting eluent was evaporated to a volume of approximately 0.5 mL, transferred to combusted GC vials, and then spiked with internal standards.



Figure 2-2: ASE Cell (left) and Collection Jar (right)

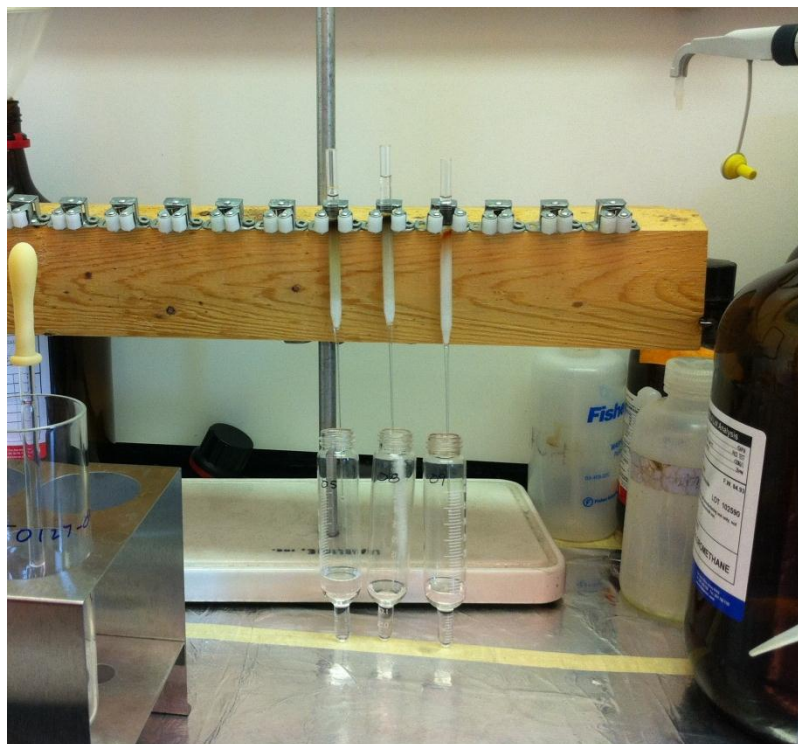


Figure 2-3: Silica gel column cleanup

2.4 EPA method 1668B modification

PCB congeners were identified, detected and quantified using a modification of EPA method 1668b. The major modifications of the method include use of Tandem Mass Spectrometry GC/MS/MS (Quattro Micro™ GC, Micromass MS Technologies) instead of high resolution mass spectrometry; and use of a set of three surrogates and two internal standards rather than the 20+ radiolabeled PCB congener standards used in the EPA method. This modified method detects 158 peaks from 209 congeners (minus three non-labeled congeners used as standards). Some congeners coelute. However, none of

the 12 dioxin-like congeners coelute with other congeners[19]. The mass selective method allows for separate detection of each homolog group as a different channel on the instrument. An example chromatogram of all the channels of the calibration standard is shown in Appendix A. The calibration standard contained 45.45 ng of each PCB with 1 to 3 chlorines, 90.91 ng of each PCB with 4 to 7 chlorines, 136.36 ng of each PCB with 8 to 10 chlorines, 140.7 of deuterated PCB 30 and 91.00 ng of deuterated PCB 65. PCBs in the calibration standard are reported as masses but are really mass fractions relative to other masses in the solution. The masses are only important relative to one another. In order to quantify the mass associated with areas of peaks in the samples, Relative Response Factors (RRF) were calculated from the analysis of the calibration standard solution and the known congener concentrations in the solution (Equation 2-1).

Equation 2-1

$$RRF = \frac{\left(\frac{calmass_i}{calarea_i} \right)}{\left(\frac{calmass_{instd}}{calarea_{instd}} \right)}$$

Where $calmass_i$ represents the known mass of an individual congener; $calarea_i$ is the area associated with the peak for an individual congener; and $calmass_{instd}$ and $calarea_{instd}$ are the mass and area for the internal standard in the calibration standards respectively. Once the RRF is calculated for each congener, the mass of a congener in an individual sample was calculated in each sample using the area of the spiked internal standard and the area from the sample chromatogram (Equation 2-2).

Equation 2-2

$$Mass_i = RRF * Area_i * (mass_{instd}/area_{instd})$$

Where $mass_{instd}$ is the mass of the internal standard spiked to the sample, $Area_i$ is the area measured under a peak of an individual congener and $area_{instd}$ is the area measured under a peak associated with an internal standard.

The detected congener mass in each sample is corrected for surrogate standard recovery (equation 2-3).

Equation 2-3

$$Recovery\ Corrected\ Mass = Mass_i * \frac{Mass\ Spiked}{Mass\ Recovered}$$

Where $Mass_i$ is the mass of a PCB congener quantified, $Mass\ Spiked$ is the mass of recovery standard in which the sample was spiked and $mass\ recovered$ is the mass of the recovery standard that was quantified. Congeners 1 through 39 were corrected for the recovery of PCB 14; congeners 40 through 169 were corrected for the recovery of PCB D-65, and congeners 170 through 209 were corrected for the recovery of PCB 166. The effective concentration in air for each sample is determined by dividing the sample congener mass by the sampling rate and the time the sampler was deployed (Equation 1-1). The Internal standard used for quantification was 20 ng of PCB D-30 (2,4,6-trichlorobiphenyl d4) and 204 (2,2',3,4,4',5,6,6'-octachlorobiphenyl).

2.5 QA/QC

To assure and evaluate quality of data, several measures of quality assurance and controls have been implemented in this study. The average recovery for these surrogate standards was $81\pm 14\%$, $83\pm 16\%$ and $89\pm 17\%$. This was used to correct each sample individually for loss during laboratory procedures. The amount of surrogate injected is confirmed with a reference injection into a blank GC vial containing hexane. This was done for each batch. Each batch of samples included a lab blank. Several field blanks were analyzed as they came in with batches they were sent in (discussed in more detail in chapter 3). Standard Reference Material was analyzed using 1944 NIST sediment because it is the same lab method as the PUFs and has similar masses associated in terms of magnitude (Figure 2-4). A difference of $19\pm 19\%$ for three measurements was found between the quantified and certified values. The major differences observed between the measured and certified values occur in discrepancies between congener coelutions reported for NIST analysis of the reference material and coelutions that occur for our specific method. For example, PCB 110 is reported as coeluting with PCB 97 in the reference material but in our method, it usually coelutes with PCB 115. The measured values were averaged from three samples of reference material analyzed and the error bars represent the standard deviation.

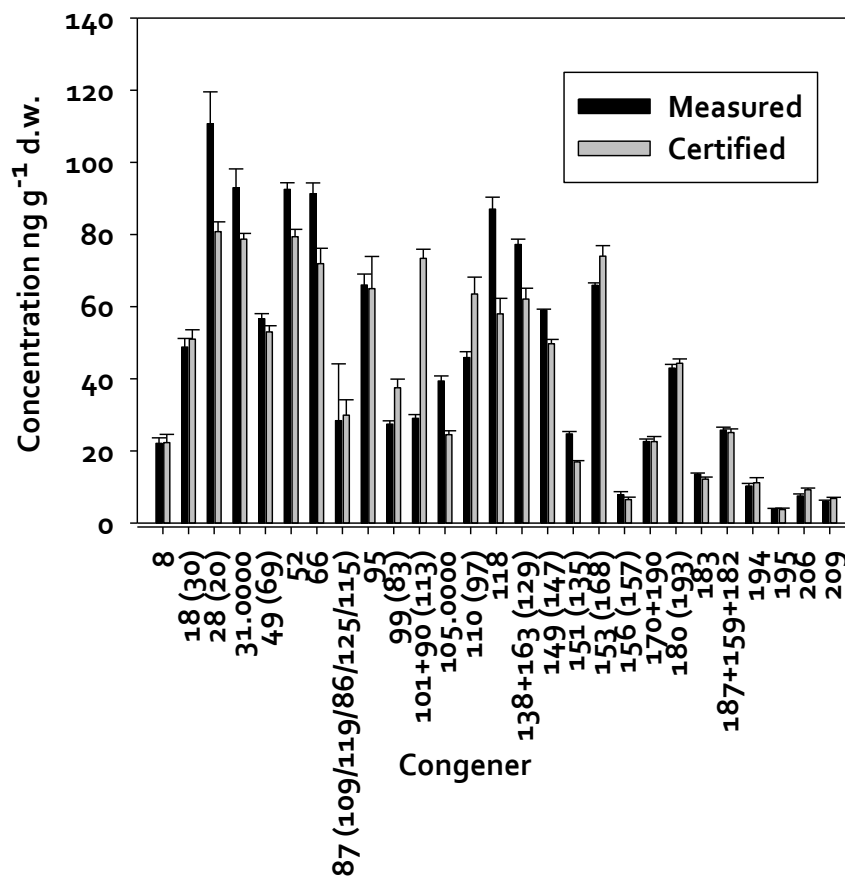


Figure 2-4: Results from analysis of SRM 1944 NIST sediment with certified values shown in gray and measured values shown in black.

CHAPTER 3 FIELD CONTROL STUDY

3.1 Introduction

Although earlier studies of the PAS-PUF method had indicated that field and trip blanks did not accumulate PCBs, this study found that PUFs presumed to be field or trip blanks accumulated high levels of PCBs – masses similar to that associated with field samples (Table 3-1). We developed and tested several hypotheses about the origin of the PCBs measured in the field blanks. First, we hypothesized that the field blanks were contaminated by the field samples during shipment. If this was the case, our field samples would also be compromised. Second, we hypothesized that the contamination of the field blanks occurred while in the freezer during storage after sample collection and before extraction. Again, this would indicate a larger cross contamination issue. Third, we hypothesized that the contamination occurred during the deployment period. If this were the case, the field blanks should be considered as samples lacking appropriate meta data, but the intentional field samples would not be compromised. We did not consider any source of PCB exposure from the lab because our regular laboratory blanks were relatively uncontaminated.

Prior to testing these hypotheses, we immediately adjusted our standard operating procedures for shipping and storing all PUF sample materials. Starting in October, 2011, all new PUFs sent out were wrapped in combusted foil inside of the plastic bag in which they were contained. This provided an extra layer of protection for the samples when not sampling. A final hypothesis was that the aluminum foil protects PUF from contamination while sealable plastic bags alone do not.

Table 3-1: Summary of field blank observations with relevant samples listed

Batch ID	Deployment Period(days)	Σ PCB Mass (ng)
0090-05	(blank)	700
0090-06	118	510
0090-07	118	550
0090-08	100	860
0090-09	100	350
0090-11	105	270
0090-12	105	290
0095-03	(blank)	600
0095-04	80	350
0095-05	80	500
0095-06	88	610
0095-07	88	360
0095-08	93	340
0095-09	93	340
0113-02	94	2700
0113-03	80	340
0113-04	80	650
0113-05	(blank)	340
0113-06	84	240
0113-07	84	430
0113-08	91	240
0113-09	91	250

3.2 Actions and Study Design

A six-week study was performed to gather information about the sampling process. An experiment was designed to test each hypothesis. We deployed controls in several locations for this study, including one of our actual field sites, Keri Hornbuckle's office, and our laboratory. In each location, triplicates of PUFs were placed in a fashion similar to how the field blanks were handled. First, a group of PUF disks were placed in room 4126 SC of the engineering building at the University of Iowa (Keri Hornbuckle's Office). These clean PUF disks were placed in sealable plastic bags in a stack on a bookcase. These were accompanied by an unprotected PUF in a PAS-PUF sampler. They remained in the office for six weeks, similar to the handling of field blanks sent to East Chicago and Columbus Junction. Second, a group of six clean PUF disks were placed in the laboratory freezer. Three were sealed in precombusted aluminum foil, three were only in sealable plastic bags. This group remained in the freezer for six weeks. A third set of clean PUF disks were sent to East Chicago with a batch of samples and returned by our field staff in the normal way after about nine weeks. Finally, to test only the shipping of the samples, three clean PUF disks were placed in a shipment box with ten PUF s that have been deployed in Chicago as part of another study (real samples). To study the effectiveness of the extra aluminum foil barrier, triplicates were deployed in both the new and old way of preparation—that is three samples wrapped in foil and three without foil.

3.3 Results

Results from this study are shown in Table 3-2. In the first group of samples, which was placed in room 4126SC with foil, very little or no mass of PCBs were

detectable. The second group, which was in the same office but without foil, PCB masses ranged from 50 ng to 192 ng for the sum of all detectable congeners. The control with the highest mass was on top of the stack of three which could indicate higher levels of sampling the air. The total PCB mass was very similar to the mass quantified from the sample placed in the sampler of the office. From this study we concluded that the foil is an effective barrier preventing sample contamination the sealed plastic bags are ineffective at preventing contamination of the PUF from ambient air. In fact, we found that the PUFs in bags collected nearly the same mass and congener distribution as did the PUF installed in a sampler (Figure 3-1). In fact, the congener distribution for the PUFs deployed in each location whether in a sampler or in a plastic bag were strikingly similar.

Table 3-2: Results from control study showing sample labels, descriptions, and the total quantified masses of PCBs (ng)

Control Name	Description	PCB sum mass (ng)
FBS-KON1	Keri's Office wrapped in foil and in plastic bag #1	0
FBS-KON2	Keri's Office wrapped in foil and in plastic bag #2	0
FBS-KON3	Keri's Office wrapped in foil and in plastic bag #3	2.8
FBS-KOO1	Keri's Office in plastic bag only #1	190
FBS-KOO2	Keri's Office in plastic bag only #2	57
FBS-KOO3	Keri's Office in plastic bag only #3	50
FBS-KOS1	Keri's Office deployed in sampler	190
FBS-KFO1	Lab Freezer in plastic bag only #1	2.2
FBS-KFO2	Lab Freezer in plastic bag only #2	3.3
FBS-KFO3	Lab Freezer in plastic bag only #3	2.0
FBS-KFN1	Lab Freezer wrapped in foil and in plastic bag #1	2.5
FBS-KFN2	Lab Freezer wrapped in foil and in plastic bag #2	0.7
FBS-KFN3	Lab Freezer wrapped in foil and in plastic bag #3	4.2
FBS-ECO1	Sent out to East Chicago in plastic bag only #1	27.0
FBS-ECO2	Sent out to East Chicago in plastic bag only #2	22.0
FBS-ECO3	Sent out to East Chicago in plastic bag only #3	17
FBS-ECN1	Sent out to East Chicago wrapped in foil and in plastic bag #1	1.4
FBS-ECN2	Sent out to East Chicago wrapped in foil and in plastic bag #2	0.4
FBS-ECN3	Sent out to East Chicago wrapped in foil and in plastic bag #3	0.7
FBS-FEB1	Blank put in box with Chicago samples for 24 hours	32
FBS-FEB2	Blank put in box with Chicago samples for 24 hours	18
FBS-FEB3	Blank put in box with Chicago samples for 24 hours	18

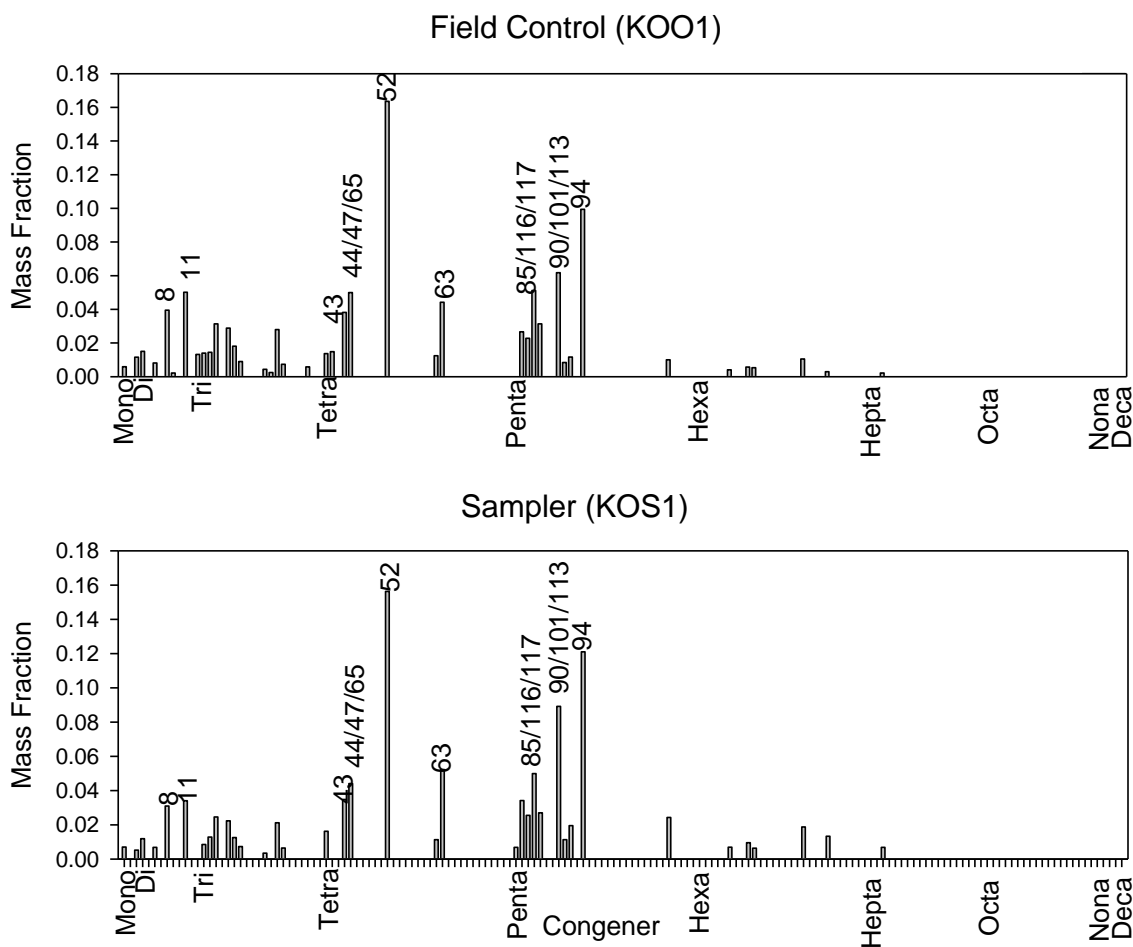


Figure 3-1: Congeners present in the sampler and the field control without foil.

Samples stored in the freezer (labeled FBS-KFO and FBS-KFN) accumulated a small mass of PCBs (0.7 ng to 4.2 ng). This indicates that there is little diffusion or transfer of PCBs between samples occurs in the freezers.

The next group of samples (FBS-ECO and FBS-ECN) examined the shipment process for cross contamination. These samples were sent out as usual with a batch and returned with new samples coming in. The return process did not include samples prepared with foil. The foiled controls accumulated a small mass of PCBs (0.7 ng to 1.4 ng) while the unfoiled controls accumulated PCB masses between 17 ng and 24 ng.

Although the control PUFs not wrapped in foil accumulated much large PCB mass than those in foil, this mass is still very low compared to what these controls accumulated during the sampling stage and low compared to the mass found in the controls which initiated this small study. At its highest possible level it would account for about 10% of the mass accumulated in the “blanks” shown in Table 1. We conclude that it is important to reduce the time required for the shipping process and to get the samples into a freezer as soon as possible. Fortunately, this was the normal procedure for all samples collected prior to this study. Subsequently, all samples have been stored and transported sealed in combusted aluminum foil.

3.4 Conclusions and Applications

Several conclusions can be made from this control study. These conclusions guide how we interpret the sample data collected in the overall study. First, the additional barrier of foil works well to prevent cross contamination and keeps blanks clean. It is a very small addition that ensures better quality of data. Second, the field controls not wrapped in foil appear to be sampling/absorbing PCBs in a similar matter as those in the sampling devices. This is shown through the summed PCB masses and chromatograms being very similar as shown in Table 1 and Figure 8. Third, refrigeration is necessary for storage to maintain sample integrity. Lastly, cross contamination is a concern if shipments are long but not a significant contributor to samples collected in the past. Future samples will be protected with foil. We concluded that it is very important to wrap samples in combusted foil except when sampling and to store them in a refrigerator or freezer prior to PCB extraction.

CHAPTER 4 RESULTS AND DISCUSSION

4.1 Introduction

Using EPA methods 3545 and 1668b, 268 PUF samples were analyzed for the full suite of PCBs (with some coelutions). The complete data set is located in Table B-4 in Appendix A with the sample batch identification, sample identification, the deployment and collection date, the deployment period (days), the mass(ng) quantified for each of the listed congeners, as well as the surrogate recoveries for each sample. Although the congener masses listed are corrected for surrogate recoveries, the consistency of the surrogate data is included as a measure of quality control for each sample. Including the surrogate data also allows for recalculation to the raw congener masses should it ever be necessary to do so. The data in Appendix B are reported in masses rather than concentrations because further work is currently being done to acquire better and a more robust set sampling rates for these sampling devices, particularly for outdoor air where the sampling rates may be highly variable with local meteorology. We do not, however, recommend using the masses for comparison between environments. Because the sampling rates are much higher and more variable in outdoor air, we recommend using only concentration data for evaluating outdoor air. Indoor air flow rates, on the other hand, are not expected to exhibit major variation and therefore it is possible to evaluate using units of mass per sampler. Comparisons between communities and environments were performed using concentrations here. All indoor concentrations were calculated as the congener mass divided by $2.6 \text{ m}^3 \text{ day}^{-1}$. All outdoor concentrations were calculated as the congener mass divided by $6.2 \text{ m}^3 \text{ day}^{-1}$. With this data set, comparison in total PCB concentrations and relative congener profiles were compared for all of the environments involve (i.e. East Chicago/Columbus Junction and Indoor/Outdoor)

4.2 Total PCB concentrations

Airborne PCB concentrations are compared for four groups: Columbus Junction indoor air, Columbus Junction outdoor air, East Chicago indoor air, and East Chicago outdoor air (Figure 4-1). A summary of the entire data set is displayed in Table 4-1. The average concentration ranges from $0.62 \pm 0.65 \text{ ng m}^{-3}$ for East Chicago outdoor air to $3.9 \pm 4.4 \text{ ng m}^{-3}$ for Columbus Junction indoor air.

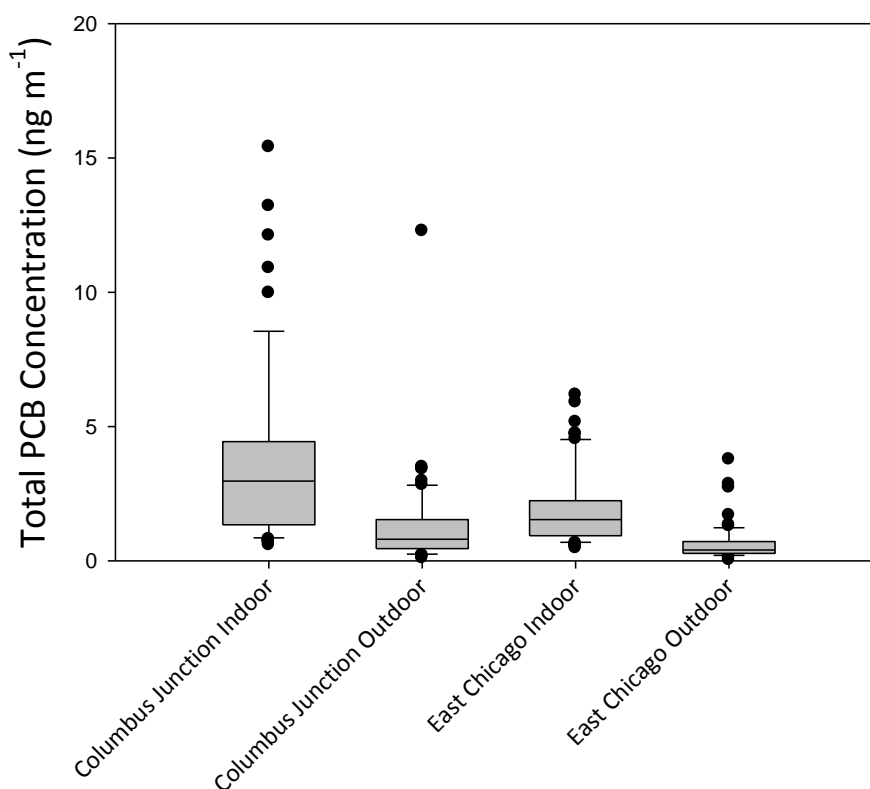


Figure 4-1: Total PCB concentrations for indoor and outdoor in Columbus Junction, IA and East Chicago, IN. The line in the center of the box represents the median value and the extents of the box show the upper and lower quartile.

Table 4-1: Summary statistics for data showing location, environment, temporal range, and a breakdown of concentrations

	Columbus Junction		East Chicago	
Deployment Period Coverage	May 2008-January2010		April 2008-March2010	
Environment	Indoor	Outdoor	Indoor	Outdoor
Number of Samples	65	68	68	67
Concentration (ng m ⁻³)				
min	0.59	0.10	0.47	0.03
median	3.0	0.80	1.5	0.40
mean	3.9	1.3	1.9	0.62
Standard deviation	4.4	1.6	1.4	0.65
max	29	12	6.1	3.8
skew	3.5	5.1	1.5	3.0

Contrary to expectations, East Chicago does not appear to have higher air concentrations of total PCBs than Columbus Junction. In fact, the largest average concentration quantified was Columbus Junction Indoor air. Indoor air shows higher concentrations than outdoor air as hypothesized but it also shows greater variation the outdoor air. There is little difference in variance though. When normalized to the mean values, the variance ranged from 70% to 120%. Inspecting concentrations in matched pairs, there are only a few instances where outdoor air shows higher concentrations than indoor levels. In order to better assess the data, congener profiles were created for each data group.

4.3 Congener Profiles

Samples were categorized by geographic location and local environment (indoor or outdoor sample). After this categorization the grouped samples were further examined via congener distribution. Each congener concentration was plotted in order of congener number against the fraction of the average total mass that was calculated (Figure 4-2).

As hypothesized, congeners that are present in the highest concentrations are those with fewer chlorines. The averaged profiles for indoor air appear to be very similar to the respective averaged outdoor air profiles. PCB congeners in the middle homolog groups were quantified at greater relative concentrations in East Chicago than in Columbus Junction. PCB 4, 8, 11, 20/28, 52, and 95 have high mass fractions for all categories. PCBs with two or more numbers listed (i.e. 20/28) indicates coelutions.

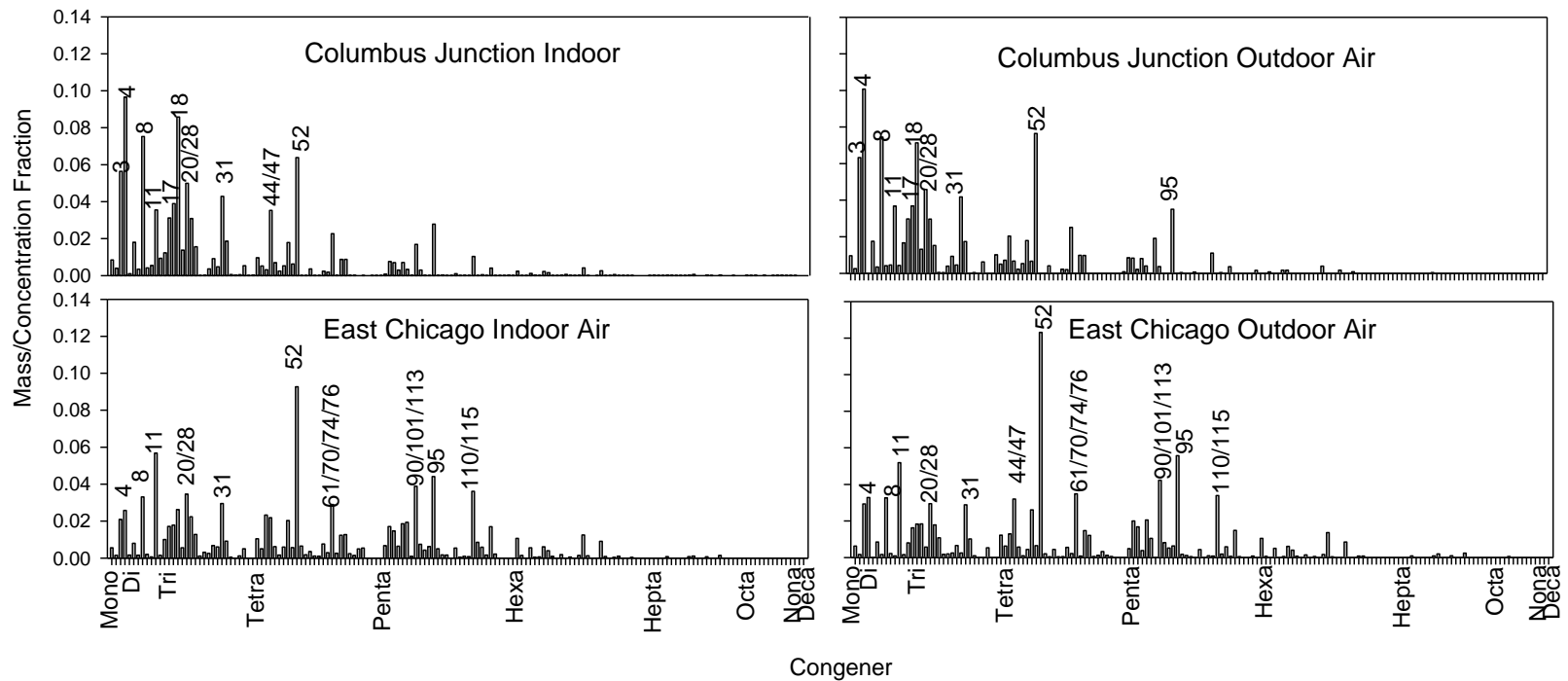


Figure 4-2: Average congener profiles for all of the study categories. The x-axis shows congeners ordered by common IUPAC classification and grouped into homolog group and the y-axis displays the mass fraction of the average total PCB concentration. Individual PCBs present in the highest concentrations are labeled.

4.4 Comparisons

The average congener profiles look very similar within each of the communities. The indoor profile for Columbus Junction is very similar to the outdoor profile, as is the case in East Chicago.

The average congener profiles look quite different between the two communities though. The greatest difference is observed for the congeners with 4, 5, and 6 chlorines. The average congener profile for East Chicago is enriched in these congeners relative to Columbus Junction. This may be an indication the heavier PCBs are staying more local and are being found closer to historical PCB inputs compared to lighter PCBs which would have a tendency to travel farther. This brings up an interesting idea regarding our finding of high concentrations in Columbus Junction. It is possible that because lighter PCBs tend to volatilize more than heavy PCBs, they are also more likely to leave the system and travel farther. This could be further examined with a temporal study examining which PCBs and how they transport. Or, the sources of PCBs are different in the two communities. For example, building materials could be important sources in both communities but the source or handling of the building materials may be different.

PCBs found in all sample groups with the highest relative concentrations include PCB 5, 20/28, 4, 31, 8, 11, 3 and 4. These compounds are all found in Aroclor mixtures sold by Monsanto for industrial use. PCB 11 is found in all sample groups and not present in Aroclor mixtures. PCB11 is an inadvertent by-product of the manufacturer of paint pigment[8]. No PCB congener, on average, makes up more the 14% of the total concentration.

4.4 Discussion

We hypothesized that East Chicago would have higher concentrations of PCBs in the air but we found that East Chicago does not show higher PCB air concentrations than Columbus Junction. This was not expected. The congener profiles of the different groups of samples show that lighter PCBs make up more of a majority of the total mass in Columbus Junction than in East Chicago.

We hypothesized and found that indoor air shows higher concentrations than outdoor air as expected. This would be interesting to look at the highest levels and get information regarding the building including age, location and materials. Age of the building is important because of the historical regulations or lack thereof of PCBs. Indoor air shows higher variation though which may be attributed to building diversity. Consideration of the characteristics, demographics, and activities of the people living in the homes sampled and the specific locations of homes is beyond the scope of this study. Such information is available for the larger study but is not considered at this time. In fact, funding for this study prohibits release of such information to protect the privacy of the participants.

This study is not the first to report higher indoor concentrations of PCBs in paired residential samples. Comparisons between indoor and outdoor air pollution using PCBs as an indicator was investigated by Menichini et al, (2007). The study was conducted to evaluate the significance of indoor air when assessing human exposure to PCBs and polycyclic aromatic hydrocarbons (PAHs). This objective is similar to the overall goals of the study by Menichini et al which included sampling in Rome in homes and buildings. Each site was examined at the floor and higher levels for indoor and outdoor environments to analyze any vertical gradients of PCBs and PAHs. To do this, samples were collected using low volume samplers with PUF plugs. PCBs were extracted from the PUF plugs in a similar manner using an ASE instrument with a 1:1 mixture of hexane

to acetone. Analysis was performed using gas chromatography with mass selective detection (GC-LRMS) and analyzed for a set of 62 congeners using ^{13}C -labelled PCB congeners with 3-8 chlorines attached. In addition to the smaller number of congeners analyzed, there are other important limitations of the Menichini study. The PCBs included in the set of 62 started in the third homolog group: no mono or di-chlorobiphenyls were considered. This does not account for PCBs in the first two homolog groups including PCB 3, 4, 8, and 11 which were quantified at relatively high concentrations for indoor and outdoor air in East Chicago and Columbus Junction. They sampled in a way to measure a vertical concentration gradient, if present. They did not find a significant vertical gradient of PCB concentrations for indoor and outdoor air. Menichini et al reported total PCB concentrations in outdoor air ranging from 1.9 to 5.4 ng m^{-3} [20]. This is consistent with the East Chicago and Columbus Junction concentrations which range from 0.03 to 3.8 ng m^{-3} and from 0.1 to 12 ng m^{-3} respectively. Indoor air total PCB concentrations for Rome were reported at levels ranging from 6.5 to 33 ng m^{-3} for the targeted 62 congeners. East Chicago indoor air concentrations ranged from 0.47 to 6.1 ng m^{-3} . Columbus Junction concentrations ranged from 0.59 to 29 ng m^{-3} which is consistent to the Rome study. The calculated indoor/outdoor ratios ranged from 2.4 to 4.2 ng m^{-3} for the Rome study. For East Chicago and Columbus Junction, this ratio was calculated to be 3.0 for both communities using mean concentrations (Table 4-2).

Because they found indoor concentrations to be consistently higher than outdoor concentrations, Menichini et al concluded that the results “were consistent with the hypothesis made by other researchers that building air may be a relevant source of PCBs for outdoor air”. The results from this East Chicago and Columbus Junction study also suggest this conclusion not only with the indoor/outdoor total concentration comparison but also shown by the congener profile distributions for the sampling categories. That is, there are similarities upon observation of congener profiles for indoor and outdoor air

within the two community's differences between the two communities themselves. Of course there may be other explanations for the similarities, as discussed above.

Bohlin et al (2011) examined persistent organic pollutants, including PCBs, in indoor and outdoor air for Mexico City; Gothenburg, Sweden; and Lancaster, England[16]. This study, similarly to the East Chicago and Columbus Junction study, used passive samplers and PUF disks to assess the air. Samplers were deployed for times ranging from 42-50 days in each Mexico City, Gothenburg and Lancaster for one sampling period between March to April of 2006. 13, 5 and 17 indoor samples were collected in each of the respective cities and 5, 5, and 1 outdoor samples were collected respectively. Sampling in Mexico City was conducted in both urban and semi-rural locations. Targeted chemicals were extracted by reflux in Soxhlets with DCM and spiked using ^{13}C -labelled surrogate standards. 80% of each PUF was used for the analysis of PCBs using GC-MS looking for a targeted group of 43 PCBs ranging from 3 to 8 chlorine atoms.

Bohlin et al was also very concerned about the determination of the appropriate sampling rates. They used average sampling rates of $2.5 \text{ m}^3 \text{ day}^{-1}$ for indoor air and $3.5 \text{ m}^3 \text{ day}^{-1}$ for outdoor air and defended these choices as appropriate for the sampling used in their study. For our study, sampling rates of 2.6 and $6.2 \text{ m}^3 \text{ day}^{-1}$ for outdoor air and indoor air respectively were chosen. These were determined to be the most useful numbers for interpretation because they were calculated for the same sampling apparatus used in the study by Persoon et al[13].

For indoor air in urban and semi-rural Mexico City, Gothenburg, and Lancaster, indoor concentrations for the 43 targeted congeners were reported to have median values of 0.46, 0.19, 0.89, and 0.86 ng m^{-3} respectively. For outdoor air they were reported to be 0.44, 0.15, 0.12, and 0.12 ng m^{-3} . These numbers are low compared to East Chicago indoor air concentrations but the study was not looking at all congeners, and most

notably, their study excluded congeners in the first two homolog groups. I/O ratios were consistently larger than one (Table 4-2).

A study published by Zhang et al (2011) reported the life cycle of PCBs and polybrominated diphenyl ethers in indoor environments[6]. This was accomplished by examining congener profile distributions of air and potential indoor sources. One goal of the paper was to show that indoor air is a significant source of PCBs (and PBDEs) to the outdoor environment. This study also used passive samplers with PUF disks as the media. PUFs were cleaned and sampled for 27-38 days. The study examined 20 indoor locations in Toronto including offices, homes, and laboratories. The total PCB concentrations reported by Zhang et al ranged from 0.8 to 130.5 ng m⁻³ with a mean value of 15.3 ng m⁻³. This is higher than those reported in Columbus Junction and East Chicago. Examining congener profiles, PCB 18/17, 31/28, and 52 were quantified to have relatively high concentrations which is similar to indoor air in both East Chicago and Columbus Junction. PCB 11 was not included in their analysis, however. They examined partitioning from different materials including dust particles, carpet, and polyurethane in furniture for emission rates. The office that was extensively examined in the study showed PCB concentrations about 30 times higher than the local outdoor air. It was suggested that these environments may be an emission reservoir to outdoor air. The authors cited the congener profile distributions and that the I/O ratio is greater than one as evidence.

Table 4-2: Comparison of indoor and outdoor total PCB concentrations with other published studies using PAS-PUF samplers

	Location	Sampling		Air Concentrations (ng m ⁻³)		
		Method	Rate (m ³ day ⁻¹)	Environment	range	mean
This Study	Columbus Junction, Iowa	PAS-PUF	2.6	Indoor	0.59-29	3.9
			6.2	Outdoor	0.1-12	1.3
	East Chicago, Indiana	PAS-PUF	2.6	Indoor	0.47-6.1	1.9
			6.2	Outdoor	0.03-3.8	0.62
Bohlin et al (2008)	Mexico City Urban	PAS-PUF	2.5	Indoor	0.21-0.84	0.46
			3.5	Outdoor	0.23-0.66	0.43
	Mexico City Semi-rural	PAS-PUF	2.5	Indoor	0.10-0.32	0.16
			3.5	Outdoor	0.09-0.21	0.15
	Gothenburg, Sweden	PAS-PUF	2.5	Indoor	0.33-1.6	0.5
			3.5	Outdoor	0.06-1.7	0.12
	Lancaster, UK	PAS-PUF	2.5	Indoor	0.15-2.1	0.62
			3.5	Outdoor	0.12	0.12
Zhang et al (2011)	Toronto, Canada	PAS-PUF	0.7-1.27	Indoor	0.8-130.5	15.3

Airborne PCBs may pose a unique toxicological risk. Xin Hu et al. have examined the uptake mechanism in rats of this air mixture via inhalation and suggested that inhalation can be an important exposure pathway of lower chlorinated PCBs[21]. Although an under studied exposure there are some studies that have explicitly examined inhalation impacts. For example, a study by Senthilkumar et al (2011) examined the effects of PCBs on telomerase activity and telomere length. This study is interesting because it examines PCBs that are more volatile which are uncommonly analyzed in terms of toxicology but are readily found in air.[22] This study used a mixture described as a synthetic Chicago Airborne Mixture (CAM) of PCBs. The goal of the study was to examine the mechanism of toxicity or more specifically of carcinogenicity of PCBs by examining the effects on an enzyme involved in chromosomal ending activity, telomerase

in which the shortening of telomeres is associated with cancer. Cultures of these cells from human skin were exposed to PCB 28, 52 and the CAM of PCBs at continuous doses of 5 μ M for 48 days and examined every 6 days for telomerase activity, telomere length, and cell growth.

PCBs were shown to reduce telomerase activity from the 18th day to the 48th day of exposure. PCB 28 and 52 showed a 30-35% reduction and the CAM showed a 20-28% reduction. Telomere length was reduced by all mixtures by as much as 40% by PCB 52 and by as little as 5% by the CAM. It is interesting that the mixture produced less significant results, but this makes sense because it is the same dosage of for each exposure group but the mixture would show dilution effects if PCBs 52 and 28 are weighted to show more potent effects.

Limitations and uncertainties do exist in this work. Sample handling by residents involve in the study is an area of uncertainty that is hard to measure. Laboratory analysis was done in a way to assure consistency and correction as needed via quality control methods. Background PCB contamination, analytical error and bias could affect the data. Samples were prepared under a hood and lab blanks were analyzed for each batch. Laboratory blanks showed less than 5% of average sample mass for all batches. The sampling rates selected provide a large portion of uncertainty in concentration calculations. Further work is being performed currently to create more confidence in sampling rate selection. Thorough records are kept to assure correctness of metadata.

4.5 Summary and Conclusions

Airborne PCB concentrations were examined in two communities—East Chicago, Indiana, an urban community and Columbus Junction, Iowa, a rural community. Passive air samplers were deployed for 90 day time intervals using PUF disks as sampling media indoors and outdoors of resident's homes of the two communities. The Objectives were to compare indoor and outdoor PCB concentrations and to compare community differences using total PCB concentrations and congener distributions. As hypothesized, indoor air concentrations of PCBs were found to be greater than outdoor concentrations. Contrary to what was hypothesized, East Chicago outdoor air concentrations were not found to be greater than Columbus Junction concentrations. This study examined a large suite of PCBs (158 congener peaks) and this congener-specific method allows for a more detailed evaluation of PCB sources and potential risk to exposure. The congener profiles showed a majority of PCBs being lower chlorinated congeners but profiles for East Chicago showed higher relative concentrations of congeners with 4, 5, and 6 chlorines. Other studies have also found higher concentrations indoors and compare indoor and outdoor concentrations using an indoor/outdoor ratio, which is above one in all studies examined.

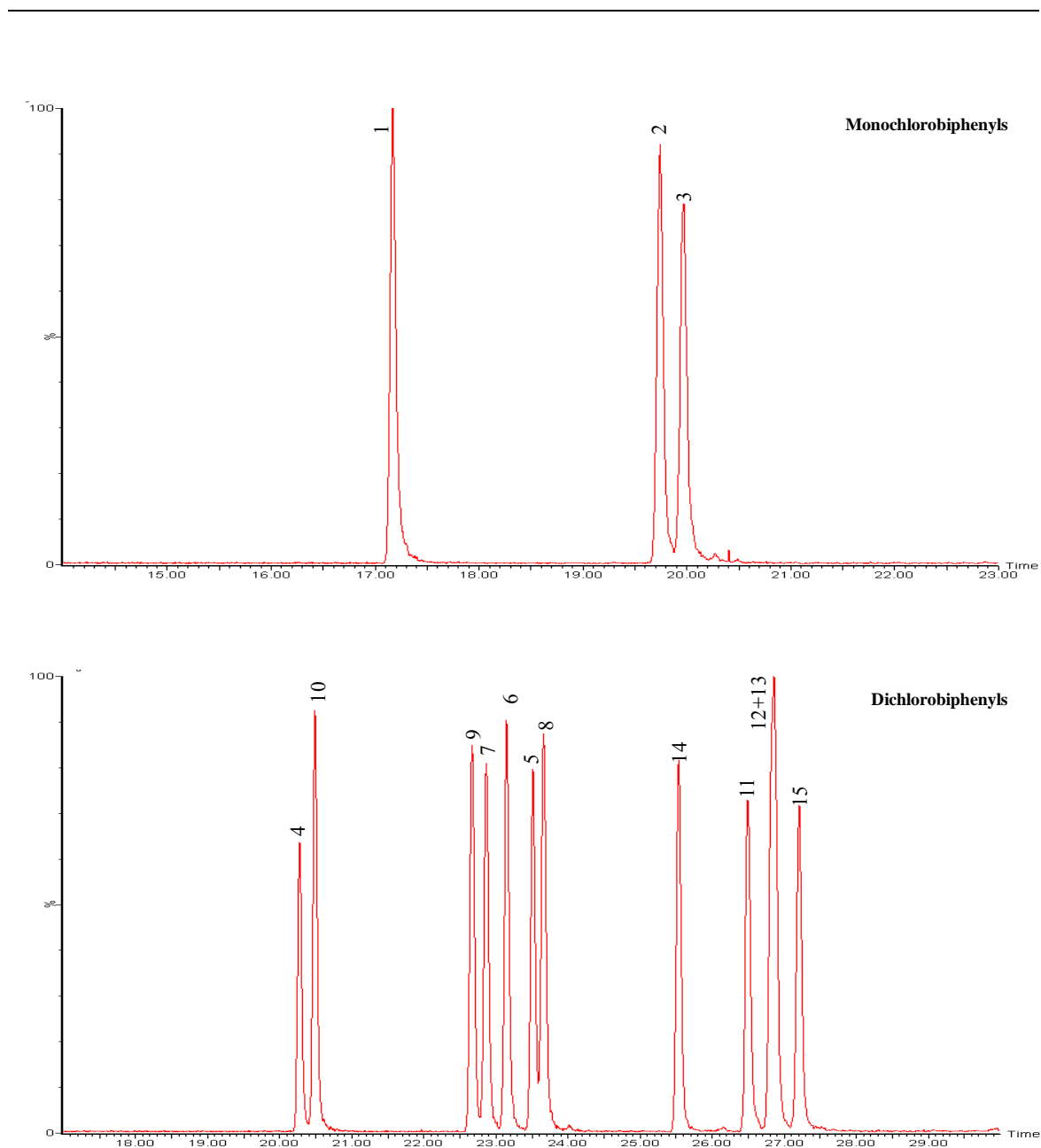
REFERENCES

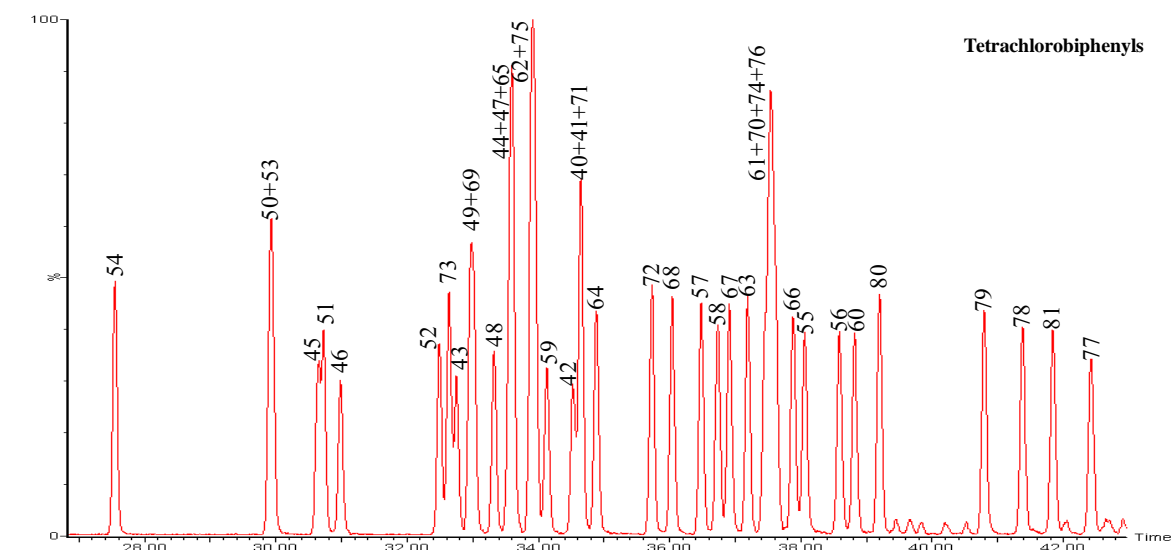
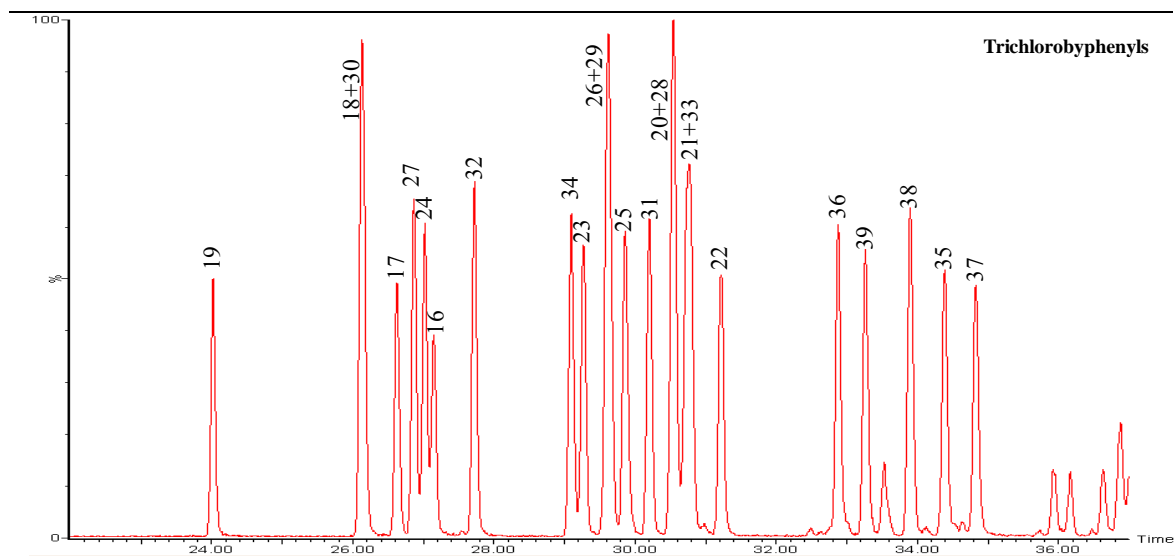
1. Hornbuckle, K.; Carlson, D.; Swackhamer, D.; Baker, J.; Eisenreich, S., Polychlorinated Biphenyls in the Great Lakes
Persistent Organic Pollutants in the Great Lakes. In Hites, R., Ed. Springer Berlin / Heidelberg: 2006; Vol. 5N, pp 13-70.
2. ATSDR *Toxicological profile for polychlorinated biphenyls (PCBs)*; U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry: 2000; p 948.
3. Organization, W. H. *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Supplement 7*; 1987.
4. Van den Berg, M.; Birnbaum, L. S.; Denison, M.; De Vito, M.; Farland, W.; Feeley, M.; Fiedler, H.; Hakansson, H.; Hanberg, A.; Haws, L.; Rose, M.; Safe, S.; Schrenk, D.; Tohyama, C.; Tritscher, A.; Tuomisto, J.; Tysklind, M.; Walker, N.; Peterson, R. E., The 2005 World Health Organization reevaluation of human and mammalian toxic equivalency factors for dioxins and dioxin-like compounds. *Toxicol Sci* **2006**, *93*, (2), 223-241.
5. Giesy, J. P.; Kannan, K., Dioxin-like and non-dioxin-like toxic effects of polychlorinated biphenyls (PCBs): Implications for risk assessment. *Crit Rev Toxicol* **1998**, *28*, (6), 511-569.
6. Zhang, X. M.; Diamond, M. L.; Robson, M.; Harrad, S., Sources, Emissions, and Fate of Polybrominated Diphenyl Ethers and Polychlorinated Biphenyls Indoors in Toronto, Canada. *Environ Sci Technol* **2011**, *45*, (8), 3268-3274.
7. Martinez, A.; Wang, K.; Hornbuckle, K. C., Fate of PCB congeners in an industrial harbor of Lake Michigan. *Environ Sci Technol* **2010**, *44*, (8), 2803-8.
8. Hu, D.; Hornbuckle, K. C., Inadvertent polychlorinated biphenyls in commercial paint pigments. *Environ Sci Technol* **2010**, *44*, (8), 2822-7.
9. Balfanz, E.; Fuchs, J.; Kieper, H., Sampling and Analysis of Polychlorinated-Biphenyls (Pcb) in Indoor Air Due to Permanently Elastic Sealants. *Chemosphere* **1993**, *26*, (5), 871-880.
10. Wallace, J. C.; Basu, I.; Hites, R. A., Sampling and analysis artifacts caused by elevated indoor air polychlorinated biphenyl concentrations. *Environ Sci Technol* **1996**, *30*, (9), 2730-2734.
11. Palmer, P. M.; Belanger, E. E.; Wilson, L. R.; Hwang, S. A. A.; Narang, R. S.; Gomez, M. I.; Cayo, M. R.; Durocher, L. A.; Fitzgerald, E. F., Outdoor air PCB concentrations in three communities along the Upper Hudson River, New York. *Arch Environ Con Tox* **2008**, *54*, (3), 363-371.

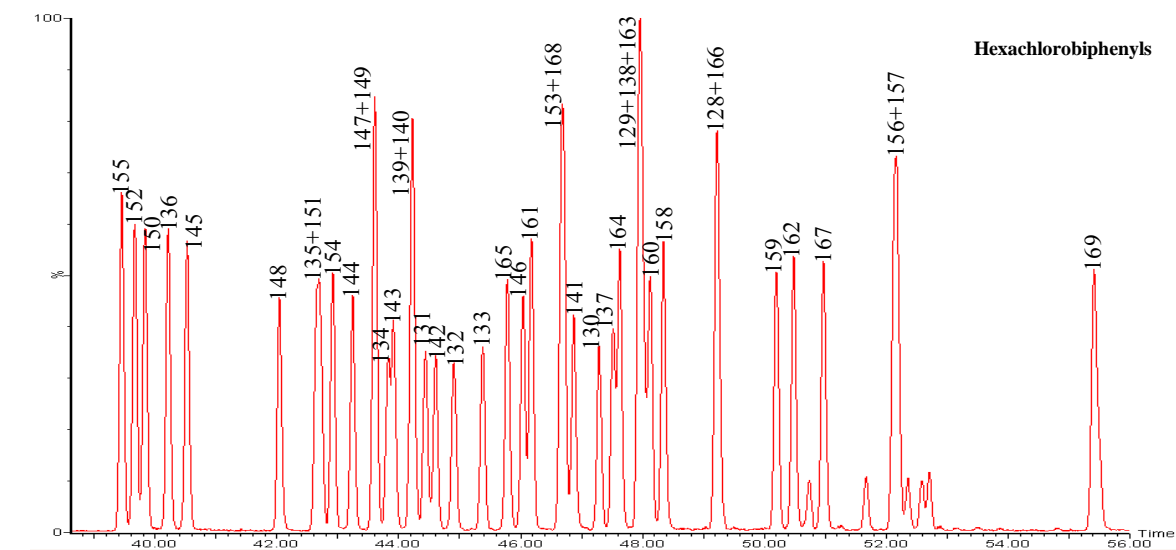
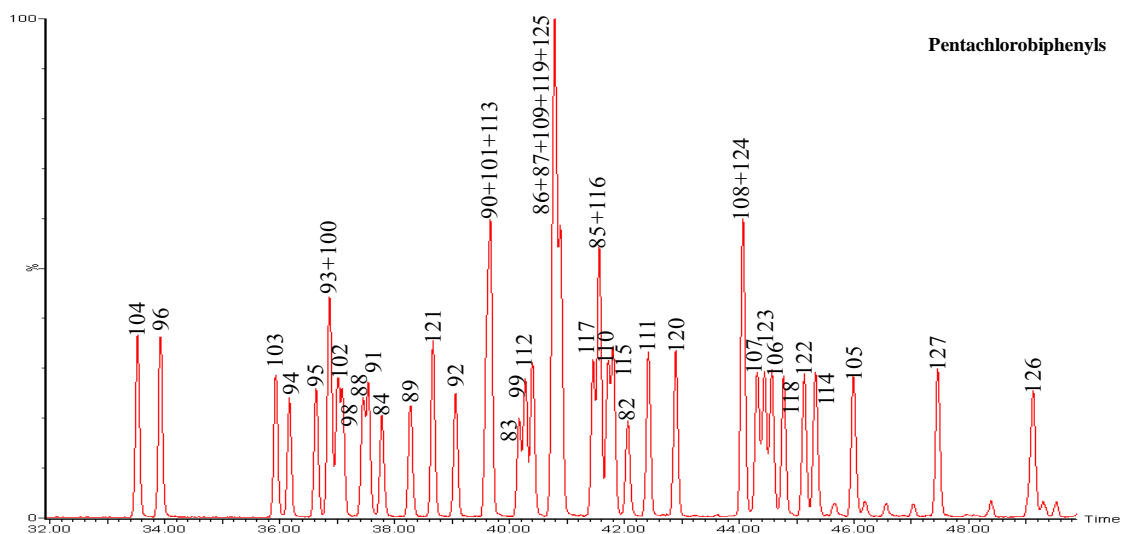
12. Holsen, T. M.; Choi, H. D.; Pagano, J. J.; Milligan, M. S.; Hopke, P. K.; Skubis, S., Polychlorinated biphenyls (PCB) and dichlorodiphenyltrichloroethane (DDE) air concentrations in the Lake Ontario region: Trends and potential sources. *Atmos Environ* **2010**, *44*, (26), 3173-3178.
13. Persoon, C.; Hornbuckle, K. C., Calculation of passive sampling rates from both native PCBs and depuration compounds in indoor and outdoor environments. *Chemosphere* **2009**, *74*, (7), 917-23.
14. Harner, T.; Shoeib, M.; Diamond, M.; Stern, G.; Rosenberg, B., Using passive air samplers to assess urban - Rural trends for persistent organic pollutants. 1. Polychlorinated biphenyls and organochlorine pesticides. *Environ Sci Technol* **2004**, *38*, (17), 4474-4483.
15. Wethington, D. M.; Hornbuckle, K. C., Milwaukee, WI, as a source of atmospheric PCBs to Lake Michigan. *Environ Sci Technol* **2005**, *39*, (1), 57-63.
16. Bohlin, P.; Jones, K. C.; Tovalin, H.; Strandberg, B., Observations on persistent organic pollutants in indoor and outdoor air using passive polyurethane foam samplers. *Atmos Environ* **2008**, *42*, (31), 7234-7241.
17. Hazrati, S.; Harrad, S., Calibration of polyurethane foam (PUF) disk passive air samplers for quantitative measurement of polychlorinated biphenyls (PCBs) and polybrominated diphenyl ethers (PBDEs): Factors influencing sampling rates. *Chemosphere* **2007**, *67*, (3), 448-455.
18. USEPA Method 3545. *Pressurized Fluid Extraction. Test Methods for Evaluating Solid Waste, 3rd ed., update III*; 1995.
19. USEPA Method 1668B: *Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS*; 2008.
20. Menichini, E.; Lacovella, N.; Monfredini, F.; Turrio-Baldassarri, L., Relationships between indoor and outdoor air pollution by carcinogenic PAHs and PCBs. *Atmos Environ* **2007**, *41*, (40), 9518-9529.
21. Hu, X.; Adamcakova-Dodd, A.; Lehmler, H. J.; Hu, D. F.; Kania-Korwel, I.; Hornbuckle, K. C.; Thorne, P. S., Time Course of Congener Uptake and Elimination in Rats after Short-Term Inhalation Exposure to an Airborne Polychlorinated Biphenyl (PCB) Mixture. *Environ Sci Technol* **2010**, *44*, (17), 6893-6900.
22. Senthilkumar, P. K.; Klingelutz, A. J.; Jacobus, J. A.; Lehmler, H.; Robertson, L. W.; Ludewig, G., Airborne polychlorinated biphenyls (PCBs) reduce telomerase activity and shorten telomere length in immortal human skin keratinocytes (HaCat). *Toxicology Letters* **2011**, *204*, (1), 64-70.

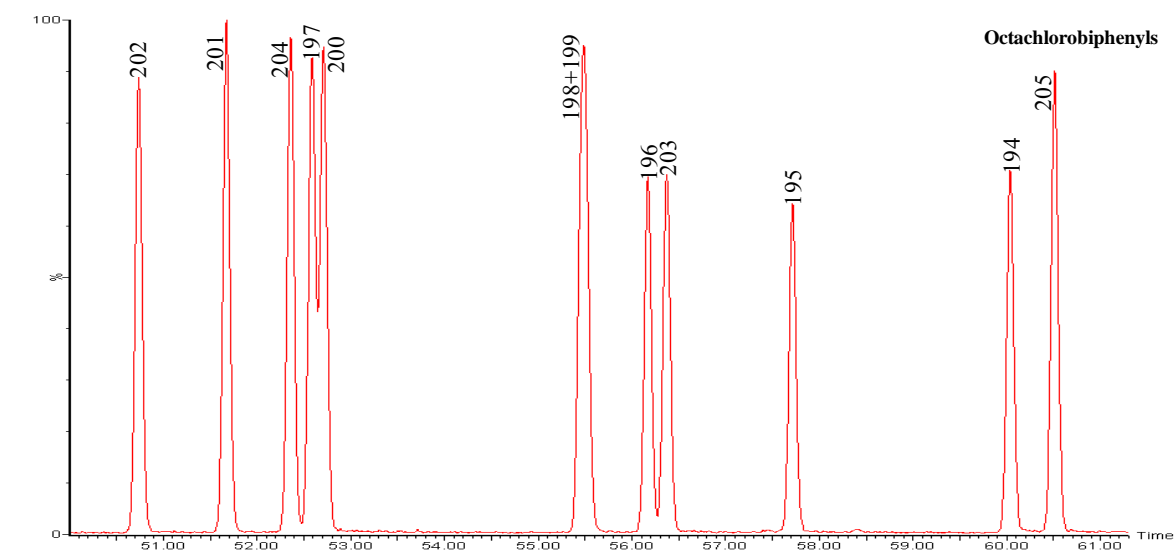
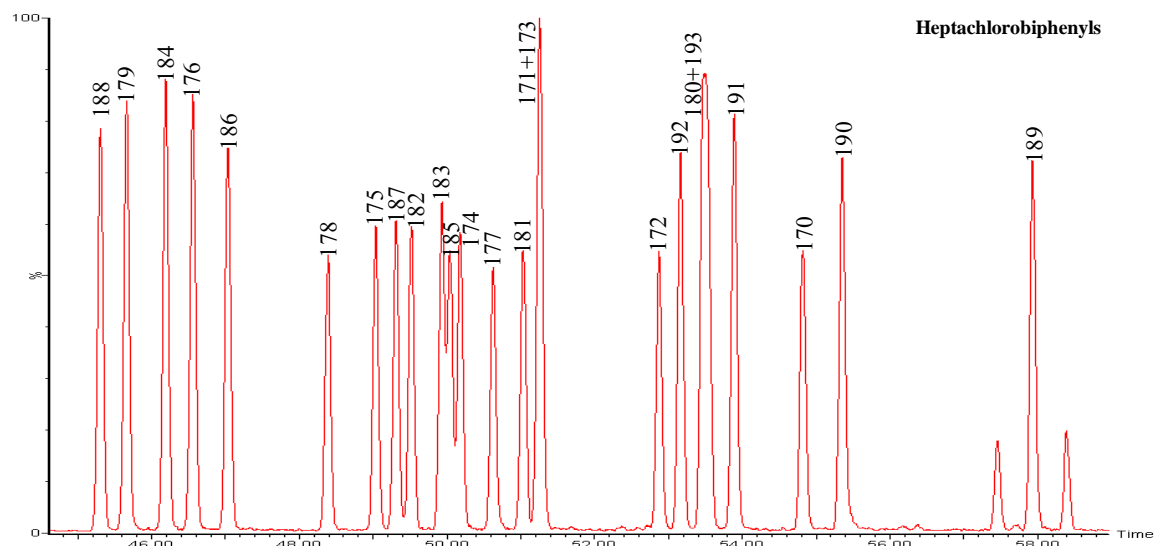
APPENDIX A SUPPLEMENTAL MATERIAL

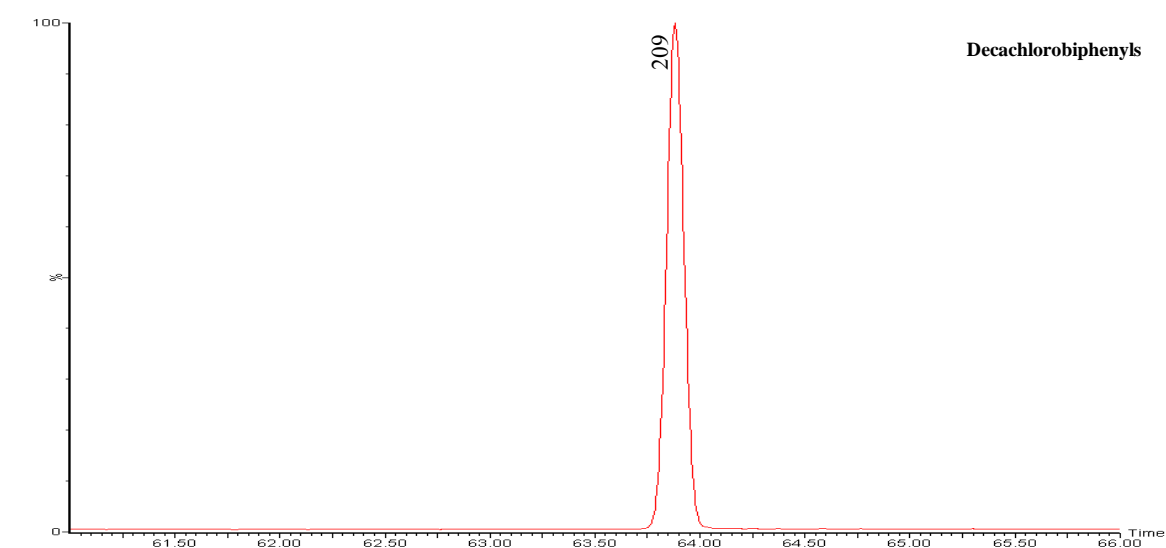
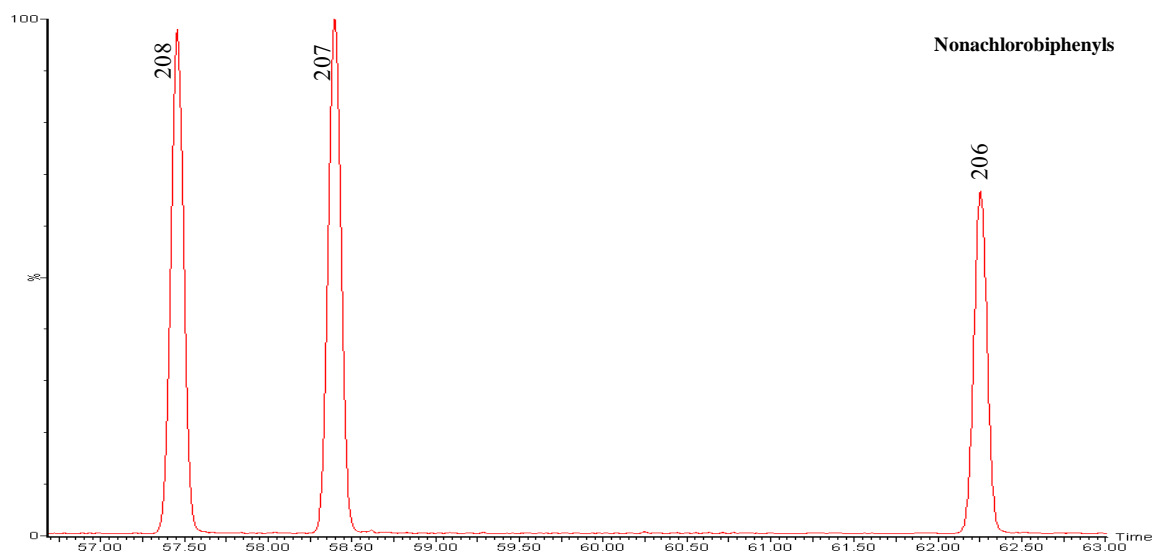
Figure A-1: Calibration standard showing retention time in the x axis and percentage of area relative to the highest peak in the y axis. Congeners are label for each peak and each homolog group is shown











37	0.6	21.1	0.9	0.5	0.4	4.1	2.9	2.2
28								
39					0.1			
Tetrachlorobiphenyls								
40/41/71	1.4	35.2	2.4	1.7		7.6	4.4	5.1
42	0.2	7.2	0.1	0.7	0.2	1.2	3.6	0.7
43/73	0.1	11.4	10.4	6.9		39.2	40.1	31.8
44/47/65								
45	0.5	4.1	1.5	0.5	0.2	1.0	2.9	0.8
46	0.1	3.9	0.5		0.1	1.3	0.1	0.6
48	1	11.3	1	0.8	1.2	3.6	2.5	2.3
49/69	2.6	25.6	3.4	2.9	3	13.1	11.5	9.1
50/53		6	0.9	0.1		3.3	2.8	0.4
52	8.1	43.4	11.2	12.1	8.2	47.2	47.2	38.0
54	0.1							
55		1.1				0.2		
56	0.2	24.9	0.5	0.7		3.0	2.0	1.5
57		0.2						
58			0.1	0.1		0.1		
59	0.2	19.2	0.5	1.1	1.3	9.7	1.1	6.4
60	0.1	15.3	0.3		0.1	1.5	1.2	0.6
61/70/74/76	0.7	19.5	1	1.2	0.5		14.6	11.6
63		1.8	0.1			1.0	0.2	0.1
64	1.4	20.8	0.8	1.5	1.8	6.5	5.4	4.2
66	0.4	41.8	1.9	1.6	1.6	6.5	4.6	3.6
67		1.7	0.1	0.1		0.1		0.1
68	0.1	0.2		0.1		0.1		
72	0.1							
77	0.1	5.5				0.2	0.3	
78			0.1					
79	0.1							
80						0.1		0.0
81				0.1	0.1			
Pentachlorobiphenyls								
82		4.4	0.2	0.1	0.3	1.4	0.7	
83/99	2	7.9	3.8	1.4	0.7	15.7	7.9	7.0
84	0.4	6.5	1.8	2.7	1.3	6.4	4.5	3.8
85/116/117	0.3	8.9	1.1	0.8	0.3	4.5	1.8	2.0
86/87/97/109/119/12	0.6	8.9	2	1.7	0.6	4.5	2.3	1.6
88/91		4.1	0.4	1.4	0.7	2.9	2.4	1.9
89						0.1		0.1
90/101/113	1.4	14.1	5.6	6.4	3.2	19.3	12.2	8.5
92	0.3	2.5	1	0.6	0.4	3.6	2.1	1.6
93/100						0.2		0.7
94	0.1			0.1	0.5	0.3	0.1	0.1

95	3.5	13	5.9	8.2	4.1	23.4	20.0	14.9
96					0.1		0.0	0.1
98/102		0.2	0.1	0.3		0.8	0.4	0.1
103						0.1		
104								
105	0.1	6.8			0.1	3.1	0.2	0.1
106								
107/123	0.1	0.1		0.4	0.6	1.5	0.7	0.8
108/124	0.1			0.4	0.6	1.0	0.4	0.7
110/115	2.9	34.9	7.9	9	4.5	18.6	7.5	5.3
111								
112		0.8		0.2	0.5	8.8	4.5	3.4
114		0.6						
118	0.6	11.8	1.6	1.6	1.2	11.2	2.5	1.7
120	0.1			0.1	0.1		0.0	
121						0.0	0.1	
122						0.1		
126			0.1			0.0		
127								

Hexachlorobiphenyls

129/138/163	0.1	2.2	0.3	0.9	0.1	8.5	0.4	
130				0.1		0.3		0.0
131		0.3		0.1			0.1	
132	0.1	0.4	0.6	0.7		3.2	0.7	0.4
133	0.3		1.5					0.2
134/143					0.2	0.4	0.1	
135/151	0.3	0.1	0.1	0.3	0.1	4.8	0.4	0.2
136	0.1	0.4	0.5	0.3	0.2	2.0	1.0	0.7
137/164		0.1						
139/140						0.2		
141		0.1				2.3	0.1	
142							0.1	
144						1.0	0.1	
145		0.1				0.1		
146		0.1				1.0	0.0	0.0
147/149	0.8	2.4	0.8	1.6	0.8	9.9	2.3	1.6
148								
150								0.0
152								0.0
153/168	0.1	1.2	0.1	0.4	0.1	8.6	0.2	0.2
154		0.1				0.1		
155						0.0		
156/157	1.7	0.5	0.6	0.2	0.1	0.7		0.1
158						0.8	0.0	
159								

160			0.1			
161	0.1			0.2	0.0	0.0
162						
165						
167						0.0
169						
Heptachlorobiphenyl						
170	0.1		0.1	0.7		
171/173				0.8		
172				0.1		
174	0.1			1.2		
175						
176				0.1	0.1	
177			0.1	1.2		
178				0.2		
179				1.5	0.1	
180/193	0.1			3.3	0.1	
181						
182						
183/185	0.2	0.1		2.7		0.1
184						
186						
187				3.0		0.1
188						
189						
190				0.1		
191						
192			0.1			
Octachlorobiphenyls						
194	0.1			0.4		
195		0.1			0.0	
196				0.1		
197		0.1			0.0	
198/199		0.1		0.5	0.1	
200		0.1				
201		0.1		0.1		
202				0.3		
203				0.3		
205	0.1		0.1			
Nonachlorobiphenyls						
206						
207				0.12		
208		0.1				
Decachlorobiphenyls						
209						

Recoveries								
14	53%	55%	49%	57%	63%	83%	73%	66%
d-65/65	85%	90%	85%	85%	95%	131%	165%	100%
166	77%	88%	76%	89%	96%	81%	75%	74%
Monochlorobiphenyls								
Batch I.D.	0091-01	0091-03	0091-05	0091-08	0110-01	0110-03	0110-05	0110-07
Sample I.D.	6203412P	6203812P	6204012P	6204412P	6200118P 05182009	6200318P 05222009	6200518P 05232009	6200918P 05232009
Deployment Date	5/19/2008	5/24/2008	5/24/2008	5/28/2008	2/12/2009	2/14/2009	2/14/2009	2/10/2009
Collection Date	8/30/2008	8/30/2008	8/30/2008	8/30/2008	5/18/2009	5/22/2009	5/23/2009	5/23/2009
Monochlorobiphenyls								
1	3	2.1	2.8	1.3	12.85	7.73	4.62	4.25
2	0.6	0.5	0.6	0.3	1.43	1.25	0.69	0.72
3	3.1	2.7	4.5	1.3	43.65	21.90	26.65	21.34
Dichlorobiphenyls								
4	16.8	8.6	11.8	6.4	104.53	15.52	15.52	7.42
5		0.1	0.2	0.1	4.48	0.70	0.60	0.37
6	7.9	4	5.2	2.8	7.05	1.65	0.97	0.81
7	1.2	0.7	0.9	0.5	4.74	1.28	0.82	0.56
8	41	16.6	25.7	14.1	20.17	4.79	3.37	1.88
9	2	1.3	1.1	0.8	1.78	0.50	0.18	
10	0.3	0.3	0.5		86.70	18.91	11.69	7.70
11	26.6	36	24.5	9.1	31.01	45.83	22.74	14.76
12/13	1.9	0.2	1.3	0.7	2.55	1.13	0.87	0.49
15	16.2	3.8	9.9	4.5	11.01	3.76	2.18	1.46
Trichlorobiphenyls								
16	27.1	7	15.6	8.6	28.99	7.63	4.32	2.77
17	25.9	9.2	17.1	9.3	32.20	7.50	4.90	3.26
18/30	19.8	20.2	18.3	17.4	77.25	17.12	12.00	7.03
19	4.8	1.8	2.6	1.5	12.77	2.28	1.74	0.88
20/28	59.4	11	31.8	18.3	76.93	25.97	16.06	11.21
21/33	42.5	8.5	24.1	13.2	34.99	12.17	7.55	5.02
22	22.4	3.4	11	6.3	11.94	4.09	2.42	1.74
23	0.4	0.1	0.1					
24								
25	4.9	1	2.1	1.6	3.97	1.38	0.76	0.72
26/29	11.8	1.9	6.1	3.4				
27	2.5	0.6	1.4	1	3.94	1.01	0.54	0.39
31	61.7	11.5	33.1	18.9	3.00	1.23	0.56	0.42
32	14.4	3.5	8.3	4.6				
34			0.1		16.54	4.33	2.67	1.84
35	0.6	0.2		0.1				
36				0.1	11.94	4.50	2.63	1.91
37	9.9	1.2	4.3	2.5	3.09	1.70	1.31	
28								
39			0.1					

Tetrachlorobiphenyls								
40/41/71	22.9	3.3	11.7	5.4		4.01	2.30	1.84
42					11.35	2.18	1.47	
43/73								
44/47/65	96.9	45.5	69	54	44.22	14.71	12.98	9.80
45	9.4	4.6	6.9	3.1	4.48	2.04	1.28	0.99
46	2.4		0.7	1	2.20	0.91		
48	6.4	0.8	4.3	3	5.52	2.22	1.15	0.94
49/69	42	8	25.9	15.7	27.19	7.33	7.22	4.67
50/53	9.2	1.9	5.6	3.9	8.24	2.53	1.90	0.75
52	203.5	35.3	115.1	83.3	117.79	26.93	31.70	21.47
54								
55								
56	9.9	2.3	5.9	4.4	3.62	2.09	1.46	
57								
58								
59/62/75	12.8	2.3	8	3.7	5.65	0.68	0.39	
60	2.7	0.5	2.6		1.19	1.18	0.69	
61/70/74/76	52.8	12.6	43.7	22.2	27.22	12.20	10.87	5.84
63								
64	18.5	3.5	12.2	7.4	11.72	3.98	3.32	2.29
66	15.2	3	11.3	6.2	9.11	4.42	3.15	2.05
67								
68		1.7				0.70		
72								
77								
78								
79								
80								
81								
Pentachlorobiphenyls								
82	1.5	0.5	2.4	0.6		1.26	0.99	
83/99	17.2	4.4	19.8	7.6	10.34	5.82	5.60	2.40
84	16.5	4.3	14.9	7.5	11.58	3.71	3.93	2.04
85/116/117	2.8	1.1	1.6	0.9	2.09	2.01	1.88	1.77
86/87/97/109/119/12	12.4	4.7	15.6	5.5	11.80	7.88	6.66	1.13
88/91	7.6	1.7	7.7	3.6	6.29	1.76	2.14	0.84
89								
90/101/113	34.4	10.6	39.7	16.9	23.33	12.26	11.91	5.53
92	6.7	1.6	6.5	3.4	4.64	2.07	2.12	1.12
93/100	0.7	0.4	0.6	0.6				
94								
95	84	19.4	73.7	40.3	48.83	12.73	15.43	9.27
96	0.7	0.1	0.5	0.3				
98/102					1.13			

165

167

169

Heptachlorobiphenyls

170					0.84	
171/173						
172					0.60	
174	0.2	0.2	0.4	0.1	1.87	
175						
176	0.1	0.1	0.1		0.50	0.40
177	0.1		0.2		0.96	
178	0.1				0.59	
179	0.4	0.2	0.4	0.1	1.51	
180/193	0.2	0.3	0.4	0.1	3.28	0.48
181						
182						
183/185	0.3	0.2	0.3		2.13	
184						
186						
187	0.5	0.2	0.5	0.1	3.25	0.62
188						
189						
190					0.37	
191						
192						

Octachlorobiphenyls

194						
195						
196					0.45	
197						
198/199					1.05	
200						
201						
202					0.47	
203					0.62	
205						

Nonachlorobiphenyls

206

207

208

Decachlorobiphenyls

209

39

Tetrachlorobiphenyls								
40/41/71	5.82	3.6	5.6	1.5	5.8	2.8	1.5	4.1
42	4.06	2.1		0.8	2.8	1.3	0.9	2.0
43/73			0.3			0.2		
44/47/65	32.01	13.0	9.4	6.6	13.6	7.8	5.3	10.9
45	2.35	2.3	2.8	1.1	3.3	2.1		1.2
46	1.39	0.7	0.3	0.3	1.1	0.4		0.7
48	3.86	1.9	1.3	0.8	3.0	1.1	0.9	2.0
49/69	20.77	11.9	5.6	5.9	13.3	6.1	3.0	5.7
50/53	6.21	2.2	1.1	1.2	3.2	1.3	0.8	2.0
52	99.31	23.4	8.0	12.0	19.7	9.6	9.4	19.5
54								
55								
56	2.60	1.8	1.3	0.6	1.9	0.9	0.8	2.3
57								
58								
59/62/75	0.89	0.6	0.4	0.3	0.6	0.4		0.7
60	1.48	0.9	0.8	0.3	0.9	0.6	0.5	1.6
61/70/74/76	21.81	11.5	6.4	5.3	11.2	5.2	4.7	10.3
63								
64	8.81	4.0	2.1	1.9	4.4	2.0	1.6	3.5
66	6.89	4.5	2.9	1.7	4.7	1.9	2.0	5.0
67								
68		0.4	0.8			0.3		
72								
77								
78								
79								
80								
81								
Pentachlorobiphenyls								
82	15.68	0.8		0.2		0.2		0.7
83/99	7.23	4.5	1.9	2.1	3.9	1.7		1.6
84	8.86	3.8	1.4	2.0	3.3	1.6	1.1	2.2
85/116/117	7.81	1.7	0.4	0.9	1.4	0.9	0.6	0.6
86/87/97/109/119/12		5.8	2.4	2.2	4.9	1.3		1.1
88/91	4.61	1.7	0.6	1.0	1.3	0.8	0.3	0.6
89								
90/101/113	18.34	9.8	4.1	4.6	9.2	3.8	2.9	6.1
92	3.62	1.9	0.8	0.9	2.0	0.7	0.6	1.2
93/100								
94								
95	40.11	14.7	4.8	7.6	12.0	5.8	3.9	8.0
96	0.57							

162	
165	
167	
169	1.5
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Heptachlorobiphenyl	
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170	
171/173	0.3
172	
174	
175	
176	
177	
178	
179	0.2
180/193	
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183/185	
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Octachlorobiphenyls	
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Nonachlorobiphenyls	
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Decachlorobiphenyls	
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Recoveries								
14	83%	81%	83%	82%	91%	84%	85%	83%
d-65/65	74%	81%	82%	77%	83%	80%	82%	79%
166	124%	110%	106%	97%	107%	104%	116%	116%

Batch I.D.	0112-05	0112-07	0113-01	0113-03	0113-06	0113-08	0114-01	0114-03
Sample I.D.	6205018P 05242009	6209414P 05222009	62062160 3092009	62072140 3082009	62056160 3082009	6209614P 05162009	6201614	6203212
Deployment Date	3/2/2009	2/14/2009	12/5/2008	12/18/200	12/14/200	2/14/2009	9/11/2008	9/28/2008
Collection Date	5/24/2009	5/22/2009	3/9/2009	3/8/2009	3/8/2009	5/16/2009	12/23/200	1/10/2009

Monochlorobiphenyls								
1	6.8	5.8	16.9	66.8	11.6	6.2	7.39	5.5
2	1.3	1.0	2.5	22.0	2.5	1.3	48.62	0.8
3	80.1	29.3	105.3	169.9	42.3	26.8		50.7

Dichlorobiphenyls								
4	96.7	27.1	44.3	85.9	15.6	19.3	134.97	231.8
5	0.7		0.9	13.3				
6	12.1	6.3	9.9	80.0	4.7	4.5	15.48	21.3
7	2.4	1.4	2.3	20.7	1.6	1.0	2.30	3.3
8	53.7	23.9	40.9	319.8	18.5	16.3	62.04	83.1
9	2.9	1.9	3.3	25.0	2.3	1.3	2.96	3.8
10	3.5	1.0	1.8	5.2	0.8	0.8	4.60	7.6
11	22.3	26.8	12.1	17.4	17.7	32.0		45.5
12/13	1.1	1.0	1.8	39.8	1.1	0.9	48.08	1.6
15	5.1	3.4	6.7	121.3	3.1	2.4	5.68	6.5

Trichlorobiphenyls								
16	19.8	8.8	18.6	124.8	5.4	5.6	17.95	24.9
17	25.5	9.5	20.5	120.0	6.5	6.9	32.70	48.4
18/30	61.3	23.3	46.8	245.7	14.3	15.0	71.94	108.0
19	11.1	3.5	6.6	27.8	2.0	2.2	12.46	23.7
20/28	15.9	10.5	29.4	254.0	10.1	8.2	26.56	27.8
21/33	9.7	6.7	19.1	163.3	6.1	4.9	14.51	15.7
22	4.5	3.2	9.8	87.9	3.2	2.6	6.64	8.8
23				0.4				
24								
25	1.2	0.9	2.2	19.8	0.8	0.6	2.25	2.2
26/29	3.6	2.4	6.2	46.9	1.9	1.7	4.37	6.2
27	2.4	1.2	2.5	17.6	0.8	0.8	3.42	5.3
31	17.9	14.3	28.6	203.2	9.7	8.4	23.62	25.0
32	10.9	4.9	11.0	72.1	3.3	3.3	12.78	18.4
34	0.1			1.0				
35	0.2	0.2	0.3	1.4	0.2	0.2		
36	0.7			0.4		0.3		
37	1.0	1.1	3.3	31.5	1.2	1.1		3.0
28				0.1		0.1		

39	0.3				22.04			
Tetrachlorobiphenyls								
40/41/71	3.9	6.1	5.5	22.3	1.6	1.4		7.6
42	2.5	3.8	2.6	11.2	0.7	0.7		3.2
43/73	0.6		0.4	1.9				
44/47/65	24.4	45.4	12.7	38.4	4.5	7.0	22.42	19.3
45	2.3	2.0	1.8	7.3	0.5	0.6	7.14	6.8
46	1.2	1.4	1.1	4.8	0.3	0.3		
48	2.3	2.9	2.9	12.8	0.8	0.7	9.81	3.5
49/69	14.1	27.3	7.8	26.4	2.5	4.0	11.73	9.9
50/53	4.5	8.4	2.8	10.1	0.9	1.4	6.22	5.0
52	69.3	161.3	23.4	45.2	9.8	20.4	53.42	38.6
54				0.2				
55								
56	1.5	2.1	2.0	8.0	0.6	0.6	3.63	
57				0.3				
58								
59/62/75	0.6	0.8	1.0	4.4	0.2	0.2		0.8
60	0.7	1.0	1.2	5.6	0.2	0.3		
61/70/74/76	15.4	23.8	10.5	32.6	3.8	4.0	18.82	8.5
63		0.4	0.3	0.9				
64	5.8	10.3	4.3	14.6	1.4	1.7	7.21	6.0
66	4.0	5.6	4.5	19.8	1.5	1.4	7.49	2.5
67			0.2	1.1				
68	0.2			0.1				
72								
77			0.3	0.5				
78								
79								
80								
81								
Pentachlorobiphenyls								
82	0.6	1.3	0.4	0.5		1.0		
83/99	2.9	4.8	2.3	2.8	1.2	1.3	24.74	1.9
84	7.0	15.2	2.5	2.0	1.1	1.5	11.96	2.3
85/116/117	1.1	1.6	0.8	1.0	0.6	0.2		1.0
86/87/97/109/119/12	5.1	9.4	2.9	3.1	1.6	1.5	27.97	3.2
88/91	1.8	3.6	1.2	1.2	0.6	0.7	7.35	1.3
89								
90/101/113	13.7	25.2	5.4	5.2	2.8	3.0	46.48	6.0
92	2.9	5.2	1.0	0.9	0.5	0.6	10.34	1.3
93/100								
94								
95	31.3	67.6	8.8	6.9	3.9	6.7	53.67	10.1
96	0.4	1.2	0.1	0.2		0.1		

162

165

167

169

 Heptachlorobiphenyl

170 0.4 2.6

171/173 0.5 0.5

172 0.3

174 1.3 1.5

175

176 0.4

177 0.6 1.0

178

179 1.2 0.5

180/193 1.8 5.4 1.4

181

182

183/185 1.0

184 1.8

186

187 2.7 1.5

188

189

190 0.7

191

192

 Octachlorobiphenyls

194 2.2

195 0.8

196 0.3 0.9

197

198/199 1.1 1.6

200

201 0.3

202 0.9

203 0.8 1.1

205

 Nonachlorobiphenyls

206

207

208

 Decachlorobiphenyls

209

162			
165			
167			
169			
<hr/>			
Heptachlorobiphenyl			
<hr/>			
170	6.3		
171/173			
172			
174	3.9		
175			
176			
177			
178			
179	1.4	0.8	
180/193	12.5	0.8	
181			
182			
183/185			
184			
186			
187	1.8	0.9	
188			
189			
190	1.6		
191			
192			
<hr/>			
Octachlorobiphenyls			
<hr/>			
194	3.7		
195	1.8		
196	2.1		
197			
198/199	3.8		
200			
201			
202			
203	2.1		
205			
<hr/>			
Nonachlorobiphenyls			
<hr/>			
206			
207			
208			
<hr/>			
Decachlorobiphenyls			
<hr/>			
209			

162			
165			
167			
169			
<hr/>			
Heptachlorobiphenyl			
<hr/>			
170			
171/173			
172			
174			2.0
175			
176			
177			
178			
179	0.7	0.8	1.8
180/193	0.7	0.9	2.8
181			
182			
183/185			2.2
184			
186			
187	1.0	1.4	3.7
188			
189			
190			
191			
192			
<hr/>			
Octachlorobiphenyls			
<hr/>			
194			
195			
196			
197			
198/199			2.0
200			
201			
202			1.5
203			
205			
<hr/>			
Nonachlorobiphenyls			
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206			
207			
208			
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Decachlorobiphenyls			
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209			

162

165

167

169

Heptachlorobiphenyl

170

171/173

172

174

175

176

177

178

179

180/193

181

182

183/185

184

186

187

188

189

190

191

192

Octachlorobiphenyls

194

195

196

197

198/199

200

201

202

203

205

Nonachlorobiphenyls

206

207

208

Decachlorobiphenyls

209

Recoveries								
14	90%	88%	83%	78%	88%	95%	90%	87%
d-65/65	96%	98%	91%	91%	81%	101%	89%	88%
166	84%	87%	93%	89%	78%	101%	89%	88%
Batch I.D.	0119-09	0120-01	0120-03	0120-05	0120-07			
Sample I.D.	6204013P1	6204213P	6204413P	6205213P	6205413P			
	2192009	12122009	12122009	12312009	12122009			
Deployment Date	8/31/2009	9/28/2009	8/31/2009	9/30/2009	9/29/2009			
Collection Date	12/19/2009	12/12/200	12/12/200	12/31/200	12/12/200			
Monochlorobiphenyls								
1	2.9	3.2	1.8	2.9	4.8			
2	1.3	0.7	0.6	54.6	1.0			
3	103.0	71.2	78.8	1.0	99.2			
Dichlorobiphenyls								
4	184.4	119.0	110.6	89.6	261.3			
5								
6	28.2	14.8	13.1	10.8	36.5			
7	3.9	2.3	2.1	1.7	4.6			
8	119.7	61.4	55.5	45.9	157.2			
9	4.1	2.3	2.1	1.2	5.5			
10	6.0	3.8	3.3	2.7	8.0			
11	27.7	15.9	18.8	13.9	31.4			
12/13	2.8	1.1	1.1	0.8	3.0			
15	16.7	7.3	5.3	4.9	21.9			
Trichlorobiphenyls								
16	50.6	26.6	22.7	18.8	76.7			
17	70.1	35.8	32.6	27.0	96.4			
18/30	154.4	85.3	74.0	60.4	239.3			
19	26.1	16.8	15.2	12.4	42.0			
20/28	50.6	20.0	14.9	14.0	77.2			
21/33	29.0	11.8	8.8	7.9	40.0			
22	13.3	5.2	4.5	3.6	19.0			
23								
24								
25	3.7	1.4	1.1	1.0	4.8			
26/29	11.5	4.8	3.6	3.3	17.0			
27	7.7	3.9	3.5	3.3	11.2			
31	48.7	20.5	16.2	15.4	74.7			
32	28.8	15.4	13.0	10.4	45.8			
34								
35					0.5			
36	3.0							
37		1.1	1.1		3.8			
28								
39	2.0							

Tetrachlorobiphenyl					
40/41/71	10.6	3.4	3.2	2.9	16.7
42	2.2	2.2	1.6		8.7
43/73					1.5
44/47/65	28.4	10.8	9.9	10.1	64.4
45	11.0	4.7	3.8	3.3	17.4
46	3.2	1.4			4.9
48	5.7	2.6	1.9	2.3	9.8
49/69	17.7	6.7	6.1	7.0	39.7
50/53	9.0	4.1	3.8	3.1	16.1
52	59.1	22.4	24.3	28.1	165.0
54					
55		1.2			
56	2.8	0.9			5.0
57					
58					
59/62/75		0.7			2.8
60	1.9				2.7
61/70/74/76	19.0	5.9	5.9	5.2	47.3
63					
64	8.2	2.6	2.9	2.7	17.7
66	7.1	0.8	2.2		13.7
67					
68					
72					
77					
78					
79					
80					
81					
Pentachlorobiphenyls					
82					2.4
83/99	6.7	2.0	2.1		20.7
84	6.1	2.2	2.5	3.3	20.8
85/116/117	2.7	1.0	0.9		4.2
86/87/97/109/119/12	9.0	0.7	2.1	2.9	21.0
88/91	2.7	1.0	1.0		10.6
89					
90/101/113	14.8	4.6	5.0	5.0	44.7
92	2.6	0.9	0.8		8.7
93/100					
94					
95	20.7	7.7	8.6	11.3	82.0
96					
98/102					2.1

103					1.1
104					
105	2.6				1.4
106					
107/123					
108/124					
110/115	11.6	2.9	3.0	3.1	24.3
111					
112					
114					
118	7.1	1.0	1.1		6.1
120					
121					
122					
126		0.5			
127					
Hexachlorobiphenyls					
129/138/163	5.9	0.9	1.0		2.8
130					
131					
132	2.7				2.8
133					
134/143					
135/151	2.7				5.9
136	1.9				5.9
137/164					
139/140					
141					
142	8.6				
144					
145					
146					
147/149		1.4	1.7		10.0
148					
150					
152					
153/168	4.6		1.2		2.8
154					
155					
156/157					
158					
159					
160					
161					
162					

165

167

169

Heptachlorobiphenyls

170

171/173

172

174

175

176

177

178

179

0.9

180/193

181

182

183/185

184

186

187

188

189

190

191

192

Octachlorobiphenyls

194

195

196

197

198/199

200

201

202

203

205

Nonachlorobiphenyls

206

207

208

Decachlorobiphenyls

209

Recoveries					
14	77%	94%	118%	26%	88%
d-65/65	79%	97%	128%	28%	89%
166	84%	101%	130%	28%	91%

Batch I.D.	0121-01	0121-03	0121-05	0121-07
Sample I.D.	6205613P1 2122009	6205813P 12122009	6206213P 12122009	6206413P 12122009
Deployment Date	9/28/2009	9/21/2009	9/28/2009	9/12/2009
Collection Date	12/12/2009	12/12/200	12/12/200	12/12/200

Monochlorobiphenyls				
1	4.1	4.8	6.7	4.7
2	0.8	0.9	1.6	0.9
3	67.2	51.3	72.3	58.7

Dichlorobiphenyls				
4	156.5	109.3	112.7	106.3
5				
6	24.4	15.5	21.0	15.2
7	3.7	3.1	3.5	2.5
8	108.2	65.2	94.1	63.5
9	3.6	2.6	4.5	2.8
10	5.0	3.0	3.6	3.1
11	30.9	26.7	24.0	27.4
12/13	2.5	1.7	3.1	1.8
15	15.9	10.2	16.4	8.0

Trichlorobiphenyls				
16	53.3	32.3	48.4	27.5
17	69.0	38.1	54.7	36.1
18/30	160.8	88.4	128.8	84.8
19	26.6	16.7	20.6	15.5
20/28	54.0	35.9	61.7	24.4
21/33	29.9	22.0	40.0	14.2
22	13.5	11.3	20.2	6.6
23				
24				
25	3.8	2.5	4.9	1.8
26/29	11.9	7.2	13.5	5.5
27	8.9	4.5	7.1	4.6
31	51.9	35.0	61.4	24.0
32	29.7	16.7	26.4	15.2
34				
35				
36				
37	3.2	4.4	6.9	1.7
28				

39

Tetrachlorobiphenyls				
40/41/71	10.7	8.7	17.7	5.2
42	6.1	4.3	8.4	2.8
43/73				
44/47/65	37.3	32.3	38.0	22.0
45	12.7	9.5	13.3	6.5
46	3.2	2.0	3.9	1.9
48	6.4	4.5	9.3	3.2
49/69	22.4	13.6	23.5	12.2
50/53	10.3	5.5	10.2	6.0
52	92.5	42.3	61.3	54.5
54				
55				
56	2.8	1.9	5.6	1.6
57				
58				
59/62/75	2.1	1.7	3.3	1.0
60	1.3	1.9	4.0	
61/70/74/76	21.8	19.2	29.3	11.9
63				
64	10.1	7.4	13.7	5.8
66	6.7	7.5	14.1	3.6
67				
68		0.9		
72				
77				
78				
79				
80				
81				

Pentachlorobiphenyls				
82		1.2	1.4	
83/99	8.3	6.9	7.7	4.9
84	9.7	5.0	6.8	5.8
85/116/117			1.9	
86/87/97/109/119/12	2.9	8.1	1.6	4.2
88/91	5.2	2.8	4.1	2.8
89				
90/101/113	19.0	14.0	16.8	12.0
92	3.7	2.8	3.2	2.4
93/100				
94				
95	41.2	19.6	26.3	24.6
96				

98/102	1.1			
103				
104				
105	0.9	1.9	1.3	0.8
106				
107/123		1.1		
108/124				
110/115	12.9	12.6	11.6	7.8
111				
112				1.7
114				
118	3.5	5.5	4.3	2.7
120				
121				
122				
126			0.7	
127				
<hr/>				
Hexachlorobiphenyls				
129/138/163	2.6	5.5	5.7	1.8
130		1.1		
131				
132				
133	1.9	2.7	2.7	1.1
134/143				
135/151	3.9	3.3	6.1	2.0
136	2.7	1.2	2.6	1.9
137/164			0.7	
139/140				
141				
142				
144			1.1	
145				
146				
147/149	5.9	6.8	10.0	3.8
148				
150				
152				
153/168	3.8	7.2	11.7	3.0
154				
155				
156/157				
158				
159				
160				
161			0.5	

162				
165				
167				
169				
Heptachlorobiphenyls				
170				
171/173				
172				
174				
175			5.3	
176				
177				
178				
179		0.9	2.6	
180/193		1.2	2.8	
181				
182				
183/185			5.2	
184				
186				
187		1.5		
188				
189				
190				
191				
192				
Octachlorobiphenyls				
194				
195				
196			1.8	
197				
198/199				
200				
201				
202			1.6	
203			1.3	
205				
Nonachlorobiphenyls				
206				
207				
208				
Decachlorobiphenyls				
209				
Recoveries				
14	87%	82%	78%	80%

d-65/65	93%	84%	79%	80%
166	103%	94%	88%	89%

Table B-2: East Chicago indoor air raw data showing necessary metadata and congener masses (ng)

Batch I.D.	0074-01	0074-03	0074-05	0074-07	0074-09	0075-01	0075-03	0075-05
Sample I.D.	6104212P	6103812P	6100611P	6103512P	6103013P	6102312P	6100210P	6102210P
Deployment Date	5/24/2008	5/24/2008	4/19/2008	5/19/2008	5/19/2008	5/6/2008	4/18/2008	5/6/2008
Collection Date	8/25/2008	8/25/2008	7/8/2008	8/30/2008	9/22/2008	9/2/2008	7/16/2008	8/11/2008
Monochlorobiphenyls								
1	0.4	0.5	0.9	0.2	0.7	1.1	3.9	9.6
2	0.1	0.2	0	0	0.2	0.5	0.8	1.9
3	0.9	1.6	0.1	0.1	3.8	1.8	3.7	15
Dichlorobiphenyls								
4	4.7	4.1	1.7	2	4.9	2.8	6.5	12.4
5	11.3	0.1	3.8	4.1	0.1		0.4	1.4
6	2.5	2.5	0.4	1	2.8	1.5	2.8	6.9
7	0.1		0		0.2	0.3	0.7	2.2
8	9.9	10.4	3.3	3.6	11.5	6.2	10.3	23.4
9	0	0.1	0	0.1	0.6	0.4	0.8	2.2
10	0.2	0			0.3			0.8
11	15.9	23.6	7.4	6.8	17.9	11.2	18.1	78.1
12/13	0.2	0.3		0.1		0.3	0.9	2.3
15	5.1	5.8	1.6	1.4	6.2	3.3	4.9	8.2
Trichlorobiphenyl								
16	5.7	7.2	1.6	2.6	9.2	3.2	5.7	8.9
17	3.9	5	2.2	2	7.7	2.8	4.9	6.7
18/30								
19	0.4	0.1	0.1	0.2	1.5	0.8	1.6	2.2
20/28	11.5	17.2	3.9	4.6	20.1	6.3	9.8	14.2
21/33	6.8	11.5	2.2	2.8	12.7	4.7	6	10
22	4.1	7.9	1.2	1.7	7.6	4.4	2.9	4.5
23				0.1	0.7			
24	3	1.2	0.8	1.4	0.1			
25		1.2	0.1		1.2	3	0.9	
26/29	1.7	3.1	0.3	1.3	3.6	2.1	2.6	3.2
27	0.7	1.1	0.2	0.4	1.2	0.6	1	0.9
31	9.3	17.7	3.2	4.4	23	6.2	8.4	12.4
32	3.4	4.1	1.1	1.5	5.3	2.1	2.9	4.3
34								
35		0.4						1.3
36	0.2		0.1		0.1			
37	1.8	5.4	0.3	0.7	3.9	4	0.8	2.2
28						2.5		
39	3.1					2.5	0.1	
Tetrachlorobiphenyls								

40/41/71	2.2					2.4	2.5	3.8
42	0.4	17.2	1.4	1.7	17.2		1.1	1.4
43/73	12	2.9	0.2	1.5	2.4	0.4		
44/47/65								
45	0.1					2.3		3
46		1.2	0.2	0.3	4.5		0.5	0.8
48	0.5	1.9		0.2	1.3	8.6	1.6	1.6
49/69		4.8	0.6		6.7	4.6	4.9	6.7
50/53	0.8					1.2	1.4	2.1
52	14.7	3	0.4	0.6	6.5	17.8	16.7	22.5
54	0.1	35.9	12.8	12.4	203.9			0.1
55	0.2							
56		0.4				0.6	1.5	1.7
57		14.7	0.5	0.3	9.6			
58	0.1	5.4		0.1	0.9	0.6		
59/62/75	1.7		5.1	2.7	106.6	5.3	1.8	2.9
60		6.4	0.6		8.3	1.5	0.8	1.5
61/70/74/76	1.5	9.5		0.1	0.1	9.6	6.7	11.2
63	0.1	3.9	0.5	0.8	2.3	4.6	0.4	
64	2	1		0.1	1.5	4	2.9	3.7
66		11.8	1.2	2	21	3	2.2	4.6
67		24.5		1.5	24.5	0.2		
68	0.2	0.3			0.2	2	2.6	2.9
72			0.1					
77		29.3	10.5	10.1	166.9			
78		2.1		0.3				
79								
80			0.2					
81						0.1		
<hr/>								
Pentachlorobiphenyls								
<hr/>								
82				0.1			4.9	6.5
83/99	4.8	0.6		0.7	18	8.8	7.4	0.7
84	0.8	0.3	2.3	2.9	6	2.2	2.3	3.4
85/116/117	0.5	6.8	1.7	2.2	50.2		1.5	
86/87/97/109/119	1.4	3.2	4.1	0.7	19.1	4.7	3.5	5.1
88/91	2.3	24.6	5.8	6.3	218.8	1.9	0.9	1.5
89		3.8	0.7	0.2	23.2	0.5	0	0.1
90/101/113	6.4	0.3			0.8	7.8	6.6	8
92	1	3.1	0.3	0.7	20.1	2.9	1.3	1.4
93/100		2.7	0.9	0.5	29.3	0.9		
94								
95	7.3					8.6	9.1	10.6
96		18.6	6.9	7.1	166.8	0.8		0.1
98/102	0.2	0.4	0.1		1.1			0.1
103	0.2	7.1	1.4	1.8	58			

167						0.1		
169	0.4				0.3		0	
Heptachlorobiphenyls								
170					0.4			0.3
171/173		0.1			0.4			
172					0.4			
174						1	0.8	0.7
175		0.2			0.3			
176								
177					0.1	0.4		
178					0.3			0.2
179					0.1	0.4	0.4	0.7
180/193		0.2		0.1	0.1	0.5	0.6	1.1
181		1.4	0.3	1.1	1.6			
182								0.1
183/185						0.3		0.5
184		0.1			0.3	0.1		
186		0.1			0.2		0	
187	0.1					1	0.5	0.9
188		0.2	0.2	1	0.6			
189								
190						0.1		
191	0.1							
192								
Octachlorobiphenyls								
194								
195	0.1			0.2				
196	0.3							
197								
198/199						0.7	0.2	0.4
200	0.1	0.1						
201	0.1							
202	0.1							0.1
203		0.1		0.1		0.2		0.6
205	0.2							
Nonachlorobiphenyls								
206								
207		0.1				0	0	
208								
Decachlorobiphenyls								
209	0.3							
Recoveries								
14	52%	65%	46%	50%	61%	68%	69%	74%
d-65/65	75%	123%	63%	65%	208%	95%	98%	110%
166	80%	92%	60%	65%	93%	89%	90%	93%

Batch I.D.	0075-07	0075-09	0076-01	0076-03	0076-05	0076-07	0093-01	0093-03
Sample I.D.	6103212P	6100810P	6100410P	6101410P	6102812P	6102010P	61019P-in	61023P-in
Deployment Date	5/19/2008	4/22/2008	4/22/2008	4/28/2008	5/19/2008	5/3/2008	8/29/2008	9/2/2008
Collection Date	8/21/2008	7/25/2008	7/8/2008	7/21/2008	8/29/2008	8/11/2008	11/25/200	11/29/2008
Monochlorobiphenyls								
1	3.3	2.6	2.1	1.5	2.4	1.6	2.1	0.6
2	0.9	1.2	0.7	0.4	0.2	0.6	0.9	0.3
3	3.1	6.0	5.1	1.9	3.5	2.3	3.0	3.3
Dichlorobiphenyls								
4	7.7	9.8	6.5	7.8	14.2	8.7	8.1	3.5
5		0.6	0.3			0.4	0.6	0.1
6	3.1	4.6	2.9	3.7	5.7	5.8	5.7	2.6
7	0.8	1.2	0.7	0.7	0.7	1.0	1.1	0.7
8	12.0	18.4	11.7	16.9	29.4	25.7	25.1	8.1
9	1.0	1.3	0.7	1.0	1.1	1.5	0.3	0.4
10	0.4	0.5		0.4	0.3	0.4	0.4	0.1
11	17.5	25.1	23.8	13.0	21.4	15.9	22.6	19.3
12/13	0.4	1.0	0.7	0.6		1.6	0.9	0.3
15	3.7	7.8	4.2	5.1	8.4	9.4	10.1	3.1
Trichlorobiphenyls								
16	5.5	10.2	6.0	0.8	32.7	17.9	14.3	1.1
17	4.2	7.2	5.3	7.4	26.3	11.1	12.8	3.7
18/30								
19	1.6	1.9	1.6	2.6	6.8	4.3	3.6	0.9
20/28	9.6	19.1	10.4	18.2	62.1	37.7	26.5	7.8
21/33	6.4	13.6	5.5	7.9	34.0	23.3	18.3	5.3
22	3.1	6.1	3.0	4.3	18.8	10.5	9.5	2.8
23								0.2
24		0.2	0.2	0.2			0.2	
25	1.4	1.1		0.8	3.9	2.7	1.4	0.2
26/29	1.7	4.2	1.9	2.7	9.7	7.1	4.4	0.1
27	0.9	1.3	0.7	1.4	4.5	2.2	1.9	
31	8.6	15.9	8.9	13.7	49.3	25.9	24.4	7.3
32	3.0	5.3	2.8	5.1	17.8	8.9	7.7	2.5
34							0.1	
35					0.4		0.0	
36								
37	1.7	3.1	2.4	1.8	9.5	4.7	4.1	1.3
28								
39	0.1	0.1						
Tetrachlorobiphenyls								
40/41/71	2.4	5.7	4.6	6.6	17.6	13.2	6.0	1.0
42	0.9		0.4		1.2	1.0	0.2	0.1
43/73		28.5				47.9	29.3	9.6

44/47/65								
45	0.6	3.5	1.9	4.9	13.7	9.5	3.3	0.5
46		1.1	0.3		2.1			
48	1.4	2.6	1.9	2.5	6.9	4.9	3.2	0.2
49/69	4.5	9.3	8.4	14.7	16.7	16.5	10.6	3.6
50/53	1.2	2.6	1.9	3.6	4.6	3.9	3.2	0.4
52	15.9	34.1	44.5	99.8	39.5	70.9	38.3	12.6
54								
55					0.5			0.8
56	1.0	2.5	1.7	4.8	7.1	3.0	1.9	0.3
57								
58				0.7				
59/62/75	1.6	3.0	2.4	3.2	7.2	5.4	4.2	0.1
60	0.4	1.5	0.7	2.1	5.0	2.6	1.2	0.1
61/70/74/76	7.7	13.9	13.7	43.5	27.1	21.8	2.7	7.0
63		0.9		1.3				0.0
64	2.2	4.9	3.5	8.9	9.6	8.7	6.2	2.2
66	2.8	4.7	4.6	10.8	17.2	9.1	5.9	2.0
67			0.2	0.1	0.4			
68	2.7	1.3	2.6	2.1		0.9	0.0	0.1
72								
77					1.1			
78						0.1		
79								
80								
81					0.2			0.1
Pentachlorobiphenyls								
82	3.4	8.2	14.3	24.7	5.7	17.2	1.5	0.2
83/99	7.8	11.4	1.0				6.4	5.8
84	1.9	4.5	6.0	33.0	2.7	12.2	1.7	0.7
85/116/117	1.7	2.6	2.7	6.3	2.8	10.3	2.7	5.4
86/87/97/109/119	4.0	6.3	9.7	59.8	5.8	21.4	4.7	0.7
88/91	1.2	2.2					1.3	0.7
89				0.8				
90/101/113	5.8	10.9	13.8	72.7	8.8	36.4	19.7	6.1
92	1.2	2.1	2.6	12.6	1.7	6.7	1.0	0.1
93/100								
94								
95	8.2	15.6	20.5	84.5	10.4	43.1	24.9	5.6
96	0.1	0.1		0.7		0.5	0.1	
98/102		0.8		1.8		1.1		
103				0.4			0.0	
104								
105	0.8	1.1	2.0	18.0	1.2	4.9	2.6	0.8
106	0.1							

Heptachlorobiphenyls								
170				0.7	0.3	0.2		
171/173								0.1
172							0.0	0.1
174		0.5	0.5	1.2	1.2		0.1	
175				0.1	0.3			
176	0.1			0.4	0.4	0.1		
177				0.4	0.9	0.2	0.0	0.1
178	0.1			0.4				0.1
179	0.1	0.5	0.7	0.9	1.1	0.7	0.1	0.4
180/193	0.4	0.7	0.7	1.5	0.9	1.2		0.1
181				0.1	0.1			
182								
183/185		0.3	0.2	0.9	0.7	0.7		0.2
184								
186								
187	0.4	0.6	0.7	1.6	1.9		0.6	0.1
188						0.1	0.0	
189								
190				0.2			0.1	
191								
192								
Octachlorobiphenyls								
194							0.3	0.1
195								
196							0.1	
197								
198/199	0.1	0.1		0.3			0.2	
200							0.0	0.1
201					0.1			
202		0.1					0.0	
203			0.4	0.3			0.2	
205			0.1				0.2	
Nonachlorobiphenyls								
206							0.1	
207	0.2		0.2	0.1		0.1	0.0	0.1
208			0.1					
Decachlorobiphenyls								
209			0.3				0.3	
Recoveries								
14	86%	77%	73%	51%	57%	61%	85%	100%
d-65/65	121%	127%	122%	125%	121%	138%	37%	17%
166	110%	104%	104%	89%	81%	102%	99%	109%
Batch I.D.	0093-06	0093-08	0093-11	0094-01	0094-03	0094-04	0094-06	0094-08

Sample I.D.	61029P-in	61021P-in	61017P-in	61045P-in	61041P-in	61031P-in	61027P-in	61025P-in
Deployment Date	9/2/2008	8/11/2008	8/11/2008	9/18/2008	8/25/2008	8/21/2008	8/29/2008	8/29/2008
Collection Date	11/29/200	11/25/200	11/29/200	11/29/200	11/29/2008	11/25/2008	11/29/200	11/29/2008
Monochlorobiphenyls								
1	1.2	23.1	1.3	1.3	6.0	4.1	5.4	1.2
2	0.7	4.2	0.7	0.5	2.2	0.8	1.1	0.8
3	3.9	22.5	2.8	2.8	10.6	3.3	7.2	2.7
Dichlorobiphenyls								
4	4.3	14.5	5.6	7.0	49.6	8.1	44.9	9.5
5	0.3	1.6	0.3		23.1			
6	2.5	8.5	3.7	2.4	1.3	2.7	9.3	1.9
7	0.0	2.4	0.4	0.6	1.3	0.5	1.1	0.3
8	10.2	29.4	13.2	7.3	76.1	9.3	47.4	7.0
9	0.5	3.2	0.7	0.7	2.3	0.8	2.2	0.6
10	0.2	1.1	0.3	0.6			0.8	
11	13.0	111.8	29.8	18.2	85.3	18.8	32.4	8.8
12/13	0.7	2.5	0.9	0.4			1.0	0.6
15	3.2	6.6	4.0	2.3	41.0	2.6	10.3	1.7
Trichlorobiphenyls								
16	7.1	8.2	8.1	2.4		4.6	33.8	2.9
17	6.4	6.2	6.4	3.4		5.7	47.0	4.1
18/30								
19	1.7	2.2	1.3	0.9	12.8	2.0	13.5	1.5
20/28	14.8	15.0	12.7	5.7	63.8	10.9	77.9	2.3
21/33	9.6	10.3	8.8	3.4	63.9	6.9	48.4	4.4
22	5.3	5.1	4.5	2.6	40.3	4.3	30.1	3.2
23		0.3	0.5	0.9	1.2	1.3	1.1	0.4
24	0.2	0.2	0.3	0.7	17.5	1.9	17.2	0.9
25	0.8	1.2	0.9	4.3		6.5		
26/29	2.0	2.9	2.2	0.5	23.3	1.2	7.1	0.8
27	0.8		1.0	5.5	4.0	10.0	70.4	1.7
31	15.6	14.3	12.0	1.8	21.3	3.5	27.6	2.3
32	4.4	4.8	4.3	0.4		0.9		
34			0.1					
35		1.4						
36				1.2	8.4	3.6	14.9	1.6
37	2.9	2.5	1.9					
28	0.0							
39								
Tetrachlorobiphenyls								
40/41/71	10.5	4.8	0.9	1.2	5.2		13.7	2.2
42	1.2	0.9	0.1		3.9		8.3	1.6
43/73	87.6	13.5	15.6		83.4			
44/47/65								
45	1.5	2.0	1.6	1.4		2.4	11.0	1.9

46	0.3	0.6			15.8		4.2	
48	3.2	2.2	1.6	0.9	35.2	13.3	10.8	1.3
49/69	21.6	6.0	6.0	4.4		6.2	22.3	4.5
50/53	3.1	1.8	1.9	1.1	10.6	2.4	7.1	2.3
52	114.6	17.4	20.4	21.2		27.4	46.3	16.6
54								
55			3.2		13.3	1.6	10.6	1.3
56	4.0	1.9	1.3					
57	0.0							
58	0.4							
59/62/75	1.6	2.9	0.8		50.4			
60	3.0	1.1	1.0		6.4	1.2	6.9	0.7
61/70/74/76	38.4	1.5	1.5	5.9		10.6	39.4	6.8
63	0.8	0.1	0.1				1.3	
64	11.9	3.7	3.1	2.1	11.4	3.9	14.6	2.4
66	16.0	4.3	3.3	1.9	35.0	3.8	22.3	2.7
67		0.0					1.0	
68	0.0	0.1	0.1					
72			0.0					
77	0.1						1.7	
78								
79								
80								
81								

Pentachlorobiphenyls

82	9.0	0.6	0.5		50.6			
83/99	37.2	6.7	4.9	2.8	29.7	4.6	6.1	3.2
84	29.8	2.6	0.4	1.8	5.9	3.1	3.6	2.0
85/116/117	20.7	0.8	0.5	1.0	2.3	1.4	1.8	0.9
86/87/97/109/119	24.1	1.9	0.1	0.7	11.2	4.3	6.7	2.0
88/91	25.9	2.6	1.8	1.1		1.5	2.2	1.1
89		0.0			7.0			
90/101/113	101.8	7.3	7.9	4.8	3.5	8.1	11.4	5.7
92	17.8	1.0	1.1	0.8			2.1	1.0
93/100		0.0						
94				6.8		11.0	13.1	6.7
95	100.6	8.7	10.5					
96	0.2							
98/102	1.1				29.8			
103	0.1	0.0						
104								
105	19.0	1.0	0.1		1.6	0.7	1.4	0.7
106	0.3		0.1					
107/123	0.2							
108/124	5.2	0.1						

110/115	101.1	6.0	5.8	2.7		5.3	8.3	3.7
111								
112	33.8	2.3	2.3		6.9			
114		0.0						
118	60.5	3.2	0.9	1.2		2.3	4.9	2.7
120								
121		0.0						
122	0.6				6.9			
126	0.1	0.2	0.4					
127								

Hexachlorobiphenyls

129/138/163	34.6	1.8	0.3		3.7	1.8	4.3	2.4
130	2.4							
131		0.0						
132	15.5	0.6	0.4		2.1		2.6	
133	0.1	0.0						
134/143	2.9	0.1						
135/151	11.9	0.8	0.7				4.0	
136	7.4	0.6	0.2					
137/164	3.5							
139/140	0.2	0.0						
141	6.0	0.3	0.1				1.2	
142								
144	2.2	0.2						
145					1.9		1.9	
146	4.3	0.3	0.2					
147/149	31.0	2.9	3.0	1.1	6.5	2.0	7.6	2.6
148								
150								
152								
153/168	23.9	2.1	1.6		3.3	1.4	5.6	2.3
154		0.0			1.9			
155								
156/157	2.9	2.4	0.1					
158	3.8	0.1	0.0					
159								
160			0.3					
161	3.6	0.0	0.1					
162								
165								
167	0.3	0.0						
169								

Heptachlorobiphenyls

170								
171/173		0.1						

172								
174	0.5	0.1					1.1	
175								
176	0.1							
177	0.3	0.1						
178	0.3	0.0	0.1					
179	0.6	0.3	0.1				1.3	
180/193	1.0	0.6	0.0				1.0	
181								
182								
183/185	0.4	0.1					1.0	
184								
186								
187	0.7	0.6	0.3				2.0	
188								
189	0.0							
190			0.0					
191	0.1							
192								
<hr/>								
Octachlorobiphenyls								
<hr/>								
194								
195								
196								
197								
198/199		0.2						
200								
201		0.0						
202								
203								
205	0.0		0.0					
<hr/>								
Nonachlorobiphenyls								
<hr/>								
206								
207								
208								
<hr/>								
Decachlorobiphenyls								
<hr/>								
209	0.0	0.0						
<hr/>								
Recoveries								
<hr/>								
14	83%	83%	79%	104%	104%	104%	104%	104%
d-65/65	83%	22%	21%	16%	17%	6%	74%	15%
166	105%	99%	90%	137%	137%	137%	137%	137%
<hr/>								
Batch I.D.	0095-04	0095-06	0095-08	0096-03	0096-05	0096-07	0097-02	0097-07
Sample I.D.	6107912P	6107512P	6107712P	6106312P	6106512P0	6106112P0	6108612P	6101216P0
Deployment Date	1/7/2009	12/30/200	12/30/200	12/9/2008	12/10/2008	12/9/2008	1/12/2009	1/12/2009

Collection Date	3/28/2009	3/28/2009	4/2/2009	3/19/2009	3/23/2009	3/24/2009	4/11/2009	4/27/2009
Monochlorobiphenyls								
1	4.5	5.4	4.9	3.0	3.9	3.3	2.9	7.4
2	0.9	0.7	0.5	0.6	0.6	0.7	0.6	0.8
3	20.9	9.7	18.8	35.8	29.8	28.7	49.9	44.4
Dichlorobiphenyls								
4	10.7	12.1	23.7	6.9	13.2	6.7	13.8	20.7
5								
6	3.3	4.0	3.4	2.8	6.4	2.8	4.3	7.3
7	0.5	0.7	0.7	0.6	2.2	0.7	0.8	1.6
8	10.8	16.1	13.9	11.2	28.5	10.7	16.4	29.9
9	0.8	1.1	0.9	0.8	1.8	0.8	1.2	2.3
10	0.4	0.4	0.5	0.3	0.4	0.3		0.7
11	16.6	24.1	19.3	27.6	36.5	32.1	33.1	51.8
12/13	0.5	0.6	0.6	0.5	0.6	0.5	0.7	1.6
15	2.6	4.0	3.3	3.4	8.5	4.6	5.1	7.3
Trichlorobiphenyls								
16	3.2	7.2	5.1				7.3	13.2
17	4.5	9.2	7.7	4.9	13.3	5.5	6.1	12.8
18/30	10.6	20.3	17.3	11.6	30.0	12.9	14.5	30.8
19	1.4	3.0	2.4	1.2	3.7	0.4	1.8	3.9
20/28	6.6	13.9	9.6	9.0	25.2	9.6	12.6	19.0
21/33	3.7	7.8	5.5	5.9	16.5	6.0	8.6	12.9
22	2.5	4.5	3.5	4.6	10.0	4.4	5.1	7.2
23	0.6	0.9	0.7	2.6	2.4	3.1	1.9	2.9
24	1.9	3.5	2.4	3.3	7.8	3.1		
25	2.0	2.7	2.0	0.5	1.9	0.7	0.9	1.4
26/29	0.8	1.5	1.0	2.9	5.7	2.9	2.8	4.4
27	7.4	13.2	9.8	0.7	2.2	0.9	1.2	3.2
31	2.5	5.5	4.1	10.0	26.5	10.0	11.7	25.4
32		0.6		3.2	8.3	3.5	3.8	7.2
34				0.8	0.6	1.0	0.8	1.5
35								
36	1.6	2.2	2.3					
37				2.2	5.3	2.4	3.2	3.4
28								
39								
Tetrachlorobiphenyls								
40/41/71	3.6	5.1	4.1	3.8	10.1	3.9	5.5	13.8
42	1.8	2.4	1.6	1.9	5.1	1.6	2.6	7.4
43/73								
44/47/65	20.5	19.8	16.3	15.6	40.2	16.0	16.4	92.4
45	1.9	1.8	2.4	2.2	7.0	2.3	2.7	6.3
46				0.8	1.8			2.0
48	1.6	2.1	1.3	1.6	4.1	1.8	2.1	6.1

49/69	12.4	10.7	9.1	9.0	21.0	8.7	9.6	58.0
50/53	2.8	3.0	2.8	2.7	6.6	2.5	2.7	11.3
52	69.9	53.2	51.4	49.9	108.6	48.3	35.3	293.1
54								
55					3.7	1.5		
56	1.1	2.4	1.7	1.6	2.3	0.9	2.8	4.8
57								
58								
59/62/75		0.6	0.5	0.6	1.2	0.5	0.8	1.7
60	0.7	1.1	1.0	0.7	0.6	1.5	1.6	2.3
61/70/74/76	15.0	20.2	11.0	10.9	25.6	11.8	15.2	66.4
63								
64	5.2	5.9	4.4	4.0	9.9	4.4	4.6	22.3
66	3.6	5.6	3.5	3.3	9.9	3.7	5.5	14.8
67								
68								
72								
77								
78								
79				4.6				
80								
81								

Pentachlorobiphenyls

82		2.8		0.9	1.3	0.7	1.2	3.1
83/99	7.5	15.6	4.8				6.0	26.5
84	7.4	12.0	5.1	4.6	8.5	4.6	4.6	29.9
85/116/117		4.5	1.6		2.5	1.8	2.1	5.7
86/87/97/109/119	6.1	18.5	5.8	5.4	8.7	2.7	7.2	26.7
88/91	3.8	5.5	2.5	2.3	4.3	2.7	2.4	15.1
89								
90/101/113	14.9	30.3	13.8	10.5	18.0	9.1	12.6	60.5
92	3.3	5.8	2.5	2.0	3.7	2.0	2.4	12.5
93/100	30.5	37.3	24.6					
94								
95				16.9	32.8	18.1	17.6	130.0
96	0.4				0.4			1.6
98/102	1.0	1.1		0.5	1.3	0.6	0.7	3.9
103								
104								
105	6.0	3.8	0.8	0.9	1.6	0.7	1.5	3.2
106								
107/123		0.9			0.4			
108/124		0.5						
110/115	7.8	25.1	7.5	8.6	10.7	5.4	9.6	28.2
111								

112				3.4	5.8	3.2		
114								
118	1.9	13.0	2.8	2.7	4.9	2.0	3.8	10.5
120								
121								
122								
126	0.3						0.3	
127								

Hexachlorobiphenyls

129/138/163	1.0	6.2	4.3	2.0	2.8	1.5	4.0	5.3
130								
131								
132	0.8	3.2	2.0	1.2	1.6	0.9	1.7	3.4
133								
134/143								
135/151	1.4	4.4	4.4	1.6	2.6	1.0	2.4	5.3
136	1.4	2.5	2.5	1.2	1.7	0.8	1.5	5.6
137/164		0.8						
139/140								
141		0.8	1.3				1.0	0.9
142								
144		0.7						0.9
145								
146		1.0	0.9					0.8
147/149	2.5	8.8	8.1	2.8	4.6	2.3	5.6	10.3
148								
150								
152								
153/168	0.6	5.4	4.8	1.8	2.7	1.3	4.8	4.5
154								
155								
156/157								
158								0.6
159								
160		0.6						
161								
162								
165								
167								
169								

Heptachlorobiphenyls

170							0.7	
171/173								
172								
174			0.9		0.6		2.2	

175								
176							0.5	
177							0.7	
178								
179		1.0	0.5	0.8			1.3	0.7
180/193		1.0		0.8			2.7	
181								
182								
183/185							1.3	
184								
186								
187		1.4	0.4	1.0			3.1	0.9
188								
189								
190								
191								
192								

Octachlorobiphenyls

194								
195								
196								
197							0.6	
198/199								
200								
201								
202								
203								
205								

Nonachlorobiphenyls

206
207
208

Decachlorobiphenyls

209

Recoveries

14	71%	71%	71%	89%	89%	89%	94%	94%
d-65/65	91%	91%	91%	109%	109%	109%	109%	109%
166	126%	126%	126%	125%	125%	125%	119%	119%

Batch I.D.	0097-09	0098-01	0098-03	0098-05	0099-02	0099-04	0099-06	0099-07
	6101316P	6106912P	6104716P	6100716P				61081P072
Sample I.D.	04272009	03282009	03282009	04282009	6108916	6107716	6107916	809
Deployment Date	1/30/2009	12/13/2008	11/28/2008	1/30/2009	6/8/2009	7/9/2009	6/9/2009	4/11/2009

Collection Date	4/27/2009	3/28/2009	3/28/2009	4/28/2009	9/18/2009	9/8/2009	9/4/2009	7/28/2009
Monochlorobiphenyls								
1	5.5	1.5	1.7	2.6	8.3	0.7	0.8	0.7
2	0.8	0.5	0.4	0.6	1.7	0.3	0.6	0.3
3	44.0	26.7	27.1	24.5	14.1	3.6	4.1	2.5
Dichlorobiphenyls								
4	17.8	7.7	6.4	26.6	14.4	3.0	5.1	4.2
5	0.3	0.2		0.4	0.7		0.2	
6	5.7	2.6	2.3	6.0	4.7	1.5	3.1	2.1
7	1.2	0.6	0.6	1.3	1.5	0.0	0.3	0.5
8	23.7	10.2	9.4	25.9	17.0	5.8	7.9	7.4
9	1.9	0.4	0.5	1.6	1.7	0.2	0.4	0.1
10	0.7	0.2	0.2	0.9	0.7	0.1	0.1	0.1
11	27.1	26.8	15.4	34.7	13.9	19.4	18.8	36.0
12/13	1.2	0.5	0.4	1.1	1.1	0.4	0.6	0.5
15	4.9	2.6	1.6	5.6	3.7	2.0	1.9	2.5
Trichlorobiphenyls								
16	10.8	8.3	4.9	16.2	7.3	4.3	5.2	6.7
17	11.7	5.8	4.1	12.5	5.7	3.4	4.1	4.6
18/30	25.2	12.8	9.0	27.3	16.6	16.5	17.9	16.1
19	3.6	1.7	1.3	4.0	1.9	1.0	1.2	1.4
20/28	16.4	11.2	5.7	18.7	9.1	6.4	6.6	9.2
21/33	10.9	7.1	3.3	11.7	5.7	3.8	4.1	5.3
22	7.0	3.5	1.6	5.9	3.0	2.1	2.1	2.9
23	3.2							
24			0.1	1.1	2.8	1.6	2.0	2.6
25	1.2	0.7	0.4	1.3	0.8	0.4		0.7
26/29	4.2	2.4	1.5	3.9	2.2	1.6	1.7	1.9
27	1.7		0.5	1.4	0.7		0.6	
31	20.3	11.0	6.0	22.0	9.3	5.7	6.5	8.2
32	5.9	3.5	2.1	6.6	3.1	2.0	2.3	2.7
34	1.1						0.0	
35		0.5		0.0				
36						0.0		
37	2.7	1.9	0.9	2.3	1.5	1.1	0.8	1.5
28				0.2				0.0
39								
Tetrachlorobiphenyls								
40/41/71	9.4	3.4	2.0	14.6	2.1	1.9	2.0	3.3
42	5.2	0.6	2.1		2.2			3.1
43/73			0.1		0.1			0.2
44/47/65	63.4							
45	4.4	0.4	1.3	5.7	1.6		1.5	0.6
46			0.2	1.8	0.1	0.0		0.5
48	4.2	0.6						0.4

49/69	39.8	8.0	6.5	45.5	5.0	3.4	4.5	4.8
50/53	7.9	1.6	1.1	8.4	1.3	0.4	0.9	0.9
52	205.5	33.4	36.0	261.1	20.7	14.7	19.9	18.8
54					0.0	0.0		
55		4.1			1.5	2.0	0.5	
56	3.2				0.3		1.0	0.0
57					0.2			
58		0.6		2.2		0.9	1.0	1.4
59/62/75	1.1	0.6	0.7	11.1	1.4	0.2	0.2	2.8
60	1.7	0.9	0.1	2.0	0.1		0.0	0.8
61/70/74/76	49.3	12.8	6.5	53.0	9.3	6.0	4.7	10.0
63		3.5	1.8	5.8	1.8	3.0	0.4	4.6
64	16.0	4.1	2.7	19.1	2.8	2.0	2.2	3.2
66	10.6	4.3	1.7	12.3	3.3	2.1	2.0	3.3
67		0.8	0.7	1.8	1.1	1.5	1.6	1.8
68			0.0					0.1
72							0.0	
77		0.0	0.0					
78				0.1	0.0			
79						0.0		0.0
80						0.0		
81				0.0				

Pentachlorobiphenyls

82	1.9	0.8	0.4	2.4	0.6		0.4	0.9
83/99	21.1	4.5	2.6	22.2	1.5	0.9	1.6	2.6
84	21.4	3.5	2.8	25.0	2.6	1.9	2.8	3.4
85/116/117	4.4			2.9			0.2	0.8
86/87/97/109/119	19.9	5.8	3.0	21.8	3.7	2.5	3.1	6.6
88/91	11.9	1.8	1.3	11.8	2.1	2.1		1.6
89		0.0	0.0	0.6	0.0		0.0	
90/101/113	47.8	10.4	5.8	48.2	6.1	5.9	5.8	9.6
92	9.5	1.8	1.2	10.3	1.1	0.9	0.5	1.7
93/100							10.6	0.3
94		0.0		0.1		0.0		0.0
95	97.5	16.5	13.1	122.4	11.0	9.4	11.3	13.4
96	1.2	0.2	0.2	1.3	0.0	0.0	0.0	
98/102	2.0	0.4	0.2	2.2		0.2	0.0	0.3
103		0.0	0.0	0.2		0.0	0.0	0.0
104			0.0					
105	1.1	1.3	0.5	1.3	0.7	0.2	0.3	1.9
106		0.1						
107/123		0.0	0.0	0.7	0.1	0.0	0.0	0.2
108/124		0.1			0.1			
110/115	18.8	9.2	4.1	28.8	5.7	4.0	4.2	11.5
111						0.0		

112		3.1	1.8	15.5				
114		0.0			0.0		0.0	0.1
118	5.5	4.7	1.6	6.7	2.6	1.5	1.5	7.0
120								
121			0.0					
122								0.0
126		0.4	0.3	0.3	0.3	0.1	0.1	0.1
127								
<hr/>								
Hexachlorobiphenyls								
<hr/>								
129/138/163	2.1	3.4	1.0	2.5	1.0	1.6	0.6	4.7
130				0.1	0.0			0.1
131								
132	1.5	1.5	0.4	1.8	0.7	0.6	0.4	1.9
133					0.0			
134/143				0.3			0.1	0.1
135/151	3.7	2.2	0.4	3.9	0.6	1.8	0.2	2.4
136	4.1	1.3	0.6	4.3	0.2	0.9	0.2	1.2
137/164					0.0			0.0
139/140				0.0			0.0	
141		0.7	0.1	0.3	0.1	0.3	0.1	0.8
142					0.0			
144		0.3		0.7	0.0		0.0	0.2
145								
146		0.1	0.1	0.5	0.0	0.1	0.0	0.6
147/149	6.1	4.7	1.5	7.6	1.9	3.0	1.3	5.0
148								
150				0.0				
152								
153/168	2.4	3.2	0.8	2.7	1.2	1.9	0.5	4.1
154		0.0		0.0			0.0	0.0
155		0.0	0.0	0.0				
156/157					1.9	0.0	0.3	0.2
158			0.1	0.1			0.0	0.6
159								
160				2.1		0.9	0.5	
161		0.2		0.3	0.0	0.0	0.0	0.0
162								
165								
167		0.0			0.0			
169		0.0						0.0
<hr/>								
Heptachlorobiphenyls								
<hr/>								
170		0.0	0.0	0.0				0.0
171/173			0.0		0.0			0.0
172								
174					0.2	0.4	0.0	1.0

175								
176	0.1		0.0		0.0			0.1
177	0.2		0.0		0.0	0.0		
178								0.2
179	0.5	0.1	0.5	0.1	0.4	0.1		0.9
180/193	0.5	0.2	0.4	0.2	0.3	0.1		0.9
181								
182								
183/185		0.0	0.1	0.1	0.2	0.0		0.7
184						0.0		0.0
186								
187	0.7	0.3	0.4	0.3	0.5	0.3		1.6
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194	0.0	0.0			0.0			
195								
196	0.0	0.0			0.0			0.0
197								
198/199		0.1				0.0		0.0
200								0.0
201	0.0					0.0		0.1
202	0.0	0.0	0.0		0.0	0.0		0.1
203					0.0	0.0		0.0
205					0.0			
Nonachlorobiphenyls								
206		0.0						
207								
208		0.0		0.0				
Decachlorobiphenyls								
209		0.0		0.1	0.1	0.0		0.1
Recoveries								
14	94%	74%	68%	63%	64%	57%	59%	57%
d-65/65	109%	121%	105%	87%	102%	87%	95%	88%
166	119%	92%	87%	87%	85%	75%	72%	74%
Batch I.D.	0100-02	0100-03	0100-04	0100-06	0100-08	0122-02	0122-04	0122-05
Sample I.D.	6106916	6100911Y R2	6102711P 081509	6102911Y R2	6103311Y R2	6100113Y R2	6100313Y R2	6100513Y R2
Deployment Date	6/10/2009	5/2/2009	5/14/2009	5/18/2009	5/31/2009	8/2/2009	8/2/2009	8/2/2009
Collection Date	9/8/2009	8/31/2009	8/15/2009	8/24/2009	8/24/2009	10/13/2009	10/27/200	11/2/2009

Monochlorobiphenyls								
1	0.6	1.5	1.0	0.7	1.0	0.7	1.2	1.7
2	0.3	0.6	0.4	0.3	0.3	0.6		0.7
3	4.9	7.9	3.1	1.9	3.0	8.3	5.6	8.1
Dichlorobiphenyls								
4	4.5	24.9	11.7	3.5	4.4	18.2	10.4	20.4
5	0.2	0.5	0.3	0.1	0.2			
6	2.2	6.7	4.2	1.1	2.1	3.8	4.7	4.6
7	0.5	1.2	0.7	0.3	0.5	0.8		1.1
8	8.0	28.1	21.8	5.8	7.9	13.2	12.1	17.3
9	0.5	2.0	0.9	0.3	0.6	0.7		1.0
10	0.2	0.7	0.3	0.1	0.2			
11	33.9	26.5	28.6	13.0	28.6	24.0	41.7	62.5
12/13	0.5	1.2	0.8	0.4	0.4		0.9	0.8
15	2.3	6.8	6.4	2.1	2.0	3.2	2.6	4.1
Trichlorobiphenyls								
16	6.5	23.2	35.2	6.3	4.9	6.3	5.3	7.9
17	5.0	18.4	25.2	4.1	3.9	7.0	6.0	10.5
18/30	17.0	17.6	15.2	15.3	16.3	14.9	12.9	20.5
19	1.5	6.0	5.9	1.1	1.1	2.8	1.9	3.6
20/28	9.0	26.3	46.1	8.9	6.8	10.9	9.2	12.3
21/33	6.1	18.6	32.9	5.5	4.6	6.6	5.4	7.6
22	3.2	8.9	16.7	3.1	2.5	4.5	3.5	4.3
23							1.9	0.8
24	2.5	9.0	13.5	2.4	0.0			
25	0.7	2.1	3.4	0.7	0.5	1.0	0.8	1.0
26/29	2.1	5.5	8.7	2.1	1.5	2.6		2.6
27	0.6	2.1	3.2		0.5	1.0	0.8	1.8
31	8.9	26.6	43.0	8.9	6.7	10.6	8.6	12.8
32	2.9	9.8	15.0	2.7	2.2	4.1	3.4	5.1
34		0.0			0.0			1.8
35	0.4		0.6		0.1			1.1
36		0.0			0.0		0.7	
37	1.4	3.7	9.2	1.7	1.0	2.3	1.7	1.7
28				0.0				
39								
Tetrachlorobiphenyls								
40/41/71	2.6	6.0	11.1	4.9		3.6	2.5	3.0
42			11.0	0.4	0.3	1.7		1.8
43/73	0.2	0.4	1.8	0.1				
44/47/65						9.7	11.1	8.9
45	2.7	5.4	8.7	3.0	2.4	2.3	2.7	2.2
46	0.2	0.9	2.0	0.6	0.5			
48	0.6	1.5	3.2			1.5	4.5	5.2
49/69	5.5	13.0	17.2	9.5	4.0	5.3		

50/53	1.5	3.7	4.5	1.9	0.8	1.8		1.9
52	19.5	45.1	36.8	42.7	13.6	5.7	4.6	4.9
54	0.0				0.0			
55	3.3	6.9		0.7	4.7			
56	0.1	0.9	7.1	2.8	0.9	1.9	1.3	1.1
57				0.5				
58	2.4	2.1	0.9		7.1			
59/62/75	1.5	9.0	11.6	3.8	4.4			
60			4.7	1.3		1.2		
61/70/74/76	9.6	21.8	30.9	22.4	8.0	9.8	8.7	7.5
63	8.4	8.5	3.8	3.6	23.1			
64	3.1	7.4	9.8	5.3	2.8	3.3	2.5	2.7
66	3.4	7.1	15.8	5.8		3.6	3.1	1.5
67	3.3	3.3	1.9	1.5	11.2			
68		0.3						
72				0.0				
77		0.0						
78				0.2	0.4			1.1
79		0.0			0.1			
80								
81					0.0			

Pentachlorobiphenyls

82	0.5	1.8	1.0	3.1	0.3			
83/99	3.1	8.3	5.1	13.7	2.3	2.4	4.4	3.1
84	2.7	7.4	3.9	10.1	1.9	3.4	3.3	2.4
85/116/117	0.7	1.0	0.4	2.0				
86/87/97/109/119	4.1	11.0	6.2	19.4	2.8	5.8	6.0	2.2
88/91	1.7	2.3	1.1	10.0	0.5	1.3	1.1	0.9
89	0.0		0.1	0.1	0.0			
90/101/113	7.3	17.1	11.1	30.6	4.7	13.4	9.4	6.9
92	1.3	3.1	2.0	5.6	0.9	2.0	1.5	1.4
93/100								
94	0.0							
95	12.1	28.0	16.6	39.3	8.0	16.1	11.3	8.3
96	0.0	0.0	0.0	0.1	0.0			
98/102		0.4		0.7	0.0			
103		0.0		0.1	0.0			
104		0.0						
105	0.9	2.2	0.3	5.4	0.4	1.0	1.4	0.7
106		0.0						
107/123	0.2	0.1	0.0	1.8	0.0			
108/124								
110/115	6.9	17.6	9.4	37.4	4.3	9.1	9.8	4.8
111								
112	4.1	11.1	6.8	17.9	3.1	1.5		

114	0.0	0.0			0.0			
118	3.0	8.3	4.0	19.9	1.7	3.8	4.5	2.2
120			0.0	0.0				
121								
122								
126	0.1	0.0	0.0	0.0	0.4			
127								
<hr/>								
Hexachlorobiphenyls								
129/138/163	2.2	5.0	3.8	13.8	1.0	7.2	3.5	2.0
130		0.4	0.0	0.8				
131		0.0	0.0	0.2				
132	1.1	2.7	1.7	5.9	0.3	3.7		
133	0.0	0.0						
134/143	0.2	0.4	0.2	0.9	0.0			
135/151	1.6	1.3	1.8	4.8	0.6	7.8	2.2	1.6
136	0.9	1.8	0.5	3.0	0.5	3.8		
137/164	0.0	0.1	0.0	1.5	0.0			
139/140		0.1	0.0	0.1				
141	0.6	1.2	1.1	1.9	0.2	2.5		
142	0.0							
144	0.2	0.1	0.2	0.8	0.0			
145								
146	0.4	0.8	0.7	1.8		2.0		
147/149	3.1	6.4	6.4	12.7	1.5	15.1	4.7	1.4
148								
150								
152			0.0					
153/168	2.0	4.3	4.5	9.1	0.9	9.5	3.3	1.8
154		0.0	0.3		0.1			
155			0.0	0.0	0.0			
156/157	0.0	0.0	0.0	0.9				
158	0.1	0.1	0.1	1.6	0.0			
159								
160			3.4					
161	0.3	0.6	0.5	1.2	0.1			
162	0.0							
165								
167		0.0		0.3				
169			0.0	0.0				
<hr/>								
Heptachlorobiphenyls								
170	0.0	0.0	0.1	0.3				
171/173	0.1		0.0	0.3				
172		0.0	0.0	0.0				
174	0.4	0.6	1.2	0.7	0.0			
175		0.0	0.0					

176	0.0	0.1	0.2	0.2	0.0			
177	0.2	0.3	0.6	0.5				
178		0.0		0.1				
179	0.3	0.6	1.1	0.8	0.1	2.3		
180/193	0.5	0.6	0.1	1.4	0.4	1.6		
181				0.0				
182								
183/185	0.7	1.3	1.0	1.9	0.3	1.6		
184								
186								
187	0.6	1.0	1.9	1.7	0.4			
188								
189								
190				0.0				
191								
192								
<hr/>								
Octachlorobiphenyls								
<hr/>								
194	0.0			0.0				
195			0.0					
196			0.0					
197				0.1				
198/199		0.1	0.2	0.2				
200			0.0	0.1				
201				0.0	0.0			
202	0.0	0.1	0.1	0.3	0.0			
203	0.0	0.0						
205								
<hr/>								
Nonachlorobiphenyls								
<hr/>								
206				0.2	0.1			
207				0.0				
208			0.0	0.1	0.0			
<hr/>								
Decachlorobiphenyls								
<hr/>								
209	0.0	0.1	0.0	0.1	0.1			
<hr/>								
Recoveries								
<hr/>								
14	64%	65%	62%	63%	64%	89%	80%	83%
d-65/65	105%	124%	131%	108%	95%	100%	90%	89%
166	84%	83%	78%	82%	80%	93%	82%	83%
<hr/>								
Batch I.D.	0122-08	0123-01	0123-03	0123-06	0123-08	0124-02	0124-03	0124-05
	6100713Y	6101113Y	6101313Y	6101913Y	6102113Y	6102313Y	6102513Y	6102713Y
Sample I.D.	R2	R2	R2	R2	R2	R2	R2	R2
Deployment Date	8/2/2009	8/2/2009	8/2/2009	8/15/2009	8/2/2009	8/15/2009	8/15/2009	8/15/2009
Collection Date	10/27/200	11/12/200	10/12/200	11/23/200	11/18/2009	11/21/2009	11/17/200	11/18/2009
<hr/>								
Monochlorobiphenyls								
<hr/>								
1	1.8	0.9	0.4	1.8	1.9	1.5	0.7	1.1

2	0.6	0.6	0.6	0.7	0.7	0.5	0.4	0.8
3	9.1	11.0	9.3	10.2	7.9	4.8	7.6	8.5
Dichlorobiphenyl								
4	20.8	28.5	25.0	25.4	17.6	10.5	23.6	31.7
5								
6	4.6	5.2	4.6	3.7	2.8	2.9	4.0	5.5
7	1.0	0.9	0.8	0.7	0.6	0.5	0.8	0.8
8	16.2	17.3	17.2	11.9	9.0	7.9	13.5	22.6
9	0.9	1.2	1.1	0.8	0.4	0.4	1.0	1.2
10		0.8	0.7	0.7	0.6	0.4	0.8	0.8
11	28.6	29.6	31.7	23.5	13.2	23.9	27.5	38.0
12/13	0.7	0.9	0.8	0.5	0.5	0.5	0.4	1.1
15	3.4	4.2	4.1	1.9	1.6	2.0	2.6	6.1
Trichlorobiphenyls								
16	7.4	9.5	11.3	4.7	3.4	4.3	5.6	21.0
17	9.3	11.9	13.1	7.0	5.0	4.9	7.8	24.1
18/30	18.7	26.4	31.0	16.3	10.9	10.6	16.9	50.8
19	3.0	4.2	4.9	3.1	1.8	1.5	3.1	6.6
20/28	11.9	19.5	19.1	8.5	6.7	8.8	9.6	44.2
21/33	7.7	10.8	10.8	4.4	3.6	5.4	5.8	27.8
22	4.9	6.5	6.2	2.7	2.1	3.3	3.2	16.0
23	0.8						0.4	
24								
25	1.3	1.4	1.5	0.6	0.4	0.6	0.8	2.8
26/29	2.5	3.6	3.9	1.7	1.2	1.9	2.1	8.1
27	1.2	1.7	1.9	1.0	0.7	0.7	1.1	3.6
31	12.5	17.7	18.7	7.4	6.1	8.6	9.1	40.1
32	4.4	6.0	7.3	3.4	2.3	2.8	4.1	14.0
34	2.3							
35		0.4			1.2			0.7
36								
37	2.0	3.7	2.7	1.5	0.7	2.2	1.8	8.9
28								
39								
Tetrachlorobiphenyls								
40/41/71	3.6	5.6	7.7	2.3	1.4	3.3	2.6	11.6
42	1.9	2.6	3.5	1.3	0.9	1.6	1.3	5.2
43/73		23.9	83.9	15.0	10.3			
44/47/65	9.0	14.0	34.5	7.6	5.4	8.7	7.5	21.8
45	2.0	3.3	4.6	1.8	1.1	1.8	1.7	5.9
46		1.1	1.6					1.9
48	1.7	2.4	2.9	1.3	0.7	1.2	1.1	5.0
49/69	5.3	8.1	17.1	4.5	2.9	4.9	4.3	13.2
50/53	1.9	2.6	4.7	1.3	1.0	1.3	1.5	4.0
52	5.2	23.9	83.9	15.0	10.3	19.7	16.9	33.0

54								
55								
56	1.3	2.7	5.4	1.2	0.7	1.9	1.0	5.8
57								
58								
59/62/75		1.0	1.0					1.8
60		1.3	2.2	0.5		1.0	0.6	4.0
61/70/74/76	8.7					11.8	7.4	25.8
63								
64	3.1	4.6	9.9	2.1	1.4	2.7	2.3	7.7
66	3.1	5.6	11.8	2.3	1.6	3.8	2.8	13.7
67								
68								
72		14.3	47.4	7.4	5.0			
77								
78								
79								
80								
81								

Pentachlorobiphenyls

82		1.0	10.3	0.8		1.1		1.0
83/99	3.1	5.6	38.0	4.5	2.4	5.5	3.9	5.7
84	2.4	3.8	30.4	3.1	1.8	4.1	2.8	3.4
85/116/117	1.1	1.7	11.1	1.7	0.6	1.8	1.6	1.9
86/87/97/109/119	3.6	1.9	17.3	1.7	1.2	7.7	4.5	4.2
88/91	1.0	1.6	10.1	1.4	0.8	1.9	1.6	1.9
89								
90/101/113	6.9	11.7	76.8	9.1	5.2	11.4	7.9	11.3
92	1.2	2.1	13.6	1.7	1.0	2.2	1.6	2.1
93/100								
94								
95	9.3	14.4	89.7	10.9	6.9	13.5	10.9	13.3
96			0.7					
98/102			2.3					
103								
104								
105	0.7	1.2	16.9	1.3		1.7	0.7	1.2
106								
107/123			4.2					
108/124			2.3					
110/115	4.9	8.8	87.2	7.6	3.3	10.5	5.6	8.2
111								
112								
114			1.1					
118	2.1	4.3	48.3	3.9	1.2	5.2	2.5	3.6

120								
121								
122			0.7					
126		0.4			0.4			0.5
127								
<hr/>								
Hexachlorobiphenyls								
129/138/163	1.9	3.1	33.8	3.4	0.6	2.9	1.3	3.0
130			2.5					
131			1.1					
132		1.6	17.6	1.8		1.9	1.1	2.0
133								
134/143			3.1					
135/151		2.2	12.5	1.7		2.4	1.2	3.0
136	2.4	1.2	8.3	1.1	0.5	1.0	0.7	1.6
137/164			2.5					
139/140			1.1					
141			5.9			0.7		1.2
142								
144			2.1					
145								
146			4.6	3.9	0.8			
147/149		4.5	31.0	4.0	1.1	4.4	2.6	6.3
148								
150								
152								
153/168	1.8	2.8	21.8			3.2	1.5	4.5
154								
155								
156/157								
158			4.0					
159								
160								
161								
162								
165								
167			0.9					
169								
<hr/>								
Heptachlorobiphenyls								
170								
171/173			0.7					
172								
174			1.5					1.3
175								
176								
177			0.8					

178								
179								
180/193	0.7	1.8	0.7		0.9			0.7
181								
182								
183/185	0.6	1.2						0.9
184		0.5						
186								
187	1.2	1.4	0.8		0.9			1.8
188	0.5	1.0	0.4		0.6			1.1
189								
190								
191								
192								

Octachlorobiphenyls

194
195
196
197
198/199
200
201
202
203
205

0.7

Nonachlorobiphe

206
207
208

Decachlorobiphenyls

209

Recoveries

14	78%	89%	81%	81%	82%	67%	65%	66%
d-65/65	85%	94%	86%	86%	88%	72%	72%	75%
166	85%	86%	91%	83%	88%	78%	86%	82%

Batch I.D.	0124-07	0125-02	0125-03	0125-05	0125-07	0125-09	0126-01	0126-03
	6102913Y	6103738P	6103515P	6103315P	6102715P0	6102915P0	6102315P	6101915P0
Sample I.D.	R2	02272010	02272010	03012010	2222010	2272010	02272010	2222010
Deployment Date	8/24/2009	11/21/200	11/28/200	11/17/200	11/17/2009	11/24/2009	11/21/200	11/23/2009
Collection Date	11/24/200	2/27/2010	2/27/2010	3/1/2010	2/22/2010	2/27/2010	2/27/2010	2/22/2010

Monochlorobiphenyls

1	2.7	2.0	2.1	2.9	2.3	1.7	1.9	4.9
2	0.7	0.9	0.9	0.9	0.6	0.8	0.6	1.3
3	11.2	5.8	4.1	4.7	4.9	5.9	5.3	14.0

180/193	1.7			0.8	1.7		0.4	
181								
182								
183/185	1.0			0.9	1.0			
184								
186								
187	0.7			1.9	1.3		0.5	
188	0.9			1.2	0.9			
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199								
200								
201								
202								
203								
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	84%	83%	90%	83%	70%	85%	93%	94%
d-65/65	88%	73%	84%	76%	64%	80%	98%	102%
166	99%	82%	88%	85%	79%	99%	102%	105%
Monochlorobiphenyls								
1	2.4	2.2	2.4	2.4	2.3	4.5		
2	0.7	0.7	0.8	0.9	0.7	1.3		
3	5.4	6.9	9.0	7.0	4.0	7.8		
Dichlorobiphenyls								

Batch I.D.	0126-05	0126-07	0127-01	0127-03	0127-06	0127-07
	6104315P0227	6110712P0303	6109612P0303	6109112P0303	6104716P0322	6108918P0127
Sample I.D.	2010	2010	2010	2010	2010	2010
Deployment Date	11/21/2009	11/14/2009	10/29/2009	10/26/2009	12/26/2009	9/18/2009
Collection Date	2/27/2010	3/3/2010	3/3/2010	3/3/2010	3/22/2010	1/27/2010

4	10.9	4.4	5.6	7.1	5.6	8.9
5			0.4	0.6	0.5	1.0
6	5.8	3.0	2.9	4.5	4.1	5.5
7	0.9	0.3	0.7	1.0	0.9	1.4
8	24.9	12.1	10.7	15.4	17.4	19.8
9	1.7	0.8	0.8	1.1	1.2	1.5
10	0.4				0.2	0.3
11	19.4	15.7	24.2	27.8	43.7	40.5
12/13	1.1	0.9	0.9	1.2	1.5	1.7
15	5.6	3.9	3.2	4.3	6.6	6.6

Trichlorobiphenyls

16	16.0	6.2	5.5	6.7	10.9	10.3
17	15.7	6.2	5.5	7.2	11.3	10.3
18/30	35.4	15.0	12.7	15.6	23.1	21.3
19	5.1	1.4	1.5	1.8	2.4	2.4
20/28	22.8	16.3	12.5	13.4	25.7	20.5
21/33	14.5	10.4	7.9	8.7	16.1	13.4
22	7.6	6.0	4.3	4.6	9.0	7.6
23	1.2	0.6	0.9	1.1	0.8	1.2
24						
25	2.0	1.1	0.9	1.0	2.0	1.6
26/29	5.1	3.1	2.8	2.5	5.0	4.3
27	2.2	0.8	0.9	1.0	1.8	1.5
31	23.3	17.5	12.7	12.8	23.5	22.1
32	8.7	4.5	3.5	4.2	7.2	6.2
34			2.7	2.7	1.2	1.7
35					0.8	0.7
36						
37	3.3	2.9	2.6	2.2	4.6	4.4
28						
39		0.5	0.7	0.7	0.5	

Tetrachlorobiphenyls

40/41/71	4.4	5.5	4.2	3.6	7.3	6.1
42	2.8	3.2	2.6	2.0	4.2	3.4
43/73	7.8	9.8				
44/47/65	15.6	20.3	17.2	11.8	36.6	20.0
45	3.9	2.8	2.8	1.7	8.4	5.0
46	1.4				1.3	1.4
48	2.9	3.0	2.1	1.7	3.9	3.1
49/69			9.2	6.7	13.0	9.9
50/53	3.1	3.2	2.3	1.8	3.3	2.9
52	33.2	45.4	38.2	25.8	45.7	30.1
54						
55						
56	2.4	2.9	2.1	1.6	3.6	4.4

57						
58						
59/62/75	1.0	0.9	0.8	0.5	1.4	1.3
60	1.3	1.5	1.4	0.8	2.0	2.6
61/70/74/76	15.6	19.1	15.5	10.0	24.3	19.8
63						
64	5.1	6.2	4.7	3.7	8.0	6.2
66	5.6	7.0	5.2	3.8	7.9	8.3
67						
68					1.8	0.7
72						
77					0.5	
78						
79						
80						
81						

Pentachlorobiphenyls

82	1.6	1.2	1.1	0.7	1.9	1.4
83/99	7.3	6.8	7.4	4.0	11.5	7.1
84	5.6	6.0	6.2	3.1	8.7	5.3
85/116/117	2.8	1.9	1.6	1.0	2.3	1.7
86/87/97/109/119	6.8	5.2	3.0	4.7	9.6	6.4
88/91	2.0	2.2	2.4	1.4	3.4	2.0
89						
90/101/113	15.7	14.9	16.1	8.8	31.1	19.6
92	3.0	2.8	2.9	1.6	5.6	3.2
93/100					1.1	
94						
95	17.8	21.0	22.7	12.1	34.3	19.4
96						
98/102						
103						
104						
105	2.4	1.5	1.7	0.7	1.6	2.5
106						
107/123	0.6				0.5	0.6
108/124					0.4	
110/115	13.9	10.6	11.4	6.0	19.5	14.4
111						
112						
114						
118	7.5	4.7	5.7	2.5	6.4	7.9
120						
121						
122						

126	0.4		0.6	0.4	0.6	
127						
Hexachlorobiphenyls						
129/138/163	5.4	4.8	3.3	1.3	4.5	7.8
130						
131						
132	2.6	1.8	1.6	0.6	3.8	4.2
133						
134/143					0.8	0.8
135/151	2.5	3.0	2.3	1.0	7.1	7.9
136			1.7	0.6	4.2	3.1
137/164						
139/140						
141	1.0	1.1	0.8		1.3	2.2
142						
144					1.1	1.3
145						
146	0.8	0.8			0.9	1.7
147/149	5.4	6.3	4.5	2.1	13.0	14.5
148						
150						
152						
153/168	3.6	5.0	2.7	1.2	4.9	9.8
154						
155	1.6	1.5				
156/157						
158		0.5			0.4	0.8
159						
160						
161						
162						
165						
167						
169						
Heptachlorobiphenyls						
170						
171/173						
172						
174		1.4			0.6	1.4
175						
176						
177		0.8				
178						
179		1.1			1.7	1.9
180/193	0.5	2.1	0.7		0.5	1.4

181						
182						
183/185		1.6		0.6		1.2
184						
186				0.3		0.7
187	0.7	2.5	0.7	1.3		2.2
188						
189						
190						
191						
192						
<hr/>						
Octachlorobiphenyls						
<hr/>						
194						
195						
196						
197						
198/199		0.7				
200						
201						
202						
203						
205						
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Nonachlorobiphenyls						
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206						
207						
208						
<hr/>						
Decachlorobiphenyls						
<hr/>						
209						
<hr/>						
Recoveries						
<hr/>						
14	93%	89%	75%	76%	84%	86%
d-65/65	100%	95%	79%	79%	83%	81%
166	100%	95%	85%	83%	82%	80%

Table B-3: Columbus Junction outdoor air raw data showing necessary metadata and congener masses (ng)

Batch I.D.	0079-02	0079-04	0079-06	0079-08	0079-11	0090-07	0090-09	0090-12
Sample I.D.	6204213P	6203613P	6205213P	6205613P	6206813P	6200313P	6202613P	6202813P
Deployment	5/24/2008	5/24/2008	5/26/2008	6/2/2008	6/27/2008	5/9/2008	5/21/2008	5/22/2008
Collection	9/27/2008	9/20/2008	9/27/2008	9/21/2008	9/28/2008	9/4/2008	8/29/2008	9/4/2008
Monochlorobiphenyls								
1	0.1	1	0.7	0.8	0.5	0.7	2.0	2.1
2	0.1	0.1	0.2	0.1	0.2	0.5	0.3	0.4
3	1	1.6	0.8	1.3	1.3	2.6	1.8	1.8
Dichlorobiphenyls								
4	5.5	7.5	4	10.1	5	9.9	7.4	6.8
5	0	0.5	0.2	0.1	0	0.7	0.4	0.4
6	0.1	3	1.7	1.4	1.5	4.9	3.3	2.9
7	0.3		0.2	0.6		1.2	0.9	0.8
8	5.6	13.4	8.2	8	6.6	21.5	14.2	12.4
9	0.2	0.8	0.2	0.6	0	1.3	1.2	0.2
10	0.1	0.3		0.2	0.2	0.5	0.4	0.3
11	4.3	13.5	8.3	11.5	6.5	46.4	12.1	9.5
12/13	0.1	2	0.5	0.4	0.1	1.5	0.8	0.7
15	1.5	7.9	2.4	1.6	1.8	8.5	4.9	4.1
Trichlorobiphenyls								
16	3.4	16.1	5.4	3	3.6	11.9	8.0	6.6
17	2.8	8.8	4.4	2.8	3.3	10.0	7.2	6.4
18/30								
19	0.1	2.1	0.3	0.7	0	2.4	1.4	0.4
20/28	5.1	41	7.2	4.3	5.8	24.5	17.0	14.5
21/33	3.9	33.1	5.1	2.9	4	16.5	12.0	10.1
22	1.9	22	2.8	1.7	1.8	8.4	5.9	5.1
23			0.1					
24	0	0.4	0.2	0.1	1.8	0.4	0.3	0.3
25	0.5	3.6	0.5	0.3	0.4	2.0	1.4	1.3
26/29	0.6	7.9	1.7	0.8	0.9	4.5	3.0	2.5
27	0.3	1.6	0.7	0.2	0.6		1.0	
31	5.5	40.5	7	4.3	5.6	23.0	15.7	13.2
32	1.5	7.4	2.6	1.3	1.8	6.3	4.0	3.6
34			0			0.0		
35		3.3		0	0.1	0.3		
36			0	0				
37	0.6	21.1	0.9	0.5	0.4	4.1	2.9	2.2
28				0				
39					0.1			
Tetrachlorobiphenyls								

40/41/71	1.4	35.2	2.4	1.7		7.6	4.4	5.1
42	0.2	7.2	0.1	0.7	0.2	1.2	3.6	0.7
43/73	0.1	11.4	10.4	6.9		39.2	40.1	31.8
44/47/65								
45	0.5	4.1	1.5	0.5	0.2	1.0	2.9	0.8
46	0.1	3.9	0.5		0.1	1.3	0.1	0.6
48	1	11.3	1	0.8	1.2	3.6	2.5	2.3
49/69	2.6	25.6	3.4	2.9	3	13.1	11.5	9.1
50/53		6	0.9	0.1		3.3	2.8	0.4
52	8.1	43.4	11.2	12.1	8.2	47.2	47.2	38.0
54	0.1							
55		1.1				0.2		
56	0.2	24.9	0.5	0.7		3.0	2.0	1.5
57		0.2						
58			0.1	0.1		0.1		
59/62/75	0.2	19.2	0.5	1.1	1.3	9.7	1.1	6.4
60	0.1	15.3	0.3		0.1	1.5	1.2	0.6
61/70/74/76	0.7	19.5	1	1.2	0.5		14.6	11.6
63		1.8	0.1			1.0	0.2	0.1
64	1.4	20.8	0.8	1.5	1.8	6.5	5.4	4.2
66	0.4	41.8	1.9	1.6	1.6	6.5	4.6	3.6
67		1.7	0.1	0.1		0.1		0.1
68	0.1	0.2		0.1		0.1		
72	0.1							
77	0.1	5.5				0.2	0.3	
78			0.1		0			
79	0.1			0				
80			0			0.1		0.0
81				0.1	0.1			
<hr/>								
Pentachlorobiphenyls								
<hr/>								
82		4.4	0.2	0.1	0.3	1.4	0.7	
83/99	2	7.9	3.8	1.4	0.7	15.7	7.9	7.0
84	0.4	6.5	1.8	2.7	1.3	6.4	4.5	3.8
85/116/117	0.3	8.9	1.1	0.8	0.3	4.5	1.8	2.0
86/87/97/10	0.6	8.9	2	1.7	0.6	4.5	2.3	1.6
88/91		4.1	0.4	1.4	0.7	2.9	2.4	1.9
89						0.1		0.1
90/101/113	1.4	14.1	5.6	6.4	3.2	19.3	12.2	8.5
92	0.3	2.5	1	0.6	0.4	3.6	2.1	1.6
93/100						0.2		0.7
94	0.1			0.1	0.5	0.3	0.1	0.1
95	3.5	13	5.9	8.2	4.1	23.4	20.0	14.9
96					0.1		0.0	0.1
98/102		0.2	0.1	0.3		0.8	0.4	0.1
103						0.1		

104								
105	0.1	6.8	0		0.1	3.1	0.2	0.1
106								
107/123	0.1	0.1		0.4	0.6	1.5	0.7	0.8
108/124	0.1			0.4	0.6	1.0	0.4	0.7
110/115	2.9	34.9	7.9	9	4.5	18.6	7.5	5.3
111	0		0					
112		0.8		0.2	0.5	8.8	4.5	3.4
114		0.6	0					
118	0.6	11.8	1.6	1.6	1.2	11.2	2.5	1.7
120	0.1			0.1	0.1		0.0	
121		0				0.0	0.1	
122						0.1		
126			0.1	0		0.0		
127								

Hexachlorobiphenyls

129/138/163	0.1	2.2	0.3	0.9	0.1	8.5	0.4	
130				0.1		0.3		0.0
131		0.3		0.1			0.1	
132	0.1	0.4	0.6	0.7		3.2	0.7	0.4
133	0.3		1.5					0.2
134/143					0.2	0.4	0.1	
135/151	0.3	0.1	0.1	0.3	0.1	4.8	0.4	0.2
136	0.1	0.4	0.5	0.3	0.2	2.0	1.0	0.7
137/164		0.1						
139/140						0.2		
141		0.1				2.3	0.1	
142							0.1	
144						1.0	0.1	
145		0.1				0.1		
146		0.1				1.0	0.0	0.0
147/149	0.8	2.4	0.8	1.6	0.8	9.9	2.3	1.6
148								
150								0.0
152				0				0.0
153/168	0.1	1.2	0.1	0.4	0.1	8.6	0.2	0.2
154		0.1				0.1		
155				0	0	0.0		
156/157	1.7	0.5	0.6	0.2	0.1	0.7		0.1
158				0		0.8	0.0	
159								
160				0.1				
161		0.1		0		0.2	0.0	0.0
162								
165								

167								0.0
169								
Heptachlorobiphenyls								
170	0.1			0.1	0.7			
171/173					0.8			
172					0.1			
174	0.1				1.2			
175								
176					0.1	0.1		
177				0.1	1.2			
178					0.2			
179					1.5	0.1		
180/193	0.1				3.3	0.1		
181								
182								
183/185	0.2	0.1			2.7			0.1
184								
186								
187					3.0			0.1
188								
189								
190					0.1			
191								
192				0.1				
Octachlorobiphenyls								
194	0.1				0.4			
195		0.1					0.0	
196					0.1			
197		0.1					0.0	
198/199		0.1			0.5		0.1	
200		0.1						
201		0.1			0.1			
202					0.3			
203					0.3			
205	0.1			0.1				
Nonachlorobiphenyls								
206								
207					0.12			
208			0.1					
Decachlorobiphenyls								
209								
Recoveries								
14	50%	36%	57%	47%	51%	81%	53%	63%
d-65/65	62%	136%	79%	65%	68%	123%	92%	97%
166	70%	57%	88%	69%	77%	88%	61%	73%

44/47/65								8.65
45	3.2	3.6	2.2	3.1	15.7	10.8	20.6	1.07
46	0.8		0.9	0.7	4.7	3.2	6.9	
48	1.9	2.9	1.4	1.9	16.0	9.2	21.7	1.38
49/69	12.9	19.4	12	15.7	72.0	47.7	109.9	5.12
50/53	2.7	4.3	2.3	3	16.5	11.3	22.3	1.77
52	59	97.3	54.6	82.7	309.5	207.1	503.3	19.79
54								
55								
56	3.7	4	1.7	4	11.8	4.7	14.0	
57								
58								
59/62/75	3.9	5.3	2.8	4.6	3.9	1.6	6.3	1.10
60	1	0.8	1		6.4	3.3	7.8	
61/70/74/76	16.9	24.7	10.7	20.6	99.6	53.3	147.2	5.69
63								
64	6.1	8.9	5	7.3	34.4	19.8	49.6	2.97
66	5.3	6.8	3.5	4.8	29.3	14.6	38.7	2.33
67								
68	1.7	2.2	1.1					
72								
77								
78								
79								
80								
81								
<hr/>								
Pentachlorobiphenyls								
82	1.1			0.5	4.0		6.8	
83/99	5.9	10.4	2.8	6.5	37.2	18.9	67.2	1.79
84	5.2	13.2	4.1	7.2	32.6	19.8	62.8	2.01
85/116/117	2	0.9	0.4	1.7		3.8		1.10
86/87/97/10	5.1	7.9	2.4	4.9	35.3	11.4	67.2	2.16
88/91	2.6	5.4	1.8	3.3	18.4	10.8	32.5	1.20
89								
90/101/113	11.7	24.3	7.7	14.5	77.7	42.0	149.2	3.90
92	2	3.8	1.2	2.7	15.7	8.5	29.7	0.85
93/100	0.4	0.5	0.2	0.7				
94								
95	26	62.6	21.2	38.7	148.8	89.8	288.7	7.28
96		0.5	0.1	0.2	1.7		3.3	
98/102					3.9	2.7	7.4	
103								
104								
105	0.3	0.3	0.2	0.4	2.8	1.7	3.7	
106	0.5	0.4	0.3	1.7				

107/123								
108/124								
110/115	6.4	11.1	3.7	6.6	48.1	21.9	82.7	2.86
111								
112				0.5				
114								
118	2.9	4.8	0.9	1.8	10.2	5.8	16.0	1.13
120								
121								
122								
126		0.3		0.1				
127								

Hexachlorobiphenyls

129/138/163	0.9	1.3	0.4	0.4	3.1	3.0	5.4	
130								
131				0.4				
132	0.6	1	0.5	0.4	2.9	2.0	5.5	
133								
134/143								
135/151	0.8	1.8	0.5	0.9	6.2	3.6	12.7	
136	1	1.8	0.8	1.4	5.1	3.5	11.6	
137/164								
139/140								
141								
142				0.2				
144							2.2	
145								
146								
147/149	2.4	5.3	1.2	1.6	9.3	6.4	20.8	1.03
148								
150								
152								
153/168	0.9	1.8	0.4		3.1	2.9	6.6	
154								
155								
156/157	1.7	1.3	1.9	1.6				
158				0.5				
159								
160				0.3				
161								
162								
165								
167								
169				0.6				

Heptachlorobiphenyls								
170								
171/173								
172								
174		0.2						
175								
176	0	0.1						
177		0.1						
178								
179	0.1	0.4	0.1	0.1	0.9		1.7	
180/193	0.2	0.2	0.1					
181								
182		0.1						
183/185	0.1	0.1						
184								
186								
187	0.2	0.4	0.1	0.1				
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199								
200								
201								
202								
203								
205								
Nonachlorobiphenyls								
206								
207				0.2				
208								
Decachlorobiphenyls								
209								
Recoveries								
14	58%	71%	31%	42%	90%	74%	77%	70%
d-65/65	98%	147%	71%	104%	74%	47%	75%	60%
166	64%	89%	40%	53%	109%	85%	87%	88%

Batch I.D.	0110-04	0110-06	0110-08	0110-10	0111-02	0111-04	0111-06	0111-08
Sample I.D.	6200319P0	6200519P0	6200919P0	6201019P052	6201419P0	6201619P0	6201819P0	6202019P0
Deployment	5/22/2009	5/23/2009	5/23/2009	5/23/2009	5/16/2009	5/19/2009	5/16/2009	5/16/2009
Collection	2/14/2009	2/14/2009	2/10/2009	2/14/2009	2/12/2009	2/14/2009	2/14/2009	2/14/2009

Monochlorobiphenyls

1	4.74	3.27	6.34	5.31	3.5	3.9	5.9	3.4
2	0.78	0.54	1.11	0.96	0.7	0.7	1.0	0.6
3	16.44	17.58	33.82	33.03	20.6	23.7	18.6	22.2

Dichlorobiphenyls

4	9.30	7.11	11.89	12.32	8.5	10.3	25.8	9.9
5	0.40	0.30	0.56	0.60	0.2	0.0		0.2
6	0.94	0.67	1.24	1.41	2.2	2.1	7.0	2.2
7	0.60	0.50	0.81	1.01	0.7	0.6	1.8	0.5
8	2.64	1.61	3.24	3.54	9.2	8.3	32.6	8.6
9	0.25		0.37	0.50	0.9	0.8	2.8	0.8
10	10.30	6.33	12.67	14.59	0.3	0.4	1.2	0.4
11	16.20	11.06	12.76	13.13	15.2	20.3	27.0	20.3
12/13	0.55	0.35	0.88	0.73	0.5	0.4	1.1	0.5
15	1.62	1.20	1.80	2.17	1.5	1.3	4.8	1.8

Trichlorobiphenyls

16	3.26	2.38	4.40	4.64	3.3	2.4	7.0	3.5
17	3.68	2.50	4.56	5.18	3.6	3.1	8.9	3.8
18/30	8.48	5.76	10.68	12.34	8.3	6.8	19.2	8.9
19	0.96	0.73	1.41	1.58	1.1	1.0	3.2	1.1
20/28	12.33	9.01	15.46	17.16	5.4	4.3	11.0	5.8
21/33	5.27	4.09	5.88	7.03	3.4	2.7	6.7	3.6
22	1.67	1.28	1.92	2.40	1.9	1.6	3.6	2.1
23								
24								
25	0.54	0.47	0.74	0.77	0.4	0.4	10.1	0.5
26/29					1.1	1.0	2.2	1.3
27	0.49	0.25	0.58	0.62	0.4	0.3	1.0	0.4
31	0.43	0.36	0.52	0.62	5.8	4.5		6.2
32					2.0	1.6	4.7	2.2
34	1.85	1.32	2.47	3.00				
35					0.1	0.5		0.2
36	1.67	1.48	1.95	2.19				
37	0.67	0.44	0.41	0.57	0.8	0.7	1.5	0.9
28								
39								

Tetrachlorobiphenyls

40/41/71	2.21	1.35	2.29	2.64	1.8	1.4	5.6	2.2
42	1.19	0.83	2.08	1.64	1.1	0.7	2.5	1.3
43/73								

44/47/65	11.44	6.95	20.76	15.46	6.4	5.0	12.7	6.4
45	0.77	0.58	1.09	0.60	1.1	0.4	3.2	0.5
46								0.5
48	1.10	0.73	1.39	1.14	1.0	0.8	1.7	1.2
49/69	7.53	4.05	13.50	9.62	6.0	4.2	11.3	5.8
50/53	1.93	1.28	3.47	3.05	1.2	0.9	2.7	1.3
52	37.73	19.97	72.36	52.57	12.0	6.8	19.3	9.9
54								
55								
56	0.99		1.45	0.19	0.8	0.8	2.9	1.0
57								
58								
59/62/75					0.3	0.2	0.5	0.4
60					0.5	0.4	1.6	0.5
61/70/74/76	8.62	4.78	12.81	9.08	5.0	4.2	12.7	5.2
63								
64	3.32	1.96	5.19	4.01	2.0	1.4	4.8	1.9
66	2.32	1.55	3.29	2.47	2.0	1.7	5.0	2.0
67								
68								
72								
77								
78								
79								
80								
81								

Pentachlorobiphenyls

82			12.16	6.33		0.3		0.3
83/99	3.42	2.24	5.25	3.32	1.5	1.6	8.3	1.7
84	3.57	1.95	6.65	4.38	1.4	1.2	6.3	1.5
85/116/117	1.24	0.86	3.89	3.20	0.9	1.0		0.3
86/87/97/10	1.24	2.36	1.96		1.7	1.0	9.7	2.1
88/91	1.85	1.10	3.10	2.01	0.7	0.6	2.9	0.8
89								
90/101/113	8.05	4.75	13.47	7.78	3.2	3.4	15.7	3.9
92	1.46	0.86	2.86	1.67		0.7	4.0	0.8
93/100					5.5			
94								
95	14.69	8.19	29.15	17.84		4.5	18.0	5.7
96								
98/102								
103								
104								
105		0.55			0.4	0.4	2.1	0.5
106								

107/123								
108/124								
110/115	4.00	2.71	1.22	0.80	2.1	2.5	12.5	2.6
111								
112								
114								
118	1.42	1.11	1.96	0.95	0.9	1.2	6.5	1.3
120								
121					0.4			
122								
126					0.7	0.7		0.9
127								
<hr/>								
Hexachlorobiphenyls								
129/138/163	0.67	0.69	1.23		0.4	0.9	2.8	0.8
130								
131								
132			0.86		0.3	0.3	2.2	0.4
133								
134/143								
135/151	0.78	1.09	1.46	1.42	0.3	0.4	1.9	0.4
136	0.60	0.30	1.46	0.77	0.2	0.3	1.3	0.3
137/164								
139/140								
141								
142								
144								
145								
146								
147/149	1.19		2.33		0.7	0.8	3.2	0.9
148								
150								
152								
153/168	0.34	0.63	1.06		0.3	0.6	2.2	0.6
154								
155								
156/157					2.0		1.9	2.1
158								
159								
160								
161								
162								
165								
167								
169						1.7		

Heptachlorobiphenyls								
170								
171/173								
172								
174								
175								
176								
177								
178								
179								
180/193								
181								
182								
183/185								
184								
186								
187								
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199								
200								
201								
202								
203								
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	85%	60%	60%	70%	85%	72%	104%	83%
d-65/65	72%	50%	49%	58%	86%	68%	81%	75%
166	106%	79%	78%	90%	107%	88%	106%	107%

 Heptachlorobiphenyls

170
 171/173
 172
 174
 175
 176
 177
 178
 179
 180/193
 181
 182
 183/185
 184
 186
 187
 188
 189
 190
 191
 192

 Octachlorobiphenyls

194
 195
 196
 197
 198/199
 200
 201
 202
 203
 205

 Nonachlorobiphenyls

206
 207
 208

 Decachlorobiphenyls

209

 Recoveries

14	70%	86%	80%	81%	80%	69%	90%	53%
d-65/65	64%	80%	75%	75%	75%	74%	96%	55%
166	85%	117%	109%	111%	110%	69%	90%	52%

44/47/65	8.1	9.4	7.9	9.1	7.6	24.7	7.6	25.4
45	0.5	3.5	2.3	2.5	2.5	10.4	2.9	8.8
46	0.3	1.0				2.9		
48	0.6	1.9	1.2	1.3		7.0		4.3
49/69	4.5	6.1	4.9	5.0	4.2	17.7	4.5	15.0
50/53	1.3	3.0	2.4		2.0	8.0	2.9	8.2
52	26.5	25.6	23.6	23.3	22.4	54.7	21.9	65.7
54								
55								
56	0.5	1.2		1.3		2.7		3.2
57								
58								
59/62/75	0.2	0.5				2.2		1.7
60	0.3	0.5		0.7		1.4		1.9
61/70/74/76	4.6	6.9	4.2	7.5	4.6	15.4	4.4	17.1
63								
64	1.9	3.0	2.1	2.8	2.3	8.3	2.4	8.4
66	1.1	2.5	1.3	3.0	1.8	7.2	1.4	7.4
67								
68								
72								
77								
78								
79								
80								
81								

Pentachlorobiphenyls

82	1.1							
83/99	1.8	2.2	1.9	2.0	1.7	3.4	1.9	5.6
84	2.5	2.0	1.9	2.1		2.9	1.4	5.5
85/116/117	0.6		0.9	1.1	1.1	1.1	2.5	7.8
86/87/97/10	2.0	2.6	2.0	2.6	1.8	2.7	2.0	5.9
88/91	1.2	1.0	1.0		1.5	1.6		2.9
89								
90/101/113	4.3	5.1	4.5	4.4	3.2	7.2	3.4	10.7
92	0.9	0.9	1.0			1.4		1.9
93/100								
94								
95	10.6	7.3	8.0	6.7	6.9	12.8	6.3	20.2
96	0.2							
98/102	0.2							
103								
104								
105	0.2	0.4						
106								

107/123							
108/124							
110/115	2.4	4.1	2.8	2.7	2.1	4.0	
111							
112							
114							
118		1.2	1.2	1.2		1.1	0.9
120							2.1
121							
122							
126	0.4						
127							
<hr/>							
Hexachlorobiphenyls							
<hr/>							
129/138/163		1.0	1.1				
130							
131							
132	0.7	0.5					
133							
134/143							
135/151	1.3						
136	1.2						1.7
137/164	1.0						
139/140							
141							
142	2.8						
144							
145							
146							
147/149		1.6	1.5	1.4		0.4	3.3
148							
150							
152							
153/168	1.1	1.5	0.7				
154							
155							
156/157	2.4						
158							
159							
160							
161							
162							
165							
167							
169							

Heptachlorobiphenyls								
170								
171/173								
172								
174								
175								
176								
177								
178								
179								
180/193								
181								
182								
183/185								
184								
186								
187								
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199								
200								
201								
202								
203								
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	90%	86%	89%	88%	93%	83%	84%	82%
d-65/65	96%	92%	94%	99%	96%	83%	90%	84%
166	89%	88%	90%	98%	100%	87%	89%	82%

Batch I.D.	0115-06	0115-08	0116-03	0116-05	0116-07	0116-09	0117-02	0117-04
Sample I.D.	6209013	6200115	6203219P0 9262009	6204212YR2 P09282009	6205212P0 9302009	6205412P0 9142009	6205612P0 9102009	6206212P0 9222009
Deployment	10/11/2008	8/9/2008	7/7/2009	6/28/2009	7/11/2009	6/4/2009	6/5/2009	7/18/2009
Collection	1/11/2009	11/14/2008	9/26/2009	9/28/2009	9/30/2009	9/14/2009	9/10/2009	9/22/2009

Monochlorobiphenyls

1	8.9	5.5	2.5	2.8	3.1	2.9	5.2	6.1
2	1.6	1.1	0.6	0.4	0.5	0.6	1.0	1.1
3	75.0	25.2	33.1	22.1	22.8	24.3	28.2	36.7

Dichlorobiphenyls

4	302.8	84.9	83.4	43.9	52.6	63.2	52.7	65.2
5				0.3	0.3		0.7	
6	39.7	12.0	9.1	5.5	5.7	6.8	7.5	9.6
7	5.1	2.3	1.6	1.1	1.2	1.2	1.4	1.8
8	175.8	47.4	37.4	22.5	22.9	28.1	32.8	37.1
9	6.0	3.7	1.9	1.6	1.7	1.7	1.9	2.4
10	9.4	2.8	3.0	1.6	1.9	2.1	1.4	2.0
11	34.7	23.0	31.0	42.2	29.5	35.9	41.3	30.4
12/13	3.3	1.3	1.1	0.6	1.1	1.1	0.5	1.8
15	18.8	6.2	4.1	4.3	3.1	3.8	5.8	6.7

Trichlorobiphenyls

16	59.7	12.3	12.1	8.4	6.1	8.8	13.1	13.4
17	107.6	20.7	20.1	11.9	9.5	13.7	16.3	15.7
18/30	231.8	45.9	45.2	26.5	21.8	32.0	35.8	36.7
19	38.8	8.1	9.6	4.8	4.5	6.4	6.1	6.6
20/28	69.7	21.4	14.0	16.2	10.3	15.1	19.0	21.5
21/33	38.3	12.1	8.9	10.3	6.1	9.2	12.6	14.2
22	17.1	6.8	4.2	6.1	3.2	5.2	6.5	7.5
23								
24								
25	5.1	1.5	1.0	1.2	0.7	1.0	1.6	2.0
26/29	16.0	4.4	3.2	3.3	2.0	3.0	4.0	4.3
27	12.3	2.4	2.3	1.7	1.3	1.7	1.9	2.3
31	65.3	19.7	14.8	16.8	10.4	14.8	20.8	22.4
32	44.7	9.8	8.5	6.3	4.6	6.9	8.1	7.9
34								
35				0.6			0.7	
36								
37	3.2	2.0	1.5	2.1	1.4	2.0	2.4	3.0
28								
39								

Tetrachlorobiphenyls

40/41/71	6.2	3.5	3.1	5.4	3.4	4.6	7.4	6.9
42	15.7	6.1	1.9	2.6	1.6	2.3	3.5	2.9
43/73								

44/47/65	31.4	11.2	13.3	20.5	10.9	16.3	29.8	24.3
45	14.2	3.4	2.9	3.7	2.2	3.3	3.2	4.0
46	4.1	1.0		1.5		46.6		
48	7.3	1.9	1.9	2.8	1.4	2.0	2.5	2.6
49/69	19.8	7.8	7.5	11.5	6.5	8.9	16.6	13.1
50/53	11.7	2.8	2.6	3.0	2.1	2.7	3.8	3.0
52	72.3	26.3	30.9	50.4	27.6		78.1	61.3
54								
55								
56	2.7	1.4	1.7	2.5		2.0	2.4	3.4
57								
58								
59/62/75	1.9			0.7	0.7	0.6	1.1	
60	1.8	0.9		1.1		1.1	1.2	2.0
61/70/74/76	19.1	9.4	11.0	19.5	9.1	13.8	27.0	23.1
63								
64	7.8	3.6	3.7	6.0	3.5	4.4	9.0	7.2
66	6.8	3.7	3.2	5.7	2.8	4.8	7.9	6.8
67								
68								
72								
77								
78								
79								
80								
81								

Pentachlorobiphenyls

82							1.4	
83/99	6.1	2.9	2.8	8.4	3.6	5.7	12.4	9.3
84	5.8	2.4	4.4	7.0	3.0	5.1	11.0	8.5
85/116/117	9.0	3.7		1.9	1.2	1.7	2.8	
86/87/97/10	6.5	3.2	5.7	9.2	3.5	6.6	12.8	3.4
88/91	3.1	1.4	1.9	3.3	1.7	2.6	5.9	4.4
89								
90/101/113	12.8	6.1	11.5	17.5	7.3	12.9	26.5	21.2
92	2.5	1.2	1.5	3.4	1.4	2.5	5.6	4.2
93/100								
94								
95	21.1	8.9	16.6	26.6	12.3	18.6	42.4	33.1
96								
98/102							1.3	
103								
104								
105			0.6	0.9		0.7	1.1	
106								

 Heptachlorobiphenyls

170
 171/173
 172
 174
 175
 176
 177
 178
 179
 180/193
 181
 182
 183/185
 184
 186
 187
 188
 189
 190
 191
 192

 Octachlorobiphenyls

194
 195
 196
 197
 198/199
 200
 201
 202
 203
 205

 Nonachlorobiphenyls

206
 207
 208

 Decachlorobiphenyls

209

 Recoveries

14	81%	88%	72%	81%	73%	84%	77%	77%
d-65/65	87%	94%	74%	82%	75%	86%	89%	82%
166	81%	83%	77%	89%	80%	89%	81%	82%

Batch I.D.	0117-06	0117-08	0117-09	0118-02	0118-04	0118-06	0118-08	0119-02
	6206812P0	6207012PP	6207219P0	6207417P092	6208019P1	6210215P0	6202612P0	6203212P0
Sample I.D.	8142009	09302009	9282009	92009	0012009	9212009	9302009	1182010
Deployment	7/20/2009	6/27/2009	7/11/2009	7/11/2009	7/7/2009	8/26/2009	8/15/2009	9/28/2009
Collection	8/14/2009	9/30/2009	9/28/2009	9/29/2009	10/1/2009	9/21/2009	9/30/2009	1/18/2010

Monochlorobiphenyls

1	3.2	11.8	18.7	5.3	2.5	2.7	3.8	
2	1.4	6.4	12.2	1.6	0.6	0.9	1.0	
3	29.9	65.6	110.5	24.8	31.9	49.9	69.2	8.5

Dichlorobiphenyls

4	57.0	66.7	103.2	35.0	61.8	57.5	165.8	20.9
5				0.4				
6	7.4	24.5	93.5	5.4	7.1	7.2	17.8	3.6
7	1.6	6.4	18.5	1.4	1.3	0.6	2.5	
8	32.4	106.5	434.4	21.3	30.6	30.1	76.7	14.1
9	1.9	7.0	22.9	1.8	1.4	0.8	3.1	
10	1.5	2.2	4.1	1.2	2.0	2.2	5.1	
11	46.6	25.9	60.1	25.1	23.3	17.8	38.0	3.0
12/13	0.8	10.0	78.6	1.0	0.8	1.2	1.2	
15	5.7	30.6	286.6	4.1	3.7	4.1	7.9	

Trichlorobiphenyls

16	13.7	27.1	251.3	8.0	13.4	9.9	26.9	6.4
17	16.4	29.7	207.6	8.2	15.2	12.9	39.3	9.0
18/30	36.3	60.8	418.2	19.2	35.4	29.2	89.8	18.4
19	6.9	8.0	43.1	3.0	7.2	5.7	19.4	
20/28	19.3	55.5	618.1	11.4	12.0	10.2	23.2	6.4
21/33	12.2	36.1	456.0	7.2	7.4	6.9	12.2	3.7
22	7.0	19.0	248.3	3.9	4.1	3.3	5.8	
23								
24								
25	1.6	4.5	49.0	0.9	1.0	0.9	1.4	
26/29	4.5	10.1	108.2	2.6	2.9	2.1	5.3	
27	2.3	3.7	33.6	1.0	1.7	1.7	4.9	
31	18.8	47.4	526.1	12.2	12.7	11.1	23.0	6.4
32	8.2	16.5	143.7	4.8	7.2	5.7	15.9	4.4
34			2.1					
35			6.3					
36								
37	3.0	7.2	129.8	1.3	1.4	1.3	2.1	
28								
39			1.5					

Tetrachlorobiphenyls

40/41/71	5.9	8.5	110.8	3.8	3.7	2.6	3.8	
42	2.8	4.3	56.8	1.6	2.0		2.1	
43/73								

44/47/65	17.7	17.2	176.0	11.7	16.0	8.3	13.6	
45	3.1	4.7	58.4	2.4	2.4		3.8	
46			20.3					
48	2.4	3.6	55.3	1.4	1.8	1.4	2.1	
49/69	10.0	11.4		5.7	7.8	5.1	7.9	
50/53	2.7	3.1	40.0	1.5	2.3	1.8	3.6	
52	39.2	30.0	190.6	23.6	37.2	19.4	32.1	15.7
54								
55								
56	2.5	3.2	53.6	1.4	1.7		1.5	
57								
58								
59/62/75		1.4	20.9				0.7	
60		1.9	35.4				0.9	
61/70/74/76	17.5	17.9	189.2	9.9	13.2	7.1	10.5	
63			5.3					
64	5.2	6.9	74.9	3.1	4.3	2.4	3.4	
66	6.4	7.1	119.3	3.2	4.2	2.1	3.7	
67			5.4					
68								
72								
77			4.5					
78								
79								
80								
81								

Pentachlorobiphenyls

82			3.5					
83/99	5.5	4.1	17.9	5.0	6.7	3.3	4.3	
84	5.3	3.6	13.2	4.1	5.4	2.7	3.5	
85/116/117	1.9	1.5	5.1	1.6	1.9	1.3	1.3	
86/87/97/10	7.1	5.7	21.4	4.2	7.0	3.9	3.3	
88/91	3.0	1.9	7.1	2.2	2.7	1.6	1.8	
89								
90/101/113	14.4	10.1	33.2	11.0	13.1	7.4	9.1	5.2
92	2.5	2.2	7.0	2.0	2.8	1.5	1.8	
93/100								
94								
95	20.9	13.7	40.7	14.2	20.4	9.8	13.7	6.9
96			0.9					
98/102			1.9					
103								
104								
105	1.3		4.4					
106								

107/123			3.5				1.7
108/124							
110/115	9.5	7.6	24.7	7.2	8.1	3.9	5.3
111							
112			1.6				0.9
114							
118	3.5	2.8	12.1	2.5	2.6	1.5	1.9
120							
121							
122							
126							
127							

Hexachlorobiphenyls

129/138/163	2.0	1.9	11.9	1.6	1.5		1.4
130							
131							
132			5.2				
133							
134/143							
135/151	1.8		6.7	1.5	1.5		
136	1.3	1.3	4.2	1.0	1.6		1.0
137/164							
139/140							
141			3.0				
142							
144							
145							
146			2.5				
147/149	3.4	2.4	12.4	3.2	3.5	2.1	2.9
148							
150							
152							
153/168	2.1	1.3	10.9	1.2	1.5		1.5
154							
155							
156/157							
158							
159							
160							
161							
162							
165							
167							
169							

Heptachlorobiphenyls								
170			4.0					
171/173			1.8					
172								
174			4.6					
175								
176								
177			3.2					
178								
179			1.9					
180/193			14.9					
181								
182								
183/185			3.3					
184								
186								
187			4.9					
188								
189								
190			2.3					
191								
192								
Octachlorobiphenyls								
194			4.7					
195			2.4					
196			2.6					
197								
198/199			4.3					
200								
201								
202								
203			2.8					
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	69%	73%	79%	92%	91%	78%	80%	21%
d-65/65	79%	84%	90%	98%	95%	89%	82%	22%
166	88%	85%	91%	91%	87%	86%	78%	24%

Heptachlorobiphenyls								
170								
171/173								
172								
174								
175								
176								
177								
178								
179							0.8	
180/193								
181								
182								
183/185								
184								
186								
187								
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199								
200								
201								
202								
203								
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	95%	94%	79%	89%	83%	75%	85%	84%
d-65/65	97%	95%	81%	88%	88%	80%	88%	85%
166	94%	86%	80%	85%	88%	83%	94%	83%

Batch I.D.	0121-02	0121-04	0121-06	0121-08
	6205614P1	6205814P1	6206214P1	6206414P121
Sample I.D.	2122009	2122009	2122009	22009
Deployment	9/28/2009	9/21/2009	9/28/2009	9/12/2009
Collection	12/12/2009	12/12/2009	12/12/2009	12/12/2009

Monochlorobiphenyls

1	3.5	5.7	6.4	12.8
2	0.8	0.6	1.4	3.4
3	51.8	57.1	64.2	168.6

Dichlorobiphenyls

4	113.9	103.4	105.3	327.8
5				
6	14.8	15.3	15.4	41.3
7	2.4	3.0	2.9	6.3
8	62.2	65.9	68.6	168.8
9	2.4	3.0	3.4	7.8
10	3.4	2.2	3.0	11.5
11	17.2	22.2	18.0	71.9
12/13	1.0	1.5	1.7	3.3
15	5.6	8.6	8.9	18.0

Trichlorobiphenyls

16	22.6	26.7	28.4	67.9
17	31.1	34.9	38.9	87.0
18/30	74.6	78.8	83.3	203.2
19	14.8	14.4	15.3	42.8
20/28	16.0	24.1	27.5	51.4
21/33	9.4	14.4	16.7	31.1
22	4.1	7.0	8.2	15.0
23				
24				
25	1.3	1.8	2.2	4.7
26/29	4.0	5.4	6.3	12.8
27	3.9	4.0	4.5	10.1
31	16.1	24.0	27.2	53.3
32	12.0	14.1	15.6	34.5
34				
35				
36				
37	1.0	1.6	1.9	4.6
28				
39				

Tetrachlorobiphenyls

40/41/71	3.0	4.9	6.6	13.4
42	1.5	2.6	3.1	
43/73	28.2	28.9	44.1	133.0

44/47/65				
45	4.0	5.7	7.1	13.5
46		1.6		
48	1.7	2.9	4.0	7.1
49/69	7.0	8.9	12.3	31.1
50/53	4.0	4.7	6.2	13.8
52	11.7	15.3	20.9	53.0
54				
55				
56	0.8	1.2	1.5	
57				
58				
59/62/75		0.9	1.2	
60				
61/70/74/76	6.5	7.7	11.5	25.7
63				
64	2.9	4.1	6.0	14.0
66	1.7	1.2	4.1	7.8
67				
68				
72				
77				
78				
79				
80				
81				

Pentachlorobiphenyls

82				
83/99	2.6	3.0	4.3	11.0
84	2.7	2.6	4.0	9.4
85/116/117		1.0		
86/87/97/10	3.3	1.8	2.5	12.7
88/91	1.5	1.3	1.9	
89				
90/101/113	6.1	5.3	8.2	23.7
92	1.3	1.2	1.6	5.2
93/100				
94				
95	11.6	10.7	17.4	58.9
96				
98/102				
103				
104				
105	0.5			
106				

107/123				
108/124				
110/115	3.7	3.6	4.4	13.4
111				
112				
114				
118	1.6	1.3	1.2	3.8
120				
121				
122				
126				
127				

Hexachlorobiphenyls

129/138/163	1.4	0.9		
130				
131				
132				
133				
134/143				
135/151	1.2		1.7	
136	0.9	0.8	1.4	5.3
137/164				
139/140				
141				
142				
144				
145				
146				
147/149	2.1	1.7	2.6	8.4
148				
150				
152				
153/168	1.7	1.6	1.7	
154				
155				
156/157				
158				
159				
160				
161				
162				
165				
167				
169				

 Heptachlorobiphenyls

170
 171/173
 172
 174
 175
 176
 177
 178
 179
 180/193
 181
 182
 183/185
 184
 186
 187
 188
 189
 190
 191
 192

 Octachlorobiphenyls

194
 195
 196
 197
 198/199
 200
 201
 202
 203
 205

 Nonachlorobiphenyls

206
 207
 208

 Decachlorobiphenyls

209

 Recoveries

14	83%	85%	86%	16%
d-65/65	85%	85%	80%	15%
166	92%	91%	91%	15%

Table B-4: East Chicago outdoor air raw data showing necessary metadata and congener masses (ng)

Batch I.D.	0073-02	0073-04	0073-07	0073-12	0074-02	0074-04	0074-08	0074-11
Sample I.D.	6101011P	6103413P	6101811P	6102613P	6104213P	6103813P	6103513P	6103012P
Deployment Date	4/23/2008	5/19/2008	5/3/2008	5/10/2008	5/24/2008	5/24/2008	5/19/2008	5/19/2008
Collection Date	7/21/2008	8/21/2008	8/11/2008	8/29/2008	8/25/2008	8/25/2008	8/30/2008	9/22/2008
Monochlorobiphenyls								
1	0.2	0.3	0.1	0.3	0.8	0.3	0.4	0.6
2	0.1			0.2	0.2	0.2	0.1	
3	0.8	0.1	1	0.5	2.4	6.9	1.2	0.1
Dichlorobiphenyls								
4	1.8	1.4	0.3	3.7	2.8	4.5	5.2	1.7
5		3.3	0.1	0.1	0.1	0.2	0.1	0.1
6	0.3	0.8	0.1	2	0.2	1.9	2.9	0.9
7				0.1		0.1		
8	3.8	3	3.2	8.4	5.1	7.5	11.6	3.1
9	0.3			0.1		0.3		0.1
10				0.1		0.1	0.2	
11	5	3.9	5.8	14.1	9.6	15.9	22.3	5.5
12/13	0.1		0.3	0.3	0.2	0.3	0.1	0.1
15	1.2	1	0.1	2.6	2.4	3.5	3.5	1.3
Trichlorobiphenyls								
16	2	2	2.6	4.1	2.8	5.4	7.6	2.3
17	1.9	2	2.1	3.6	2.3	4.6	6.1	2.2
18/30								
19	0.1		0.1	0.2	0.1	1.4	1.6	0.7
20/28	3.9	4.2	4.6	6.5	6.2	10.2	10.7	5
21/33	2.2	2.6	2.8	4.5	3.5	5.7	6	2.8
22	1.5	1.7	1.9	2.7	2.3	4.2	3.5	1.7
23								0.1
24		1	1.3	2	0.1	0.3	4	1.2
25	0.3	0.6	0.3	0.1	0.5	0.7	1.1	0.7
26/29	1.2	1.1	1.6			2.1	2.3	1.6
27		0.3	0.2	0.4				
31	3.5	3.5	4.5	5.7	5.1	8.7	10.2	4.8
32	1.2	1.2	1.4	2.2	1.6	2.7	3.7	1.1
34								
35				0.1		0.6	0.1	
36								
37		0.5	1	1	0.7	1.8	0.8	1
28					0.1			
39								
Tetrachlorobiphenyls								

40/41/71	1.4	1.5	2.1	1.2	3.8			
42	1.1	1.2	0.2	0.4	0.7	4.9	2.4	2.6
43/73		0.5	0.3	0.2		0.4		0.2
44/47/65								
45		0.2	0.4	0.6	0.7	0.4		0.3
46	0.1		0.2	0.1		1.5	0.2	0.5
48	0.9	0.5	1.1	1.5	0.9			0.2
49/69	2.6	2.2	3.7	3.9		1.6	1.6	1.3
50/53	0.3	0.5	1.4	1.2	0.9			
52	10	7.2	16.1	16	10.7	1.7	1.1	0.2
54			0.1	0.2	0.1	16.6	22.2	19.4
55								0.1
56	0.4	0.6		0.2		0.1	0.1	0.2
57			3.2			1.2		1.7
58						4		
59/62/75	2.3	1.2	2.4	4.3	3.2	9.9	9.8	27.2
60	0.3	0.1		0.2	0.1	2.3		1.1
61/70/74/76						0.4	0.2	0.7
63		0.1			0.1		1.7	
64	1.5	1.3	2.1	2	0.1			0.2
66	1.4	1.3	2.2		2.1	3.4	1.6	3.1
67		0.1	0.2			3.3	1.7	3.6
68	0.1	0.1		0.1				0.1
72							0.1	
77			0.1			0.2	18.1	15.9
78								
79								
80				0.1			0.1	
81								
Pentachlorobiphenyls								
82		0.3	0.4		0.1			
83/99	3.6	0.9	3.1	5.7	1.9	0.5	0.6	1.5
84	1.3	1	0.5	3.3	1.6	0.3	0.2	0.6
85/116/117	0.4		0.1		0.3	2.3	3.5	5.3
86/87/97/109/119/		0.5	1.6	1.9	2	0.8	0.1	17.8
88/91	0.6	0.2	1.5	1	1	7.7	8.2	26.6
89					0.1	0.8	0.2	1.5
90/101/113	4.4	3	6.1	7.6	4.4	0.1		0.2
92	0.7	0.2	1	1.3	0.3	1.4	0.9	2
93/100	0.1			0.2		1.4	0.2	3.9
94								
95	5	3.7	9	10.9	5.7			
96		0.1	0.1		0.2	8.4	9.3	18.4
98/102					0.2			
103		0.1		0.2		1.9	2.5	6.5

104	0.1		0.1		0.1			0.1
105	0.1	0.1	0.1	0.2	0.2		0.1	
106	2	0.5		2.9		0.1	0.1	3
107/123	1.1			0.1				
108/124	0.9							
110/115					7.6	0.6	0.3	0.8
111						9.8	8	39.3
112	0.5	0.5	0.5	2.3	1.5			
114						2	2.6	
118	1.7	1.3	2.6	2.4	1.7	0.5		0.7
120		0.1				2.2	1.6	11.6
121			0.1					
122					0.1		0.1	
126	3.2		6.7			0.6	0.3	
127						0.1		

Hexachlorobiphenyls

129/138/163	0.3	0.5	1.4	0.1	0.2			
130						2.1		7.7
131		0.1						
132	0.6	0.1	1.4	1	0.8		0.2	0.1
133					0.1	0.8		3.6
134/143		0.3		0.2				0.1
135/151	0.1	1.4	0.7	0.4	0.4			1.2
136	0.3	0.1	0.1	0.6	0.4		1.1	1.6
137/164		0.2	0.1			0.6	0.6	1.7
139/140		0.1		0.2				0.1
141	0.1	0.3						
142						0.3		1.3
144		0.2	0.1	0.1				
145								0.7
146		0.3			0.1		0.1	
147/149	2	2	3	2.3	1.7	0.1		0.1
148	0.1				0.1	2.6	1.7	8
150		0.1				0.1		
152		0.1						
153/168					0.6			
154	0.1					1.8	0.5	6.1
155								
156/157	1.6	0.6	0.3	0.5	2.1			0.1
158			0.1			0.2	0.6	2
159								0.1
160	0.2			0.1				
161								
162								
165								

167								
169	0.5				0.5			
Heptachlorobiphenyls								
170	0.1							
171/173	0.1					0.1		0.1
172								
174								
175					0.1			0.2
176								
177	0.1	0.1			0.1			0.1
178						0.1		
179	0.3	0.3	0.1		0.1			
180/193	0.2	0.5	0.6		0.4			0.1
181						1		3.6
182								
183/185			0.2		0.1			
184						0.1		0.3
186						0.1		0.1
187	0.4	0.4	0.2	0.2				
188						0.2	0.2	1.3
189								0.1
190		0.1						
191								
192								
Octachlorobiphenyls								
194			0.2		0.1			
195								0.2
196								
197								
198/199	0.1		0.1					
200					0.1		0.2	0.2
201								
202	0.1		0.1				0.1	
203		0.1			0.1			0.1
205								
Nonachlorobiphenyls								
206							0.1	
207	0.1							
208								
Decachlorobiphenyls								
209						0.1		
Recoveries								
14	39%	33%	38%	55%	56%	58%	70%	43%
d-65/65	59%	52%	59%	74%	78%	86%	96%	64%
166	64%	51%	61%	82%	78%	78%	95%	56%

Batch I.D.	0075-02	0075-04	0075-06	0075-08	0075-11	0076-02	0076-04	0076-06
Sample I.D.	6102313P	6100211P	6102211P	6103213P	6100811P	6100411P	6101411P	6102813P
Deployment Date	5/6/2008	4/18/2008	5/6/2008	5/19/2008	4/22/2008	4/22/2008	4/28/2008	5/19/2008
Collection Date	9/2/2008	7/16/2008	8/11/2008	8/21/2008	7/25/2008	7/8/2008	7/21/2008	8/29/2008

Monochlorobiphenyls

1	1.4	3.9	2.3	2.2	1.9	1.4	1.8	2.1
2	0.2	0.7	0.4	0.6	0.5	0.3	0.5	0.6
3	1.1	5.1	2.2	1.8	3.7	1.3	3.5	2.9

Dichlorobiphenyls

4	2	6.1	2	4.7	6.2	4.1	4	5.4
5		0.4	0.2	0.1				0.2
6	0.8	2.8	1.1	1.7	2.4	1.5	1.8	1.9
7	0.2	0.6	0.3	0.6	0.6	0.3	0.4	0.3
8	3.4	10.9	3.6	6.2	8.1	5.2	7.2	9
9	0.3	0.8	0.4	0.6	0.9	0.5	0.5	0.7
10		0.3	0.2	0.2	0.3			
11	5.3	9.7	6	8.2	10.1	8	9.6	8.3
12/13		0.6	0.3	0.4	0.1			0.4
15	1.4	4.7	1.1	2	2.6	1.3	2.6	3.2

Trichlorobiphenyls

16	2.9	9.4	2.2	3.4	3.9	2.4	3.5	5.4
17	2.2	7.2	1.8	3.1	4	2.2	3.3	4.5
18/30								
19	0.8	2.1	0.5	0.9	1	0.9	1.2	1.2
20/28	5.9	17.1	3.9	6.5	7.8	5.2	7.5	9.4
21/33	3.8	10.9	2.5	4.4	5.1	2.3	3.3	5
22	2.2	5.9	1.4	2	2.4	1.8	2.2	2.9
23		0.1						
24								
25	0.7	1.6				0.3	0.4	0.5
26/29	1.4	3.6	1.3	2.2	2	0.8	1	1.5
27	0.4	1.4	0.3	0.4	0.5	0.4	0.4	1
31	5	14.2	3.4	5.5	8.6	4.2	5.3	6.8
32	1.5	5	0.9	1.7	2.1	1.4	1.8	2.5
34					0.2			
35								
36								
37	1	3.3	0.7	0.8	1.8		0.8	1.5
28								
39					0.1			

Tetrachlorobiphenyls

40/41/71	2.6	9	1.8	2.2	2.8	1.8	2.6	4.4
42	0.8	1.4	0.7					
43/73	0.3							
44/47/65								

45		5	0.9	0.9		0.9	1.3	
46		1.5		0.4	0.5			
48		3.1		1.2	1	1.2	1.2	
49/69	3.7	8.7	2.9	3.5	6.1	4	5.4	4.6
50/53	1	3.3	0.9	1.4	1.5	1.1	1.2	1.4
52	10.1	21.8	10.4	13.5	23.1	18.2	27.6	21.8
54								
55								
56	1.4	3.2	0.6	0.9	1.4	0.9	1.1	1.4
57								
58							0.2	
59/62/75	2.6	4.8	2.8	2.5	4.4	0.9	1.1	2.3
60	0.7	2.2	0.3				0.8	0.5
61/70/74/76	6.6	12.4	4	6.1	6.9	5.7	8.1	8.4
63	0.1	0.2						
64	1.9	5.6	1.4	2.1	3	2	2.5	3.3
66	2.7	6.4	1.4	2	2.5	2	2.8	4.3
67	0.2	0.2						
68	0.4	1.6	1.1	2	1.8	2.2	5.5	3.6
72			0.1	0.1	0.1			
77								
78								0.3
79						0.1		
80				0.1				
81								
<hr/>								
Pentachlorobiphenyls								
82		2.1	0.9	2.6	2.5	12.4	17.6	18.7
83/99	8.6	8.5	5.9	6.3	6.8	0.8		
84	1.7	2.6	1.9	1.6	2.8	2.1	3.7	2.6
85/116/117		1.7	1	1.2		0.9	0.8	2.9
86/87/97/109/119/	3.5	4	1.7	2.7	3.9	4.8	6.1	4.1
88/91	0.9	1.5	0.9	0.9	1.5			
89		0.1						
90/101/113	6.1	6	3.2	4.9	6.3	6.2	8.8	7.6
92	1.3	1.2	0.6	0.9	1	0.9	1.8	1.7
93/100			0.1					
94	0.2				0.1	0.2		
95	6.1	8.3	4.6	6.9	9.8	7.8	13.2	8.6
96		0.1				0.1	0.2	
98/102		0.5			0.2			
103						0.1		
104								
105	1.1	1.1	0.4	0.5	0.7	0.6	1.2	1
106						0.1		
107/123	0.3			0.1	0.6			

108/124	0.3				0.6		0.1	0.5
110/115	7.9	7.7	3.4	6.9	7.4	7.3	11.2	8.5
111								
112	2.3	2.3	1.3	2	2	2.4	3.2	2.8
114								
118	3.4	2.9	1.5	2.1	1.9	2	3.8	3.4
120								
121				0.1				
122								
126								0.2
127		0.1	0.1					

Hexachlorobiphenyls

129/138/163	3.4	3.1	1.3	1.9	1.7	1.9	2.6	1.9
130								
131	0.4	0.5			0.3			
132	1.1	1.4	0.4	0.7	0.8	1	1.5	1.2
133						0.2	0.7	0.8
134/143					0.2			
135/151	2	1.2	0.8	0.9	1.3	1.7	1.3	
136	0.9	0.7	0.6	0.6	0.8	0.7	1	0.7
137/164	0.1	0.2			0.2		0.1	0.2
139/140								
141	0.8	0.9	0.4	0.5		0.2	0.6	
142					0.1			
144		0.1					0.4	
145								
146	0.3	0.4				0.4	0.4	
147/149	2.1	1.2	0.9	1	1.2	1.7	1.3	
148								
150							0.1	0.2
152							0.1	
153/168	3.7	2.5	1.1	1.6	1.4	2	2.2	2.4
154	0.1				0.1			
155								
156/157	0.3					0.1	0.2	
158		0.4					0.3	
159								
160						0.1		
161	0.4	0.4				0.1	0.3	
162								
165								
167		0.1						
169								

Heptachlorobiphenyls

170	0.4			0.4		0.1		
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171/173								
172		0.1						
174	1.9	1	0.1	0.3		0.2	0.3	
175								
176	0.3						0.1	
177	0.3	0.4						
178		0.1						
179	0.8	0.4	0.1	0.4	0.3	0.3	0.3	0.7
180/193	1.8	1.2	0.4	0.4	1	0.8	0.5	0.5
181								
182								
183/185	0.8	0.3	0.2			0.2	0.2	
184								
186			0.1		0.2	0.2		
187	2.7	1	0.7	0.9	0.8	1		1.2
188								
189								
190						0.1		
191								
192					0.1			
<hr/>								
Octachlorobiphenyls								
<hr/>								
194	0.5					0.1		
195								
196	0.4							
197								
198/199	1.4	0.5	0.5	0.3		0.5		0.8
200		0.1				0.1		
201								
202	0.8	0.3		0.4				
203	1.1		0.3			0.3	0.2	0.3
205								
<hr/>								
Nonachlorobiphenyls								
<hr/>								
206								
207				0.2	0.3			
208								
<hr/>								
Decachlorobiphenyls								
<hr/>								
209								
<hr/>								
Recoveries								
<hr/>								
14	50%	48%	36%	69%	64%	49%	59%	63%
d-65/65	74%	88%	54%	89%	98%	76%	97%	98%
166	67%	64%	44%	81%	77%	76%	85%	93%

Batch I.D.	0093-02	0093-04	0093-05	0093-07	0093-09	0093-12	0094-02	0094-05
Sample I.D.	61019P-out	61023P-out	61015P-out	61029P-out	61021P-out	61017P-out	61045P-out	61031P-out
Deployment Date	8/29/2008	9/2/2008	8/30/2008	9/2/2008	8/11/2008	8/11/2008	9/18/2008	8/21/2008
Collection Date	11/25/200	11/29/2008	11/29/200	11/29/200	11/25/2008	11/29/200	11/29/200	11/25/200
Monochlorobiphenyls								
1	0.95	3.11	0.8	0.63	6.82	0.24	2.2	1.8
2	0.37	0.8	0.69	0.6	1.53	0.42	0.6	0.3
3	2.13	2.88	2.39	1.25	4.53	0.77	2.9	1.9
Dichlorobiphenyls								
4	2.72	3.56	2.8	2.1	4.03	2.35	6.5	6.4
5	0.11	0.23	0.04	0.08	0.31	0.08		
6	1.23	1.85	1.45	1.14	2.18	0.68	1.7	2.0
7	0.31	0.14	0.06		0.36	0.01	0.3	
8	5.57	7.35	5.35	4.39	7.95	4.83	5.5	6.5
9	0.12	0.14	0.18	0.3	0.47	0.15	0.5	0.4
10	0.1	0.17	0.06	0.07	0.24	0.13		
11	7.92	9.51	7.23	6.22	14.32	8.02	9.5	10.7
12/13	0.16	0.4	0.21	0.35	0.79		0.5	0.5
15	1.51	2.1	1.5	1.6	2.19	2.02	1.4	1.8
Trichlorobiphenyls								
16	2.73	5.09	3.16	3.29	4.48	4.57	2.2	3.1
17	2.73	4.49	3.04	3.02	4.03	3.87	3.3	4.8
18/30								
19	0.85	1.27	0.21	0.83	1.25	1.3	1.2	1.6
20/28	5.03	9	5.81	6.39	8.75	9.17	5.4	8.8
21/33	3.26	6.07	3.77	4.07	5.63	5.38	3.0	4.8
22	1.72	3.29	2.22	2.3	3.16	3.25	2.2	3.4
23	0.05	0.13					0.6	1.0
24	1.39	0.06	0.04	0.43		2.32		
25	0.05	0.42	0.03		0.68	0.42	0.5	2.9
26/29	1.97	1.56	1.49	0.02	1.64		3.9	3.3
27		0.47	0.46	0.54	0.72	0.73	0.6	0.7
31	4.6	8.25	5.34	6.2	7.99	7.69	5.1	7.9
32	1.78	2.85	2.08	1.98	2.63	2.94	1.8	2.7
34	0.05				0.4			0.7
35			0.03	0.01	0.02	0.02		
36		0.01						
37	0.11	1.97		1.24	1.83	0.95	1.3	2.3
28								
39								
Tetrachlorobiphenyls								
40/41/71	0.15	3.38	2.59	2.92		1.55	1.3	2.6
42	0.15	0.41	0.93	0.27	0.23	0.41		1.6
43/73	8.11	8.38	11.93	14.78	8.97	9.37		

107/123		0.08	0.58	0.82	0.06	0.04		
108/124		0.03		0.13	0.05			
110/115	4.21	3.96	13.1	14.59	3.66	4.99	3.0	5.9
111		0.03						
112	0.12	1.58	3.69	5.25	1.35	1.88		
114			0.14	0.08		0.05		
118	2.18	2.36	8.08	8.66	1.84	2.83	1.6	2.9
120								
121								
122	0.03	0.02				0.04		
126			0.03	0.02	0.04			
127								

Hexachlorobiphenyls

129/138/163	1.59	2	5.16	5.92	1.68	3.55	1.2	2.4
130								
131		0.03	0.1					
132	0.2	0.59	2.64	1.51	0.52	1.32		1.7
133	0.04	0.03						
134/143	0.12		0.13		0.14	0.15		
135/151		0.43	0.16	0.55	0.03	0.11		1.4
136	0.33	0.34	0.91	1.31	0.26	0.07		
137/164			0.23	0.1	0.05	0.2		
139/140	0.04		0.06	0.04				
141	0.07	0.29	1.02	0.94	0.34	1.01		
142								
144			0.37	0.06	0.03			
145								0.8
146	0.03	0.07	0.26	0.33		0.13		
147/149	2	2.53	5.89	5.66	2.22	2.36	1.5	3.0
148								
150								
152								
153/168	1.43	1.65	4.03	4.68	1.86	3.26	1.3	1.9
154	0.04	0.03			0.04	0.08		
155								
156/157	2.6	0.02	0.14	2.5	0.6			
158		0.04	0.35	0.54	0.03	0.12		
159	0.02							
160								
161	0.02	0.02	0.27	0.22		0.13		
162	0.02							
165		0.03						
167		0.04	0.03	0.03				
169		0.07			0.02			

Heptachlorobiphenyls								
170	0.05	0.06	0.05	0.05	0.04	0.22		
171/173					0.05			
172		0.04						
174		0.25	0.08	0.04	0.08	0.05		
175								
176			0.04	0.07				0.03
177					0.08	0.29		
178			0.08		0.05	0.05		
179		0.28	0.41	0.6	0.28	0.37		
180/193	0.19	0.03	0.13	0.64	0.39	1.74		0.7
181								
182								
183/185		0.57		0.05	0.17	0.34		
184								
186								
187	0.08	1.19	0.16	0.3	1.21	0.53		0.9
188								
189								
190								
191								
192		0.03						
Octachlorobiphenyls								
194	0.05	0.29	0.04	0.09	0.07	0.06		
195								
196	0.04	0.04			0.04			
197								0.03
198/199	0.06	0.82	0.26	0.54	0.81	0.19		
200			0.05		0.11	0.03		
201		0.07			0.13			
202		0.12	0.05		0.23	0.07		
203	0.06	0.22		0.05	0.16	0.03		
205								
Nonachlorobiphenyls								
206	0.16	0.06				0.31		
207								
208				0.03				
Decachlorobiphenyls								
209	0.22	0.09		0.07	0.03			
Recoveries								
14	90%	88%	83%	78%	81%	67%	104%	104%
d-65/65	8%	11%	15%	18%	14%	11%	13%	22%
166	93%	102%	93%	91%	92%	76%	137%	137%

44/47/65			22.8	37.1	18.2	27.6	6.5	9.8
45	1.9	0.7	1.9	3.0	2.3	2.7	1.2	1.7
46		2.1						
48	1.6	2.3	1.7	2.2	1.9	2.5	0.9	1.3
49/69	6.7	7.7	13.5	20.8	10.9	17.1	4.1	5.3
50/53	1.5	2.1	3.1	5.6	3.4	3.6	1.3	1.5
52	23.9	32.7	81.3	135.9	59.1	95.6	20.6	24.4
54								
55	1.2	1.8						0.7
56			1.2	1.9	1.8	1.6	0.7	
57								
58								
59/62/75		1.0	0.5		0.6	0.9		
60	0.7	1.1	0.7	1.2	1.0	0.9		
61/70/74/76	8.2	11.0	14.3	25.2	13.0	17.9	5.4	7.0
63								
64	3.5	4.0	5.8	9.2	5.0	6.9	2.0	2.5
66	2.7	3.7	4.0	6.1	4.2	4.5	1.6	2.3
67								
68								
72								
77								
78		14.6						
79								
80								
81								

Pentachlorobiphenyls

82				1.8				
83/99	3.0	4.7	5.6	14.1	4.9			
84	1.8	3.3	7.1	15.7	5.3	7.3	2.2	2.3
85/116/117	1.1	1.5	1.0	3.2	1.6		0.9	1.0
86/87/97/109/119/	2.9	4.9	5.0	15.6	4.9	7.1	1.8	1.8
88/91	1.3	1.8	4.0	6.7	2.7	4.4	1.1	1.6
89								
90/101/113	5.2	9.3	13.3	31.4	10.4	16.4	5.1	6.3
92	1.0	1.8	2.6	6.4	2.2	3.3	1.0	1.0
93/100			31.9	61.2	21.5			
94	7.4	13.5						
95						32.7	7.6	9.7
96			0.6	1.0	0.3	0.6		
98/102			0.8	1.7	0.7	1.1		
103								
104								
105	0.6	0.7	0.3	1.6	1.1	0.6	0.5	0.6
106								

107/123								
108/124								
110/115	3.6	6.1	5.0	18.8	6.0	9.4	3.1	3.9
111								
112						5.1	1.6	2.1
114								
118	1.9	2.9	1.4	5.4	2.7	2.5	1.1	1.5
120								
121								
122								
126			0.3			0.3	0.3	0.4
127								

Hexachlorobiphenyls

129/138/163	1.6	1.8	0.8	4.6	2.6	2.0	0.8	1.1
130								
131								
132		1.2		3.6	1.3	1.0		
133								
134/143				1.1				
135/151	1.1	1.7	1.2	5.0	1.8	2.1	0.7	1.2
136			1.2	4.7	1.1	1.7	0.5	0.5
137/164								
139/140								
141				1.0				
142								
144				1.2				
145	0.6	1.0						
146								
147/149	2.2	3.3	1.6	9.8	3.1	3.4	1.3	1.8
148								
150								
152								
153/168	1.5	2.2	0.8	4.4	2.1	2.1	0.7	1.2
154								
155								
156/157								
158								
159								
160								
161								
162								
165								
167								
169								

Heptachlorobiphenyls								
170								
171/173								
172								
174				1.1				
175								
176								
177								
178								
179				1.0			0.6	
180/193	0.6			1.4		1.2	0.6	
181								
182								
183/185						0.6		
184								
186								
187	0.9			1.4		0.4	0.8	
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199								
200								
201								
202								
203								
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								2.0
Recoveries								
14	104%	104%	71%	71%	71%	89%	89%	89%
d-65/65	20%	27%	91%	91%	91%	109%	109%	109%
166	137%	137%	126%	126%	126%	125%	125%	125%

44/47/65	14.8	27.9	29.3	13.0	191.8	66.8		
45	1.9	4.8	2.6	1.9	10.6	6.4	1.0	3.0
46					3.5	1.9	0.9	1.2
48	1.7	4.3	2.5	1.8	11.0	5.2		
49/69	9.4	15.1	17.3	7.6	118.7	38.3	17.8	30.7
50/53	2.3	4.0	3.9	2.3	19.5	8.2	4.3	5.5
52	42.4	51.6	83.8	29.9	598.9	185.8	105.5	183.9
54								0.0
55	2.6						0.9	0.4
56	1.0	4.3	1.6	1.3	9.1	5.9	1.5	2.4
57								
58							0.6	1.3
59/62/75		1.9	0.7			0.9	4.3	6.6
60		2.5	1.0		4.4	2.6		1.1
61/70/74/76	14.4	24.0	21.3	9.2	150.4	66.5	14.7	33.1
63							2.3	3.2
64	5.2	8.9	7.1	3.3	48.1	16.5	6.8	12.4
66	5.9	8.8	5.8	2.9	31.2	14.3	3.9	7.6
67							0.2	0.5
68								0.1
72								
77							0.0	
78								
79		2.2						
80								
81							0.0	0.0

Pentachlorobiphenyls

82	1.1	1.8	1.0		5.6	9.0	0.5	1.3
83/99		8.5	9.3	3.8	60.8	40.7	5.4	13.4
84	4.2	6.5	9.9	3.0	67.0	39.8	6.3	16.7
85/116/117	1.6	2.2	2.0	1.4			0.9	2.7
86/87/97/109/119/	3.8	9.5	9.5	1.3	57.0	57.1	5.3	13.1
88/91	2.5	3.6	5.1	1.6	36.9	17.4	3.1	8.0
89					2.0	1.1	0.1	0.0
90/101/113	10.7	17.5	19.7	7.5	134.5	87.5	11.3	30.6
92	2.2	3.6	4.4	1.6	27.9	15.6	2.5	6.6
93/100								
94					1.3			
95	16.0	25.4	42.2	11.8	300.0	132.8	34.3	83.0
96			0.6		3.6	1.0	0.5	0.9
98/102			1.2		7.8	3.1	0.6	1.9
103					1.9		0.1	0.4
104								
105	1.6	2.1	0.8	0.8	3.7	13.5	0.4	0.7
106								

Heptachlorobiphenyls								
170						0.9		
171/173								
172								
174		1.5				1.1		0.1
175								
176							0.0	
177								0.0
178							0.0	
179					1.1	1.1	0.2	0.3
180/193	1.0	2.7		1.6	0.6	1.6	0.2	0.2
181								
182								
183/185						1.0		0.0
184							0.0	0.0
186								
187	0.8	3.2		1.3	0.9	1.4	0.3	0.4
188								
189								
190								
191								
192								
Octachlorobiphenyls								
194								0.0
195								
196								0.0
197		1.3						
198/199								0.0
200								
201								
202							0.0	0.0
203								0.0
205								
Nonachlorobiphenyls								
206								0.0
207								
208								
Decachlorobiphenyls								
209								0.5
Recoveries								
14	89%	94%	94%	94%	94%	94%	64%	58%
d-65/65	109%	109%	109%	109%	109%	109%	95%	84%
166	125%	119%	119%	119%	119%	119%	85%	80%

Batch I.D.	0099-01	0099-03	0099-05	0100-01	0100-05	0100-07	0100-09	0122-01
Sample I.D.	6108917	6107717	6107917	6106917	6102712P0 81509	6102912Y R2	6103312Y R2	6100114Y R2
Deployment Date	6/8/2009	7/9/2009	6/9/2009	6/10/2009	5/14/2009	5/18/2009	5/31/2009	8/2/2009
Collection Date	9/18/2009	9/8/2009	9/4/2009	9/8/2009	8/15/2009	8/24/2009	8/24/2009	10/13/200
Monochlorobiphenyls								
1	2.6	0.7	0.1	0.6	0.8	0.9	0.7	1.5
2	0.5	0.2	0.1	0.2	0.4	0.4	0.2	0.6
3	3.8	2.9	1.1	3.7	2.0	2.5	2.2	20.1
Dichlorobiphenyls								
4	3.2	4.2	1.1	3.1	5.3	4.7	3.6	54.8
5	0.1	0.2		0.0	0.1	0.2	0.1	
6	1.6	2.3	0.2	1.4	1.6	2.4	1.4	7.3
7	0.2	0.7		0.3	0.2	0.4		1.5
8	6.4	9.6	0.8	5.2	6.9	9.6	5.5	30.0
9	0.3	0.6	0.0	0.1	0.2	0.5	0.1	1.3
10	0.2	0.1		0.1	0.2	0.2	0.1	1.8
11	7.8	25.4	1.8	9.2	11.4	19.0	9.9	24.7
12/13	0.4	0.7	0.0	0.3	0.4	0.5	0.3	0.9
15	2.7	4.1	0.2	1.6	1.6	2.9	1.8	4.7
Trichlorobiphenyls								
16	8.1	10.5	0.5	4.7	5.8	9.9	5.1	15.6
17	5.2	7.5	0.5	3.3	4.5	7.0	3.4	19.9
18/30								41.4
19	1.5	1.9	0.1	0.5	1.2	1.7	0.8	8.6
20/28	12.6	17.2	0.9	6.6	7.3	15.6	7.1	20.8
21/33	6.8	9.7	0.4	4.2	4.6	9.9	4.3	10.6
22	4.6	5.8	0.3	2.4	2.3	5.4	2.6	7.2
23		0.0						
24	3.1	4.1	0.2	1.8	2.2	4.0	2.0	
25	1.1	1.4	0.0	0.6	0.6	1.0	0.6	2.0
26/29	2.6	3.5	0.0	1.7	1.8	2.9	1.7	4.7
27	0.9	1.0		0.5	0.6	0.8	0.5	2.5
31	11.0	15.0	0.8	6.2	6.8	18.6	6.7	20.6
32	3.8	4.9	0.3	2.1	2.5	4.7	2.2	9.5
34	0.0	0.0		0.0				
35		0.5		0.2	0.1		0.1	
36						0.0		
37	2.7	3.0	0.0	0.5	1.1	2.4	1.4	3.3
28		0.0						
39	0.0							
Tetrachlorobiphenyls								
40/41/71	5.6	8.1	0.1	2.3	1.9	10.8		7.6
42	1.3	8.5	0.1	0.4	0.4	1.0	2.9	4.2
43/73	0.6				0.1		0.1	

44/47/65								16.3
45	3.1	5.6	0.0	0.4	1.8	2.3	0.5	5.5
46	1.1	0.9			0.4	1.5	0.2	
48	1.0	1.0		0.3		1.9	0.4	3.1
49/69	7.4	10.8	0.1	4.0	3.8	35.2	4.2	10.0
50/53	1.6	2.6	0.0	1.1	1.0	4.8	0.8	4.4
52	20.5	43.1	1.6	12.5	13.1	207.1	12.3	8.7
54	0.0						0.0	
55			0.0	0.4	0.2		0.5	
56	2.9	3.1	0.0	0.9	0.5	8.1	1.0	3.0
57		0.1			0.0	0.5		
58	0.0	0.1		1.1	0.0	2.0	0.6	
59/62/75	4.1	3.5	0.3	2.1	2.2	8.9	1.2	1.3
60	0.7	1.5	0.0	0.5	0.0	3.8		1.6
61/70/74/76	11.6	21.9	0.5	6.6	5.7	91.4	6.4	13.4
63	0.1	0.4		4.0	0.7	3.6	1.8	
64	5.2	6.3		2.2	2.1	17.6	2.2	7.0
66	5.6	6.7	0.1	2.8	2.2	19.8	2.7	6.1
67	0.1	0.2	0.2	1.5	0.6	1.5	0.9	
68		0.9	0.0	0.0	0.0	0.0		
72								
77	0.0		0.0	0.1		0.1		
78	0.0			0.0	0.0			
79	0.0						0.0	
80					0.0			
81			0.0					
Pentachlorobiphenyls								
82	0.8	2.5		0.5	0.3	11.3	0.3	1.2
83/99	1.9	6.3		2.5	2.1	60.4	1.4	4.3
84	2.5	7.5	0.1	2.1	1.8	42.6	1.8	3.5
85/116/117		0.9	0.0	0.1		5.8		
86/87/97/109/119/	4.7	15.1	0.5	3.3	2.8	81.7	3.0	2.1
88/91	3.5	2.5	0.1	2.4	0.9	40.8	1.4	1.3
89				0.0		0.8	0.0	
90/101/113	6.6	26.9	0.5	5.1	4.8	134.8	4.9	9.1
92	1.4	4.6	0.0	1.0	0.9	24.8	0.8	1.6
93/100	0.2			0.2				
94	0.0				0.0		0.0	
95	9.8	32.9	1.2	7.9	8.0	170.8	7.5	12.8
96	0.1	0.2				0.8	0.0	
98/102	0.2	0.7		0.2	0.1	2.8	0.0	
103		0.1				0.1	0.0	
104								
105	1.2	3.9		0.3	0.4	21.5	0.8	1.2
106		0.1						

107/123	0.2	1.2	0.0	0.2		8.9		
108/124		2.3	0.0	0.0	0.0	10.7		
110/115	8.1	28.8	0.3	5.3	4.1	154.8	5.2	7.2
111								
112				3.4	2.8	80.5	0.5	
114	0.0	0.1			0.0	1.4		
118	4.2	14.6	0.1	2.3	1.8	84.5	2.6	3.1
120								
121								
122						0.5		
126	0.6		0.0	0.2	0.2	0.1	0.0	
127								

Hexachlorobiphenyls

129/138/163	3.9	12.6		2.0	1.3	52.5	2.2	4.3
130		0.3		0.1		3.7		
131						0.7	0.0	
132	0.7	5.4		0.9	0.2	22.6	1.0	2.2
133		0.1			0.0	0.4	0.0	
134/143	0.1	0.6				3.2		
135/151	1.9	9.1		0.5	0.3	17.2	0.5	2.9
136	0.6	4.2	0.0	0.3	0.5	10.7	0.5	1.7
137/164	0.2	0.1		0.1		7.0		
139/140	0.0	0.1	0.0		0.0	1.6		
141	0.6	2.5		0.2	0.2	7.9	0.3	
142						1.4		
144	0.0	1.5		0.0	0.1	3.1	0.1	
145					0.0	0.0	0.0	
146	0.6	1.5		0.4	0.1	6.5	0.3	
147/149	4.1	18.3	0.2	1.8	1.8	43.9	2.6	5.2
148						0.0		
150						0.0	0.0	
152						0.0	0.0	
153/168	3.2	12.6	0.0	1.7	1.2	32.3	1.8	3.7
154	0.1			0.1	0.0		0.1	
155								
156/157	1.7	0.1	1.9	0.0		4.1		
158	0.4	0.9			0.0	6.2	0.1	
159				0.0				
160								
161	0.4	1.0		0.3	0.1	4.5	0.2	
162							0.0	
165								
167	0.0	0.1				1.4		
169		0.0						

Heptachlorobiphenyls								
170	0.1	0.2		0.0	0.0	1.6	0.1	
171/173	0.1	0.1				0.6	0.0	
172					0.0	0.0	0.0	
174	1.0	2.8		0.3	0.1	2.3		
175	0.0	0.0				0.1		
176	0.0	0.7		0.0	0.0	0.5	0.1	
177	0.4	0.5		0.2	0.1	1.2	0.1	
178	0.1	0.1		0.1	0.0		0.0	
179	0.8	3.2		0.4	0.3	1.1	0.4	
180/193	1.5	2.2	0.1	0.7	0.4	2.4	0.8	
181								
182						0.0		
183/185	0.8	4.8		0.6	0.6	2.7	0.4	
184						0.0		
186			0.0					
187	2.0	5.6	0.0	1.0	0.6	1.8	1.1	
188	0.0							
189								
190	0.0	0.0				0.1		
191	0.0					0.1		
192								0.0
Octachlorobiphenyls								
194	0.3	0.1		0.0	0.0			
195				0.0				
196	0.0	0.1		0.1			0.0	
197								
198/199	0.6	0.2	0.0	0.4	0.1	0.1	0.1	
200	0.2	0.2			0.0	0.0	0.1	
201	0.1	0.0				0.0	0.0	
202	0.5	0.2	0.0	0.1	0.1		0.0	
203	0.0	0.1	0.0	0.0		0.0	0.1	
205	0.0							
Nonachlorobiphenyls								
206	0.5	0.1		0.1	0.1	0.1	0.1	
207								
208	0.2					0.0	0.0	
Decachlorobiphenyls								
209	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Recoveries								
14	62%	66%	12%	63%	63%	66%	48%	97%
d-65/65	101%	95%	18%	95%	87%	198%	69%	113%
166	84%	87%	17%	84%	78%	96%	61%	101%

44/47/65	8.8	6.9	7.7	5.7	7.0	10.7	8.0	20.8
45		1.7	1.6	1.5	1.9	2.1	1.4	4.1
46								
48		1.1			1.2	1.6	1.1	3.1
49/69	4.5	3.7	4.7	3.1	4.1	6.1	4.3	11.1
50/53		1.5	1.4	1.4	1.4	1.9	1.3	2.9
52	4.7	3.8	5.2	3.3	11.5	24.4	16.2	37.3
54								
55								
56	1.3	1.2	1.2		1.3	1.4	1.4	2.5
57								
58								
59/62/75					0.5	0.6	0.5	1.0
60					0.7	0.6	0.8	1.4
61/70/74/76	7.7	7.0	7.8	3.0				
63								
64	3.2	2.1	2.8	1.9	2.4	2.9	2.8	6.2
66	2.9	2.5	2.7	1.6	2.6	3.4	3.2	6.2
67								
68								
72					6.1	11.0	9.1	19.1
77								
78								
79								
80								
81								

Pentachlorobiphenyls

82					0.6	1.2	1.1	1.8
83/99	3.7	3.4	3.8	2.1	3.2	7.0	5.5	12.8
84	3.0	2.7	3.3	1.6	2.0	5.1	3.9	9.3
85/116/117	1.3	0.9		0.9	1.1	1.9	1.4	2.0
86/87/97/109/119/	4.1	2.5	4.2	2.6	1.1	2.5	2.5	15.0
88/91	1.0	1.0	1.3		0.9	2.0	1.7	3.7
89								
90/101/113	7.7	7.4	8.2	4.5	5.7	13.9	11.9	24.3
92	1.5	1.3	1.6	0.9	1.1	2.5	2.1	4.6
93/100								
94								
95	9.9	8.8	10.9	6.1	6.8	18.5	14.1	31.5
96								0.4
98/102						0.6		0.7
103								
104								
105		0.7	0.6		0.8	1.5	1.7	2.8
106								

Heptachlorobiphenyls								
170								
171/173								
172								
174				0.8				
175								
176								
177								
178								
179								
180/193	1.2			1.4	0.6	0.6	0.5	
181								
182								
183/185				0.6				
184								
186								
187	1.8			1.8	0.7	0.7		
188				0.8	0.4	0.5	0.4	
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199				1.1				
200								
201								
202				0.6				
203				0.7				
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	81%	75%	84%	86%	84%	87%	85%	87%
d-65/65	89%	81%	88%	89%	92%	93%	92%	93%
166	83%	78%	90%	95%	87%	86%	88%	92%

Batch I.D.	0123-09	0124-01	0124-04	0124-06	0124-08	0125-01	0125-04	0125-06
Sample I.D.	6102114Y R2	6102314Y R2	6102514Y R2	6102714Y R2	6102914Y R2	6103737P 02272010	6103516P 02272010	6103316P 03012010
Deployment Date	8/2/2009	8/15/2009	8/15/2009	8/15/2009	8/24/2009	11/21/200	11/28/200	11/17/200
Collection Date	11/18/200	11/21/2009	11/17/200	11/18/200	11/24/2009	2/27/2010	2/27/2010	3/1/2010
Monochlorobiphenyls								
1	0.8	1.1	1.6	2.1	4.1	0.9	1.0	3.4
2	0.4	0.4	0.5	0.7	0.9	0.9	0.7	1.2
3	6.0	5.0	4.9	7.4	35.3	5.7	4.1	5.4
Dichlorobiphenyls								
4	15.1	16.1	12.7	22.4	130.7	6.9	4.4	10.3
5						0.5		
6	2.0	2.4	2.9	4.0	12.0	3.3	1.6	3.5
7	0.4	0.4	0.7	0.7	1.9	0.9	0.4	0.4
8	6.1	8.0	9.6	13.4	46.1	12.1	5.5	12.0
9	0.4	0.7	0.7	1.0	2.4	1.3	0.7	1.3
10	0.5	0.6	0.4	0.6	4.1			
11	12.1	13.5	26.9	22.6	26.7	29.9	8.9	15.8
12/13	0.4	0.6	0.8	0.7	1.1	1.4	0.4	0.6
15	1.3	2.0	2.1	3.2	4.6	4.0	1.1	2.4
Trichlorobiphenyls								
16	3.4	4.4	4.7	7.7	20.1	7.0	2.1	5.4
17	4.4	5.4	6.4	10.1	32.8	7.6	2.8	7.2
18/30	10.0	12.8	13.1	21.1	73.7	17.0	6.3	15.3
19	1.9	2.2	2.2	2.6	14.9	2.0	0.9	2.2
20/28	6.7	8.1	10.3	16.0	22.2	15.1	4.3	9.9
21/33	3.4	4.6	6.0	9.2	10.5	8.6	2.5	5.6
22	2.1	2.8	3.9	5.4	5.6	5.6	1.5	3.2
23		0.3				1.2		
24								
25	0.5	0.6	0.8	1.2	1.5	1.1	0.4	0.8
26/29	1.2	1.9	2.3	2.9	4.6	3.0	0.9	2.3
27	0.7	0.9	0.9	1.6	4.3	1.4		1.1
31	6.0	7.7	9.1	14.1	21.3	13.4	4.1	11.2
32	2.4	3.1	3.5	5.1	12.8	4.5	1.5	3.6
34								
35	1.3							
36								
37	0.8	2.1	2.6	2.7	2.3	2.8	0.8	1.6
28								
39		0.3						
Tetrachlorobiphenyls								
40/41/71	2.6	3.1	3.3	4.2	6.5	4.6	3.8	14.9
42	1.3	1.4	1.4	2.1	2.9	2.2	2.2	6.1
43/73					0.3	27.3	12.4	128.1

44/47/65	6.5	7.6	7.4	11.2	23.4	13.8	6.8	42.1
45	1.7	1.6	1.5	2.3	5.4	3.0		1.5
46					1.6			
48	1.1	1.2	1.2	1.8	3.9	2.2		2.9
49/69	3.6	4.6	4.6	6.5	13.8	7.9	3.2	23.6
50/53	1.2	1.3	1.5	1.8	4.4	2.4		5.4
52	11.2	16.4	16.6	23.9	65.5	27.3	12.4	128.1
54								
55								
56	1.2	1.6	1.1	1.8	3.3			
57						2.3		1.1
58						1.5		
59/62/75	0.4			0.7	1.0	1.0	1.1	2.8
60	0.6	1.0	1.1	1.2	1.6			
61/70/74/76		7.8	8.1	11.1	28.8			
63								
64	2.3	2.6	2.6	3.6	7.1	4.6	1.6	28.5
66	2.5	3.3	2.9	4.5	8.7			
67								
68						4.7		2.2
72	6.3					13.5	1.4	7.5
77								
78								
79								
80								
81								

Pentachlorobiphenyls

82	0.6	0.9			3.4	1.1		1.3
83/99	3.2	3.9	4.1	4.7	18.9	5.2	2.5	13.3
84	2.2	2.6	2.6	3.1	12.9	3.8	1.9	12.9
85/116/117	1.4	1.5	1.5	1.5	4.6	1.4		2.6
86/87/97/109/119/	1.6	1.6	1.8	5.2	25.1	2.1	2.6	7.7
88/91	0.9	1.5	1.4	1.5	5.7	2.7	1.3	10.2
89								
90/101/113	6.5	7.9	8.2	9.0	40.2	12.3	4.4	28.8
92	1.2	1.5	1.6	1.6	7.0	2.1	0.9	6.1
93/100								
94						16.7	7.0	63.3
95	8.1	10.3	10.6	11.8	43.8			0.9
96								1.3
98/102					1.3			
103								
104								
105	0.6	1.1	0.9	0.9	5.3	1.1		0.9
106								

107/123					1.5			
108/124					1.0			
110/115	5.2	6.7	6.5	6.3	34.4	8.0	2.8	13.3
111								
112								
114								
118	2.3	3.4	2.9	2.8	16.8	3.4	1.1	3.2
120								
121								
122								
126	0.5	0.6						
127								

Hexachlorobiphenyls

129/138/163	2.1	2.2	1.7	1.0	8.9	2.0	0.5	1.0
130					0.8			
131								
132	0.9	1.5	1.2	1.2	6.5	1.1		1.4
133								
134/143					1.6			
135/151	1.3	1.7	1.5	1.3	7.0	3.2		2.8
136	0.9	1.0	1.0	0.8	4.0	1.6		3.1
137/164					2.2			
139/140								
141					2.3	0.7		
142								
144					1.0			
145								
146	2.6				2.0			
147/149	2.9	4.2	3.3	3.1	15.4	5.3	0.9	5.0
148								
150								
152								
153/168		2.7	2.2	1.6	9.9	3.5		1.6
154								
155								
156/157								
158					1.3			
159								
160								
161								
162								
165								
167								
169								

Heptachlorobiphenyls								
170								
171/173								
172								
174		0.9			1.0			
175								
176								
177								
178								
179								
180/193	0.9	1.6	0.7		1.3	0.8		
181								
182								
183/185		1.1			0.8			
184								
186								
187	1.3	2.5	0.8	0.8	1.8	1.2		
188	0.7	1.0			1.0	0.8		
189								
190								
191								
192								
Octachlorobiphenyls								
194								
195								
196								
197								
198/199	0.8	1.5			0.7			
200								
201								
202		0.8						
203		0.8						
205								
Nonachlorobiphenyls								
206								
207								
208								
Decachlorobiphenyls								
209								
Recoveries								
14	85%	73%	54%	58%	83%	84%	77%	77%
d-65/65	90%	79%	62%	67%	89%	80%	68%	70%
166	88%	84%	66%	68%	94%	83%	74%	74%

Batch I.D.	0125-08	0125-10	0126-02	0126-04	0126-06
	6102716P	6102916P0	6102316P	6101916P	6104316P0
Sample I.D.	02222010	2272010	02272010	02222010	2272010
Deployment Date	11/17/200	11/24/2009	11/21/200	11/23/200	11/21/2009
Collection Date	2/22/2010	2/27/2010	2/27/2010	2/22/2010	2/27/2010

Monochlorobiphenyls

1	2.5	2.5	2.0	4.8	1.8
2	0.9	0.8	0.6	1.1	0.6
3	5.5	4.3	7.2	9.8	4.9

Dichlorobiphenyls

4	6.1	5.5	4.4	6.6	5.4
5					
6	2.5	2.4	3.1	3.1	2.4
7	0.5	0.6	0.6	0.9	0.6
8	8.6	7.5	9.9	12.3	9.4
9	0.8	0.9	0.8	1.1	0.8
10				0.3	
11	13.6	15.3	20.8	12.6	8.4
12/13	0.6	0.5	0.9	0.6	0.4
15	1.7	1.9	2.3	1.9	1.6

Trichlorobiphenyls

16	4.1	3.3	5.2	3.9	3.0
17	5.4	4.5	5.2	4.4	3.7
18/30	11.1	9.3	11.8	9.7	8.5
19	1.3	1.3	1.3	1.4	1.1
20/28	8.3	9.1	10.0	5.8	5.3
21/33	4.7	4.8	6.1	3.7	3.3
22	2.9	3.0	3.6	2.0	1.6
23	0.7	0.7		0.4	0.6
24					
25	0.6	0.6	0.7	0.6	0.5
26/29	1.8	1.5	2.1	1.4	1.3
27	0.8	0.6	0.7	0.6	0.7
31	8.2	8.3	10.5	6.5	5.0
32	2.6	2.7	3.0	2.4	2.0
34					
35					
36					
37	1.5	1.9	2.1	1.0	0.9
28					
39					

Tetrachlorobiphenyls

40/41/71	5.6	5.2	2.9	1.7	1.0
42	2.8	2.8	1.5	1.2	
43/73	45.1	32.3	4.7	6.0	2.5

44/47/65	15.5	12.2	10.3	11.8	5.1
45	2.0	1.6	2.0	1.2	1.0
46					
48	1.5	1.4	1.4	1.0	
49/69	9.3	7.6			
50/53	2.9	1.8	1.6	2.0	
52	45.1	32.3	22.6	35.9	12.1
54					
55					
56			1.7	0.8	
57		1.1			
58					
59/62/75	1.3	1.2	0.5		
60			1.0		
61/70/74/76			9.9	7.7	4.2
63					
64	9.1	12.9	2.9	2.8	1.6
66			3.6	1.9	1.3
67					
68	1.0	1.7			
72	2.8	4.8			
77					
78					
79					
80					
81					

Pentachlorobiphenyls

82			0.8	0.5	
83/99	4.0	5.7	4.2	3.3	1.8
84	4.5	4.6	3.3	3.9	1.4
85/116/117	1.4	1.8	3.1	1.3	
86/87/97/109/119/	4.3	4.3	1.9	4.1	1.4
88/91	3.2	3.1	1.2	1.5	0.7
89					
90/101/113	8.7	12.3	8.7	7.9	3.8
92	2.0	2.2	1.7	1.7	0.8
93/100					
94	20.5	17.7			
95			11.6	15.3	5.9
96					
98/102				0.5	
103					
104					
105		1.5	1.2	0.5	
106					

107/123					
108/124					
110/115	4.4	8.1	6.8	4.9	2.4
111					
112					
114					
118	1.3	3.6	3.7	1.5	1.0
120					
121					
122					
126			0.5	0.4	0.5
127					
<hr/>					
Hexachlorobiphenyls					
<hr/>					
129/138/163	0.5	1.5	2.5	0.9	0.7
130					
131					
132		1.3	1.4	0.6	
133					
134/143					
135/151	1.3	1.5	1.5	1.0	
136	1.2	1.2			
137/164					
139/140					
141			0.6		
142					
144					
145					
146					
147/149	1.9	2.7	3.1	1.9	1.1
148					
150					
152					
153/168	0.6	1.5	2.0	0.8	0.7
154					
155			0.9	0.9	
156/157					
158					
159					
160					
161					
162					
165					
167					
169					

Heptachlorobiphenyls					
170					
171/173					
172					
174					
175					
176					
177					
178					
179					
180/193			0.5		
181					
182					
183/185					
184					
186					
187			0.6		
188					
189					
190					
191					
192					
Octachlorobiphenyls					
194					
195					
196					
197					
198/199					
200					
201					
202					
203					
205					
Nonachlorobiphenyls					
206					
207					
208					
Decachlorobiphenyls					
209					
Recoveries					
14	83%	80%	88%	84%	91%
d-65/65	76%	77%	97%	88%	95%
166	83%	80%	96%	88%	96%

Batch I.D.	0126-08	0127-02	0127-04	0127-05	0127-08
	6110713P	6109613P0	6109113P	6104715P	6108919P0
Sample I.D.	03032010	3032010	03032010	03222010	1272010
Deployment Date	11/14/200	10/29/2010	10/26/200	12/26/200	9/18/2009
Collection Date	3/3/2010	3/3/2010	3/3/2010	3/22/2010	1/27/2010

Monochlorobiphenyls

1	2.3	2.2	3.1	1.6	2.7
2	0.7	0.8	0.9	0.6	0.9
3	6.8	10.5	7.3	3.7	6.1

Dichlorobiphenyls

4	4.2	5.0	8.9	5.0	4.7
5			0.5	0.4	
6	3.2	2.3	5.0	3.5	2.6
7	0.6	0.7	1.1	0.8	0.7
8	13.6	8.7	17.1	15.7	9.1
9	0.9	0.8	1.2	1.0	0.9
10					
11	21.2	13.4	29.4	49.8	12.8
12/13	1.3	0.7	1.3	1.3	0.9
15	6.0	2.1	4.4	5.7	2.5

Trichlorobiphenyls

16	10.9	4.2	7.2	10.3	4.3
17	9.1	4.4	7.7	9.9	4.8
18/30	21.8	9.7	16.6	21.6	10.2
19	1.8	1.3	2.2	2.1	1.4
20/28	31.0	7.4	12.8	24.6	8.7
21/33	20.8	4.0	8.5	15.6	5.1
22	12.2	2.7	4.7	8.4	3.0
23	1.0	0.6	1.2		0.5
24					
25	1.7	0.7	1.1	1.8	0.9
26/29	5.0	1.8	3.2	4.5	1.9
27	1.4	0.7	1.0	1.5	0.6
31	33.0	7.4	12.8	23.1	8.6
32	7.0	2.7	4.4	6.8	3.1
34		2.4	3.3	1.2	1.6
35				0.6	
36					
37	6.9	1.5	2.1	5.4	1.7
28					
39	0.4	0.6	0.9	0.6	0.5

Tetrachlorobiphenyls

40/41/71	14.5	3.0	3.6	7.3	2.3
42	8.2	1.4	2.0	4.1	1.2
43/73	20.1				

44/47/65	40.8	12.0	15.7	22.4	6.3
45	6.4	1.9	4.0	4.4	1.5
46	1.9			1.1	
48	6.7	1.3	1.7	3.5	1.2
49/69		6.5	8.6	11.4	4.1
50/53	5.2	1.9	2.6	2.9	1.3
52	74.4	32.0	37.8	37.3	13.2
54					
55					
56	10.1		1.5	4.0	1.2
57					
58					
59/62/75	2.4		0.7	1.4	
60	5.8		0.8	2.3	
61/70/74/76	57.2	7.5	10.9	20.6	5.8
63	1.1				
64	15.1	2.9	4.4	6.9	2.2
66	22.4	2.4	4.1	8.5	2.0
67					
68			0.8		
72					
77	0.7				
78					
79					
80					
81					

Pentachlorobiphenyls

82	3.9		0.7	1.1	
83/99	21.8	2.9	3.7	6.9	2.0
84	14.8	3.5	4.1	5.0	1.5
85/116/117	6.5	0.9	0.7	1.5	0.8
86/87/97/109/119/	27.0	2.3	2.9	5.8	2.6
88/91	5.8	1.4	1.5	2.1	0.7
89	0.6				
90/101/113	43.4	7.3	9.8	15.8	4.3
92	7.8	1.5	1.9	2.8	0.8
93/100					
94					
95	45.7	14.1	15.6	18.7	6.1
96	0.5				
98/102	1.6				
103					
104					
105	5.8	0.5	0.7	1.5	0.6
106					

107/123	1.8				
108/124	0.8				
110/115	36.6	4.7	6.3	10.2	3.4
111					
112					
114	0.5				
118	19.2	1.8	2.6	4.4	1.0
120					
121					
122					
126	0.9	0.4	0.5	0.6	0.5
127					
<hr/>					
Hexachlorobiphenyls					
<hr/>					
129/138/163	14.6	1.3	1.5	2.9	1.4
130	0.8				
131					
132	6.2		0.7	1.5	0.5
133					
134/143	1.2				
135/151	8.6	1.0	1.0	2.6	0.9
136		0.9	0.8	1.5	
137/164	1.5				
139/140					
141	3.5			0.8	
142					
144	1.5				
145					
146	2.0			0.5	
147/149	18.2	2.1	2.3	5.0	1.7
148					
150					
152					
153/168	14.6	1.2	1.3	3.1	1.2
154					
155	4.1				
156/157					
158	1.4				
159					
160					
161					
162					
165					
167					
169					