Outfall 003
The KCP has previously conducted investigations to determine the source of VOCs in Outfalls 003 and 004 completing a preliminary investigation of six 10,000 gallon underground storage tanks (USTs) associated with the Former Fuels Test Lab (Bldg 50) located on the GSA controlled portion of the Bannister Federal Complex. GSA is responsible for investigation of Bldg 50 and associated USTs. A summary of the KCP's preliminary investigation was included in Section 3.6 of the 2001 Annual Groundwater Monitoring Report. The investigation concluded that a source of solvent contamination does exist in this area and is likely contributing to VOCs detected in stormwater discharges from Outfalls 003 and 004. The GSA has further investigated this area to characterize contamination associated with the former tank farm. Follow-up investigations of the Bldg 50 area and associated USTs by GSA identified TCE concentrations as high as 43,100 µg/L in groundwater (GSA 2008). Outfall 003 had previously been lined by the KCP to address contaminant infiltration concerns. Liner terminations and service connections were sealed during 2005 to further ensure contaminant infiltration points were addressed. VOCs were not detected in stormwater discharges from Outfall 003 during 2011. Prior to the completion of the lining work in 2002 VOCs were routinely detected in stormwater discharges from Outfall 003 (reference Outfall 003 trend graph at the end of this section).

Outfall 004
Outfall 004 continues to occasionally detect TCE in stormwater discharges (Table 5.2 - see also Outfall 004 trend graph at the end of this section). The likely source of this contamination is the Building 50 area which is controlled by GSA (see discussion under Outfall 003 above). A camera survey of the 004 stormwater piping system was conducted during 2005 and 2006 to determine if leakage of groundwater into piping could be a source of solvents detected in Outfall 004 stormwater discharges. A number of piping integrity issues were noted from this survey. Relatively minor areas of groundwater infiltration have been found in several areas of Outfall 004. This information was used in the preparation of an engineering design for the repair of stormwater piping within the 004 storm sewer system during 2006. The work outlined in this design has not been implemented.

Note: Trend graphs depicting the occurrence of TCE, 1,2-DCE, and vinyl chloride in the four regulated outfalls are provided in the Attachments section at the end of Section 5.0.

5.3 PCBs
The occurrence of PCBs in stormwater discharges associated with stormwater run-off from the Bannister Federal Complex is largely associated with two sources that affect three of the four permitted outfalls. Under the KCP's Post Closure Permit (previously enforced by EPA as a RCRA Consent Order) potential sources of PCBs to the environment have been extensively investigated and regulatory approved corrective actions implemented. In addition, the KCP's NPDES permit requires weekly monitoring for PCBs at the four permitted outfalls. The PCB discharge limit is 0.5 µg/L which is also the analytical quantification level for routine compliance reporting purposes. During

2011 none of the four outfalls detected PCBs for samples analyzed by methods required for routine compliance purposes. The following sections provide a basic overview of PCB occurrence in Outfalls 001, 002, and 003. Historically, Outfall 004 has not detected PCBs in permit compliance samples.

5.3.a Outfall 001

The occurrence of PCBs in Outfall 001 is associated with historic spills that occurred during the late 1960's and 1970's from the Department 27 (D/27) heat transfer fluid system (DOE 1995). The D/27 heat transfer fluid system used PCB Aroclor 1242 as the basis for the heat transfer fluid. Several spills associated with D/27 operations contaminated soils within the Outfall 001 water shed. Accessible areas of PCB soil contamination associated with D/27 have been removed (DOE 1994a). A PCB trend graph for Outfall 001 is provided as an attachment to Section 5.0. NPDES permit required sampling has not detected PCBs in Outfall 001 since 2004 (see Outfall 001 PCB trend graph in the attachments to this section).

5.3.b Outfall 002

This section specifically addresses PCB discharges from Outfall 002. Other parameters of interest regarding Outfall 002 are addressed in the above sections of text. Appendix D of this report includes a summary of sample results collected from the NPDES Permit compliance point for Outfall 002 during calendar year 2011 and a summary of data collected from the Outfall 002 RCRA Post Closure Permit sampling location (002 flap gate). The KCP's Missouri State Operating Permit requires sampling of Outfall 002 stormwater discharges at the sluice gate location and the RCRA Part B Permit Post Closure Permit requires sampling of Outfall 002 discharges at the flap gate location (Figure 5.1).

As outlined under Appendix F of the Sampling and Analysis Plan, which is specific to the RCRA Part B Permit, stormwater discharges from Outfall 002 were sampled on a semi-monthly basis for PCBs, VOCs, and PCBs in sediment. Water samples were collected at the Outfall 002 flap gate (Figure 5.1). Sediment samples were collected at the Outfall 002 sluice gate (Figure 5.1), approximately 100 yards upstream of the flap gate, by installing a sediment collection tray which is left in place during intervals between sample events. In addition, Outfall 002 is monitored under the KCP's NPDES permit at the sluice gate for PCBs and other selected parameters.

The occurrence of PCBs in Outfall 002 is well documented (IT Corp. 1989, DOE 1977, DOE 2003). PCB Therminol FR-1 was used at the KCP from 1966 – 1974 in heat transfer fluid systems (DOE 1993b). During 1969 and 1971 spill events from the heat transfer system resulted in the discharge of PCBs to the storm sewer system and soils beneath D/26. During each of the above events hay was used to absorb the spilled material and the cleanup residual turned over to a licensed contractor for disposal (DOE 1977). The KCP has undertaken numerous cleanup actions since the initial spill events to further remediate the occurrence of PCBs in Outfall 002 and soils spending approximately $18 million on corrective actions.

These actions had previously resulted in routine compliance with the PCB discharge standard of 1.0 μg/L contained in the KCP's NPDES permit (MO-0004863). Weekly sampling and analysis for PCBs is required by this permit. The PCB NPDES Permit limit was reduced to 0.5 μg/L effective November 2002. During 2011 the 0.5 μg/L PCB limit was not exceeded. Figure 5.2 and Table 5.3 depict PCB concentrations in Outfall 002 during 2011. Both the table and the figure provide data from the NPDES permit monitoring location (sluice gate) and the Post Closure Permit monitoring location (flap gate). The sluice gate location (NPDES compliance point) is sampled on a weekly basis and the flap gate location (RCRA Part B Permit sample location) is sampled on a semi-monthly basis.

As discussed in Section 5.3.b, under the Base Flow Diversion System heading, since March 2005, stormwater is only discharged from Outfall 002 during precipitation events. Although weekly sampling is required by the NPDES Permit there are numerous weeks throughout the year where there is no discharge and, therefore, no sample collected from the 002 NPDES compliance point. MDNR personnel from the Kansas City Regional office accompanied KCP representatives during an inspection to determine the effectiveness of the Outfall 002 diversion system on April 7, 2005. Active flow downstream of the diversion system was not observed during this inspection and KCP was instructed to note in the quarterly discharge monitoring reports that there was no flow during the monitoring period. In order to ensure samples are collected from outfall 002 during rain events an automated sampler has been installed. Sample events are triggered on a rain gauge tipping bucket and a flow sensor. This configuration ensures samples are collected when rain events occur during weekends or off-shifts.

The flap gate monitoring location was added under the Post Closure permit at the request of MDNR RCRA Permit program personnel. Even though there may be no discharge from Outfall 002, samples from the flap gate location are nevertheless collected on a weekly basis. A summary table of analytical results collected at the flap gate location is provided in Appendix D. Surface water from Indian Creek backs up into the Outfall 002 raceway and therefore, water is available at the flap gate location. Water from Indian Creek does not back-up into Outfall 002 piping as there is an approximate one foot drop-off from the flap gate structure to the raceway. Sample results from the Outfall 002 flap gate location have historically periodically detected PCBs. Sample results derived from the flap gate location are not representative of discharges from Outfall 002. During periods of no discharge PCB results at the flap gate location are affected by sediment entrainment. The Outfall 002 raceway accumulates sediments that contain PCBs. Entraining even small amounts of sediment in the sample can impact the PCB concentration. Sediments that collect in the Outfall 002 raceway are typically contaminated with low level (i.e., less than 1 ppm) PCBs. The water is less than one foot deep in the raceway and the pickup tube on the sampler is occasionally impacted by these sediments resulting in detections of PCBs in the water sample collected at the flap gate location. Sample results at the sluice gate location (NPDES compliance point) and the flap gate location (sample location at the raceway) are not comparable (Figure 5.2). There are no active or passive sources of flow into Outfall 002 downstream of the sluice gate location that would otherwise account for the sporadic occurrence of PCBs at the

Figure 5.2
Outfall 002 PCBs

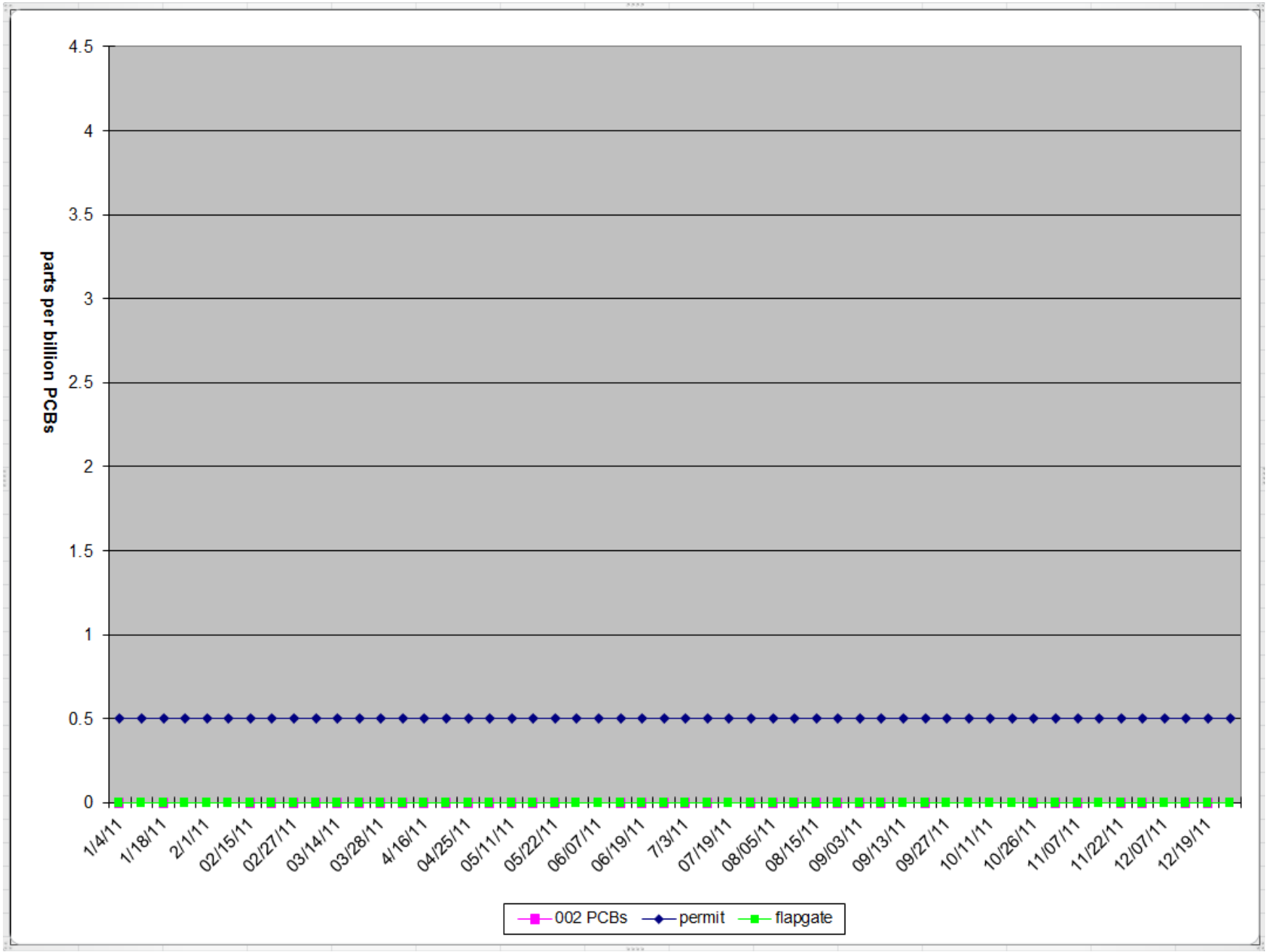


Table 5.3
Outfall 002 PCBs
(results ug/L)

Date	002 PCBs	flapgate	permit	comments
1/4/11		<	0.5	002 reroute system on-line - effectively rerouted all flow
1/11/11			0.5	002 reroute system on-line - effectively rerouted all flow
1/18/11		<	0.5	
1/25/11			0.5	002 reroute system on-line - effectively rerouted all flow
2/1/11			0.5	
2/8/11			0.5	
02/15/11	<	<	0.5	
02/24/11	<	<	0.5	002 reroute system on-line - effectively rerouted all flow
02/27/11	<	<	0.5	002 reroute system on-line - effectively rerouted all flow
03/08/11	<		0.5	
03/14/11	<	<	0.5	
03/25/11	<		0.5	
03/28/11	<		0.5	002 reroute system on-line - effectively rerouted all flow
4/3/11	<	<	0.5	
4/16/11	<		0.5	
04/21/11	<	<	0.5	
04/25/11	<		0.5	
05/05/11	<	<	0.5	
05/11/11	<		0.5	002 reroute system on-line - effectively rerouted all flow
05/19/11	<	<	0.5	
05/22/11	<		0.5	
05/29/11			0.5	
06/07/11		<	0.5	
06/16/11	<		0.5	
06/19/11	<	<	0.5	002 reroute system on-line - effectively rerouted all flow
06/27/11	<		0.5	002 reroute system on-line - effectively rerouted all flow
7/3/11	<	<	0.5	
07/12/11	<		0.5	
07/19/11		<	0.5	
07/30/11	<		0.5	
08/05/11	<	<	0.5	
08/07/11	<		0.5	002 reroute system on-line - effectively rerouted all flow
08/15/11	<	<	0.5	002 reroute system on-line - effectively rerouted all flow
08/22/11	<		0.5	
09/03/11	<		0.5	002 reroute system on-line - effectively rerouted all flow
09/09/11	<	<	0.5	
09/13/11			0.5	002 reroute system on-line - effectively rerouted all flow
09/18/11	<	<	0.5	
09/27/11			0.5	
10/4/11		<	0.5	002 reroute system on-line - effectively rerouted all flow
10/11/11			0.5	002 reroute system on-line - effectively rerouted all flow
10/18/11		<	0.5	002 reroute system on-line - effectively rerouted all flow
10/26/11	<		0.5	
11/02/11	<	<	0.5	
11/07/11	<		0.5	
11/16/11		<	0.5	002 reroute system on-line - effectively rerouted all flow
11/22/11	<		0.5	
12/03/11	<		0.5	
12/07/11		<	0.5	002 reroute system on-line - effectively rerouted all flow
12/13/11	<		0.5	002 reroute system on-line - effectively rerouted all flow
12/19/11	<	<	0.5	002 reroute system on-line - effectively rerouted all flow
12/26/11			0.5	002 reroute system on-line - effectively rerouted all flow
12/24/10	<		0.5	
12/31/10	<	<	0.5	
CY11 AVG	0.05	**average using 1/2 DL when ND**		

flap gate sample location. During 2011, PCBs were not detected in semi-monthly samples collected at the flap gate (post Closure Permit) monitoring location.

Corrective Actions

Numerous corrective actions and investigations have been completed to remediate and identify the occurrence of PCBs in Outfall 002 and summary reports forwarded to MDNR. The Outfall 002 Corrective Actions Interim Measures Report (DOE 2003) was submitted to MDNR November 2003 which provides a detailed summary of historic and corrective actions completed through 2003 to reduce PCBs associated with Outfall 002 stormwater discharges (DOE 2003).

Base Flow Diversion System

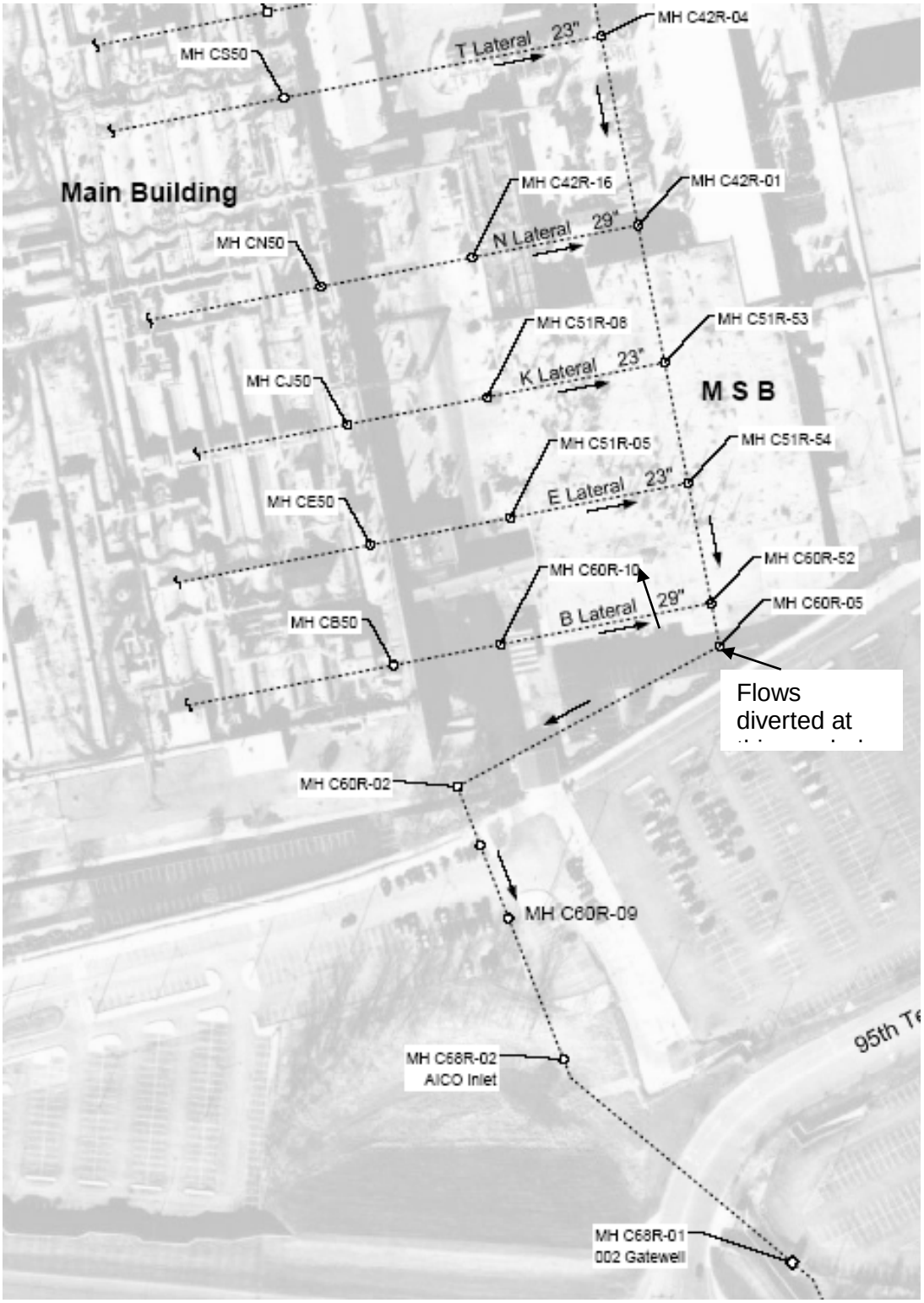
As a result of significant flow reductions in Outfall 002 the KCP identified a project that would divert base flows (i.e., air conditioning condensate and fire protection system test flows) in Outfall 002 and route this flow to the Groundwater Treatment System (GTS). The GTS has historically received low levels of PCBs and is permitted to receive and treat groundwater contaminated with PCBs and VOCs. During 2005 the KCP completed construction of the Outfall 002 Diversion System. This system diverts all non-rain event flow (base flow) in Outfall 002 to the GTS. Base flow rates in Outfall 002 are approximately 5 gpm. Outfall 002 base flows are diverted at manhole MHC60R-05 (Figure 5-3). The system is capable of rerouting up to 15 gpm. Once flows exceed 15 gpm a high level float shuts off the pump. As flows return to less than 15 gpm in the outfall the diversion pump is automatically actuated.

This location of the diversion system ensures that base flow will be captured as the majority of the Outfall 002 watershed is upstream of this location. There are no dry weather inputs downstream of this location. Operation of the 002 diversion system results in discharges from Outfall 002 during precipitation events only. Outfall 002 rain event flows have been characterized and typically do not detect PCBs. Downstream of MHC60R-05 storm sewer flows are related to overland flow such as parking lot drains. Therefore, the diversion system captures non-rain event related flow within Outfall 002. The Outfall 002 diversion system has effectively served reduced PCB discharges. The system operated in a continuous mode during 2011.

Post Closure Permit Driven Actions

The 95th Terrace Corrective Measures Study (CMS) and related Statement of Basis (incorporated into the RCRA Post Closure Permit in a September 29, 2006, permit modification) evaluated several corrective action alternatives related to PCB contaminated sediments associated with stormwater discharges from outfall 002. The approved alternative includes the following corrective actions related to contaminated sediments:

Figure 5.3
Location of Outfall 002 Diversion System



- Semi-Annual sampling of surface waters for PCB analysis by EPA Method 1668.
- Semi-Annual internal inspection of the outfall 002 storm sewer system to identify areas of sediment accumulation and removal of sediments if significant deposits are identified.
- Semi-Annual internal inspection of the Outfall 002 storm sewer to inspect the condition of the pipe and identify any areas of infiltration and mitigation of any infiltration areas.
- Installation and maintenance of an access restriction over the Outfall 002 raceway.
- Posting of notification signs near the Outfall 002 flap gate.
- Indian Creek sediment sampling and calculation of the Hazard Index for the recreational user for the ingestion and dermal contact pathways.

2011 Outfall 002 Repair Work

The 95th Terrace CMS requires semi-annual internal inspections of the Outfall 002 storm sewer system. Previous inspection s had identified a section of damaged piping upstream of the AICO inlet. The interval of pipe that extends from AICO to the meter pit has previously been In-Situ form lined. Approximately six feet upstream of AICO the liner was noted as heaving inward. Construction specifications were developed during 2010 to implement repairs and construction mobilization was initiated during December 2010. Included as an attachment at the end of this section are the first nine pages of the summary report previously submitted to MDNR that documents the above repair work.

Outfall 002 Internal Inspections

An internal inspection was conducted May 13, 2011, with the exception of the interval of pipe immediately upstream from the AICO drop inlet (see Fig. 5-3) that has been repaired (see above) the inspection did not note any issues with the condition of the pipe or areas of infiltration (see Figure 5-3 the box culvert extends from AICO to the flap gate).

The second semi-annual inspection was conducted December 15, 2011. Seepage was observed north of the AICO inlet where the new manhole joins the 60-inch Hobas pipe. Water was dripping from the pipe crown at the joint between the new Hobas pipe and new manhole (north, upstream side of manhole). Rust-colored staining associated with the seepage was also observed. A follow-up inspection of this area was conducted January 4, 2012, by the construction company that had installed the new pipe during Spring 2011 to scope the necessary repair work. Repairs to seal the above pipe joint were completed on February 1, 2012.

Outfall 002 Sediment

The Post Closure permit requires collection of weekly sediment samples at the Outfall 002 sluice gate. There are numerous weeks throughout the year when sufficient sediment is not available for sampling. The majority of the Outfall 002 watershed is comprised of hard surfaces (i.e., buildings and paved areas), therefore, very few sources of sediment discharge to the storm sewer are available. Sediments deposited within the storm sewer system are comprised mainly of roof sand that is abraded off the building's composite roof. Sediments deposited within the storm sewer act as "sinks" where PCBs migrating on colloidal sized particles are entrapped by the sediments. Appendix F of the Sampling and Analysis Plan was modified with approval of the 95th Terrace CMS changing the

sediment sampling frequency at the sluice gate to a monthly interval. Sufficient sediment was collected and analyzed on the following occasions during the year:

Table 5.4
Outfall 002 Sediment Sample Results
Results in mg/kg (detection limit dependent upon volume of sample available)

Date / Aroclor	1016	1221	1232	1242	1248	1254	1260	Total
03/15/11	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101	<0.101

Access Restriction Over Outfall 002 Raceway
The 95th Terrace CMS and related Statement of Basis required the installation and maintenance of an access restriction over the outfall 002 raceway. The Outfall 002 discharge point to Indian Creek consists of a flap gate structure, which is essentially a large hinged door to allow flow to discharge from the storm sewer. When Indian Creek floods the flap gate prevents water from backing up into the storm sewer system. After the water exits the flap gate it enters a raceway, essentially a rectangular pipe with no top, and is discharged to Indian Creek. The raceway is approximately 150 feet long. The 95th Terrace Risk Assessment identified PCB contaminated sediments that accumulate in the raceway as an area of higher potential risk than the surrounding area (i.e., sediments in Indian Creek). Sediments are periodically removed from the raceway. In order to reduce the potential risk posed by PCB contaminated sediments that accumulate in the raceway an access restriction was installed over the raceway August 2004 (Figure 5.4.a. – c.).

The KCP uses a maintenance scheduling program to manage preventive maintenance activities. Inspection of the access restriction is scheduled through this system on a quarterly basis.

Notification Signs
The 95th Terr CMS and related Statement of Basis required the installation and maintenance of notification signs near Outfall 002. Sign configuration (wording, size, and layout) was previously agreed to by MDNR and KCP representatives. These signs provide notification that fish from the area should not be consumed, and that drinking the water and wading and swimming are not allowed. These signs are also inspected on a quarterly basis which is facilitated through the maintenance scheduling program as discussed above.

Figure 5.4.a

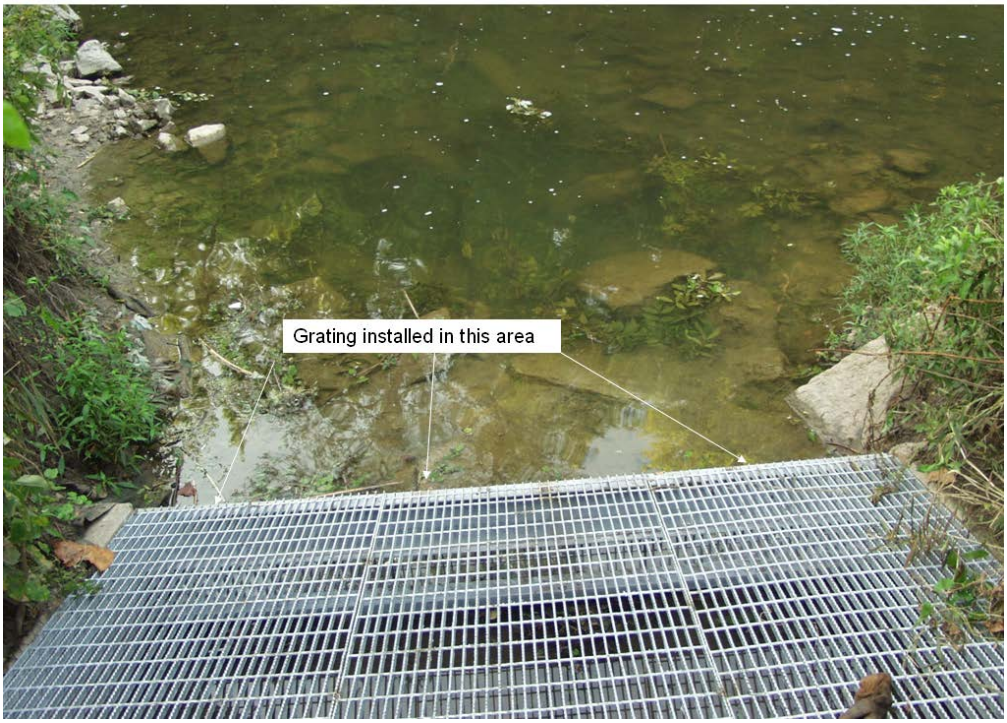
Outfall 002 Raceway looking towards flap gate prior to access restriction installation

Figure 5.4.b

Outfall 002 Raceway with access restriction installed looking towards flap gate.

Figure 5.4.c

Outfall 002 Raceway looking towards Indian Creek



Outfall 002 Aqueous PCB Mass

The cumulative effect of corrective actions taken to date can be summarized, in one way, by reviewing the data trend associated with the aqueous mass of PCBs discharged through Outfall 002 (Figures 5.5 and 5.6). Since 2003 there has been a steady downward trend in the mass of aqueous PCBs discharged through Outfall 002. The trend graph starts with 2001 since this is the last year prior to efforts initiated to reroute single pass cooling water discharges to the storm sewer system. Prior to 2002, Outfall 002 received approximately 100 gallons per minute (gpm) of single pass cooling water discharges. The KCP's November 1999 stormwater permit (MSOP 0004863) contained a total residual chlorine limit and related compliance schedule. Since single pass cooling water is made-up from drinking water, which contains residual chlorine, the KCP reconfigured processes requiring cooling water to utilize the plant's closed loop chilled water system or, in a few instances, rerouted the single pass cooling water to the sanitary sewer with city approval.

As a result of efforts to stop the discharge of single pass cooling water to the storm sewer system the base flow rate (i.e., non-rain event flow comprised of single pass cooling water and air conditioning condensate) went from approximately 100 gpm in 2001 to 5-10 gpm in 2004. This reduction in base flow rate allowed the KCP to capture the remaining base flow in Outfall 002 (see previous discussion), which contained an approximate average of 0.5 µg/L total PCBs, and reroute this water to the Groundwater Treatment System where the PCBs are treated and discharged to the sanitary sewer. This system (Outfall 002 reroute system) became operational March 2005 and has

significantly reduced the aqueous mass of PCBs discharged through the Outfall 002 system. Figure 5.5 provides a trend graph of weekly PCB results collected from the Outfall 002 compliance point, and the approximate single pass cooling water flow rate. As can be seen on Figure 5.5 as single pass cooling water was reduced PCB trends became very erratic. Numerous corrective actions were also occurring during this period that cleaned and sealed storm sewer piping. When the 002 reroute system became operational March of 2005 the occurrence of PCBs was greatly reduced.

Figure 5.5
Outfall 002 PCB Trend Graph

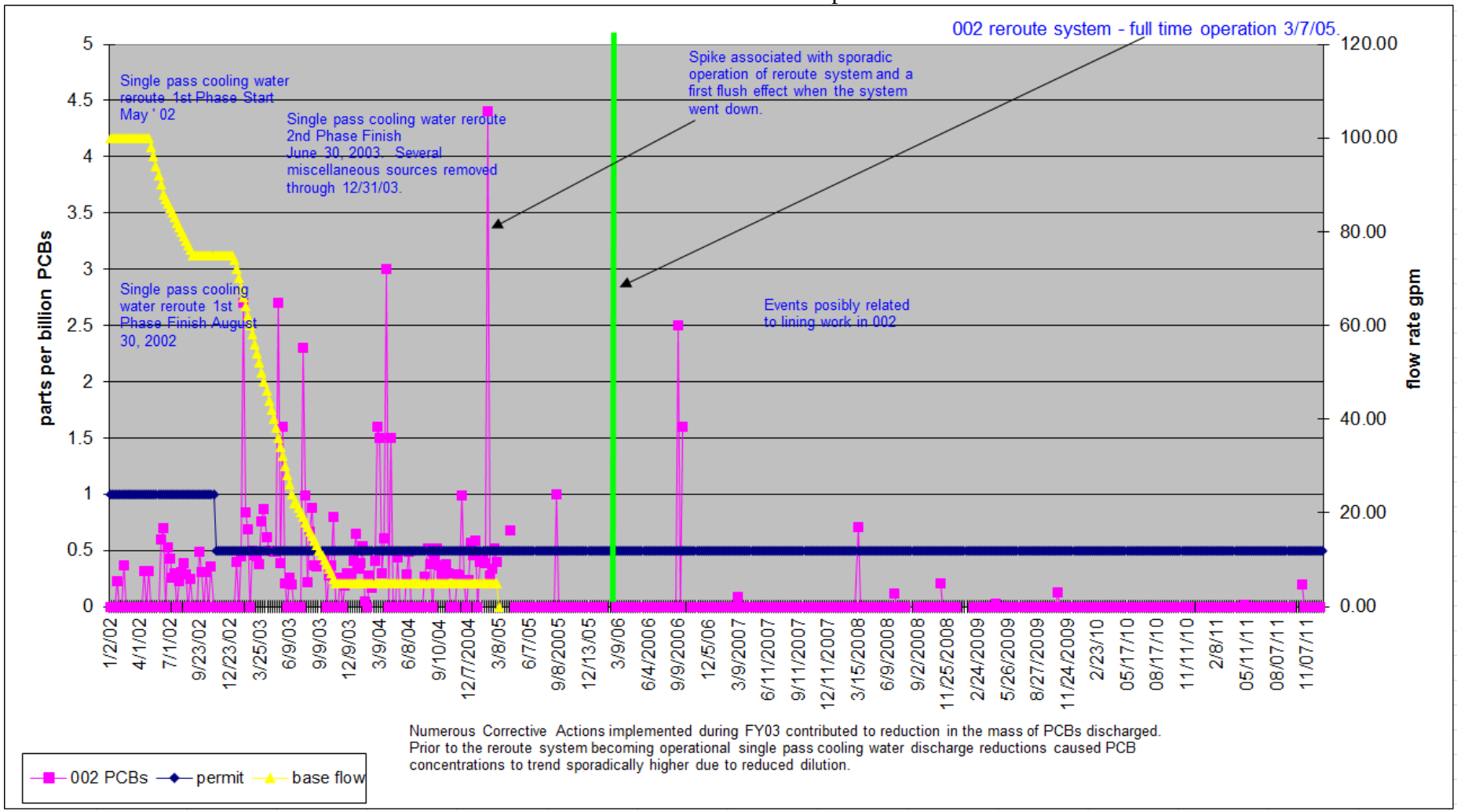
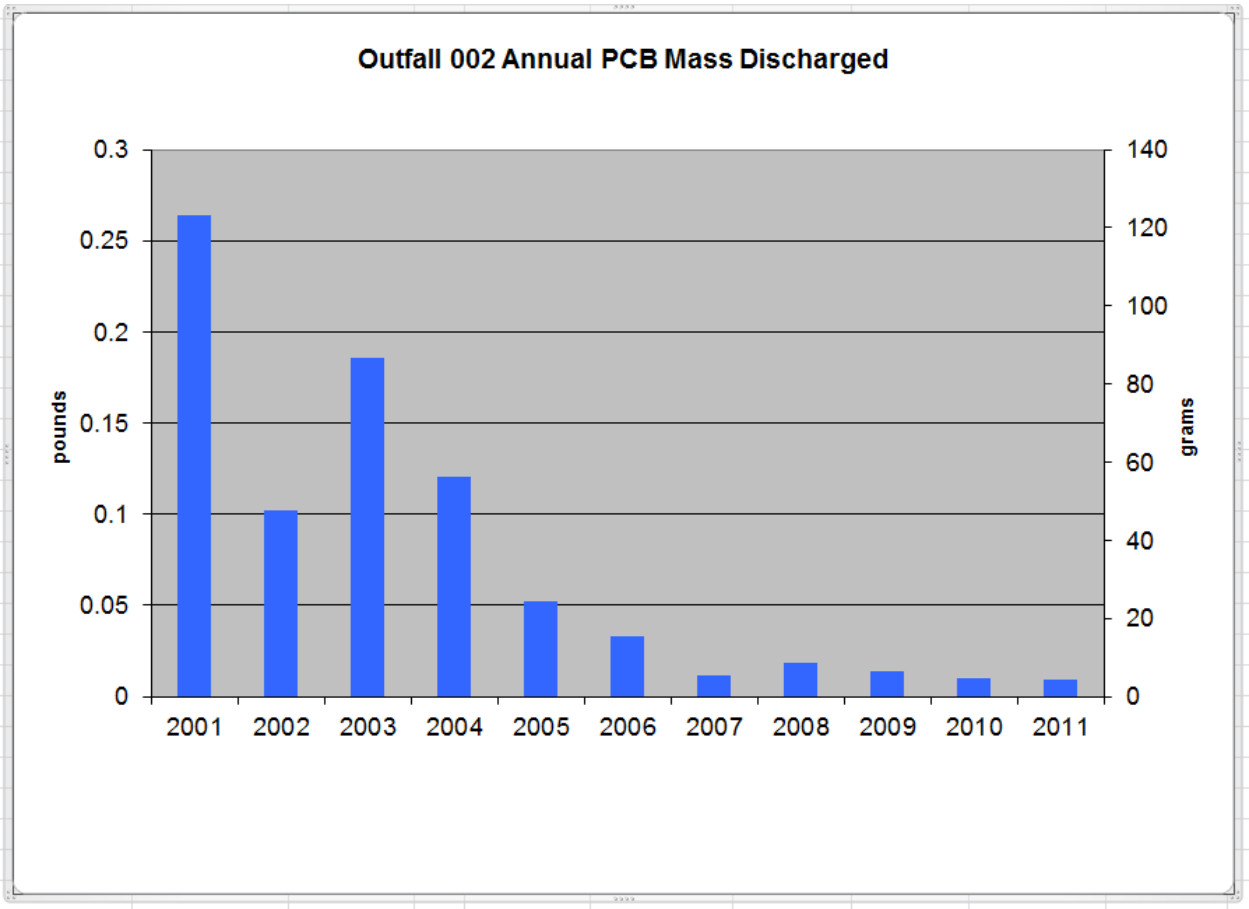


Figure 5.6
Outfall 002 Aqueous PCB Mass



The methodology employed to calculate the aqueous mass of PCBs discharged through Outfall 002 conservatively estimates mass by using one half the detection limit when the result was non-detect for PCBs. The analytical lab used by the KCP has a 0.1 µg/L detection limit and a 0.5 µg/L quantification limit for PCB analysis. Therefore, 0.05 µg/L is assumed present in the discharge when sample results are non-detect for PCBs. During years when higher annual rainfall is received related PCB mass estimates are higher due to the assumption that up to one half the detection limit is present even though the analysis did not detect any PCBs. During 2007 only 5.2 grams (0.0115141 lbs) of PCBs were discharged in the aqueous phase. The only PCB detections during 2007 were the two sample events that employed Method 1668 analysis (Table 5.5). During 2008 8.85 grams (0.01955 lbs) of PCBs were discharged in the aqueous phase. There were only three sample events that detected PCBs during 2008. The two events that employed Method 1668 analysis (Table 5.5) and one regular sample event that utilized Method 8082 analysis detected 0.71 µg/L of total PCBs on March 15th. During 2009 only 6.15 grams (0.013559 lbs) of PCBs were discharged in the aqueous phase. The only PCB detections during 2009 were the two sample events that employed Method 1668 analysis (Table 5.5). During the other 34 sample events PCBs were not detected, however, one half the detection limit (0.05 µg/L) was used when calculating the mass of PCBs in the discharge. During 2010 only 4.52

grams (0.00996 lbs) of PCBs were discharged in the aqueous phase. The only PCB detections during 2010 were the two sample events that employed Method 1668 analysis (Table 5.5). During the other 33 sample events PCBs were not detected, however, one half the detection limit (0.05 µg/L) was used when calculating the mass of PCBs in the discharge. During 2011 only 4.13 grams (0.009114 lbs) of PCBs were discharged in the aqueous phase. The only PCB detections during 2011 were the two sample events that employed Method 1668 analysis (Table 5.5). During the other 33 sample events PCBs were not detected, however, one half the detection limit (0.05 µg/L) was used when calculating the mass of PCBs in the discharge. Outfall 002 only discharges during rain events and is therefore, not sampled on a weekly basis when there is insufficient rainfall to bypass the reroute system.

5.3.c. Outfall 003

Outfall 003 drains the southwest portion of the Bannister Federal Complex. The occurrence of PCBs in Outfall 003 is associated with a historic spill of PCB based transformer oil. A transformer located on the GSA controlled portion of the building roof is the likely cause of PCBs detected in stormwater discharges from Outfall 003. Historic interviews with GSA personnel identified the leak of transformer oil. GSA conducted some additional follow-up wipe sampling of the area in question which did not detect PCBs. GSA has documented the occurrence of this transformer oil release and follow-up sampling in a Preliminary Assessment / Site Inspection Report that reviewed several areas of potential environmental contamination on GSA controlled portions of the Bannister Federal Complex (GSA 2008). PCB based transformer oil typically consists of Aroclor 1260. Based on the Aroclor typically detected in Outfall 003 stormwater and congener analysis by Method 1668 (see additional discussion below) analytical data from Outfall 003 confirms the source of PCBs is consistent with a transformer oil spill.

During 2002 the DOE began work to address the occurrence of PCBs in Outfall 003. The outfall was cleaned to remove PCB contaminated sediments during 2002 and again during 2008. Investigations by DOE also identified expansion joint material between pipe joints of the main collector line as being contaminated with up to 250 ppm of PCB Aroclor 1260. To rule out cross contamination issues, samples of the expansion joint material were collected from the top of the pipe. It is not uncommon to find PCBs in construction materials that pre-date the early 1970's. In order to address the occurrence of PCBs in the expansion joint material DOE lined the length of the main trunk line and the S lateral and AC lateral (Figure 5.7). Cleaning and lining the Outfall 003 storm sewer system has achieved routine compliance with the 0.5 µg/L PCB discharge limit (Figure 5.8).

Figure 5.7
Outfall 003 System

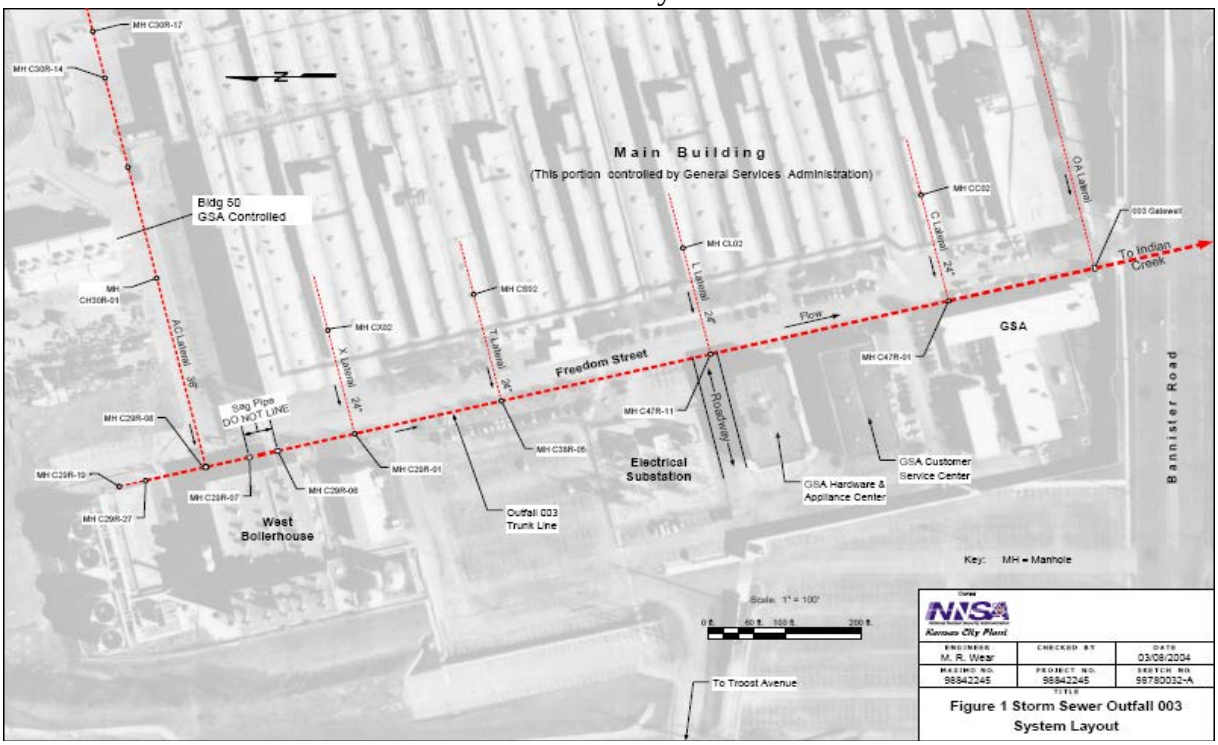
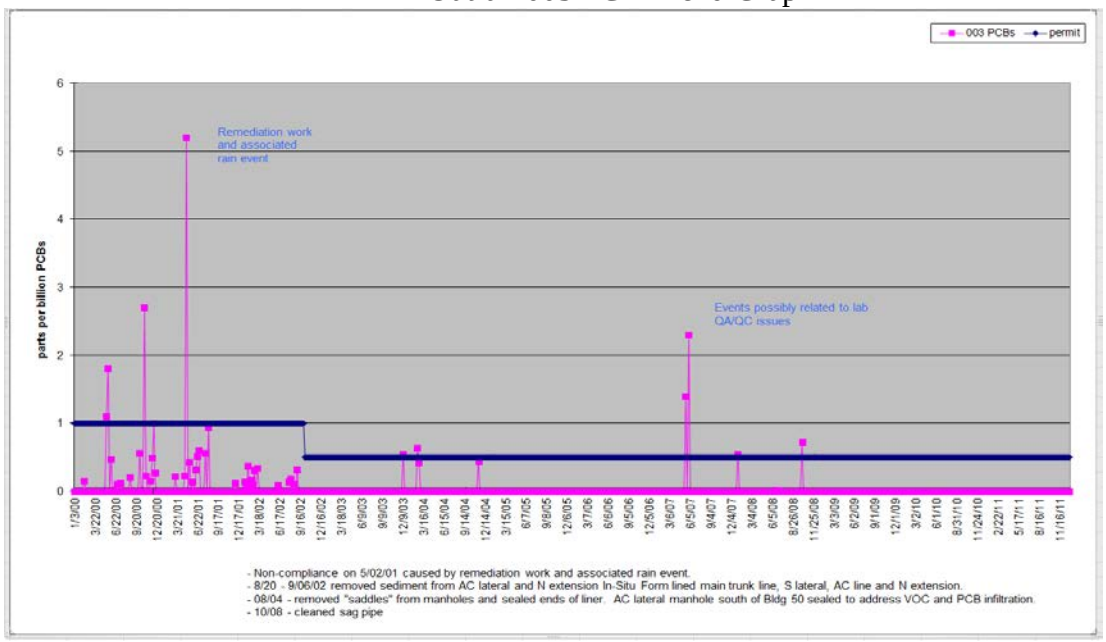


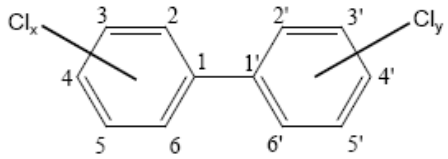
Figure 5.8
Outfall 003 PCB Trend Graph



5.3.d PCB Sampling by Method 1668

The 95th Terrace Statement of Basis requires semi-annual sampling of six surface water locations near the KCP (Figure 5.1) for PCBs by EPA method 1668. Results from Method 1668 analysis are one of several analytical tools (e.g., bioaccumulation studies, semi-permeable membrane device sampling) employed by the KCP to characterize patterns of contamination in receiving streams near the KCP. The KCPs currently approved Sampling and Analysis Plan for Surface Water (Appendix F of the Sampling and Analysis Plan – DOE 2008) requires annual sampling of surface water sites for PCBs by Method 1668. The Statement of Basis for the 95th Terrace Site, incorporated into the permit with the September 29, 2006, permit modification requires semi-annual sampling of surface water sites for PCBs by Method 1668. Surface water sites are sampled concurrently with semi-annual groundwater sample events which occurred during May and October of 2011.

Method 1668 provides low level quantification of PCB congeners and is considered cost prohibitive when routinely employed, therefore, this method is only used occasionally. Method 1668 provided reporting limits as low as 0.21 ng/L for certain congeners.
PCBs are a class of chemical compounds in which 2–10 chlorine atoms are attached to the biphenyl molecule. Monochlorinated biphenyls (i.e., one chlorine atom attached to the biphenyl molecule) are often included when describing PCBs. The general chemical structure of chlorinated biphenyls is shown below.



It can be seen from the structure that a large number of chlorinated compounds are possible. The 209 possible compounds are called congeners. PCBs can also be categorized by degree of chlorination. The term “homolog” is used to refer to all PCBs with the same number of chlorines (e.g., trichlorobiphenyls). Homologs with different substitution patterns are referred to as isomers. For example, the dichlorophenyl homolog contains 12 isomers. Method 1668 is used to determine concentrations of the 209 possible PCB congeners and is capable of sub-nanogram per liter reporting limits.

Manufacturers marketed mixtures of PCBs under the trade name Aroclor. The Aroclors are identified by a four-digit numbering code in which the first two digits indicate the type of mixture and the last two digits indicate the approximate chlorine content by weight percent. Thus, Aroclor 1242 is a chlorinated biphenyl mixture of varying amounts of mono- through heptachlorinated homologs with an average chlorine content of 42%. The exception to this code is Aroclor 1016, which contains mono- through hexachlorinated homologs with an average chlorine content of 41% (Hutzinger et al. 1974).

Semi-Annual Surface Water / Outfall Sample Stations (Reference Figure 5.1)

The KCP has routinely sampled the six surface water sample stations on the Blue River and Indian Creek plus stormwater discharges from the four regulated outfalls for PCBs by Method

1668 since 2007. Two sample stations on Boone Creek (a small tributary to the Blue River that borders the northeast portion of the Bannister Federal Complex) have been routinely sampled as a part of the surface water sampling effort since 2009. With the addition of the Boone Creek sites there are a total of eight surface water sampling stations. The surface water sample stations have been selected to "bracket" KCP stormwater outfalls (i.e., there is a sample station upstream and downstream of each outfall). The surface water sample stations provide PCB data from sites upstream of KCP stormwater discharges and from sample stations downstream of the KCP.

May 2011 1668 Sampling

Reference Figure 5.1 to locate the sample locations discussed in this section. Results from this round of sampling were, for the most part, consistent with the historic 1668 data set. Three out of the four KCP outfalls detected PCBs at levels within the historic range of results. Historically, Outfall 004 has not detected PCBs. Table 5.5 provides total PCB concentrations derived from Method 1668 analysis from the four outfalls and surface water sample stations near the KCP. Outfall 001 detected 15.981 ng/L total PCBs, Outfall 002 detected 14.598 ng/L total PCBs, and Outfall 003 detected 4.588 ng/L. These results are within the historic range of results.

Two of the three surface water sample stations on the Blue River detected PCBs. Both sample stations on Boone Creek detected PCBs at concentrations at relatively significant levels when compared to results from other surface water sample stations.
Although none of the three Indian Creek sample stations detected PCBs fish tissue samples collected during numerous previous rounds of bioaccumulation sampling demonstrate the presence of PCBs within the Indian Creek watershed both upstream and downstream of KCP stormwater discharges.

The upstream Blue River sample station (BRU) and the downstream Blue River sample station (BRD) detected PCBs. Sample station BRU, which serves as the upstream background sample station on the Blue River detected 0.275 ng/L total PCBs which is within the range of historic results. The BRU sample station detects PCBs approximately 50% of the time when sampled by Method 1668. Biota samples (fish tissue and clams) collected at the BRU sample station consistently detect PCBs. These data (water and biota samples) demonstrate the Blue River upstream of the KCP is impacted by sources of PCBs not related to the KCP.

The BRD sample station downstream of all KCP discharges detected 1.8 ng/L of PCBs.
The BRD sample station is impacted by PCBs contributed by a source located within the watershed of Boone Creek. Boone Creek runs along the northeast edge of the Bannister Federal Complex before discharging into the Blue River immediately south of the Prospect bridge. KCP Outfall 001 discharges into Boone Creek. Sample station BCU is located upstream of Outfall 001. The BCU sample station detected 23.547 ng/L of total PCBs. The Boone Creek sample station located downstream of the Outfall 001 discharge detected 12.513 ng/L of total PCBs. Based on the historic data set for Boone Creek, it is apparent that a PCB source upstream of the KCP on Boone Creek adds to the PCB levels detected at the BRD sample station.

Table 5.5
Method 1668a Total PCB Sample Results (ng/L)
Reference Figure 5.1 for sample locations.

	ICU	003	004	ICDA	002	ICDB	ICBR	BRU	BCU	001	BCD	BRD	blank
8/04	<	**6.591**	<	<	**354.3**	**0.45**	<	**9.8**	**20.6**	**ns**	**53.9**	**1.35**	
5/06	<	**19.56**	<	<	**63.98**	<	<	**0.54**	**ns**	**15.82**	**ns**	**5.66**	
3/07	<	**5.7**	<	<	**82.4**	<	<	<	**ns**	**16.2**	**ns**	**0.42**	
8/07	<	**16.78**	<	<	**41.545**	<	<	**0.685**	**122.67**	**14.61**	**77.3**	**4.397**	<
6/08	**0.711**	**22.22**	**2.89**	**0.70**	**112.43**	**5.936**	**0.91**	**1.22**	**ns**	**17.92**	**ns**	**1.58**	**3.632**
10/08	<	**8.429**	**0.51**	<	**205.35**	<	<	<	**ns**	**15.31**	**ns**	**1.19**	**3.935**
5/09	<	**26.795**	<	<	**29.75**	<	<	<	**ns**	**11.295**	**ns**	**14.162**	<
10/09	<	**14.324**	<	<	**125.51**	**0.248**	<	<	**23.1**	**25.157**	**26.8**	**0.829**	<
5/10	<	**29.217**	<	<	**33.48**	**0.571**	<	**0.234**	**26.89**	**18.636**	**67.34**	**1.292**	<
9/10	<	**36.382**	**0.476**	**0.948**	**18.082**	**0.27**	**0.215**	**0.641**	**41.25**	**10.842**	**22.42**	**2.909**	<
5/11	<	**4.59**	<	<	**14.6**	<	<	**0.275**	**23.5**	**15.98**	**12.51**	**1.8**	<
10/11	<	<	<	<	**195.5**	<	<	**0.287**	**62.1**	**4.7**	**56.3**	**4.23**	<

ns – no sample result is less than associated blank

Table 5.6 provides Method 1668 sample results for the May sample event for the four regulated outfalls and six surface water sample stations by concentration. Table 5.7 provides the weight percent congener composition present in the sample. In order to compare the makeup of congeners present in the sample to the distribution of congeners in pure Aroclor 1242 the weight percent congener composition for Aroclor 1242 is also provided in Table 5.7. Historically, samples from Outfall 001 and 002 note a higher relative weight percent of the di, tri and tetrachlorobiphenyl homolog groups which is consistent with the homolog distribution of an Aroclor 1242 pattern.

Historically, Outfall 003 has noted a higher relative weight percent distribution of the hexa and heptachlorobiphenyl homolog groups which is likely associated with the historic Aroclor 1260 PCB source. With the exception of the mold heat transfer fluid spills (Aroclor 1242) serving as the historic source of PCBs in Outfall 002, and the transformer oil spill (Aroclor 1260) on the GSA side of the main building roof (GSA 2008) serving as the source of PCBs in Outfall 003, the true source of PCBs currently detected in surface water samples near the KCP is unknown. Sources of PCBs upstream or near the KCP are unknown, however, the occurrence of upstream sources of PCBs is demonstrated by 1668 analytical data and analysis conducted as a part of bioaccumulation studies. As discussed in bioaccumulation studies performed by the KCP, other sources of PCBs are present upstream and downstream of the KCP on Indian Creek and the Blue River (DOE 2006a, 2008a). Further complicating identification of the source as Aroclor 1242 or 1260 can be caused by affects associated with the transport mechanism and weathering of the original spill. Therefore, truly definitive statements regarding the PCB Aroclor type associated with the original spill cannot be made.

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-001	ng/L	5/5/11	1.64	< 0.221	< 0.261	< 0.267	2.54	3.38	0.46	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-002	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-003	ng/L	5/5/11	0.329	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
Totals for Monochlorobiphenyl			**1.969**	**0.000**	**0.000**	**0.000**	**2.540**	**3.380**	**0.460**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-004	ng/L	5/5/11	3.7	1.63	0.509	< 0.267	4.540	8.81	1.07	0.275	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-005	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-006	ng/L	5/5/11	< 0.271	0.344	< 0.261	< 0.267	0.277	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-007	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-008	ng/L	5/5/11	0.798	0.824	1.14	< 0.267	0.667	1.36	0.27	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-009	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-010	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	0.379	0.607	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-011	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-012	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-013	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 0.500
PCB-014	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-015	ng/L	5/5/11	1.25	0.625	< 0.261	< 0.267	0.671	1.55	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
Totals for Dichlorobiphenyl			**5.748**	**3.423**	**1.649**	**0.000**	**6.534**	**12.327**	**1.340**	**0.275**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-016	ng/L	5/5/11	< 0.271	0.368	0.269	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-017	ng/L	5/5/11	0.462	0.465	0.35	< 0.267	0.335	0.676	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-018	ng/L	5/5/11	0.767	1.11	0.83	< 0.534	< 0.552	0.673	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-019	ng/L	5/5/11	1.1	0.619	< 0.261	< 0.267	0.647	1.33	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-020	ng/L	5/5/11	1.41	1.8	0.666	< 0.534	0.742	1.08	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-021	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-022	ng/L	5/5/11	0.469	0.734	0.277	< 0.267	< 0.276	0.389	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-023	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-024	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-025	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-026	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-027	ng/L	5/5/11	0.326	< 0.221	< 0.261	< 0.267	< 0.276	0.34	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-028	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 0.500
PCB-029	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 0.500
PCB-030	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 0.500
PCB-031	ng/L	5/5/11	0.891	0.764	0.547	< 0.267	0.478	0.724	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-032	ng/L	5/5/11	0.918	0.999	< 0.261	< 0.267	0.459	0.863	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-033	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 0.500
PCB-034	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-035	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-036	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-037	ng/L	5/5/11	< 0.271	0.375	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-038	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
PCB-039	ng/L	5/5/11	< 0.271	< 0.221	< 0.261	< 0.267	< 0.276	< 0.263	< 0.268	< 0.266	< 0.266	< 0.267	< 0.261	< 0.266	< 0.250
Totals for Trichlorobiphenyl			**6.343**	**7.234**	**2.939**	**0.000**	**2.661**	**6.075**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-040	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-041	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-042	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-043	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-044	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-045	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-046	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-047	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-048	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-049	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-050	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-051	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-052	ng/L	5/5/11	1.25	1.17	< 0.522	< 0.534	0.778	1.13	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-053	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-054	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-055	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-056	ng/L	5/5/11	< 0.543	0.609	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-057	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-058	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-059	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-060	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-061	ng/L	5/5/11	< 2.17	< 1.77	< 2.09	< 2.13	< 2.21	< 2.1	< 2.14	< 2.13	< 2.13	< 2.13	< 2.09	< 2.13	< 2.00
PCB-062	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-063	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-064	ng/L	5/5/11	< 0.543	0.602	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-065	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-066	ng/L	5/5/11	0.671	1.11	< 0.522	< 0.534	< 0.552	0.635	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-067	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-068	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-069	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-070	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 2.00
PCB-071	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-072	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-073	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-074	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 2.00
PCB-075	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-076	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 2.00
PCB-077	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-078	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-079	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-080	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-081	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
Totals for Tetrachlorobiphenyl (4Cl)			**1.921**	**3.491**	**0.000**	**0.000**	**0.778**	**1.765**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-082	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-083	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-084	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-085	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-086	ng/L	5/5/11	< 3.26	< 2.65	< 3.13	< 3.2	< 3.31	< 3.15	< 3.22	< 3.19	< 3.2	< 3.2	< 3.14	< 3.19	< 3.00
PCB-087	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 3.00
PCB-088	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-089	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-090	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-091	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-092	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-093	ng/L	5/5/11	< 2.17	< 1.77	< 2.09	< 2.13	< 2.21	< 2.1	< 2.14	< 2.13	< 2.13	< 2.13	< 2.09	< 2.13	< 2.00
PCB-094	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-095	ng/L	5/5/11	< 0.543	0.45	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-096	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-097	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 3.00

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-098	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 2.00
PCB-099	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-100	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 2.00
PCB-101	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-102	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 2.00
PCB-103	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-104	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-105	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-106	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-107	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-108	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 3.00
PCB-109	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-110	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-111	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 0.500
PCB-112	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-113	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-114	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-115	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-116	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-117	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-118	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-119	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 3.00
PCB-120	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-121	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-122	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-123	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-124	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-125	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 3.00
PCB-126	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-127	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
Totals for Pentachlorobiphenyl			**0.000**	**0.450**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-128	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-129	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-130	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-131	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-132	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-133	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-134	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-135	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-136	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-137	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-138	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-139	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-140	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-141	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-142	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-143	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-144	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-145	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-146	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-147	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-148	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-149	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-150	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-151	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-152	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-153	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-154	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-155	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-156	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-157	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-158	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-159	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-160	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-161	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-162	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-163	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-164	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-165	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-166	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-167	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-168	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-169	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
Totals for Hexachlorobiphenyl			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-170	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-171	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-172	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-173	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-174	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-175	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-176	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-177	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-178	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-179	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-180	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-181	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-182	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-183	ng/L	5/5/11	< 1.09	< 0.883	< 1.04	< 1.07	< 1.1	< 1.05	< 1.07	< 1.06	< 1.07	< 1.07	< 1.05	< 1.06	< 1.00
PCB-184	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-185	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
PCB-186	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-187	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-188	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-189	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-190	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-191	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-192	ng/L	5/5/11	< 0.543	< 0.441	< 0.522	< 0.534	< 0.552	< 0.525	< 0.536	< 0.532	< 0.533	< 0.534	< 0.523	< 0.532	< 0.500
PCB-193	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.00
Totals for Heptachlorobiphenyl			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-194	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-195	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-196	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750

Table 5.6
May 2011 Method 1668 Surface Water Sampling Results
(results in ng/L)

Parameter	Unit	Date	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022
PCB-197	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-198	ng/L	5/5/11	< 1.63	< 1.32	< 1.57	< 1.6	< 1.66	< 1.58	< 1.61	< 1.6	< 1.6	< 1.6	< 1.57	< 1.6	< 1.50
PCB-199	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-200	ng/L	5/5/11	0	0	0	0	0	0	0	0	0	0	0	0	< 1.50
PCB-201	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-202	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-203	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-204	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-205	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
Totals for Octachlorobiphenyl			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-206	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-207	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
PCB-208	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
Totals for Nonachlorobiphenyl			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
PCB-209	ng/L	5/5/11	< 0.814	< 0.662	< 0.783	< 0.8	< 0.828	< 0.788	< 0.804	< 0.798	< 0.799	< 0.801	< 0.784	< 0.799	< 0.750
Totals for Decachlorobiphenyl			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
TOTAL PCBs ng/L			15.981	14.598	4.588	0.000	12.513	23.547	1.800	0.275	0.000	0.000	0.000	0.000	0.000

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-001	10.262	0.000	0.000	0.000	20.299	14.354	25.556	0.000	0.000	0.000	0.000	0.000	0.000	0.540
PCB-002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030
PCB-003	2.059	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180
total monochlorobiphenyl	12.321	0.000	0.000	0.000	20.299	14.354		0.000	0.000	0.000	0.000	0.000	0.000	0.750
PCB-004	23.152	11.166	11.094	0.000	36.282	37.415	59.444	100.000	0.000	0.000	0.000	0.000	0.000	3.080
PCB-005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140
PCB-006	0.000	2.356	0.000	0.000	2.214	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.430
PCB-007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.260
PCB-008	4.993	5.645	24.847	0.000	5.330	5.776	15.000	0.000	0.000	0.000	0.000	0.000	0.000	7.050
PCB-009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
PCB-010	0.000	0.000	0.000	0.000	3.029	2.578	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.200
PCB-011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
PCB-013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.220
PCB-014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-015	7.822	4.281	0.000	0.000	5.362	6.583	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.100
total dichlorobiphenyl	35.968	23.448	35.942	0.000	52.218	52.351	74.444	100.000	0.000	0.000	0.000	0.000	0.000	15.040
PCB-016	0.000	2.521	5.863	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.140
PCB-017	2.891	3.185	7.629	0.000	2.677	2.871	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.130
PCB-018	4.799	7.604	18.091	0.000	0.000	2.858	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.530
PCB-019	6.883	4.240	0.000	0.000	5.171	5.648	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.800
PCB-020	8.823	12.330	14.516	0.000	5.930	4.587	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.720
PCB-021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-022	2.935	5.028	6.037	0.000	0.000	1.652	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.840
PCB-023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.130
PCB-025	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.590
PCB-026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.280
PCB-027	2.040	0.000	0.000	0.000	0.000	1.444	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.410
PCB-028	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.860
PCB-029	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080
PCB-030	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-031	5.575	5.234	11.922	0.000	3.820	3.075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	7.340
PCB-032	5.744	6.843	0.000	0.000	3.668	3.665	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.900
PCB-033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.010
PCB-034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
PCB-035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080
PCB-036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-037	0.000	2.569	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.030
PCB-038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total trichlorobiphenyls	39.691	49.555	64.058	0.000	21.266	25.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	44.900
PCB-040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.760
PCB-041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.680
PCB-042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.190
PCB-043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180
PCB-044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.550
PCB-045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.890
PCB-046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.360
PCB-047	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.930
PCB-048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.180
PCB-049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.530
PCB-050	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230
PCB-052	7.822	8.015	0.000	0.000	6.218	4.799	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.530
PCB-053	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.710
PCB-054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100
PCB-056	0.000	4.172	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.810
PCB-057	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
PCB-058	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-059	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320
PCB-060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.180
PCB-061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-062	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-063	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.120
PCB-064	0.000	4.124	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.700
PCB-065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-066	4.199	7.604	0.000	0.000	0.000	2.697	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.390
PCB-067	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.160
PCB-068	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-069	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-070	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.730
PCB-071	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.030
PCB-072	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-073	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PCB-074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.810
PCB-075	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040
PCB-076	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080
PCB-077	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.310
PCB-079	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total tetrachlorobiphenyls	12.021	23.914	0.000	0.000	6.218	7.496	0.000	0.000	0.000	0.000	0.000	0.000	0.000	32.540
PCB-082	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.260
PCB-084	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110
PCB-085	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.410
PCB-086	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.310
PCB-087	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.460
PCB-088	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030
PCB-089	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-090	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090
PCB-091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.210
PCB-092	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-093	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090
PCB-094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-095	0.000	3.083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.610
PCB-097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.380
PCB-098	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-099	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030
PCB-100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.690
PCB-102	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.070
PCB-103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.460
PCB-104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-106	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.470
PCB-107	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-109	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
PCB-110	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-111	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-112	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.830
PCB-113	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-114	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-115	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040
PCB-116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-117	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030
PCB-118	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040
PCB-119	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.660
PCB-121	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-122	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-124	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030
PCB-125	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
PCB-126	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.030
PCB-127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total pentachlorobiphenyls	0.000	3.083	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.450

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-128	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-129	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
PCB-130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-131	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-132	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-133	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040
PCB-134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
PCB-136	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-141	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.100
PCB-142	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-143	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-144	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-145	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-146	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-147	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-149	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-150	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-151	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
PCB-152	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-153	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-154	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
PCB-155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-156	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-157	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-158	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-159	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-161	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010
PCB-163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-164	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-166	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-167	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-168	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-169	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total hexachlorobiphenyls	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.330
PCB-170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-171	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-172	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-173	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-176	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-178	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-179	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-181	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-182	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-183	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-184	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-185	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-186	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-187	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-188	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-189	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-190	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-191	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-192	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-193	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total heptachlorobiphenyls	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

Table 5.7
May 2011 Method 1668 Surface Water Sampling Results
Weight Percent Congener Composition

Parameter	OF001	OF002	OF003	OF004	SWBCD	SWBCU	SWBRDD	SWBRU	SWICBR	SWICDA	SWICDB	SWICU	Blank 29022	Aroclor 1242*
PCB-194	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-195	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-196	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-197	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-198	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-199	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-202	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-203	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-204	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-205	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total octachlorobiphenyls	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-206	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-207	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-208	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total nonachlorobiphenyls	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PCB-209	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
total decachlorobiphenyls	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Legend: **PCB Congener Weight Percent**

0	PCBs 0.001 - <1	PCBs 1 - <5	PCBs 5 - <20	PCBs >20

*2000 ATSDR Toxological Profile for Polychlorinated Biphenyls, Table 4-4.