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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

MAY 13 2010

MEMORANDUM

SUBJECT: Vapor Intrusion Sampling – PCB Results
GSA Buildings 50 and 52
Kansas City, Missouri

FROM: Jeremy Johnson
Toxicologist
ENSV/EAMB

TO: Ronald King
Site Assessment Manager
SUPR/ERNB

A handwritten signature in black ink, appearing to read "JJJ". It is positioned above the TO: line.

As requested, we have reviewed the polychlorinated biphenyl (PCB) analytical results for the vapor intrusion sampling conducted at GSA's Buildings 50 and 52 on February 6, 2010. The vapor intrusion investigation was conducted to determine whether subsurface contamination at the site is or has the potential to affect the indoor air space of these buildings. Below we have broken our review into five parts, including an overview of the PCB sampling and analysis, a risk-based evaluation of indoor air data, an evaluation of the vapor intrusion pathway, an uncertainties discussion, and our conclusions. This evaluation supplements our previous evaluation on the volatile organic compounds (VOCs) in Buildings 50 and 52 that was submitted to you on February 19, 2010.

PCB Sampling and Analysis

Similar to the VOC vapor intrusion sampling, the PCB vapor intrusion sampling consisted of subslab air, indoor air, and outdoor air sampling. Attachment 1 depicts the sampling locations in Buildings 50 and 52. Indoor and outdoor air samples were collected using high-volume air samplers and given that there is a limited amount of air space below the buildings' foundations, low-volume samplers were used to collect subslab samples. Polyurethane foam (PUF) sorbent tubes were used to collect air samples for PCB analysis. The PUF samples were analyzed for all 209 PCB congeners including 12 dioxin-like PCBs. The analytical laboratory provided the PCB results in nanograms per sample. These results were then converted to micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) by the START contractor (i.e., Tetra Tech EM, Inc.). The raw analytical data and the converted air concentration data are provided in the Analytical Report (Test

America, 2010) and the Trip Report and Data Summary (Tetra Tech, 2010), respectively. Additional information on the sampling and analysis procedures can be found in the project's quality assurance project plan (QAPP).

There are two unique issues that we considered when interpreting the analytical results. The first issue pertains to coeluting isomers. As shown and discussed in the Analytical Report (Test America, 2010), there are many coeluting isomers (ranging from two to six isomers), which are given a "C" data qualifier. While the same result is posted for each of the coeluting isomers, the result represents the total concentration for the coeluted isomers. For the purposes of our evaluation, the coeluted isomers were evaluated as a group, not individually, so that potential health risks were not double counted.

The other key issue is in regards to method blank contamination. As shown in the Analytical Report, many sample results are given a "B" qualifier, which indicates that the analyte was present in the associated method blank. However, the concentrations in the air samples were significantly greater (10-1,000 times) than the associated method blank. As a result, the results were treated as detects. This is consistent with the *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part A)*, which states that when blanks contain detectable levels of chemicals that are not considered common laboratory contaminants, then consider site sample results as positive only if the concentration of the chemical in the site sample exceeds five times the maximum amount detected in any blank (USEPA, 1989). No adjustments (i.e., subtraction of the method blank concentration) to the sample results are necessary because it would have an insignificant impact on the sample results and risk estimates.

Human Health Risk Evaluation

The human health risk evaluation consists of a comparison of the indoor air sample results against chronic risk-based screening levels for indoor air. Risk-based indoor air screening levels were specifically derived for the workers and children whom occupy Buildings 50 and 52 and account for their exposure time, exposure frequency, and exposure duration. The equations, exposure factors, and toxicity values used to derive the PCB screening levels are presented in Attachment 2 and are consistent with EPA risk assessment guidance (USEPA, 2009b). Given that there are two groups of receptors in Buildings 50 and 52, the screening levels were based on the lower (i.e., more protective) of the two derived for each receptor. The screening levels are based on a cancer risk of 1E-06. Non-cancer screening levels were not derived because reference concentrations (RfCs) are not available for individual PCB congeners.

Please note that 12 PCB congeners (congeners 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, and 189) are classified as dioxin-like. Screening levels for dioxin-like PCBs were derived using the inhalation unit risk (IUR) for 2,3,7,8-tetrachlorodibenzodioxin (TCDD) and applicable 2,3,7,8-TCDD toxic equivalents (TEQs). The TEQs are based on the World Health Organization's 2005 toxic equivalency factors (WHO, 2005). The remaining PCBs' screening levels were based on

the high risk PCB IUR. The high risk PCB IUR (the most conservative IUR for non-dioxin like PCBs) is recommended for early-life exposures (i.e., exposures to children) (CalEPA, 2009; USEPA, 2010a).

Table 1 below compares the maximum detections of PCBs in each building to their respective screening level. Given the number of PCB congeners, Table 1 provides the results for the dioxin-like PCBs and the total concentration for the non-dioxin-like PCBs. See Attachment 3 for a comparison of each congener's maximum detection to its respective risk-based screening level.

Table 1. Indoor Air Results Screening ($\mu\text{g}/\text{m}^3$)

PCB Congener	Risk-Based Screening Level (Cancer risk = 1E-06)	Building 50 Maximum Detection	Building 50 & 52 Corridor Maximum Detection	Building 52 Maximum Detection
Dioxin-like PCBs				
PCB 77	2.58E-03	5.35E-06	4.86E-07	1.00E-06
PCB 81	8.61E-04	ND	ND	ND
PCB 105	8.61E-03	1.05E-04	5.66E-06	1.22E-05
PCB 114	8.61E-03	9.03E-06	3.46E-07	9.71E-07
PCB 118	8.61E-03	3.81E-04	1.92E-05	4.37E-05
PCB 123	8.61E-03	5.38E-06	2.58E-07	6.08E-07
PCB 126	2.58E-06	1.98E-06	ND	ND
PCB 156 & 157	8.61E-03	1.30E-05	5.85E-07	8.50E-07
PCB 167	8.61E-03	5.07E-06	2.61E-07	3.81E-07
PCB 169	8.61E-06	ND	ND	ND
PCB 189	8.61E-01	ND	ND	ND
Non-Dioxin-like PCBs (Total) ¹	1.72E-02	1.02E-02	1.69E-03	3.55E-03

ND: Not Detected.

¹ Maximum detection for non-dioxin-like PCBs represents a maximum total concentration for all non-dioxin-like congeners. See Attachment 3 for congener-specific comparisons.

As shown in Table 1 and Attachment 3, the maximum detected concentrations of individual PCB congeners were below risk-based screening levels in Building 50, Building 52, and the corridor between the Buildings 50 and 52 ("corridor"). While concentrations of individual congeners did not exceed screening levels, cumulative health risks resulting from exposure to all of the 209 congeners must be assessed. To do this we estimated a cancer risk for each congener (or group of congeners for coeluted isomers) by dividing the maximum detection by the corresponding screening level and multiplying the result by 1E-06. Then we summed the cancer risk for all of the congeners and congener groups. The resulting cancer risks for Building 50, Building 52, and the corridor are 1E-06, 1E-07, and 2E-07, respectively (see Attachment 3). These estimates indicate that PCBs are present within EPA's target cancer risk range of 1E-04 to 1E-06 in Building 50 and below the range in Building 52 and the corridor.

In addition to the indoor air, the utility tunnel air samples were also compared to risk-based screening levels. Although workers are not expected to be in the utility tunnel

for any significant amount of time, the indoor air screening levels derived for Buildings 50 and 52 were conservatively compared to the PCB concentrations in the tunnel. Similar to the indoor air results, the levels of PCBs in the utility tunnel are within EPA's target cancer risk range with a cumulative PCB risk of 7E-07 (see Attachment 4).

Vapor Intrusion Pathway Evaluation

The collection of indoor air, subslab air, and outdoor air samples allows us to perform a thorough evaluation of the vapor intrusion pathway. Consistent with relevant vapor intrusion guidance (USEPA, 2002, 2008; ITRC, 2007), our evaluation included an analysis of the subslab air data, subslab-to-indoor attenuation factors, and potential background sources. Below we have provided a summary of our findings.

As shown in Attachment 5, PCBs were detected in the subslab air below Buildings 50 and 52 and the corridor between the two buildings. Subslab air screening levels are provided in the attachment for reference. The finding of PCBs in the subslab air samples combined with the detection of PCBs in indoor air indicate that the vapor intrusion pathway is complete. The results also show that a greater number of PCB congeners were detected in subslab air sample SS-2P and utility tunnel air sample UT-1MP, with total PCB concentrations that are 10 to 100-fold greater than the three other locations including SS-3P, SS-5P, and SS-7P (see Attachment 5). Although the concentrations are very low (less than $1 \mu\text{g}/\text{m}^3$), the results from SS-2P and UT-1MP indicate a potential source of PCBs in the subsurface immediately below the slab and within the utility tunnel, respectively. It is worth noting the vapor intrusion pathway may be affecting the utility tunnel. Per the *Preliminary Assessment and Site Investigation* (PA/SI), potential sources of PCBs that were identified within and near Building 50 include, but are not limited to those associated with the deluge tank system, waste oil collection system, and underground storage tanks (SCS Engineers, 2008).

Subslab-to-indoor-air attenuation factors (α) were also derived by dividing the indoor air concentrations by the subslab air concentrations in order to evaluate the potential source(s) of the detections in indoor air. Attachment 6 presents the subslab-to-indoor air attenuation factors and the results vary according to the building. A vast majority of the attenuation factors derived for the collocated subslab and indoor air samples in Building 50 are below 0.1 and 0.01, which indicates a subsurface source may contribute to the majority of the detections in indoor air. Note that measured subslab-to-indoor-air attenuation factors typically range from 0.001 to 0.01 (USEPA, 2008). In comparison, the attenuation factors for Building 52 and the corridor between Buildings 50 and 52 are generally greater than 0.1 and 1, which is indicative of an indoor air source (see below) (USEPA, 2008).

Although the sources of PCBs in the buildings are not entirely certain, the indoor air within Building 52 and the corridor could be affected by Building 50. Given that the buildings are connected (via the corridor) and a high volume of indoor air passed through the PUF cartridges (i.e., $>247 \text{ m}^3$ of air), it is plausible that the trace levels of PCBs detected in Buildings 52 and the corridor are, in part, attributable to Building 50.

However, a little more than half of the PCB congeners are found at greater concentrations in Building 52 than in the corridor, which would be expected to have higher concentration given its closer proximity to Building 50. Despite these findings, there is too little data (one round of sampling and one sample from both locations) to make any definitive conclusions, not to mention the variability associated with trace level analyses.

Other potential sources of PCBs in the building's indoor air, although uncertain, may include commercial products that were manufactured prior to 1979. In 1979, PCB manufacturing in the United States was banned. Products that were produced prior to 1979 that may contain PCBs include the following:

- Transformers and capacitors,
- Other electrical equipment including voltage regulators, switches, reclosers, bushings, and electromagnets,
- Oil used in motors and hydraulic systems,
- Old electrical devices or appliances containing PCB capacitors,
- Fluorescent light ballasts,
- Cable insulation,
- Thermal insulation material including fiberglass, felt, foam, and cork,
- Adhesives and tapes,
- Oil-based paint,
- Caulking,
- Plastics,
- Carbonless copy paper, and
- Floor finish (USEPA, 2009a).

Although the presence of these products in Building 50 is unknown and unlikely in Building 52 and the corridor, the latter two being constructed after 1979, it is worth noting that if any are present, they could contribute to the trace levels found in the air samples. Also, given PCBs' persistence in the environment, they can remain in the environment for long periods of time even after their source is removed.

We also evaluated the outdoor air samples as a potential background source (see Attachment 7). Based on our review of the results, the outdoor air was not a significant background source for the PCBs in the indoor air samples. Levels of PCBs in the outdoor air were lower than the lowest indoor air results.

Uncertainties

When evaluating the vapor intrusion pathway and human health risks, it is important to address the uncertainties in the evaluation. Although the uncertainties are not expected to affect our findings, they are important for conveying information about the pathway and health risks. First, there is some uncertainty in how representative the air samples are of long-term indoor air concentrations. The evaluation was based on the assumption that the sample results from one round of sampling are representative of long-term conditions over many years. Although the samples were collected during the time

of year that would likely represent worst case conditions (i.e., during the winter, when the building depressurization is expected to be the greatest (USEPA, 2002)), the levels of chemicals, regardless of the source, in indoor, subslab, and outdoor air can fluctuate daily and seasonally. In addition, the exact levels of PCBs in air that are due to background sources and the potential sources outlined in the PA/SI are unknown. Also, although PCBs have been banned for more than 30 years, they are persistent contaminants that remain in the environment for a very long. Therefore, even after their source(s) has been removed, residual levels may remain in the environment for a long period of time.

Conclusions

Similar to the VOC data, the subslab air and indoor air data indicate that the vapor intrusion pathway is complete at Buildings 50 and 52. Also, the PCBs in the subslab and utility tunnel air at Building 50 may have contributed to the PCB detections in Building 52 and the corridor between the two buildings. Despite the data supporting that the vapor intrusion pathway is complete, our evaluation has found that the trace levels of PCBs detected in Buildings 50 and 52, the corridor, and the utility tunnel do not pose short-term or long-term health risks of concern. The levels of PCBs detected in the indoor air samples fall below or within EPA's target cancer risk range.

In light of these findings, we support the recent installation of the subslab vapor mitigation system. This precautionary measure will ensure that the PCBs and other chemicals detected below the buildings will not significantly affect indoor air quality.

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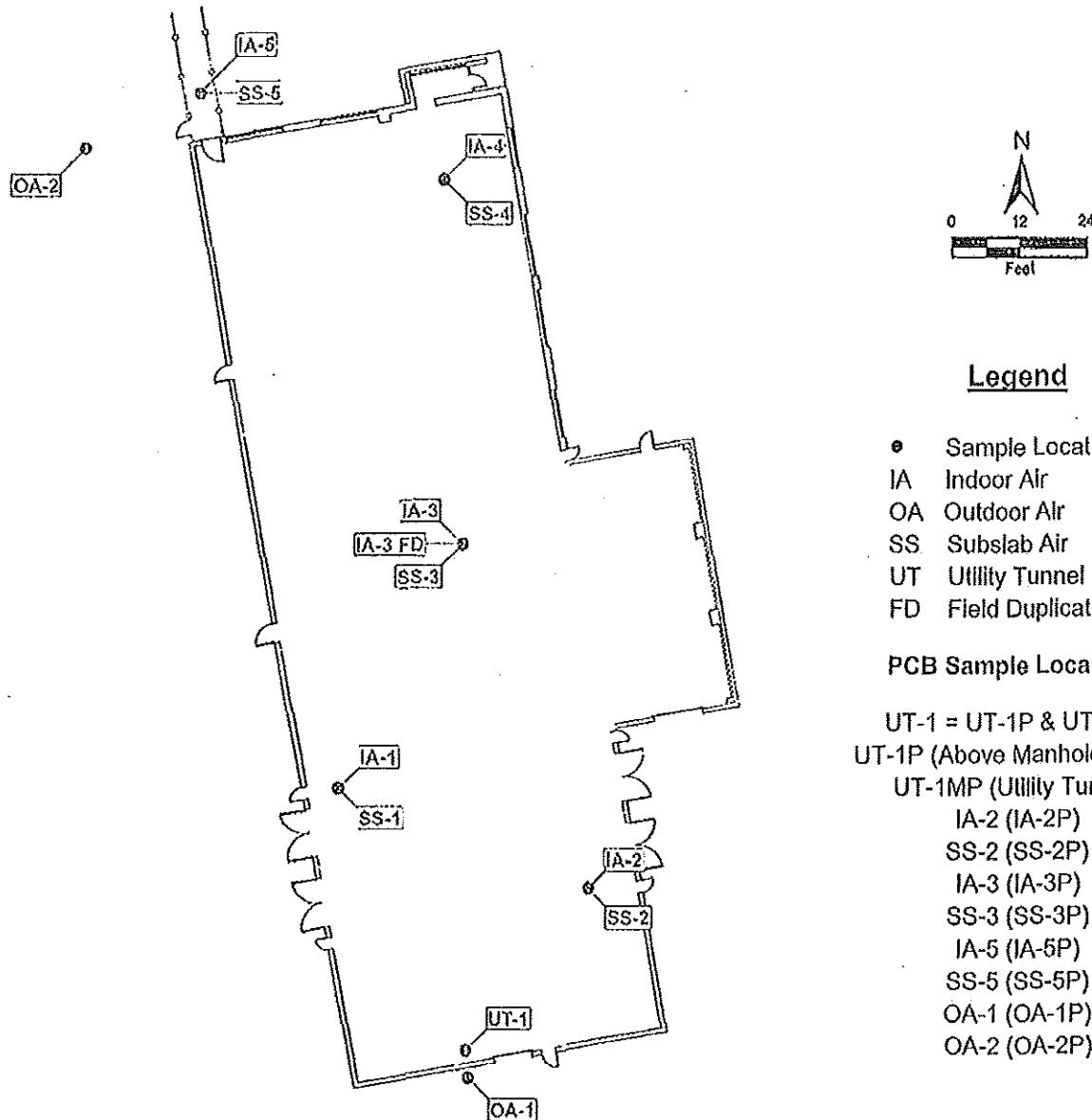
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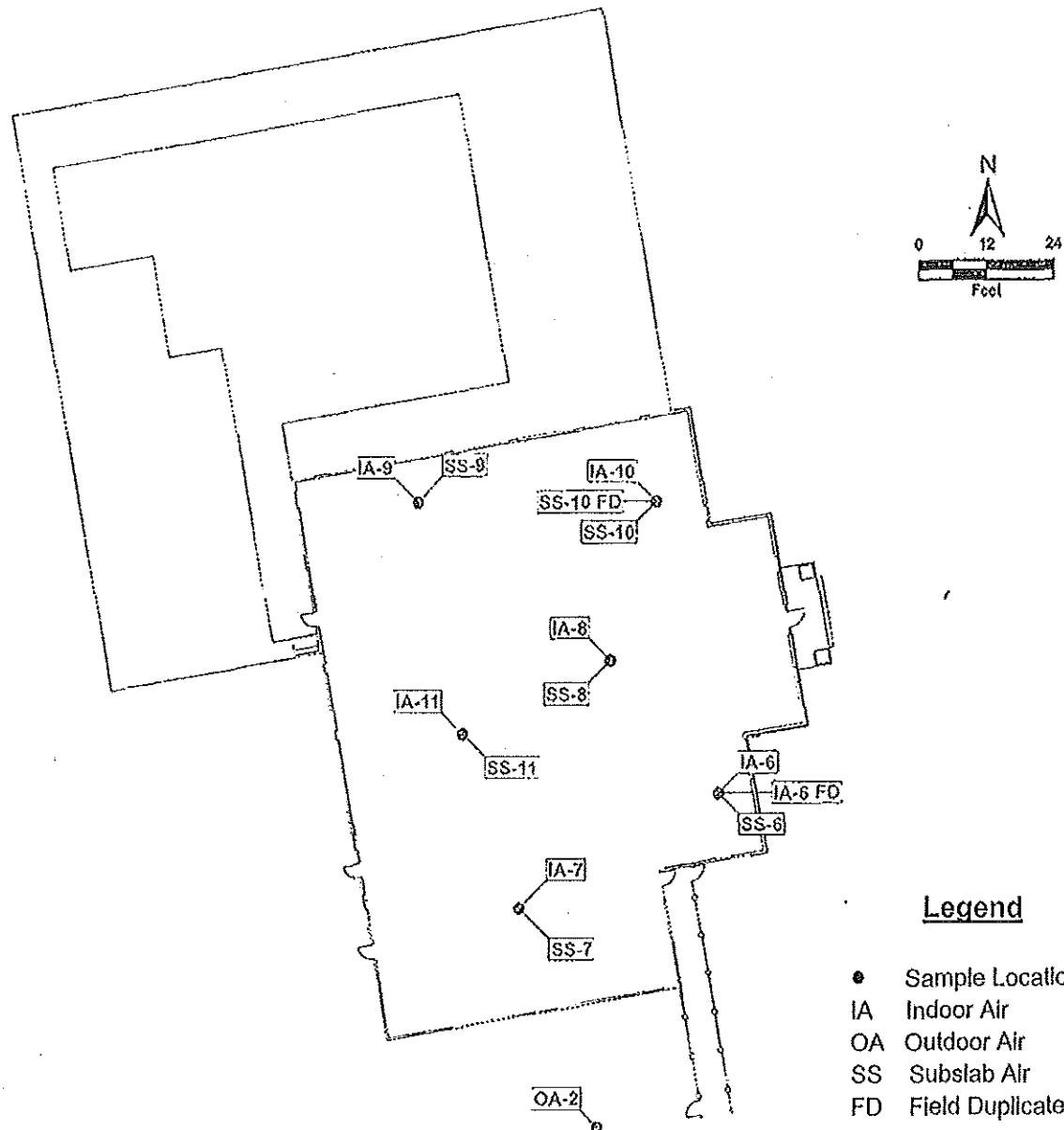
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ATTACHMENT 1 – Sample Location Figures

BUILDING 50



BUILDING 52

Legend

- Sample Location
- IA Indoor Air
- OA Outdoor Air
- SS Subslab Air
- FD Field Duplicate

PCB Sample Locations

IA-7 (IA-7P)
SS-7 (SS-7P)
OA-2 (OA-2P)

ATTACHMENT 2 - Indoor Air Risk-Based Screening Levels

Congeners	Toxicity Values					Industrial/ Occupational ($\mu\text{g}/\text{m}^3$)		Daycare ($\mu\text{g}/\text{m}^3$)	
	RfC (mg/m^3)	source	TEQ	IUR ($\mu\text{g}/\text{m}^3$) ⁻¹	source	HQ = 0.1	1.E-06	HQ = 0.1	1.E-06
PCB 189	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 167	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 157	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 156	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 169	na	-	3.E-02	1.1E+00	c	-	8.61E-06	-	4.30E-05
PCB 123	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 118	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 105	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 114	na	-	3.E-05	1.1E-03	c	-	8.61E-03	-	4.30E-02
PCB 126	na	-	1.E-01	3.8E+00	c	-	2.58E-06	-	1.29E-05
PCB 77	na	-	1.E-04	3.8E-03	c	-	2.58E-03	-	1.29E-02
PCB 81	na	-	3.E-04	1.1E-02	c	-	8.61E-04	-	4.30E-03
PCB high risk IUR ¹	na	-	NA	5.7E-04	c	-	1.72E-02	-	8.61E-02

c: CalEPA (2010)

IUR: Inhalation Unit Risk, used to evaluate cancer risks.

RfC: Reference Concentration, used to evaluate non-cancer hazards.

na: RfCs are not available.

Dioxin-like PCBs: IUR based on 2,3,7,8-TCDD's IUR of 3.8E+01 ($\mu\text{g}/\text{m}^3$)⁻¹. Dioxin-like PCB IUR = 2,3,7,8-TCDD IUR x TEQ.

TEQ: 2,3,7,8-TCDD toxic equivalents (WHO, 2005).

¹ The high risk PCB IUR (the most conservative IUR for non-dioxin like PCBs) is recommended for early-life exposures (i.e., exposures to children) (CalEPA, 2009; USEPA, 2010a).

Exposure Factors	Worker	Child (Daycare)	Screening Level Equations (USEPA, 2009b)
Exposure Duration (ED) (years)	25	5	Carcinogenic Screening Level (SL)
Exposure Frequency (EF) (days/year)	250	250	$SL_c (\mu\text{g}/\text{m}^3) = (TR \times Afc) / (ED \times EF \times (ET/24\text{hours}) \times IUR)$
Exposure Time (ET) (hours/day)	10	10	
Averaging Time (cancer) (ATc) (days)	25550	25550	
Target Cancer Risk (TR)	1.00E-06	1.00E-06	
Conversion Factor (CF) ($\mu\text{g}/\text{mg}$)	1000	1000	

ATTACHMENT 3 - Indoor Air Risk-Based Screening (Maximum Detections)

Congeners	Screening Level	Building 50		Bld 50 and 52 Corridor		Building 52	
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ¹	$\mu\text{g}/\text{m}^3$	Risk ¹	$\mu\text{g}/\text{m}^3$
PCB 1	1.72E-02	9.53E-05	5.5E-09	1.21E-05	7.0E-10	2.53E-05	1.5E-09
PCB 2	1.72E-02	7.80E-06	4.5E-10	4.29E-06	2.5E-10	7.63E-06	4.4E-10
PCB 3	1.72E-02	3.65E-05	2.1E-09	9.85E-06	5.7E-10	2.90E-05	1.7E-09
PCB 4	1.72E-02	1.20E-04	7.0E-09	3.16E-05	1.8E-09	5.10E-05	3.0E-09
PCB 5	1.72E-02	5.48E-06	3.2E-10	1.55E-06	9.0E-11	2.87E-06	1.7E-10
PCB 6	1.72E-02	5.88E-05	3.4E-09	1.88E-05	1.1E-09	3.33E-05	1.9E-09
PCB 7	1.72E-02	1.53E-05	8.9E-10	5.47E-06	3.2E-10	1.57E-05	9.1E-10
PCB 8	1.72E-02	2.57E-04	1.5E-08	7.24E-05	4.2E-09	1.46E-04	8.5E-09
PCB 9	1.72E-02	2.03E-05	1.2E-09	6.58E-06	3.8E-10	1.16E-05	6.7E-10
PCB 10	1.72E-02	8.08E-06	4.7E-10	2.30E-06	1.3E-10	4.17E-06	2.4E-10
PCB 11	1.72E-02	3.35E-04	1.9E-08	6.70E-04	3.9E-08	8.58E-04	5.0E-08
PCB 12 & 13	1.72E-02	9.00E-06	5.2E-10	8.93E-06	5.2E-10	1.54E-05	8.9E-10
PCB 14	1.72E-02	ND	-	ND	-	ND	-
PCB 15	1.72E-02	4.42E-05	2.6E-09	1.41E-05	8.2E-10	3.32E-05	1.9E-09
PCB 16	1.72E-02	6.68E-05	3.9E-09	2.65E-05	1.5E-09	5.38E-05	3.1E-09
PCB 17	1.72E-02	7.70E-05	4.5E-09	3.08E-05	1.8E-09	5.95E-05	3.5E-09
PCBs 18 & 30	1.72E-02	1.72E-04	1.0E-08	6.70E-05	3.9E-09	1.37E-04	8.0E-09
PCB 19	1.72E-02	2.17E-05	1.3E-09	8.42E-06	4.9E-10	1.53E-05	8.9E-10
PCBs 20 & 28	1.72E-02	1.70E-04	9.9E-09	5.56E-05	3.2E-09	1.35E-04	7.8E-09
PCB 21 & 33	1.72E-02	1.02E-04	5.9E-09	3.30E-05	1.9E-09	8.03E-05	4.7E-09
PCB 22	1.72E-02	5.20E-05	3.0E-09	1.71E-05	1.0E-09	3.93E-05	2.3E-09
PCB 23	1.72E-02	3.68E-07	2.1E-11	ND	-	ND	-
PCB 24	1.72E-02	3.08E-06	1.8E-10	7.50E-07	4.4E-11	1.41E-06	8.2E-11
PCB 25	1.72E-02	1.33E-05	7.7E-10	4.70E-06	2.7E-10	1.16E-05	6.7E-10
PCBs 26 & 29	1.72E-02	2.99E-05	1.7E-09	1.03E-05	6.0E-10	2.40E-05	1.4E-09
PCB 27	1.72E-02	1.03E-05	6.0E-10	3.97E-06	2.3E-10	8.57E-06	5.0E-10
PCB 31	1.72E-02	1.71E-04	9.9E-09	5.37E-05	3.1E-09	1.31E-04	7.6E-09
PCB 32	1.72E-02	4.18E-05	2.4E-09	1.71E-05	9.9E-10	3.25E-05	1.9E-09
PCB 34	1.72E-02	6.44E-07	3.7E-11	ND	-	6.02E-07	3.5E-11
PCB 35	1.72E-02	2.65E-06	1.5E-10	1.68E-06	9.8E-11	2.99E-06	1.7E-10
PCB 36	1.72E-02	5.45E-06	3.2E-10	1.07E-06	6.2E-11	2.60E-06	1.5E-10
PCB 37	1.72E-02	1.94E-05	1.1E-09	5.47E-06	3.2E-10	1.43E-05	8.3E-10
PCB 38	1.72E-02	ND	-	ND	-	ND	-
PCB 39	1.72E-02	6.57E-07	3.8E-11	ND	-	7.49E-07	4.4E-11
PCBs 40, 41, & 71	1.72E-02	6.06E-05	3.5E-09	1.24E-05	7.2E-10	3.32E-05	1.9E-09
PCB 42	1.72E-02	2.73E-05	1.6E-09	5.72E-06	3.3E-10	1.52E-05	8.9E-10
PCB 43 & 73	1.72E-02	1.98E-06	1.2E-10	1.12E-06	6.5E-11	2.09E-06	1.2E-10
PCB 44, 47, & 65	1.72E-02	3.25E-04	1.9E-08	3.56E-05	2.1E-09	1.22E-04	7.1E-09
PCB 45 & 51	1.72E-02	2.31E-05	1.3E-09	8.67E-06	5.0E-10	2.68E-05	1.6E-09
PCB 46	1.72E-02	7.80E-06	4.5E-10	2.20E-06	1.3E-10	4.64E-06	2.7E-10
PCB 48	1.72E-02	2.70E-05	1.6E-09	6.58E-06	3.8E-10	1.74E-05	1.0E-09
PCB 49 & 69	1.72E-02	1.80E-04	1.0E-08	1.88E-05	1.1E-09	6.02E-05	3.5E-09
PCB 50 & 53	1.72E-02	2.85E-05	1.7E-09	5.97E-06	3.5E-10	1.45E-05	8.4E-10
PCB 52	1.72E-02	9.72E-04	5.6E-08	5.81E-05	3.4E-09	2.28E-04	1.3E-08
PCB 54	1.72E-02	ND	-	ND	-	ND	-
PCB 55	1.72E-02	3.74E-06	2.2E-10	ND	-	6.12E-07	3.6E-11
PCB 56	1.72E-02	4.21E-05	2.4E-09	5.53E-06	3.2E-10	1.46E-05	8.4E-10
PCB 57	1.72E-02	ND	-	ND	-	ND	-
PCB 58	1.72E-02	ND	-	ND	-	2.63E-07	1.5E-11

Congeners	Screening Level	Building 50			Bld 50 and 52 Corridor		Building 52	
		µg/m³	µg/m³	Risk¹	µg/m³	Risk¹	µg/m³	Risk¹
PCB 59, 62, & 75	1.72E-02	8.44E-06	4.9E-10	1.91E-06	1.1E-10	4.81E-06	2.8E-10	
PCB 60	1.72E-02	2.13E-05	1.2E-09	3.43E-06	2.0E-10	8.94E-06	5.2E-10	
PCBs 61, 70, 74, & 76	1.72E-02	5.26E-04	3.1E-08	3.69E-05	2.1E-09	1.37E-04	8.0E-09	
PCB 63	1.72E-02	5.26E-06	3.1E-10	6.04E-07	3.5E-11	1.82E-06	1.1E-10	
PCB 64	1.72E-02	8.35E-05	4.9E-09	9.91E-06	5.8E-10	3.14E-05	1.8E-09	
PCB 66	1.72E-02	1.26E-04	7.3E-09	1.31E-05	7.6E-10	3.97E-05	2.3E-09	
PCB 67	1.72E-02	2.38E-06	1.4E-10	4.64E-07	2.7E-11	1.00E-06	5.8E-11	
PCB 68	1.72E-02	1.69E-06	9.8E-11	5.08E-07	3.0E-11	3.10E-06	1.8E-10	
PCB 72	1.72E-02	ND	-	ND	-	ND	-	
PCB 77	2.58E-03	5.35E-06	2.1E-09	4.86E-07	1.9E-10	1.00E-06	3.9E-10	
PCB 78	1.72E-02	ND	-	ND	-	ND	-	
PCB 79	1.72E-02	5.23E-06	3.0E-10	ND	-	3.67E-07	2.1E-11	
PCB 80	1.72E-02	3.68E-07	2.1E-11	ND	-	ND	-	
PCB 81	8.61E-04	ND	-	ND	-	ND	-	
PCB 82	1.72E-02	6.90E-05	4.0E-09	2.96E-06	1.7E-10	8.64E-06	5.0E-10	
PCB 83 & 99	1.72E-02	4.15E-04	2.4E-08	1.56E-05	9.1E-10	6.45E-05	3.8E-09	
PCB 84	1.72E-02	2.72E-04	1.6E-08	9.98E-06	5.8E-10	3.97E-05	2.3E-09	
PCB 85, 116, & 117	1.72E-02	1.02E-04	6.0E-09	3.97E-06	2.3E-10	1.44E-05	8.4E-10	
PCB 86, 87, 97, 109, 119, & 125	1.72E-02	5.23E-04	3.0E-08	2.11E-05	1.2E-09	7.33E-05	4.3E-09	
PCB 88 & 91	1.72E-02	1.16E-04	6.8E-09	4.19E-06	2.4E-10	2.05E-05	1.2E-09	
PCB 89	1.72E-02	7.39E-06	4.3E-10	ND	-	1.10E-06	6.4E-11	
PCB 90, 101, & 113	1.72E-02	9.19E-04	5.3E-08	3.75E-06	2.2E-09	1.36E-04	7.9E-09	
PCB 92	1.72E-02	1.57E-04	9.1E-09	5.81E-06	3.4E-10	2.33E-05	1.4E-09	
PCB 93 & 100	1.72E-02	1.03E-05	6.0E-10	ND	-	8.23E-07	4.8E-11	
PCB 94	1.72E-02	3.12E-06	1.8E-10	ND	-	ND	-	
PCB 95	1.72E-02	9.50E-04	5.5E-08	4.04E-05	2.3E-09	1.39E-04	8.1E-09	
PCB 96	1.72E-02	5.54E-06	3.2E-10	ND	-	1.08E-06	6.3E-11	
PCB 98 & 102	1.72E-02	2.11E-05	1.2E-09	6.80E-07	4.0E-11	4.00E-06	2.3E-10	
PCB 103	1.72E-02	4.05E-06	2.4E-10	ND	-	ND	-	
PCB 104	1.72E-02	ND	-	ND	-	ND	-	
PCB 105	8.61E-03	1.05E-04	1.2E-08	5.66E-06	6.6E-10	1.22E-05	1.4E-09	
PCB 106	1.72E-02	6.08E-06	3.5E-10	ND	-	1.92E-06	1.1E-10	
PCB 107/109 (IUPAC)	1.72E-02	2.53E-05	1.5E-09	9.95E-07	5.8E-11	2.94E-06	1.7E-10	
PCB 108/107 (IUPAC) & 124	1.72E-02	1.73E-05	1.0E-09	7.34E-07	4.3E-11	2.03E-06	1.2E-10	
PCB 110 & 115	1.72E-02	7.46E-04	4.3E-08	2.98E-05	1.7E-09	9.78E-05	5.7E-09	
PCB 111	1.72E-02	3.48E-07	2.0E-11	ND	-	ND	-	
PCB 112	1.72E-02	ND	-	ND	-	ND	-	
PCB 114	8.61E-03	9.03E-06	1.0E-09	3.46E-07	4.0E-11	9.71E-07	1.1E-10	
PCB 118	8.61E-03	3.81E-04	4.4E-08	1.92E-05	2.2E-09	4.37E-05	5.1E-09	
PCB 120	1.72E-02	5.16E-07	3.0E-11	ND	-	ND	-	
PCB 121	1.72E-02	ND	-	ND	-	ND	-	
PCB 122	1.72E-02	5.48E-06	3.2E-10	ND	-	4.91E-07	2.9E-11	
PCB 123	8.61E-03	5.38E-06	6.3E-10	2.58E-07	3.0E-11	6.08E-07	7.1E-11	
PCB 126	2.58E-06	1.98E-06	7.7E-07	ND	-	ND	-	
PCB 127	1.72E-02	7.80E-07	4.5E-11	ND	-	ND	-	
PCB 128 & 166	1.72E-02	2.78E-05	1.6E-09	1.53E-06	8.9E-11	2.16E-06	1.3E-10	
PCB 129, 138, 160, & 163	1.72E-02	2.19E-04	1.3E-08	1.38E-05	8.0E-10	2.15E-05	1.2E-09	
PCB 130	1.72E-02	1.51E-05	8.8E-10	7.59E-07	4.4E-11	1.31E-06	7.6E-11	
PCB 131	1.72E-02	8.11E-06	4.7E-10	2.89E-07	1.7E-11	4.50E-07	2.6E-11	
PCB 132	1.72E-02	1.29E-04	7.5E-09	7.12E-06	4.1E-10	1.31E-05	7.6E-10	

Congeners	Screening Level	Building 50		Bld 50 and 52 Corridor		Building 52	
		µg/m³	µg/m³	Risk¹	µg/m³	Risk¹	µg/m³
PCB 133	1.72E-02	4.30E-06	2.5E-10	ND	-	3.17E-07	1.8E-11
PCB 134 & 143	1.72E-02	2.90E-05	1.7E-09	1.05E-06	6.1E-11	2.61E-06	1.5E-10
PCB 135 & 151	1.72E-02	1.27E-04	7.4E-09	8.80E-06	5.1E-10	1.78E-05	1.0E-09
PCB 136	1.72E-02	8.14E-05	4.7E-09	5.18E-06	3.0E-10	9.58E-06	5.6E-10
PCB 137	1.72E-02	1.50E-05	8.7E-10	7.02E-07	4.1E-11	1.30E-06	7.5E-11
PCB 139 & 140	1.72E-02	9.96E-06	5.8E-10	ND	-	8.57E-07	5.0E-11
PCB 141	1.72E-02	4.49E-05	2.6E-09	3.12E-06	1.8E-10	5.63E-06	3.3E-10
PCB 142	1.72E-02	ND	-	ND	-	ND	-
PCB 144	1.72E-02	2.16E-05	1.3E-09	1.24E-06	7.2E-11	3.60E-06	2.1E-10
PCB 145	1.72E-02	ND	-	ND	-	ND	-
PCB 146	1.72E-02	3.22E-05	1.9E-09	2.18E-06	1.3E-10	3.73E-06	2.2E-10
PCB 147 & 149	1.72E-02	2.88E-04	1.7E-08	1.90E-05	1.1E-09	3.39E-05	2.0E-09
PCB 148	1.72E-02	ND	-	ND	-	ND	-
PCB 150	1.72E-02	6.47E-07	3.8E-11	ND	-	ND	-
PCB 152	1.72E-02	7.10E-07	4.1E-11	ND	-	ND	-
PCB 153 & 168	1.72E-02	1.83E-04	1.1E-08	1.37E-05	8.0E-10	2.09E-05	1.2E-09
PCB 154	1.72E-02	3.67E-06	2.1E-10	ND	-	4.98E-07	2.9E-11
PCB 155	1.72E-02	ND	-	ND	-	ND	-
PCB 156 & 157	8.61E-03	1.30E-05	1.5E-09	5.85E-07	6.8E-11	8.50E-07	9.9E-11
PCB 158	1.72E-02	2.35E-05	1.4E-09	1.39E-06	8.1E-11	2.12E-06	1.2E-10
PCB 159	1.72E-02	4.95E-07	2.9E-11	ND	-	ND	-
PCB 161	1.72E-02	ND	-	ND	-	ND	-
PCB 162	1.72E-02	3.74E-07	2.2E-11	ND	-	ND	-
PCB 164	1.72E-02	1.26E-05	7.3E-10	7.37E-07	4.3E-11	1.35E-06	7.8E-11
PCB 165	1.72E-02	ND	-	ND	-	ND	-
PCB 167	8.61E-03	5.07E-06	5.9E-10	2.61E-07	3.0E-11	3.81E-07	4.4E-11
PCB 169	8.61E-06	ND	-	ND	-	ND	-
PCB 170	1.72E-02	6.34E-06	3.7E-10	7.31E-07	4.2E-11	1.38E-06	8.0E-11
PCB 171 & 173	1.72E-02	4.52E-06	2.6E-10	4.16E-07	2.4E-11	5.71E-07	3.3E-11
PCB 172	1.72E-02	1.09E-06	6.3E-11	ND	-	ND	-
PCB 174	1.72E-02	1.36E-05	7.9E-10	2.07E-06	1.2E-10	2.68E-06	1.6E-10
PCB 175	1.72E-02	6.87E-07	4.0E-11	ND	-	ND	-
PCB 176	1.72E-02	4.05E-06	2.4E-10	3.43E-07	2.0E-11	6.68E-07	3.9E-11
PCB 177	1.72E-02	7.33E-06	4.3E-10	7.72E-07	4.5E-11	1.51E-06	8.8E-11
PCB 178	1.72E-02	3.59E-06	2.1E-10	3.75E-07	2.2E-11	7.12E-07	4.1E-11
PCB 179	1.72E-02	1.41E-05	8.2E-10	1.67E-06	9.7E-11	2.94E-06	1.7E-10
PCB 180 & 193	1.72E-02	1.53E-05	8.9E-10	2.13E-06	1.2E-10	4.53E-06	2.6E-10
PCB 181	1.72E-02	ND	-	ND	-	ND	-
PCB 182	1.72E-02	ND	-	ND	-	ND	-
PCB 183 & 185	1.72E-02	1.19E-05	6.9E-10	1.33E-06	7.8E-11	2.38E-06	1.4E-10
PCB 184	1.72E-02	ND	-	ND	-	ND	-
PCB 186	1.72E-02	ND	-	ND	-	ND	-
PCB 187	1.72E-02	1.92E-05	1.1E-09	2.70E-06	1.6E-10	4.41E-06	2.6E-10
PCB 188	1.72E-02	ND	-	ND	-	ND	-
PCB 189	8.61E-03	ND	-	ND	-	ND	-
PCB 190	1.72E-02	1.19E-06	6.9E-11	ND	-	ND	-
PCB 191	1.72E-02	3.22E-07	1.9E-11	ND	-	ND	-
PCB 192	1.72E-02	ND	-	ND	-	ND	-
PCB 194	1.72E-02	9.50E-07	5.5E-11	ND	-	ND	-
PCB 195	1.72E-02	3.99E-07	2.3E-11	ND	-	ND	-
PCB 196	1.72E-02	1.01E-06	5.9E-11	ND	-	ND	-

Congeners	Screening Level	Building 50		Bld 50 and 52 Corridor		Building 52	
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ¹	$\mu\text{g}/\text{m}^3$	Risk ¹	$\mu\text{g}/\text{m}^3$
PCB 197	1.72E-02	ND	-	ND	-	ND	-
PCB 198 & 201/199(IUPAC)	1.72E-02	3.06E-06	1.8E-10	ND	-	7.61E-07	4.4E-11
PCB 199/200 (IUPAC)	1.72E-02	6.56E-07	3.8E-11	ND	-	ND	-
PCB 200/201 (IUPAC)	1.72E-02	8.01E-07	4.7E-11	ND	-	ND	-
PCB 202	1.72E-02	1.57E-06	9.1E-11	ND	-	2.97E-07	1.7E-11
PCB 203	1.72E-02	1.82E-06	1.1E-10	ND	-	5.14E-07	3.0E-11
PCB 204	1.72E-02	ND	-	ND	-	ND	-
PCB 205	1.72E-02	ND	-	ND	-	ND	-
PCB 206	1.72E-02	5.17E-07	3.0E-11	ND	-	ND	-
PCB 207	1.72E-02	1.87E-07	1.1E-11	ND	-	ND	-
PCB 208	1.72E-02	3.74E-07	2.2E-11	ND	-	ND	-
PCB 209	1.72E-02	3.37E-07	2.0E-11	ND	-	ND	-
Total Cancer Risks		1.E-06		1.E-07		2.E-07	

Dioxin-like PCBs

ND: Not detected (see raw analytical data for detection limit).

¹ Cancer Risk = (Indoor Air Concentration/Screening Level) x 1.0E-06.

ATTACHMENT 4 - Utility Tunnel Air Risk-Based Screening

Congeners	Screening Level	Utility Tunnel (UT-1MP)	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ¹
PCB 1	1.72E-02	2.84E-05	1.65E-09
PCB 2	1.72E-02	2.67E-06	1.55E-10
PCB 3	1.72E-02	1.15E-05	6.70E-10
PCB 4	1.72E-02	4.49E-05	2.61E-09
PCB 5	1.72E-02	ND	-
PCB 6	1.72E-02	1.81E-05	1.05E-09
PCB 7	1.72E-02	5.86E-06	3.40E-10
PCB 8	1.72E-02	8.29E-05	4.82E-09
PCB 9	1.72E-02	5.38E-06	3.13E-10
PCB 10	1.72E-02	1.75E-06	1.02E-10
PCB 11	1.72E-02	4.81E-05	2.80E-09
PCB 12 & 13	1.72E-02	5.53E-06	3.21E-10
PCB 14	1.72E-02	ND	-
PCB 15	1.72E-02	2.22E-05	1.29E-09
PCB 16	1.72E-02	3.46E-05	2.01E-09
PCB 17	1.72E-02	4.52E-05	2.63E-09
PCBs 18 & 30	1.72E-02	8.41E-05	4.89E-09
PCB 19	1.72E-02	1.31E-05	7.60E-10
PCBs 20 & 28	1.72E-02	1.03E-04	5.99E-09
PCB 21 & 33	1.72E-02	6.31E-05	3.67E-09
PCB 22	1.72E-02	3.68E-05	2.14E-09
PCB 23	1.72E-02	ND	-
PCB 24	1.72E-02	5.51E-07	3.21E-11
PCB 25	1.72E-02	1.09E-05	6.36E-10
PCBs 26 & 29	1.72E-02	1.74E-05	1.01E-09
PCB 27	1.72E-02	5.70E-06	3.31E-10
PCB 31	1.72E-02	1.13E-04	6.56E-09
PCB 32	1.72E-02	2.78E-05	1.61E-09
PCB 34	1.72E-02	ND	-
PCB 35	1.72E-02	ND	-
PCB 36	1.72E-02	ND	-
PCB 37	1.72E-02	2.05E-06	1.19E-09
PCB 38	1.72E-02	ND	-
PCB 39	1.72E-02	7.55E-07	4.39E-11
PCBs 40, 41, & 71	1.72E-02	8.72E-05	5.07E-09
PCB 42	1.72E-02	4.64E-05	2.70E-09
PCB 43 & 73	1.72E-02	1.25E-05	7.26E-10
PCB 44, 47, & 65	1.72E-02	1.95E-03	1.14E-07
PCB 45 & 51	1.72E-02	3.34E-04	1.94E-08
PCB 46	1.72E-02	1.40E-05	8.15E-10
PCB 48	1.72E-02	3.68E-05	2.14E-09
PCB 49 & 69	1.72E-02	2.25E-04	1.31E-08
PCB 50 & 53	1.72E-02	3.52E-05	2.05E-09
PCB 52	1.72E-02	9.44E-04	5.49E-08
PCB 54	1.72E-02	ND	-
PCB 55	1.72E-02	4.58E-06	2.66E-10
PCB 56	1.72E-02	5.61E-05	3.26E-09
PCB 57	1.72E-02	ND	-
PCB 58	1.72E-02	ND	-
PCB 59, 62, & 75	1.72E-02	2.24E-05	1.30E-09
PCB 60	1.72E-02	2.74E-05	1.59E-09

Congeners	Screening Level	Utility Tunnel (UT-1MP)	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ¹
PCBs 61, 70, 74, & 76	1.72E-02	5.15E-04	2.99E-08
PCB 63	1.72E-02	6.58E-06	3.82E-10
PCB 64	1.72E-02	1.05E-04	6.12E-09
PCB 66	1.72E-02	1.42E-04	8.23E-09
PCB 67	1.72E-02	1.93E-06	1.12E-10
PCB 68	1.72E-02	1.03E-04	5.96E-09
PCB 72	1.72E-02	ND	-
PCB 77	2.58E-03	4.34E-06	1.68E-09
PCB 78	1.72E-02	ND	-
PCB 79	1.72E-02	3.53E-06	2.05E-10
PCB 80	1.72E-02	ND	-
PCB 81	8.61E-04	ND	-
PCB 82	1.72E-02	4.52E-05	2.63E-09
PCB 83 & 99	1.72E-02	3.41E-04	1.98E-08
PCB 84	1.72E-02	2.30E-04	1.34E-08
PCB 85, 116, & 117	1.72E-02	6.94E-05	4.04E-09
PCB 86, 87, 97, 109, 119, & 125	1.72E-02	3.81E-04	2.22E-08
PCB 88 & 91	1.72E-02	1.14E-04	6.64E-09
PCB 89	1.72E-02	5.27E-06	3.06E-10
PCB 90, 101, & 113	1.72E-02	7.71E-04	4.48E-08
PCB 92	1.72E-02	1.36E-04	7.91E-09
PCB 93 & 100	1.72E-02	8.36E-06	4.86E-10
PCB 94	1.72E-02	2.32E-06	1.35E-10
PCB 95	1.72E-02	9.22E-04	5.36E-08
PCB 96	1.72E-02	5.31E-06	3.09E-10
PCB 98 & 102	1.72E-02	2.71E-05	1.58E-09
PCB 103	1.72E-02	2.47E-06	1.43E-10
PCB 104	1.72E-02	ND	-
PCB 105	8.61E-03	5.63E-05	6.54E-09
PCB 106	1.72E-02	ND	-
PCB 107/109 (IUPAC)	1.72E-02	1.66E-05	9.64E-10
PCB 108/107 (IUPAC) & 124	1.72E-02	1.32E-05	7.66E-10
PCB 110 & 115	1.72E-02	5.10E-04	2.96E-08
PCB 111	1.72E-02	ND	-
PCB 112	1.72E-02	ND	-
PCB 114	8.61E-03	4.21E-06	4.88E-10
PCB 118	8.61E-03	2.26E-04	2.63E-08
PCB 120	1.72E-02	ND	-
PCB 121	1.72E-02	ND	-
PCB 122	1.72E-02	2.18E-06	1.27E-10
PCB 123	8.61E-03	2.98E-06	3.46E-10
PCB 126	2.58E-06	ND	-
PCB 127	1.72E-02	ND	-
PCB 128 & 166	1.72E-02	1.59E-05	9.25E-10
PCB 129, 138, 160, & 163	1.72E-02	1.68E-04	9.80E-09
PCB 130	1.72E-02	8.72E-06	5.07E-10
PCB 131	1.72E-02	5.70E-06	3.31E-10
PCB 132	1.72E-02	1.10E-04	6.39E-09
PCB 133	1.72E-02	ND	-
PCB 134 & 143	1.72E-02	2.20E-05	1.28E-09
PCB 135 & 151	1.72E-02	1.67E-04	9.72E-09
PCB 136	1.72E-02	9.85E-06	5.73E-09
PCB 137	1.72E-02	1.07E-05	6.21E-10

Congeners	Screening Level	Utility Tunnel (UT-1MP)	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ¹
PCB 139 & 140	1.72E-02	5.73E-06	3.33E-10
PCB 141	1.72E-02	5.14E-05	2.99E-09
PCB 142	1.72E-02	ND	-
PCB 144	1.72E-02	2.22E-05	1.29E-09
PCB 145	1.72E-02	ND	-
PCB 146	1.72E-02	3.65E-05	2.12E-09
PCB 147 & 149	1.72E-02	3.57E-04	2.08E-08
PCB 148	1.72E-02	ND	-
PCB 150	1.72E-02	ND	-
PCB 152	1.72E-02	ND	-
PCB 153 & 168	1.72E-02	1.95E-04	1.14E-08
PCB 154	1.72E-02	3.25E-06	1.89E-10
PCB 155	1.72E-02	ND	-
PCB 156 & 157	8.61E-03	5.18E-06	6.01E-10
PCB 158	1.72E-02	1.63E-05	9.48E-10
PCB 159	1.72E-02	ND	-
PCB 161	1.72E-02	ND	-
PCB 162	1.72E-02	ND	-
PCB 164	1.72E-02	1.21E-05	7.03E-10
PCB 165	1.72E-02	ND	-
PCB 167	8.61E-03	3.05E-06	3.54E-10
PCB 169	8.61E-06	ND	-
PCB 170	1.72E-02	5.30E-06	3.08E-10
PCB 171 & 173	1.72E-02	4.03E-06	2.34E-10
PCB 172	1.72E-02	1.73E-06	1.00E-10
PCB 174	1.72E-02	2.90E-05	1.68E-09
PCB 175	1.72E-02	9.50E-07	5.52E-11
PCB 176	1.72E-02	7.90E-06	4.59E-10
PCB 177	1.72E-02	9.39E-06	5.46E-10
PCB 178	1.72E-02	7.87E-06	4.58E-10
PCB 179	1.72E-02	3.99E-05	2.32E-09
PCB 180 & 193	1.72E-02	2.78E-05	1.61E-09
PCB 181	1.72E-02	ND	-
PCB 182	1.72E-02	ND	-
PCB 183 & 185	1.72E-02	2.61E-05	1.52E-09
PCB 184	1.72E-02	ND	-
PCB 186	1.72E-02	ND	-
PCB 187	1.72E-02	5.77E-05	3.35E-09
PCB 188	1.72E-02	ND	-
PCB 189	8.61E-03	ND	-
PCB 190	1.72E-02	ND	-
PCB 191	1.72E-02	ND	-
PCB 192	1.72E-02	ND	-
PCB 194	1.72E-02	ND	-
PCB 195	1.72E-02	ND	-
PCB 196	1.72E-02	2.51E-06	1.46E-10
PCB 197	1.72E-02	ND	-
PCB 198 & 201/199(IUPAC)	1.72E-02	9.68E-06	5.63E-10
PCB 199/200 (IUPAC)	1.72E-02	1.36E-06	7.91E-11
PCB 200/201 (IUPAC)	1.72E-02	3.72E-06	2.16E-10
PCB 202	1.72E-02	1.19E-05	6.94E-10
PCB 203	1.72E-02	4.96E-06	2.88E-10
PCB 204	1.72E-02	ND	-

Congeners	Screening Level	Utility Tunnel (UT-1MP)	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ¹
PCB 205	1.72E-02	ND	-
PCB 206	1.72E-02	5.36E-06	3.12E-10
PCB 207	1.72E-02	1.79E-06	1.04E-10
PCB 208	1.72E-02	1.25E-05	7.25E-10
PCB 209	1.72E-02	1.48E-05	8.62E-10
Total Cancer Risks		7.E-07	

Dioxin-like PCBs

¹ Cancer Risk = (Indoor Air Concentration/Screening Level) x 1.0E-06.

ATTACHMENT 5 - Subslab Air Risk-Based Screening

Congeners	Screening Level ($\alpha = 0.1$) ¹	Building 50						Bld 50 & 52 Corridor		Building 52	
		UT-1MP ³		SS-2P		SS-3P		SS-5P		SS-7P	
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$
PCB 1	1.72E-01	2.84E-05	1.7E-10	8.67E-05	5.0E-10	1.61E-05	9.4E-11	4.07E-06	2.4E-11	1.15E-05	6.7E-11
PCB 2	1.72E-01	2.67E-06	1.6E-11	7.00E-06	4.1E-11	9.28E-06	5.4E-11	ND	-	2.02E-06	1.2E-11
PCB 3	1.72E-01	1.15E-05	6.7E-11	2.52E-05	1.5E-10	8.98E-06	5.2E-11	2.82E-06	1.6E-11	7.24E-06	4.2E-11
PCB 4	1.72E-01	4.49E-05	2.6E-10	1.71E-04	9.9E-10	8.31E-05	4.8E-10	4.83E-06	2.8E-11	1.15E-05	6.7E-11
PCB 5	1.72E-01	ND	-	ND	-	1.99E-05	1.2E-10	ND	-	8.97E-07	5.2E-12
PCB 6	1.72E-01	1.81E-05	1.1E-10	6.41E-05	3.7E-10	4.06E-05	2.4E-10	3.18E-06	1.9E-11	5.73E-06	3.3E-11
PCB 7	1.72E-01	5.85E-06	3.4E-11	1.35E-05	7.8E-11	2.23E-05	1.3E-10	4.16E-06	2.4E-11	1.35E-05	7.8E-11
PCB 8	1.72E-01	8.29E-05	4.8E-10	2.64E-04	1.5E-09	1.13E-04	6.6E-10	1.45E-05	8.4E-11	2.59E-05	1.5E-10
PCB 9	1.72E-01	5.38E-06	3.1E-11	1.94E-05	1.1E-10	1.36E-05	7.9E-11	1.48E-06	8.6E-12	3.54E-06	2.1E-11
PCB 10	1.72E-01	1.75E-06	1.0E-11	9.89E-06	5.8E-11	1.57E-05	9.1E-11	ND	-	1.54E-06	9.0E-12
PCB 11	1.72E-01	4.81E-05	2.8E-10	2.94E-05	1.7E-10	4.75E-05	2.8E-10	1.59E-05	9.3E-11	4.48E-05	2.6E-10
PCB 12 & 13	1.72E-01	5.53E-06	3.2E-11	6.95E-06	4.0E-11	ND	-	ND	-	1.84E-06	1.1E-11
PCB 14	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 15	1.72E-01	2.22E-05	1.3E-10	4.16E-05	2.4E-10	2.26E-05	1.3E-10	2.90E-06	1.7E-11	5.47E-06	3.2E-11
PCB 16	1.72E-01	3.46E-05	2.0E-10	1.80E-04	1.0E-09	5.92E-05	3.4E-10	3.89E-06	2.3E-11	7.37E-06	4.3E-11
PCB 17	1.72E-01	4.52E-05	2.6E-10	1.98E-04	1.2E-09	9.99E-05	5.8E-10	1.40E-05	8.1E-11	3.70E-05	2.1E-10
PCBs 18 & 30	1.72E-01	8.41E-05	4.9E-10	6.01E-04	3.5E-09	1.37E-04	8.0E-10	9.89E-06	5.8E-11	1.87E-05	1.1E-10
PCB 19	1.72E-01	1.31E-05	7.6E-11	5.72E-05	3.3E-10	ND	-	ND	-	2.90E-06	1.7E-11
PCBs 20 & 28	1.72E-01	1.03E-04	6.0E-10	5.10E-04	3.0E-09	9.30E-05	5.4E-10	8.62E-06	5.0E-11	1.44E-05	8.4E-11
PCB 21 & 33	1.72E-01	6.31E-05	3.7E-10	3.05E-04	1.8E-09	6.05E-05	3.5E-10	1.00E-05	5.8E-11	2.55E-05	1.5E-10
PCB 22	1.72E-01	3.68E-05	2.1E-10	1.63E-04	9.5E-10	2.43E-05	1.4E-10	1.71E-06	9.9E-12	3.06E-06	1.8E-11
PCB 23	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 24	1.72E-01	5.51E-07	3.2E-12	6.87E-06	4.0E-11	ND	-	ND	-	ND	-
PCB 25	1.72E-01	1.09E-05	6.4E-11	3.78E-05	2.2E-10	1.98E-05	1.1E-10	2.74E-06	1.6E-11	5.79E-06	3.4E-11
PCBs 26 & 29	1.72E-01	1.74E-05	1.0E-10	7.35E-05	4.3E-10	ND	-	ND	-	2.94E-06	1.7E-11
PCB 27	1.72E-01	5.70E-06	3.3E-11	2.39E-05	1.4E-10	ND	-	ND	-	2.05E-06	1.2E-11
PCB 31	1.72E-01	1.13E-04	6.6E-10	8.04E-04	4.7E-09	7.66E-05	4.5E-10	6.03E-06	3.5E-11	1.14E-05	6.6E-11
PCB 32	1.72E-01	2.78E-05	1.6E-10	1.29E-04	7.5E-10	4.83E-05	2.8E-10	2.44E-06	1.4E-11	6.14E-06	3.6E-11
PCB 34	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 35	1.72E-01	ND	-	6.03E-06	3.5E-11	ND	-	ND	-	ND	-
PCB 36	1.72E-01	ND	-	9.83E-05	5.7E-10	ND	-	ND	-	ND	-
PCB 37	1.72E-01	2.05E-05	1.2E-10	1.35E-04	7.8E-10	ND	-	ND	-	ND	-
PCB 38	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 39	1.72E-01	7.55E-07	4.4E-12	ND	-	ND	-	ND	-	ND	-

Congeners	Screening Level ($\alpha = 0.1$) ¹	Building 50						Bld 50 & 52 Corridor		Building 52	
		UT-1MP ³		SS-2P		SS-3P		SS-5P		SS-7P	
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$
PCBs 40, 41, & 71	1.72E-01	8.72E-05	5.1E-10	1.27E-03	7.4E-09	1.91E-05	1.1E-10	ND	-	ND	-
PCB 42	1.72E-01	4.64E-05	2.7E-10	5.73E-04	3.3E-09	ND	-	ND	-	ND	-
PCB 43 & 73	1.72E-01	1.25E-05	7.3E-11	2.53E-04	1.5E-09	ND	-	ND	-	ND	-
PCB 44, 47, & 65	1.72E-01	1.95E-03	1.1E-08	7.94E-03	4.6E-08	1.65E-03	9.6E-09	1.29E-03	7.5E-09	3.18E-03	1.9E-08
PCB 45 & 51	1.72E-01	3.34E-04	1.9E-09	4.28E-04	2.5E-09	3.60E-04	2.1E-09	2.99E-04	1.7E-09	7.66E-04	4.5E-09
PCB 46	1.72E-01	1.40E-05	8.2E-11	8.35E-05	4.9E-10	ND	-	3.28E-06	1.9E-11	7.23E-06	4.2E-11
PCB 48	1.72E-01	3.68E-05	2.1E-10	4.98E-04	2.9E-09	1.01E-05	5.9E-11	ND	-	ND	-
PCB 49 & 69	1.72E-01	2.25E-04	1.3E-09	4.09E-03	2.4E-08	5.78E-05	3.4E-10	1.63E-05	9.5E-11	3.81E-05	2.2E-10
PCB 50 & 53	1.72E-01	3.52E-05	2.0E-10	4.79E-04	2.8E-09	ND	-	1.49E-06	8.7E-12	1.50E-06	8.7E-12
PCB 52	1.72E-01	9.44E-04	5.5E-09	2.07E-02	1.2E-07	1.47E-04	8.5E-10	5.89E-06	3.4E-11	7.11E-06	4.1E-11
PCB 54	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 55	1.72E-01	4.58E-06	2.7E-11	1.26E-04	7.3E-10	ND	-	ND	-	ND	-
PCB 56	1.72E-01	5.61E-05	3.3E-10	1.60E-03	9.3E-09	ND	-	ND	-	ND	-
PCB 57	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 58	1.72E-01	ND	-	9.00E-06	5.2E-11	ND	-	ND	-	ND	-
PCB 59, 62, & 75	1.72E-01	2.24E-05	1.3E-10	1.53E-04	8.9E-10	8.56E-06	5.0E-11	ND	-	ND	-
PCB 60	1.72E-01	2.74E-05	1.6E-10	8.65E-04	5.0E-09	ND	-	ND	-	ND	-
PCBs 61, 70, 74, & 76	1.72E-01	5.15E-04	3.0E-09	1.90E-02	1.1E-07	5.14E-05	3.0E-10	1.81E-06	1.1E-11	3.44E-06	2.0E-11
PCB 63	1.72E-01	6.58E-06	3.8E-11	1.76E-04	1.0E-09	ND	-	ND	-	ND	-
PCB 64	1.72E-01	1.05E-04	6.1E-10	2.50E-03	1.5E-08	1.88E-05	1.1E-10	ND	-	ND	-
PCB 66	1.72E-01	1.42E-04	8.2E-10	4.51E-03	2.6E-08	1.63E-05	9.5E-11	1.51E-06	8.8E-12	3.57E-06	2.1E-11
PCB 67	1.72E-01	1.93E-06	1.1E-11	4.55E-05	2.6E-10	ND	-	ND	-	ND	-
PCB 68	1.72E-01	1.03E-04	6.0E-10	4.23E-05	2.5E-10	ND	-	7.19E-05	4.2E-10	1.71E-04	9.9E-10
PCB 72	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 77	2.58E-02	4.34E-06	1.7E-10	1.28E-04	5.0E-09	ND	-	ND	-	ND	-
PCB 78	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 79	1.72E-01	3.53E-06	2.1E-11	2.48E-04	1.4E-09	ND	-	ND	-	ND	-
PCB 80	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 81	8.61E-03	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 82	1.72E-01	4.52E-05	2.6E-10	3.91E-03	2.3E-08	ND	-	ND	-	ND	-
PCB 83 & 99	1.72E-01	3.41E-04	2.0E-09	1.85E-02	1.1E-07	1.73E-05	1.0E-10	ND	-	ND	-
PCB 84	1.72E-01	2.30E-04	1.3E-09	8.74E-03	5.1E-08	1.79E-05	1.0E-10	ND	-	ND	-
PCB 85, 116, & 117	1.72E-01	6.94E-05	4.0E-10	5.60E-03	3.3E-08	ND	-	ND	-	ND	-

Congeners	Screening Level ($\alpha = 0.1$) ¹	Building 50						Bld 50 & 52 Corridor		Building 52	
		UT-1MP ³		SS-2P		SS-3P		SS-5P		SS-7P	
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$
PCB 86, 87, 97, 109, 119, & 125	1.72E-01	3.81E-04	2.2E-09	2.46E-02	1.4E-07	2.04E-05	1.2E-10	ND	-	1.48E-06	8.6E-12
PCB 88 & 91	1.72E-01	1.14E-04	6.6E-10	4.33E-03	2.5E-08	ND	-	ND	-	ND	-
PCB 89	1.72E-01	5.27E-06	3.1E-11	2.68E-04	1.6E-09	ND	-	ND	-	ND	-
PCB 90, 101, & 113	1.72E-01	7.71E-04	4.5E-09	3.65E-02	2.1E-07	7.02E-05	4.1E-10	2.53E-06	1.5E-11	3.12E-06	1.8E-11
PCB 92	1.72E-01	1.36E-04	7.9E-10	6.04E-03	3.5E-08	ND	-	ND	-	ND	-
PCB 93 & 100	1.72E-01	8.36E-06	4.9E-11	2.35E-04	1.4E-09	ND	-	ND	-	ND	-
PCB 94	1.72E-01	2.32E-06	1.3E-11	9.97E-05	5.8E-10	ND	-	ND	-	ND	-
PCB 95	1.72E-01	9.22E-04	5.4E-09	2.83E-02	1.6E-07	9.77E-05	5.7E-10	ND	-	2.68E-06	1.6E-11
PCB 96	1.72E-01	5.31E-06	3.1E-11	1.85E-04	1.1E-09	ND	-	ND	-	ND	-
PCB 98 & 102	1.72E-01	2.71E-05	1.6E-10	8.46E-04	4.9E-09	ND	-	ND	-	ND	-
PCB 103	1.72E-01	2.47E-06	1.4E-11	1.44E-04	8.3E-10	ND	-	ND	-	ND	-
PCB 104	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 105	8.61E-02	5.63E-05	6.5E-10	1.32E-02	1.5E-07	ND	-	ND	-	ND	-
PCB 106	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 107/109 (IUPAC)	1.72E-01	1.66E-05	9.6E-11	2.38E-03	1.4E-08	ND	-	ND	-	ND	-
PCB 108/107 (IUPAC) & 124	1.72E-01	1.32E-05	7.7E-11	1.63E-03	9.5E-09	ND	-	ND	-	ND	-
PCB 110 & 115	1.72E-01	5.10E-04	3.0E-09	3.84E-02	2.2E-07	3.19E-05	1.9E-10	2.43E-06	1.4E-11	3.08E-06	1.8E-11
PCB 111	1.72E-01	ND	-	6.40E-06	3.7E-11	ND	-	ND	-	ND	-
PCB 112	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 114	8.61E-02	4.21E-06	4.9E-11	1.07E-03	1.2E-08	ND	-	ND	-	ND	-
PCB 118	8.61E-02	2.26E-04	2.6E-09	3.70E-02	4.3E-07	9.45E-06	1.1E-10	1.81E-06	2.1E-11	2.18E-06	2.5E-11
PCB 120	1.72E-01	ND	-	1.98E-05	1.2E-10	ND	-	ND	-	ND	-
PCB 121	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-
PCB 122	1.72E-01	2.18E-06	1.3E-11	5.35E-04	3.1E-09	ND	-	ND	-	ND	-
PCB 123	8.61E-02	2.98E-06	3.5E-11	5.16E-04	6.0E-09	ND	-	ND	-	ND	-
PCB 126	2.58E-05	ND	-	2.38E-04	9.2E-06	ND	-	ND	-	ND	-
PCB 127	1.72E-01	ND	-	6.08E-05	3.5E-10	ND	-	ND	-	ND	-
PCB 128 & 166	1.72E-01	1.59E-05	9.2E-11	5.65E-03	3.3E-08	ND	-	ND	-	ND	-
PCB 129, 138, 160, & 163	1.72E-01	1.68E-04	9.8E-10	3.44E-02	2.0E-07	1.59E-05	9.2E-11	3.51E-06	2.0E-11	2.27E-06	1.3E-11
PCB 130	1.72E-01	8.72E-06	5.1E-11	2.29E-03	1.3E-08	ND	-	ND	-	ND	-
PCB 131	1.72E-01	5.70E-06	3.3E-11	8.03E-04	4.7E-09	ND	-	ND	-	ND	-

Congeners	Screening Level ($\alpha = 0.1$) ¹	Building 50						Bld 50 & 52 Corridor		Building 52	
		UT-1MP ³		SS-2P		SS-3P		SS-5P		SS-7P	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ²								
PCB 132	1.72E-01	1.10E-04	6.4E-10	1.25E-02	7.3E-08	ND	-	ND	-	ND	-
PCB 133	1.72E-01	ND	-	4.55E-04	2.6E-09	ND	-	ND	-	ND	-
PCB 134 & 143	1.72E-01	2.20E-05	1.3E-10	2.42E-03	1.4E-08	ND	-	ND	-	ND	-
PCB 135 & 151	1.72E-01	1.67E-04	9.7E-10	6.97E-03	4.1E-08	1.56E-05	9.1E-11	ND	-	ND	-
PCB 136	1.72E-01	9.85E-05	5.7E-10	3.32E-03	1.9E-08	1.59E-05	9.2E-11	ND	-	ND	-
PCB 137	1.72E-01	1.07E-05	6.2E-11	2.48E-03	1.4E-08	ND	-	ND	-	ND	-
PCB 139 & 140	1.72E-01	5.73E-06	3.3E-11	9.83E-04	5.7E-09	ND	-	ND	-	ND	-
PCB 141	1.72E-01	5.14E-05	3.0E-10	6.09E-03	3.5E-08	ND	-	ND	-	ND	-
PCB 142	1.72E-01	ND	-								
PCB 144	1.72E-01	2.22E-05	1.3E-10	1.40E-03	8.1E-09	ND	-	ND	-	ND	-
PCB 145	1.72E-01	ND	-								
PCB 146	1.72E-01	3.65E-05	2.1E-10	3.87E-03	2.2E-08	ND	-	ND	-	ND	-
PCB 147 & 149	1.72E-01	3.57E-04	2.1E-09	2.19E-02	1.3E-07	3.03E-05	1.8E-10	2.13E-06	1.2E-11	1.82E-06	1.1E-11
PCB 148	1.72E-01	ND	-								
PCB 150	1.72E-01	ND	-	3.23E-05	1.9E-10	ND	-	ND	-	ND	-
PCB 152	1.72E-01	ND	-	3.16E-05	1.8E-10	ND	-	ND	-	ND	-
PCB 153 & 168	1.72E-01	1.95E-04	1.1E-09	2.11E-02	1.2E-07	2.06E-05	1.2E-10	2.09E-06	1.2E-11	1.30E-06	7.5E-12
PCB 154	1.72E-01	3.25E-06	1.9E-11	1.72E-04	1.0E-09	ND	-	ND	-	ND	-
PCB 155	1.72E-01	ND	-								
PCB 156 & 157	8.61E-02	5.18E-06	6.0E-11	4.16E-03	4.8E-08	ND	-	ND	-	ND	-
PCB 158	1.72E-01	1.63E-05	9.5E-11	4.47E-03	2.6E-08	ND	-	ND	-	ND	-
PCB 159	1.72E-01	ND	-	7.94E-05	4.6E-10	ND	-	ND	-	ND	-
PCB 161	1.72E-01	ND	-								
PCB 162	1.72E-01	ND	-	1.28E-04	7.4E-10	ND	-	ND	-	ND	-
PCB 164	1.72E-01	1.21E-05	7.0E-11	2.12E-03	1.2E-08	ND	-	ND	-	ND	-
PCB 165	1.72E-01	ND	-								
PCB 167	8.61E-02	3.05E-06	3.5E-11	1.20E-03	1.4E-08	ND	-	ND	-	ND	-
PCB 169	8.61E-05	ND	-								
PCB 170	1.72E-01	5.30E-06	3.1E-11	2.39E-03	1.4E-08	ND	-	ND	-	ND	-
PCB 171 & 173	1.72E-01	4.03E-06	2.3E-11	8.11E-04	4.7E-09	ND	-	ND	-	ND	-
PCB 172	1.72E-01	1.73E-06	1.0E-11	3.56E-04	2.1E-09	ND	-	ND	-	ND	-
PCB 174	1.72E-01	2.90E-05	1.7E-10	1.99E-03	1.2E-08	ND	-	ND	-	ND	-
PCB 175	1.72E-01	9.50E-07	5.5E-12	1.11E-04	6.4E-10	ND	-	ND	-	ND	-
PCB 176	1.72E-01	7.90E-06	4.6E-11	3.22E-04	1.9E-09	ND	-	ND	-	ND	-
PCB 177	1.72E-01	9.39E-06	5.5E-11	1.04E-03	6.0E-09	ND	-	ND	-	ND	-
PCB 178	1.72E-01	7.87E-06	4.6E-11	3.65E-04	2.1E-09	ND	-	ND	-	ND	-

Congeners	Screening Level ($\alpha = 0.1$) ¹	Building 50						Bld 50 & 52 Corridor		Building 52		
		UT-1MP ³			SS-2P		SS-3P		SS-5P		SS-7P	
		$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²	$\mu\text{g}/\text{m}^3$	Risk ²
PCB 179	1.72E-01	3.99E-05	2.3E-10	8.19E-04	4.8E-09	ND	-	ND	-	ND	-	
PCB 180 & 193	1.72E-01	2.78E-05	1.6E-10	3.67E-03	2.1E-08	ND	-	ND	-	5.03E-07	2.9E-12	
PCB 181	1.72E-01	ND	-	6.29E-05	3.7E-10	ND	-	ND	-	ND	-	
PCB 182	1.72E-01	ND	-	2.69E-05	1.6E-10	ND	-	ND	-	ND	-	
PCB 183 & 185	1.72E-01	2.61E-05	1.5E-10	1.56E-03	9.1E-09	ND	-	ND	-	ND	-	
PCB 184	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-	
PCB 186	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-	
PCB 187	1.72E-01	5.77E-05	3.4E-10	1.88E-03	1.1E-08	6.13E-06	3.6E-11	ND	-	ND	-	
PCB 188	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-	
PCB 189	8.61E-02	ND	-	1.07E-04	1.2E-09	ND	-	ND	-	ND	-	
PCB 190	1.72E-01	ND	-	4.24E-04	2.5E-09	ND	-	ND	-	ND	-	
PCB 191	1.72E-01	ND	-	1.12E-04	6.5E-10	ND	-	ND	-	ND	-	
PCB 192	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-	
PCB 194	1.72E-01	ND	-	4.01E-04	2.3E-09	ND	-	ND	-	ND	-	
PCB 195	1.72E-01	ND	-	1.77E-04	1.0E-09	ND	-	ND	-	ND	-	
PCB 196	1.72E-01	2.51E-06	1.5E-11	2.47E-04	1.4E-09	ND	-	ND	-	ND	-	
PCB 197	1.72E-01	ND	-	1.26E-05	7.3E-11	ND	-	ND	-	ND	-	
PCB 198 & 201/199(IUPAC)	1.72E-01	9.68E-06	5.6E-11	4.63E-04	2.7E-09	ND	-	ND	-	ND	-	
PCB 199/200 (IUPAC)	1.72E-01	1.36E-06	7.9E-12	6.53E-05	3.8E-10	ND	-	ND	-	ND	-	
PCB 200/201 (IUPAC)	1.72E-01	3.72E-06	2.2E-11	5.88E-05	3.4E-10	ND	-	ND	-	ND	-	
PCB 202	1.72E-01	1.19E-05	6.9E-11	7.86E-05	4.6E-10	ND	-	ND	-	ND	-	
PCB 203	1.72E-01	4.96E-06	2.9E-11	3.18E-04	1.8E-09	ND	-	ND	-	ND	-	
PCB 204	1.72E-01	ND	-	ND	-	ND	-	ND	-	ND	-	

Congeners	Screening Level ($\alpha = 0.1$) ¹	Building 50						Bld 50 & 52 Corridor		Building 52	
		UT-1MP ³		SS-2P		SS-3P		SS-5P		SS-7P	
	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	Risk ²								
PCB 205	1.72E-01	ND	-	2.30E-05	1.3E-10	ND	-	ND	-	ND	-
PCB 206	1.72E-01	5.36E-06	3.1E-11	9.17E-05	5.3E-10	ND	-	ND	-	ND	-
PCB 207	1.72E-01	1.79E-06	1.0E-11	1.11E-05	6.5E-11	ND	-	ND	-	ND	-
PCB 208	1.72E-01	1.25E-05	7.2E-11	2.21E-05	1.3E-10	ND	-	ND	-	ND	-
PCB 209	1.72E-01	1.48E-05	8.6E-11	9.51E-06	5.5E-11	ND	-	ND	-	ND	-
Total # PCBs Detected		114		134		44		33		43	
Total PCBs ($\mu\text{g}/\text{m}^3$)		1.10E-02		4.60E-01		3.74E-03		1.82E-03		4.47E-03	

Dioxin-like PCBs

¹ Subslab screening levels = (Indoor Air Screening Level)/0.1 (USEPA, 2002).

² Cancer Risk = (Indoor Air Concentration/Screening Level) x 1.0E-06.

³ Building 50 includes the Utility Tunnel Air Sample UT-1MP. Although the utility tunnel air sample is not a subslab air sample, the utility tunnel air could impact indoor air in much the same way subslab air does by serving as a source for indoor air PCB contamination.

ATTACHMENT 6 - Subslab-to-Indoor-Air Attenuation Factors

Congeners	Building 50/Utility Tunnel			Building 50				Building 50 - Average ³			Corridor			Building 52				
	UT-1P ¹ µg/m ³	UT-1MP µg/m ³	α^*	IA-2P µg/m ³	SS-2P µg/m ³	α^*	IA-3P µg/m ³	SS-3P µg/m ³	α^*	IA µg/m ³	SS µg/m ³	α^*	IA-5P µg/m ³	SS-5P µg/m ³	α^*	IA-7P µg/m ³	SS-7P µg/m ³	α^*
PCB 1	9.53E-05	2.84E-05	3.4	6.99E-05	8.67E-05	0.8	1.80E-05	1.61E-05	1.1	6.11E-05	4.37E-05	1.4	1.21E-05	4.07E-06	3.0	2.09E-05	1.15E-05	1.8
PCB 2	7.80E-06	2.67E-06	2.9	6.29E-06	7.00E-06	0.9	4.83E-06	9.28E-06	0.5	6.30E-06	6.31E-06	1.0	4.29E-06	ND	-	7.00E-06	2.02E-06	3.5
PCB 3	3.65E-05	1.15E-05	3.2	2.53E-05	2.52E-05	1.0	1.37E-05	8.98E-06	1.5	2.52E-05	1.52E-05	1.7	9.85E-06	2.82E-06	3.5	1.67E-05	7.24E-06	2.3
PCB 4	1.20E-04	4.49E-05	2.7	1.05E-04	1.71E-04	0.6	5.55E-05	8.31E-05	0.7	9.36E-05	9.96E-05	0.9	3.16E-05	4.83E-06	6.5	5.10E-05	1.15E-05	4.5
PCB 5	5.48E-06	ND	-	4.03E-06	ND	-	2.73E-06	1.99E-05	0.14	4.08E-06	1.99E-05	0.2	1.55E-06	ND	-	2.65E-06	8.97E-07	3.0
PCB 6	5.88E-05	1.81E-05	3.3	4.73E-05	6.41E-05	0.7	3.24E-05	4.06E-05	0.8	4.62E-05	4.09E-05	1.1	1.88E-05	3.16E-06	5.9	3.18E-05	5.73E-06	5.5
PCB 7	1.53E-05	5.85E-06	2.6	1.17E-05	1.35E-05	0.9	7.51E-06	2.23E-05	0.3	1.15E-05	1.39E-05	0.8	5.47E-06	4.16E-06	1.3	7.93E-06	1.35E-05	0.6
PCB 8	2.57E-04	8.29E-05	3.1	2.03E-04	2.64E-04	0.8	1.29E-04	1.13E-04	1.1	1.96E-04	1.53E-04	1.3	7.24E-05	1.45E-05	5.0	1.13E-04	2.59E-05	4.3
PCB 9	2.03E-05	5.33E-06	3.8	1.71E-05	1.94E-05	0.9	1.13E-05	1.36E-05	0.8	1.63E-05	1.28E-05	1.3	6.58E-06	1.43E-06	4.5	9.55E-06	3.54E-06	2.7
PCB 10	8.08E-06	1.75E-06	4.6	6.57E-06	9.89E-06	0.7	3.58E-06	1.57E-05	0.2	6.07E-06	9.13E-06	0.7	2.30E-06	ND	-	3.35E-06	1.54E-06	2.2
PCB 11	9.34E-05	4.81E-05	1.9	8.65E-05	2.94E-05	2.9	3.35E-04	4.75E-05	7.1	1.72E-04	4.16E-05	4.1	6.70E-04	1.59E-05	42.1	8.58E-04	4.48E-05	19.2
PCB 12 & 13	9.00E-06	5.53E-06	1.6	8.80E-06	6.95E-06	1.3	7.80E-06	ND	-	8.53E-06	6.24E-06	1.4	8.93E-06	ND	-	1.21E-05	1.84E-06	6.6
PCB 14	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 15	4.42E-05	2.22E-05	2.0	3.31E-05	4.16E-05	0.8	2.44E-05	2.26E-05	1.1	3.39E-05	2.88E-05	1.2	1.41E-05	2.90E-06	4.9	2.24E-05	5.47E-06	4.1
PCB 16	6.68E-05	3.46E-05	1.9	5.69E-05	1.80E-04	0.3	4.15E-05	5.92E-05	0.7	5.51E-05	9.12E-05	0.6	2.65E-05	3.89E-06	6.8	4.98E-05	7.37E-06	6.8
PCB 17	7.70E-05	4.52E-05	1.7	6.64E-05	1.98E-04	0.3	4.61E-05	9.99E-05	0.5	6.32E-05	1.14E-04	0.6	3.08E-05	1.40E-05	2.2	5.34E-05	3.70E-05	1.4
PCBs 18 & 30	1.72E-04	8.41E-05	2.0	1.46E-04	6.01E-04	0.2	1.02E-04	1.37E-04	0.7	1.40E-04	2.74E-04	0.5	6.70E-05	9.89E-06	6.8	1.20E-04	1.87E-05	6.4
PCB 19	2.17E-05	1.31E-05	1.7	1.86E-05	5.72E-05	0.3	1.26E-05	ND	-	1.76E-05	3.51E-05	0.5	8.42E-06	ND	-	1.40E-05	2.90E-06	4.8
PCBs 20 & 28	1.70E-04	1.03E-04	1.7	1.38E-04	5.10E-04	0.3	9.66E-05	9.30E-05	1.0	1.35E-04	2.35E-04	0.6	5.56E-05	8.62E-06	6.5	1.06E-04	1.44E-05	7.4
PCB 21 & 33	1.02E-04	6.31E-05	1.6	8.51E-05	3.05E-04	0.3	6.05E-05	6.05E-05	1.0	8.25E-05	1.43E-04	0.6	3.30E-05	1.00E-05	3.3	6.72E-05	2.55E-05	2.6
PCB 22	5.20E-05	3.68E-05	1.4	4.42E-05	1.63E-04	0.3	3.36E-05	2.43E-05	1.4	4.33E-05	7.47E-05	0.6	1.71E-05	1.71E-06	10.0	3.40E-05	3.06E-06	11.1
PCB 23	3.68E-07	ND	-	ND	ND	-	ND	ND	-	3.58E-07	ND	-	ND	ND	-	ND	ND	-
PCB 24	3.08E-06	5.51E-07	5.6	2.86E-06	6.87E-06	0.4	1.29E-06	ND	-	2.41E-06	3.71E-06	0.7	7.50E-07	ND	-	1.27E-06	ND	-
PCB 25	1.33E-05	1.09E-05	1.2	1.12E-05	3.78E-05	0.3	7.69E-06	1.98E-05	0.4	1.07E-05	2.28E-05	0.5	4.70E-06	2.74E-06	1.7	8.34E-06	5.79E-06	1.4
PCBs 26 & 29	2.99E-05	1.74E-05	1.7	2.43E-05	7.35E-05	0.3	1.82E-05	ND	-	2.41E-05	4.54E-05	0.5	1.03E-05	ND	-	1.94E-05	2.94E-06	6.6
PCB 27	1.03E-05	5.70E-06	1.8	8.44E-06	2.39E-05	0.4	5.37E-06	ND	-	8.05E-06	1.48E-05	0.5	3.97E-06	ND	-	7.85E-06	2.05E-06	3.8
PCB 31	1.71E-04	1.13E-04	1.5	1.39E-04	8.04E-04	0.2	8.98E-05	7.66E-05	1.2	1.33E-04	3.31E-04	0.4	5.37E-05	6.03E-06	8.9	1.03E-04	1.14E-05	9.0
PCB 32	4.18E-05	2.78E-05	1.5	3.74E-05	1.29E-04	0.3	2.49E-05	4.83E-05	0.5	3.47E-05	6.85E-05	0.5	1.71E-05	2.44E-06	7.0	3.14E-05	6.14E-06	5.1
PCB 34	6.44E-07	ND	-	4.06E-07	ND	-	ND	ND	-	5.25E-07	ND	-	ND	ND	-	4.61E-07	ND	-
PCB 35	1.92E-06	ND	-	1.62E-06	6.03E-06	0.3	2.65E-06	ND	-	2.06E-06	6.03E-06	0.3	1.68E-06	ND	-	2.30E-06	ND	-
PCB 36	5.45E-06	ND	-	4.45E-06	9.83E-05	0.05	ND	ND	-	4.95E-06	9.83E-05	0.05	1.07E-06	ND	-	ND	ND	-
PCB 37	1.94E-05	2.05E-05	0.9	1.66E-05	1.35E-04	0.12	1.71E-05	ND	-	1.77E-05	7.75E-05	0.2	5.47E-06	ND	-	1.15E-05	ND	-
PCB 38	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 39	ND	7.55E-07	-	6.57E-07	ND	-	ND	ND	-	6.57E-07	7.55E-07	0.9	ND	ND	-	ND	ND	-
PCBs 40, 41, & 71	6.06E-05	8.72E-05	0.7	5.97E-05	1.27E-03	0.05	3.00E-05	1.91E-05	1.6	5.01E-05	4.60E-04	0.11	1.24E-05	ND	-	2.82E-05	ND	-
PCB 42	2.73E-05	4.64E-05	0.6	2.68E-05	5.73E-04	0.05	1.24E-05	ND	-	2.21E-05	3.10E-04	0.07	5.72E-06	ND	-	1.26E-05	ND	-
PCB 43 & 73	ND	1.25E-05	-	ND	2.53E-04	-	1.98E-06	ND	-	1.98E-06	1.33E-04	0.01	1.12E-06	ND	-	2.08E-06	ND	-
PCB 44, 47, & 65	3.25E-04	1.95E-03	0.2	2.89E-04	7.94E-03	0.04	6.80E-05	1.65E-03	0.04	2.27E-04	3.85E-03	0.06	3.56E-05	1.29E-03	0.03	6.44E-05	3.18E-03	0.02
PCB 45 & 51	2.31E-05	3.34E-04	0.07	2.19E-05	4.28E-04	0.05	1.33E-05	3.60E-04	0.04	1.94E-05	3.74E-04	0.05	6.57E-06	2.99E-04	0.03	1.62E-05	7.56E-04	0.02
PCB 46	7.80E-06	1.40E-05	0.6	7.49E-06	8.35E-05	0.09	3.51E-06	ND	-	6.27E-06	4.88E-05	0.13	2.20E-06	3.28E-06	0.7	4.57E-06	7.23E-06	0.6
PCB 48	2.70E-05	3.68E-05	0.7	2.63E-05	4.98E-04	0.05	1.24E-05	1.01E-05	1.2	2.19E-05	1.82E-04	0.12	6.58E-06	ND	-	1.48E-05	ND	-
PCB 49 & 69	1.80E-04	2.25E-04	0.8	1.62E-04	4.09E-03	0.04	3.68E-05	5.78E-05	0.6	1.26E-04	1.46E-03	0.09	1.88E-05	1.63E-05	1.2	3.74E-05	3.91E-05	1.0
PCB 50 & 53	2.85E-05	3.52E-05	0.8	2.68E-05	4.79E-04	0.06	9.66E-06	ND	-	2.17E-05	2.57E-04	0.08	5.97E-06	1.49E-06	4.0	1.20E-05	1.50E-06	8.0
PCB 52	9.72E-04	9.44E-04	1.0	8.48E-04	2.07E-02	0.04	1.18E-04	1.47E-04	0.8	6.48E-04	7.26E-03	0.09	5.81E-05	5.89E-06	9.9	1.08E-04	7.11E-06	15.1
PCB 54	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 55	3.74E-08	4.58E-06	0.8	3.17E-06	1.26E-04	0.03	6.51E-07	ND	-	2.52E-06	6.51E-05	0.04	ND	ND	-	ND	ND	-
PCB 56	4.21E-05	5.61E-05	0.8	3.52E-05	1.60E-03	0.02	1.63E-05	ND	-	3.12E-05	8.30E-04	0.04	5.53E-06	ND	-	1.11E-05	ND	-

Congeners	Building 50/Utility Tunnel			Building 50						Building 50 - Average ^a			Corridor			Building 52		
	UT-1P ^b µg/m ³	UT-1MP µg/m ³	α ^c	IA-2P µg/m ³	SS-2P µg/m ³	α ^c	IA-3P µg/m ³	SS-3P µg/m ³	α ^c	IA µg/m ³	SS µg/m ³	α ^c	IA-5P µg/m ³	SS-5P µg/m ³	α ^c	IA-7P µg/m ³	SS-7P µg/m ³	α ^c
PCB 57	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 58	ND	ND	-	ND	9.00E-06	-	ND	ND	-	ND	9.00E-06	-	ND	ND	-	2.63E-07	ND	-
PCB 59, 62, & 75	8.38E-06	2.24E-05	0.4	8.44E-06	1.53E-04	0.06	3.47E-06	8.56E-05	0.4	6.77E-06	6.12E-05	0.11	1.91E-06	ND	-	4.13E-06	ND	-
PCB 60	2.13E-05	2.74E-05	0.8	1.86E-05	8.65E-04	0.02	9.69E-06	ND	-	1.65E-05	4.46E-04	0.04	3.43E-06	ND	-	6.11E-06	ND	-
PCBs 61, 70, 74, & 76	5.26E-04	5.15E-04	1.0	4.34E-04	1.90E-02	0.02	9.09E-05	5.14E-05	1.8	3.50E-04	6.53E-03	0.05	3.69E-05	1.81E-06	20.3	6.64E-05	3.44E-06	19.3
PCB 63	5.26E-06	6.58E-06	0.8	4.45E-06	1.76E-04	0.03	1.22E-06	ND	-	3.64E-06	9.12E-05	0.04	6.04E-07	ND	-	1.15E-06	ND	-
PCB 64	8.35E-05	1.05E-04	0.8	7.91E-05	2.50E-03	0.03	2.20E-05	1.88E-05	1.2	6.15E-05	8.73E-04	0.07	9.91E-06	ND	-	2.04E-05	ND	-
PCB 66	1.26E-04	1.42E-04	0.9	1.08E-04	4.51E-03	0.02	3.50E-05	1.63E-05	2.1	8.97E-05	1.56E-03	0.06	1.31E-05	1.51E-06	8.7	2.57E-05	3.57E-06	7.2
PCB 67	2.22E-06	1.93E-06	1.2	2.38E-06	4.55E-05	0.05	1.13E-06	ND	-	1.91E-06	2.37E-05	0.08	4.64E-07	ND	-	1.00E-06	ND	-
PCB 68	9.34E-07	1.03E-04	0.009	ND	4.28E-05	-	1.69E-06	ND	-	1.31E-06	7.24E-05	0.02	5.08E-07	7.19E-05	0.007	ND	1.71E-04	-
PCB 72	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 77	5.35E-06	4.34E-06	1.2	3.46E-06	1.28E-04	0.03	1.66E-06	ND	-	3.49E-06	6.62E-05	0.05	4.86E-07	ND	-	1.00E-06	ND	-
PCB 78	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 79	5.23E-06	3.53E-06	1.5	3.96E-06	2.48E-04	0.02	7.23E-07	ND	-	3.30E-06	1.26E-04	0.03	ND	ND	-	3.67E-07	ND	-
PCB 80	3.68E-07	ND	-	ND	ND	-	ND	ND	-	3.68E-07	ND	-	ND	ND	-	ND	ND	-
PCB 81	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 82	6.90E-05	4.52E-05	1.5	4.84E-05	3.91E-03	0.01	9.95E-06	ND	-	4.24E-05	1.98E-03	0.02	2.96E-06	ND	-	4.49E-06	ND	-
PCB 83 & 99	4.15E-04	3.41E-04	1.2	2.81E-04	1.85E-02	0.02	5.29E-05	1.73E-05	3.1	2.49E-04	6.28E-03	0.04	1.56E-05	ND	-	2.74E-05	ND	-
PCB 84	2.72E-04	2.30E-04	1.2	2.03E-04	8.74E-03	0.02	3.23E-05	1.79E-05	1.8	1.69E-04	3.00E-03	0.05	9.98E-06	ND	-	1.82E-05	ND	-
PCB 85, 116, & 117	1.02E-04	6.94E-05	1.5	6.78E-05	5.60E-03	0.01	1.33E-05	ND	-	6.12E-05	2.83E-03	0.02	3.97E-06	ND	-	6.72E-06	ND	-
PCB 86, 87, 97, 109, 119, & 125	5.23E-04	3.81E-04	1.4	3.51E-04	2.46E-02	0.01	7.41E-05	2.04E-05	3.6	3.16E-04	8.33E-03	0.04	2.11E-05	ND	-	3.26E-05	1.48E-06	22.0
PCB 88 & 91	1.16E-04	1.14E-04	1.0	9.15E-05	4.33E-03	0.02	1.48E-05	ND	-	7.42E-05	2.22E-03	0.03	4.19E-06	ND	-	8.30E-06	ND	-
PCB 89	7.39E-06	5.27E-06	1.4	9.37E-06	2.68E-04	0.02	ND	ND	-	6.38E-06	1.36E-04	0.05	ND	ND	-	ND	ND	-
PCB 90, 101, & 113	9.19E-04	7.71E-04	1.2	6.46E-04	3.65E-02	0.02	1.17E-04	7.02E-05	1.7	5.61E-04	1.24E-02	0.05	3.75E-05	2.53E-06	14.8	6.03E-05	3.12E-06	19.3
PCB 92	1.57E-04	1.36E-04	1.2	1.11E-04	6.04E-03	0.02	2.00E-05	ND	-	9.58E-05	3.09E-03	0.03	5.81E-06	ND	-	9.63E-06	ND	-
PCB 93 & 100	5.85E-06	8.36E-06	0.7	1.03E-05	2.35E-04	0.04	ND	ND	-	8.06E-06	1.22E-04	0.07	ND	ND	-	ND	ND	-
PCB 94	3.12E-06	2.32E-06	1.3	2.80E-06	9.97E-05	0.03	ND	ND	-	2.96E-06	5.10E-05	0.06	ND	ND	-	ND	ND	-
PCB 95	9.50E-04	9.22E-04	1.0	7.38E-04	2.83E-02	0.03	1.15E-04	9.77E-05	1.2	6.01E-04	9.78E-03	0.06	4.04E-05	ND	-	6.88E-05	2.68E-06	25.6
PCB 96	5.54E-06	5.31E-06	1.0	5.33E-06	1.85E-04	0.03	ND	ND	-	5.44E-06	9.51E-05	0.06	ND	ND	-	ND	ND	-
PCB 98 & 102	2.11E-05	2.71E-05	0.8	1.89E-05	8.46E-04	0.02	ND	ND	-	2.00E-05	4.36E-04	0.05	6.80E-07	ND	-	1.78E-06	ND	-
PCB 103	4.05E-06	2.47E-06	1.6	3.57E-06	1.44E-04	0.02	ND	ND	-	3.81E-06	7.30E-05	0.05	ND	ND	-	ND	ND	-
PCB 104	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 105	1.05E-04	5.63E-05	1.9	6.71E-05	1.32E-02	0.01	1.58E-05	ND	-	6.25E-05	6.62E-03	0.01	5.66E-06	ND	-	9.27E-06	ND	-
PCB 106	ND	ND	-	ND	ND	-	6.08E-06	ND	-	6.08E-06	ND	-	ND	ND	-	1.92E-06	ND	-
PCB 107/109 (IUPAC)	2.53E-05	1.66E-05	1.5	1.61E-05	2.38E-03	0.01	2.66E-06	ND	-	1.47E-05	1.20E-03	0.01	9.95E-07	ND	-	1.15E-06	ND	-
PCB 108/107 (IUPAC) & 124	1.73E-05	1.32E-05	1.3	1.26E-05	1.63E-03	0.01	2.02E-06	ND	-	1.07E-05	8.21E-04	0.01	7.34E-07	ND	-	1.22E-06	ND	-
PCB 110 & 115	7.46E-04	5.10E-04	1.5	4.98E-04	3.84E-02	0.01	9.91E-05	3.19E-05	3.1	4.48E-04	1.30E-02	0.03	2.98E-05	2.43E-06	12.3	4.70E-05	3.08E-06	15.2
PCB 111	3.00E-07	ND	-	3.48E-07	6.40E-06	0.05	ND	ND	-	3.24E-07	6.40E-06	0.05	ND	ND	-	ND	ND	-
PCB 112	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 114	9.03E-06	4.21E-06	2.1	6.57E-06	1.07E-03	0.01	1.28E-06	ND	-	5.63E-06	5.39E-04	0.01	3.46E-07	ND	-	ND	ND	-
PCB 118	3.81E-04	2.26E-04	1.7	2.51E-04	3.70E-02	0.01	4.97E-05	9.45E-06	5.3	2.27E-04	1.24E-02	0.02	1.92E-05	1.81E-06	10.6	2.73E-05	2.18E-06	12.5
PCB 120	5.14E-07	ND	-	5.16E-07	1.98E-05	0.03	ND	ND	-	5.15E-07	1.98E-05	0.03	ND	ND	-	ND	ND	-
PCB 121	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 122	5.48E-06	2.18E-06	2.5	4.70E-06	5.35E-04	0.01	ND	ND	-	5.09E-06	2.69E-04	0.02	ND	ND	-	ND	ND	-

Congeners	Building 50/Utility Tunnel			Building 50						Building 50 - Average ³			Corridor			Building S2		
	UT-1P ¹ µg/m ³	UT-1MP µg/m ³	c ²	IA-2P µg/m ³	SS-2P µg/m ³	c ²	IA-3P µg/m ³	SS-3P µg/m ³	c ²	IA µg/m ³	SS µg/m ³	c ²	IA-5P µg/m ³	SS-5P µg/m ³	c ²	IA-7P µg/m ³	SS-7P µg/m ³	c ²
PCB 123	5.38E-06	2.98E-06	1.8	3.85E-06	5.16E-04	0.01	9.09E-07	ND	-	3.38E-06	2.60E-04	0.01	2.58E-07	ND	-	2.33E-07	ND	-
PCB 126	1.98E-06	ND	-	1.38E-06	2.38E-04	0.01	ND	ND	-	1.66E-06	2.38E-04	0.01	ND	ND	-	ND	ND	-
PCB 127	7.80E-07	ND	-	4.91E-07	6.08E-05	0.01	ND	ND	-	6.35E-07	6.08E-05	0.01	ND	ND	-	ND	ND	-
PCB 128 & 166	2.78E-05	1.59E-05	1.7	1.80E-05	5.65E-03	0.003	3.42E-06	ND	-	1.64E-05	2.83E-03	0.01	1.53E-06	ND	-	2.16E-06	ND	-
PCB 129, 138, 160, & 163	2.19E-04	1.68E-04	1.3	1.47E-04	3.44E-02	0.004	3.19E-05	1.59E-05	2.0	1.33E-04	1.15E-02	0.01	1.38E-05	3.51E-06	3.9	2.15E-05	2.27E-06	9.4
PCB 130	1.51E-05	8.72E-06	1.7	1.11E-05	2.29E-03	0.005	2.16E-06	ND	-	9.46E-06	1.15E-03	0.01	7.59E-07	ND	-	1.31E-06	ND	-
PCB 131	8.11E-06	5.70E-06	1.4	6.61E-06	8.03E-04	0.008	ND	ND	-	7.36E-06	4.04E-04	0.02	2.89E-07	ND	-	ND	ND	-
PCB 132	1.29E-04	1.10E-04	1.2	9.11E-05	1.25E-02	0.007	1.56E-05	ND	-	7.87E-05	6.31E-03	0.01	7.12E-06	ND	-	1.13E-05	ND	-
PCB 133	4.30E-06	ND	-	2.91E-06	4.55E-04	0.006	ND	ND	-	3.61E-06	4.55E-04	0.01	ND	ND	-	ND	ND	-
PCB 134 & 143	2.90E-05	2.20E-05	1.3	2.36E-05	2.42E-03	0.01	2.78E-06	ND	-	1.84E-05	1.22E-03	0.02	1.05E-06	ND	-	2.41E-06	ND	-
PCB 135 & 151	1.27E-04	1.57E-04	0.8	8.76E-05	6.97E-03	0.01	1.89E-05	1.56E-05	1.2	7.79E-05	2.38E-03	0.03	8.80E-06	ND	-	1.40E-05	ND	-
PCB 136	8.14E-05	9.85E-05	0.8	6.18E-05	3.32E-03	0.02	1.06E-05	1.59E-05	0.7	5.12E-05	1.15E-03	0.04	5.18E-06	ND	-	7.93E-06	ND	-
PCB 137	1.50E-05	1.07E-05	1.4	1.16E-05	2.48E-03	0.005	1.85E-06	ND	-	9.49E-06	1.25E-03	0.01	7.02E-07	ND	-	8.62E-07	ND	-
PCB 139 & 140	9.96E-06	5.73E-06	1.7	7.77E-06	9.83E-04	0.008	6.73E-07	ND	-	6.14E-06	4.94E-04	0.01	ND	ND	-	4.82E-07	ND	-
PCB 141	4.49E-05	5.14E-05	0.9	3.40E-05	6.09E-03	0.006	7.05E-06	ND	-	2.86E-05	3.07E-03	0.01	3.12E-06	ND	-	5.63E-06	ND	-
PCB 142	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 144	2.16E-05	2.22E-05	1.0	1.63E-05	1.40E-03	0.012	3.86E-06	ND	-	1.39E-05	7.10E-04	0.02	1.24E-06	ND	-	2.33E-06	ND	-
PCB 145	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 146	3.22E-05	3.65E-05	0.9	2.38E-05	3.87E-03	0.006	4.36E-06	ND	-	2.01E-05	1.95E-03	0.01	2.18E-06	ND	-	3.31E-06	ND	-
PCB 147 & 149	2.88E-04	3.57E-04	0.8	2.19E-04	2.19E-02	0.01	4.15E-05	3.03E-05	1.4	1.83E-04	7.41E-03	0.02	1.90E-05	2.13E-06	8.9	3.02E-05	1.82E-06	16.5
PCB 148	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 150	6.47E-07	ND	-	3.26E-07	3.23E-05	0.01	ND	ND	-	4.87E-07	3.23E-05	0.02	ND	ND	-	ND	ND	-
PCB 152	5.14E-07	ND	-	7.10E-07	3.16E-05	0.02	ND	ND	-	6.12E-07	3.16E-05	0.02	ND	ND	-	ND	ND	-
PCB 153 & 168	1.83E-04	1.95E-04	0.9	1.27E-04	2.11E-02	0.006	2.92E-05	2.06E-05	1.4	1.13E-04	7.10E-03	0.02	1.37E-05	2.09E-06	6.6	2.09E-05	1.30E-06	16.1
PCB 154	3.47E-06	3.25E-06	1.1	3.67E-06	1.72E-04	0.02	ND	ND	-	3.57E-06	8.76E-05	0.04	ND	ND	-	4.98E-07	ND	-
PCB 155	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 156 & 157	1.30E-05	5.18E-06	2.5	7.81E-06	4.16E-03	0.002	1.38E-06	ND	-	7.38E-06	2.08E-03	0.004	5.85E-07	ND	-	8.50E-07	ND	-
PCB 158	2.35E-05	1.63E-05	1.4	1.63E-05	4.47E-03	0.004	3.02E-06	ND	-	1.43E-05	2.25E-03	0.01	1.39E-06	ND	-	1.74E-06	ND	-
PCB 159	4.95E-07	ND	-	4.20E-07	7.94E-05	0.005	ND	ND	-	4.58E-07	7.94E-05	0.01	ND	ND	-	ND	ND	-
PCB 161	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 162	3.74E-07	ND	-	ND	1.28E-04	-	ND	ND	-	3.74E-07	1.28E-04	0.00	ND	ND	-	ND	ND	-
PCB 164	1.26E-05	1.21E-05	1.0	9.15E-06	2.12E-03	0.004	1.72E-06	ND	-	7.82E-06	1.07E-03	0.01	7.37E-07	ND	-	1.35E-06	ND	-
PCB 165	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 167	5.07E-06	3.05E-06	1.7	2.74E-06	1.20E-03	0.002	ND	ND	-	3.91E-06	6.01E-04	0.01	2.61E-07	ND	-	3.81E-07	ND	-
PCB 169	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 170	6.34E-06	5.30E-06	1.2	4.06E-06	2.39E-03	0.002	7.87E-07	ND	-	3.73E-06	1.20E-03	0.003	7.31E-07	ND	-	1.38E-06	ND	-
PCB 171 & 173	4.52E-06	4.03E-06	1.1	2.72E-06	8.11E-04	0.003	8.12E-07	ND	-	2.68E-06	4.07E-04	0.01	4.16E-07	ND	-	5.71E-07	ND	-
PCB 172	1.09E-06	1.73E-06	0.6	8.16E-07	3.56E-04	0.002	ND	ND	-	9.51E-07	1.79E-04	0.01	ND	ND	-	ND	ND	-
PCB 174	1.36E-05	2.90E-05	0.5	9.36E-06	1.99E-03	0.005	3.29E-06	ND	-	8.75E-06	1.01E-03	0.01	2.07E-06	ND	-	2.68E-06	ND	-
PCB 175	6.87E-07	9.50E-07	0.7	4.95E-07	1.11E-04	0.004	ND	ND	-	5.91E-07	5.58E-05	0.01	ND	ND	-	ND	ND	-
PCB 176	4.05E-06	7.90E-06	0.5	3.21E-06	3.22E-04	0.01	8.16E-07	ND	-	2.59E-06	1.65E-04	0.02	3.43E-07	ND	-	6.63E-07	ND	-
PCB 177	7.33E-06	9.39E-06	0.8	4.66E-06	1.04E-03	0.004	1.24E-06	ND	-	4.41E-06	5.24E-04	0.01	7.72E-07	ND	-	1.51E-06	ND	-
PCB 178	3.59E-06	7.87E-06	0.5	2.70E-06	3.65E-04	0.007	ND	ND	-	3.15E-06	1.86E-04	0.02	3.75E-07	ND	-	7.12E-07	ND	-
PCB 179	1.41E-05	3.99E-05	0.4	1.13E-05	8.19E-04	0.01	3.68E-06	ND	-	9.70E-06	4.29E-04	0.02	1.67E-06	ND	-	2.94E-06	ND	-
PCB 180 & 193	1.53E-05	2.78E-05	0.6	1.02E-05	3.67E-03	0.003	4.15E-06	ND	-	9.88E-06	1.85E-03	0.01	2.13E-06	ND	-	4.53E-06	5.03E-07	9.0
PCB 181	ND	ND	-	ND	6.29E-05	-	ND	ND	-	ND	6.29E-05	-	ND	ND	-	ND	ND	-
PCB 182	ND	ND	-	ND	2.69E-05	-	ND	ND	-	ND	2.69E-05	-	ND	ND	-	ND	ND	-
PCB 183 & 185	1.19E-05	2.61E-05	0.5	8.67E-06	1.56E-03	0.005	2.73E-06	ND	-	7.84E-06	7.96E-04	0.01	1.33E-06	ND	-	2.38E-06	ND	-
PCB 184	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-

Congeners	Building 50/Utility Tunnel			Building 50						Building 50 - Average ³			Corridor			Building 52		
	UT-1P ¹ µg/m ³	UT-1MP µg/m ³	α^2	IA-2P µg/m ³	SS-2P µg/m ³	α^2	IA-3P µg/m ³	SS-3P µg/m ³	α^2	IA µg/m ³	SS µg/m ³	α^2	IA-5P µg/m ³	SS-5P µg/m ³	α^2	IA-7P µg/m ³	SS-7P µg/m ³	α^2
PCB 186	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 187	1.92E-05	5.77E-05	0.3	1.38E-05	1.88E-03	0.007	6.40E-06	6.13E-06	1.0	1.31E-05	6.46E-04	0.02	2.70E-06	ND	-	4.41E-06	ND	-
PCB 188	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 189	ND	ND	-	ND	1.07E-04	-	ND	ND	-	ND	1.07E-04	-	ND	ND	-	ND	ND	-
PCB 190	1.19E-06	ND	-	7.10E-07	4.24E-04	0.002	ND	ND	-	9.51E-07	4.24E-04	0.002	ND	ND	-	ND	ND	-
PCB 191	3.22E-07	ND	-	ND	1.12E-04	-	ND	ND	-	3.22E-07	1.12E-04	0.003	ND	ND	-	ND	ND	-
PCB 192	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 194	9.50E-07	ND	-	4.87E-07	4.01E-04	0.001	ND	ND	-	7.19E-07	4.01E-04	0.002	ND	ND	-	ND	ND	-
PCB 195	3.99E-07	ND	-	ND	1.77E-04	-	ND	ND	-	3.99E-07	1.77E-04	0.002	ND	ND	-	ND	ND	-
PCB 196	1.01E-06	2.51E-06	0.4	ND	2.47E-04	-	ND	ND	-	1.01E-06	1.25E-04	0.01	ND	ND	-	ND	ND	-
PCB 197	ND	ND	-	ND	1.26E-05	-	ND	ND	-	ND	1.26E-05	-	ND	ND	-	ND	ND	-
PCB 198 & 201/199(IUPAC)	3.06E-06	9.68E-06	0.3	1.20E-06	4.63E-04	0.003	1.22E-06	ND	-	1.83E-06	2.36E-04	0.01	ND	ND	-	7.61E-07	ND	-
PCB 199/200 (IUPAC)	6.56E-07	1.36E-06	0.5	3.67E-07	6.53E-05	0.006	ND	ND	-	5.12E-07	3.33E-05	0.02	ND	ND	-	ND	ND	-
PCB 200/201 (IUPAC)	8.01E-07	3.72E-06	0.2	4.31E-07	5.88E-05	0.007	ND	ND	-	6.16E-07	3.135E-05	0.02	ND	ND	-	ND	ND	-
PCB 202	1.57E-06	1.19E-05	0.1	1.02E-06	7.86E-05	0.013	ND	ND	-	1.30E-06	4.53E-05	0.03	ND	ND	-	ND	ND	-
PCB 203	1.82E-06	4.96E-06	0.4	7.06E-07	3.18E-04	0.002	7.83E-07	ND	-	1.10E-06	1.62E-04	0.01	ND	ND	-	5.14E-07	ND	-
PCB 204	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-	ND	ND	-
PCB 205	ND	ND	-	ND	2.30E-05	-	ND	ND	-	ND	2.30E-05	-	ND	ND	-	ND	ND	-
PCB 206	5.17E-07	5.36E-06	0.1	2.06E-07	9.17E-05	0.002	ND	ND	-	3.61E-07	4.85E-05	0.01	ND	ND	-	ND	ND	-
PCB 207	1.87E-07	1.79E-06	0.1	ND	1.11E-05	-	ND	ND	-	1.87E-07	6.46E-06	0.03	ND	ND	-	ND	ND	-
PCB 208	3.74E-07	1.25E-05	0.0	ND	2.21E-05	-	ND	ND	-	3.74E-07	1.73E-05	0.02	ND	ND	-	ND	ND	-
PCB 209	3.37E-07	1.48E-05	0.0	ND	9.51E-06	-	ND	ND	-	3.37E-07	1.22E-05	0.03	ND	ND	-	ND	ND	-
	# $\alpha < 1$	46		# $\alpha < 1$	116		# $\alpha < 1$	19		# $\alpha < 1$	122		# $\alpha < 1$	4		# $\alpha < 1$	5	
	# $\alpha < 0.1$	5		# $\alpha < 0.1$	92		# $\alpha < 0.1$	2		# $\alpha < 0.1$	97		# $\alpha < 0.1$	3		# $\alpha < 0.1$	2	
	# $\alpha > 1$	66		# $\alpha > 1$	3		# $\alpha > 1$	25		# $\alpha > 1$	8		# $\alpha > 1$	29		# $\alpha > 1$	37	

Dioxin-like PCBs

ND: Not detected (see raw analytical data for detection limit).

¹ UT-1P was collected adjacent to the utility tunnel access point located in Building 50 (see Attachment 1). This sample is an indoor air sample.² Subslab-to-indoor-air attenuation factor = Indoor Air Concentration/Subslab Air Concentration.³ Building 50 Average includes the Indoor Air Sample UT-1P and Utility Tunnel Air Sample UT-1MP. The utility tunnel air sample is treated as a subslab air sample for the purposes of deriving an attenuation factor. Although the utility air sample is not a subslab air sample, the utility tunnel air could impact indoor air in much the same way subslab air does, except that the attenuation may differ.

ATTACHMENT 7 - Outdoor Air Results

Congeners	Outdoor Air	
	OA-1P	OA-2P
	µg/m ³	µg/m ³
PCB 1	2.24E-06	2.16E-06
PCB 2	1.04E-06	1.10E-06
PCB 3	1.41E-06	1.37E-06
PCB 4	6.52E-06	5.96E-06
PCB 5	3.11E-07	2.56E-07
PCB 6	3.29E-06	2.45E-06
PCB 7	1.15E-06	6.40E-07
PCB 8	1.33E-05	1.00E-05
PCB 9	1.15E-06	8.35E-07
PCB 10	4.26E-07	3.33E-07
PCB 11	7.03E-06	1.01E-05
PCB 12 & 13	9.94E-07	7.03E-07
PCB 14	ND	ND
PCB 15	2.99E-06	2.17E-06
PCB 16	4.76E-06	3.58E-06
PCB 17	5.53E-06	4.02E-06
PCB 18 & 30	1.21E-05	8.76E-06
PCB 19	1.58E-06	1.33E-06
PCB 20 & 28	1.27E-05	7.16E-06
PCB 21 & 33	7.73E-06	4.39E-06
PCB 22	4.31E-06	2.35E-06
PCB 23	2.90E-08	ND
PCB 24	1.57E-07	1.66E-07
PCB 25	1.09E-06	5.62E-07
PCB 26 & 29	2.33E-06	1.28E-06
PCB 27	7.51E-07	5.74E-07
PCB 31	1.20E-05	6.53E-06
PCB 32	3.15E-06	2.30E-06
PCB 34	6.20E-08	ND
PCB 35	4.51E-07	1.68E-07
PCB 36	ND	ND
PCB 37	2.50E-06	8.57E-07
PCB 38	6.61E-08	ND
PCB 39	9.01E-08	1.90E-08
PCB 40, 41, 71	4.54E-06	1.96E-06
PCB 42	2.04E-06	8.63E-07
PCB 43 & 73	3.00E-07	2.00E-07
PCB 44, 47, & 65	1.31E-05	5.40E-06
PCB 45 & 51	2.82E-06	1.02E-06
PCB 46	5.40E-07	3.02E-07
PCB 48	1.94E-06	8.92E-07
PCB 49 & 69	6.55E-06	2.83E-06
PCB 50 & 53	1.44E-06	7.69E-07
PCB 52	2.30E-05	9.92E-06
PCB 54	ND	ND
PCB 55	1.94E-07	1.30E-07
PCB 56	2.50E-06	9.51E-07
PCB 57	3.71E-08	ND
PCB 58	ND	ND
PCB 59, 62 & 75	6.49E-07	3.13E-07

Congeners	Outdoor Air	
	OA-1P	OA-2P
	µg/m ³	µg/m ³
PCB 60	1.48E-06	4.99E-07
PCB 61, 70, 74 & 76	1.67E-05	7.41E-06
PCB 63	2.74E-07	9.57E-08
PCB 64	3.64E-06	1.74E-06
PCB 66	5.59E-06	2.15E-06
PCB 67	2.41E-07	4.61E-08
PCB 68	2.56E-07	1.16E-07
PCB 72	3.52E-08	ND
PCB 77	3.00E-07	1.03E-07
PCB 78	ND	ND
PCB 79	6.68E-08	5.56E-08
PCB 80	ND	ND
PCB 81	ND	ND
PCB 82	1.11E-06	8.44E-07
PCB 83 & 99	7.83E-06	4.58E-06
PCB 84	4.73E-06	2.96E-06
PCB 85, 116 & 117	1.89E-06	1.23E-06
PCB 86, 87, 97, 109, 119 & 125	9.27E-06	5.74E-06
PCB 88 & 91	2.38E-06	1.40E-06
PCB 89	1.41E-07	ND
PCB 90, 101 & 113	1.56E-05	9.67E-06
PCB 92	2.64E-06	1.67E-06
PCB 93 & 100	6.49E-08	1.05E-07
PCB 94	ND	ND
PCB 95	1.63E-05	9.57E-06
PCB 96	1.30E-07	ND
PCB 98 & 102	5.14E-07	2.82E-07
PCB 103	8.69E-08	ND
PCB 104	ND	ND
PCB 105	1.68E-06	1.10E-06
PCB 106	ND	ND
PCB 107/109 (IUPAC)	4.06E-07	2.10E-07
PCB 108/107 (IUPAC) & 124	2.52E-07	1.41E-07
PCB 110 & 115	1.16E-05	8.16E-06
PCB 111	ND	ND
PCB 112	ND	ND
PCB 114	1.33E-07	9.67E-08
PCB 118	5.72E-06	3.92E-06
PCB 120	ND	ND
PCB 121	ND	ND
PCB 122	7.51E-08	ND
PCB 123	9.33E-08	5.37E-08
PCB 126	ND	ND
PCB 127	ND	ND
PCB 128 & 166	3.45E-07	2.04E-07
PCB 129, 138, 160 & 163	2.68E-06	1.94E-06
PCB 130	1.55E-07	1.22E-07
PCB 131	6.87E-08	8.70E-08
PCB 132	1.52E-06	1.24E-06
PCB 133	4.09E-08	ND
PCB 134 & 143	2.81E-07	2.41E-07
PCB 135 & 151	1.90E-06	1.46E-06

Congeners	Outdoor Air	
	OA-1P	OA-2P
	µg/m³	µg/m³
PCB 136	1.21E-06	9.57E-07
PCB 137	1.67E-07	1.35E-07
PCB 139 & 140	9.97E-08	9.04E-08
PCB 141	6.23E-07	4.21E-07
PCB 142	ND	ND
PCB 144	3.26E-07	2.29E-07
PCB 145	ND	ND
PCB 146	4.31E-07	3.23E-07
PCB 147 & 149	3.87E-06	3.14E-06
PCB 148	ND	ND
PCB 150	ND	ND
PCB 152	ND	ND
PCB 153 & 168	2.40E-06	1.80E-06
PCB 154	5.56E-08	2.75E-08
PCB 155	ND	ND
PCB 156 & 157	1.78E-07	9.76E-08
PCB 158	3.05E-07	2.32E-07
PCB 159	ND	ND
PCB 161	ND	ND
PCB 162	ND	ND
PCB 164	1.65E-07	1.28E-07
PCB 165	ND	ND
PCB 167	5.46E-08	3.55E-08
PCB 169	ND	ND
PCB 170	1.83E-07	6.97E-08
PCB 171 & 173	6.97E-08	4.02E-08
PCB 172	ND	ND
PCB 174	3.03E-07	1.45E-07
PCB 175	ND	ND
PCB 176	6.17E-08	4.30E-08
PCB 177	1.32E-07	7.50E-08
PCB 178	5.62E-08	ND
PCB 179	2.05E-07	1.70E-07
PCB 180 & 193	4.79E-07	2.51E-07
PCB 181	ND	ND
PCB 182	ND	ND
PCB 183 & 186	2.42E-07	1.53E-07
PCB 184	ND	ND
PCB 186	ND	ND
PCB 187	3.87E-07	2.58E-07
PCB 188	ND	ND
PCB 189	ND	ND
PCB 190	ND	ND
PCB 191	ND	ND
PCB 192	ND	ND
PCB 194	6.17E-08	ND
PCB 195	ND	ND
PCB 196	3.80E-08	ND
PCB 197	ND	ND
PCB 198 & 201/199 (IUPAC)	1.09E-07	6.31E-08
PCB 199/200 (IUPAC)	1.89E-08	ND
PCB 200/201 (IUPAC)	ND	ND

Congeners	Outdoor Air	
	OA-1P	OA-2P
	µg/m ³	µg/m ³
PCB 202	2.80E-08	ND
PCB 203	6.14E-08	3.02E-08
PCB 204	ND	ND
PCB 205	ND	ND
PCB 206	4.57E-08	2.14E-08
PCB 207	ND	ND
PCB 208	ND	ND
PCB 209	ND	ND
Total PCBs	3.03E-04	1.86E-04

Dioxin-like PCBs