

“How To” Review, Blank Correct and Calculate Total PCB (Supplemental document to TMDL GM14-2004)

Note - Basic knowledge of Microsoft Excel is necessary to perform these tasks.

Automated Excel Spreadsheet Used to Calculate Total PCB (tPCB)

An Excel “tPCB Auto-Calculation” spreadsheet has been developed to automatically compute “uncensored” and “censored” (i.e., blank corrected) tPCB concentrations. The spreadsheet is comprised of a worksheet that includes directions as well as four interactive worksheets: 1) “Directions” provides an overview of the spreadsheet, 2) “Samples & Results” is the worksheet where effluent (i.e., field sample) data are uploaded yielding a summary of computed “uncensored” and “censored” tPCB results, 3) “QC_MB” is the worksheet where method blank data are uploaded, 4) the worksheet “QC_FB_RB” receives field and/or rinsate blanks, and 5) “Blank Correction” is where an automatic comparative analysis for the blank correction process occurs with the calculated results transferred to the “Samples & Results” worksheet. Information is taken directly from the “Analytical Results” EDD .csv spreadsheet (provided by the laboratory) by copying and pasting the appropriate data into the “Samples & Results”, “QC_MB”, and “QC_FB_RB” worksheets. The formatting of the EDD .csv file is defined in Appendix E of **TMDL GM No. 09-2001, Amendment No. 1** and the PCB data should be delivered by the laboratory in this format. An example of the “tPCB Calculation” spreadsheet is found in Figure a. below with instructions for populating the spreadsheet. **Note: When dual computer screens are available, do not open Excel software twice and show on both screens as the copy and paste functions become disabled.**

Figure a. Unpopulated “tPCB Auto-Calculation” spreadsheet.

Sample Identification

Sample_ID	Lab_Sample_ID	Lab_Name	Sample_Matrix	Percent_Mositure	Percent_Lipid	QC_Code	Sample_Date	Sample_Time	Analysis_Performed	Extraction_Date	Analysis_Time	Sample_Size	Size_Units
Eff 1													

tPCB results summarized here

Summary	tPCB unadj (pg/L)	tPCB adj (pg/L)	OPR (ok)	Extraction, Cleanup & Injection stds (ok)
Eff 1	0	0		
Eff 2	0	0		
Eff 3	0	0		
Eff 4	0	0		
Eff 5	0	0		
Method Blank	0			
*Field or Rinsate Blank	0			

*Only applicable if Field or Rinsate Blank collected

Sample results placed in this area

Compound	IUPAC_PCB #	Conc_Found	Dilution Factor	UNITS	Data_Qualifier	EDL	Minimum_Level
2-MoCB	1						
3-MoCB	2						
4-MoCB	3						
2,2'-DiCB	4						
2,3'-DiCB	5						
2,3'-DiCB	6						
2,4'-DiCB	7						
2,4'-DiCB	8						
2,5'-DiCB	9						
2,6'-DiCB	10						
3,3'-DiCB	11						

Steps required to populate the PCB spreadsheet:

- 1) Open an unpopulated “tPCB Auto-Calculation” spreadsheet. A functional copy of the spreadsheet is available at: (<http://www.deq.state.va.us/Programs/Water/WaterQualityInformationTMDLs/TMDL/PCBTMDLs.aspx>). Next open the “Analytical Results” EDD .csv file of interest and locate column G (labeled as QC_Code, see Figure b.). This field (“QC-Code”) identifies the different type of samples included in the EDD .csv file (i.e., “MB” = Method Blank, “OPR” = On-going Precision and Recovery, “SA” = Sample).
 - a. Three of the worksheets included in The “tPCB Auto-Calculation ” spreadsheet are set-up to receive imported data. These are identified as “Samples & Results”, “QC_MB”, and “QC_FB_RB”. Up to 5 effluent sample results associated with the “SA” identifier in column G of the EDD can be copied into the “Samples & Results” worksheet (scroll right to include additional samples). Field blanks and rinsate blanks, also identified in column G with an “SA”, are imported to the “QC_FB_RB” worksheet. These can be separated from the effluent samples by referring to column A (Sample ID) of the EDD .csv spreadsheet. Lastly, results associated with the “MB” identifier in column G will be copied into “QC_MB” worksheet. Specific directions follow.
- 2) From the “Analytical Results” EDD .csv file, find and select records from a single row in columns A through O from the first targeted sample (QC_code = “SA”). Highlight and copy (see Figure b).

Figure b. “Analytical Results” EDD.csv file

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Sample ID	Lab	Samp Lab	Sample Name	Percent	Percent	QC Code	Sample Date	Sample Time	Analysis	Extraction	Analysis	Analysis	Sample Size	Units
2	VA000000	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
3	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
4	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
5	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
6	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
7	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
8	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
9	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
10	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
11	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
12	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
13	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
14	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
15	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
16	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
17	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
18	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
19	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
20	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
21	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
22	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
23	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
24	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
25	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	
26	VA006663	31100450C	SGS Wilmi Water (wh)	100	NA	SA	3/11/2011	8:56	1668B	3/31/2011	4/5/2011	22:32	2399	mL	

- 3) Records A-O are pasted into cell B2 of the “Sample & Results” spreadsheet (or “QC_MB” or “QC_FB_RB”) using the Paste Special - transpose function. The information fits into cell array B2:B16 (Figure c).

Figure c. “tPCB Auto-Calculation” spreadsheet

FileHomeInsertPage LayoutFormulasDataReviewView

PasteClipboard

Font

Alignment

Number

Conditional Formatting

Format as Table

Cell Styles

InsertDeleteFormatCells

Sort & Find & Filter & SelectEditing

B1210/29/2011

A	B	C	D	E	F	G	H	I
1	Effluent sample #1				** Censored **			
2	Sample_ID	/A0000000-001-DW-100202011			Compared to largest			
3	Lab_Sample_ID	A3761_9282_PCB_008			Unensored			
4	Lab_Name	Lab X			tPCB			
5	Sample_Matrix	Water (whole)			unadj (pg/L)	tPCB		
6	Percent_Mositure				adj (pg/L)	OPR (ok)	Extraction, Cleanup	
7	Percent_Lipid						& Injection stds (ok)	
8	QC_Code	SA						
9	Sample_Date	10/9/2011						
10	Sample_Time							
11	Analysis_Performed	1668C						
12	Extraction_Date	10/29/2011						
13	Analysis_Date	11/3/2011						
14	Analysis_Time	0:34						
15	Sample_Size	2.3						
16	Size_Units	L						
17								
18								
19	Compound	IUPAC_PCB_#	Conc_Found	Dilution Factor	UNITS	Data_Qualifier	EDL	Minimum_Level
20	2-MoCB	1						
21	3-MoCB	2						
22	4-MoCB	3						
23	2,2'-DiCB	4						
24	2,3-DiCB	5						
25	2,3'-DiCB	6						
26	2,4-DiCB	7						
27	2,4'-DiCB	8						
28	2,5-DiCB	9						
29	2,6-DiCB	10						
30	3,3'-DiCB	11						

Step 3

licable if Field or Rinsate Blank collected

Directions

Samples & Results

QC_MB

QC_FB_RB

Blank Correction

Select destination and press ENTER or choose Paste

100%

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- 4) The next step is to copy the PCB congener data set from the targeted sample in the Analytical Results EDD .csv to the “tPCB Auto-Calculation ” spreadsheet.
 - a. Referring to the example presented in Figure d below, use PCB congener numbers 1-209 in column Y from the “Analytical Results” EDD .csv file as a guide in determining what should be copied from columns AA through AF. Congeners 1-209 are provided for each sample result.
 - i. **IMPORTANT:** For the “tPCB Auto-Calculation ” spreadsheet to work properly, all PCB congeners found in column Y must be in numeric rank order (1-209). If one or more PCBs are out of rank order, highlight all rows (i.e., PCB records 1-209) for that sample beginning at column A and extending to the far right to include all fields for that sample. Next, using column Y as a guide, go to the DATA Tab and click on the “Sort” function. Sort in ascending order 1-209.
 - ii. Occasionally, a single congener from a sample may be errantly located within the labeled PCB surrogates from the same sample. In this situation, insert a blank row in the numerically ordered spot, then cut and paste the out-of-order record in the newly created row.
 - b. Records from columns AA through AF, including 209 rows to capture all PCB congeners from a

specific sample, are highlighted in the “Analytical Results” EDD.csv and copied to the predetermined worksheet file (see Figure d).

- c. Columns AA - AF in the “Analytical Results” EDD .csv file are labeled as follows:

“Analytical Results” EDD .csv file Column Heading	Field Name
AA	<i>Conc_Found</i>
AB	<i>Dilution Factor</i>
AC	<i>UNITS</i>
AD	<i>Data_Qualifier</i>
AE	<i>EDL</i>
AF	<i>Minimum_Level</i>

Figure d. “Analytical Results” EDD .csv file

Group 1 validated.csv - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Calibri 11 A A

Paste B I U Column Y Alignment Number

General Conditional Formatting as Table Styles Cell Styles Delete Format Sort & Find & Filter Select

AA2 0.83

X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
1	Compound	PAC_PCB CAS_#	Conc_Found	Dilution Factor	UNITS	Data_Qualifier	EDL	Minimum_Level	Conc_I	Conc	Ion_Abundi	Ion_Abun	Ion_Abur	RR
2	PCB-1 2-MoCB	1 2051-60-7	0.83	1	PG/L	J EMPC	0.608	4			2.51	2.66	3.6	1.0011
3	PCB-2 3-MoCB	2 2051-61-8		1	PG/L	U	0.826	4				2.66	3.6	
4	PCB-3 4-MoCB	3 2051-62-9	9.84	1	PG/L	B	0.691	4.35			2.99	2.66	3.6	1.001
5	PCB-4 22'-DiCB	4 13029-08-8	5.43	1	PG/L		2.58	4.35			0	1.33	1.79	1.0011
6	PCB-5 23'-DiCB	5 15605-91-7		1	PG/L	U	3.07	4.35				1.33	1.79	
7	PCB-6 23'-DiCB	6 25569-80-6		1	PG/L	U	3.06	4.35				1.33	1.79	
8	PCB-7 24'-DiCB	7 33284-50-3	324	1	PG/L		2.9	4.35			1.46	1.33	1.79	1.0115
9	PCB-8 24'-DiCB	8 34883-43-7	2.25	1	PG/L	J	0.979	4.35						
10	PCB-9 25'-DiCB	9 34883-39-1		1	PG/L	U	3.26	4.35						
11	PCB-10 26'-DiCB	10 33146-45-1		1	PG/L	U	3.66	4.35						
12	PCB-11 33'-DiCB	11 2050-67-1	6.43	1	PG/L	B	1.04	4.35						
13	PCB-12 34'-DiCB	12 2574-92-7		1	PG/L	U C	3.27	4.35						
14	PCB-13 34'-DiCB	13 2574-90-5		1	PG/L	C12								
15	PCB-14 35'-DiCB	14 34883-41-5		1	PG/L	U	2.66	4.35						
16	PCB-15 44'-DiCB	15 2050-68-2	2.99	1	PG/L	J	0.893	4.35						
17	PCB-16 22'-Tr	16 34444-78-9		1	PG/L	U	1.22	4.35						
18	PCB-17 22'-Tr	17 37680-66-3	8.14	1	PG/L		0.939	4.35			1.03	0.88	1.2	1.1323
19	PCB-18 22'-Tr	18 37680-65-2	2.99	1	PG/L	J C	0.808	4.35			1.15	0.88	1.2	1.1083
20	PCB-19 22'-Tr	19 34444-73-4	4.74	1	PG/L		1.14	4.35			0.95	0.88	1.2	1.0012
21	PCB-20 233'-Tr	20 38444-84-7	13.4	1	PG/L	C	0.678	4.35			1.08	0.88	1.2	0.8583
22	PCB-21 234'-Tr	21 55702-46-0	2.44	1	PG/L	J C	0.659	4.35			0.95	0.88	1.2	0.865
23	PCB-22 234'-Tr	22 38444-85-8	1.81	1	PG/L	J	0.74	4.35			0.99	0.88	1.2	0.8807
24	PCB-23 235'-Tr	23 55720-44-0		1	PG/L	U	0.66	4.35				0.88	1.2	
25	PCB-24 236'-Tr	24 55702-45-9		1	PG/L	U	0.746	4.35				0.88	1.2	

Ready Average: 6.791298851 Count: 132 Sum: 590.843 100% 8:25 AM

Step 4 – Highlight and Copy results from PCB 1 – 209 (Use column Y as guide)

- d. The 209 records are pasted into the applicable worksheet of the “tPCB Auto-Calculation” spreadsheet beginning at cell C20 (see Figure e.). For additional samples, move within the spreadsheet to the right and find cells M20, W20, etc. for data placement.

Figure e. “tPCB Auto-Calculation” spreadsheet.

Figure 6: tPCB Rate Calculation Spreadsheet

tPCB CALC test worksheet for doc.xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

Cell I1

	A	B	C	D	E	F	G	H	I
1		Effluent sample #1				** Censored **			
2	Sample_ID	/A0000000-001-DW-100202011				Compared to largest			
3	Lab_Sample_ID	A3761_9282_PCB_008			Uncensored	blank (X5) & corrected			
4	Lab_Name	Lab X							
5	Sample_Matrix	Water (whole)			tPCB	tPCB	OPR (ok)	Extraction, Cleanup	
6	Percent_Moisture		VA0000000-001-DW-100202011		unadj (pg/L)	adj (pg/L)		& Injection stds (ok)	
7	Percent_Lipid		1528.141		1294.741		ok	ok	
8	QC_Code	SA	Eff 2	0	0				
9	Sample_Date	10/9/2011	Eff 3	0	0				
10	Sample_Time		Eff 4	0	0				
11	Analysis_Performed	1668C	Eff 5	0	0				
12	Extraction_Date	10/29/2011							
13	Analysis_Date	11/3/2011	Method Blank	4.899				ok	
14	Analysis_Time	0:34	VA0000000-001-RB-10202011	163.417				ok	
15	Sample_Size								
16	Size_Units								
17			*Only applicable if Field or Rinsate Blank collected						
18									
19	Compound	IUPAC_PCB_#	Conc_Found	Dilution Factor	UNITS	Data_Qualifier	EDL	Minimum_Level	
20	2-MoCB	1	6.91		1 PG/L		0.637	4.35	
21	3-MoCB	2	5.96		1 PG/L	B	0.706	4.35	
22	4-MoCB	3	9.84		1 PG/L	B	0.691	4.35	
23	2,2'-DiCB	4	5.43		1 PG/L		2.58	4.35	
24	2,3-DiCB	5			1 PG/L	U	3.07	4.35	
25	2,3'-DiCB	6			1 PG/L	U	3.06	4.35	
26	2,4-DiCB	7	324		1 PG/L		2.9	4.35	
27	2,4'-DiCB	8	2.25		1 PG/L	J	0.979	4.35	
28	2,5-DiCB	9			1 PG/L	U	3.26	4.35	
29	2,6-DiCB	10			1 PG/L	U	3.66	4.35	
30	3,3'-DiCB	11	6.43		1 PG/L	B	1.04	4.35	

Cell I C20

Step 4.d. Paste PCB Congener results here

QC check approvals

Ready

Richards, Mark (DEQ)... Guidance Docs Microsoft Excel - tPCB... V 5.1 Working Draft P... Desktop 1:20 PM

Note: For simplicity, only the first 11 PCB congeners are presented (altogether there are 209).

- 5) The next step is to perform a QC review of the PCB C¹³ labeled congener results including surrogates, extraction, cleanup, and injection standards (this step does not involve copying QC data to the spreadsheet).
 - a. Following the example provided in Figure f., locate the PCB C¹³ labeled congeners in the “Analytical Results” EDD .csv file immediately below the final PCB congener result from the sample of interest (i.e., use column Y as a guide and look immediately below PCB 209). Note that PCB C¹³ labeled congeners are identified with a “L” (e.g., 104L).
 - i. In addition to the “Analytical Results” EDD .csv file, it is necessary to locate these results in the “hardcopy” .pdf document also provided as a laboratory deliverable. This serves as a cursory check of the overall results as well as providing information on the PCB C¹³ labeled congeners.
 - b. Percent recovery results found in column AA are reviewed to ensure the data are within the lab specific range in columns AG and AH. Column AC includes units which are identified as “%”.
 - i. If percent recoveries cannot be found in the EDD .csv file, refer to the “hardcopy” .pdf file.
 - c. If the PCB C¹³ labeled congener recoveries are in the acceptable range (i.e., columns AG and AH), place “ok” in the specified slot for Surrogates, Clean-up and Extraction Stds found in the “Samples & Results” worksheet tPCB summary table (see Figure e). If the recoveries are out of range, refer to Section III.B.3.c. of the guidance.

- d. The OPR and OPR (duplicate) samples are reviewed (not copied) similarly to the labeled surrogates (i.e., percent recovery results in column AA are reviewed to ensure the results are within the lab specific range included in columns AG and AH). If the OPR sample recoveries are in the acceptable range, place “ok” in the “Samples & Results” worksheet tPCB summary table (see Figure e). If the data are out of range, refer to Section III.B.3.b. of the guidance. OPR data are not copied to the spreadsheet.

Figure f. Analytical Results EDD.csv file.

Step 5: C¹³ labeled PCB Congener % Recovery Results in Column AA compared to range in columns AG & AH

U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
209	HRP1025	60085	15509 2,2',3,3',4,	208 52663-77-1				1 pg/L	U	1.55	4.31	0	0	0
210	HRP1025	60085	15509 2,2',3,3',4,	209 2051-24-3	1.42			1 pg/L	J EMPC	0.913	4.31	0	0	1.53883
211	HRP1025	60085	15509 13C-2,3,4	104L	234432-89	38	1 %					36	115	2.575392
212	HRP1025	60085	15509 13C-2,3,4	105L	208263-64	74	1 %					50	111	1.60744
213	HRP1025	60085	15509 13C-2,3,3'	111L	235416-29	63	1 %					57	112	1.618333
214	HRP1025	60085	15509 13C-2,3,4	114L	104130-40	69	1 %					41	121	1.554698
215	HRP1025	60085	15509 13C-2,3,4	118L	208263-63	68	1 %					49	111	1.552027
216	HRP1025	60085	15509 13C-2,3,4	123L	208263-62	72	1 %					49	116	1.533645
217	HRP1025	60085	15509 13C-3,3,4	126L	208263-65	74	1 %					50	106	1.607365
218	HRP1025	60085	15509 13C-2,2,4	155L	234432-90	56	1 %					25	124	1.265392
219	HRP1025	60085	15509 13C-2,3,3'	156L	208263-69	70	1 %					40	120	1.304924
220	HRP1025	60085	15509 13C-2,3,3'	157L	208263-68-7		1 %					0	0	0
221	HRP1025	60085	15509 13C-4,4'-C	15L	208263-67	51	1 %					19	107	1.530427
222	HRP1025	60085	15509 13C-2,3,4	167L	235416-30	71	1 %					45	118	1.261364
223	HRP1025	60085	15509 13C-3,3,4	169L	208263-70	79	1 %					37	117	1.242796
224	HRP1025	60085	15509 13C-2,2,3	178L	232919-67	71	1 %					57	125	1.057624
225	HRP1025	60085	15509 13C-2,2,3	188L	234432-91	59	1 %					23	125	1.066304
226	HRP1025	60085	15509 13C-2,3,3'	189L	208263-73	63	1 %					47	116	1.017023
227	HRP1025	60085	15509 13C-2,2,6	19L	234432-87	48	1 %					1	108	1.039855
228	HRP1025	60085	15509 13C-2-Mo	1L	234432-85	40	1 %					4	100	2.9629
229	HRP1025	60085	15509 13C-2,2,3	202L	105600-26	64	1 %					31	134	0.898576
230	HRP1025	60085	15509 13C-2,3,3'	205L	234446-64	62	1 %					46	115	0.918666
231	HRP1025	60085	15509 13C-2,2,3	206L	234432-92	69	1 %					38	122	0.785074
232	HRP1025	60085	15509 13C-2,2,3	208L	208263-75	64	1 %					31	126	0.770048
233	HRP1025	60085	15509 13C-2,2,3	209L	105600-27	63	1 %					43	115	1.167006
234	HRP1025	60085	15509 13C-2,4,4'	28L	208263-76	53	1 %					14	131	1.036192

- 6) Steps 1-5 are followed for all “SA” and “MB” samples types.
 - a. “MB” data are copied and pasted to the “QC_MB” worksheet (see figure g. below).
 - b. Similarly, data originating from a field blank or rinsate blank, also notated with an “SA” but differentiated by looking in column A of the Analytical Results EDD.csv file, are copied and pasted into the “QC_FB_RB” worksheet (see figure h. below).

Figure g. "QC_MB" worksheet.

Sample_ID	Lab_Sample_ID	Lab_Name	Sample_Matrix	Percent_Mositure	Percent_Lipid	QC_Code	Sample_Date	Sample_Time	Analysis_Performed	Extraction_Date	Analysis_Date	Analysis_Time	Sample_Size	Size_Units
1	MB1_9282_PCB_TLX	Lab X	Water (whole)			MB			1668C	10/29/2011	11/2/2011	19:59	2.1	L
17	Compound	IUPAC_PCB_#	Conc_Found	Dilution	Fa	UNITS	Data_Qual	EDL	Minimum_Level					Method Blank Adj conc (5X)
19	2-MoCB	1				1 PG/L	U	0.473	4.76					0
20	3-MoCB	2	0.877			1 PG/L	J	0.48	4.76					4.385
21	4-MoCB	3	0.91			1 PG/L	J	0.47	4.76					4.55
22	2,2'-DiCB	4				1 PG/L	U	5.49	4.76					0
23	2,3'-DiCB	5				1 PG/L	U	1.38	4.76					0
24	2,4'-DiCB	6				1 PG/L	U	1.38	4.76					0
25	2,5'-DiCB	7				1 PG/L	U	1.3	4.76					0
26	2,6'-DiCB	8				1 PG/L	U	1.36	4.76					0
27	2,3,4'-DiCB	9				1 PG/L	U	1.46	4.76					0
28	2,3,5'-DiCB	10				1 PG/L	U	3.26	4.76					0
29	2,3,6'-DiCB	11	1.96			1 PG/L	J	0.492	4.76					9.8

Figure h. "QC_FB_RB" worksheet.

Sample_ID	Lab_Sample_ID	Lab_Name	Sample_Matrix	Percent_Mositure	Percent_Lipid	QC_Code	Sample_Date	Sample_Time	Analysis_Performed	Extraction_Date	Analysis_Date	Analysis_Time	Sample_Size	Size_Units
1	VA0000000-001-RB-10202011	Lab X	Water (whole)			SA			1668C	10/29/2011	11/2/2011	20:54	2.5	L
17	Compound	IUPAC_PCB_#	Conc_Found	Dilution	Fa	UNITS	Data_Qual	EDL	Minimum_Level					Blank Adj conc (5X)
19	2-MoCB	1	0.83			1 PG/L	J	EMPC	0.608	4				4.15
20	3-MoCB	2				1 PG/L	U		0.826	4				0
21	4-MoCB	3				1 PG/L	U		0.809	4				0
22	2,2'-DiCB	4				1 PG/L	U		6.59	4				0
23	2,3'-DiCB	5				1 PG/L	U		2.65	4				0
24	2,4'-DiCB	6				1 PG/L	U		2.64	4				0
25	2,5'-DiCB	7	24.7			1 PG/L	U		2.5	4				123.5
26	2,6'-DiCB	8				1 PG/L	U		2.61	4				0
27	2,3,4'-DiCB	9				1 PG/L	U		2.81	4				0
28	2,3,5'-DiCB	10				1 PG/L	U		3.91	4				0
29	2,3,6'-DiCB	11	4.32			1 PG/L	B		0.915	4				21.6

