1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

Client Project Information

Project ID: 1466-004
Project Description: SEATTLE IRON & METALS
Contact: Amber Bailey

ALSE Project Information

Project ID: FAR100
Contact: Claire Kocharakkal
Submission ID(s): L2491640

Final Package Review by: _____

Date Reviewed: 15-Sep-20

ALS Life Sciences
1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 1: PROJECT NARRATIVE

ALSE Project Information

Project ID: FAR100
Contact: Claire Kocharakkal
Submission ID(s): L2491640

Client Project Information

Project ID: 1466-004
Project Description: SEATTLE IRON & METALS
Contact: Amber Bailey

Analytical Method: PCB Congeners by EPA 1668C

ALS Sample ID	Client Sample Descriptions	Matrix	Date Sampled	Date Received	Temp/degrees C. on receipt	Date Extracted	Date Analyzed
L2482298-1	L2472405-12-1	PUF	29-Jul-20	31-Jul-20	8.1	n/a	n/a
L2485375-1	L2472405-20-1	PUF	4-Aug-20	7-Aug-20	15.8	n/a	n/a
L2488764-1	L2472405-17-1	PUF	11-Aug-20	14-Aug-20	21.5	n/a	n/a
L2491634-1	L2472405-9-1	PUF	18-Aug-20	19-Aug-20	5.2	n/a	n/a
L2491640-1	**SITE 1 - COMPOSITE 2 (AUGUST)**	**PUF**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
L2482298-2	L2472405-11-2	PUF	29-Jul-20	31-Jul-20	8.1	n/a	n/a
L2485375-2	L2472405-13-2	PUF	4-Aug-20	7-Aug-20	15.8	n/a	n/a
L2488764-2	L2472405-10-2	PUF	11-Aug-20	14-Aug-20	21.5	n/a	n/a
L2491634-2	L2472405-15-2	PUF	18-Aug-20	19-Aug-20	5.2	n/a	n/a
L2491640-2	**SITE 2 - COMPOSITE 2 (AUGUST)**	**PUF**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
L2482298-3	L2472405-4-3	PUF	29-Jul-20	31-Jul-20	8.1	n/a	n/a
L2485375-3	L2472405-2-3	PUF	4-Aug-20	7-Aug-20	15.8	n/a	n/a
L2488764-3	L2472405-7-3	PUF	11-Aug-20	14-Aug-20	21.5	n/a	n/a
L2491634-3	L2472405-3-3	PUF	18-Aug-20	19-Aug-20	5.2	n/a	n/a
L2491640-3	**SITE 3 - COMPOSITE 2 (AUGUST)**	**PUF**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
L2482298-4	L2472405-19-4	PUF	29-Jul-20	31-Jul-20	8.1	n/a	n/a
L2485375-4	L2472405-5-4	PUF	4-Aug-20	7-Aug-20	15.8	n/a	n/a
L2488764-4	L2472405-16-4	PUF	11-Aug-20	14-Aug-20	21.5	n/a	n/a
L2491634-4	L2472405-14-4	PUF	18-Aug-20	19-Aug-20	5.2	n/a	n/a
L2491640-4	**SITE 4 - COMPOSITE 2 (AUGUST)**	**PUF**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
L2482298-5	L2472405-1-5	PUF	29-Jul-20	31-Jul-20	8.1	n/a	n/a
L2485375-5	L2472405-6-5	PUF	4-Aug-20	7-Aug-20	15.8	n/a	n/a
L2488764-5	L2472405-8-5	PUF	11-Aug-20	14-Aug-20	21.5	n/a	n/a
L2491634-5	L2472405-18-5	PUF	18-Aug-20	19-Aug-20	5.2	n/a	n/a
L2491640-5	**SITE 5 - COMPOSITE 2 (AUGUST)**	**PUF**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
WG3389564-1	**Method Blank**	**MEDIA**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
WG3389564-4	**Method Blank**	**REAGENT**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**
WG3389564-2	**Laboratory Control Sample**	**QC**	**n/a**	**n/a**	**n/a**	**26-Aug-20**	**09-Sep-20**

Comments and Notes:
a) Sample Integrity:

The samples were received on 4 different dates as noted above. The four samples for each site were extracted together for a total of 5 composites. Some of the samples were received at above the recommended transportation and storage temperature. However, the brief period at above the recommended temperature is not expected to have a negative impact on reported native target results.

b) Instrumental Analysis:

The responses for PCB-1 and PCB-3 have been omitted from the highest level of the initial calibration due to detector saturation. Four calibration levels have been used for these targets.

An incorrect amount of injection standard was used to quantify the extraction standard recoveries. This has been corrected in the report. However, the reported concentrations and recoveries of these labelled standards in the Instrument Output reports in the Appendix are half of the true value. Native target quantification is not affected.

The results for select high level targets have been reported from the analysis of diluted extracts.

No criteria failures or exceedances.

I certify that this data package is in compliance with the terms and condition of the contract , both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package (hardcopy and/or electronic version) has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Steve Kennedy, Technical Supervisor

15-Sep-20
Date

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 2: DATA SUMMARY REPORT

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6
Phone: 905-331-3111, FAX: 905-331-4567

Certificate of Analysis

ALS Project Contact:	Claire Kocharakkal	**Client Name:**	Farallon Consulting, L.L.C.
ALS Project ID:	FAR100	**Client Address:**	975 5th Avenue Northwest
ALS WO#:	L2491640		Issaquah,WA 98027
Date of Report	17-Sep-20		USA
Date of Sample Receipt	19-Aug-20	**Client Contact:**	Amber Bailey
		Client Project ID:	1466-004 SEATTLE IRON & METALS

COMMENTS: **PCB Congeners by EPA 1668C**

PCB Congener Group Totals and Total PCB are a sum of detected values, including EMPC values, consistent with USEPA CLP SOW CBC1.2

The results for select high level targets have been reported from the analysis of diluted extracts.

Certified by:

Steve Kennedy
Technical Supervisor

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	SITE 1 - COMPOSITE 2 (AUGUST)	SITE 2 - COMPOSITE 2 (AUGUST)	SITE 3 - COMPOSITE 2 (AUGUST)	SITE 4 - COMPOSITE 2 (AUGUST)	SITE 5 - COMPOSITE 2 (AUGUST)
ALS Sample ID	L2491640-1	L2491640-2	L2491640-3	L2491640-4	L2491640-5
Sample Size	1	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a	n/a
Sample Matrix	PUF	PUF	PUF	PUF	PUF
Sampling Date	n/a	n/a	n/a	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**	**pg**	**pg**	**pg**
PCB-001	10300	183000	78500	165000	411000
PCB-002	784	8680	3470	7740	17100
PCB-003	2970	35900	14800	33900	72100
PCB-004	56200	896000	438000	1150000	2090000
PCB-010	1930	23100	13300	35700	58300
PCB-009	4510	58000	29700	77300	147000
PCB-007	2770	33500	17200	43100	82300
PCB-006	12300	159000	78500	234000	446000
PCB-005	1360	13200	7690	16200	36400
PCB-008	55000	736000	400000	961000	1850000
PCB-014	<14	42.9	<22	<49	<77
PCB-011	6770	7990	6640	12000	17800
PCB-012/013	2220	22400	11200	31900	52500
PCB-015	12200	125000	60800	187000	312000
PCB-019	10600	133000	66000	201000	290000
PCB-018/030	55300	587000	319000	1020000	1560000
PCB-017	24300	255000	156000	440000	679000
PCB-027	3350	34600	19800	62000	81500
PCB-024	895	9410	4940	17700	21200
PCB-016	23700	239000	142000	400000	603000
PCB-032	12600	133000	74700	218000	338000
PCB-034	150	1670	843	2810	4250
PCB-023	67.2	766	399	1190	2050
PCB-026/029	7380	75500	39000	125000	191000
PCB-025	3100	30900	16000	50400	77800
PCB-031	34800	360000	180000	536000	868000
PCB-020/028	37200	378000	190000	584000	931000
PCB-021/033	23700	236000	118000	352000	571000
PCB-022	13600	126000	64600	197000	304000
PCB-036	<17	<26	<29	<51	<24
PCB-039	87.6	747	370	1210	1910
PCB-038	<17	112	60.7	157	255
PCB-035	457	3000	1640	5230	7480
PCB-037	4950	36600	20900	63700	84200
PCB-054	<110	1420	705	2140	3530
PCB-050/053	4210	42800	21100	72900	110000
PCB-045/051	6000	59500	29600	99500	151000
PCB-046	1890	18500	9170	29500	44800
PCB-052	21500	184000	89100	327000	475000
PCB-073	<2.2	<4.2	<4.9	<13	<5.3
PCB-043	1010	9160	4410	14800	23500
PCB-049/069	10700	97300	47400	159000	267000
PCB-048	5020	47100	22900	75800	121000
PCB-044/047/065	16900	147000	70000	267000	391000
PCB-059/062/075	1640	14700	6800	22100	36000
PCB-042	4520	40100	18900	61100	96400
PCB-040/041/071	9320	79800	38600	122000	189000
PCB-064	6590	54900	27000	83700	132000
PCB-072	58.9	385	211	631	1000
PCB-068	34.5	192	<98	259	461
PCB-057	53.5	434	225	725	1180
PCB-058	<5.3	<12	<13	<30	<21
PCB-067	315	2500	1370	4110	6410
PCB-063	282	2230	1240	3800	5730
PCB-061/070/074/076	11600	78200	44700	135000	196000
PCB-066	4980	34000	20200	59600	85700
PCB-055	<210	1280	1060	2460	2970
PCB-056	2210	14500	9420	26200	36400
PCB-060	1410	9390	6190	17100	23700
PCB-080	<4.6	<11	<12	<26	<18
PCB-079	27.1	134	<71	426	512
PCB-078	<5.2	<12	<13	143	<20
PCB-081	23.2	99.4	76.3	191	242
PCB-077	393	1890	1290	3950	4420
PCB-104	<1.6	<13	11.4	16.0	<32
PCB-096	132	1090	500	1830	2550
PCB-103	59.7	340	178	586	835
PCB-094	<54	422	210	676	932
PCB-095	6950	37200	18600	62000	79800
PCB-093/098/100/102	417	2710	1390	4510	6070

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	SITE 1 - COMPOSITE 2 (AUGUST)	SITE 2 - COMPOSITE 2 (AUGUST)	SITE 3 - COMPOSITE 2 (AUGUST)	SITE 4 - COMPOSITE 2 (AUGUST)	SITE 5 - COMPOSITE 2 (AUGUST)
ALS Sample ID	L2491640-1	L2491640-2	L2491640-3	L2491640-4	L2491640-5
Sample Size	1	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a	n/a
Sample Matrix	PUF	PUF	PUF	PUF	PUF
Sampling Date	n/a	n/a	n/a	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**	**pg**	**pg**	**pg**
PCB-088/091	1200	6870	3500	12000	15300
PCB-084	2040	11000	5560	18700	22800
PCB-089	95.2	605	359	1080	1370
PCB-121	<6.5	<10	<10	<14	<6.9
PCB-092	1080	5280	2720	8930	10900
PCB-090/101/113	6020	28100	14500	47100	57000
PCB-083/099	3160	14900	7950	25600	31000
PCB-112	<60	<140	<49	<170	160
PCB-086/087/097/109/119/125	3840	18800	9290	30400	36200
PCB-085/110/115/116/117	6920	32300	15500	48500	58200
PCB-082	650	3260	1630	5220	6120
PCB-111	<6.5	<10	<10	<26	<6.8
PCB-120	<6.2	<16	<10	<34	63.4
PCB-108/124	119	711	291	947	1150
PCB-107	184	1010	456	1380	1690
PCB-123	57.3	323	142	490	598
PCB-106	<8.1	<8.3	<12	<14	<7.7
PCB-118	3160	17800	7200	22400	27600
PCB-122	<46	293	134	<350	428
PCB-114	<68	578	217	745	913
PCB-105	1130	7700	3020	9370	11500
PCB-127	<7.6	<9.7	<11	23.6	<24
PCB-126	<27	<49	<39	<120	<84
PCB-155	<1.8	<1.2	<2.6	<5.2	6.86
PCB-152	<4.8	23.2	<9.4	49.7	52.5
PCB-150	<9.2	<28	20.2	48.5	70.8
PCB-136	572	2370	1100	3710	4560
PCB-145	<2.1	13.5	<6.9	18.0	<24
PCB-148	5.51	13.7	<5.2	21.9	<23
PCB-135/151	1140	4540	1990	5800	7920
PCB-154	41.2	120	56.8	171	222
PCB-144	166	687	291	853	1180
PCB-147/149	2430	10600	4370	13300	17200
PCB-134/143	225	1000	379	1280	1600
PCB-139/140	73.5	339	140	452	578
PCB-131	<51	264	95.0	326	405
PCB-142	<5.5	<8.0	<7.1	<16	<8.2
PCB-132	1060	5600	1920	6360	8010
PCB-133	<33	172	<60	194	246
PCB-165	<4.2	<6.0	<6.6	<12	19.1
PCB-146	315	1490	557	1680	2230
PCB-161	<3.7	<5.3	<4.8	<11	<5.5
PCB-153/168	1860	9110	3430	10100	13200
PCB-141	424	2160	762	2290	2920
PCB-130	162	850	277	909	1160
PCB-137/164	267	1540	529	1570	2060
PCB-129/138/163	2260	13100	4210	13400	17000
PCB-160	<3.8	<5.6	<5.0	<11	<5.7
PCB-158	246	1480	452	1420	1950
PCB-128/166	292	1960	572	1910	2370
PCB-159	<5.7	31.8	<8.2	<25	42.0
PCB-162	<3.7	33.0	<6.8	34.5	37.4
PCB-167	67.6	449	117	390	546
PCB-156/157	164	1520	387	1300	1730
PCB-169	<4.2	<6.4	<5.7	<13	<18
PCB-188	5.51	8.73	9.38	<13	<18
PCB-179	228	630	388	799	1230
PCB-184	<2.7	<3.9	<3.2	<5.1	<8.1
PCB-176	53.2	182	86.3	212	309
PCB-186	<3.0	<2.6	<3.5	<5.4	<2.5
PCB-178	86.9	262	<130	311	494
PCB-175	14.1	<51	<19	<52	86.2
PCB-187	449	1440	889	1780	2800
PCB-182	<3.7	15.1	<6.8	<18	<21
PCB-183	154	677	331	721	1110
PCB-185	<25	101	52.8	129	172
PCB-174	202	1000	385	964	1450
PCB-177	113	558	189	495	750
PCB-181	<3.5	<14	<4.2	<14	22.7
PCB-171/173	56.9	325	103	272	417
PCB-172	<26	170	56.6	147	216

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	SITE 1 - COMPOSITE 2 (AUGUST)	SITE 2 - COMPOSITE 2 (AUGUST)	SITE 3 - COMPOSITE 2 (AUGUST)	SITE 4 - COMPOSITE 2 (AUGUST)	SITE 5 - COMPOSITE 2 (AUGUST)
ALS Sample ID	L2491640-1	L2491640-2	L2491640-3	L2491640-4	L2491640-5
Sample Size	1	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a	n/a
Sample Matrix	PUF	PUF	PUF	PUF	PUF
Sampling Date	n/a	n/a	n/a	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**	**pg**	**pg**	**pg**
PCB-192	<3.0	<2.6	<3.6	<5.5	<2.6
PCB-180/193	343	2040	792	1900	3000
PCB-191	<7.1	43.7	<11	35.9	49.2
PCB-170	124	1050	283	783	1140
PCB-190	27.7	195	67.8	170	228
PCB-189	<3.4	43.4	<13	33.0	42.3
PCB-202	118	271	<240	388	669
PCB-201	<39	131	109	167	303
PCB-204	<2.3	<1.2	<1.3	<2.4	<1.3
PCB-197	<5.4	<23	18.1	<24	43.8
PCB-200	25.5	90.2	<50	109	188
PCB-198/199	167	761	476	866	1500
PCB-196	<43	276	159	<270	495
PCB-203	<89	487	311	552	932
PCB-195	<19	178	52.5	157	219
PCB-194	56.7	508	168	458	662
PCB-205	<3.5	24.2	7.30	<18	28.6
PCB-208	27.1	154	73.7	165	276
PCB-207	15.2	<58	41.1	76.1	<110
PCB-206	<41	446	160	404	633
PCB-209	12.4	253	<42	147	235
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C12-PCB-001	73	52	49	41	57
13C12-PCB-003	67	56	48	40	59
13C12-PCB-004	73	63	53	44	68
13C12-PCB-015	90	92	68	52	86
13C12-PCB-019	61	55	44	33	52
13C12-PCB-037	93	88	60	41	82
13C12-PCB-054	81	69	58	42	59
13C12-PCB-081	99	94	62	40	87
13C12-PCB-077	101	95	62	40	84
13C12-PCB-104	92	99	61	44	92
13C12-PCB-123	109	100	70	44	89
13C12-PCB-118	109	104	69	45	93
13C12-PCB-114	110	100	68	42	88
13C12-PCB-105	106	97	65	42	86
13C12-PCB-126	107	97	67	42	85
13C12-PCB-155	101	94	64	44	84
13C12-PCB-167	126	113	83	50	103
13C12-PCB-156/157	128	114	83	49	102
13C12-PCB-169	138	121	88	54	110
13C12-PCB-188	138	124	90	53	110
13C12-PCB-189	149	129	97	60	119
13C12-PCB-202	110	97	70	44	92
13C12-PCB-205	129	115	81	51	105
13C12-PCB-208	126	115	81	49	102
13C12-PCB-206	134	119	86	54	112
13C12-PCB-209	129	114	84	51	103
Field Spike Standards					
13C12-PCB-031	117	120	123	123	126
13C12-PCB-095	111	113	113	113	116
13C12-PCB-153	106	103	105	102	105
Cleanup Standards					
13C12-PCB-028	95	85	64	46	89
13C12-PCB-111	116	98	71	45	96
13C12-PCB-178	138	119	83	53	115

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	SITE 1 - COMPOSITE 2 (AUGUST)	SITE 2 - COMPOSITE 2 (AUGUST)	SITE 3 - COMPOSITE 2 (AUGUST)	SITE 4 - COMPOSITE 2 (AUGUST)	SITE 5 - COMPOSITE 2 (AUGUST)
ALS Sample ID	L2491640-1	L2491640-2	L2491640-3	L2491640-4	L2491640-5
Sample Size	1	1	1	1	1
Sample size units	Sample	Sample	Sample	Sample	Sample
Percent Moisture	n/a	n/a	n/a	n/a	n/a
Sample Matrix	PUF	PUF	PUF	PUF	PUF
Sampling Date	n/a	n/a	n/a	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**	**pg**	**pg**	**pg**
Homologue Group Totals					
Total MonoCB	14100	228000	96800	207000	500000
Total DiCB	155000	2070000	1060000	2750000	5090000
Total TriCB	256000	2640000	1410000	4280000	6620000
Total TetraCB	111000	942000	472000	1590000	2400000
Total PentaCB	37500	192000	93500	303000	373000
Total HexaCB	11900	59500	21800	67600	87400
Total HeptaCB	1920	8810	3810	8850	13600
Total OctaCB	566	2750	1590	3010	5040
Total NonaCB	83.3	658	275	645	1020
DecaCB	12.4	253	42.0	147	235
Total PCB	588000	6150000	3170000	9210000	15100000
Toxic Equivalency - (WHO 2005)					
Lower Bound PCB TEQ	0.184	1.07	0.484	1.49	1.80
Mid Point PCB TEQ	2.95	6.07	4.47	13.7	10.7
Upper Bound PCB TEQ	3.01	6.16	4.56	13.9	10.7

ALS Life Sciences

Quality Control Summary Report

Sample Name	Method Blank	Reagent Blank
ALS Sample ID	WG3389564-1	WG3389564-4
Sample Size	1	1
Sample size units	Sample	Sample
Percent Moisture	n/a	n/a
Sample Matrix	MEDIA	REAGENT
Sampling Date	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**
PCB-001	<2.8	<3.2
PCB-002	<3.6	<4.0
PCB-003	<3.9	<4.4
PCB-004	<21	<25
PCB-010	<11	<14
PCB-009	<11	<13
PCB-007	<11	<13
PCB-006	<11	<13
PCB-005	<13	<15
PCB-008	<10	<12
PCB-014	<10	<13
PCB-011	<34	37.8
PCB-012/013	<11	<13
PCB-015	<12	<15
PCB-019	<6.0	<6.7
PCB-018/030	14.6	<8.3
PCB-017	<6.0	<9.6
PCB-027	<4.4	<7.1
PCB-024	<4.7	<7.6
PCB-016	<7.1	<11
PCB-032	<6.1	<6.7
PCB-034	<5.4	<6.8
PCB-023	<5.2	<6.5
PCB-026/029	<5.0	<6.3
PCB-025	<4.7	<5.9
PCB-031	15.7	<11
PCB-020/028	<12	16.8
PCB-021/033	10.8	<13
PCB-022	<6.5	<6.9
PCB-036	<5.0	<6.3
PCB-039	<5.2	<6.5
PCB-038	<5.3	<6.6
PCB-035	<5.5	<6.9
PCB-037	<6.7	<9.0
PCB-054	<2.6	<4.0
PCB-050/053	<3.8	<4.3
PCB-045/051	<4.0	<4.5
PCB-046	<4.5	<5.0
PCB-052	21.3	<30
PCB-073	<3.0	<3.3
PCB-043	<4.5	<5.1
PCB-049/069	<8.3	8.46
PCB-048	<3.9	<4.4
PCB-044/047/065	22.0	25.3
PCB-059/062/075	<3.0	<3.3
PCB-042	<4.1	<5.7
PCB-040/041/071	<5.4	<7.2
PCB-064	7.15	<6.5
PCB-072	<3.8	<2.8
PCB-068	<3.7	<2.7
PCB-057	<4.0	<3.0
PCB-058	<3.9	<3.0
PCB-067	<3.6	<2.7
PCB-063	<3.8	<2.8
PCB-061/070/074/076	<16	21.7
PCB-066	6.13	<7.4
PCB-055	<4.1	<3.1
PCB-056	<4.1	<3.1
PCB-060	<4.1	<3.0
PCB-080	<3.5	<2.6
PCB-079	<3.6	<2.7
PCB-078	<3.9	<2.9
PCB-081	<4.7	<3.5
PCB-077	<4.8	<3.7
PCB-104	<2.7	<3.0
PCB-096	<2.5	<2.7
PCB-103	<4.5	<4.3
PCB-094	<5.4	<5.1
PCB-095	<15	17.7
PCB-093/098/100/102	<4.8	<4.6

ALS Life Sciences

Quality Control Summary Report

Sample Name	Method Blank	Reagent Blank
ALS Sample ID	WG3389564-1	WG3389564-4
Sample Size	1	1
Sample size units	Sample	Sample
Percent Moisture	n/a	n/a
Sample Matrix	MEDIA	REAGENT
Sampling Date	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**
PCB-088/091	<5.0	<4.7
PCB-084	<5.3	<5.1
PCB-089	<5.1	<4.9
PCB-121	<3.7	<3.5
PCB-092	<5.0	<4.8
PCB-090/101/113	<17	19.1
PCB-083/099	7.26	<4.8
PCB-112	<3.6	<3.4
PCB-086/087/097/109/119/125	<4.2	<5.3
PCB-085/110/115/116/117	21.6	25.0
PCB-082	<5.7	<5.4
PCB-111	<3.7	<3.5
PCB-120	<3.5	<3.4
PCB-108/124	<2.8	<3.3
PCB-107	<2.5	<2.9
PCB-123	<3.2	<3.8
PCB-106	<2.9	<3.4
PCB-118	13.8	<12
PCB-122	<3.0	<3.5
PCB-114	<3.3	<3.9
PCB-105	<3.3	<5.6
PCB-127	<2.7	<3.2
PCB-126	<3.3	<3.7
PCB-155	<880	<1.4
PCB-152	<1.9	<1.2
PCB-150	<2.0	<1.2
PCB-136	<2.0	<1.2
PCB-145	<2.0	<1.3
PCB-148	<2.7	<1.7
PCB-135/151	<2.8	<1.7
PCB-154	<2.2	<1.3
PCB-144	<2.7	<1.6
PCB-147/149	10.6	<10
PCB-134/143	<3.3	<3.1
PCB-139/140	<2.8	<2.7
PCB-131	<3.2	<3.1
PCB-142	<3.3	<3.2
PCB-132	8.76	<6.9
PCB-133	<3.0	<2.9
PCB-165	<2.5	<2.4
PCB-146	<2.7	<2.6
PCB-161	<2.2	<2.1
PCB-153/168	7.53	8.84
PCB-141	<2.8	<2.7
PCB-130	<3.2	<3.1
PCB-137/164	<2.5	<2.4
PCB-129/138/163	<9.8	<12
PCB-160	<2.3	<2.2
PCB-158	<2.0	<1.9
PCB-128/166	<2.5	<2.4
PCB-159	<2.1	<2.0
PCB-162	<2.2	<2.1
PCB-167	<2.1	<2.2
PCB-156/157	<2.8	<2.8
PCB-169	<2.3	<2.2
PCB-188	<1.6	<2.4
PCB-179	<1.9	<2.1
PCB-184	<1.4	<2.0
PCB-176	<1.5	<2.0
PCB-186	<1.6	<2.2
PCB-178	<2.0	<2.7
PCB-175	<1.9	<2.5
PCB-187	<1.7	<2.4
PCB-182	<1.7	<2.4
PCB-183	<1.8	<2.5
PCB-185	<1.9	<2.6
PCB-174	<1.7	<2.4
PCB-177	<1.9	<2.6
PCB-181	<1.9	<2.6
PCB-171/173	<1.9	<2.6
PCB-172	<1.9	<2.7

ALS Life Sciences

Quality Control Summary Report

Sample Name	Method Blank	Reagent Blank
ALS Sample ID	WG3389564-1	WG3389564-4
Sample Size	1	1
Sample size units	Sample	Sample
Percent Moisture	n/a	n/a
Sample Matrix	MEDIA	REAGENT
Sampling Date	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**
PCB-192	<1.6	<2.2
PCB-180/193	<1.6	<2.9
PCB-191	<1.5	<2.1
PCB-170	<2.0	<2.8
PCB-190	<1.5	<2.0
PCB-189	<2.1	<1.5
PCB-202	<1.3	<1.5
PCB-201	<1.3	<1.3
PCB-204	<1.3	<1.4
PCB-197	<1.3	<1.4
PCB-200	<1.3	<1.4
PCB-198/199	<1.8	<1.9
PCB-196	<1.8	<1.9
PCB-203	<1.7	<1.8
PCB-195	<1.4	<1.6
PCB-194	<1.4	<1.5
PCB-205	<1.3	<1.4
PCB-208	<2.2	<3.2
PCB-207	<2.6	<3.6
PCB-206	<3.8	<4.9
PCB-209	<0.93	<1.0
Extraction Standards	**% Rec**	**% Rec**
13C12-PCB-001	51	35
13C12-PCB-003	47	33
13C12-PCB-004	48	36
13C12-PCB-015	57	39
13C12-PCB-019	37	30
13C12-PCB-037	52	40
13C12-PCB-054	45	39
13C12-PCB-081	63	51
13C12-PCB-077	66	53
13C12-PCB-104	58	49
13C12-PCB-123	75	62
13C12-PCB-118	76	65
13C12-PCB-114	71	59
13C12-PCB-105	75	63
13C12-PCB-126	81	70
13C12-PCB-155	65	51
13C12-PCB-167	101	87
13C12-PCB-156/157	103	87
13C12-PCB-169	112	99
13C12-PCB-188	96	74
13C12-PCB-189	120	110
13C12-PCB-202	88	74
13C12-PCB-205	106	93
13C12-PCB-208	111	89
13C12-PCB-206	112	98
13C12-PCB-209	107	97
Field Spike Standards		
13C12-PCB-031	NS	NS
13C12-PCB-095	NS	NS
13C12-PCB-153	NS	NS
Cleanup Standards		
13C12-PCB-028	49	41
13C12-PCB-111	74	63
13C12-PCB-178	100	83

ALS Life Sciences

Quality Control Summary Report

Sample Name	Method Blank	Reagent Blank
ALS Sample ID	WG3389564-1	WG3389564-4
Sample Size	1	1
Sample size units	Sample	Sample
Percent Moisture	n/a	n/a
Sample Matrix	MEDIA	REAGENT
Sampling Date	n/a	n/a
Extraction Date	26-Aug-20	26-Aug-20
Target Analytes	**pg**	**pg**
Homologue Group Totals		
Total MonoCB	<2.8	<3.2
Total DiCB	34.0	37.8
Total TriCB	65.7	40.8
Total TetraCB	86.3	112
Total PentaCB	74.7	84.7
Total HexaCB	36.7	37.7
Total HeptaCB	1.90	2.90
Total OctaCB	<1.3	<1.3
Total NonaCB	<2.2	<3.2
DecaCB	<0.93	<1.0
Total PCB	299	316
Toxic Equivalency - (WHO 2005)		
Lower Bound PCB TEQ	0.000414	0.00
Mid Point PCB TEQ	0.201	0.219
Upper Bound PCB TEQ	0.402	0.438

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	Laboratory Control Sample
ALS Sample ID	WG3389564-2
Sample Size	1
Sample size units	n/a
Percent Moisture	n/a
Sample Matrix	QC
Sampling Date	n/a
Extraction Date	26-Aug-20

Target Analytes	% Rec
PCB-001	96
PCB-003	92
PCB-004	128
PCB-015	109
PCB-019	124
PCB-037	108
PCB-054	122
PCB-081	98
PCB-077	100
PCB-104	107
PCB-123	105
PCB-118	104
PCB-114	112
PCB-105	108
PCB-126	109
PCB-155	109
PCB-167	103
PCB-156/157	105
PCB-169	106
PCB-188	106
PCB-189	99
PCB-202	117
PCB-205	99
PCB-208	94
PCB-206	90
PCB-209	114
Extraction Standards	**% Rec**
13C12-PCB-001	48
13C12-PCB-003	49
13C12-PCB-004	50
13C12-PCB-015	60
13C12-PCB-019	41
13C12-PCB-037	57
13C12-PCB-054	52
13C12-PCB-081	68
13C12-PCB-077	66
13C12-PCB-104	62
13C12-PCB-123	75
13C12-PCB-118	76
13C12-PCB-114	70
13C12-PCB-105	74
13C12-PCB-126	78
13C12-PCB-155	65
13C12-PCB-167	93
13C12-PCB-156/157	96
13C12-PCB-169	107
13C12-PCB-188	89
13C12-PCB-189	116
13C12-PCB-202	82
13C12-PCB-205	97
13C12-PCB-208	95
13C12-PCB-206	105
13C12-PCB-209	94
Field Spike Standards	
13C12-PCB-031	NS
13C12-PCB-095	NS
13C12-PCB-153	NS
Cleanup Standards	
13C12-PCB-028	58
13C12-PCB-111	76
13C12-PCB-178	93

ALS Life Sciences

Sample Analysis Summary Report

Sample Name	CVS	CCV	CCV	CCV	CCV
ALS Sample ID	H5-20-RS1-004	H5-20-CCV-730	H5-20-CCV-731	H5-20-CCV-731	H5-20-CCV-738
Sample Size	1	1	1	1	1
Sample size units	n/a	n/a	n/a	n/a	n/a
Percent Moisture	n/a	n/a	n/a	n/a	n/a
Sample Matrix	QC	QC	QC	QC	QC
Sampling Date	n/a	n/a	n/a	n/a	n/a
Extraction Date	n/a	n/a	n/a	n/a	n/a
Target Analytes	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
PCB-001	109	92	92	94	95
PCB-003	110	93	92	94	97
PCB-004	111	116	112	113	116
PCB-015	111	103	105	110	111
PCB-019	114	113	113	116	115
PCB-037	111	103	106	106	118
PCB-054	112	114	113	113	112
PCB-081	105	107	107	109	109
PCB-077	105	104	105	108	108
PCB-104	101	109	111	111	109
PCB-123	106	108	108	112	112
PCB-118	106	107	109	112	113
PCB-114	109	112	111	115	114
PCB-105	105	114	113	117	116
PCB-126	105	107	108	110	111
PCB-155	105	111	111	112	112
PCB-167	105	106	106	108	108
PCB-156/157	104	110	109	110	110
PCB-169	107	110	110	110	110
PCB-188	105	112	112	109	110
PCB-189	110	99	101	104	102
PCB-202	109	111	109	110	110
PCB-205	104	103	104	104	105
PCB-208	101	97	96	96	98
PCB-206	102	95	94	94	97
PCB-209	119	104	105	105	106
Extraction Standards	**% Rec**	**% Rec**	**% Rec**	**% Rec**	**% Rec**
13C12-PCB-001	99	108	106	103	96
13C12-PCB-003	100	105	104	102	98
13C12-PCB-004	99	102	104	102	96
13C12-PCB-015	101	96	94	92	91
13C12-PCB-019	101	77	76	72	69
13C12-PCB-037	102	90	86	88	95
13C12-PCB-054	100	87	86	88	88
13C12-PCB-081	102	89	90	88	92
13C12-PCB-077	101	92	92	89	94
13C12-PCB-104	100	88	88	85	88
13C12-PCB-123	102	101	101	90	95
13C12-PCB-118	102	102	104	91	96
13C12-PCB-114	101	97	97	86	93
13C12-PCB-105	101	94	94	85	92
13C12-PCB-126	103	95	97	87	98
13C12-PCB-155	99	89	90	90	87
13C12-PCB-167	101	102	96	101	103
13C12-PCB-156/157	102	100	93	100	102
13C12-PCB-169	103	104	101	101	103
13C12-PCB-188	99	105	99	109	102
13C12-PCB-189	103	114	113	114	113
13C12-PCB-202	100	87	88	92	89
13C12-PCB-205	100	103	104	101	102
13C12-PCB-208	99	102	104	106	113
13C12-PCB-206	100	111	110	109	105
13C12-PCB-209	99	102	105	102	99
Field Spike Standards					
13C12-PCB-031	98	111	113	115	110
13C12-PCB-095	98	102	101	109	106
13C12-PCB-153	98	110	109	106	105
Cleanup Standards					
13C12-PCB-028	99	99	96	98	100
13C12-PCB-111	99	111	111	108	105
13C12-PCB-178	100	103	102	107	103

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 1 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A07
Run Date	09-Sep-20 17:35
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-001		8.91	10300	3.0			100
PCB-002		10.33	784	3.7			100
PCB-003		10.45	2970	3.8			100
PCB-004		10.59	56200	12			100
PCB-010		10.70	1930	5.8			100
PCB-009		11.87	4510	5.5			100
PCB-007		11.98	2770	5.7			100
PCB-006		12.12	12300	5.6			100
PCB-005		12.34	1360	6.4	M		100
PCB-008		12.40	55000	5.3	M		100
PCB-014		NotFnd	<14	14	U		100
PCB-011		13.89	6770	15	M		100
PCB-012/013		14.08	2220	15			100
PCB-015		14.28	12200	15			100
PCB-019		12.60	10600	3.9			100
PCB-018/030		13.70	55300	6.7			100
PCB-017		13.95	24300	7.8			100
PCB-027		14.08	3350	5.8			100
PCB-024		14.17	895	6.1			100
PCB-016		14.23	23700	9.2			100
PCB-032		14.53	12600	5.5			100
PCB-034		15.22	150	18			100
PCB-023		15.32	67.2	17	J		100
PCB-026/029		15.50	7380	16			100
PCB-025		15.64	3100	16			100
PCB-031		15.81	34800	16			100
PCB-020/028		15.98	37200	17			100
PCB-021/033		16.12	23700	17			100
PCB-022		16.35	13600	18			100
PCB-036		NotFnd	<17	17	U		100
PCB-039		17.41	87.6	17	J		100
PCB-038		17.74	<17	17	M,J,R	17	100
PCB-035		18.00	457	18			100
PCB-037		18.23	4950	20			100
PCB-054		14.44	<110	1.8	M,R	110	100
PCB-050/053		15.65	4210	2.8			100
PCB-045/051		16.06	6000	2.9			100
PCB-046		16.23	1890	3.3			100
PCB-052		16.98	21500	2.9			100
PCB-073		NotFnd	<2.2	2.2	U		100
PCB-043		17.11	1010	3.3			100
PCB-049/069		17.25	10700	2.5			100
PCB-048		17.41	5020	2.9			100
PCB-044/047/065		17.54	16900	2.6			100
PCB-059/062/075		17.72	1640	2.2			100
PCB-042		17.84	4520	3.0			100
PCB-040/041/071		18.10	9320	2.9			100
PCB-064		18.23	6590	2.1			100
PCB-072		18.63	58.9	5.1	J		100
PCB-068		18.79	34.5	4.9	J		100
PCB-057		19.03	53.5	5.4	J		100
PCB-058		NotFnd	<5.3	5.3	U		100
PCB-067		19.25	315	4.8			100
PCB-063		19.40	282	5.0			100
PCB-061/070/074/076		19.58	11600	5.2			100
PCB-066		19.76	4980	5.0			100
PCB-055		19.86	<210	5.5	R	210	100
PCB-056		20.13	2210	5.5			100
PCB-060		20.26	1410	5.4			100
PCB-080		NotFnd	<4.6	4.6	U		100
PCB-079		21.24	27.1	4.8	M,J		100
PCB-078		NotFnd	<5.2	5.2	U		100
PCB-081	0.0003	21.81	23.2	6.3	J		100
PCB-077	0.0001	22.11	393	6.4			100
PCB-104		NotFnd	<1.6	1.6	U		100
PCB-096		17.74	132	1.5	M		100
PCB-103		18.73	59.7	8.0	J		100
PCB-094		18.87	<54	9.5	J,R	54	100
PCB-095		19.12	6950	8.5			100
PCB-093/098/100/102		19.29	417	8.6			100

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 1 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A07
Run Date	09-Sep-20 17:35
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-088/091		19.58	1200	8.8			100
PCB-084		19.72	2040	9.4			100
PCB-089		19.97	95.2	9.1	J		100
PCB-121		NotFnd	<6.5	6.5	U		100
PCB-092		20.34	1080	8.8			100
PCB-090/101/113		20.64	6020	7.5			100
PCB-083/099		20.96	3160	8.8	M		100
PCB-112		21.03	<60	6.3	M,J,R	60	100
PCB-086/087/097/109/119/125		21.30	3840	7.4	M		100
PCB-085/110/115/116/117		21.71	6920	6.9	M		100
PCB-082		21.91	650	10			100
PCB-111		NotFnd	<6.5	6.5	U		100
PCB-120		22.30	<6.2	6.2	M,U	5.9	100
PCB-108/124		22.90	119	7.9			100
PCB-107		23.03	184	7.1	M		100
PCB-123	0.00003	23.08	57.3	9.3	M,J		100
PCB-106		NotFnd	<8.1	8.1	U		100
PCB-118	0.00003	23.27	3160	8.7			100
PCB-122		23.47	<46	8.4	J,R	46	100
PCB-114	0.00003	23.58	<68	9.2	J,R	68	100
PCB-105	0.00003	23.91	1130	9.4			100
PCB-127		NotFnd	<7.6	7.6	U		100
PCB-126	0.1	25.48	<27	10	M,J,R	27	100
PCB-155		NotFnd	<1.8	1.8	U		100
PCB-152		20.67	<4.8	2.0	J,R	4.8	100
PCB-150		20.73	<9.2	2.1	J,R	9.2	100
PCB-136		20.96	572	2.1			100
PCB-145		NotFnd	<2.1	2.1	U		100
PCB-148		21.83	5.51	2.9	J		100
PCB-135/151		22.17	1140	3.0			100
PCB-154		22.27	41.2	2.3	J		100
PCB-144		22.47	166	2.8			100
PCB-147/149		22.66	2430	4.7			100
PCB-134/143		22.79	225	5.5			100
PCB-139/140		22.97	73.5	4.8	J		100
PCB-131		23.10	<51	5.4	M,J,R	51	100
PCB-142		NotFnd	<5.5	5.5	U		100
PCB-132		23.35	1060	5.5			100
PCB-133		23.54	<33	5.1	J,R	33	100
PCB-165		NotFnd	<4.2	4.2	U		100
PCB-146		23.88	315	4.5			100
PCB-161		NotFnd	<3.7	3.7	U		100
PCB-153/168		24.19	1860	4.0			100
PCB-141		24.32	424	4.7			100
PCB-130		24.54	162	5.4			100
PCB-137/164		24.71	267	4.2	M		100
PCB-129/138/163		24.88	2260	4.6			100
PCB-160		NotFnd	<3.8	3.8	U		100
PCB-158		25.09	246	3.4			100
PCB-128/166		25.57	292	4.1			100
PCB-159		26.02	<5.7	3.5	J,R	5.7	100
PCB-162		26.16	<3.7	3.7	U	3.3	100
PCB-167	0.00003	26.42	67.6	4.0	J		100
PCB-156/157	0.00003	27.03	164	5.2	J		200
PCB-169	0.03	28.71	<4.2	4.2	M,U	2.7	100
PCB-188		23.50	5.51	2.7	M,J		100
PCB-179		23.71	228	2.8			100
PCB-184		23.96	<2.7	2.7	U	1.8	100
PCB-176		24.17	53.2	2.8	J		100
PCB-186		NotFnd	<3.0	3.0	U		100
PCB-178		25.07	86.9	3.7	J		100
PCB-175		25.41	14.1	3.5	J		100
PCB-187		25.54	449	3.3	M		100
PCB-182		25.63	<3.7	3.2	M,J,R	3.7	100
PCB-183		25.86	154	3.4			100
PCB-185		25.94	<25	3.5	M,J,R	25	100
PCB-174		26.00	202	3.2	M		100
PCB-177		26.25	113	3.5			100
PCB-181		NotFnd	<3.5	3.5	U		100
PCB-171/173		26.56	56.9	3.6	J		100
PCB-172		27.36	<26	3.6	J,R	26	100

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 1 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A07
Run Date	09-Sep-20 17:35
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<3.0	3.0	U		100
PCB-180/193		27.71	343	3.0			100
PCB-191		27.90	<7.1	2.8	J,R	7.1	100
PCB-170		28.38	124	3.8			100
PCB-190		28.65	27.7	2.7	J		100
PCB-189	0.00003	29.97	<3.4	1.7	J,R	3.4	100
PCB-202		26.28	118	2.4			100
PCB-201		26.75	<39	2.3	J,R	39	100
PCB-204		NotFnd	<2.3	2.3	U		100
PCB-197		27.21	<5.4	2.3	J,R	5.4	100
PCB-200		27.31	25.5	2.4	J		100
PCB-198/199		28.71	167	3.2			100
PCB-196		29.05	<43	3.2	M,J,R	43	100
PCB-203		29.15	<89	3.0	M,J,R	89	100
PCB-195		29.88	<19	1.5	J,R	19	100
PCB-194		31.09	56.7	1.4	J		100
PCB-205		31.38	<3.5	1.3	M,J,R	3.5	100
PCB-208		29.71	27.1	2.2	J		100
PCB-207		30.18	15.2	2.6	J		100
PCB-206		32.44	<41	3.7	M,J,R	41	100
PCB-209		33.57	12.4	0.83	J		100

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	
13C12-PCB-001	4000	8.90	73	5-145	
13C12-PCB-003	4000	10.44	67	5-145	
13C12-PCB-004	4000	10.59	73	5-145	
13C12-PCB-015	4000	14.27	90	5-145	
13C12-PCB-019	4000	12.58	61	5-145	
13C12-PCB-037	4000	18.22	93	5-145	
13C12-PCB-054	4000	14.43	81	5-145	
13C12-PCB-081	4000	21.80	99	10-145	
13C12-PCB-077	4000	22.10	101	10-145	
13C12-PCB-104	4000	17.49	92	10-145	
13C12-PCB-123	4000	23.08	109	10-145	
13C12-PCB-118	4000	23.26	109	10-145	
13C12-PCB-114	4000	23.55	110	10-145	
13C12-PCB-105	4000	23.90	106	10-145	
13C12-PCB-126	4000	25.51	107	10-145	
13C12-PCB-155	4000	20.49	101	10-145	
13C12-PCB-167	4000	26.39	126	10-145	
13C12-PCB-156/157	8000	27.03	128	10-145	
13C12-PCB-169	4000	28.70	138	10-145	R
13C12-PCB-188	4000	23.49	138	10-145	
13C12-PCB-189	4000	29.97	149	10-145	
13C12-PCB-202	4000	26.26	110	10-145	
13C12-PCB-205	4000	31.35	129	10-145	
13C12-PCB-208	4000	29.69	126	10-145	
13C12-PCB-206	4000	32.43	134	10-145	
13C12-PCB-209	4000	33.55	129	10-145	

Field Spike Standards					
13C12-PCB-031	24000	15.80	117	70-130	
13C12-PCB-095	24000	19.10	111	70-130	
13C12-PCB-153	24000	24.18	106	70-130	

Cleanup Standards					
13C12-PCB-028	4000	15.97	95	5-145	
13C12-PCB-111	4000	22.02	116	10-145	
13C12-PCB-178	4000	25.06	138	10-145	

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 1 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A07
Run Date	09-Sep-20 17:35
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			14100	3.0	J		400
Total DiCB			155000	5.3	J		800
Total TriCB			256000	3.9	J		800
Total TetraCB			111000	1.8	J		1600
Total PentaCB			37500	1.5	J		1600
Total HexaCB			11900	1.8	J		1600
Total HeptaCB			1920	1.7	J		800
Total OctaCB			566	1.3	J		800
Total NonaCB			83.3	2.2	J		400
DecaCB			12.4	0.83	J		400
Total PCB			588000		J		3200
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.184				
Mid Point PCB TEQ			2.95				
Upper Bound PCB TEQ			3.01				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 2 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-2	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A08	5-200910A22
Run Date	09-Sep-20 18:17	11-Sep-20 01:38
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-001		8.91	183000	7.3			100						
PCB-002		10.33	8680	7.9			100						
PCB-003		10.45	35900	7.4			100						
PCB-004								10.58	896000	54			500
PCB-010		10.72	23100	6.2			100						
PCB-009		11.87	58000	5.9			100						
PCB-007		11.98	33500	6.1			100						
PCB-006		12.13	159000	6.0			100						
PCB-005		12.33	13200	6.9	M		100						
PCB-008								12.39	736000	20	M		500
PCB-014		13.40	42.9	17	J		100						
PCB-011		13.90	7990	18			100						
PCB-012/013		14.08	22400	18			100						
PCB-015		14.28	125000	16			100						
PCB-019		12.60	133000	3.6			100						
PCB-018/030								13.69	587000	29			500
PCB-017								13.94	255000	33			500
PCB-027		14.08	34600	8.4			100						
PCB-024		14.18	9410	8.9			100						
PCB-016								14.22	239000	40			500
PCB-032		14.54	133000	7.9			100						
PCB-034		15.23	1670	28			100						
PCB-023		15.33	766	27			100						
PCB-026/029		15.50	75500	26			100						
PCB-025		15.64	30900	25			100						
PCB-031								15.80	360000	68			500
PCB-020/028								15.97	378000	73			500
PCB-021/033								16.11	236000	72			500
PCB-022		16.36	126000	29			100						
PCB-036		NotFnd	<26	26	U		100						
PCB-039		17.42	747	27			100						
PCB-038		17.74	112	28			100						
PCB-035		18.00	3000	29			100						
PCB-037		18.23	36600	29			100						
PCB-054		14.45	1420	2.3			100						
PCB-050/053		15.66	42800	5.4			100						
PCB-045/051		16.07	59500	5.7			100						
PCB-046		16.24	18500	6.3			100						
PCB-052		16.99	184000	5.7			100						
PCB-073		NotFnd	<4.2	4.2	U		100						
PCB-043		17.12	9160	6.4			100						
PCB-049/069		17.26	97300	4.9			100						
PCB-048		17.42	47100	5.5			100						
PCB-044/047/065		17.55	147000	5.1			100						
PCB-059/062/075		17.73	14700	4.2			100						
PCB-042		17.85	40100	5.8			100						
PCB-040/041/071		18.11	79800	5.5			100						
PCB-064		18.23	54900	4.1			100						
PCB-072		18.64	385	12			100						
PCB-068		18.81	192	11			100						
PCB-057		19.04	434	12			100						
PCB-058		NotFnd	<12	12	U		100						
PCB-067		19.26	2500	11			100						
PCB-063		19.41	2230	12			100						
PCB-061/070/074/076		19.59	78200	12			100						
PCB-066		19.76	34000	12			100						
PCB-055		19.87	1280	13			100						
PCB-056		20.14	14500	13			100						
PCB-060		20.26	9390	13			100						
PCB-080		NotFnd	<11	11	U		100						
PCB-079		21.26	134	11			100						
PCB-078		NotFnd	<12	12	U		100						
PCB-081	0.0003	21.83	99.4	15	J		100						
PCB-077	0.0001	22.13	1890	15			100						
PCB-104		17.51	<13	1.9	J,R	13	100						
PCB-096		17.75	1090	2.0			100						
PCB-103		18.74	340	13			100						
PCB-094		18.88	422	15			100						
PCB-095		19.13	37200	14			100						
PCB-093/098/100/102		19.30	2710	14			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 2 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-2	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A08	5-200910A22
Run Date	09-Sep-20 18:17	11-Sep-20 01:38
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-088/091		19.59	6870	14			100						
PCB-084		19.73	11000	15			100						
PCB-089		19.98	605	15			100						
PCB-121		NotFnd	<10	10	U		100						
PCB-092		20.35	5280	14			100						
PCB-090/101/113		20.65	28100	12			100						
PCB-083/099		20.97	14900	14	M		100						
PCB-112		21.04	<140	10	M,R	140	100						
PCB-086/087/097/109/119/125		21.31	18800	12	M		100						
PCB-085/110/115/116/117		21.72	32300	11	M		100						
PCB-082		21.92	3260	16			100						
PCB-111		NotFnd	<10	10	U		100						
PCB-120		22.29	<16	9.9	M,J,R	16	100						
PCB-108/124		22.91	711	8.1			100						
PCB-107		23.04	1010	7.2			100						
PCB-123	0.00003	23.10	323	10			100						
PCB-106		NotFnd	<8.3	8.3	U		100						
PCB-118	0.00003	23.27	17800	8.9			100						
PCB-122		23.47	293	8.6			100						
PCB-114	0.00003	23.58	578	9.8			100						
PCB-105	0.00003	23.93	7700	10			100						
PCB-127		24.66	<9.7	7.8	M,J,R	9.7	100						
PCB-126	0.1	25.53	<49	12	J,R	49	100						
PCB-155		NotFnd	<1.2	1.2	U		100						
PCB-152		20.67	23.2	1.4	J		100						
PCB-150		20.73	<28	1.5	J,R	28	100						
PCB-136		20.97	2370	1.5			100						
PCB-145		21.10	13.5	1.5	J		100						
PCB-148		21.84	13.7	2.0	J		100						
PCB-135/151		22.19	4540	2.1	M		100						
PCB-154		22.27	120	1.6	M		100						
PCB-144		22.48	687	2.0			100						
PCB-147/149		22.67	10600	6.8			100						
PCB-134/143		22.80	1000	7.9			100						
PCB-139/140		22.98	339	6.9			100						
PCB-131		23.12	264	7.8			100						
PCB-142		NotFnd	<8.0	8.0	U		100						
PCB-132		23.36	5600	8.0			100						
PCB-133		23.55	172	7.4			100						
PCB-165		23.74	<6.0	6.0	U	4.6	100						
PCB-146		23.89	1490	6.5			100						
PCB-161		NotFnd	<5.3	5.3	U		100						
PCB-153/168		24.20	9110	5.8			100						
PCB-141		24.34	2160	6.9			100						
PCB-130		24.55	850	7.9			100						
PCB-137/164		24.72	1540	6.1	M		100						
PCB-129/138/163		24.89	13100	6.7			100						
PCB-160		NotFnd	<5.6	5.6	U		100						
PCB-158		25.09	1480	4.9			100						
PCB-128/166		25.58	1960	6.0			100						
PCB-159		26.03	31.8	5.1	J		100						
PCB-162		26.17	33.0	5.3	J		100						
PCB-167	0.00003	26.43	449	5.6			100						
PCB-156/157	0.00003	27.03	1520	7.6			200						
PCB-169	0.03	28.71	<6.4	6.4	M,U	3.3	100						
PCB-188		23.50	8.73	2.3	J		100						
PCB-179		23.72	630	2.4			100						
PCB-184		23.95	<3.9	2.3	J,R	3.9	100						
PCB-176		24.18	182	2.4			100						
PCB-186		NotFnd	<2.6	2.6	U		100						
PCB-178		25.09	262	3.2			100						
PCB-175		25.41	<51	3.0	J,R	51	100						
PCB-187		25.56	1440	2.8	M		100						
PCB-182		25.65	15.1	2.8	M,J		100						
PCB-183		25.87	677	2.9			100						
PCB-185		25.96	101	3.1	M		100						
PCB-174		26.02	1000	2.8	M		100						
PCB-177		26.25	558	3.1			100						
PCB-181		26.45	<14	3.1	J,R	14	100						
PCB-171/173		26.58	325	3.1			100						
PCB-172		27.38	170	3.1			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 2 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-2	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A08	5-200910A22
Run Date	09-Sep-20 18:17	11-Sep-20 01:38
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<2.6	2.6	U		100						
PCB-180/193		27.72	2040	2.6			100						
PCB-191		27.90	43.7	2.4	J		100						
PCB-170		28.40	1050	3.3			100						
PCB-190		28.67	195	2.4			100						
PCB-189	0.00003	29.99	43.4	1.8	J		100						
PCB-202		26.29	271	1.2			100						
PCB-201		26.75	131	1.2			100						
PCB-204		NotFnd	<1.2	1.2	U		100						
PCB-197		27.22	<23	1.2	J,R	23	100						
PCB-200		27.31	90.2	1.2	J		100						
PCB-198/199		28.72	761	1.7			100						
PCB-196		29.06	276	1.7			100						
PCB-203		29.16	487	1.6			100						
PCB-195		29.88	178	2.7			100						
PCB-194		31.10	508	2.6			100						
PCB-205		31.40	24.2	2.5	J		100						
PCB-208		29.71	154	2.1			100						
PCB-207		30.20	<58	2.5	M,J,R	58	100						
PCB-206		32.46	446	3.5			100						
PCB-209		33.58	253	0.74			100						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	4000	8.91	52	5-145			
13C12-PCB-003	4000	10.44	56	5-145			
13C12-PCB-004	4000	10.59	63	5-145			
13C12-PCB-015	4000	14.27	92	5-145			
13C12-PCB-019	4000	12.58	55	5-145			
13C12-PCB-037	4000	18.22	88	5-145			
13C12-PCB-054	4000	14.44	69	5-145			
13C12-PCB-081	4000	21.81	94	10-145			
13C12-PCB-077	4000	22.11	95	10-145			
13C12-PCB-104	4000	17.50	99	10-145			
13C12-PCB-123	4000	23.09	100	10-145			
13C12-PCB-118	4000	23.26	104	10-145			
13C12-PCB-114	4000	23.56	100	10-145			
13C12-PCB-105	4000	23.91	97	10-145			
13C12-PCB-126	4000	25.52	97	10-145			
13C12-PCB-155	4000	20.50	94	10-145			
13C12-PCB-167	4000	26.40	113	10-145			
13C12-PCB-156/157	8000	27.04	114	10-145			
13C12-PCB-169	4000	28.71	121	10-145			
13C12-PCB-188	4000	23.50	124	10-145			
13C12-PCB-189	4000	29.97	129	10-145			
13C12-PCB-202	4000	26.27	97	10-145			
13C12-PCB-205	4000	31.37	115	10-145			
13C12-PCB-208	4000	29.71	115	10-145			
13C12-PCB-206	4000	32.44	119	10-145			
13C12-PCB-209	4000	33.57	114	10-145			
Field Spike Standards							
13C12-PCB-031	24000	15.80	120	70-130			
13C12-PCB-095	24000	19.11	113	70-130			
13C12-PCB-153	24000	24.19	103	70-130			
Cleanup Standards							
13C12-PCB-028	4000	15.98	85	5-145			
13C12-PCB-111	4000	22.03	98	10-145			
13C12-PCB-178	4000	25.07	119	10-145			

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 2 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-2	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**	**Run 2**
Filename	5-200909A08	5-200910A22
Run Date	09-Sep-20 18:17	11-Sep-20 01:38
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals													
Total MonoCB			228000	7.3	J		400						
Total DiCB			2070000	5.9	J		800						
Total TriCB			2640000	3.6	J		800						
Total TetraCB			942000	2.3	J		1600						
Total PentaCB			192000	1.9	J		1600						
Total HexaCB			59500	1.2	J		1600						
Total HeptaCB			8810	1.8	J		800						
Total OctaCB			2750	1.2	J		800						
Total NonaCB			658	2.1	J		400						
DecaCB			253	0.74	J		400						
Total PCB			6150000		J		3200						
Toxic Equivalency - (WHO 2005)													
Lower Bound PCB TEQ			1.07										
Mid Point PCB TEQ			6.07										
Upper Bound PCB TEQ			6.16										

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 3 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-3	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A09	5-200910A23
Run Date	09-Sep-20 18:59	11-Sep-20 02:20
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-001		8.91	78500	7.3			100						
PCB-002		10.33	3470	8.6			100						
PCB-003		10.45	14800	8.6			100						
PCB-004								10.59	438000	85			500
PCB-010		10.72	13300	9.2			100						
PCB-009		11.87	29700	8.8			100						
PCB-007		11.98	17200	9.1			100						
PCB-006		12.13	78500	9.0			100						
PCB-005		12.33	7690	10	M		100						
PCB-008								12.39	400000	42	M		500
PCB-014		NotFnd	<22	22	U		100						
PCB-011		13.90	6640	24	M		100						
PCB-012/013		14.08	11200	23			100						
PCB-015		14.28	60800	22			100						
PCB-019		12.60	66000	5.8			100						
PCB-018/030								13.70	319000	73			500
PCB-017		13.96	156000	23			100						
PCB-027		14.08	19800	17			100						
PCB-024		14.17	4940	18			100						
PCB-016		14.24	142000	28			100						
PCB-032		14.53	74700	16			100						
PCB-034		15.23	843	31			100						
PCB-023		15.33	399	30			100						
PCB-026/029		15.50	39000	29			100						
PCB-025		15.64	16000	27			100						
PCB-031		15.81	180000	28			100						
PCB-020/028		15.99	190000	30			100						
PCB-021/033		16.12	118000	29			100						
PCB-022		16.36	64600	32			100						
PCB-036		NotFnd	<29	29	U		100						
PCB-039		17.42	370	30			100						
PCB-038		17.75	60.7	31	M,J		100						
PCB-035		18.01	1640	32			100						
PCB-037		18.24	20900	37			100						
PCB-054		14.45	705	3.1			100						
PCB-050/053		15.66	21100	6.3			100						
PCB-045/051		16.06	29600	6.6			100						
PCB-046		16.24	9170	7.3			100						
PCB-052		16.98	89100	6.6			100						
PCB-073		NotFnd	<4.9	4.9	U		100						
PCB-043		17.12	4410	7.5			100						
PCB-049/069		17.25	47400	5.6			100						
PCB-048		17.42	22900	6.4			100						
PCB-044/047/065		17.54	70000	5.9			100						
PCB-059/062/075		17.73	6800	4.9			100						
PCB-042		17.84	18900	6.7			100						
PCB-040/041/071		18.11	38600	6.5			100						
PCB-064		18.23	27000	4.8			100						
PCB-072		18.64	211	13			100						
PCB-068		18.80	<98	12	J,R	98	100						
PCB-057		19.04	225	14			100						
PCB-058		NotFnd	<13	13	U		100						
PCB-067		19.26	1370	12			100						
PCB-063		19.41	1240	13			100						
PCB-061/070/074/076		19.59	44700	13			100						
PCB-066		19.76	20200	13			100						
PCB-055		19.87	1060	14			100						
PCB-056		20.14	9420	14			100						
PCB-060		20.27	6190	14			100						
PCB-080		NotFnd	<12	12	U		100						
PCB-079		21.26	<71	12	J,R	71	100						
PCB-078		NotFnd	<13	13	U		100						
PCB-081	0.0003	21.83	76.3	16	J		100						
PCB-077	0.0001	22.13	1290	17			100						
PCB-104		17.49	11.4	3.2	J		100						
PCB-096		17.75	500	3.1			100						
PCB-103		18.74	178	12			100						
PCB-094		18.88	210	15			100						
PCB-095		19.13	18600	13			100						
PCB-093/098/100/102		19.30	1390	13			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 3 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-3	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**	**Run 2**
Filename	5-200909A09	5-200910A23
Run Date	09-Sep-20 18:59	11-Sep-20 02:20
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-088/091		19.59	3500	13			100						
PCB-084		19.73	5560	14			100						
PCB-089		19.98	359	14	M		100						
PCB-121		NotFnd	<10	10	U		100						
PCB-092		20.35	2720	14			100						
PCB-090/101/113		20.65	14500	12			100						
PCB-083/099		20.97	7950	14	M		100						
PCB-112		21.04	<49	9.7	M,J,R	49	100						
PCB-086/087/097/109/119/125		21.31	9290	11	M		100						
PCB-085/110/115/116/117		21.72	15500	11	M		100						
PCB-082		21.92	1630	15			100						
PCB-111		NotFnd	<10	10	U		100						
PCB-120		22.28	<10	9.6	M,J,R	10	100						
PCB-108/124		22.91	291	12			100						
PCB-107		23.04	456	11	M		100						
PCB-123	0.00003	23.09	142	14	M		100						
PCB-106		NotFnd	<12	12	U		100						
PCB-118	0.00003	23.27	7200	13			100						
PCB-122		23.48	134	13			100						
PCB-114	0.00003	23.58	217	14			100						
PCB-105	0.00003	23.93	3020	15			100						
PCB-127		NotFnd	<11	11	U		100						
PCB-126	0.1	25.54	<39	16	M,J,R	39	100						
PCB-155		NotFnd	<2.6	2.6	U		100						
PCB-152		20.66	<9.4	2.9	M,J,R	9.4	100						
PCB-150		20.73	20.2	3.0	M,J		100						
PCB-136		20.97	1100	3.0			100						
PCB-145		21.10	<6.9	3.1	J,R	6.9	100						
PCB-148		21.84	<5.2	4.1	M,J,R	5.2	100						
PCB-135/151		22.18	1990	4.2	M		100						
PCB-154		22.29	56.8	3.3	M,J		100						
PCB-144		22.47	291	4.0			100						
PCB-147/149		22.67	4370	6.1			100						
PCB-134/143		22.80	379	7.1			100						
PCB-139/140		22.97	140	6.2			100						
PCB-131		23.12	95.0	7.0	J		100						
PCB-142		NotFnd	<7.1	7.1	U		100						
PCB-132		23.36	1920	7.2			100						
PCB-133		23.55	<60	6.6	J,R	60	100						
PCB-165		23.71	<6.6	5.4	J,R	6.6	100						
PCB-146		23.89	557	5.8			100						
PCB-161		NotFnd	<4.8	4.8	U		100						
PCB-153/168		24.20	3430	5.1			100						
PCB-141		24.34	762	6.1			100						
PCB-130		24.55	277	7.0			100						
PCB-137/164		24.66	529	5.4	M		100						
PCB-129/138/163		24.88	4210	6.0			100						
PCB-160		NotFnd	<5.0	5.0	U		100						
PCB-158		25.09	452	4.3			100						
PCB-128/166		25.57	572	5.4			100						
PCB-159		26.02	<8.2	4.5	J,R	8.2	100						
PCB-162		26.17	<6.8	4.7	J,R	6.8	100						
PCB-167	0.00003	26.42	117	4.8			100						
PCB-156/157	0.00003	27.04	387	6.8			200						
PCB-169	0.03	28.70	<5.7	5.7	M,U	4.8	100						
PCB-188		23.51	9.38	3.3	J		100						
PCB-179		23.72	388	3.3			100						
PCB-184		NotFnd	<3.2	3.2	U		100						
PCB-176		24.18	86.3	3.3	J		100						
PCB-186		NotFnd	<3.5	3.5	U		100						
PCB-178		25.09	<130	4.3	R	130	100						
PCB-175		25.41	<19	4.1	J,R	19	100						
PCB-187		25.54	889	3.9	M		100						
PCB-182		25.63	<6.8	3.8	M,J,R	6.8	100						
PCB-183		25.87	331	4.0			100						
PCB-185		25.96	52.8	4.2	M,J		100						
PCB-174		26.02	385	3.8	M		100						
PCB-177		26.25	189	4.2			100						
PCB-181		26.44	<4.2	4.2	U	3.3	100						
PCB-171/173		26.57	103	4.2			100						
PCB-172		27.37	56.6	4.3	J		100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 3 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-3	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A09	5-200910A23
Run Date	09-Sep-20 18:59	11-Sep-20 02:20
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<3.6	3.6	U		100						
PCB-180/193		27.71	792	3.5			100						
PCB-191		27.90	<11	3.3	J,R	11	100						
PCB-170		28.40	283	4.5			100						
PCB-190		28.67	67.8	3.2	M,J		100						
PCB-189	0.00003	29.99	<13	2.8	M,J,R	13	100						
PCB-202		26.28	<240	1.3	R	240	100						
PCB-201		26.75	109	1.3			100						
PCB-204		NotFnd	<1.3	1.3	U		100						
PCB-197		27.22	18.1	1.3	J		100						
PCB-200		27.31	<50	1.3	J,R	50	100						
PCB-198/199		28.71	476	1.8			100						
PCB-196		29.05	159	1.8			100						
PCB-203		29.16	311	1.7			100						
PCB-195		29.88	52.5	2.0	J		100						
PCB-194		31.10	168	1.9			100						
PCB-205		31.40	7.30	1.8	M,J		100						
PCB-208		29.71	73.7	3.0	J		100						
PCB-207		30.20	41.1	3.5	J		100						
PCB-206		32.46	160	4.9			100						
PCB-209		33.58	<42	1.4	J,R	42	100						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	4000	8.90	49	5-145			
13C12-PCB-003	4000	10.44	48	5-145			
13C12-PCB-004	4000	10.59	53	5-145			
13C12-PCB-015	4000	14.27	68	5-145			
13C12-PCB-019	4000	12.58	44	5-145			
13C12-PCB-037	4000	18.23	60	5-145			
13C12-PCB-054	4000	14.44	58	5-145			
13C12-PCB-081	4000	21.82	62	10-145			
13C12-PCB-077	4000	22.12	62	10-145			
13C12-PCB-104	4000	17.50	61	10-145			
13C12-PCB-123	4000	23.09	70	10-145			
13C12-PCB-118	4000	23.26	69	10-145			
13C12-PCB-114	4000	23.56	68	10-145			
13C12-PCB-105	4000	23.91	65	10-145			
13C12-PCB-126	4000	25.52	67	10-145			
13C12-PCB-155	4000	20.50	64	10-145			
13C12-PCB-167	4000	26.40	83	10-145			
13C12-PCB-156/157	8000	27.03	83	10-145			
13C12-PCB-169	4000	28.71	88	10-145 R			
13C12-PCB-188	4000	23.50	90	10-145			
13C12-PCB-189	4000	29.97	97	10-145			
13C12-PCB-202	4000	26.27	70	10-145			
13C12-PCB-205	4000	31.37	81	10-145			
13C12-PCB-208	4000	29.69	81	10-145			
13C12-PCB-206	4000	32.44	86	10-145			
13C12-PCB-209	4000	33.57	84	10-145			
Field Spike Standards							
13C12-PCB-031	24000	15.80	123	70-130			
13C12-PCB-095	24000	19.11	113	70-130			
13C12-PCB-153	24000	24.19	105	70-130			
Cleanup Standards							
13C12-PCB-028	4000	15.97	64	5-145			
13C12-PCB-111	4000	22.03	71	10-145			
13C12-PCB-178	4000	25.07	83	10-145			

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 3 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-3	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**	**Run 2**
Filename	5-200909A09	5-200910A23
Run Date	09-Sep-20 18:59	11-Sep-20 02:20
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals													
Total MonoCB			96800	7.3	J		400						
Total DiCB			1060000	8.8	J		800						
Total TriCB			1410000	5.8	J		800						
Total TetraCB			472000	3.1	J		1600						
Total PentaCB			93500	3.1	J		1600						
Total HexaCB			21800	2.6	J		1600						
Total HeptaCB			3810	2.8	J		800						
Total OctaCB			1590	1.3	J		800						
Total NonaCB			275	3.0	J		400						
DecaCB			42.0	1.4	J		400						
Total PCB			3170000		J		3200						
Toxic Equivalency - (WHO 2005)													
Lower Bound PCB TEQ			0.484										
Mid Point PCB TEQ			4.47										
Upper Bound PCB TEQ			4.56										

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 4 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-4	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A10	5-200910A24
Run Date	09-Sep-20 19:41	11-Sep-20 03:02
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-001		8.90	165000	7.8			100						
PCB-002		10.31	7740	9.3			100						
PCB-003		10.44	33900	9.4			100						
PCB-004								10.59	1150000	92			500
PCB-010		10.70	35700	10			100						
PCB-009		11.87	77300	9.8			100						
PCB-007		11.97	43100	10			100						
PCB-006								12.12	234000	47			500
PCB-005		12.33	16200	11	M		100						
PCB-008								12.39	961000	41	M		500
PCB-014		13.38	<49	36	M,J,R	49	100						
PCB-011		13.89	12000	38			100						
PCB-012/013		14.08	31900	38			100						
PCB-015		14.27	187000	37			100						
PCB-019								12.58	201000	28			500
PCB-018/030								13.70	1020000	86			500
PCB-017								13.94	440000	99			500
PCB-027		14.08	62000	18			100						
PCB-024		14.16	17700	19			100						
PCB-016								14.23	400000	120			500
PCB-032								14.52	218000	72			500
PCB-034		15.22	2810	55			100						
PCB-023		15.32	1190	53			100						
PCB-026/029		15.49	125000	51			100						
PCB-025		15.64	50400	48			100						
PCB-031								15.80	536000	110			500
PCB-020/028								15.98	584000	120			500
PCB-021/033								16.11	352000	110			500
PCB-022								16.35	197000	120			500
PCB-036		NotFnd	<51	51	U		100						
PCB-039		17.41	1210	53			100						
PCB-038		17.73	157	54			100						
PCB-035		18.00	5230	56			100						
PCB-037		18.22	63700	62			100						
PCB-054		14.44	2140	5.7			100						
PCB-050/053		15.65	72900	17			100						
PCB-045/051		16.05	99500	18			100						
PCB-046		16.23	29500	20			100						
PCB-052								16.97	327000	61			500
PCB-073		NotFnd	<13	13	U		100						
PCB-043		17.11	14800	20			100						
PCB-049/069		17.24	159000	15			100						
PCB-048		17.41	75800	18			100						
PCB-044/047/065								17.53	267000	58			500
PCB-059/062/075		17.72	22100	13			100						
PCB-042		17.84	61100	18			100						
PCB-040/041/071		18.10	122000	18			100						
PCB-064		18.22	83700	13			100						
PCB-072		18.63	631	28			100						
PCB-068		18.80	259	27	M		100						
PCB-057		19.03	725	30			100						
PCB-058		NotFnd	<30	30	U		100						
PCB-067		19.25	4110	27			100						
PCB-063		19.40	3800	28			100						
PCB-061/070/074/076		19.58	135000	29			100						
PCB-066		19.75	59600	28			100						
PCB-055		19.86	2460	31	M		100						
PCB-056		20.13	26200	30			100						
PCB-060		20.26	17100	30			100						
PCB-080		NotFnd	<26	26	U		100						
PCB-079		21.30	426	27			100						
PCB-078		21.63	143	29			100						
PCB-081	0.0003	21.82	191	40			100						
PCB-077	0.0001	22.12	3950	41			100						
PCB-104		17.53	16.0	5.5	J		100						
PCB-096		17.74	1830	6.2			100						
PCB-103		18.73	586	18			100						
PCB-094		18.87	676	21			100						
PCB-095		19.12	62000	19			100						
PCB-093/098/100/102		19.29	4510	19			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 4 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-4	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A10	5-200910A24
Run Date	09-Sep-20 19:41	11-Sep-20 03:02
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-088/091		19.58	12000	19			100						
PCB-084		19.72	18700	21			100						
PCB-089		19.97	1080	20			100						
PCB-121		NotFnd	<14	14	U		100						
PCB-092		20.34	8930	19			100						
PCB-090/101/113		20.64	47100	17			100						
PCB-083/099		20.96	25600	20	M		100						
PCB-112		21.03	<170	14	M,R	170	100						
PCB-086/087/097/109/119/125		21.30	30400	16	M		100						
PCB-085/110/115/116/117		21.71	48500	15	M		100						
PCB-082		21.91	5220	22			100						
PCB-111		22.05	<26	14	J,R	26	100						
PCB-120		22.29	<34	14	J,R	34	100						
PCB-108/124		22.91	947	14			100						
PCB-107		23.03	1380	12	M		100						
PCB-123	0.00003	23.08	490	17	M		100						
PCB-106		NotFnd	<14	14	U		100						
PCB-118	0.00003	23.27	22400	15			100						
PCB-122		23.47	<350	14	M,R	350	100						
PCB-114	0.00003	23.58	745	17			100						
PCB-105	0.00003	23.91	9370	17			100						
PCB-127		24.65	23.6	13	J		100						
PCB-126	0.1	25.53	<120	19	M,R	120	100						
PCB-155		20.50	<5.2	3.7	M,J,R	5.2	100						
PCB-152		20.66	49.7	4.6	J		100						
PCB-150		20.73	48.5	4.7	J		100						
PCB-136		20.96	3710	4.7			100						
PCB-145		21.10	18.0	4.9	J		100						
PCB-148		21.84	21.9	6.5	J		100						
PCB-135/151		22.17	5800	6.7	M		100						
PCB-154		22.26	171	5.2	M		100						
PCB-144		22.46	853	6.3			100						
PCB-147/149		22.66	13300	14			100						
PCB-134/143		22.79	1280	16			100						
PCB-139/140		22.97	452	14			100						
PCB-131		23.10	326	16			100						
PCB-142		NotFnd	<16	16	U		100						
PCB-132		23.35	6360	16			100						
PCB-133		23.54	194	15			100						
PCB-165		23.71	<12	12	U	11	100						
PCB-146		23.88	1680	13			100						
PCB-161		NotFnd	<11	11	U		100						
PCB-153/168		24.19	10100	12			100						
PCB-141		24.32	2290	14			100						
PCB-130		24.54	909	16			100						
PCB-137/164		24.71	1570	12	M		100						
PCB-129/138/163		24.88	13400	14			100						
PCB-160		NotFnd	<11	11	U		100						
PCB-158		25.09	1420	9.9			100						
PCB-128/166		25.57	1910	12			100						
PCB-159		26.02	<25	10	M,J,R	25	100						
PCB-162		26.16	34.5	11	J		100						
PCB-167	0.00003	26.42	390	12			100						
PCB-156/157	0.00003	27.03	1300	16			200						
PCB-169	0.03	NotFnd	<13	13	U		100						
PCB-188		23.50	<13	5.1	J,R	13	100						
PCB-179		23.72	799	5.1			100						
PCB-184		23.95	<5.1	4.9	J,R	5.1	100						
PCB-176		24.17	212	5.0			100						
PCB-186		NotFnd	<5.4	5.4	U		100						
PCB-178		25.07	311	6.7			100						
PCB-175		25.40	<52	6.3	J,R	52	100						
PCB-187		25.54	1780	5.9	M		100						
PCB-182		25.62	<18	5.9	M,J,R	18	100						
PCB-183		25.86	721	6.1			100						
PCB-185		25.93	129	6.4	M		100						
PCB-174		26.00	964	5.9	M		100						
PCB-177		26.25	495	6.4			100						
PCB-181		26.44	<14	6.4	J,R	14	100						
PCB-171/173		26.57	272	6.5			100						
PCB-172		27.37	147	6.6			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 4 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-4	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A10	5-200910A24
Run Date	09-Sep-20 19:41	11-Sep-20 03:02
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<5.5	5.5	U		100						
PCB-180/193		27.70	1900	5.4			100						
PCB-191		27.89	35.9	5.1	M,J		100						
PCB-170		28.38	783	7.0			100						
PCB-190		28.66	170	5.0			100						
PCB-189	0.00003	29.99	33.0	3.4	J		100						
PCB-202		26.28	388	2.4			100						
PCB-201		26.75	167	2.3			100						
PCB-204		NotFnd	<2.4	2.4	U		100						
PCB-197		27.21	<24	2.3	J,R	24	100						
PCB-200		27.30	109	2.4			100						
PCB-198/199		28.71	866	3.2			100						
PCB-196		29.05	<270	3.3	M,R	270	100						
PCB-203		29.15	552	3.1	M		100						
PCB-195		29.86	157	3.9			100						
PCB-194		31.09	458	3.7			100						
PCB-205		31.37	<18	3.5	J,R	18	100						
PCB-208		29.71	165	5.7			100						
PCB-207		30.18	76.1	6.4	J		100						
PCB-206		32.44	404	8.7			100						
PCB-209		33.57	147	3.1			100						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Flags**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	4000	8.90	41	5-145				
13C12-PCB-003	4000	10.42	40	5-145				
13C12-PCB-004	4000	10.58	44	5-145				
13C12-PCB-015	4000	14.26	52	5-145				
13C12-PCB-019	4000	12.58	33	5-145				
13C12-PCB-037	4000	18.21	41	5-145				
13C12-PCB-054	4000	14.43	42	5-145				
13C12-PCB-081	4000	21.81	40	10-145				
13C12-PCB-077	4000	22.11	40	10-145				
13C12-PCB-104	4000	17.49	44	10-145				
13C12-PCB-123	4000	23.09	44	10-145				
13C12-PCB-118	4000	23.26	45	10-145				
13C12-PCB-114	4000	23.56	42	10-145				
13C12-PCB-105	4000	23.90	42	10-145				
13C12-PCB-126	4000	25.51	42	10-145				
13C12-PCB-155	4000	20.49	44	10-145				
13C12-PCB-167	4000	26.40	50	10-145				
13C12-PCB-156/157	8000	27.03	49	10-145				
13C12-PCB-169	4000	28.70	54	10-145	R			
13C12-PCB-188	4000	23.49	53	10-145				
13C12-PCB-189	4000	29.97	60	10-145				
13C12-PCB-202	4000	26.26	44	10-145				
13C12-PCB-205	4000	31.35	51	10-145				
13C12-PCB-208	4000	29.69	49	10-145				
13C12-PCB-206	4000	32.43	54	10-145				
13C12-PCB-209	4000	33.55	51	10-145				
Field Spike Standards								
13C12-PCB-031	24000	15.79	123	70-130				
13C12-PCB-095	24000	19.10	113	70-130				
13C12-PCB-153	24000	24.18	102	70-130				
Cleanup Standards								
13C12-PCB-028	4000	15.97	46	5-145				
13C12-PCB-111	4000	22.02	45	10-145				
13C12-PCB-178	4000	25.06	53	10-145				

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 4 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-4	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**	**Run 2**
Filename	5-200909A10	5-200910A24
Run Date	09-Sep-20 19:41	11-Sep-20 03:02
Final Volume	25 ul	25 uL
Dilution Factor	1	5
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals													
Total MonoCB			207000	7.8	J		400						
Total DiCB			2750000	9.8	J		800						
Total TriCB			4280000	18	J		800						
Total TetraCB			1590000	5.7	J		1600						
Total PentaCB			303000	5.5	J		1600						
Total HexaCB			67600	3.7	J		1600						
Total HeptaCB			8850	3.4	J		800						
Total OctaCB			3010	2.3	J		800						
Total NonaCB			645	5.7	J		400						
DecaCB			147	3.1	J		400						
Total PCB			9210000		J		3200						
Toxic Equivalency - (WHO 2005)													
Lower Bound PCB TEQ			1.49										
Mid Point PCB TEQ			13.7										
Upper Bound PCB TEQ			13.9										

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 5 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-5	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A11	5-200910A25
Run Date	09-Sep-20 20:23	11-Sep-20 03:44
Final Volume	25 ul	25 uL
Dilution Factor	1	10
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-001								8.90	411000	61			1000
PCB-002		10.31	17100	10			100						
PCB-003		10.44	72100	9.5			100						
PCB-004								10.59	2090000	110			1000
PCB-010		10.72	58300	4.5			100						
PCB-009		11.87	147000	4.3			100						
PCB-007		11.98	82300	4.4			100						
PCB-006								12.12	446000	52			1000
PCB-005		12.33	36400	5.0	M		100						
PCB-008								12.39	1850000	47	M		1000
PCB-014		13.38	<77	22	J,R	77	100						
PCB-011		13.90	17800	23			100						
PCB-012/013		14.08	52500	22			100						
PCB-015								14.28	312000	150			1000
PCB-019								12.58	290000	41			1000
PCB-018/030								13.69	1560000	93			1000
PCB-017								13.94	679000	110			1000
PCB-027		14.08	81500	6.8			100						
PCB-024		14.17	21200	7.2			100						
PCB-016								14.22	603000	130			1000
PCB-032								14.52	338000	77			1000
PCB-034		15.23	4250	25			100						
PCB-023		15.33	2050	24			100						
PCB-026/029		15.50	191000	23			100						
PCB-025		15.64	77800	22			100						
PCB-031								15.80	868000	320			1000
PCB-020/028								15.97	931000	340			1000
PCB-021/033								16.11	571000	330			1000
PCB-022								16.35	304000	360			1000
PCB-036		NotFnd	<24	24	U		100						
PCB-039		17.42	1910	24			100						
PCB-038		17.73	255	25			100						
PCB-035		17.99	7480	26			100						
PCB-037		18.22	84200	26			100						
PCB-054		14.45	3530	3.0			100						
PCB-050/053		15.65	110000	6.8			100						
PCB-045/051		16.06	151000	7.1			100						
PCB-046		16.23	44800	7.9			100						
PCB-052								16.97	475000	83			1000
PCB-073		NotFnd	<5.3	5.3	U		100						
PCB-043		17.12	23500	8.0			100						
PCB-049/069								17.24	267000	73			1000
PCB-048		17.41	121000	6.9			100						
PCB-044/047/065								17.53	391000	77			1000
PCB-059/062/075		17.72	36000	5.3			100						
PCB-042		17.84	96400	7.2			100						
PCB-040/041/071		18.10	189000	6.9			100						
PCB-064		18.23	132000	5.1			100						
PCB-072		18.63	1000	20			100						
PCB-068		18.80	461	19			100						
PCB-057		19.03	1180	21			100						
PCB-058		NotFnd	<21	21	U		100						
PCB-067		19.25	6410	19			100						
PCB-063		19.40	5730	20			100						
PCB-061/070/074/076		19.58	196000	20			100						
PCB-066		19.76	85700	20			100						
PCB-055		19.86	2970	22			100						
PCB-056		20.13	36400	21			100						
PCB-060		20.26	23700	21			100						
PCB-080		NotFnd	<18	18	U		100						
PCB-079		21.30	512	19			100						
PCB-078		NotFnd	<20	20	U		100						
PCB-081	0.0003	21.82	242	24			100						
PCB-077	0.0001	22.11	4420	25			100						
PCB-104		17.51	<32	3.1	J,R	32	100						
PCB-096		17.75	2550	3.2			100						
PCB-103		18.74	835	8.4			100						
PCB-094		18.87	932	10			100						
PCB-095		19.12	79800	8.9			100						
PCB-093/098/100/102		19.30	6070	9.0			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 5 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-5	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A11	5-200910A25
Run Date	09-Sep-20 20:23	11-Sep-20 03:44
Final Volume	25 ul	25 uL
Dilution Factor	1	10
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-088/091		19.58	15300	9.2			100						
PCB-084		19.73	22800	9.9			100						
PCB-089		19.98	1370	9.6			100						
PCB-121		NotFnd	<6.9	6.9	U		100						
PCB-092		20.34	10900	9.3			100						
PCB-090/101/113		20.64	57000	7.9			100						
PCB-083/099		20.96	31000	9.3	M		100						
PCB-112		21.04	160	6.6	M		100						
PCB-086/087/097/109/119/125		21.30	36200	7.8	M		100						
PCB-085/110/115/116/117		21.71	58200	7.3	M		100						
PCB-082		21.91	6120	10			100						
PCB-111		NotFnd	<6.8	6.8	U		100						
PCB-120		22.28	63.4	6.5	J		100						
PCB-108/124		22.91	1150	7.5			100						
PCB-107		23.03	1690	6.7	M		100						
PCB-123	0.00003	23.08	598	9.2	M		100						
PCB-106		NotFnd	<7.7	7.7	U		100						
PCB-118	0.00003	23.27	27600	8.3			100						
PCB-122		23.47	428	8.0			100						
PCB-114	0.00003	23.58	913	9.1			100						
PCB-105	0.00003	23.91	11500	9.3			100						
PCB-127		24.66	<24	7.2	J,R	24	100						
PCB-126	0.1	25.52	<84	10	J,R	84	100						
PCB-155		20.51	6.86	1.3	J		100						
PCB-152		20.67	52.5	1.5	J		100						
PCB-150		20.73	70.8	1.5	J		100						
PCB-136		20.96	4560	1.5			100						
PCB-145		21.10	<24	1.5	J,R	24	100						
PCB-148		21.84	<23	2.0	J,R	23	100						
PCB-135/151		22.18	7920	2.1	M		100						
PCB-154		22.26	222	1.6	M		100						
PCB-144		22.47	1180	2.0			100						
PCB-147/149		22.66	17200	7.0			100						
PCB-134/143		22.79	1600	8.1			100						
PCB-139/140		22.97	578	7.1			100						
PCB-131		23.10	405	8.1			100						
PCB-142		23.20	<8.2	8.2	U		100						
PCB-132		23.35	8010	8.3			100						
PCB-133		23.55	246	7.6			100						
PCB-165		23.72	19.1	6.2	J		100						
PCB-146		23.88	2230	6.7			100						
PCB-161		NotFnd	<5.5	5.5	U		100						
PCB-153/168		24.20	13200	5.9			100						
PCB-141		24.32	2920	7.1			100						
PCB-130		24.54	1160	8.1			100						
PCB-137/164		24.71	2060	6.3	M		100						
PCB-129/138/163		24.88	17000	6.9			100						
PCB-160		NotFnd	<5.7	5.7	U		100						
PCB-158		25.09	1950	5.0			100						
PCB-128/166		25.57	2370	6.2			100						
PCB-159		26.02	42.0	5.2	M,J		100						
PCB-162		26.16	37.4	5.5	J		100						
PCB-167	0.00003	26.42	546	5.7			100						
PCB-156/157	0.00003	27.03	1730	7.9			200						
PCB-169	0.03	28.71	<18	6.5	M,J,R	18	100						
PCB-188		23.51	<18	2.3	J,R	18	100						
PCB-179		23.72	1230	2.4			100						
PCB-184		23.95	<8.1	2.3	J,R	8.1	100						
PCB-176		24.17	309	2.3			100						
PCB-186		NotFnd	<2.5	2.5	U		100						
PCB-178		25.09	494	3.1			100						
PCB-175		25.41	86.2	2.9	J		100						
PCB-187		25.54	2800	2.8			100						
PCB-182		25.64	<21	2.8	J,R	21	100						
PCB-183		25.86	1110	2.9	M		100						
PCB-185		25.94	172	3.0	M		100						
PCB-174		26.02	1450	2.7	M		100						
PCB-177		26.25	750	3.0			100						
PCB-181		26.44	22.7	3.0	J		100						
PCB-171/173		26.57	417	3.0			100						
PCB-172		27.37	216	3.1			100						

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 5 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		Approved:
ALS Sample ID	L2491640-5	Extraction Date	26-Aug-20		*S. Jin*
Analysis Method	EPA 1668C	Sample Size	1	Sample	--e-signature--
Analysis Type	Sample	Percent Moisture	n/a		11-Sep-2020
Sample Matrix	PUF	Split Ratio	4		

Run Information	**Run 1**	**Run 2**
Filename	5-200909A11	5-200910A25
Run Date	09-Sep-20 20:23	11-Sep-20 03:44
Final Volume	25 ul	25 uL
Dilution Factor	1	10
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<2.6	2.6	U		100						
PCB-180/193		27.71	3000	2.5	M		100						
PCB-191		27.89	49.2	2.4	M,J		100						
PCB-170		28.38	1140	3.2			100						
PCB-190		28.66	228	2.3			100						
PCB-189	0.00003	29.97	42.3	1.6	M,J		100						
PCB-202		26.28	669	1.2			100						
PCB-201		26.75	303	1.2			100						
PCB-204		NotFnd	<1.3	1.3	U		100						
PCB-197		27.21	43.8	1.2	J		100						
PCB-200		27.31	188	1.3			100						
PCB-198/199		28.71	1500	1.7			100						
PCB-196		29.05	495	1.7			100						
PCB-203		29.15	932	1.6			100						
PCB-195		29.88	219	1.8			100						
PCB-194		31.09	662	1.8			100						
PCB-205		31.38	28.6	1.7	J		100						
PCB-208		29.71	276	2.3			100						
PCB-207		30.18	<110	2.6	M,R	110	100						
PCB-206		32.44	633	3.7			100						
PCB-209		33.58	235	1.1			100						

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	4000	8.90	57	5-145			
13C12-PCB-003	4000	10.44	59	5-145			
13C12-PCB-004	4000	10.59	68	5-145			
13C12-PCB-015	4000	14.27	86	5-145			
13C12-PCB-019	4000	12.58	52	5-145			
13C12-PCB-037	4000	18.21	82	5-145			
13C12-PCB-054	4000	14.44	59	5-145			
13C12-PCB-081	4000	21.81	87	10-145			
13C12-PCB-077	4000	22.10	84	10-145			
13C12-PCB-104	4000	17.49	92	10-145			
13C12-PCB-123	4000	23.09	89	10-145			
13C12-PCB-118	4000	23.26	93	10-145			
13C12-PCB-114	4000	23.56	88	10-145			
13C12-PCB-105	4000	23.90	86	10-145			
13C12-PCB-126	4000	25.51	85	10-145			
13C12-PCB-155	4000	20.49	84	10-145			
13C12-PCB-167	4000	26.40	103	10-145			
13C12-PCB-156/157	8000	27.03	102	10-145			
13C12-PCB-169	4000	28.70	110	10-145 R			
13C12-PCB-188	4000	23.49	110	10-145			
13C12-PCB-189	4000	29.97	119	10-145			
13C12-PCB-202	4000	26.27	92	10-145			
13C12-PCB-205	4000	31.37	105	10-145			
13C12-PCB-208	4000	29.69	102	10-145			
13C12-PCB-206	4000	32.43	112	10-145			
13C12-PCB-209	4000	33.55	103	10-145			
Field Spike Standards							
13C12-PCB-031	24000	15.80	126	70-130			
13C12-PCB-095	24000	19.11	116	70-130			
13C12-PCB-153	24000	24.18	105	70-130			
Cleanup Standards							
13C12-PCB-028	4000	15.97	89	5-145			
13C12-PCB-111	4000	22.03	96	10-145			
13C12-PCB-178	4000	25.06	115	10-145			

ALS Life Sciences

Sample Analysis Report

Sample Name	**SITE 5 - COMPOSITE 2 (AUGUST)**	Sampling Date	n/a		
ALS Sample ID	L2491640-5	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Sample	Percent Moisture	n/a		--e-signature--
Sample Matrix	PUF	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**	**Run 2**
Filename	5-200909A11	5-200910A25
Run Date	09-Sep-20 20:23	11-Sep-20 03:44
Final Volume	25 ul	25 uL
Dilution Factor	1	10
Analysis Units	pg	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals													
Total MonoCB			500000	9.5	J		400						
Total DiCB			5090000	4.3	J		800						
Total TriCB			6620000	6.8	J		800						
Total TetraCB			2400000	3.0	J		1600						
Total PentaCB			373000	3.1	J		1600						
Total HexaCB			87400	1.3	J		1600						
Total HeptaCB			13600	1.6	J		800						
Total OctaCB			5040	1.2	J		800						
Total NonaCB			1020	2.3	J		400						
DecaCB			235	1.1	J		400						
Total PCB			15100000		J		3200						
Toxic Equivalency - (WHO 2005)													
Lower Bound PCB TEQ			1.80										
Mid Point PCB TEQ			10.7										
Upper Bound PCB TEQ			10.7										

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 3: METHOD SUMMARY

PCB METHOD SUMMARY
Method 1668

Introduction:

This summary is to provide ALSE Burlington PCB method details in order to provide persons reviewing or validating this data package sufficient informatior to re-construct the sample calculation, data verification and review. It incorporates the analysis of PCBs via the following reference methods

US EPA Office of Water, Method 1668A
US EPA Office of Water, Method 1668C

Any deviations to what is listed herein would be listed in the project narrative

To avoid the confusion and conflicting nomenclature within the methods, we have defined the labeled standards in terms relating to the time of addition to the sample or extract. Therefore;

The Field or Sampling Standards are added prior to field sampling
The Extraction Standards are added prior to extraction
The Clean-up Standards are added prior to extract clean-up
The Injection Standards are added prior to extract injection.

Calibration Standard Levels:

Six levels of standard are available for calibration as listed in Table 1. The low point (the CS0) is below method requirements and therefore is optional

Table 1. Concentration of CB congeners in calibration and calibration verification standards
Solution concentration (ng/mL)

CB congener	IUPAC [1]	CS-0.2 (Hi sens)2	CS-1	CS-2	CS-3 (VER)	CS-4	CS-5
Native Toxics/LOC							
2-MoCB	1	0.2	1	5	50	400	2000
4-MoCB	3	0.2	1	5	50	400	2000
2,2'-DiCB	4	0.2	1	5	50	400	2000
4,4'-DiCB	15	0.2	1	5	50	400	2000
2,2',6'-TrCB	19	0.2	1	5	50	400	2000
3,4,4'-TrCB	37	0.2	1	5	50	400	2000
2,2',6,6'-TeCB	54	0.2	1	5	50	400	2000
3,3',4,4'-TeCB	77	0.2	1	5	50	400	2000
3,4,4',5-TeCB	81	0.2	1	5	50	400	2000
2,2',4,6,6'-PeCB	104	0.2	1	5	50	400	2000
2,3,3',4,4'-PeCB	105	0.2	1	5	50	400	2000
2,3,4,4',5-PeCB	114	0.2	1	5	50	400	2000
2,3',4,4',5-PeCB	118	0.2	1	5	50	400	2000
2',3,4,4',5-PeCB	123	0.2	1	5	50	400	2000
3,3',4,4',5-PeCB	126	0.2	1	5	50	400	2000
2,2',4,4',6,6'-HxCB	155	0.2	1	5	50	400	2000
2,3,3',4,4',5-HxCB	156	0.2	1	5	50	400	2000
2,3,3',4,4',5'-HxCB	157	0.2	1	5	50	400	2000
2,3',4,4',5,5'-HxCB	167	0.2	1	5	50	400	2000
3,3',4,4',5,5'-HxCB	169	0.2	1	5	50	400	2000
2,2',3,4',5,6,6'-HpCB	188	0.2	1	5	50	400	2000
2,3,3',4,4',5,5'-HpCB	189	0.2	1	5	50	400	2000
2,2',3,3',5,5',6,6'-OcCB	202	0.2	1	5	50	400	2000
2,3,3',4,4',5,5',6-OcCB	205	0.2	1	5	50	400	2000
2,2',3,3',4,4',5,5',6-NoCB	206	0.2	1	5	50	400	2000
2,2',3,3',4',5,5',6,6'-NoCB	208	0.2	1	5	50	400	2000
DeCB 209	209	0.2	1	5	50	400	2000
Labelled Toxics/LOC/window-defining							
13C12-2-MoCB	1L	100	100	100	100	100	100
13C12-4-MoCB	3L	100	100	100	100	100	100
13C12-2,2'-DiCB	4L	100	100	100	100	100	100
13C12-4,4'-DiCB	15L	100	100	100	100	100	100
13C12-2,2',6'-TrCB	19L	100	100	100	100	100	100
13C12-3,4,4'-TrCB	37L	100	100	100	100	100	100
13C12-2,2',6,6'-TeCB	54L	100	100	100	100	100	100
13C12-3,3',4,4'-TeCB	77L	100	100	100	100	100	100
13C12-3,4,4',5-TeCB	81L	100	100	100	100	100	100
13C12-2,2',4,6,6'-PeCB	104L	100	100	100	100	100	100
13C12-2,3,3',4,4'-PeCB	105L	100	100	100	100	100	100
13C12-2,3,4,4',5-PeCB	114L	100	100	100	100	100	100
13C12-2,3',4,4',5-PeCB	118L	100	100	100	100	100	100
13C12-2',3,4,4',5-PeCB	123L	100	100	100	100	100	100
13C12-3,3',4,4',5-PeCB	126L	100	100	100	100	100	100
13C12-2,2',4,4',6,6'-HxCB	155L	100	100	100	100	100	100
13C12-2,3,3',4,4',5-HxCB	156L	100	100	100	100	100	100
13C12-2,3,3',4,4',5'-HxCB	157L	100	100	100	100	100	100
13C12-2,3',4,4',5,5'-HxCB	167L	100	100	100	100	100	100
13C12-3,3',4,4',5,5'-HxCB	169L	100	100	100	100	100	100
13C12-2,2',3,4',5,6,6'-HpCB	188L	100	100	100	100	100	100
13C12-2,3,3',4,4',5,5'-HpCB	189L	100	100	100	100	100	100
13C12-2,2',3,3',5,5',6,6'-OcCB	202L	100	100	100	100	100	100
13C12-2,3,3',4,4',5,5',6-OcCB	205L	100	100	100	100	100	100
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	100	100	100	100	100	100
13C12-2,2',3,3',4',5,5',6,6'-NoCB	208L	100	100	100	100	100	100
13C12-DeCB 209L	209L	100	100	100	100	100	100
Labelled clean-up							
13C12-2,4,4'-TrCB	28L	100	100	100	100	100	100
13C12-2,3,3',5,5'-PeCB	111L	100	100	100	100	100	100
13C12-2,2',3,3',5,5',6-HpCB	178L	100	100	100	100	100	100
Labelled injection internal							
13C12-2,5-DiCB	9L	100	100	100	100	100	100
13C12-2,2',5,5'-TeCB	52L	100	100	100	100	100	100
13C12-2,2',4',5,5'-PeCB	101L	100	100	100	100	100	100
13C12-2,2',3',4,4',5'-HxCB	138L	100	100	100	100	100	100
13C12-2,2',3,3',4,4',5,5'-OcCB	194L	100	100	100	100	100	100

Method Control Limits for 1668A

The initial and continuing calibration control limits for both methods are presented in Table 2 below. For the initial calibration CS1 and for each calibration verification CS3, the signal to noise ratio for each quantification ion for labelled and non-labelled analytes must be greater than or equal to 10:1

Table 2A. QC acceptance crtiteria for chlorinated biphenyls in VER, IPR, OPR, and samples [1]

Congener	IUPAC Number [2]	Test conc (ng/mL)	VER (%)	IPR		OPR (%)	Labelled compound recovery in samples (%)
				RSD (%)	X (%)		
2-MoCB	1	50	70-130	40	60-140	50-150	
4-MoCB	3	50	70-130	40	60-140	50-150	
2,2'-DiCB	4	50	70-130	40	60-140	50-150	
4,4'-DiCB	15	50	70-130	40	60-140	50-150	
2,2'6-TrCB	19	50	70-130	40	60-140	50-150	
3,4,4'-TrCB	37	50	70-130	40	60-140	50-150	
2,2'6,6'TeCB	54	50	70-130	40	60-140	50-150	
3,3',4,4'-TeCB	77	50	70-130	40	60-140	50-150	
3,4,4',5-TeCB	81	50	70-130	40	60-140	50-150	
2,2',4,6,6'-PeCB	104	50	70-130	40	60-140	50-150	
2,3,3',4,4'-PeCB	105	50	70-130	40	60-140	50-150	
2,3,4,4',5-PeCB	114	50	70-130	40	60-140	50-150	
2,3',4,4',5-PeCB	118	50	70-130	40	60-140	50-150	
2',3,4,4',5-PeCB	123	50	70-130	40	60-140	50-150	
3,3',4,4',5-PeCB	126	50	70-130	40	60-140	50-150	
2,2',4,4',6,6'-HxCB	155	50	70-130	40	60-140	50-150	
2,3,3',4,4',5-HxCB [3]	156	50	70-130	40	60-140	50-150	
2,3,3',4,4',5'-HxCB [3]	157	50	70-130	40	60-140	50-150	
2,3',4,4',5,5'-HxCB	167	50	70-130	40	60-140	50-150	
3,3',4,4',5,5'-HxCB	169	50	70-130	40	60-140	50-150	
2,2',3,4',5,6,6'-HpCB	188	50	70-130	40	60-140	50-150	
2,3,3',4,4',5,5'-HpCB	189	50	70-130	40	60-140	50-150	
2,2',3,3',5,5',6,6'-OcCB	202	50	70-130	40	60-140	50-150	
2,3,3',4,4',5,5',6-OcCB	205	50	70-130	40	60-140	50-150	
2,2',3,3',4,4',5,5',6-NoCB	206	50	70-130	40	60-140	50-150	
2,2',3,3,'4,5,5',6,6'-NoCB	208	50	70-130	40	60-140	50-150	
DeCB	209	50	70-130	40	60-140	50-150	
13C12-2-MoCB	1L	100	50-150	50	35-135	30-140	25-150
13C12-4-MoCB	3L	100	50-150	50	35-135	30-140	25-150
13C12-2,2'-DiCB	4L	100	50-150	50	35-135	30-140	25-150
13C12-4,4'-DiCB	15L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',6-TrCB	19L	100	50-150	50	35-135	30-140	25-150
13C12-3,4,4'-TrCB	37L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',6,6'-TeCB	54L	100	50-150	50	35-135	30-140	25-150
13C12-3,3',4,4'-TCB	77L	100	50-150	50	35-135	30-140	25-150
13C12-3,4,4',5-TeCB	81L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',4,6,6'-PeCB	104L	100	50-150	50	35-135	30-140	25-150
13C12-2,3,3',4,4'-PeCB	105L	100	50-150	50	35-135	30-140	25-150
13C12-2,3,4,4',5-PeCB	114L	100	50-150	50	35-135	30-140	25-150
13C12-2,3',4,4',5-PeCB	118L	100	50-150	50	35-135	30-140	25-150
13C12-2',3,4,4',5-PeCB	123L	100	50-150	50	35-135	30-140	25-150
13C12-3,3',4,4',5-PeCB	126L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',4,4',6,6'-HxCB	155L	100	50-150	50	35-135	30-140	25-150
13C12-2,3,3',4,4',5 –HxCB [3]	156L	100	50-150	50	35-135	30-140	25-150
13C12-2,3,3',4,4',5'-HxCB [3]	157L	100	50-150	50	35-135	30-140	25-150
13C12-2,3',4,4',5,5'-HxCB	167L	100	50-150	50	35-135	30-140	25-150
13C12-3,3',4,4',5,5'-HxCB	169L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',3,4',5,6,6'-HpCB	188L	100	50-150	50	35-135	30-140	25-150
13C12-2',3,3',4,4',5,5'-HpCB	189L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',3,3',5,5',6,6'-OcCB	202L	100	50-150	50	35-135	30-140	25-150
13C12-2,3,3',4,4',5,5',6-OcCB	205L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	100	50-150	50	35-135	30-140	25-150
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	100	50-150	50	35-135	30-140	25-150
Cleanup standard							
13C12-2,4,4'-TrCB	28L	100	60-130	45	45-120	40-125	30-135
13C12-2,3,3',5,5'-PeCB	111L	100	60-130	45	45-120	40-125	30-135
13C12-2,2',3,3',5,5',6-HpCB	178L	100	60-130	45	45-120	40-125	30-135

1. QC acceptance criteria for IPR, OPR, and samples based on a 20 ul extract final volume

2. Suffix "L" indicates labelled compound.

3. PCBs 156 and 157 are tested as the sum of two concentrations

Method Control Limits for 1668C

The initial and continuing calibration control limits for both methods are presented in Table 2 below. For the initial calibration CS1 and for each calibration verification CS3, the signal to noise ratio for each quantification ion for labelled and non-labelled analytes must be greater than or equal to 10:1

Table 2A. QC acceptance crtiteria for chlorinated biphenyls in VER, IPR, OPR, and samples [1]

Congener	IUPAC Number [2]	Test conc (ng/mL)	VER (%)	IPR		OPR (%)	Labelled compound recovery in samples (%)
				RSD (%)	X (%)		
2-MoCB	1	50	75 - 125	25	70 - 130	60 - 135	
4-MoCB	3	50	75 - 125	25	70 - 130	60 - 135	
2,2'-DiCB	4	50	75 - 125	25	70 - 130	60 - 135	
4,4'-DiCB	15	50	75 - 125	25	70 - 130	60 - 135	
2,2'6-TrCB	19	50	75 - 125	25	70 - 130	60 - 135	
3,4,4'-TrCB	37	50	75 - 125	25	70 - 130	60 - 135	
2,2'6,6'TeCB	54	50	75 - 125	25	70 - 130	60 - 135	
3,3',4,4'-TeCB	77	50	75 - 125	25	70 - 130	60 - 135	
3,4,4',5-TeCB	81	50	75 - 125	25	70 - 130	60 - 135	
2,2',4,6,6'-PeCB	104	50	75 - 125	25	70 - 130	60 - 135	
2,3,3',4,4'-PeCB	105	50	75 - 125	25	70 - 130	60 - 135	
2,3,4,4',5-PeCB	114	50	75 - 125	25	70 - 130	60 - 135	
2,3',4,4',5-PeCB	118	50	75 - 125	25	70 - 130	60 - 135	
2',3,4,4',5-PeCB	123	50	75 - 125	25	70 - 130	60 - 135	
3,3',4,4',5-PeCB	126	50	75 - 125	25	70 - 130	60 - 135	
2,2',4,4',6,6'-HxCB	155	50	75 - 125	25	70 - 130	60 - 135	
2,3,3',4,4',5-HxCB [3]	156	50	75 - 125	25	70 - 130	60 - 135	
2,3,3',4,4',5'-HxCB [3]	157	50	75 - 125	25	70 - 130	60 - 135	
2,3',4,4',5,5'-HxCB	167	50	75 - 125	25	70 - 130	60 - 135	
3,3',4,4',5,5'-HxCB	169	50	75 - 125	25	70 - 130	60 - 135	
2,2',3,4',5,6,6'-HpCB	188	50	75 - 125	25	70 - 130	60 - 135	
2,3,3',4,4',5,5'-HpCB	189	50	75 - 125	25	70 - 130	60 - 135	
2,2',3,3',5,5',6,6'-OcCB	202	50	75 - 125	25	70 - 130	60 - 135	
2,3,3',4,4',5,5',6-OcCB	205	50	75 - 125	25	70 - 130	60 - 135	
2,2',3,3',4,4',5,5',6-NoCB	206	50	75 - 125	25	70 - 130	60 - 135	
2,2',3,3,'4,5,5',6,6'-NoCB	208	50	75 - 125	25	70 - 130	60 - 135	
DeCB	209	50	75 - 125	25	70 - 130	60 - 135	
13C12-2-MoCB	1L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-4-MoCB	3L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-2,2'-DiCB	4L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-4,4'-DiCB	15L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-2,2',6-TrCB	19L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-3,4,4'-TrCB	37L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-2,2',6,6'-TeCB	54L	100	50 - 145	70	20 - 135	5 - 145	5 - 145
13C12-3,3',4,4'-TeCB	77L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-3,4,4',5-TeCB	81L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',4,6,6'-PeCB	104L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3,3',4,4'-PeCB	105L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3,4,4',5-PeCB	114L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3',4,4',5-PeCB	118L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2',3,4,4',5-PeCB	123L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-3,3',4,4',5-PeCB	126L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',4,4',6,6'-HxCB	155L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3,3',4,4',5 -HxCB [3]	156L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3,3',4,4',5'-HxCB [3]	157L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3',4,4',5,5'-HxCB	167L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-3,3',4,4',5,5'-HxCB	169L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',3,4',5,6,6'-HpCB	188L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2',3,3',4,4',5,5'-HpCB	189L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',3,3',5,5',6,6'-OcCB	202L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,3,3',4,4',5,5',6-OcCB	205L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',3,3',4,4',5,5',6-NoCB	206L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',3,3',4,5,5',6,6'-NoCB	208L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
13C12-2,2',3,3',4,4',5,5',6,6'-DeCB	209L	100	50 - 145	50	45 - 135	10 - 145	10 - 145
Cleanup standards							
13C12-2,4,4'-TrCB	28L	100	65 - 135	70	20 - 135	5 - 145	5 - 145
13C12-2,3,3',5,5'-PeCB	111L	100	75 - 125	50	45 - 135	10 - 145	10 - 145
13C12-2,2',3,3',5,5',6-HpCB	178L	100	75 - 125	50	45 - 135	10 - 145	10 - 145

1. QC acceptance criteria for IPR, OPR, and samples based on a 20-µL extract final volume
2. Suffix "L" indicates labeled compound.
3. CBs 156/157 and 156L/157L are tested as the sum of the two congeners

Reporting Limits:

Unless indicated in the otherwise, the PCB results are reported down to 2.5:1 signal to noise for each isomer grouping for each extract injection. This is consistent to SW846 8290 defined protocols (i.e. EDL or Estimated Detection Limit) and is commonly applied throughout the industry to any or all the HRMS performance based methods applicable to this method summary.

Method Blank:

The Method Blank must be below the EMLs published in the required method, 1668A or 1668C.

MS/MSD:

The % relative difference between the MS and MSD spike recoveries should be less than or equal to 20%.

Instrument/Run Performance Criteria:

1 Elution windows must be defined by a 'Window Performance Mix' at the beginning of each 12-hour run sequence

2 GC performance criteria of 40% maximum valley between PCB-34/PCB-23, and PCB-187/PCB-182 (Octyl Column).

3 At the beginning of and just following the end of each 12 hour run sequence, the instrument must be checked to demonstrate a resolution of 10,000 within each quantification window (8,000 minimum across the window).
4 The relative retention times (RRT) of the compounds in the daily 209 congener mix must fall into the ranges presented in Table 4.
5 The RT in the daily CS3 verification standards must be within 15 seconds of the CS3 in the initial calibration run.
6 The maximum time between scans within a descriptor is 1 second.
7 Lock mass deviations to the average response must be less than or equal 20%.

Laboratory Duplicates:

The % relative difference between duplicates should be less than or equal to 25% but only where the response is greater than the low calibration standard.

Analyte Identification Criteria:

1 Ion ratio must be within 15% of theoretical or within 10% of the most recent CS3.
2 The retention time (RT) of the peak maxima for each pair of quantification ions must be no more than 2 seconds (i.e. 2 scans) difference.
3 The retention time (RT) of the peak maxima of all native analytes for which a labeled analogue is used must be within -1 to +3 seconds of the RT of corresponding $^{13}C_{12}$-labelled isomer of that injection run.
4 For those native analytes without a corresponding labelled isomer, the relative retention time (RRT) must be within 0.005 of the relative retention time observed in the daily 209 congener run.

DEVIATIONS AND CLARIFICATIONS FROM THE PRIMARY REFERENCES

The reference methods applicable to this document are:
US EPA Office of Water, Method 1668A
US EPA Office of Water, Method 1668C

These methods are referred-to herein as Method 1668

The following changes and clarifications apply:

1) As stated in method 1668, alternate columns and column systems are allowable changes to the method. In the context of the method, it is clear that Table 2 of this method (including retention times, relative retention times, and quantitation references) is specific to the Octyl GC column if used exactly as suggested in the method.

As a performance based method, changes in the internal standard references could be considered an improvement even when using the SPB-Octyl column. However when using an alternate column system (which may or may not include use of the Octyl column), optimization of the quantitation references can be an important part of optimizing the method. Consider that the MS acquisition method must be divided into mass descriptors or 'functions', each one defining the masses that are monitored during that time range. When monitoring for all 209 PCB congeners, there are large chromatographic regions where elution of target compounds is nearly continuous with little separation between peaks. In addition, there is a slight acquisition "gap" that occurs at each function change (for Water's instruments 1-2 seconds, for Thermo instruments 6-8 seconds), and also the likelihood of slight retention time shifts from one run to another. Consequently, choosing the exact location of each function boundary can be challenging. For a 1668 method, there are typically between 5 and 8 functions dependent upon the column, the GC conditions, the instrument and the choice of the function boundaries by the laboratory. Each function can have 1 to as many as 4 chlorination levels. When optimizing the quantification model in the case where RT and elution patterns have changed – even slightly - the best choice of internal standard references can and should change dependent upon target retention times and placement of function boundaries. For example, the best quantification is achieved using an internal standard reference that elutes at close to the same retention time. Another consideration is that it is best practice where possible (i.e. generally allows for more accurate target determinations) to have the internal standard reference within the same function rather than quantify a target relative to an internal standard from an outside function.

The quantification references used in this analysis are detailed in Table 3.

2) The absolute retention time criterion for decachlorobiphenyl of 55 minutes is not generally followed and is an unnecessary restriction since method 1668 was developed without the use of electronic pressure control on the GC injection system, and there are GC performance criteria that can be met without this restriction. As a result, the RRT criteria of 1668 may not be applicable.

3) Although not clearly stated in method 1668, we maintain that each and every individual clean-up procedure is, by definition, performance-based and optional. There is not an expectation within the industry to follow exactly the descriptions of clean-ups in reference methods. Adaptations which meet or exceed the required performance criteria are therefore acceptable within the scope of each reference method. The reference method descriptions are intended as guidelines or templates available to help the laboratory to define effective in-house clean-up methods. The objective within the laboratory is to provide quality clean extracts to the instrument for analysis. Each individual clean-up is part of the laboratory's available tools in order to achieve this objective.

4) There are differences within the individual reference methods as to the precise spiking protocols for adding extraction standards and native spikes (for LCS, MS and MSD). To ensure consistency within the laboratory between HRMS methods, the PCB preparative method requires solid samples (including stack and ambient sorbants/filters) to be spiked in the soxhlet extractor from a nonane solution and waters are spiked before filtering from an acetone solution. .

5) Sub-sampling of solids and pre-extraction processing is done in a manner that minimizes potential for cross-contamination. These processes are designed around SW846 protocols rather than 1668 protocols. Solids are sub-sampled directly from the bottle as submitted to the laboratory wherever practical. If the sample is submitted such that homogenization in the bottle is impractical (eg. the bottle is too full or lumps cannot be broken down), then transferring the sample to a tray or another bottle maybe in order.

6) The concentration of labelled and native spiking solutions are not consistent with those listed in all of the reference methods. These concentrations are prepared at levels convenient and expedient for accurate laboratory processing.

7) Extraction and injection standard concentrations differ from 1668, in order to aid precise measurement and standardise volumes with other reference methods such as PCDD/F by 1613B.

8) Method 1668C recognizes the option to use the 209 congener mix as the daily calibration verification solution rather than the CS3. This document acknowledges and allows either calibration option for both 1668A and 1668C analytical approaches.

9) For method 1668C analysis, the OPR labelled recovery limits are the same as for the sample recovery limits in method 1668C. This represents a broader acceptance range for the OPR than is currently listed in method 1668C. However, the control of the native (i.e. non-labelled) recovery limits is the key item to demonstrate/monitor in the OPR. Furthermore, in the OPR performance, it is important to demonstrate these native controls are maintained within the same range of labelled recoveries as is observed in the sample data.

Table 3: Quantitation References for Native and Labeled CBs

Cl No.[1]	Congener No.[2,3]	RT Ref[4]	Quantitation Reference[5]
Native Compounds			
1	1	1L	1L
1	2	3L	1L/3L
1	3	3L	3L
2	4	4L	4L
2	10	4L	4L/15L
2	9	4L	4L/15L
2	7	4L	4L/15L
2	6	4L	4L/15L
2	5	4L	4L/15L
2	8	4L	4L/15L
2	14	15L	4L/15L
2	11	15L	4L/15L
2	13/12	15L	4L/15L
2	15	15L	15L
3	19	19L	19L
3	30/18	19L	19L/37L
3	17	19L	19L/37L
3	27	19L	19L/37L
3	24	19L	19L/37L
3	16	19L	19L/37L
3	32	19L	19L/37L
3	34	19L	19L/37L
3	23	19L	19L/37L
3	26/29	19L	19L/37L
3	25	37L	19L/37L
3	31	37L	19L/37L
3	28/20	37L	19L/37L
3	21/33	37L	19L/37L
3	22	37L	19L/37L
3	36	37L	19L/37L
3	39	37L	19L/37L
3	38	37L	19L/37L
3	35	37L	19L/37L
3	37	37L	37L
4	54	54L	54L
4	50/53	54L	54L/81L/77L
4	45/51	54L	54L/81L/77L
4	46	54L	54L/81L/77L
4	52	54L	54L/81L/77L
4	73	54L	54L/81L/77L
4	43	54L	54L/81L/77L
4	69/49	54L	54L/81L/77L
4	48	54L	54L/81L/77L
4	44/47/65	54L	54L/81L/77L
4	59/62/75	54L	54L/81L/77L
4	42	54L	54L/81L/77L
4	41/40/71	54L	54L/81L/77L
4	64	54L	54L/81L/77L
4	72	81L	54L/81L/77L
4	68	81L	54L/81L/77L

Cl No.[1]	Congener No.[2,3]	RT Ref[4]	Quantitation Reference[5]
4	57	81L	54L/81L/77L
4	58	81L	54L/81L/77L
4	67	81L	54L/81L/77L
4	63	81L	54L/81L/77L
4	61/70/74/76	81L	54L/81L/77L
4	66	81L	54L/81L/77L
4	55	81L	54L/81L/77L
4	56	81L	54L/81L/77L
4	60	81L	54L/81L/77L
4	80	81L	54L/81L/77L
4	79	81L	54L/81L/77L
4	78	81L	54L/81L/77L
4	81	81L	81L
4	77	77L	77L
5	104	104L	104L
5	96	104L	104L/123L/114L/118L
5	103	104L	104L/123L/114L/118L
5	94	104L	104L/123L/114L/118L
5	95	104L	104L/123L/114L/118L
5	95/100/93/102/98	104L	104L/123L/114L/118L
5	88/91	104L	104L/123L/114L/118L
5	84	104L	104L/123L/114L/118L
5	89	104L	104L/123L/114L/118L
5	121	104L	104L/123L/114L/118L
5	92	123L	104L/123L/114L/118L
5	113/90/101	104L	104L/123L/114L/118L
5	83/99	104L	104L/123L/114L/118L
5	112	104L	104L/123L/114L/118L
5	108/119/86/97/125/87	104L	104L/123L/114L/118L
5	117/116/85/110/115	104L	104L/123L/114L/118L
5	82	104L	104L/123L/114L/118L
5	111	104L	104L/123L/114L/118L
5	120	104L	104L/123L/114L/118L
5	107/124	104L	104L/123L/114L/118L
5	109	104L	104L/123L/114L/118L
5	123	123L	123L
5	106	123L	104L/123L/114L/118L
5	118	118L	118L
5	122	118L	104L/123L/114L/118L
5	114	114L	114L
5	105	105L	105L
5	127	105L	104L/123L/114L/118L
5	126	126L	126L
6	155	155L	155L
6	152	155L	155L/156L/157L/167L
6	150	155L	155L/156L/157L/167L
6	136	155L	155L/156L/157L/167L
6	145	155L	155L/156L/157L/167L
6	148	155L	155L/156L/157L/167L
6	151/135	135L	155L/156L/157L/167L
6	154	155L	155L/156L/157L/167L
6	144	155L	155L/156L/157L/167L
6	147/149	155L	155L/156L/157L/167L
6	134/143	155L	155L/156L/157L/167L

Cl No. [1]	Congener No. [2,3]	RT Ref [4]	Quantitation Reference [5]
6	139/140	155L	155L/156L/157L/167L
6	131	155L	155L/156L/157L/167L
6	142	155L	155L/156L/157L/167L
6	132	155L	155L/156L/157L/167L
6	133	155L	155L/156L/157L/167L
6	165	167L	155L/156L/157L/167L
6	146	167L	155L/156L/157L/167L
6	161	167L	155L/156L/157L/167L
6	153/168	167L	155L/156L/157L/167L
6	141	167L	155L/156L/157L/167L
6	130	167L	155L/156L/157L/167L
6	137/164	167L	155L/156L/157L/167L
6	138/163/129	167L	155L/156L/157L/167L
6	160	167L	155L/156L/157L/167L
6	158	167L	155L/156L/157L/167L
6	128/166	167L	155L/156L/157L/167L
6	159	167L	155L/156L/157L/167L
6	162	167L	155L/156L/157L/167L
6	167	167L	155L/156L/157L/167L
6	156/157	156L/157L	156L/157L
6	169	169L	169L
7	188	188L	188L
7	179	188L	188L/189L
7	184	188L	188L/189L
7	176	188L	188L/189L
7	186	188L	188L/189L
7	178	188L	188L/189L
7	175	188L	188L/189L
7	187	188L	188L/189L
7	182	188L	188L/189L
7	183	188L	188L/189L
7	185	188L	188L/189L
7	174	188L	188L/189L
7	177	188L	188L/189L
7	181	188L	188L/189L
7	171/173	188L	188L/189L
7	172	189L	188L/189L
7	192	189L	188L/189L
7	180/193	189L	188L/189L
7	191	189L	188L/189L
7	170	189L	188L/189L
7	190	189L	188L/189L
7	189	189L	189L
8	202	202L	202L
8	201	202L	202L/205L
8	204	202L	202L/205L
8	197	202L	202L/205L
8	200	202L	202L/205L
8	198/199	202L	202L/205L
8	196	205L	202L/205L
8	203	205L	202L/205L
8	195	205L	202L/205L
8	194	205L	202L/205L
8	205	205L	205L
9	208	208L	208L
9	207	208L	208L/206L
9	206	206L	206L
10	209	209L	209L

Cl No.[1]	Congener No.[2,3]	RT Ref[4]	Quantitation Reference[5]
Labelled Extraction Standards			
1	1L	9L	9L
1	3L	9L	9L
2	4L	9L	9L
2	15L	9L	9L
3	19L	9L	9L
3	37L	52L	52L
4	54L	52L	52L
4	81L	101L	101L
4	77L	101L	101L
5	104L	101L	101L
5	123L	101L	101L
5	118L	101L	101L
5	114L	101L	101L
5	105L	101L	101L
5	126L	101L	101L
6	155L	101L	101L
6	167L	138L	138L
6	156L/157L	157L	138L
6	169L	138L	138L
7	188L	138L	138L
7	189L	138L	138L
8	202L	138L	138L
8	205L	194L	194L
9	208L	194L	194L
9	206L	194L	194L
10	209L	194L	194L
Labelled clean-up standards			
3	28L	52L	52L
5	111L	101L	101L
7	178L	138L	138L
Labelled injection internal standards			
2	9L	138L	138L
4	52L	138L	138L
5	101L	138L	138L
6	138L	138L	
8	194L	138L	138L

1. Number of chlorines on congener.

2. Suffix "L" indicates labelled compound.

3. Multiple congeners in a box indicates a group of congeners that co-elute or may not be adequately resolved on a 30-m SPBOctyl column. Congeners included in the group are listed as the last entry in the box.

4. Retention time reference that is used to locate target congener.

5. Labelled congeners that form the quantitation reference. Areas from the exact m/z's of the congeners listed in the quantitation

Table 5: HRMS Instrumental Descriptor Parameters

Function and chlorine level	m/z	m/z type	m/z formula	Substance
	180.9888	QC	C4F7	PFK
Fn-1; Cl-1	188.0393	M	12C12 H9 35Cl	Cl-1 CB
	190.0363	M+2	12C12 H9 37Cl	Cl-1 CB
	200.0795	M	13C12 H9 35Cl	13C12 Cl-1 CB
	202.0766	M+2	13C12 H9 37Cl	13C12 Cl-1 CB
	204.9983	QC	C6F7	PFK
	218.9856	lock	C4 F9	PFK
	230.9850	QC	C5F9	PFK
	204.9883	QC	C6F7	PFK
	218.9856	QC	C4F9	PFK
Fn-2; Cl-2,3	222.0003	M	12C12 H8 35Cl2	Cl-2 PCB
	223.9974	M+2	12C12 H8 35Cl 37Cl	Cl-2 PCB
	225.9944	M+4	12C12 H8 37Cl2	Cl-2 PCB
	234.0406	M	13C12 H8 35Cl2	13C12 Cl-2 PCB
	236.0376	M+2	13C12 H8 35Cl 37 Cl	13C12 Cl-2 PCB
	242.9856	lock	C6 F9	PFK
	255.9613	M	12C12 H7 35Cl3	Cl-3 PCB
	257.9584	M+2	12C12 H7 35Cl2 37Cl	Cl-3 PCB
	268.0016	M	13C12 H7 35Cl3	13C12 Cl-3 PCB
	269.9986	M+2	13C12 H7 35Cl2 37Cl 13C12	13C12 Cl-3 PCB
Fn-3	255.9613	M	12C12 H7 35Cl3	Cl-3 PCB
Cl-3,4,5	257.9584	M+2	12C12 H7 35Cl2 37Cl	Cl-3 PCB
	268.0016	M	13C12 H7 35Cl3	13C12 Cl-3 PCB
	269.9986	M+2	13C12 H7 35Cl2 37Cl 13C12	13C12 Cl-3 PCB
	280.9825	lock	C6 F11	PFK
	289.9224	M	12C12 H6 35Cl4	Cl-4 PCB
	291.9194	M+2	12C12 H6 35Cl3 37Cl	Cl-4 PCB
	301.9626	M	13C12 H6 35Cl4	13C12 Cl-4 PCB
	303.9597	M+2	13C12 H6 35Cl3 37Cl	13C12 Cl-4 PCB
	323.8834	M	12C12 H5 35Cl5	Cl-5 PCB
	325.8804	M+2 1	2C12 H5 35Cl4 37Cl	Cl-5 PCB
	327.8775	M+4	12C12 H5 35Cl3 37Cl2	Cl-5 PCB
	337.9207	M+2	13C12 H5 35Cl4 37Cl	13C12 Cl-5 PCB
	339.9178	M+4	13C12 H5 35Cl3 37Cl2	13C12 Cl-5 PCB
	280.9824		C6 F11	PFK
Fn-4	289.9224	M	12C12 H6 35Cl4	Cl-4 PCB
Cl-4,5,6	291.9194	M+2	12C12 H6 35Cl3 37Cl	Cl-4 PCB
	293.9165	M+4	12C12 H6 35Cl2 37Cl2	Cl-4 PCB
	301.9626	M+2	13C12 H6 35Cl3 37Cl	13C12 Cl-4 PCB
	303.9597	M+4	13C12 H6 35Cl2	13C12 Cl-4 PCB
	323.8834	M	12C12 H5 35Cl5	Cl-5 PCB
	325.8804	M+2	12C12 H5 35Cl4 37Cl	Cl-5 PCB
	327.8775	M+4	12C12 H5 35Cl3 37Cl2	Cl-5 PCB
	330.9792	lock	C7 F15	PFK
	337.9207	M+2	13C12 H5 35Cl4 37Cl 13C12	Cl-5 PCB
	339.9178	M+4	13C12 H5 35Cl3 37Cl2	13C12 Cl-5 PCB
	359.8415	M+2	13C12 H4 35Cl5 37Cl	Cl-6 PCB
	361.8385	M+4	13C12 H4 35Cl4 37Cl2	Cl-6 PCB
	363.8356	M+6	13C12 H4 35Cl3 37Cl2	Cl-6 PCB
	371.8817	M+2	13C12 H4 35Cl5 37Cl	13C12 Cl-6 PCB
	373.8788	M+4	13C12 H4 35Cl4 37Cl2	13C12 Cl-6 PCB

Function and chlorine level	m/z	m/z type	m/z formula	Substance
Fn-5	323.8834	M	12C12 H5 35Cl5	Cl-5 PCB
Cl-5,6,7	325.8804	M+2	12C12 H5 35Cl4 37Cl	Cl-5 PCB
	327.8775	M+4	12C12 H5 35Cl3 37Cl2	Cl-5 PCB
	337.9207	M+2	13C12 H5 35Cl4 37Cl	13C12 Cl-5 PCB
	339.9178	M+4	13C12 H5 35Cl3 37Cl2	13C12 Cl-5 PCB
	354.9792	lock	C9 F13	PFK
	359.8415	M+2	12C12 H4 35Cl5 37Cl	Cl-6 PCB
	361.8385	M+4	12C12 H4 35Cl4 37Cl2	Cl-6 PCB
	363.8356	M+6	12C12 H4 35Cl3 37Cl3	Cl-6 PCB
	371.8817	M+2	13C12 H4 35Cl5 37Cl	13C12 Cl-6 PCB
	373.8788	M+4	13C12 H4 35Cl4 37Cl2	13C12 Cl-6 PCB
	393.8025	M+2	12C12 H3 35Cl6 37Cl	Cl-7 PCB
	395.7995	M+4	12C12 H3 35Cl5 37Cl2	Cl-7 PCB
	397.7966	M+6	12C12 H3 35Cl4 37Cl3	Cl-7 PCB
	405.8428	M+2	13C12 H3 35Cl6 37Cl	13C12 Cl-7 PCB
	407.8398	M+4	13C12 H3 35Cl5 37Cl2	13C12 Cl-7 PCB
	427.7635	M+2	12C12 H2 35Cl7 37Cl	Cl-8 PCB
	429.7606	M+4	12C12 H2 35Cl6 37Cl2	Cl-8 PCB
	431.7576	M+6	12C12 H2 35Cl5 37Cl3	Cl-8 PCB
	439.8038	M+2	13C12 H2 35Cl7 37Cl	13C12 Cl-8 PCB
	441.8008	M+4	13C12 H2 35Cl6 37Cl2	13C12 Cl-8 PCB
Fn-6	393.8025	M+2	12C12 H3 35Cl6 37Cl	Cl-7 PCB
Cl-7,8,9,10	395.7995	M+4	12C12 H3 35Cl5 37Cl2	Cl-7 PCB
	397.7966	M+6	12C12 H3 35Cl4 37Cl3	Cl-7 PCB
	405.8428	M+2	13C12 H3 35Cl6 37Cl 13C12	Cl-7 PCB
	407.8398	M+4	13C12 H3 35Cl5 37Cl2	13C12 Cl-7 PCB
	427.7635	M+2	12C12 H2 35Cl7 37Cl	Cl-8 PCB
	429.7606	M+4	12C12 H2 35Cl6 37Cl2	Cl-8 PCB
	431.7576	M+6	12C12 H2 35Cl5 37Cl3	Cl-8 PCB
	439.8038	M+2	13C12 H2 35Cl7 37Cl	13C12 Cl-8 PCB
	441.8008	M+4	13C12 H2 35Cl6 37Cl2	13C12 Cl-8 PCB
	442.9728	QC	C10 F13	PFK
	454.9728	lock	C11 F13	PFK
	461.7246	M+2	12C12 H1 35Cl8 37Cl	Cl-9 PCB
	463.7216	M+4	12C12 H1 35Cl7 37Cl2	Cl-9 PCB
	465.7187	M+6	12C12 H1 35Cl6 37Cl3	Cl-9 PCB
	473.7648	M+2	13C12 H1 35Cl8 37Cl	13C12 Cl-9 PCB
	475.7619	M+4	13C12 H1 35Cl7 37Cl2	13C12 Cl-9 PCB
	495.6856	M+2	13C12 H4 35Cl9 37Cl	Cl-10 PCB
Fn-7	497.6826	M+4	12C12 35Cl8 37Cl2	Cl-10 PCB
	499.6797	M+6	12C12 35Cl7 37Cl3	Cl-10 PCB
	509.7229	M+4	13C12 H4 35Cl8 37Cl2	13C12 Cl-10 PCB
	511.7199	M+6	13C12 H4 35Cl8 37Cl4	13C12 Cl-10 PCB
	516.9697	lock	C13F19	PFK

Data Calculations:

a) Analyte Concentrations:

The relative response factor of each target relative to the standard against which it is to be calculated is determined using the area responses of both quantification ions via equation 9.1.
In cases where a native target is calculated against an exact labelled analogue, the quantification will be considered to be by isotope dilution. In other cases, the quantification will be considered to be by internal standard.

$$RRF = \frac{(A1_t + A2_t)\ C_s}{(A1_s + A2_s)\ C_t} \qquad \text{Equ. 9.1}$$

Where,
$A1_t + A2_t$ = The areas of the two quantification ions for the target analyte
$A1_s + A2_s$ = The areas of the two quantification ions for the labelled compound against which the target analyte will be calculated.
C_t = The concentration in the calibration standard of the target analyte.
C_s = The concentration in the calibration standard of the labelled compound against which the target will be calculated.

For all analytes to be quantified and from the initial calibration series of standard injections, a table of RRFs is prepared. The relative standard deviation (%RSD, or the coefficient of variance) is checked to confirm that the appropriate method criteria has been met as listed in Table 3. The average of the five or six levels of standard for each analyte, RRF_{av} is applied for quantification of samples according to Equations 9.2 and 9.3 below.

$$\text{Amount in sample (pg)} = \frac{(A1_n + A2_n)\ Q_l}{(A1_l + A2_l)\ (RRF_{av})} \qquad \text{Equ. 9.2}$$

$$\text{Concentration in sample (pg/g or pg/l)} = \frac{(A1_n + A2_n)\ Q_l}{(A1_l + A2_l)\ (RRF_{av})\ (W_s)} \qquad \text{Equ. 9.3}$$

Where,

Q_l = The amount (pg) of labelled compound added to the sample
W_s = The weight (g) or volume (l) of sample

b) Extraction, Clean-up, and Sampling Standard Recovery Calculation:

The extraction, clean-up, and sampling standard recoveries are determined by Equation 9.4 below.

% Recovery = (Amount in sample)/(Amount added to sample) X 100 Equ. 9.4

c) Estimated Detection Limit

$$EDL = \frac{2.5 \times H_x \times Q_{es}}{H_{es} \times W \times RFF_{av}} \qquad \text{Equ. 9.5}$$

Where,
EDL = estimated detection limit for homologous PCB
H_x = sum of the height of the noise level for each quantification ions for the unlabelled PCB.
H_{es} = Sum of the heights of responses of both quantification ions for the labelled extraction standard.
W = weight of volume of sample
RRF_{av} = average relative response factor
Q_{es} = Amount of extraction standard added

Chromatogram Annotation Codes

All manually integrated peaks are expanded and reprinted with the following annotations:

* Analyst Initials	AA
* Date	YYMMDD
* integration code	CC

The Syntax is:	Example:
AAYYMMDDCC	SK111220MB

Code	Mnemonic	Description
MB	Manual Baseline	The peak was manually integrated because the initial baseline was determined incorrectly by the software
MS	Manual Split	The peak was manually integrated because the peak was incorrectly or not split by the software
MJ/MC	Manual Join/Manual Combine	The peak was manually integrated because the peak was split by the software and the peak should be integrated as a single peak
MA	Manual Add	The peak was manually integrated because the signal:noise ratio was judged to be >2.5
MD	Manual Delete	The peak was excluded because the signal:noise ratio was judged to be <2.5
MX	Manual Exclude	The peak was excluded due to an interference
NH	Noise Height	The noise height for Estimated Detection Limit calculation was chosen by the analyst (automated noise height not appropriate)
MT	Manual Time	The peak retention time was manually chosen

The following explanatory annotation codes may appear on the chromatograms of peaks that have been reviewed:

Code	Mnemonic	Description
+	Detected Peak	A peak was detected at this mass and retention time that was above 2.5:1 signal to noise
<	Below Detection Limit	The signal at this mass and retention time was below 2.5:1 signal to noise
EMPC	Estimated Maximum Possible Concentration	The signal at this mass and retention time is an interference such that the target compound could not be confirmed
X-RT	Not Detected due to Retention Time non-conformance	The signal at this retention time could not be used to positively identify the target compound because of retention time non-conformance (apex of quantification and confirmation ions do not maximize within the same two seconds, or the retention time of the peak does not fall within the expected range with respect to its labeled analogue)
X-LOC	Not Detected due to interference from a higher level of chlorination	The signal at this retention time is attributable to a fragment from a co-eluting compound at a higher level of chlorination, and cannot be used to positively identify the target. The result is expressed as an Estimated Maximum Possible Concentration (EMPC)
X-DPE	Not Detected due to diphenyl ether interference	The signal at this retention time is attributable to interference from a chlorinated diphenyl ether, and cannot be used to positively identify the target. The result is expressed as an Estimated Maximum Possible Concentration (EMPC)
X-IF	Not Detected due to interference	The signal at this retention time is attributable to a co-eluting interference, and cannot be used to positively identify the target. The result is expressed as an Estimated Maximum Possible Concentration (EMPC)

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 4: CALIBRATION DATA

Including:

for Multi-Point Calibration(s)

- Multi-Point Calibration Tables
- Individual Quantitation Reports

for Continuing Calibration(s)

- Individual Quantitation Reports

ALS Life Sciences

Calibration Summary Report

Calibration Level	Filename	Run Date
CS-1	5-200219A02	19-Feb-2020 14:40
CS-2	5-200219A04	19-Feb-2020 16:17
CS-3	5-200219A01	19-Feb-2020 13:42
CS-4	5-200219A05	19-Feb-2020 16:57
CS-5	5-200219A06	19-Feb-2020 17:39

Approved: *S. Jin*
--e-signature--
11-Sep-2020

Relative Response Factors

Target Analytes	CS-1	CS-2	CS-3	CS-4	CS-5	Mean	% RSD
PCB-001	1.160	1.143	1.110	1.242		1.164	5%
PCB-003	1.177	1.184	1.115	1.270		1.187	5%
PCB-004	0.787	0.830	0.753	0.853	0.863	0.817	6%
PCB-015	0.925	0.946	0.926	1.036	1.030	0.973	6%
PCB-019	1.086	1.128	1.085	1.197	1.184	1.136	5%
PCB-037	0.970	0.992	0.933	1.039	1.042	0.995	5%
PCB-054	0.951	0.988	0.947	1.061	1.055	1.000	5%
PCB-081	1.058	1.096	1.066	1.166	1.158	1.109	5%
PCB-077	1.068	1.068	1.039	1.144	1.149	1.094	5%
PCB-104	1.041	1.078	1.032	1.159	1.145	1.091	5%
PCB-123	0.930	0.929	0.913	1.007	1.008	0.957	5%
PCB-118	0.956	1.025	1.000	1.096	1.094	1.034	6%
PCB-114	1.001	1.007	0.992	1.093	1.090	1.037	5%
PCB-105	0.958	0.990	0.967	1.068	1.072	1.011	5%
PCB-126	1.011	1.078	1.020	1.123	1.116	1.070	5%
PCB-155	0.928	1.007	0.949	1.042	1.029	0.991	5%
PCB-167	1.061	1.048	1.001	1.106	1.109	1.065	4%
PCB-156/157	1.058	1.088	1.035	1.127	1.136	1.089	4%
PCB-169	0.973	1.019	1.004	1.107	1.102	1.041	6%
PCB-188	0.866	0.925	0.882	0.968	0.958	0.920	5%
PCB-189	0.923	0.945	0.921	1.008	1.027	0.965	5%
PCB-202	1.047	1.052	0.979	1.080	1.081	1.048	4%
PCB-205	0.806	0.842	0.824	0.901	0.906	0.856	5%
PCB-208	1.220	1.278	1.209	1.337	1.332	1.275	5%
PCB-206	1.241	1.287	1.249	1.346	1.354	1.295	4%
PCB-209	0.832	0.870	0.833	0.925	0.911	0.874	5%
Extraction Standards							
13C12-PCB-001	0.870	0.900	0.901	0.912	0.911	0.899	2%
13C12-PCB-003	0.834	0.841	0.875	0.879	0.892	0.864	3%
13C12-PCB-004	0.640	0.641	0.649	0.650	0.643	0.645	1%
13C12-PCB-015	0.907	0.891	0.947	0.945	0.952	0.928	3%
13C12-PCB-019	0.517	0.526	0.521	0.519	0.514	0.519	1%
13C12-PCB-037	1.539	1.494	1.514	1.587	1.592	1.545	3%
13C12-PCB-054	1.347	1.334	1.309	1.348	1.319	1.331	1%
13C12-PCB-081	1.614	1.533	1.558	1.627	1.671	1.601	3%
13C12-PCB-077	1.621	1.536	1.553	1.634	1.664	1.602	3%
13C12-PCB-104	1.516	1.512	1.491	1.529	1.501	1.510	1%
13C12-PCB-123	1.503	1.477	1.450	1.532	1.546	1.502	3%
13C12-PCB-118	1.486	1.460	1.431	1.509	1.516	1.480	2%
13C12-PCB-114	1.440	1.404	1.384	1.452	1.451	1.426	2%
13C12-PCB-105	1.475	1.439	1.411	1.483	1.511	1.464	3%
13C12-PCB-126	1.387	1.314	1.305	1.411	1.444	1.372	4%
13C12-PCB-155	1.714	1.693	1.679	1.692	1.678	1.691	1%
13C12-PCB-167	1.202	1.181	1.155	1.224	1.204	1.193	2%
13C12-PCB-156/157	1.154	1.135	1.113	1.190	1.155	1.149	2%
13C12-PCB-169	1.135	1.101	1.075	1.157	1.159	1.125	3%
13C12-PCB-188	1.171	1.175	1.143	1.167	1.143	1.160	1%
13C12-PCB-189	0.938	0.932	0.890	0.973	0.957	0.938	3%
13C12-PCB-202	1.050	1.053	1.030	1.063	1.035	1.046	1%
13C12-PCB-205	1.355	1.334	1.363	1.372	1.347	1.354	1%
13C12-PCB-208	1.072	1.072	1.106	1.066	1.043	1.072	2%
13C12-PCB-206	0.733	0.722	0.747	0.743	0.732	0.735	1%
13C12-PCB-209	1.130	1.144	1.164	1.154	1.173	1.153	1%
Field Spike Standards							
13C12-PCB-031	1.271	1.287	1.330	1.268	1.249	1.281	2%
13C12-PCB-095	0.596	0.599	0.608	0.587	0.587	0.595	1%
13C12-PCB-153	0.902	0.917	0.951	0.894	0.901	0.913	3%
Cleanup Standards							
13C12-PCB-028	1.626	1.614	1.731	1.646	1.628	1.649	3%
13C12-PCB-111	1.173	1.149	1.207	1.171	1.173	1.175	2%
13C12-PCB-178	0.802	0.806	0.799	0.821	0.808	0.807	1%

ALS Life Sciences

Calibration Report

ALS Sample ID **H5-20-CS1-004**
Analysis Method EPA 1668C
Analysis Type Calibration

Filename	Inst #	Column	Run Date	Approved:	*S. Jin*
5-200219A02	HRMS-5	SPB OCTYL 65972-02A	19-Feb-2020 14:40		--e-signature-- 11-Sep-2020

Target Analytes	Ret. Time	Ion Ratio	Concentration ng/mL	Response	RRF
PCB-001	8.85	3.29	1.00	3.99E+04	1.160
PCB-003	10.38	3.07	1.00	3.87E+04	1.177
PCB-004	10.55	1.43	1.00	1.99E+04	0.787
PCB-015	14.22	1.55	1.00	3.31E+04	0.925
PCB-019	12.55	1.13	1.00	2.22E+04	1.086
PCB-037	18.18	1.04	1.00	3.09E+04	0.970
PCB-054	14.41	0.84	1.00	2.65E+04	0.951
PCB-081	21.77	0.78	1.00	2.80E+04	1.058
PCB-077	22.06	0.79	1.00	2.84E+04	1.068
PCB-104	17.49	1.67	1.00	2.59E+04	1.041
PCB-123	23.08	1.64	1.00	2.30E+04	0.930
PCB-118	23.25	1.56	1.00	2.33E+04	0.956
PCB-114	23.55	1.56	1.00	2.37E+04	1.001
PCB-105	23.89	1.53	1.00	2.32E+04	0.958
PCB-126	25.48	1.67	1.00	2.30E+04	1.011
PCB-155	20.51	1.25	1.00	2.61E+04	0.928
PCB-167	26.41	1.11	1.00	2.67E+04	1.061
PCB-156/157	27.03	1.19	2.00	5.12E+04	1.058
PCB-169	28.69	1.17	1.00	2.32E+04	0.973
PCB-188	23.5	0.98	1.00	2.13E+04	0.866
PCB-189	29.98	1.01	1.00	1.82E+04	0.923
PCB-202	26.29	1.02	1.00	2.31E+04	1.047
PCB-205	31.38	0.94	1.00	1.40E+04	0.806
PCB-208	29.72	0.85	1.00	1.67E+04	1.220
PCB-206	32.47	0.79	1.00	1.16E+04	1.241
PCB-209	33.61	1.15	1.00	1.20E+04	0.832
Extraction Standards					
13C12-PCB-001	8.85	2.94	100.00	3.44E+06	0.870
13C12-PCB-003	10.38	2.87	100.00	3.29E+06	0.834
13C12-PCB-004	10.54	1.56	100.00	2.53E+06	0.640
13C12-PCB-015	14.21	1.63	100.00	3.58E+06	0.907
13C12-PCB-019	12.54	1.00	100.00	2.04E+06	0.517
13C12-PCB-037	18.17	1.03	100.00	3.18E+06	1.539
13C12-PCB-054	14.4	0.80	100.00	2.79E+06	1.347
13C12-PCB-081	21.76	0.82	100.00	2.65E+06	1.614
13C12-PCB-077	22.06	0.83	100.00	2.66E+06	1.621
13C12-PCB-104	17.48	1.56	100.00	2.49E+06	1.516
13C12-PCB-123	23.07	1.59	100.00	2.47E+06	1.503
13C12-PCB-118	23.24	1.59	100.00	2.44E+06	1.486
13C12-PCB-114	23.54	1.62	100.00	2.36E+06	1.440
13C12-PCB-105	23.88	1.61	100.00	2.42E+06	1.475
13C12-PCB-126	25.47	1.61	100.00	2.28E+06	1.387
13C12-PCB-155	20.5	1.26	100.00	2.81E+06	1.714
13C12-PCB-167	26.39	1.33	100.00	2.52E+06	1.202
13C12-PCB-156/157	27.02	1.33	200.00	4.84E+06	1.154
13C12-PCB-169	28.67	1.33	100.00	2.38E+06	1.135
13C12-PCB-188	23.5	1.05	100.00	2.46E+06	1.171
13C12-PCB-189	29.96	1.05	100.00	1.97E+06	0.938
13C12-PCB-202	26.28	0.91	100.00	2.20E+06	1.050
13C12-PCB-205	31.37	0.87	100.00	1.73E+06	1.355
13C12-PCB-208	29.71	0.78	100.00	1.37E+06	1.072
13C12-PCB-206	32.46	0.79	100.00	9.38E+05	0.733
13C12-PCB-209	33.6	1.17	100.00	1.45E+06	1.130
Field Spike Standards					
13C12-PCB-031	15.76	1.04	100.00	3.32E+06	1.271
13C12-PCB-095	19.08	1.62	100.00	1.45E+06	0.596
13C12-PCB-153	24.19	1.32	100.00	2.29E+06	0.902
Cleanup Standards					
13C12-PCB-028	15.94	1.04	100.00	3.36E+06	1.626
13C12-PCB-111	22.01	1.61	100.00	1.93E+06	1.173
13C12-PCB-178	25.07	1.05	100.00	1.68E+06	0.802
Injection Standards					
13C12-PCB-9	11.81	1.53	100.00	3.95E+06	-
13C12-PCB-52	16.94	0.84	100.00	2.07E+06	-
13C12-PCB-101	20.62	1.58	100.00	1.64E+06	-
13C12-PCB-138	24.85	1.33	100.00	2.10E+06	-
13C12-PCB-194	31.09	0.85	100.00	1.28E+06	-

ALS Life Sciences

Calibration Report

ALS Sample ID **H5-20-CS2-004**
Analysis Method EPA 1668C
Analysis Type Calibration

Filename	Inst #	Column	Run Date	Approved:	*S. Jin*
5-200219A04	HRMS-5	SPB OCTYL 65972-02A	19-Feb-2020 16:17		--e-signature-- 11-Sep-2020

Target Analytes	Ret. Time	Ion Ratio	Concentration ng/mL	Response	RRF
PCB-001	8.87	3.00	5.00	1.76E+05	1.143
PCB-003	10.4	3.04	5.00	1.70E+05	1.184
PCB-004	10.56	1.49	5.00	9.12E+04	0.830
PCB-015	14.23	1.59	5.00	1.44E+05	0.946
PCB-019	12.55	1.06	5.00	1.02E+05	1.128
PCB-037	18.19	1.02	5.00	1.36E+05	0.992
PCB-054	14.42	0.79	5.00	1.21E+05	0.988
PCB-081	21.78	0.76	5.00	1.24E+05	1.096
PCB-077	22.07	0.73	5.00	1.21E+05	1.068
PCB-104	17.49	1.55	5.00	1.20E+05	1.078
PCB-123	23.09	1.56	5.00	1.01E+05	0.929
PCB-118	23.26	1.56	5.00	1.10E+05	1.025
PCB-114	23.56	1.59	5.00	1.04E+05	1.007
PCB-105	23.9	1.62	5.00	1.05E+05	0.990
PCB-126	25.5	1.62	5.00	1.04E+05	1.078
PCB-155	20.52	1.25	5.00	1.26E+05	1.007
PCB-167	26.41	1.17	5.00	1.14E+05	1.048
PCB-156/157	27.04	1.17	10.00	2.27E+05	1.088
PCB-169	28.7	1.16	5.00	1.03E+05	1.019
PCB-188	23.53	1.02	5.00	9.99E+04	0.925
PCB-189	29.99	1.04	5.00	8.10E+04	0.945
PCB-202	26.29	0.90	5.00	1.02E+05	1.052
PCB-205	31.4	0.94	5.00	6.46E+04	0.842
PCB-208	29.74	0.81	5.00	7.88E+04	1.278
PCB-206	32.49	0.81	5.00	5.35E+04	1.287
PCB-209	33.63	1.15	5.00	5.73E+04	0.870
Extraction Standards					
13C12-PCB-001	8.85	2.94	100.00	3.08E+06	0.900
13C12-PCB-003	10.38	2.88	100.00	2.88E+06	0.841
13C12-PCB-004	10.55	1.57	100.00	2.20E+06	0.641
13C12-PCB-015	14.22	1.66	100.00	3.05E+06	0.891
13C12-PCB-019	12.54	0.99	100.00	1.80E+06	0.526
13C12-PCB-037	18.17	1.05	100.00	2.75E+06	1.494
13C12-PCB-054	14.41	0.80	100.00	2.45E+06	1.334
13C12-PCB-081	21.77	0.82	100.00	2.26E+06	1.533
13C12-PCB-077	22.06	0.83	100.00	2.26E+06	1.536
13C12-PCB-104	17.49	1.59	100.00	2.23E+06	1.512
13C12-PCB-123	23.08	1.61	100.00	2.17E+06	1.477
13C12-PCB-118	23.25	1.61	100.00	2.15E+06	1.460
13C12-PCB-114	23.55	1.60	100.00	2.07E+06	1.404
13C12-PCB-105	23.89	1.63	100.00	2.12E+06	1.439
13C12-PCB-126	25.48	1.62	100.00	1.94E+06	1.314
13C12-PCB-155	20.5	1.25	100.00	2.49E+06	1.693
13C12-PCB-167	26.4	1.33	100.00	2.17E+06	1.181
13C12-PCB-156/157	27.03	1.34	200.00	4.17E+06	1.135
13C12-PCB-169	28.69	1.35	100.00	2.02E+06	1.101
13C12-PCB-188	23.5	1.05	100.00	2.16E+06	1.175
13C12-PCB-189	29.98	1.04	100.00	1.71E+06	0.932
13C12-PCB-202	26.28	0.90	100.00	1.94E+06	1.053
13C12-PCB-205	31.38	0.86	100.00	1.54E+06	1.334
13C12-PCB-208	29.72	0.80	100.00	1.23E+06	1.072
13C12-PCB-206	32.47	0.79	100.00	8.31E+05	0.722
13C12-PCB-209	33.61	1.17	100.00	1.32E+06	1.144
Field Spike Standards					
13C12-PCB-031	15.77	1.03	100.00	2.93E+06	1.287
13C12-PCB-095	19.09	1.62	100.00	1.29E+06	0.599
13C12-PCB-153	24.19	1.33	100.00	2.01E+06	0.917
Cleanup Standards					
13C12-PCB-028	15.94	1.03	100.00	2.97E+06	1.614
13C12-PCB-111	22.02	1.63	100.00	1.69E+06	1.149
13C12-PCB-178	25.07	1.06	100.00	1.48E+06	0.806
Injection Standards					
13C12-PCB-9	11.81	1.56	100.00	3.42E+06	-
13C12-PCB-52	16.95	0.85	100.00	1.84E+06	-
13C12-PCB-101	20.62	1.61	100.00	1.47E+06	-
13C12-PCB-138	24.87	1.31	100.00	1.84E+06	-
13C12-PCB-194	31.09	0.87	100.00	1.15E+06	-

ALS Life Sciences

Calibration Report

ALS Sample ID **H5-20-CS3-004**
Analysis Method EPA 1668C
Analysis Type Calibration

Filename	Inst #	Column	Run Date	Approved:	*S. Jin*
5-200219A01	HRMS-5	SPB OCTYL 65972-02A	19-Feb-2020 13:42		--e-signature-- 11-Sep-2020

Target Analytes	Ret. Time	Ion Ratio	Concentration ng/mL	Response	RRF
PCB-001	8.91	3.04	50.00	1.27E+06	1.110
PCB-003	10.44	3.06	50.00	1.24E+06	1.115
PCB-004	10.59	1.48	50.00	6.21E+05	0.753
PCB-015	14.28	1.58	50.00	1.11E+06	0.926
PCB-019	12.6	1.06	50.00	7.18E+05	1.085
PCB-037	18.24	1.04	50.00	9.99E+05	0.933
PCB-054	14.46	0.80	50.00	8.76E+05	0.947
PCB-081	21.83	0.77	50.00	9.21E+05	1.066
PCB-077	22.13	0.76	50.00	8.94E+05	1.039
PCB-104	17.54	1.53	50.00	8.53E+05	1.032
PCB-123	23.14	1.57	50.00	7.34E+05	0.913
PCB-118	23.31	1.59	50.00	7.93E+05	1.000
PCB-114	23.61	1.58	50.00	7.61E+05	0.992
PCB-105	23.95	1.59	50.00	7.56E+05	0.967
PCB-126	25.54	1.60	50.00	7.38E+05	1.020
PCB-155	20.57	1.26	50.00	8.83E+05	0.949
PCB-167	26.47	1.16	50.00	8.08E+05	1.001
PCB-156/157	27.09	1.16	100.00	1.61E+06	1.035
PCB-169	28.76	1.18	50.00	7.54E+05	1.004
PCB-188	23.57	1.01	50.00	7.04E+05	0.882
PCB-189	30.05	1.04	50.00	5.73E+05	0.921
PCB-202	26.35	0.89	50.00	7.04E+05	0.979
PCB-205	31.45	0.92	50.00	4.53E+05	0.824
PCB-208	29.78	0.83	50.00	5.40E+05	1.209
PCB-206	32.54	0.82	50.00	3.77E+05	1.249
PCB-209	33.7	1.19	50.00	3.91E+05	0.833
Extraction Standards					
13C12-PCB-001	8.9	2.98	100.00	2.29E+06	0.901
13C12-PCB-003	10.42	3.00	100.00	2.22E+06	0.875
13C12-PCB-004	10.59	1.57	100.00	1.65E+06	0.649
13C12-PCB-015	14.27	1.65	100.00	2.41E+06	0.947
13C12-PCB-019	12.6	0.99	100.00	1.32E+06	0.521
13C12-PCB-037	18.22	1.06	100.00	2.14E+06	1.514
13C12-PCB-054	14.45	0.80	100.00	1.85E+06	1.309
13C12-PCB-081	21.82	0.82	100.00	1.73E+06	1.558
13C12-PCB-077	22.12	0.83	100.00	1.72E+06	1.553
13C12-PCB-104	17.53	1.57	100.00	1.65E+06	1.491
13C12-PCB-123	23.13	1.60	100.00	1.61E+06	1.450
13C12-PCB-118	23.3	1.59	100.00	1.59E+06	1.431
13C12-PCB-114	23.6	1.62	100.00	1.53E+06	1.384
13C12-PCB-105	23.94	1.61	100.00	1.56E+06	1.411
13C12-PCB-126	25.53	1.61	100.00	1.45E+06	1.305
13C12-PCB-155	20.56	1.25	100.00	1.86E+06	1.679
13C12-PCB-167	26.45	1.35	100.00	1.61E+06	1.155
13C12-PCB-156/157	27.08	1.32	200.00	3.11E+06	1.113
13C12-PCB-169	28.75	1.32	100.00	1.50E+06	1.075
13C12-PCB-188	23.56	1.07	100.00	1.60E+06	1.143
13C12-PCB-189	30.03	1.06	100.00	1.24E+06	0.890
13C12-PCB-202	26.34	0.91	100.00	1.44E+06	1.030
13C12-PCB-205	31.44	0.86	100.00	1.10E+06	1.363
13C12-PCB-208	29.78	0.80	100.00	8.93E+05	1.106
13C12-PCB-206	32.53	0.80	100.00	6.03E+05	0.747
13C12-PCB-209	33.67	1.18	100.00	9.40E+05	1.164
Field Spike Standards					
13C12-PCB-031	15.82	1.04	100.00	2.30E+06	1.330
13C12-PCB-095	19.13	1.64	100.00	9.70E+05	0.608
13C12-PCB-153	24.25	1.35	100.00	1.55E+06	0.951
Cleanup Standards					
13C12-PCB-028	15.99	1.01	100.00	2.45E+06	1.731
13C12-PCB-111	22.07	1.64	100.00	1.34E+06	1.207
13C12-PCB-178	25.13	1.07	100.00	1.12E+06	0.799
Injection Standards					
13C12-PCB-9	11.85	1.55	100.00	2.54E+06	-
13C12-PCB-52	17	0.85	100.00	1.41E+06	-
13C12-PCB-101	20.68	1.62	100.00	1.11E+06	-
13C12-PCB-138	24.92	1.33	100.00	1.40E+06	-
13C12-PCB-194	31.16	0.86	100.00	8.07E+05	-

ALS Life Sciences

Calibration Report

ALS Sample ID **H5-20-CS4-004**
Analysis Method EPA 1668C
Analysis Type Calibration

Filename	Inst #	Column	Run Date	Approved:	*S. Jin*
5-200219A05	HRMS-5	SPB OCTYL 65972-02A	19-Feb-2020 16:57		--e-signature-- 11-Sep-2020

Target Analytes	Ret. Time	Ion Ratio	Concentration ng/mL	Response	RRF
PCB-001	8.87	3.05	400.00	1.61E+07	1.242
PCB-003	10.4	3.03	400.00	1.58E+07	1.270
PCB-004	10.56	1.47	400.00	7.86E+06	0.853
PCB-015	14.23	1.59	400.00	1.39E+07	1.036
PCB-019	12.55	1.05	400.00	8.81E+06	1.197
PCB-037	18.19	1.04	400.00	1.24E+07	1.039
PCB-054	14.43	0.79	400.00	1.08E+07	1.061
PCB-081	21.78	0.77	400.00	1.14E+07	1.166
PCB-077	22.08	0.77	400.00	1.12E+07	1.144
PCB-104	17.5	1.57	400.00	1.06E+07	1.159
PCB-123	23.09	1.58	400.00	9.27E+06	1.007
PCB-118	23.27	1.57	400.00	9.93E+06	1.096
PCB-114	23.56	1.56	400.00	9.53E+06	1.093
PCB-105	23.91	1.56	400.00	9.51E+06	1.068
PCB-126	25.5	1.57	400.00	9.52E+06	1.123
PCB-155	20.52	1.26	400.00	1.06E+07	1.042
PCB-167	26.43	1.18	400.00	1.03E+07	1.106
PCB-156/157	27.04	1.18	800.00	2.04E+07	1.127
PCB-169	28.71	1.18	400.00	9.73E+06	1.107
PCB-188	23.53	1.00	400.00	8.58E+06	0.968
PCB-189	30	1.03	400.00	7.45E+06	1.008
PCB-202	26.3	0.90	400.00	8.72E+06	1.080
PCB-205	31.4	0.93	400.00	5.90E+06	0.901
PCB-208	29.74	0.82	400.00	6.80E+06	1.337
PCB-206	32.5	0.82	400.00	4.77E+06	1.346
PCB-209	33.64	1.18	400.00	5.09E+06	0.925
Extraction Standards					
13C12-PCB-001	8.87	2.93	100.00	3.23E+06	0.912
13C12-PCB-003	10.38	2.91	100.00	3.12E+06	0.879
13C12-PCB-004	10.55	1.56	100.00	2.31E+06	0.650
13C12-PCB-015	14.22	1.65	100.00	3.35E+06	0.945
13C12-PCB-019	12.55	1.00	100.00	1.84E+06	0.519
13C12-PCB-037	18.18	1.05	100.00	2.98E+06	1.587
13C12-PCB-054	14.41	0.79	100.00	2.53E+06	1.348
13C12-PCB-081	21.77	0.82	100.00	2.44E+06	1.627
13C12-PCB-077	22.06	0.82	100.00	2.45E+06	1.634
13C12-PCB-104	17.49	1.57	100.00	2.30E+06	1.529
13C12-PCB-123	23.08	1.60	100.00	2.30E+06	1.532
13C12-PCB-118	23.26	1.61	100.00	2.27E+06	1.509
13C12-PCB-114	23.55	1.61	100.00	2.18E+06	1.452
13C12-PCB-105	23.9	1.61	100.00	2.23E+06	1.483
13C12-PCB-126	25.48	1.62	100.00	2.12E+06	1.411
13C12-PCB-155	20.51	1.24	100.00	2.54E+06	1.692
13C12-PCB-167	26.41	1.33	100.00	2.32E+06	1.224
13C12-PCB-156/157	27.03	1.32	200.00	4.52E+06	1.190
13C12-PCB-169	28.7	1.33	100.00	2.20E+06	1.157
13C12-PCB-188	23.51	1.04	100.00	2.22E+06	1.167
13C12-PCB-189	29.99	1.06	100.00	1.85E+06	0.973
13C12-PCB-202	26.29	0.91	100.00	2.02E+06	1.063
13C12-PCB-205	31.38	0.86	100.00	1.64E+06	1.372
13C12-PCB-208	29.72	0.79	100.00	1.27E+06	1.066
13C12-PCB-206	32.47	0.80	100.00	8.86E+05	0.743
13C12-PCB-209	33.61	1.19	100.00	1.38E+06	1.154
Field Spike Standards					
13C12-PCB-031	15.77	1.05	100.00	3.06E+06	1.268
13C12-PCB-095	19.1	1.63	100.00	1.33E+06	0.587
13C12-PCB-153	24.2	1.32	100.00	2.08E+06	0.894
Cleanup Standards					
13C12-PCB-028	15.95	1.04	100.00	3.09E+06	1.646
13C12-PCB-111	22.03	1.62	100.00	1.76E+06	1.171
13C12-PCB-178	25.08	1.06	100.00	1.56E+06	0.821
Injection Standards					
13C12-PCB-9	11.83	1.55	100.00	3.54E+06	-
13C12-PCB-52	16.95	0.85	100.00	1.88E+06	-
13C12-PCB-101	20.63	1.58	100.00	1.50E+06	-
13C12-PCB-138	24.88	1.34	100.00	1.90E+06	-
13C12-PCB-194	31.11	0.86	100.00	1.19E+06	-

ALS Life Sciences

Calibration Report

ALS Sample ID **H5-20-CS5-004**
Analysis Method EPA 1668C
Analysis Type Calibration

Filename	Inst #	Column	Run Date	Approved:	*S. Jin*
5-200219A06	HRMS-5	SPB OCTYL 65972-02A	19-Feb-2020 17:39		--e-signature-- 11-Sep-2020

Target Analytes	Ret. Time	Ion Ratio	Concentration ng/mL	Response	RRF
PCB-001					
PCB-003					
PCB-004	10.55	1.47	2000.00	4.13E+07	0.863
PCB-015	14.22	1.52	2000.00	7.30E+07	1.030
PCB-019	12.55	1.05	2000.00	4.54E+07	1.184
PCB-037	18.18	1.05	2000.00	6.51E+07	1.042
PCB-054	14.42	0.79	2000.00	5.46E+07	1.055
PCB-081	21.78	0.77	2000.00	5.96E+07	1.158
PCB-077	22.07	0.77	2000.00	5.89E+07	1.149
PCB-104	17.49	1.56	2000.00	5.30E+07	1.145
PCB-123	23.09	1.57	2000.00	4.80E+07	1.008
PCB-118	23.26	1.56	2000.00	5.11E+07	1.094
PCB-114	23.56	1.56	2000.00	4.87E+07	1.090
PCB-105	23.9	1.56	2000.00	4.99E+07	1.072
PCB-126	25.5	1.58	2000.00	4.97E+07	1.116
PCB-155	20.52	1.26	2000.00	5.32E+07	1.029
PCB-167	26.41	1.18	2000.00	5.31E+07	1.109
PCB-156/157	27.04	1.19	4000.00	1.04E+08	1.136
PCB-169	28.7	1.19	2000.00	5.08E+07	1.102
PCB-188	23.53	1.00	2000.00	4.36E+07	0.958
PCB-189	29.99	1.04	2000.00	3.91E+07	1.027
PCB-202	26.3	0.90	2000.00	4.45E+07	1.081
PCB-205	31.4	0.92	2000.00	3.07E+07	0.906
PCB-208	29.74	0.82	2000.00	3.50E+07	1.332
PCB-206	32.49	0.82	2000.00	2.49E+07	1.354
PCB-209	33.64	1.18	2000.00	2.69E+07	0.911
Extraction Standards					
13C12-PCB-001	8.85	2.92	100.00	3.39E+06	0.911
13C12-PCB-003	10.38	2.88	100.00	3.32E+06	0.892
13C12-PCB-004	10.54	1.53	100.00	2.39E+06	0.643
13C12-PCB-015	14.21	1.64	100.00	3.55E+06	0.952
13C12-PCB-019	12.54	1.00	100.00	1.92E+06	0.514
13C12-PCB-037	18.17	1.05	100.00	3.12E+06	1.592
13C12-PCB-054	14.4	0.79	100.00	2.59E+06	1.319
13C12-PCB-081	21.76	0.82	100.00	2.57E+06	1.671
13C12-PCB-077	22.06	0.84	100.00	2.56E+06	1.664
13C12-PCB-104	17.49	1.55	100.00	2.31E+06	1.501
13C12-PCB-123	23.08	1.59	100.00	2.38E+06	1.546
13C12-PCB-118	23.25	1.60	100.00	2.34E+06	1.516
13C12-PCB-114	23.55	1.61	100.00	2.24E+06	1.451
13C12-PCB-105	23.89	1.61	100.00	2.33E+06	1.511
13C12-PCB-126	25.48	1.58	100.00	2.22E+06	1.444
13C12-PCB-155	20.5	1.24	100.00	2.58E+06	1.678
13C12-PCB-167	26.4	1.33	100.00	2.40E+06	1.204
13C12-PCB-156/157	27.03	1.32	200.00	4.60E+06	1.155
13C12-PCB-169	28.69	1.35	100.00	2.31E+06	1.159
13C12-PCB-188	23.5	1.06	100.00	2.27E+06	1.143
13C12-PCB-189	29.98	1.06	100.00	1.91E+06	0.957
13C12-PCB-202	26.28	0.91	100.00	2.06E+06	1.035
13C12-PCB-205	31.38	0.86	100.00	1.69E+06	1.347
13C12-PCB-208	29.72	0.79	100.00	1.31E+06	1.043
13C12-PCB-206	32.47	0.79	100.00	9.20E+05	0.732
13C12-PCB-209	33.61	1.19	100.00	1.48E+06	1.173
Field Spike Standards					
13C12-PCB-031	15.76	1.04	100.00	3.15E+06	1.249
13C12-PCB-095	19.09	1.62	100.00	1.36E+06	0.587
13C12-PCB-153	24.19	1.31	100.00	2.16E+06	0.901
Cleanup Standards					
13C12-PCB-028	15.94	1.03	100.00	3.19E+06	1.628
13C12-PCB-111	22.02	1.60	100.00	1.81E+06	1.173
13C12-PCB-178	25.07	1.07	100.00	1.61E+06	0.808
Injection Standards					
13C12-PCB-9	11.81	1.55	100.00	3.73E+06	-
13C12-PCB-52	16.94	0.85	100.00	1.96E+06	-
13C12-PCB-101	20.62	1.59	100.00	1.54E+06	-
13C12-PCB-138	24.87	1.32	100.00	1.99E+06	-
13C12-PCB-194	31.11	0.86	100.00	1.26E+06	-

ALS Life Sciences

Second Source Calibration Verification Report

Sample Name	**CVS**	Sampling Date	n/a		
ALS Sample ID	H5-20-RS1-004	Extraction Date	n/a		Approved:
Analysis Method	EPA 1668C	Sample Size	1	n/a	*S. Jin*
Analysis Type	CCV	Percent Moisture	n/a		--e-signature--
Sample Matrix	QC	Split Ratio	1		11-Sep-2020

Run Information	**Run 1**
Filename	5-200219A07
Run Date	19-Feb-20 18:21
Final Volume	25 ul
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS-5 SPB OCTYL 65972-02A

Target Analytes	**pg/uL**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	50	8.87	109	75-125	
PCB-003	50	10.40	110	75-125	
PCB-004	50	10.56	111	75-125	
PCB-015	50	14.23	111	75-125	
PCB-019	50	12.55	114	75-125	
PCB-037	50	18.19	111	75-125	
PCB-054	50	14.42	112	75-125	
PCB-081	50	21.78	105	75-125	
PCB-077	50	22.08	105	75-125	
PCB-104	50	17.49	101	75-125	
PCB-123	50	23.09	106	75-125	
PCB-118	50	23.26	106	75-125	
PCB-114	50	23.56	109	75-125	
PCB-105	50	23.90	105	75-125	
PCB-126	50	25.50	105	75-125	
PCB-155	50	20.52	105	75-125	
PCB-167	50	26.43	105	75-125	
PCB-156/157	100	27.04	104	75-125	
PCB-169	50	28.71	107	75-125	
PCB-188	50	23.53	105	75-125	
PCB-189	50	29.99	110	75-125	
PCB-202	50	26.30	109	75-125	
PCB-205	50	31.40	104	75-125	
PCB-208	50	29.74	101	75-125	
PCB-206	50	32.49	102	75-125	
PCB-209	50	33.64	119	75-125	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-001	100	8.87	99	50-145	
13C12-PCB-003	100	10.38	100	50-145	
13C12-PCB-004	100	10.55	99	50-145	
13C12-PCB-015	100	14.22	101	50-145	
13C12-PCB-019	100	12.55	101	50-145	
13C12-PCB-037	100	18.17	102	50-145	
13C12-PCB-054	100	14.41	100	50-145	
13C12-PCB-081	100	21.77	102	50-145	
13C12-PCB-077	100	22.06	101	50-145	
13C12-PCB-104	100	17.49	100	50-145	
13C12-PCB-123	100	23.08	102	50-145	
13C12-PCB-118	100	23.25	102	50-145	
13C12-PCB-114	100	23.55	101	50-145	
13C12-PCB-105	100	23.89	101	50-145	
13C12-PCB-126	100	25.48	103	50-145	
13C12-PCB-155	100	20.51	99	50-145	
13C12-PCB-167	100	26.40	101	50-145	
13C12-PCB-156/157	200	27.03	102	50-145	
13C12-PCB-169	100	28.70	103	50-145	
13C12-PCB-188	100	23.51	99	50-145	
13C12-PCB-189	100	29.98	103	50-145	
13C12-PCB-202	100	26.29	100	50-145	
13C12-PCB-205	100	31.38	100	50-145	
13C12-PCB-208	100	29.72	99	50-145	
13C12-PCB-206	100	32.47	100	50-145	
13C12-PCB-209	100	33.61	99	50-145	
Field Spike Standards					
13C12-PCB-031	100	15.77	98	70-130	
13C12-PCB-095	100	19.09	98	70-130	
13C12-PCB-153	100	24.20	98	70-130	
Cleanup Standards					
13C12-PCB-028	100	15.94	99	65-135	
13C12-PCB-111	100	22.03	99	75-125	
13C12-PCB-178	100	25.08	100	75-125	

INSTRUMENT 209 PCB CALIBRATION REPORT

	Target Analyte	#Hom	Resp	Ra	Ra fail=YES	RT	Conc.	H/A	ical RRF	User RF	%Rec	Mod.Date	Mod.Comment	Code Comments	Noise 1	Noise 2	Ion1 Ht	Ion2 Ht	Ion1 s/n	Ion2 s/n	Ion1 Area	Ion2 Area	RRT	RT LCL	RT UCL	Acq.Date	Acq.Time	ID	Spl Size
1	* PCB-1		363938	3.255	NO	8.91	24.41535	21.112		1.164	97.7				1174	718	5877752	1800287	5008.1	2507.9	278414.3	85523.7	1.0016	8.88	8.94	9-Sep-20	14:04:47	H5-20-WDM-731	1
2	PCB-2		337877.9	3.182	NO	10.31	25	19.23	1.083		100				1174	718	4943880	1576865	4212.4	2196.7	257089.4	80788.5	0.9892	10.28	10.35	9-Sep-20	14:04:47	H5-20-WDM-731	1
3	PCB-3		359000.6	3.256	NO	10.44	24.89554	18.189		1.186	99.6				1174	718	4995747	1537054	4256.6	2141.2	274656.6	84344	1.0013	10.4	10.47	9-Sep-20	14:04:47	H5-20-WDM-731	1
4	*PCB-4		218730	1.481	NO	10.59	30.74955	20.588		0.817	123				500	4256	2688032	1802466	5376.3	423.5	130564	88166	1.0013	10.56	10.63	9-Sep-20	14:04:47	H5-20-WDM-731	1
5	PCB-10		321950.7	1.52	NO	10.7	25	20.357	1.261		100				500	4256	3952821	2608307	7905.9	612.8	194170.9	127779.7	1.0119	10.67	10.74	9-Sep-20	14:04:47	H5-20-WDM-731	1
6	PCB-9		336694.2	1.494	NO	11.85	25	19.711	1.318		100				500	4256	3975615	2659527	7951.5	624.9	201697.1	134997.1	1.1206	11.82	11.89	9-Sep-20	14:04:47	H5-20-WDM-731	1
7	PCB-7		326491.9	1.479	NO	11.97	25	18.559	1.278		100				500	4256	3615027	2441897	7230.3	573.7	194784.8	131707.1	1.1312	11.93	12	9-Sep-20	14:04:47	H5-20-WDM-731	1
8	PCB-6		331861.3	1.486	NO	12.12	25	18.339	1.299		100				500	4256	3638019	2465950	7276.3	579.4	198374.8	133486.5	1.1457	12.09	12.15	9-Sep-20	14:04:47	H5-20-WDM-731	1
9	PCB-5		290328.9	1.489	NO	12.32	25	18.971	1.137		100				500	4256	3294885	2211891	6590	519.7	173679.5	116649.4	1.1643	12.28	12.35	9-Sep-20	14:04:47	H5-20-WDM-731	1
10	PCB-8		353809.1	1.498	NO	12.4	25	17.631	1.385		100				500	4256	3741189	2490506	7482.6	585.2	212195.7	141613.4	1.1722	12.37	12.43	9-Sep-20	14:04:47	H5-20-WDM-731	1
11	* PCB-14		324151.6	1.501	NO	13.38	25	19.467	1.269		100				2281	4510	3787077	2534901	1660.5	562.1	194540.1	129611.5	0.938	13.34	13.41	9-Sep-20	14:04:47	H5-20-WDM-731	1
12	PCB-11		304050.7	1.539	NO	13.89	25	18.759	1.19		100				2281	4510	3456941	2222092	1515.7	492.7	184286.3	119764.4	0.9742	13.86	13.92	9-Sep-20	14:04:47	H5-20-WDM-731	1
13	PCB-13/12		621124.4	1.53	NO	14.08	50	14.728	1.216		100				2281	4510	5532143	3549069	2425.6	786.9	375621.3	245503.1	0.9877	14.05	14.12	9-Sep-20	14:04:47	H5-20-WDM-731	1
14	PCB-15		345082	1.545	NO	14.27	30.27685	17.013		0.972	121.1				2281	4510	3563954	2370517	1562.6	525.6	209488.3	135593.7	1.0006	14.24	14.3	9-Sep-20	14:04:47	H5-20-WDM-731	1
15	* PCB-19		174667.6	1.092	NO	12.58	30.60226	19.707		1.136	122.4				614	599	1796559	1654452	2926.5	2760.5	91165.1	83502.5	1.0011	12.55	12.62	9-Sep-20	14:04:47	H5-20-WDM-731	1
16	* PCB-30/18		545400.6	1.137	NO	13.67	50	15.448	1.468		100				1143	840	4482417	3864387	3920.4	4598.5	290159.4	255241.2	1.0876	13.64	13.7	9-Sep-20	14:04:47	H5-20-WDM-731	1
17	PCB-17		236095.3	1.114	NO	13.94	25	21.378	1.271		100				1143	840	2659989	2375498	2326.5	2826.7	124426.2	111669	1.1089	13.9	13.97	9-Sep-20	14:04:47	H5-20-WDM-731	1
18	PCB-27		317141.6	1.146	NO	14.07	25	22.202	1.707		100				1143	840	3760843	3235401	3289.3	3850	169391.9	147749.7	1.1192	14.03	14.1	9-Sep-20	14:04:47	H5-20-WDM-731	1
19	PCB-24		299122.7	1.131	NO	14.16	25	21.105	1.61		100				1143	840	3349984	2933731	2930	3491	158728	140394.6	1.1265	14.13	14.19	9-Sep-20	14:04:47	H5-20-WDM-731	1
20	PCB-16		199721.1	1.11	NO	14.22	25	20.67	1.075		100				1143	840	2171792	1962450	1899.5	2335.2	105071.7	94649.4	1.1316	14.19	14.26	9-Sep-20	14:04:47	H5-20-WDM-731	1
21	PCB-32		335363.4	1.173	NO	14.52	25	21.067	1.805		100				1143	840	3814379	3290761	3336.1	3915.9	181058.8	154304.6	1.1551	14.48	14.55	9-Sep-20	14:04:47	H5-20-WDM-731	1
22	* PCB-34		276818.8	1.033	NO	15.21	25	21.013	1.49		100				2983	4828	2955402	2820700	990.8	584.2	140643.9	136174.8	0.8355	15.18	15.25	9-Sep-20	14:04:47	H5-20-WDM-731	1
23	PCB-23		287522.7	1.019	NO	15.31	25	19.575	1.548		100				2983	4828	2840770	2760167	952.4	571.7	145121.6	142401.2	0.8409	15.28	15.35	9-Sep-20	14:04:47	H5-20-WDM-731	1
24	PCB-29/26		599099.8	1.048	NO	15.5	50	17.308	1.612		100				2983	4828	5305433	5081635	1778.6	1052.5	306533.1	292566.7	0.8511	15.46	15.53	9-Sep-20	14:04:47	H5-20-WDM-731	1
25	PCB-25		317061.6	1.028	NO	15.63	25	18.157	1.707		100				2983	4828	2918108	2905495	978.3	601.8	160712.2	156349.5	0.8581	15.59	15.66	9-Sep-20	14:04:47	H5-20-WDM-731	1
26	PCB-31		314379.1	1.036	NO	15.8	25	19.731	1.692		100				2983	4828	3157158	3058933	1058.4	633.6	160008.2	154371	0.8678	15.77	15.83	9-Sep-20	14:04:47	H5-20-WDM-731	1
27	PCB-28/20		588180.4	1.041	NO	15.99	50	15.499	1.583		100				2983	4828	4650003	4480400	1558.9	928	300022	288158.4	0.878	15.95	16.02	9-Sep-20	14:04:47	H5-20-WDM-731	1
28	PCB-21/33		593586.9	1.03	NO	16.1	50	15.22	1.597		100				2983	4828	4583809	4448094	1536.7	921.3	301160.8	292426.1	0.8844	16.07	16.14	9-Sep-20	14:04:47	H5-20-WDM-731	1
29	PCB-22		270857.4	1.047	NO	16.35	25	18.509	1.458		100				2983	4828	2564643	2447724	859.8	507	138565	132292.5	0.8979	16.32	16.38	9-Sep-20	14:04:47	H5-20-WDM-731	1
30	PCB-36		298522.7	1.053	NO	17.18	25	17.257	1.607		100				2983	4828	2641890	2546659	885.7	527.5	153090.3	145432.5	0.9436	17.15	17.21	9-Sep-20	14:04:47	H5-20-WDM-731	1
31	PCB-39		288440.5	1.024	NO	17.4	25	17.884	1.552		100				2983	4828	2609858	2550569	874.9	528.3	145934.3	142506.2	0.9554	17.36	17.43	9-Sep-20	14:04:47	H5-20-WDM-731	1
32	PCB-38		283024.4	1.033	NO	17.73	25	18.312	1.523		100				2983	4828	2633716	2483730	882.9	514.4	143826.6	139197.8	0.9737	17.7	17.76	9-Sep-20	14:04:47	H5-20-WDM-731	1
33	PCB-35		273469.8	1.05	NO	17.98	25	17.059	1.472		100				2983	4828	2389861	2256982	801.2	467.5	140096	133373.8	0.9876	17.95	18.02	9-Sep-20	14:04:47	H5-20-WDM-731	1
34	PCB-37		273707.6	1.055	NO	18.22	27.95773	17.06		0.995	111.8				2983	4828	2397096	2261115	803.6	468.3	140508.6	133199	1.0005	18.19	18.25	9-Sep-20	14:04:47	H5-20-WDM-731	1
35	* PCB-54		506169.5	0.808	NO	14.43	62.29823	22.101		1	124.6				741	558	4999727	6278518	6751.3	11257	226218.1	279951.4	1.0006	14.4	14.47	9-Sep-20	14:04:47	H5-20-WDM-731	1
36	* PCB-50/53		950432.2	0.756	NO	15.65	100	19.969	1.181		100				879	1420	8171273	10672042	9297.3	7514.2	409191.5	541240.8	1.0852	15.62	15.69	9-Sep-20	14:04:47	H5-20-WDM-731	1
37	PCB-45/51		912308.3	0.762	NO	16.06	100	15.698	1.134		100				879	1420	6194715	8183645	7048.4	5762.1	394619.3	517689	1.113	16.02	16.09	9-Sep-20	14:04:47	H5-20-WDM-731	1
38	PCB-46		409295.3	0.763	NO	16.22	50	20.715	1.017		100				879	1420	3669258	4734475	4174.9	3333.6	177133.3	232162	1.1245	16.19	16.26	9-Sep-20	14:04:47	H5-20-WDM-731	1
39	PCB-52		454583.5	0.74	NO	16.97	50	21.928	1.13		100				879	1420	4238903	5697417	4823	4011.6	193308.5	261275	1.1761	16.93	17	9-Sep-20	14:04:47	H5-20-WDM-731	1
40	PCB-73		613851.7	0.762	NO	17.03	50	19.823	1.525		100				879	1420	5260771	6906238	5985.7	4862.7	265386.9	348464.7	1.1809	17	17.07	9-Sep-20	14:04:47	H5-20-WDM-731	1
41	PCB-43		402822.8	0.757	NO	17.1	50	20.572	1.001		100				879	1420	3569878	4776574	4061.8	3363.2	173531.5	229291.3	1.1856	17.07	17.14	9-Sep-20	14:04:47	H5-20-WDM-731	1
42	PCB-69/49		1064300.7	0.766	NO	17.21	100	12.764	1.322		100				879	1420	5891916	7724101	6703.8	5438.6	461610.4	602690.3	1.1931	17.18	17.24	9-Sep-20	14:04:47	H5-20-WDM-731	1
43	PCB-48		466557.5	0.768	NO	17.4	50	20.668	1.159		100				879	1420	4188757	5399503	4766	3801.8	202673.3	263884.2	1.206	17.36	17.43	9-Sep-20	14:04:47	H5-20-WDM-731	1
44	PCB-44/47/65		1521337.4	0.765	NO	17.54	150	18.861	1.26		100				879	1420	12432867	16263071	14146.2	11450.9	659195.9	862141.4	1.2161	17.51	17.58	9-Sep-20	14:04:47	H5-20-WDM-731	1
45	PCB-59/62/75		1826626	0.765	NO	17.71	150	18.987	1.513		100				879	1420	15026512	19713542	17097.2	13880.4	791404.4	1035222	1.2277	17.68	17.74	9-Sep-20	14:04:47	H5-20-WDM-731	1
46	PCB-42		446395	0.758	NO	17.83	50	19.296	1.109		100				879	1420	3714495	4899202	4226.4	3449.5	192502.3	253892.7	1.2358	17.79	17.86	9-Sep-20	14:04:47	H5-20-WDM-731	1
47	PCB-41/71/40		1397298.2	0.76	NO	18.09	150	13.053	1.157		100				879	1420	7876616	10374865	8962	7305	603410.4	793887.8	1.2541	18.06	18.13	9-Sep-20	14:04:47	H5-20-WDM-731	1
48	PCB-64		631463.3	0.772	NO	18.22	50	19.183	1.569		100				879	1420	5276406	6768821	6003.5	4766	275056.4	356406.8	1.263	18.19	18.25	9-Sep-20	0.586655	H5-20-WDM-731	1
49	* PCB-72		525050.7	0.775	NO	18.63	50	19.979	1.305		100				8699	9355	4580904	5774279	526.6	617.2	229287.8	295763	0.8552	18.59	18.66	9-Sep-20	0.586655	H5-20-WDM-731	1
50	PCB-68		544924.3	0.772	NO	18.78	50	19.023	1.354		100				8699	9355	4514827	5722769	519	611.7	237331.3	307593.1	0.8624	18.75	18.82	9-Sep-20	0.586655	H5-20-WDM-731	1
51	PCB-57		492178	0.761	NO	19.02	50	19.381	1.223		100				8699	9355	4121982	5409522	473.9	578.2	212683.7	279494.3	0.8734	18.99	19.06	9-Sep-20	0.586655	H5-20-WDM-731	1
52	PCB-58		504562.1	0.781	NO	19.15	50	19.513	1.254		100				8699	9355	4316499	5540254	496.2	592.2	221213.1	283349	0.8794	19.12	19.19	9-Sep-20	14:04:47	H5-20-WDM-731	1
53	PCB-67		551845.2	0.774	NO	19.25	50	18.879	1.371		100				8699	9355	4545704	5741928	522.6	613.8	240785.7	311059.5	0.8836	19.21	19.28	9-Sep-20	14:04:47	H5-20-WDM-731	1
54	PCB-63		529080	0.775	NO	19.39	50	18.775	1.315		100				8699	9355	4335382	5554010	498.4	593.7	230915.6	298164.4	0.8904	19.36	19.43	9-Sep-20	14:04:47	H5-20-WDM-731	1
55	PCB-61/70/74/76		2050697.1	0.777	NO	19.57	200	11.209	1.274		100				8699	9355	10052949	12957351	1155.7	1385.1	896829.7	1153867	0.8985	19.54	19.6	9-Sep-20	14:04:47	H5-20-WDM-731	1
56	PCB-66		531551.5	0.76	NO	19.75	50	18.646	1.321		100				8699	9355	4280983	5623459	492.1	601.1	229587.3	301964.2	0.907	19.72	19.79	9-Sep-20	14:04:47	H5-20-WDM-731	1
57	PCB-55		487395.7	0.804	NO	19.86	50	18.434	1.211		100				8699	9355	4005578	5034398	460.5	538.1	217291.7	270104	0.9117	19.82	19.89	9-Sep-20	14:04:47	H5-20-WDM-731	1
58	PCB-56		488997	0.777	NO	20.12	50	19.592	1.215		100				8699	9355	4189281	5395878	481.6	576.8	213823.6	275173.5	0.924	20.09	20.16	9-Sep-20	14:04:47	H5-20-WDM-731	1
59	PCB-60		490438.3	0.761	NO	20.24	50	18.21	1.219		100				8699	9355	3860668	5023897	443.8	537	212006	278432.3	0.9295	20.21	20.28	9-Sep-20	14:04:47	H5-20-WDM-731	1
60	PCB-80		575771.6	0.772	NO	20.39	50	18.011	1.431		100				8699	9355	4518620	5908768	519.5	631.6	250876.5	324895.2	0.9363	20.36	20.43	9-Sep-20	14:04:47	H5-20-WDM-731	1
61	PCB-79		557955.8	0.768	NO	21.24	50	17.767	1.387		100				8699	9355	4306489	5591019	495.1	590	242382	315573.8	0.9754	21.21	21.28	9-Sep-20	14:04:47	H5-20-WDM-731	1
62	PCB-78		512023.2	0.791	NO	21.55	50	17.876	1.272		100				8699	9355	4043517	5086938	464.8	543.8	226197.9	285825.3	0.9894	21.51	21.58	9-Sep-20	14:04:47	H5-20-WDM-731	1
63	PCB-81		486855.3	0.757	NO	21.8	55.3468	17.953		1.109	110.7				8699	9355	3766443	4799940	433	513.1	209793.4	277061.8	1.0008	21.76	21.83	9-Sep-20	14:04:47	H5-20-WDM-731	1
64	PCB-77		462932.8	0.781	NO	22.09	52.31731	16.893		1.094	104.6				8699	9355	3428591	4427377	394.2	473.3	202962.1	259970.7	1.0004	22.06	22.13	9-Sep-20	14:04:47	H5-20-WDM-731	1
65	* PCB-104		470722.3	1.598	NO	17.49	54.18044	20.962		1.091	108.4				554	912	6069115	3791884	10961	4156.6	289531.4	181190.9	1.0006	17.46	17.53	9-Sep-20	14:04:47	H5-20-WDM-731	1
66	PCB-96		465464.8	1.59	NO	17.73	50	20.62	1.181		100				554	912	5892876	3723638	10642.8	4081.8	285783.1	179681.7	1.014	17.7	17.76	9-Sep-20	14:04:47	H5-20-WDM-731	1
67	* PCB-103		408207.7	1.66	NO	18.72	50	20.775	1.036		100				431	2856	5291943	3235099	12288.7	1132.9	254721.4	153486.3	1.0705	18.68	18.75	9-Sep-20	14:04:47	H5-20-WDM-731	1
68	PCB-94		342347.8	1.639	NO	18.86	50	20.41	0.869		100				431	2856	4339938	2649767	10078	927.9	212635.9	129711.9	1.0785	18.82	18.89	9-Sep-20	14:04:47	H5-20-WDM-731	1
69	PCB-95		383411.4	1.656	NO	19.11	50	21.11	0.973		100				431	2856	5046813	3026269	11719.4	1059.8	239075.8	144335.5	1.0927	19.07	19.14	9-Sep-20	14:04:47	H5-20-WDM-731	1
70	PCB-100/93/102/98		1519154.4	1.629	NO	19.28	200	6.034	0.964		100	10-Sep-20	SJ200910MJ		431	2856	5679340	3459409	13188.3	1211.4	941253.1	577901.3	1.1028	19.25	19.32	9-Sep-20	14:04:47	H5-20-WDM-731	1
71	PCB-88/91		742406.2	1.619	NO	19.56	100	11.44	0.942		100	10-Sep-20	SJ200910MJ		431	2856	5250504	3250675	12192.4	1138.3	458965	283441.2	1.1187	19.53	19.59	9-Sep-20	14:04:47	H5-20-WDM-731	1
72	PCB-84		346393	1.627	NO	19.71	50	20.045	0.879		100				431	2856	4300454	2666087	9986.3	933.6	214540.9	131852.1	1.1271	19.67	19.74	9-Sep-20	14:04:47	H5-20-WDM-731	1
73	PCB-89		357662.2	1.614	NO	19.96	50	20.394	0.907		100				431	2856	4504084	2774886	10459.1	971.7	220857.5	136804.7	1.1414	19.92	19.99	9-Sep-20	14:04:47	H5-20-WDM-731	1
74	PCB-121		496936.8	1.642	NO	20.11	50	19.775	1.261		100				431	2856	6107481	3711961	14182.5	1299.9	308853.4	188083.3	1.1499	20.07	20.14	9-Sep-20	14:04:47	H5-20-WDM-731	1
75	PCB-92		368118.2	1.633	NO	20.33	50	19.954	0.934		100				431	2856	4555748	2779587	10579.1	973.4	228315.8	139802.4	1.1626	20.29	20.36	9-Sep-20	14:04:47	H5-20-WDM-731	1
76	PCB-113/90/101		1294632.8	1.625	NO	20.62	150	15.998	1.095		100				431	2856	12820954	7950123	29772.1	2784	801387.1	493245.6	1.1795	20.59	20.66	9-Sep-20	14:04:47	H5-20-WDM-731	1
77	PCB-83/99		735527.1	1.64	NO	20.94	100	14.05	0.933		100				431	2856	6419663	3860805	14907.4	1352	456904.2	278622.9	0.9077	20.9	20.97	9-Sep-20	14:04:47	H5-20-WDM-731	1
78	PCB-112		517756.3	1.634	NO	21.02	50	18.797	1.314		100				431	2856	6038065	3789898	14021.3	1327.2	321219.7	196536.6	0.9113	20.99	21.05	9-Sep-20	14:04:47	H5-20-WDM-731	1
79	PCB-109/119/86/97/125/87		2630481.6	1.625	NO	21.22	300	10.45	1.112		100				431	2856	17014996	10479080	39511.3	3669.6	1628264	1002218	0.9197	21.18	21.25	9-Sep-20	14:04:47	H5-20-WDM-731	1
80	PCB-117/116/85/110/115		2345507.4	1.629	NO	21.63	250	6.995	1.19		100	10-Sep-20	SJ200910MJ		431	2856	10166008	6236053	23607	2183.8	1453257	892250.8	0.9378	21.6	21.67	9-Sep-20	14:04:47	H5-20-WDM-731	1
81	PCB-82		325745.8	1.66	NO	21.9	50	19.442	0.826		100				431	2856	3952549	2376960	9178.4	832.4	203295.3	122450.4	0.9494	21.87	21.93	9-Sep-20	14:04:47	H5-20-WDM-731	1
82	PCB-111		500340.8	1.644	NO	22.02	50	19.33	1.269		100				431	2856	6013856	3677902	13965	1287.9	311114.5	189226.3	0.9546	21.99	22.05	9-Sep-20	14:04:47	H5-20-WDM-731	1
83	PCB-120		523070.8	1.647	NO	22.27	50	19.601	1.327		100				431	2856	6379788	3859663	14814.8	1351.6	325486.6	197584.2	0.9654	22.24	22.3	9-Sep-20	14:04:47	H5-20-WDM-731	1
84	* PCB-108/124		895268.2	1.56	NO	22.9	100	18.29	1.136		100				3554	1803	9977806	6427901	2807.8	3565.9	545518.8	349749.4	0.9927	22.86	22.93	9-Sep-20	14:04:47	H5-20-WDM-731	1
85	PCB-107		501181.8	1.558	NO	23.02	50	18.112	1.272		100				3554	1803	5528505	3558942	1555.8	1974.4	305231.9	195949.8	0.9979	22.99	23.05	9-Sep-20	14:04:47	H5-20-WDM-731	1
86	PCB-123		458349.4	1.575	NO	23.08	59.21728	18.56		0.957	118.4				3554	1803	5203288	3296204	1464.2	1828.6	280346.7	178002.7	1.0005	23.05	23.11	9-Sep-20	14:04:47	H5-20-WDM-731	1
87	PCB-106		438700.2	1.552	NO	23.16	50	18.541	1.113		100				3554	1803	4946932	3189177	1392.1	1769.2	266817.3	171882.9	0.9964	23.13	23.2	9-Sep-20	14:04:47	H5-20-WDM-731	1
88	PCB-118		457467.8	1.573	NO	23.26	55.18133	17.473		1.034	110.4				3554	1803	4886207	3111985	1375	1726.4	279641.9	177825.9	1.0005	23.23	23.29	9-Sep-20	14:04:47	H5-20-WDM-731	1
89	PCB-122		421715.5	1.554	NO	23.45	50	18.879	1.07		100				3554	1803	4844714	3108049	1363.3	1724.2	256618.1	165097.4	0.9964	23.42	23.49	9-Sep-20	14:04:47	H5-20-WDM-731	1
90	PCB-114		462696.3	1.523	NO	23.55	59.84402	17.57		1.036	119.7				3554	1803	4907813	3250241	1381.1	1803.1	279332.3	183364.1	1.0005	23.52	23.58	9-Sep-20	14:04:47	H5-20-WDM-731	1
91	PCB-105		466440.7	1.555	NO	23.9	61.51391	17.695		1.011	123				3554	1803	5022782	3266698	1413.4	1812.2	283851.7	182589	1.0005	23.87	23.93	9-Sep-20	14:04:47	H5-20-WDM-731	1
92	PCB-127		466442.9	1.578	NO	24.63	50	17.315	1.183		100				3554	1803	4943209	3177095	1391.1	1762.5	285493.4	180949.5	1.0309	24.59	24.66	9-Sep-20	14:04:47	H5-20-WDM-731	1
93	PCB-126		471885.3	1.613	NO	25.5	59.27913	16.087		1.07	118.6				3554	1803	4686094	2951020	1318.7	1637.1	291292.5	180592.8	1.0005	25.46	25.53	9-Sep-20	14:04:47	H5-20-WDM-731	1
94	* PCB-155		489276.7	1.258	NO	20.49	55.62174	20.57		0.991	111.2				499	626	5607067	4512271	11237.8	7203.7	272582	216694.8	1.0004	20.46	20.53	9-Sep-20	14:04:47	H5-20-WDM-731	1
95	PCB-152		465064.2	1.276	NO	20.65	50	20.644	1.052		100				499	626	5383303	4240127	10789.4	6769.2	260770.2	204294	1.0081	20.62	20.68	9-Sep-20	14:04:47	H5-20-WDM-731	1
96	PCB-150		452746	1.277	NO	20.73	50	20.037	1.024		100				499	626	5087898	3992786	10197.3	6374.3	253921.8	198824.2	1.0117	20.69	20.76	9-Sep-20	14:04:47	H5-20-WDM-731	1
97	PCB-136		453141.2	1.282	NO	20.95	50	20.487	1.025		100				499	626	5215314	4116839	10452.7	6572.4	254572.8	198568.4	1.0226	20.91	20.98	9-Sep-20	14:04:47	H5-20-WDM-731	1
98	PCB-145		440792.2	1.269	NO	21.09	50	20.361	0.997		100				499	626	5019808	3965159	10060.8	6330.2	246539.9	194252.3	1.0293	21.05	21.12	9-Sep-20	14:04:47	H5-20-WDM-731	1
99	PCB-148		331044.6	1.273	NO	21.83	50	19.762	0.749		100				499	626	3664034	2867631	7343.6	4578.1	185405.1	145639.7	1.0655	21.79	21.86	9-Sep-20	0.586655	H5-20-WDM-731	1
100	PCB-151/135		639197.2	1.274	NO	22.18	100	13.157	0.723		100				499	626	4712424	3695989	9444.8	5900.5	358158.9	281038.3	1.0826	22.14	22.21	9-Sep-20	0.586655	H5-20-WDM-731	1
101	PCB-154		412818.6	1.291	NO	22.26	50	19.725	0.934		100				499	626	4588685	3541506	9196.8	5653.9	232627.1	180191.5	1.0867	22.23	22.29	9-Sep-20	0.586655	H5-20-WDM-731	1
102	PCB-144		338579.6	1.268	NO	22.45	50	20.086	0.766		100				499	626	3802257	3009070	7620.6	4803.9	189298.2	149281.4	1.0962	22.42	22.49	9-Sep-20	0.586655	H5-20-WDM-731	1
103	* PCB-147/149		824586.3	1.214	NO	22.64	100	18.655	0.933		100				2377	2355	8434747	7033673	3548.9	2986.8	452151.9	372434.4	1.1054	22.61	22.68	9-Sep-20	14:04:47	H5-20-WDM-731	1
104	PCB-134/143		712426.4	1.221	NO	22.8	100	12.793	0.806		100				2377	2355	5010816	4115693	2108.3	1747.7	391676.7	320749.8	1.1131	22.77	22.84	9-Sep-20	14:04:47	H5-20-WDM-731	1
105	PCB-139/140		815913.3	1.228	NO	22.96	100	17.828	0.923		100				2377	2355	8016192	6527788	3372.8	2772	449644.3	366269	1.1208	22.93	22.99	9-Sep-20	14:04:47	H5-20-WDM-731	1
106	PCB-131		360127.7	1.231	NO	23.09	50	18.869	0.815		100				2377	2355	3749334	3049131	1577.5	1294.8	198700.1	161427.6	0.8754	23.06	23.13	9-Sep-20	14:04:47	H5-20-WDM-731	1
107	PCB-142		353549.8	1.245	NO	23.19	50	18.636	0.8		100				2377	2355	3653548	2921151	1537.2	1240.4	196047.2	157502.6	0.8791	23.15	23.22	9-Sep-20	14:04:47	H5-20-WDM-731	1
108	PCB-132		351138.4	1.213	NO	23.33	50	18.631	0.794		100				2377	2355	3586470	3012164	1509	1279.1	192499.4	158639	0.8846	23.3	23.37	9-Sep-20	14:04:47	H5-20-WDM-731	1
109	PCB-133		380065.1	1.222	NO	23.53	50	18.302	0.86		100				2377	2355	3825302	3182198	1609.5	1351.3	209013.9	171051.2	0.8919	23.49	23.56	9-Sep-20	14:04:47	H5-20-WDM-731	1
110	PCB-165		467514.4	1.225	NO	23.74	50	18.825	1.058		100				2377	2355	4846009	3932349	2038.9	1669.8	257417.9	210096.5	0.9001	23.71	23.78	9-Sep-20	14:04:47	H5-20-WDM-731	1
111	PCB-146		431546.9	1.215	NO	23.87	50	19.777	0.976		100				2377	2355	4682038	3829186	1969.9	1626	236745.7	194801.2	0.9047	23.83	23.9	9-Sep-20	14:04:47	H5-20-WDM-731	1
112	PCB-161		526559.2	1.221	NO	23.94	50	17.675	1.191		100				2377	2355	5115768	4230095	2152.4	1796.3	289429.7	237129.5	0.9075	23.9	23.97	9-Sep-20	14:04:47	H5-20-WDM-731	1
113	PCB-153/168		976047.8	1.218	NO	24.2	100	15.918	1.104		100				2377	2355	8532005	7003726	3589.8	2974.1	535990.4	440057.5	0.9175	24.17	24.24	9-Sep-20	14:04:47	H5-20-WDM-731	1
114	PCB-141		409015.3	1.24	NO	24.31	50	18.81	0.925		100				2377	2355	4259044	3424277	1792	1454.1	226424.8	182590.6	0.9217	24.28	24.35	9-Sep-20	14:04:47	H5-20-WDM-731	1
115	PCB-130		356854.1	1.222	NO	24.53	50	18.73	0.807		100				2377	2355	3675402	3023234	1546.4	1283.8	196230.9	160623.2	0.9299	24.5	24.56	9-Sep-20	14:04:47	H5-20-WDM-731	1
116	PCB-137/164		923297.7	1.205	NO	24.7	100	11.087	1.044		100	10-Sep-20	SJ200910MJ		2377	2355	5594066	4598348	2353.7	1952.7	504581.2	418716.5	0.9363	24.67	24.73	9-Sep-20	14:04:47	H5-20-WDM-731	1
117	PCB-138/163/129		1262687.2	1.221	NO	24.87	150	14.117	0.952		100				2377	2355	9798148	8003831	4122.5	3398.8	694073.2	568614	0.9427	24.83	24.9	9-Sep-20	14:04:47	H5-20-WDM-731	1
118	PCB-160		506231.8	1.219	NO	24.96	50	17.894	1.145		100				2377	2355	4975988	4135334	2093.6	1756	278088.3	228143.4	0.9464	24.93	25	9-Sep-20	14:04:47	H5-20-WDM-731	1
119	PCB-158		578874.9	1.227	NO	25.07	50	18.453	1.31		100				2377	2355	5885294	4797816	2476.2	2037.4	318926.6	259948.3	0.9505	25.04	25.11	9-Sep-20	14:04:47	H5-20-WDM-731	1
120	PCB-128/166		938759.7	1.209	NO	25.53	100	14.989	1.062		100				2377	2355	7700355	6383277	3239.9	2710.6	513738.7	425021	0.9679	25.5	25.57	9-Sep-20	14:04:47	H5-20-WDM-731	1
121	PCB-159		552936.8	1.196	NO	26	50	18.017	1.251		100				2377	2355	5425435	4551455	2282.7	1932.7	301131.2	251805.6	0.9858	25.97	26.04	9-Sep-20	14:04:47	H5-20-WDM-731	1
122	PCB-162		531310.6	1.208	NO	26.15	50	18.501	1.202		100				2377	2355	5377668	4412238	2262.6	1873.6	290661.4	240649.2	0.9913	26.12	26.18	9-Sep-20	14:04:47	H5-20-WDM-731	1
123	PCB-167		558367.4	1.214	NO	26.4	56.79337	17.689		1.065	113.6				2377	2355	5414930	4447221	2278.3	1888.5	306111.5	252255.9	1.0009	26.37	26.44	9-Sep-20	14:04:47	H5-20-WDM-731	1
124	PCB-156/157		1057589.7	1.221	NO	27.03	112.4003	13.692		1.089	112.4				2377	2355	7960627	6518776	3349.4	2768.2	581413.5	476176.2	1.0004	27	27.06	9-Sep-20	14:04:47	H5-20-WDM-731	1
125	PCB-169		508087.9	1.211	NO	28.69	56.65304	16.377		1.041	113.3				2377	2355	4556760	3756314	1917.2	1595.1	278246.8	229841.1	1	28.65	28.72	9-Sep-20	14:04:47	H5-20-WDM-731	1
126	* PCB-188		424369.5	1.037	NO	23.49	54.45757	19.224		0.92	108.9				1053	1199	4153364	3992718	3945.8	3328.8	216053.8	208315.7	1.0005	23.46	23.52	9-Sep-20	14:04:47	H5-20-WDM-731	1
127	PCB-179		427943.1	1.04	NO	23.71	50	19.237	1.036		100				1053	1199	4196998	4035674	3987.3	3364.6	218168.8	209774.3	1.0098	23.67	23.74	9-Sep-20	14:04:47	H5-20-WDM-731	1
128	PCB-184		440501	1.025	NO	23.94	50	19.177	1.067		100				1053	1199	4274796	4187155	4061.2	3490.9	222914.1	217586.9	1.0196	23.9	23.97	9-Sep-20	14:04:47	H5-20-WDM-731	1
129	PCB-176		432348.8	1.039	NO	24.16	50	19.249	1.047		100				1053	1199	4241155	4069363	4029.2	3392.7	220336.8	212012.1	1.0288	24.12	24.19	9-Sep-20	14:04:47	H5-20-WDM-731	1
130	PCB-186		401740.5	1.025	NO	24.41	50	18.758	0.973		100				1053	1199	3814146	3754334	3623.6	3130.1	203335.7	198404.8	1.0396	24.38	24.44	9-Sep-20	14:04:47	H5-20-WDM-731	1
131	PCB-178		324748.6	1.008	NO	25.06	50	18.828	0.786		100				1053	1199	3069456	3107586	2916.1	2590.9	163028.1	161720.5	1.0674	25.03	25.09	9-Sep-20	14:04:47	H5-20-WDM-731	1
132	PCB-175		344870.7	1.036	NO	25.39	50	18.89	0.835		100				1053	1199	3315336	3186478	3149.7	2656.7	175503.1	169367.6	1.0813	25.35	25.42	9-Sep-20	14:04:47	H5-20-WDM-731	1
133	PCB-187		365846.5	1.033	NO	25.53	50	19.357	0.886		100				1053	1199	3598080	3489724	3418.3	2909.5	185884.4	179962.1	1.0875	25.5	25.57	9-Sep-20	14:04:47	H5-20-WDM-731	1
134	PCB-182		367363.3	1.028	NO	25.63	50	19.029	0.89		100				1053	1199	3543698	3433366	3366.6	2862.5	186230.1	181133.2	1.0916	25.6	25.66	9-Sep-20	14:04:47	H5-20-WDM-731	1
135	PCB-183		352936	1.035	NO	25.85	50	19.78	0.855		100				1053	1199	3550717	3405896	3373.3	2839.6	179506.7	173429.3	1.1009	25.81	25.88	9-Sep-20	14:04:47	H5-20-WDM-731	1
136	PCB-185		338221	1.175	NO	25.93	50	17.914	0.819		100				1053	1199	3272754	3113162	3109.2	2595.5	182687.6	155533.4	1.1045	25.9	25.97	9-Sep-20	14:04:47	H5-20-WDM-731	1
137	PCB-174		370062.9	0.912	NO	25.99	50	19.146	0.896		100				1053	1199	3379125	3368151	3210.3	2808.1	176493.4	193569.4	1.1071	25.96	26.03	9-Sep-20	14:04:47	H5-20-WDM-731	1
138	PCB-177		338484.7	1.005	NO	26.23	50	18.505	0.82		100				1053	1199	3139886	3153016	2983	2628.8	169676.7	168808	1.1174	26.2	26.27	9-Sep-20	14:04:47	H5-20-WDM-731	1
139	PCB-181		337569.8	1.041	NO	26.43	50	18.69	0.817		100				1053	1199	3217641	3093515	3056.9	2579.1	172158.8	165410.9	0.8821	26.39	26.46	9-Sep-20	14:04:47	H5-20-WDM-731	1
140	PCB-171/173		665830.3	1.012	NO	26.56	100	19.056	0.806		100				1053	1199	6382560	6200120	6063.6	5169.2	334936	330894.3	0.8865	26.53	26.59	9-Sep-20	14:04:47	H5-20-WDM-731	1
141	PCB-172		328397.3	1.03	NO	27.36	50	18.129	0.795		100				1053	1199	3019982	2914835	2869.1	2430.2	166583.4	161813.9	0.9132	27.32	27.39	9-Sep-20	14:04:47	H5-20-WDM-731	1
142	PCB-192		391589.8	1.032	NO	27.51	50	18.325	0.948		100				1053	1199	3644950	3565058	3462.8	2972.3	198901.3	192688.5	0.9184	27.48	27.55	9-Sep-20	14:04:47	H5-20-WDM-731	1
143	PCB-180/193		805699.1	1.031	NO	27.67	100	14.254	0.975		100				1053	1199	5829653	5641559	5538.4	4703.5	408972.7	396726.4	0.9236	27.64	27.71	9-Sep-20	14:04:47	H5-20-WDM-731	1
144	PCB-191		428074.7	1.056	NO	27.88	50	18.85	1.037		100				1053	1199	4145266	3953763	3938.1	3296.4	219909.6	208165	0.9305	27.84	27.91	9-Sep-20	14:04:47	H5-20-WDM-731	1
145	PCB-170		311244.6	1.052	NO	28.37	50	18.005	0.754		100				1053	1199	2872418	2791943	2728.9	2327.7	159535.9	151708.6	0.947	28.34	28.41	9-Sep-20	14:04:47	H5-20-WDM-731	1
146	PCB-190		437605.5	1.029	NO	28.65	50	17.517	1.06		100				1053	1199	3887355	3798448	3693.1	3166.9	221916.8	215688.7	0.9563	28.62	28.68	9-Sep-20	14:04:47	H5-20-WDM-731	1
147	* PCB-189		400429.4	1.038	NO	29.97	51.55267	17.194		0.965	103.1				1075	798	3506055	3369507	3260.2	4223.7	203909	196520.4	1.0005	29.94	30.01	9-Sep-20	14:04:47	H5-20-WDM-731	1
148	* PCB-202		605590.9	0.933	NO	26.27	79.76679	18.861		1.048	106.4				433	529	5513252	5909551	12740.1	11179.9	292310.8	313280.1	1.0009	26.24	26.3	9-Sep-20	14:04:47	H5-20-WDM-731	1
149	PCB-201		621260	0.933	NO	26.74	75	19.296	1.117		100				433	529	5787965	6191133	13374.9	11712.6	299951.8	321308.3	1.0189	26.71	26.77	9-Sep-20	14:04:47	H5-20-WDM-731	1
150	PCB-204		612517.5	0.917	NO	27.08	75	18.876	1.101		100				433	529	5529403	6099086	12777.4	11538.4	292936.6	319580.9	1.0318	27.05	27.11	9-Sep-20	0.586655	H5-20-WDM-731	1
151	PCB-197		615800.5	0.935	NO	27.2	75	19.106	1.107		100				433	529	5683783	6085648	13134.2	11513	297485.7	318314.9	1.0364	27.17	27.23	9-Sep-20	0.586655	H5-20-WDM-731	1
152	PCB-200		598444.2	0.926	NO	27.3	75	18.566	1.076		100				433	529	5342649	5732600	12345.9	10845.1	287763.8	310680.4	1.0401	27.26	27.33	9-Sep-20	0.586655	H5-20-WDM-731	1
153	PCB-198/199		889186.7	0.928	NO	28.69	150	15.993	0.799		100				433	529	6844355	7358956	15816	13921.9	427948.4	461238.3	0.9153	28.65	28.72	9-Sep-20	0.586655	H5-20-WDM-731	1
154	PCB-196		441275.7	0.931	NO	29.04	75	18.629	0.793		100				433	529	3962830	4253576	9157.4	8047	212720.3	228555.3	0.9265	29	29.07	9-Sep-20	14:04:47	H5-20-WDM-731	1
155	PCB-203		471945.7	0.911	NO	29.13	75	18.952	0.848		100				433	529	4265278	4695593	9856.3	8883.3	225052	246893.7	0.9296	29.1	29.17	9-Sep-20	14:04:47	H5-20-WDM-731	1
156	* PCB-195		420471.3	0.897	NO	29.86	75	17.935	0.756		100				654	773	3566626	3975486	5452.1	5143.2	198858.7	221612.6	0.9528	29.83	29.9	9-Sep-20	14:04:47	H5-20-WDM-731	1
157	PCB-194		434437.3	0.875	NO	31.09	75	16	0.781		100				654	773	3243314	3702144	4957.9	4789.6	202711.9	231725.4	0.992	31.06	31.12	9-Sep-20	14:04:47	H5-20-WDM-731	1
158	PCB-205		505270	0.901	NO	31.37	77.82231	15.738		0.855	103.8				654	773	3769319	4160365	5762	5382.4	239503.3	265766.8	1.0009	31.33	31.4	9-Sep-20	14:04:47	H5-20-WDM-731	1
159	* PCB-208		571310.4	0.805	NO	29.69	72.67099	18.133		1.275	96.9				654	894	4620050	5708320	7062.2	6386	254791.3	316519.1	1.0005	29.66	29.73	9-Sep-20	14:04:47	H5-20-WDM-731	1
160	PCB-207		550274.3	0.813	NO	30.17	75	17.761	1.392		100				654	894	4381505	5407113	6697.6	6049	246692.7	303581.6	1.0164	30.14	30.2	9-Sep-20	14:04:47	H5-20-WDM-731	1
161	PCB-206		400949	0.804	NO	32.43	70.81127	14.614		1.295	94.4				654	894	2611879	3272701	3992.5	3661.2	178718.3	222230.6	1.0004	32.4	32.46	9-Sep-20	14:04:47	H5-20-WDM-731	1
162	* PCB-209		486888.2	1.178	NO	33.57	87.08029	13.33		0.874	116.1				148	149	3510520	2981455	23680.8	20070.2	263351.9	223536.3	1.0009	33.54	33.6	9-Sep-20	14:04:47	H5-20-WDM-731	1
163	13C-PCB-31		1100822.7	1.061	NO	15.79	115.631	20.302		1.281	115.6				12091	6833	11503244	10797311	951.4	1580.2	566611.3	534211.4	0.8672	15.76	15.83	9-Sep-20	14:04:47	H5-20-WDM-731	1
164	13C-PCB-95		525473.6	1.622	NO	19.09	112.0321	20.508		0.595	112				1161	1348	6666629	4079710	5740.7	3026.2	325067.3	200406.3	1.0917	19.05	19.12	9-Sep-20	14:04:47	H5-20-WDM-731	1
165	13C-PCB-153		846648.5	1.317	NO	24.17	104.8915	18.591		0.913	104.9				1894	1763	8947557	6790990	4724.7	3853	481288.8	365359.7	1.1798	24.13	24.2	9-Sep-20	14:04:47	H5-20-WDM-731	1
166	13C-PCB-28		1173249.1	1.024	NO	15.96	99.63159	19.86		1.649	99.6				12091	6833	11790301	11420053	975.1	1671.3	593667.1	579582	0.9417	15.92	15.99	9-Sep-20	14:04:47	H5-20-WDM-731	1

167	13C-PCB-111	702274	1.629	NO	22.01	101.843	20.064	1.175	101.8
168	13C-PCB-178	618516	1.072	NO	25.05	103.3613	19.275	0.807	103.4
169	13C-PCB-1	1280593.8	2.96	NO	8.9	105.7754	20.95	0.899	105.8
170	13C-PCB-3	1215875	2.941	NO	10.42	104.4981	18.592	0.864	104.5
171	13C-PCB-4	870658.1	1.628	NO	10.58	100.2354	20.296	0.645	100.2
172	13C-PCB-15	1172588	1.644	NO	14.26	93.82758	18.962	0.928	93.8
173	13C-PCB-19	502435.7	1.064	NO	12.57	71.88631	19.66	0.519	71.9
174	13C-PCB-37	983924.7	1.061	NO	18.21	89.17864	17.254	1.545	89.2
175	13C-PCB-54	812494.2	0.82	NO	14.43	85.48102	22.308	1.331	85.5
176	13C-PCB-81	793187.3	0.808	NO	21.78	84.47303	18.137	1.6	84.5
177	13C-PCB-77	808826.1	0.796	NO	22.08	86.031	17.473	1.602	86
178	13C-PCB-104	796338	1.621	NO	17.49	89.86339	20.776	1.51	89.9
179	13C-PCB-123	808791	1.565	NO	23.07	91.75477	18.13	1.502	91.8
180	13C-PCB-118	801766.3	1.597	NO	23.25	92.30992	17.789	1.48	92.3
181	13C-PCB-114	746303.5	1.595	NO	23.54	89.17811	17.915	1.426	89.2
182	13C-PCB-105	750018.5	1.601	NO	23.89	87.29576	18.296	1.464	87.3
183	13C-PCB-126	743962.3	1.618	NO	25.48	92.39726	16.771	1.372	92.4
184	13C-PCB-155	887639	1.298	NO	20.48	89.44479	20.413	1.691	89.4
185	13C-PCB-167	923151.1	1.318	NO	26.38	104.3549	17.996	1.193	104.4
186	13C-PCB-156/157	1728032.3	1.33	NO	27.02	202.8208	13.856	1.149	101.4
187	13C-PCB-169	861519.2	1.317	NO	28.69	103.2745	16.933	1.125	103.3
188	13C-PCB-188	847028.6	1.084	NO	23.48	98.4738	19.332	1.16	98.5
189	13C-PCB-189	804910.3	1.052	NO	29.96	115.7245	17.383	0.938	115.7
190	13C-PCB-202	724429.2	0.931	NO	26.25	93.39957	18.659	1.046	93.4
191	13C-PCB-205	759369.7	0.884	NO	31.34	100.4551	15.565	1.354	100.5
192	13C-PCB-208	616596.2	0.796	NO	29.68	103.0252	18.099	1.072	103
193	13C-PCB-206	437237	0.801	NO	32.41	106.5533	14.735	0.735	106.6
194	13C-PCB-209	639731.8	1.189	NO	33.54	99.38161	13.563	1.153	99.4
195	13C-PCB-9	1346687.9	1.627	NO	11.84	100	18.817	13466.88	100
196	13C-PCB-52	714122.2	0.821	NO	16.95	100	20.124	7141.222	100
197	13C-PCB-101	586864.3	1.635	NO	20.62	100	19.668	5868.643	100
198	13C-PCB-138	741514.1	1.348	NO	24.86	100	18.632	7415.141	100
199	13C-PCB-194	558293.5	0.878	NO	31.06	100	16.22	5582.935	100

1161	1348	8730876	5420619	7518.2	4020.8	435153.2	267120.9	1.0673	21.98	22.04	9-Sep-20	14:04:47	H5-20-WDM-731	1
901	757	6168219	5778622	6849.3	7632.4	320003.6	298512.4	1.0078	25.02	25.08	9-Sep-20	14:04:47	H5-20-WDM-731	1
1418	7153	20052506	6854808	14143	958.3	957170.4	323423.4	0.7514	8.86	8.93	9-Sep-20	14:04:47	H5-20-WDM-731	1
1418	7153	16869234	5804755	11897.9	811.5	907335.6	308539.4	0.8804	10.39	10.46	9-Sep-20	14:04:47	H5-20-WDM-731	1
2372	1380	10947959	6749904	4614.9	4892.9	539424.3	331233.8	0.8935	10.55	10.61	9-Sep-20	14:04:47	H5-20-WDM-731	1
3901	2869	13826215	8490377	3544.6	2959.6	729149.1	443438.9	1.2044	14.23	14.29	9-Sep-20	14:04:47	H5-20-WDM-731	1
8828	6133	5093266	4818184	577	785.6	259066.8	243368.9	1.0616	12.54	12.6	9-Sep-20	14:04:47	H5-20-WDM-731	1
12091	6833	8737831	8144508	722.7	1191.9	506420.3	477504.4	1.0745	18.18	18.24	9-Sep-20	14:04:47	H5-20-WDM-731	1
3473	2388	8164069	9906330	2351	4148.8	365970.3	446523.9	0.8512	14.39	14.46	9-Sep-20	14:04:47	H5-20-WDM-731	1
3762	3212	6430591	7981093	1709.4	2484.9	354554.3	438633.1	1.0561	21.75	21.81	9-Sep-20	14:04:47	H5-20-WDM-731	1
3762	3212	6264141	7980285	1665.1	2484.7	358510.6	450315.5	1.0709	22.05	22.12	9-Sep-20	14:04:47	H5-20-WDM-731	1
887	1108	10232342	6394133	11534.5	5772.5	492516.3	303821.7	1.0318	17.45	17.52	9-Sep-20	14:04:47	H5-20-WDM-731	1
2635	2438	8947196	5688867	3395.6	2333.6	493489.5	315301.5	1.1185	23.03	23.1	9-Sep-20	14:04:47	H5-20-WDM-731	1
2635	2438	8771554	5515565	3329	2262.1	493077.4	308688.9	1.1273	23.22	23.28	9-Sep-20	14:04:47	H5-20-WDM-731	1
2635	2438	8217372	5207486	3118.6	2135.8	458682.7	287620.8	0.947	23.51	23.57	9-Sep-20	14:04:47	H5-20-WDM-731	1
2635	2438	8447387	5212632	3205.9	2137.9	461709.8	288308.7	0.9611	23.86	23.92	9-Sep-20	14:04:47	H5-20-WDM-731	1
2635	2438	7710487	4797304	2926.3	1967.5	459745.5	284216.8	1.0253	25.45	25.52	9-Sep-20	14:04:47	H5-20-WDM-731	1
952	576	10233530	7893168	10749.5	13706.8	501312.2	386326.8	0.9933	20.45	20.52	9-Sep-20	14:04:47	H5-20-WDM-731	1
1894	1763	9445537	7172931	4987.7	4069.7	524856.7	398294.4	1.0613	26.35	26.41	9-Sep-20	14:04:47	H5-20-WDM-731	1
1894	1763	13668374	10246368	7217.5	5813.5	986455.7	741576.6	1.087	26.99	27.05	9-Sep-20	14:04:47	H5-20-WDM-731	1
1894	1763	8291449	6302208	4378.3	3575.7	489659.2	371860	1.1541	28.65	28.72	9-Sep-20	14:04:47	H5-20-WDM-731	1
901	757	8516402	7939274	9456.8	10486.2	440543.8	406484.8	0.9446	23.44	23.51	9-Sep-20	14:04:47	H5-20-WDM-731	1
1591	1071	7171930	6785300	4507.7	6333.8	412592.3	392318.1	0.9645	29.93	29.99	9-Sep-20	14:04:47	H5-20-WDM-731	1
572	604	6518197	6954480	11396.4	11522.9	349326.7	375102.5	1.0559	26.21	26.28	9-Sep-20	14:04:47	H5-20-WDM-731	1
1024	1166	5546387	6303284	5414	5406.8	356342.5	403027.2	1.009	31.31	31.37	9-Sep-20	14:04:47	H5-20-WDM-731	1
582	758	4944655	6228484	8489.5	8215.9	273201.7	343394.5	0.9555	29.65	29.71	9-Sep-20	14:04:47	H5-20-WDM-731	1
582	758	2864655	3644169	4918.3	4807	194415	242822	1.0436	32.38	32.45	9-Sep-20	14:04:47	H5-20-WDM-731	1
176	227	4712457	3991880	26821.3	17607.8	347444.1	292287.7	1.0798	33.51	33.57	9-Sep-20	14:04:47	H5-20-WDM-731	1
2372	1380	15692961	9727913	6615	7051.6	833984.6	512703.3	0.4763	11.81	11.87	9-Sep-20	14:04:47	H5-20-WDM-731	1
3781	2030	6479034	7886251	1713.8	3885.2	321959.1	392163	0.6818	16.91	16.98	9-Sep-20	14:04:47	H5-20-WDM-731	1
1161	1348	7162009	4362383	6167.3	3235.8	364150.2	222714.1	0.8297	20.59	20.66	9-Sep-20	14:04:47	H5-20-WDM-731	1
1894	1763	7932748	5939151	4188.8	3369.7	425758.8	315755.3	0	24.82	24.89	9-Sep-20	14:04:47	H5-20-WDM-731	1
1024	1166	4233607	4870950	4132.6	4178.1	261006.4	297287.1	1.2497	31.03	31.09	9-Sep-20	14:04:47	H5-20-WDM-731	1

Sample Name: 5-200910A17 Sample ID: H5-20-WDM-737

INSTRUMENT 209 PCB CALIBRATION REPORT

	Target Analyte	#Hom	Resp	Ra	Ra fail=YES	RT	Conc.	H/A	ical RRF	User RF	%Rec	Mod.Date	Mod.Comment	Code	Comments	Noise 1	Noise 2	Ion1 Ht	Ion2 Ht	Ion1 s/n	Ion2 s/n	Ion1 Area	Ion2 Area	RRT	RT LCL	RT UCL	Acq.Date	Acq.Time	ID	Spl Size
1	* PCB-1		215491.6	3.332	NO	8.94	24.53868	20.673		1.164	98.2					1053	662	3426615	1038057	3255.3	1568.2	165749.6	49742	1.0016	8.91	8.97	10-Sep-20	22:09:37	H5-20-WDM-737	1
2	PCB-2		198992.3	3.251	NO	10.35	25	18.319	1.085		100					1053	662	2787764	850495	2648.4	1284.8	152181.7	46810.6	0.9893	10.32	10.39	10-Sep-20	22:09:37	H5-20-WDM-737	1
3	PCB-3		216379.1	3.262	NO	10.47	25.57872	17.078		1.186	102.3					1053	662	2828180	874792	2686.8	1321.5	165606.8	50772.3	1	10.43	10.5	10-Sep-20	22:09:37	H5-20-WDM-737	1
4	*PCB-4		136204.1	1.496	NO	10.62	31.26793	20.557		0.817	125.1					649	2454	1678008	1127657	2585.8	459.6	81626.4	54577.7	1.0013	10.59	10.65	10-Sep-20	22:09:37	H5-20-WDM-737	1
5	PCB-10		196627.3	1.524	NO	10.73	25	19.963	1.306		100					649	2454	2370110	1576699	3652.4	642.6	118723.4	77904	1.0119	10.7	10.77	10-Sep-20	22:09:37	H5-20-WDM-737	1
6	PCB-9		195577.3	1.516	NO	11.88	25	19.334	1.299		100					649	2454	2278513	1524229	3511.2	621.2	117852.6	77724.8	1.1203	11.85	11.92	10-Sep-20	22:09:37	H5-20-WDM-737	1
7	PCB-7		195685.4	1.505	NO	11.99	25	18.203	1.299		100					649	2454	2139918	1418602	3297.6	578.1	117557.1	78128.3	1.1308	11.96	12.03	10-Sep-20	22:09:37	H5-20-WDM-737	1
8	PCB-6		195033.1	1.514	NO	12.15	25	18.011	1.295		100					649	2454	2115272	1397858	3259.7	569.7	117450.4	77582.7	1.1454	12.11	12.18	10-Sep-20	22:09:37	H5-20-WDM-737	1
9	PCB-5		167810.4	1.479	NO	12.36	25	18.814	1.114		100					649	2454	1883697	1270246	2902.8	517.7	100123.6	67686.7	1.1652	12.33	12.39	10-Sep-20	22:09:37	H5-20-WDM-737	1
10	PCB-8		219131.6	1.525	NO	12.43	25	17.153	1.455		100					649	2454	2270142	1510140	3498.3	615.4	132344.6	86787	1.1718	12.4	12.46	10-Sep-20	22:09:37	H5-20-WDM-737	1
11	* PCB-14		194399.6	1.598	NO	13.4	25	18.262	1.291		100					3168	3534	2183783	1395627	689.4	394.9	119580.8	74818.8	0.9375	13.37	13.44	10-Sep-20	22:09:37	H5-20-WDM-737	1
12	PCB-11		184857.6	1.564	NO	13.93	25	18.276	1.228		100					3168	3534	2060693	1294264	650.5	366.2	112755.7	72101.9	0.9742	13.89	13.96	10-Sep-20	22:09:37	H5-20-WDM-737	1
13	PCB-13/12		374959.6	1.546	NO	14.12	50	14.536	1.245		100					3168	3534	3309917	2201142	1044.9	622.8	227697.5	147262.2	0.9878	14.09	14.16	10-Sep-20	22:09:37	H5-20-WDM-737	1
14	PCB-15		201903.4	1.553	NO	14.31	30.93154	16.766		0.972	123.7					3168	3534	2059001	1349388	650	381.8	122811.7	79091.8	1.0007	14.27	14.34	10-Sep-20	22:09:37	H5-20-WDM-737	1
15	* PCB-19		104989.3	1.071	NO	12.61	30.36503	19.599		1.136	121.5					496	339	1063931	992777	2146.4	2925.7	54284	50705.2	1.0011	12.58	12.64	10-Sep-20	22:09:37	H5-20-WDM-737	1
16	* PCB-30/18		341556.1	1.113	NO	13.7	50	14.288	1.553		100					2321	1211	2571123	2318082	1107.7	1914.4	179949.6	161606.5	1.0874	13.66	13.73	10-Sep-20	22:09:37	H5-20-WDM-737	1
17	PCB-17		148145.1	1.11	NO	13.97	25	20.88	1.347		100					2321	1211	1627224	1497639	701	1236.8	77932.1	70213	1.1086	13.93	14	10-Sep-20	22:09:37	H5-20-WDM-737	1
18	PCB-27		196974.2	1.125	NO	14.09	25	21.634	1.791		100					2321	1211	2255984	2026866	971.9	1673.9	104281.6	92692.6	1.1189	14.06	14.13	10-Sep-20	22:09:37	H5-20-WDM-737	1
19	PCB-24		184611.3	1.126	NO	14.19	25	21.053	1.679		100					2321	1211	2058657	1823000	886.9	1505.5	97786.6	86824.7	1.1262	14.15	14.22	10-Sep-20	22:09:37	H5-20-WDM-737	1
20	PCB-16		124353.7	1.096	NO	14.26	25	20.732	1.131		100					2321	1211	1348077	1218985	580.8	1006.7	65024	59329.7	1.132	14.23	14.29	10-Sep-20	22:09:37	H5-20-WDM-737	1
21	PCB-32		205594.3	1.105	NO	14.55	25	21.004	1.87		100					2321	1211	2266714	2025642	976.5	1672.9	107919	97675.3	1.1547	14.51	14.58	10-Sep-20	22:09:37	H5-20-WDM-737	1
22	* PCB-34		165477.3	1.046	NO	15.24	25	20.922	1.505		100					2619	3641	1769616	1681515	675.7	461.9	84582.9	80894.4	0.8358	15.21	15.28	10-Sep-20	22:09:37	H5-20-WDM-737	1
23	PCB-23		173584.1	1.046	NO	15.34	25	19.203	1.579		100					2619	3641	1703737	1649517	650.6	453.1	88724.7	84859.4	0.8411	15.31	15.37	10-Sep-20	22:09:37	H5-20-WDM-737	1
24	PCB-29/26		357947.3	1.052	NO	15.53	50	17.647	1.628		100					2619	3641	3238109	3148375	1236.4	864.8	183490.2	174457.1	0.8513	15.49	15.56	10-Sep-20	22:09:37	H5-20-WDM-737	1
25	PCB-25		194482	1.017	NO	15.65	25	18.216	1.769		100					2619	3641	1786440	1729463	682.1	475	98069.4	96412.7	0.8583	15.62	15.69	10-Sep-20	22:09:37	H5-20-WDM-737	1
26	PCB-31		188523.7	1.043	NO	15.83	25	19.433	1.714		100					2619	3641	1870113	1805842	714.1	496	96233.7	92290	0.868	15.8	15.86	10-Sep-20	22:09:37	H5-20-WDM-737	1
27	PCB-28/20		348537.3	1.021	NO	16.02	50	15.077	1.585		100					2619	3641	2654286	2553653	1013.5	701.4	176051.4	172485.8	0.8782	15.98	16.05	10-Sep-20	22:09:37	H5-20-WDM-737	1
28	PCB-21/33		356768.1	1.033	NO	16.13	50	14.992	1.622		100					2619	3641	2718442	2601121	1038	714.5	181320.9	175447.3	0.8846	16.1	16.17	10-Sep-20	22:09:37	H5-20-WDM-737	1
29	PCB-22		163852.2	0.999	NO	16.38	25	18.507	1.49		100					2619	3641	1515423	1490753	578.7	409.5	81885.8	81966.4	0.898	16.35	16.41	10-Sep-20	22:09:37	H5-20-WDM-737	1
30	PCB-36		178054.2	1.055	NO	17.21	25	16.677	1.619		100					2619	3641	1524595	1469829	582.2	403.7	91418.6	86635.7	0.9436	17.18	17.24	10-Sep-20	22:09:37	H5-20-WDM-737	1
31	PCB-39		169786.9	1.008	NO	17.43	25	17.414	1.544		100					2619	3641	1484444	1490346	566.8	409.4	85246.4	84540.5	0.9555	17.39	17.46	10-Sep-20	22:09:37	H5-20-WDM-737	1
32	PCB-38		163887.2	1.055	NO	17.76	25	17.323	1.49		100					2619	3641	1457638	1386193	556.6	380.8	84145.8	79741.4	0.9737	17.73	17.79	10-Sep-20	22:09:37	H5-20-WDM-737	1
33	PCB-35		160829.7	1.032	NO	18.02	25	16.667	1.463		100					2619	3641	1361405	1300118	519.8	357.1	81682.4	79147.3	0.9882	17.99	18.06	10-Sep-20	22:09:37	H5-20-WDM-737	1
34	PCB-37		158338.9	1.031	NO	18.25	27.66069	16.002		0.995	110.6					2619	3641	1286371	1213213	491.2	333.2	80386.7	77952.2	1.0005	18.22	18.28	10-Sep-20	22:09:37	H5-20-WDM-737	1
35	* PCB-54		325723.3	0.817	NO	14.46	62.23766	22.103		1	124.5					801	369	3236160	4001784	4040.7	10835.3	146411.7	179311.7	1.0006	14.43	14.5	10-Sep-20	22:09:37	H5-20-WDM-737	1
36	* PCB-50/53		573180	0.765	NO	15.67	100	20.643	1.105		100					1081	2045	5127204	6723075	4741.1	3286.9	248378.7	324801.3	1.0845	15.64	15.71	10-Sep-20	22:09:37	H5-20-WDM-737	1
37	PCB-45/51		557323	0.759	NO	16.09	100	15.887	1.075		100					1081	2045	3818359	5034841	3530.8	2461.5	240421.7	316901.3	1.1129	16.05	16.12	10-Sep-20	22:09:37	H5-20-WDM-737	1
38	PCB-46		251213.9	0.773	NO	16.25	50	20.39	0.969		100					1081	2045	2233184	2867378	2065	1401.8	109523.8	141690.1	1.1244	16.22	16.29	10-Sep-20	22:09:37	H5-20-WDM-737	1
39	PCB-52		287781.3	0.761	NO	16.99	50	20.661	1.11		100					1081	2045	2568672	3371673	2375.2	1648.4	124326.5	163454.8	1.1752	16.95	17.02	10-Sep-20	22:09:37	H5-20-WDM-737	1
40	PCB-73		345493.1	0.753	NO	17.06	50	20.896	1.332		100					1081	2045	3100478	4113151	2867	2010.9	148377.7	197115.4	1.1806	17.03	17.1	10-Sep-20	22:09:37	H5-20-WDM-737	1
41	PCB-43		252799.6	0.764	NO	17.12	50	19.62	0.975		100					1081	2045	2148591	2819943	1986.8	1378.7	109510.1	143289.5	1.1847	17.09	17.16	10-Sep-20	22:09:37	H5-20-WDM-737	1
42	PCB-69/49		648285.7	0.758	NO	17.24	100	12.501	1.25		100					1081	2045	3495636	4603282	3232.4	2250.5	279634.4	368651.2	1.1928	17.21	17.27	10-Sep-20	22:09:37	H5-20-WDM-737	1
43	PCB-48		282052.1	0.751	NO	17.43	50	19.819	1.088		100					1081	2045	2396579	3229120	2216.1	1578.7	120924.2	161127.9	1.2057	17.39	17.46	10-Sep-20	22:09:37	H5-20-WDM-737	1
44	PCB-44/47/65		922687.8	0.767	NO	17.56	150	19.647	1.186		100					1081	2045	7867559	10224638	7275.1	4998.8	400448.4	522239.3	1.2152	17.53	17.6	10-Sep-20	22:09:37	H5-20-WDM-737	1
45	PCB-59/62/75		1099930.8	0.757	NO	17.73	150	19.063	1.414		100					1081	2045	9034306	11940319	8353.9	5837.6	473909.7	626021.1	1.2267	17.7	17.76	10-Sep-20	22:09:37	H5-20-WDM-737	1
46	PCB-42		278396.5	0.771	NO	17.85	50	18.897	1.074		100					1081	2045	2290771	2959733	2118.3	1447	121224.3	157172.3	1.2348	17.81	17.88	10-Sep-20	22:09:37	H5-20-WDM-737	1
47	PCB-41/71/40		850866.8	0.768	NO	18.12	150	12.736	1.094		100					1081	2045	4706860	6180192	4352.4	3021.5	369575.3	481291.6	1.2538	18.09	18.15	10-Sep-20	22:09:37	H5-20-WDM-737	1
48	PCB-64		380231.5	0.764	NO	18.24	50	19.578	1.466		100					1081	2045	3223553	4265664	2980.8	2085.5	164650	215581.5	1.2619	18.21	18.27	10-Sep-20	0.923345	H5-20-WDM-737	1
49	* PCB-72		318556.8	0.77	NO	18.64	50	19.984	1.228		100					2628	8544	2769952	3615704	1054	423.2	138610.7	179946	0.8549	18.61	18.68	10-Sep-20	0.923345	H5-20-WDM-737	1
50	PCB-68		333202.4	0.758	NO	18.81	50	18.356	1.285		100					2628	8544	2637587	3433780	1003.6	401.9	143691.2	189511.2	0.8626	18.78	18.84	10-Sep-20	0.923345	H5-20-WDM-737	1
51	PCB-57		303858.6	0.785	NO	19.04	50	19.814	1.172		100					2628	8544	2648562	3378264	1007.8	395.4	133673.7	170184.8	0.8732	19.01	19.08	10-Sep-20	0.923345	H5-20-WDM-737	1
52	PCB-58		296630.1	0.796	NO	19.18	50	20.037	1.144		100					2628	8544	2634187	3232424	1002.3	378.3	131468.2	165161.9	0.8795	19.15	19.21	10-Sep-20	22:09:37	H5-20-WDM-737	1
53	PCB-67		348388.5	0.773	NO	19.26	50	18.564	1.343		100					2628	8544	2820591	3594865	1073.3	420.8	151939.5	196449	0.8834	19.23	19.3	10-Sep-20	22:09:37	H5-20-WDM-737	1
54	PCB-63		327163	0.767	NO	19.41	50	19.284	1.262		100					2628	8544	2739168	3538354	1042.3	414.1	142043.9	185119.1	0.8901	19.38	19.45	10-Sep-20	22:09:37	H5-20-WDM-737	1
55	PCB-61/70/74/76		1265611.1	0.781	NO	19.6	200	11.298	1.22		100					2628	8544	6271805	7940089	2386.5	929.3	555127.8	710483.4	0.8986	19.56	19.63	10-Sep-20	22:09:37	H5-20-WDM-737	1
56	PCB-66		326101	0.78	NO	19.77	50	18.388	1.258		100					2628	8544	2627592	3372933	999.8	394.8	142896.5	183204.5	0.9067	19.74	19.81	10-Sep-20	22:09:37	H5-20-WDM-737	1
57	PCB-55		305322.4	0.777	NO	19.88	50	18.517	1.177		100					2628	8544	2472634	3178468	940.9	372	133535.4	171787	0.9118	19.85	19.92	10-Sep-20	22:09:37	H5-20-WDM-737	1
58	PCB-56		298239.7	0.77	NO	20.15	50	19.772	1.15		100					2628	8544	2564674	3289999	975.9	385.1	129712.2	168527.5	0.9241	20.12	20.19	10-Sep-20	22:09:37	H5-20-WDM-737	1
59	PCB-60		309718.7	0.764	NO	20.27	50	18.182	1.194		100					2628	8544	2438319	3108806	927.8	363.9	134108.6	175610.1	0.9296	20.24	20.31	10-Sep-20	22:09:37	H5-20-WDM-737	1
60	PCB-80		362619	0.767	NO	20.42	50	18.452	1.398		100					2628	8544	2904473	3735290	1105.2	437.2	157411.1	205207.9	0.9364	20.39	20.45	10-Sep-20	22:09:37	H5-20-WDM-737	1
61	PCB-79		356767.8	0.772	NO	21.27	50	16.649	1.376		100					2628	8544	2588238	3389621	984.9	396.7	155458.5	201309.3	0.9754	21.24	21.3	10-Sep-20	22:09:37	H5-20-WDM-737	1
62	PCB-78		329014.2	0.764	NO	21.58	50	17.711	1.269		100					2628	8544	2523520	3279876	960.2	383.9	142479.8	186534.4	0.9894	21.54	21.61	10-Sep-20	22:09:37	H5-20-WDM-737	1
63	PCB-81		330736.8	0.731	NO	21.83	57.91946	17.65		1.109	115.8					2628	8544	2465930	3170915	938.3	371.1	139708.8	191028	1.0008	21.79	21.86	10-Sep-20	22:09:37	H5-20-WDM-737	1
64	PCB-77		294891.8	0.753	NO	22.13	52.07368	17.127		1.094	104.1					2628	8544	2169307	2803154	825.5	328.1	126658.1	168233.7	1.0008	22.1	22.16	10-Sep-20	22:09:37	H5-20-WDM-737	1
65	* PCB-104		292004.2	1.574	NO	17.52	54.30615	20.402		1.091	108.6					409	551	3643552	2363767	8898.8	4289.7	178584	113420.1	1.0011	17.49	17.56	10-Sep-20	22:09:37	H5-20-WDM-737	1
66	PCB-96		287766.5	1.586	NO	17.76	50	20.476	1.183		100					409	551	3613859	2274748	8826.3	4128.1	176489.4	111277.2	1.0145	17.73	17.79	10-Sep-20	22:09:37	H5-20-WDM-737	1
67	* PCB-103		257133.6	1.62	NO	18.74	50	20.39	1.057		100					1673	4832	3242021	2000098	1938.2	413.9	158999.3	98134.3	1.0704	18.7	18.77	10-Sep-20	22:09:37	H5-20-WDM-737	1
68	PCB-94		219801.3	1.626	NO	18.88	50	20.594	0.904		100					1673	4832	2803038	1718154	1675.7	355.6	136112.3	83688.9	1.0783	18.84	18.91	10-Sep-20	22:09:37	H5-20-WDM-737	1
69	PCB-95		242690.3	1.644	NO	19.13	50	20.532	0.998		100					1673	4832	3098023	1886752	1852.1	390.5	150887.9	91802.4	1.0926	19.09	19.16	10-Sep-20	22:09:37	H5-20-WDM-737	1
70	PCB-100/93/102/98		944462.8	1.628	NO	19.3	200	5.908	0.971		100	11-Sep-20	SJ200911MJ			1673	4832	3457280	2136782	2066.9	442.2	585136.8	359325.9	1.1026	19.27	19.33	10-Sep-20	22:09:37	H5-20-WDM-737	1
71	PCB-88/91		472634.8	1.63	NO	19.59	100	11.236	0.971		100	11-Sep-20	SJ200911MJ			1673	4832	3291367	2055888	1967.7	425.5	292936.3	179698.4	1.119	19.55	19.62	10-Sep-20	22:09:37	H5-20-WDM-737	1
72	PCB-84		219922.6	1.621	NO	19.74	50	20.137	0.904		100					1673	4832	2738713	1698459	1637.3	351.5	136005	83917.6	1.1275	19.7	19.77	10-Sep-20	22:09:37	H5-20-WDM-737	1
73	PCB-89		226162.4	1.66	NO	19.99	50	20.311	0.93		100					1673	4832	2866691	1692482	1713.8	350.2	141140.4	85022	1.1417	19.95	20.02	10-Sep-20	22:09:37	H5-20-WDM-737	1
74	PCB-121		316948.9	1.629	NO	20.12	50	20.269	1.303		100					1673	4832	3980487	2464261	2379.6	510	196381.2	120567.7	1.1496	20.09	20.16	10-Sep-20	22:09:37	H5-20-WDM-737	1
75	PCB-92		233093	1.616	NO	20.35	50	20.032	0.958		100					1673	4832	2884116	1826747	1724.2	378	143978.9	89114.2	1.1623	20.31	20.38	10-Sep-20	22:09:37	H5-20-WDM-737	1
76	PCB-113/90/101		826824.2	1.643	NO	20.65	150	15.95	1.133		100					1673	4832	8197840	5019230	4900.9	1038.7	513981.6	312842.6	1.1798	20.62	20.68	10-Sep-20	22:09:37	H5-20-WDM-737	1
77	PCB-83/99		481928.6	1.618	NO	20.96	100	14.211	0.991		100					1673	4832	4232552	2577081	2530.3	533.3	297838.1	184090.5	1.1975	20.92	20.99	10-Sep-20	22:09:37	H5-20-WDM-737	1
78	PCB-112		343774.1	1.635	NO	21.05	50	19.215	1.413		100					1673	4832	4099233	2537739	2450.6	525.2	213332.6	130441.5	1.2024	21.02	21.08	10-Sep-20	22:09:37	H5-20-WDM-737	1
79	PCB-109/119/86/97/125/87		1754992	1.632	NO	21.23	300	10.315	1.202		100					1673	4832	11223949	6994492	6710	1447.5	1088078	666914.1	0.9195	21.2	21.27	10-Sep-20	22:09:37	H5-20-WDM-737	1
80	PCB-117/116/85/110/115		1580323.1	1.638	NO	21.65	250	7.203	1.299		100	11-Sep-20	SJ200911MJ			1673	4832	7067138	4321981	4224.9	894.4	981205.3	599117.8	0.9376	21.62	21.68	10-Sep-20	22:09:37	H5-20-WDM-737	1
81	PCB-82		220447.3	1.628	NO	21.92	50	19.332	0.906		100					1673	4832	2639803	1641634	1578.1	339.7	136549.8	83897.6	0.9492	21.88	21.95	10-Sep-20	22:09:37	H5-20-WDM-737	1
82	PCB-111		336546.1	1.634	NO	22.05	50	19.689	1.383		100					1673	4832	4110796	2502260	2457.5	517.8	208782.5	127763.6	0.9548	22.01	22.08	10-Sep-20	22:09:37	H5-20-WDM-737	1
83	PCB-120		352336.3	1.633	NO	22.29	50	19.285	1.448		100					1673	4832	4213914	2594554	2519.2	536.9	218512.8	133823.5	0.9652	22.25	22.32	10-Sep-20	22:09:37	H5-20-WDM-737	1
84	* PCB-108/124		584545.8	1.582	NO	22.92	100	17.698	1.201		100					1496	982	6338857	3986257	4236.1	4059.9	358175.4	226370.4	0.9927	22.89	22.96	10-Sep-20	22:09:37	H5-20-WDM-737	1
85	PCB-107		339766.5	1.537	NO	23.04	50	17.759	1.397		100					1496	982	3655144	2373215	2442.6	2417.1	205820.4	133946.1	0.9979	23.01	23.08	10-Sep-20	22:09:37	H5-20-WDM-737	1
86	PCB-123		266540.3	1.584	NO	23.1	55.29884	21.038		0.957	110.6					1496	982	3437268	2186190	2297	2226.6	163384.8	103155.4	1.0005	23.07	23.14	10-Sep-20	22:09:37	H5-20-WDM-737	1
87	PCB-106		310443.5	1.55	NO	23.18	50	16.714	1.276		100					1496	982	3154148	2057168	2107.8	2095.2	188713.7	121729.8	0.9964	23.14	23.21	10-Sep-20	22:09:37	H5-20-WDM-737	1
88	PCB-118		288049.8	1.579	NO	23.27	56.5895	17.342		1.034	113.2					1496	982	3058122	1943693	2043.6	1979.6	176343.9	111705.9	1.0005	23.24	23.31	10-Sep-20	22:09:37	H5-20-WDM-737	1
89	PCB-122		269813.5	1.572	NO	23.48	50	18.585	1.109		100					1496	982	3064911	1971849	2048.2	2008.3	164914.8	104898.7	0.9964	23.44	23.51	10-Sep-20	22:09:37	H5-20-WDM-737	1
90	PCB-114		292297.3	1.54	NO	23.58	61.68758	17.258		1.036	123.4					1496	982	3058476	2041952	2043.9	2079.7	177219.5	115077.8	1.0005	23.54	23.61	10-Sep-20	22:09:37	H5-20-WDM-737	1
91	PCB-105		293155.9	1.574	NO	23.93	62.82668	17.462		1.011	125.7					1496	982	3130672	1985420	2092.1	2022.1	179282.8	113873.1	1.0005	23.89	23.96	10-Sep-20	22:09:37	H5-20-WDM-737	1
92	PCB-127		282313.7	1.554	NO	24.65	50	16.996	1.16		100					1496	982	2919694	1861695	1951.1	1896.1	171788.2	110525.5	1.0308	24.62	24.68	10-Sep-20	22:09:37	H5-20-WDM-737	1
93	PCB-126		273113.7	1.53	NO	25.53	59.16143	15.501		1.07	118.3					1496	982	2560044	1679773	1710.8	1710.8	165151.4	107962.3	1.0005	25.5	25.57	10-Sep-20	22:09:37	H5-20-WDM-737	1
94	* PCB-155		319337.1	1.257	NO	20.51	55.917	21.004		0.991	111.8					591	439	3735560	2964250	6324.9	6758.8	177853.9	141483.2	1.0005	20.48	20.55	10-Sep-20	22:09:37	H5-20-WDM-737	1
95	PCB-152		302137.8	1.262	NO	20.68	50	20.739	1.166		100					591	439	3495599	2794200	5918.6	6371.1	168548.1	133589.8	1.0086	20.65	20.71	10-Sep-20	22:09:37	H5-20-WDM-737	1
96	PCB-150		312976.7	1.263	NO	20.74	50	20.353	1.207		100					591	439	3555788	2782245	6020.5	6343.8	174706.2	138270.5	1.0117	20.71	20.78	10-Sep-20	22:09:37	H5-20-WDM-737	1
97	PCB-136		311070.6	1.29	NO	20.97	50	20.479	1.2		100					591	439	3588602	2800827	6076.1	6386.2	175232.8	135837.8	1.0226	20.93	21	10-Sep-20	22:09:37	H5-20-WDM-737	1
98	PCB-145		300404.5	1.283	NO	21.1	50	20.554	1.159		100					591	439	3470278	2677139	5875.7	6104.2	168835.5	131569	1.0293	21.07	21.14	10-Sep-20	22:09:37	H5-20-WDM-737	1
99	PCB-148		238498.6	1.266	NO	21.84	50	20.143	0.92		100					591	439	2684087	2111009	4544.6	4813.3	133254.3	105244.4	1.065	21.8	21.87	10-Sep-20	0.923345	H5-20-WDM-737	1
100	PCB-151/135		454571.7	1.274	NO	22.19	100	13.053	0.877		100					591	439	3323870	2615943	5627.8	5964.7	254648.9	199922.9	1.0821	22.15	22.22	10-Sep-20	0.923345	H5-20-WDM-737	1
101	PCB-154		292473.3	1.262	NO	22.28	50	19.651	1.128		100					591	439	3206456	2579820	5429	5882.3	163168.6	129304.8	1.0866	22.25	22.31	10-Sep-20	0.923345	H5-20-WDM-737	1
102	PCB-144		240680	1.255	NO	22.47	50	19.995	0.929		100	11-Sep-20	SJ200911MB			591	439	2678715	2150762	4535.5	4904	133971	106709	1.0961	22.44	22.51	10-Sep-20	0.923345	H5-20-WDM-737	1
103	* PCB-147/149		536825.6	1.225	NO	22.67	100	19.29	1.036		100					1418	1871	5700885	4662811	4019.5	2492.6	295530.2	241295.4	1.1056	22.64	22.7	10-Sep-20	22:09:37	H5-20-WDM-737	1
104	PCB-134/143		458863.1	1.21	NO	22.83	100	13.064	0.885		100					1418	1871	3281649	2694817	2313.8	1440.6	251200.9	207662.2	1.1133	22.79	22.86	10-Sep-20	22:09:37	H5-20-WDM-737	1
105	PCB-139/140		526539.7	1.217	NO	22.98	100	18.077	1.016		100					1418	1871	5224889	4259909	3683.9	2277.2	289030.1	237509.6	1.1209	22.95	23.02	10-Sep-20	22:09:37	H5-20-WDM-737	1
106	PCB-131		221528	1.212	NO	23.12	50	19.553	0.855		100					1418	1871	2373043	1914513	1673.2	1023.4	121365.5	100162.5	0.8755	23.08	23.15	10-Sep-20	22:09:37	H5-20-WDM-737	1
107	PCB-142		228178.6	1.197	NO	23.2	50	18.76	0.88		100					1418	1871	2332456	1932041	1644.5	1032.8	124333.6	103844.9	0.8787	23.17	23.23	10-Sep-20	22:09:37	H5-20-WDM-737	1
108	PCB-132		218814.3	1.207	NO	23.36	50	19.01	0.844		100					1418	1871	2274865	1897303	1603.9	1014.2	119664	99150.3	0.8847	23.32	23.39	10-Sep-20	22:09:37	H5-20-WDM-737	1
109	PCB-133		237159.5	1.201	NO	23.55	50	18.805	0.915		100					1418	1871	2433092	2023604	1715.5	1081.8	129383.5	107776	0.892	23.52	23.58	10-Sep-20	22:09:37	H5-20-WDM-737	1
110	PCB-165		287549	1.236	NO	23.76	50	18.764	1.109		100					1418	1871	2982435	2409535	2102.8	1288.1	158948.5	128600.5	0.8998	23.72	23.79	10-Sep-20	22:09:37	H5-20-WDM-737	1
111	PCB-146		275084	1.222	NO	23.89	50	18.599	1.061		100					1418	1871	2814059	2268315	1984.1	1212.6	151304.1	123779.9	0.9048	23.86	23.92	10-Sep-20	22:09:37	H5-20-WDM-737	1
112	PCB-161		314022	1.232	NO	23.96	50	19.286	1.212		100					1418	1871	3343546	2732466	2357.4	1460.7	173362.2	140659.8	0.9075	23.93	24	10-Sep-20	22:09:37	H5-20-WDM-737	1
113	PCB-153/168		597806.3	1.217	NO	24.22	100	16.35	1.153		100					1418	1871	5365325	4369471	3782.9	2335.8	328159	269647.4	0.9172	24.18	24.25	10-Sep-20	22:09:37	H5-20-WDM-737	1
114	PCB-141		246859.2	1.308	NO	24.34	50	18.375	0.952		100					1418	1871	2570739	2023751	1812.6	1081.8	139906.9	106952.3	0.9217	24.3	24.37	10-Sep-20	22:09:37	H5-20-WDM-737	1
115	PCB-130		215565.9	1.227	NO	24.55	50	19.488	0.832		100					1418	1871	2314457	1864603	1631.9	996.8	118765.8	96800.1	0.93	24.52	24.59	10-Sep-20	22:09:37	H5-20-WDM-737	1
116	PCB-137/164		551265.6	1.258	NO	24.72	100	10.968	1.063		100	11-Sep-20	SJ200911MJ			1418	1871	3368080	2678633	2374.7	1431.9	307069.9	244195.7	0.9364	24.69	24.76	10-Sep-20	22:09:37	H5-20-WDM-737	1
117	PCB-138/163/129		714938.9	1.219	NO	24.89	150	14.774	0.919		100					1418	1871	5802968	4725346	4091.5	2526	392793.1	322145.8	0.9428	24.86	24.93	10-Sep-20	22:09:37	H5-20-WDM-737	1
118	PCB-160		319056.4	1.225	NO	24.99	50	17.263	1.231		100					1418	1871	3031931	2468441	2137.7	1319.6	175636.4	143420	0.9465	24.96	25.02	10-Sep-20	22:09:37	H5-20-WDM-737	1
119	PCB-158		344529	1.238	NO	25.09	50	18.366	1.329		100					1418	1871	3500124	2891608	2467.8	1545.8	190572.2	153956.8	0.9501	25.05	25.12	10-Sep-20	22:09:37	H5-20-WDM-737	1
120	PCB-128/166		525317.5	1.2	NO	25.56	100	14.988	1.013		100					1418	1871	4294243	3542930	3027.7	1893.9	286506.2	238811.3	0.968	25.52	25.59	10-Sep-20	22:09:37	H5-20-WDM-737	1
121	PCB-159		310325	1.219	NO	26.02	50	18.025	1.197		100					1418	1871	3073050	2507354	2166.7	1340.4	170490	139835	0.9854	25.98	26.05	10-Sep-20	22:09:37	H5-20-WDM-737	1
122	PCB-162		298997.6	1.181	NO	26.16	50	17.968	1.154		100					1418	1871	2909440	2351045	2051.4	1256.8	161924.9	137072.7	0.9908	26.13	26.19	10-Sep-20	22:09:37	H5-20-WDM-737	1
123	PCB-167		313962.6	1.21	NO	26.42	57.09002	18.059		1.065	114.2					1418	1871	3104215	2575972	2188.7	1377	171889.1	142073.4	1.0005	26.38	26.45	10-Sep-20	22:09:37	H5-20-WDM-737	1
124	PCB-156/157		595385.4	1.208	NO	27.04	111.2541	13.403		1.089	111.3					1418	1871	4366301	3615574	3078.6	1932.8	325761.2	269624.2	1.0004	27.01	27.08	10-Sep-20	22:09:37	H5-20-WDM-737	1
125	PCB-169		286539.9	1.242	NO	28.71	56.23371	16.229		1.041	112.5					1418	1871	2575988	2137034	1816.3	1142.4	158725.2	127814.7	1.0004	28.68	28.74	10-Sep-20	22:09:37	H5-20-WDM-737	1
126	* PCB-188		273372.3	1.044	NO	23.5	53.29286	18.885		0.92	106.6					958	898	2637279	2518743	2751.6	2805.5	139652.8	133719.5	1.0005	23.47	23.54	10-Sep-20	22:09:37	H5-20-WDM-737	1
127	PCB-179		274078.5	1.037	NO	23.72	50	19.182	1.096		100					958	898	2677029	2582173	2793	2876.1	139555.9	134522.7	1.0098	23.69	23.75	10-Sep-20	22:09:37	H5-20-WDM-737	1
128	PCB-184		287878	1.024	NO	23.95	50	18.851	1.151		100					958	898	2745394	2697998	2864.4	3005.1	145634.8	142243.2	1.0195	23.92	23.98	10-Sep-20	22:09:37	H5-20-WDM-737	1
129	PCB-176		267324.8	1.039	NO	24.18	50	19.323	1.069		100					958	898	2632566	2538138	2746.7	2827.1	136237.7	131087	1.0293	24.15	24.21	10-Sep-20	22:09:37	H5-20-WDM-737	1
130	PCB-186		256288.9	1.015	NO	24.43	50	19.414	1.024		100					958	898	2506486	2435412	2615.1	2712.6	129106.9	127182.1	1.0401	24.4	24.47	10-Sep-20	22:09:37	H5-20-WDM-737	1
131	PCB-178		196975.3	1.018	NO	25.09	50	19.055	0.787		100					958	898	1893377	1885696	1975.4	2100.4	99361.3	97614	1.0679	25.05	25.12	10-Sep-20	22:09:37	H5-20-WDM-737	1
132	PCB-175		203090.8	1.043	NO	25.41	50	19.148	0.812		100					958	898	1985290	1908232	2071.3	2125.5	103680.3	99410.5	1.0818	25.38	25.45	10-Sep-20	22:09:37	H5-20-WDM-737	1
133	PCB-187		211852.1	1.027	NO	25.54	50	19.412	0.847		100					958	898	2083261	2051603	2173.5	2285.1	107317.6	104534.5	1.0875	25.51	25.58	10-Sep-20	22:09:37	H5-20-WDM-737	1
134	PCB-182		212204.2	1.022	NO	25.65	50	18.35	0.849		100					958	898	1969524	1901837	2054.9	2118.5	107328.1	104976.1	1.0921	25.62	25.69	10-Sep-20	22:09:37	H5-20-WDM-737	1
135	PCB-183		221926.1	1.013	NO	25.86	50	18.854	0.887		100					958	898	2105825	2073320	2197.1	2309.3	111690.1	110236.1	1.1008	25.83	25.89	10-Sep-20	22:09:37	H5-20-WDM-737	1
136	PCB-185		187705.7	1.028	NO	25.94	50	19.562	0.75		100					958	898	1861821	1803905	1942.5	2009.3	95173.2	92532.5	1.1044	25.91	25.98	10-Sep-20	22:09:37	H5-20-WDM-737	1
137	PCB-174		212616	1.048	NO	26.02	50	18.991	0.85		100					958	898	2066228	1958661	2155.8	2181.6	108802.9	103813	1.1075	25.98	26.05	10-Sep-20	22:09:37	H5-20-WDM-737	1
138	PCB-177		190978.1	0.998	NO	26.25	50	18.53	0.763		100					958	898	1767804	1788203	1844.4	1991.8	95401.1	95577	1.1173	26.21	26.28	10-Sep-20	22:09:37	H5-20-WDM-737	1
139	PCB-181		194029.1	1.025	NO	26.45	50	19.164	0.776		100					958	898	1881738	1828503	1963.3	2036.7	98193.1	95836	0.8825	26.42	26.48	10-Sep-20	22:09:37	H5-20-WDM-737	1
140	PCB-171/173		381218.6	1.024	NO	26.57	100	18.162	0.762		100					958	898	3503100	3450886	3654.9	3843.7	192878.8	188339.8	0.8865	26.54	26.61	10-Sep-20	22:09:37	H5-20-WDM-737	1
141	PCB-172		193374.2	1.042	NO	27.37	50	18.228	0.773		100					958	898	1798624	1731547	1876.6	1928.7	98673.7	94700.4	0.9131	27.34	27.4	10-Sep-20	22:09:37	H5-20-WDM-737	1
142	PCB-192		217320	1.019	NO	27.53	50	18.87	0.869		100					958	898	2069414	2024247	2159.1	2254.7	109669.5	107650.5	0.9184	27.49	27.56	10-Sep-20	22:09:37	H5-20-WDM-737	1
143	PCB-180/193		458353.8	1.01	NO	27.7	100	13.917	0.916		100					958	898	3205468	3202127	3344.4	3566.6	230320.7	228033.1	0.924	27.66	27.73	10-Sep-20	22:09:37	H5-20-WDM-737	1
144	PCB-191		246481.3	1.034	NO	27.89	50	18.124	0.985		100					958	898	2270970	2193346	2369.4	2443	125298.4	121182.8	0.9305	27.86	27.92	10-Sep-20	22:09:37	H5-20-WDM-737	1
145	PCB-170		180282.9	1.035	NO	28.4	50	18.651	0.721		100					958	898	1710139	1634900	1784.3	1821	91692.3	88590.6	0.9474	28.36	28.43	10-Sep-20	22:09:37	H5-20-WDM-737	1
146	PCB-190		254540.4	1.008	NO	28.67	50	16.799	1.017		100					958	898	2146441	2121784	2239.5	2363.3	127775.5	126765	0.9567	28.64	28.71	10-Sep-20	22:09:37	H5-20-WDM-737	1
147	* PCB-189		222095.3	1.03	NO	29.99	51.93955	17.177		0.965	103.9					602	623	1935316	1898741	3216.9	3048.1	112666.4	109428.9	1.0005	29.95	30.02	10-Sep-20	22:09:37	H5-20-WDM-737	1
148	* PCB-202		342261.9	0.913	NO	26.28	77.99156	19.181		1.048	104					402	387	3132719	3422492	7786.9	8834.5	163323.3	178938.6	1.0005	26.25	26.32	10-Sep-20	22:09:37	H5-20-WDM-737	1
149	PCB-201		369861.4	0.932	NO	26.75	75	19.277	1.166		100					402	387	3439578	3686742	8549.7	9516.6	178430.5	191430.9	1.0184	26.72	26.79	10-Sep-20	0.923345	H5-20-WDM-737	1
150	PCB-204		367268.1	0.945	NO	27.09	75	19.058	1.158		100					402	387	3400982	3598132	8453.7	9287.9	178457.5	188810.7	1.0313	27.06	27.13	10-Sep-20	0.923345	H5-20-WDM-737	1
151	PCB-197		364527.7	0.924	NO	27.21	75	19.204	1.149		100					402	387	3361961	3660853	8356.8	9449.8	175065	189462.7	1.0359	27.18	27.25	10-Sep-20	0.923345	H5-20-WDM-737	1
152	PCB-200		357376.7	0.945	NO	27.31	75	18.968	1.127		100					402	387	3293735	3462926	8187.2	8938.9	173644.4	183732.3	1.0396	27.28	27.34	10-Sep-20	0.923345	H5-20-WDM-737	1
153	PCB-198/199		534910.7	0.913	NO	28.7	150	16.009	0.843		100					402	387	4087326	4460971	10159.8	11515.1	255315.5	279595.2	0.9149	28.67	28.73	10-Sep-20	0.923345	H5-20-WDM-737	1
154	PCB-196		262327.2	0.961	NO	29.05	75	19.144	0.827		100					402	387	2461496	2566334	6118.5	6624.5	128576.3	133750.9	0.9261	29.02	29.08	10-Sep-20	22:09:37	H5-20-WDM-737	1
155	PCB-203		282064.1	0.929	NO	29.15	75	17.84	0.889		100					402	387	2422923	2625347	6022.6	6776.8	135817.9	146246.2	0.9292	29.11	29.18	10-Sep-20	22:09:37	H5-20-WDM-737	1
156	* PCB-195		236343.6	0.895	NO	29.88	75	17.845	0.745		100					494	659	1991549	2231624	4028.9	3385.5	111605.5	124738	0.9524	29.84	29.91	10-Sep-20	22:09:37	H5-20-WDM-737	1
157	PCB-194		245189.3	0.91	NO	31.1	75	16.245	0.773		100					494	659	1898256	2065535	3840.1	3133.6	116853.7	128335.6	0.9915	31.07	31.14	10-Sep-20	22:09:37	H5-20-WDM-737	1
158	PCB-205		281350.2	0.897	NO	31.38	77.05626	15.88		0.855	102.7					494	659	2113153	2388620	4274.9	3623.7	133074	148276.3	1.0004	31.35	31.42	10-Sep-20	22:09:37	H5-20-WDM-737	1
159	* PCB-208		321275.3	0.814	NO	29.71	71.55448	18.199		1.275	95.4					523	716	2622920	3242529	5019.8	4529.8	144125.7	177149.6	1.0005	29.67	29.74	10-Sep-20	22:09:37	H5-20-WDM-737	1
160	PCB-207		308563.9	0.828	NO	30.18	75	17.95	1.381		100					523	716	2508659	3024858	4801.2	4225.7	139756.3	168807.6	1.0164	30.15	30.22	10-Sep-20	22:09:37	H5-20-WDM-737	1
161	PCB-206		221637.6	0.797	NO	32.46	70.21373	14.534		1.295	93.6					523	716	1428930	1783967	2734.7	2492.2	98314.6	123323	1.0009	32.42	32.49	10-Sep-20	22:09:37	H5-20-WDM-737	1
162	* PCB-209		279337.2	1.181	NO	33.58	89.04792	13.355		0.874	118.7					132	137	2020433	1754544	15267.2	12792.8	151290.7	128046.5	1.0009	33.55	33.62	10-Sep-20	22:09:37	H5-20-WDM-737	1
163	13C-PCB-31		654712.6	1.053	NO	15.82	116.2011	19.731		1.281	116.2					10552	6291	6624400	6302144	627.8	1001.8	335742.7	318969.9	0.8674	15.79	15.85	10-Sep-20	22:09:37	H5-20-WDM-737	1
164	13C-PCB-95		323895	1.605	NO	19.12	111.8844	20.894		0.595	111.9					1580	1260	4169492	2555721	2638.4	2027.5	199555.2	124339.8	1.092	19.08	19.15	10-Sep-20	22:09:37	H5-20-WDM-737	1
165	13C-PCB-153		508462.3	1.295	NO	24.19	107.4314	19.019		0.913	107.4					2116	1982	5457453	4245888	2578.7	2142.1	286947.4	221514.9	1.1799	24.16	24.22	10-Sep-20	22:09:37	H5-20-WDM-737	1
166	13C-PCB-28		700671.1	1.053	NO	15.99	97.56133	19.814		1.649	97.6					10552	6291	7120510	6701891	674.8	1065.4	359361.6	341310.1	0.9418	15.95	16.02	10-Sep-20	22:09:37	H5-20-WDM-737	1

167	13C-PCB-111	490628.2	1.589	NO	22.03	110.8511	20.106	1.175	110.9
168	13C-PCB-178	379523	1.047	NO	25.07	106.5514	19.17	0.807	106.6
169	13C-PCB-1	754442.7	2.928	NO	8.92	103.4668	19.822	0.899	103.5
170	13C-PCB-3	713266.5	2.954	NO	10.47	101.7824	17.449	0.864	101.8
171	13C-PCB-4	533174	1.588	NO	10.61	101.9164	19.776	0.645	101.9
172	13C-PCB-15	671546.2	1.623	NO	14.3	89.22007	18.301	0.928	89.2
173	13C-PCB-19	304363.7	1.055	NO	12.6	72.30363	19.343	0.519	72.3
174	13C-PCB-37	575309.4	1.053	NO	18.24	85.49816	16.735	1.545	85.5
175	13C-PCB-54	523354.1	0.815	NO	14.45	90.28204	22.232	1.331	90.3
176	13C-PCB-81	514904.2	0.801	NO	21.81	85.43419	17.8	1.6	85.4
177	13C-PCB-77	517639	0.785	NO	22.11	85.78073	16.801	1.602	85.8
178	13C-PCB-104	492850.6	1.623	NO	17.5	86.64901	20.948	1.51	86.6
179	13C-PCB-123	503657.1	1.585	NO	23.09	89.02054	18.82	1.502	89
180	13C-PCB-118	492278.9	1.589	NO	23.26	88.30285	17.971	1.48	88.3
181	13C-PCB-114	457369.6	1.556	NO	23.56	85.14772	18.365	1.426	85.1
182	13C-PCB-105	461533.6	1.59	NO	23.91	83.69267	18.019	1.464	83.7
183	13C-PCB-126	431440.7	1.685	NO	25.52	83.48187	16.117	1.372	83.5
184	13C-PCB-155	576277.8	1.291	NO	20.5	90.47185	20.8	1.691	90.5
185	13C-PCB-167	516378.4	1.312	NO	26.4	98.06682	18.378	1.193	98.1
186	13C-PCB-156/157	982843.2	1.319	NO	27.03	193.8022	13.658	1.149	96.9
187	13C-PCB-169	489483.1	1.336	NO	28.7	98.57792	16.579	1.125	98.6
188	13C-PCB-188	557567.9	1.045	NO	23.49	108.9016	19.339	1.16	108.9
189	13C-PCB-189	443112.5	1.051	NO	29.97	107.03	17.204	0.938	107
190	13C-PCB-202	418745	0.934	NO	26.27	90.70109	18.896	1.046	90.7
191	13C-PCB-205	427044.6	0.87	NO	31.37	98.98774	15.832	1.354	99
192	13C-PCB-208	352152.1	0.789	NO	29.69	103.1009	18.262	1.072	103.1
193	13C-PCB-206	243754	0.787	NO	32.43	104.0857	14.74	0.735	104.1
194	13C-PCB-209	358916.6	1.204	NO	33.55	97.69921	13.678	1.153	97.7
195	13C-PCB-9	811083.1	1.604	NO	11.87	100	18.182	8110.831	100
196	13C-PCB-52	435528.1	0.823	NO	16.98	100	20.46	4355.281	100
197	13C-PCB-101	376681.9	1.633	NO	20.64	100	20.219	3766.819	100
198	13C-PCB-138	441372.7	1.299	NO	24.87	100	18.795	4413.727	100
199	13C-PCB-194	318620.1	0.898	NO	31.09	100	15.992	3186.201	100

1580	1260	6054404	3827129	3831.2	3036.2	301122.1	189506.1	1.0672	22	22.06	10-Sep-20	22:09:37	H5-20-WDM-737	1
996	749	3721857	3515635	3735.6	4691.3	194151.8	185371.2	1.0083	25.04	25.11	10-Sep-20	22:09:37	H5-20-WDM-737	1
1841	6402	11147319	3822126	6055	597	562357.3	192085.4	0.752	8.89	8.96	10-Sep-20	22:09:37	H5-20-WDM-737	1
1841	6402	9298245	3195259	5050.6	499.1	532890.3	180376.1	0.8819	10.43	10.5	10-Sep-20	22:09:37	H5-20-WDM-737	1
2808	1290	6470201	4082174	2304.4	3164.3	327173.5	206000.5	0.8937	10.57	10.64	10-Sep-20	22:09:37	H5-20-WDM-737	1
4571	2501	7604230	4754171	1663.5	1900.6	415513.6	256032.6	1.2046	14.26	14.33	10-Sep-20	22:09:37	H5-20-WDM-737	1
7961	4155	3022578	2890922	379.7	695.7	156264.8	148098.8	1.0614	12.56	12.63	10-Sep-20	22:09:37	H5-20-WDM-737	1
10552	6291	4937151	4617468	467.9	734	295012.3	280297.1	1.0744	18.21	18.27	10-Sep-20	22:09:37	H5-20-WDM-737	1
2422	1570	5223158	6398485	2156.9	4074.5	234937.9	288416.3	0.8514	14.42	14.49	10-Sep-20	22:09:37	H5-20-WDM-737	1
2919	1867	4075562	5048005	1396.2	2704.3	228961	285943.2	1.0565	21.77	21.84	10-Sep-20	22:09:37	H5-20-WDM-737	1
2919	1867	3823470	4947904	1309.8	2650.7	227578.6	290060.4	1.0713	22.08	22.15	10-Sep-20	22:09:37	H5-20-WDM-737	1
504	608	6388216	3862430	12684.9	6353.4	304948.7	187901.9	1.0311	17.47	17.54	10-Sep-20	22:09:37	H5-20-WDM-737	1
1832	2405	5811693	3611685	3171.8	1501.9	308799.9	194857.2	1.1187	23.06	23.13	10-Sep-20	22:09:37	H5-20-WDM-737	1
1832	2405	5429362	3377872	2963.2	1404.6	302125.3	190153.6	1.1269	23.23	23.29	10-Sep-20	22:09:37	H5-20-WDM-737	1
1832	2405	5113002	3225183	2790.5	1341.1	278412.8	178956.8	0.9475	23.53	23.6	10-Sep-20	22:09:37	H5-20-WDM-737	1
1832	2405	5105976	3178115	2786.7	1321.6	283384.3	178169.3	0.9616	23.88	23.95	10-Sep-20	22:09:37	H5-20-WDM-737	1
1832	2405	4363913	2631472	2381.7	1094.3	270770	160670.6	1.0262	25.49	25.55	10-Sep-20	22:09:37	H5-20-WDM-737	1
572	1420	6754629	5172248	11815.7	3641.3	324743.2	251534.6	0.9933	20.47	20.54	10-Sep-20	22:09:37	H5-20-WDM-737	1
2116	1982	5384561	4127978	2544.3	2082.7	292987.9	223390.4	1.0617	26.37	26.44	10-Sep-20	22:09:37	H5-20-WDM-737	1
2116	1982	7636524	5782221	3608.3	2917.3	559108.4	423734.8	1.087	27	27.06	10-Sep-20	22:09:37	H5-20-WDM-737	1
2116	1982	4641352	3477420	2193.1	1754.4	279947.5	209535.6	1.154	28.67	28.73	10-Sep-20	22:09:37	H5-20-WDM-737	1
996	749	5509169	5256322	5529.5	7014.1	284880.6	272687.3	0.9446	23.46	23.52	10-Sep-20	22:09:37	H5-20-WDM-737	1
1205	708	3907136	3770303	3243.5	5326.7	227108.7	216003.8	0.9641	29.94	30.01	10-Sep-20	22:09:37	H5-20-WDM-737	1
321	384	3820521	4141671	11890.7	10783	202182.5	216562.6	1.0564	26.24	26.3	10-Sep-20	22:09:37	H5-20-WDM-737	1
756	534	3145126	3614558	4162.8	6767.4	198656.1	228388.5	1.009	31.34	31.4	10-Sep-20	22:09:37	H5-20-WDM-737	1
399	329	2836527	3607424	7110.9	10967.5	155327.9	196824.3	0.9551	29.66	29.73	10-Sep-20	22:09:37	H5-20-WDM-737	1
399	329	1582814	1997872	3967.9	6074	107379.3	136374.7	1.0431	32.4	32.46	10-Sep-20	22:09:37	H5-20-WDM-737	1
171	157	2681933	2239366	15683.5	14287.5	196073.4	162843.2	1.0793	33.52	33.59	10-Sep-20	22:09:37	H5-20-WDM-737	1
2808	1290	9083190	5644096	3235	4375	499571.3	311511.8	0.4772	11.83	11.9	10-Sep-20	22:09:37	H5-20-WDM-737	1
2543	2071	4022088	4943594	1581.8	2386.6	196585.4	238942.7	0.6826	16.94	17.01	10-Sep-20	22:09:37	H5-20-WDM-737	1
1580	1260	4723322	2877008	2988.9	2282.4	233610.4	143071.5	0.83	20.61	20.68	10-Sep-20	22:09:37	H5-20-WDM-737	1
2116	1982	4687893	3595828	2215.1	1814.2	249425.2	191947.5	0	24.83	24.9	10-Sep-20	22:09:37	H5-20-WDM-737	1
756	534	2410273	2680651	3190.2	5018.9	150717.1	167903	1.2502	31.06	31.12	10-Sep-20	22:09:37	H5-20-WDM-737	1

ALS Life Sciences

Continuing Calibration Report

Sample Name	**CCV**	Sampling Date	n/a		
ALS Sample ID	H5-20-CCV-730	Extraction Date	n/a		Approved:
Analysis Method	EPA 1668C	Sample Size	1	n/a	*S. Jin*
Analysis Type	CCV	Percent Moisture	n/a		--e-signature--
Sample Matrix	QC	Split Ratio	1		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A01
Run Date	09-Sep-20 13:24
Final Volume	25 ul
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**pg/uL**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	50	8.92	92	75-125	
PCB-003	50	10.45	93	75-125	
PCB-004	50	10.61	116	75-125	
PCB-015	50	14.29	103	75-125	
PCB-019	50	12.60	113	75-125	
PCB-037	50	18.23	103	75-125	
PCB-054	50	14.45	114	75-125	
PCB-081	50	21.81	107	75-125	
PCB-077	50	22.11	104	75-125	
PCB-104	50	17.51	109	75-125	
PCB-123	50	23.10	108	75-125	
PCB-118	50	23.27	107	75-125	
PCB-114	50	23.58	112	75-125	
PCB-105	50	23.91	114	75-125	
PCB-126	50	25.51	107	75-125	
PCB-155	50	20.51	111	75-125	
PCB-167	50	26.42	106	75-125	
PCB-156/157	100	27.04	110	75-125	
PCB-169	50	28.70	110	75-125	
PCB-188	50	23.50	112	75-125	
PCB-189	50	29.99	99	75-125	
PCB-202	50	26.28	111	75-125	
PCB-205	50	31.38	103	75-125	
PCB-208	50	29.71	97	75-125	
PCB-206	50	32.46	95	75-125	
PCB-209	50	33.58	104	75-125	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-001	100	8.91	108	50-145	
13C12-PCB-003	100	10.44	105	50-145	
13C12-PCB-004	100	10.59	102	50-145	
13C12-PCB-015	100	14.28	96	50-145	
13C12-PCB-019	100	12.60	77	50-145	
13C12-PCB-037	100	18.22	90	50-145	
13C12-PCB-054	100	14.44	87	50-145	
13C12-PCB-081	100	21.80	89	50-145	
13C12-PCB-077	100	22.10	92	50-145	
13C12-PCB-104	100	17.50	88	50-145	
13C12-PCB-123	100	23.09	101	50-145	
13C12-PCB-118	100	23.26	102	50-145	
13C12-PCB-114	100	23.55	97	50-145	
13C12-PCB-105	100	23.90	94	50-145	
13C12-PCB-126	100	25.50	95	50-145	
13C12-PCB-155	100	20.49	89	50-145	
13C12-PCB-167	100	26.39	102	50-145	
13C12-PCB-156/157	200	27.03	100	50-145	
13C12-PCB-169	100	28.70	104	50-145	
13C12-PCB-188	100	23.49	105	50-145	
13C12-PCB-189	100	29.97	114	50-145	
13C12-PCB-202	100	26.27	87	50-145	
13C12-PCB-205	100	31.35	103	50-145	
13C12-PCB-208	100	29.69	102	50-145	
13C12-PCB-206	100	32.43	111	50-145	
13C12-PCB-209	100	33.55	102	50-145	
Field Spike Standards					
13C12-PCB-031	100	15.81	111	70-130	
13C12-PCB-095	100	19.11	102	70-130	
13C12-PCB-153	100	24.19	110	70-130	
Cleanup Standards					
13C12-PCB-028	100	15.98	99	65-135	
13C12-PCB-111	100	22.03	111	75-125	
13C12-PCB-178	100	25.06	103	75-125	

ALS Life Sciences

Continuing Calibration Report

Sample Name	**CCV**	Sampling Date	n/a		
ALS Sample ID	H5-20-CCV-731	Extraction Date	n/a		Approved:
Analysis Method	EPA 1668C	Sample Size	1	n/a	*S. Jin*
Analysis Type	CCV	Percent Moisture	n/a		--e-signature--
Sample Matrix	QC	Split Ratio	1		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A15
Run Date	09-Sep-20 23:11
Final Volume	25 ul
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**pg/uL**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	50	8.92	92	75-125	
PCB-003	50	10.45	92	75-125	
PCB-004	50	10.61	112	75-125	
PCB-015	50	14.29	105	75-125	
PCB-019	50	12.60	113	75-125	
PCB-037	50	18.23	106	75-125	
PCB-054	50	14.45	113	75-125	
PCB-081	50	21.81	107	75-125	
PCB-077	50	22.11	105	75-125	
PCB-104	50	17.51	111	75-125	
PCB-123	50	23.10	108	75-125	
PCB-118	50	23.27	109	75-125	
PCB-114	50	23.56	111	75-125	
PCB-105	50	23.91	113	75-125	
PCB-126	50	25.51	108	75-125	
PCB-155	50	20.51	111	75-125	
PCB-167	50	26.42	106	75-125	
PCB-156/157	100	27.04	109	75-125	
PCB-169	50	28.71	110	75-125	
PCB-188	50	23.50	112	75-125	
PCB-189	50	29.97	101	75-125	
PCB-202	50	26.28	109	75-125	
PCB-205	50	31.37	104	75-125	
PCB-208	50	29.71	96	75-125	
PCB-206	50	32.44	94	75-125	
PCB-209	50	33.57	105	75-125	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-001	100	8.92	106	50-145	
13C12-PCB-003	100	10.44	104	50-145	
13C12-PCB-004	100	10.59	104	50-145	
13C12-PCB-015	100	14.28	94	50-145	
13C12-PCB-019	100	12.58	76	50-145	
13C12-PCB-037	100	18.22	86	50-145	
13C12-PCB-054	100	14.44	86	50-145	
13C12-PCB-081	100	21.80	90	50-145	
13C12-PCB-077	100	22.09	92	50-145	
13C12-PCB-104	100	17.49	88	50-145	
13C12-PCB-123	100	23.09	101	50-145	
13C12-PCB-118	100	23.26	104	50-145	
13C12-PCB-114	100	23.55	97	50-145	
13C12-PCB-105	100	23.90	94	50-145	
13C12-PCB-126	100	25.50	97	50-145	
13C12-PCB-155	100	20.49	90	50-145	
13C12-PCB-167	100	26.40	96	50-145	
13C12-PCB-156/157	200	27.03	93	50-145	
13C12-PCB-169	100	28.70	101	50-145	
13C12-PCB-188	100	23.49	99	50-145	
13C12-PCB-189	100	29.97	113	50-145	
13C12-PCB-202	100	26.27	88	50-145	
13C12-PCB-205	100	31.35	104	50-145	
13C12-PCB-208	100	29.69	104	50-145	
13C12-PCB-206	100	32.43	110	50-145	
13C12-PCB-209	100	33.55	105	50-145	
Field Spike Standards					
13C12-PCB-031	100	15.80	113	70-130	
13C12-PCB-095	100	19.11	101	70-130	
13C12-PCB-153	100	24.19	109	70-130	
Cleanup Standards					
13C12-PCB-028	100	15.98	96	65-135	
13C12-PCB-111	100	22.02	111	75-125	
13C12-PCB-178	100	25.06	102	75-125	

ALS Life Sciences

Continuing Calibration Report

Sample Name	**CCV**	Sampling Date	n/a		
ALS Sample ID	H5-20-CCV-731	Extraction Date	n/a		Approved:
Analysis Method	EPA 1668C	Sample Size	1	n/a	*S. Jin*
Analysis Type	CCV	Percent Moisture	n/a		--e-signature--
Sample Matrix	QC	Split Ratio	1		11-Sep-2020

Run Information	**Run 1**
Filename	5-200910A16
Run Date	10-Sep-20 21:15
Final Volume	25 ul
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**pg/uL**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	50	8.91	94	75-125	
PCB-003	50	10.44	94	75-125	
PCB-004	50	10.59	113	75-125	
PCB-015	50	14.28	110	75-125	
PCB-019	50	12.58	116	75-125	
PCB-037	50	18.22	106	75-125	
PCB-054	50	14.44	113	75-125	
PCB-081	50	21.80	109	75-125	
PCB-077	50	22.10	108	75-125	
PCB-104	50	17.49	111	75-125	
PCB-123	50	23.09	112	75-125	
PCB-118	50	23.26	112	75-125	
PCB-114	50	23.55	115	75-125	
PCB-105	50	23.90	117	75-125	
PCB-126	50	25.51	110	75-125	
PCB-155	50	20.49	112	75-125	
PCB-167	50	26.40	108	75-125	
PCB-156/157	100	27.03	110	75-125	
PCB-169	50	28.70	110	75-125	
PCB-188	50	23.49	109	75-125	
PCB-189	50	29.97	104	75-125	
PCB-202	50	26.26	110	75-125	
PCB-205	50	31.35	104	75-125	
PCB-208	50	29.69	96	75-125	
PCB-206	50	32.43	94	75-125	
PCB-209	50	33.55	105	75-125	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-001	100	8.91	103	50-145	
13C12-PCB-003	100	10.44	102	50-145	
13C12-PCB-004	100	10.59	102	50-145	
13C12-PCB-015	100	14.27	92	50-145	
13C12-PCB-019	100	12.57	72	50-145	
13C12-PCB-037	100	18.21	88	50-145	
13C12-PCB-054	100	14.43	88	50-145	
13C12-PCB-081	100	21.79	88	50-145	
13C12-PCB-077	100	22.09	89	50-145	
13C12-PCB-104	100	17.49	85	50-145	
13C12-PCB-123	100	23.07	90	50-145	
13C12-PCB-118	100	23.25	91	50-145	
13C12-PCB-114	100	23.54	86	50-145	
13C12-PCB-105	100	23.89	85	50-145	
13C12-PCB-126	100	25.50	87	50-145	
13C12-PCB-155	100	20.48	90	50-145	
13C12-PCB-167	100	26.38	101	50-145	
13C12-PCB-156/157	200	27.02	100	50-145	
13C12-PCB-169	100	28.69	101	50-145	
13C12-PCB-188	100	23.48	109	50-145	
13C12-PCB-189	100	29.96	114	50-145	
13C12-PCB-202	100	26.25	92	50-145	
13C12-PCB-205	100	31.34	101	50-145	
13C12-PCB-208	100	29.68	106	50-145	
13C12-PCB-206	100	32.41	109	50-145	
13C12-PCB-209	100	33.54	102	50-145	
Field Spike Standards					
13C12-PCB-031	100	15.79	115	70-130	
13C12-PCB-095	100	19.09	109	70-130	
13C12-PCB-153	100	24.17	106	70-130	
Cleanup Standards					
13C12-PCB-028	100	15.97	98	65-135	
13C12-PCB-111	100	22.01	108	75-125	
13C12-PCB-178	100	25.05	107	75-125	

ALS Life Sciences

Continuing Calibration Report

Sample Name	**CCV**	Sampling Date	n/a		
ALS Sample ID	H5-20-CCV-738	Extraction Date	n/a		Approved:
Analysis Method	EPA 1668C	Sample Size	1	n/a	*S. Jin*
Analysis Type	CCV	Percent Moisture	n/a		--e-signature--
Sample Matrix	QC	Split Ratio	1		11-Sep-2020

Run Information	**Run 1**
Filename	5-200910A32
Run Date	11-Sep-20 08:39
Final Volume	25 ul
Dilution Factor	1
Analysis Units	%
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**pg/uL**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	50	8.92	95	75-125	
PCB-003	50	10.45	97	75-125	
PCB-004	50	10.61	116	75-125	
PCB-015	50	14.29	111	75-125	
PCB-019	50	12.60	115	75-125	
PCB-037	50	18.24	118	75-125	
PCB-054	50	14.45	112	75-125	
PCB-081	50	21.82	109	75-125	
PCB-077	50	22.12	108	75-125	
PCB-104	50	17.51	109	75-125	
PCB-123	50	23.10	112	75-125	
PCB-118	50	23.27	113	75-125	
PCB-114	50	23.58	114	75-125	
PCB-105	50	23.93	116	75-125	
PCB-126	50	25.52	111	75-125	
PCB-155	50	20.51	112	75-125	
PCB-167	50	26.42	108	75-125	
PCB-156/157	100	27.04	110	75-125	
PCB-169	50	28.71	110	75-125	
PCB-188	50	23.50	110	75-125	
PCB-189	50	29.99	102	75-125	
PCB-202	50	26.28	110	75-125	
PCB-205	50	31.38	105	75-125	
PCB-208	50	29.71	98	75-125	
PCB-206	50	32.46	97	75-125	
PCB-209	50	33.58	106	75-125	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-001	100	8.91	96	50-145	
13C12-PCB-003	100	10.44	98	50-145	
13C12-PCB-004	100	10.59	96	50-145	
13C12-PCB-015	100	14.28	91	50-145	
13C12-PCB-019	100	12.58	69	50-145	
13C12-PCB-037	100	18.23	95	50-145	
13C12-PCB-054	100	14.44	88	50-145	
13C12-PCB-081	100	21.81	92	50-145	
13C12-PCB-077	100	22.10	94	50-145	
13C12-PCB-104	100	17.49	88	50-145	
13C12-PCB-123	100	23.09	95	50-145	
13C12-PCB-118	100	23.26	96	50-145	
13C12-PCB-114	100	23.56	93	50-145	
13C12-PCB-105	100	23.91	92	50-145	
13C12-PCB-126	100	25.51	98	50-145	
13C12-PCB-155	100	20.49	87	50-145	
13C12-PCB-167	100	26.40	103	50-145	
13C12-PCB-156/157	200	27.03	102	50-145	
13C12-PCB-169	100	28.71	103	50-145	
13C12-PCB-188	100	23.49	102	50-145	
13C12-PCB-189	100	29.97	113	50-145	
13C12-PCB-202	100	26.27	89	50-145	
13C12-PCB-205	100	31.37	102	50-145	
13C12-PCB-208	100	29.69	113	50-145	
13C12-PCB-206	100	32.44	105	50-145	
13C12-PCB-209	100	33.55	99	50-145	
Field Spike Standards					
13C12-PCB-031	100	15.81	110	70-130	
13C12-PCB-095	100	19.11	106	70-130	
13C12-PCB-153	100	24.19	105	70-130	
Cleanup Standards					
13C12-PCB-028	100	15.98	100	65-135	
13C12-PCB-111	100	22.03	105	75-125	
13C12-PCB-178	100	25.07	103	75-125	

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 5: QC SAMPLE DATA

Including:

- Laboratory Method Blank Analysis Reports
- Laboratory Control Sample Analysis Reports
- Matrix Spike Analysis Reports
- Other QC Sample Analysis Reports (where applicable)

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	MEDIA	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A05
Run Date	09-Sep-20 16:10
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-001		NotFnd	<2.8	2.8	U		100
PCB-002		NotFnd	<3.6	3.6	U		100
PCB-003		NotFnd	<3.9	3.9	U		100
PCB-004		10.59	<21	21	U	8.7	100
PCB-010		NotFnd	<11	11	U		100
PCB-009		NotFnd	<11	11	U		100
PCB-007		NotFnd	<11	11	U		100
PCB-006		NotFnd	<11	11	U		100
PCB-005		NotFnd	<13	13	U		100
PCB-008		NotFnd	<10	10	U		100
PCB-014		NotFnd	<10	10	U		100
PCB-011		13.93	<34	11	J,R	34	100
PCB-012/013		NotFnd	<11	11	U		100
PCB-015		NotFnd	<12	12	U		100
PCB-019		NotFnd	<6.0	6.0	U		100
PCB-018/030		13.73	14.6	5.2	M,J		100
PCB-017		NotFnd	<6.0	6.0	U		100
PCB-027		NotFnd	<4.4	4.4	U		100
PCB-024		NotFnd	<4.7	4.7	U		100
PCB-016		NotFnd	<7.1	7.1	U		100
PCB-032		14.54	<6.1	4.2	J,R	6.1	100
PCB-034		NotFnd	<5.4	5.4	U		100
PCB-023		NotFnd	<5.2	5.2	U		100
PCB-026/029		NotFnd	<5.0	5.0	U		100
PCB-025		NotFnd	<4.7	4.7	U		100
PCB-031		15.82	15.7	4.7	J		100
PCB-020/028		16.01	<12	5.1	J,R	12	100
PCB-021/033		16.14	10.8	5.0	J		100
PCB-022		16.36	<6.5	5.5	M,J,R	6.5	100
PCB-036		NotFnd	<5.0	5.0	U		100
PCB-039		NotFnd	<5.2	5.2	U		100
PCB-038		NotFnd	<5.3	5.3	U		100
PCB-035		NotFnd	<5.5	5.5	U		100
PCB-037		18.25	<6.7	6.7	U	6.3	100
PCB-054		NotFnd	<2.6	2.6	U		100
PCB-050/053		NotFnd	<3.8	3.8	U		100
PCB-045/051		NotFnd	<4.0	4.0	U		100
PCB-046		NotFnd	<4.5	4.5	U		100
PCB-052		16.98	21.3	4.0	J		100
PCB-073		NotFnd	<3.0	3.0	U		100
PCB-043		NotFnd	<4.5	4.5	U		100
PCB-049/069		17.26	<8.3	3.4	J,R	8.3	100
PCB-048		NotFnd	<3.9	3.9	U		100
PCB-044/047/065		17.55	22.0	3.6	J		100
PCB-059/062/075		NotFnd	<3.0	3.0	U		100
PCB-042		NotFnd	<4.1	4.1	U		100
PCB-040/041/071		18.12	<5.4	3.9	M,J,R	5.4	100
PCB-064		18.24	7.15	2.9	J		100
PCB-072		NotFnd	<3.8	3.8	U		100
PCB-068		NotFnd	<3.7	3.7	U		100
PCB-057		NotFnd	<4.0	4.0	U		100
PCB-058		NotFnd	<3.9	3.9	U		100
PCB-067		NotFnd	<3.6	3.6	U		100
PCB-063		NotFnd	<3.8	3.8	U		100
PCB-061/070/074/076		19.60	<16	3.9	M,J,R	16	100
PCB-066		19.77	6.13	3.7	J		100
PCB-055		NotFnd	<4.1	4.1	U		100
PCB-056		NotFnd	<4.1	4.1	U		100
PCB-060		NotFnd	<4.1	4.1	U		100
PCB-080		NotFnd	<3.5	3.5	U		100
PCB-079		NotFnd	<3.6	3.6	U		100
PCB-078		NotFnd	<3.9	3.9	U		100
PCB-081	0.0003	NotFnd	<4.7	4.7	U		100
PCB-077	0.0001	NotFnd	<4.8	4.8	U		100
PCB-104		NotFnd	<2.7	2.7	U		100
PCB-096		NotFnd	<2.5	2.5	U		100
PCB-103		NotFnd	<4.5	4.5	U		100
PCB-094		NotFnd	<5.4	5.4	U		100
PCB-095		19.13	<15	4.8	J,R	15	100
PCB-093/098/100/102		NotFnd	<4.8	4.8	U		100

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	MEDIA	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A05
Run Date	09-Sep-20 16:10
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-088/091		NotFnd	<5.0	5.0	U		100
PCB-084		NotFnd	<5.3	5.3	U		100
PCB-089		NotFnd	<5.1	5.1	U		100
PCB-121		NotFnd	<3.7	3.7	U		100
PCB-092		NotFnd	<5.0	5.0	U		100
PCB-090/101/113		20.65	<17	4.3	M,J,R	17	100
PCB-083/099		20.95	7.26	5.0	J		100
PCB-112		NotFnd	<3.6	3.6	U		100
PCB-086/087/097/109/119/125		NotFnd	<4.2	4.2	U		100
PCB-085/110/115/116/117		21.72	21.6	3.9	M,J		100
PCB-082		NotFnd	<5.7	5.7	U		100
PCB-111		NotFnd	<3.7	3.7	U		100
PCB-120		NotFnd	<3.5	3.5	U		100
PCB-108/124		NotFnd	<2.8	2.8	U		100
PCB-107		NotFnd	<2.5	2.5	U		100
PCB-123	0.00003	NotFnd	<3.2	3.2	U		100
PCB-106		NotFnd	<2.9	2.9	U		100
PCB-118	0.00003	23.27	13.8	3.0	J		100
PCB-122		NotFnd	<3.0	3.0	U		100
PCB-114	0.00003	NotFnd	<3.3	3.3	U		100
PCB-105	0.00003	NotFnd	<3.3	3.3	U		100
PCB-127		NotFnd	<2.7	2.7	U		100
PCB-126	0.1	NotFnd	<3.3	3.3	U		100
PCB-155		NotFnd	<880	880	U		100
PCB-152		NotFnd	<1.9	1.9	U		100
PCB-150		NotFnd	<2.0	2.0	U		100
PCB-136		NotFnd	<2.0	2.0	U		100
PCB-145		NotFnd	<2.0	2.0	U		100
PCB-148		NotFnd	<2.7	2.7	U		100
PCB-135/151		NotFnd	<2.8	2.8	U		100
PCB-154		NotFnd	<2.2	2.2	U		100
PCB-144		NotFnd	<2.7	2.7	U		100
PCB-147/149		22.66	10.6	2.8	J		100
PCB-134/143		NotFnd	<3.3	3.3	U		100
PCB-139/140		NotFnd	<2.8	2.8	U		100
PCB-131		NotFnd	<3.2	3.2	U		100
PCB-142		NotFnd	<3.3	3.3	U		100
PCB-132		23.36	8.76	3.3	J		100
PCB-133		NotFnd	<3.0	3.0	U		100
PCB-165		NotFnd	<2.5	2.5	U		100
PCB-146		NotFnd	<2.7	2.7	U		100
PCB-161		NotFnd	<2.2	2.2	U		100
PCB-153/168		24.20	7.53	2.4	J		100
PCB-141		NotFnd	<2.8	2.8	U		100
PCB-130		NotFnd	<3.2	3.2	U		100
PCB-137/164		NotFnd	<2.5	2.5	U		100
PCB-129/138/163		24.87	<9.8	2.8	M,J,R	9.8	100
PCB-160		NotFnd	<2.3	2.3	U		100
PCB-158		NotFnd	<2.0	2.0	U		100
PCB-128/166		NotFnd	<2.5	2.5	U		100
PCB-159		NotFnd	<2.1	2.1	U		100
PCB-162		NotFnd	<2.2	2.2	U		100
PCB-167	0.00003	NotFnd	<2.1	2.1	U		100
PCB-156/157	0.00003	NotFnd	<2.8	2.8	U		200
PCB-169	0.03	NotFnd	<2.3	2.3	U		100
PCB-188		NotFnd	<1.6	1.6	U		100
PCB-179		23.72	<1.9	1.5	J,R	1.9	100
PCB-184		NotFnd	<1.4	1.4	U		100
PCB-176		NotFnd	<1.5	1.5	U		100
PCB-186		NotFnd	<1.6	1.6	U		100
PCB-178		NotFnd	<2.0	2.0	U		100
PCB-175		NotFnd	<1.9	1.9	U		100
PCB-187		NotFnd	<1.7	1.7	U		100
PCB-182		NotFnd	<1.7	1.7	U		100
PCB-183		NotFnd	<1.8	1.8	U		100
PCB-185		NotFnd	<1.9	1.9	U		100
PCB-174		NotFnd	<1.7	1.7	U		100
PCB-177		NotFnd	<1.9	1.9	U		100
PCB-181		NotFnd	<1.9	1.9	U		100
PCB-171/173		NotFnd	<1.9	1.9	U		100
PCB-172		NotFnd	<1.9	1.9	U		100

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	MEDIA	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A05
Run Date	09-Sep-20 16:10
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<1.6	1.6	U		100
PCB-180/193		NotFnd	<1.6	1.6	U		100
PCB-191		NotFnd	<1.5	1.5	U		100
PCB-170		NotFnd	<2.0	2.0	U		100
PCB-190		NotFnd	<1.5	1.5	U		100
PCB-189	0.00003	NotFnd	<2.1	2.1	U		100
PCB-202		NotFnd	<1.3	1.3	U		100
PCB-201		NotFnd	<1.3	1.3	U		100
PCB-204		NotFnd	<1.3	1.3	U		100
PCB-197		NotFnd	<1.3	1.3	U		100
PCB-200		NotFnd	<1.3	1.3	U		100
PCB-198/199		NotFnd	<1.8	1.8	U		100
PCB-196		NotFnd	<1.8	1.8	U		100
PCB-203		NotFnd	<1.7	1.7	U		100
PCB-195		NotFnd	<1.4	1.4	U		100
PCB-194		NotFnd	<1.4	1.4	U		100
PCB-205		NotFnd	<1.3	1.3	U		100
PCB-208		NotFnd	<2.2	2.2	U		100
PCB-207		NotFnd	<2.6	2.6	U		100
PCB-206		NotFnd	<3.8	3.8	U		100
PCB-209		NotFnd	<0.93	0.93	U		100

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**
13C12-PCB-001	4000	8.91	51	5-145
13C12-PCB-003	4000	10.45	47	5-145
13C12-PCB-004	4000	10.59	48	5-145
13C12-PCB-015	4000	14.30	57	5-145
13C12-PCB-019	4000	12.58	37	5-145
13C12-PCB-037	4000	18.24	52	5-145
13C12-PCB-054	4000	14.43	45	5-145
13C12-PCB-081	4000	21.82	63	10-145
13C12-PCB-077	4000	22.11	66	10-145
13C12-PCB-104	4000	17.49	58	10-145
13C12-PCB-123	4000	23.09	75	10-145
13C12-PCB-118	4000	23.26	76	10-145
13C12-PCB-114	4000	23.56	71	10-145
13C12-PCB-105	4000	23.91	75	10-145
13C12-PCB-126	4000	25.51	81	10-145
13C12-PCB-155	4000	20.49	65	10-145
13C12-PCB-167	4000	26.40	101	10-145
13C12-PCB-156/157	8000	27.03	103	10-145
13C12-PCB-169	4000	28.70	112	10-145
13C12-PCB-188	4000	23.49	96	10-145
13C12-PCB-189	4000	29.97	120	10-145
13C12-PCB-202	4000	26.27	88	10-145
13C12-PCB-205	4000	31.35	106	10-145
13C12-PCB-208	4000	29.69	111	10-145
13C12-PCB-206	4000	32.43	112	10-145
13C12-PCB-209	4000	33.55	107	10-145

Field Spike Standards		
13C12-PCB-031	NS	
13C12-PCB-095	NS	
13C12-PCB-153	NS	

Cleanup Standards				
13C12-PCB-028	4000	15.99	49	5-145
13C12-PCB-111	4000	22.03	74	10-145
13C12-PCB-178	4000	25.06	100	10-145

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-1	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	MEDIA	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A05
Run Date	09-Sep-20 16:10
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			<2.8	2.8	U		400
Total DiCB			34.0	10	J		800
Total TriCB			65.7	4.2	J		800
Total TetraCB			86.3	2.6	J		1600
Total PentaCB			74.7	2.5	J		1600
Total HexaCB			36.7	1.9	J		1600
Total HeptaCB			1.90	1.4	J		800
Total OctaCB			<1.3	1.3	U		800
Total NonaCB			<2.2	2.2	U		400
DecaCB			<0.93	0.93	U		400
Total PCB			299		J		3200
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.000414				
Mid Point PCB TEQ			0.201				
Upper Bound PCB TEQ			0.402				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
NS	Indicates that this compound was not added.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-4	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	REAGENT	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A06
Run Date	09-Sep-20 16:52
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-001		NotFnd	<3.2	3.2	U		100
PCB-002		NotFnd	<4.0	4.0	U		100
PCB-003		NotFnd	<4.4	4.4	U		100
PCB-004		NotFnd	<25	25	U		100
PCB-010		NotFnd	<14	14	U		100
PCB-009		NotFnd	<13	13	U		100
PCB-007		NotFnd	<13	13	U		100
PCB-006		NotFnd	<13	13	U		100
PCB-005		NotFnd	<15	15	U		100
PCB-008		NotFnd	<12	12	U		100
PCB-014		NotFnd	<13	13	U		100
PCB-011		13.94	37.8	14	M,J		100
PCB-012/013		NotFnd	<13	13	U		100
PCB-015		NotFnd	<15	15	U		100
PCB-019		NotFnd	<6.7	6.7	U		100
PCB-018/030		13.72	<8.3	8.3	U	8.2	100
PCB-017		13.96	<9.6	9.6	U		100
PCB-027		NotFnd	<7.1	7.1	U		100
PCB-024		NotFnd	<7.6	7.6	U		100
PCB-016		14.25	<11	11	U	9.4	100
PCB-032		NotFnd	<6.7	6.7	U		100
PCB-034		NotFnd	<6.8	6.8	U		100
PCB-023		NotFnd	<6.5	6.5	U		100
PCB-026/029		NotFnd	<6.3	6.3	U		100
PCB-025		NotFnd	<5.9	5.9	U		100
PCB-031		15.84	<11	6.0	M,J,R	11	100
PCB-020/028		16.02	16.8	6.4	M,J		100
PCB-021/033		16.14	<13	6.3	J,R	13	100
PCB-022		NotFnd	<6.9	6.9	U		100
PCB-036		NotFnd	<6.3	6.3	U		100
PCB-039		NotFnd	<6.5	6.5	U		100
PCB-038		NotFnd	<6.6	6.6	U		100
PCB-035		NotFnd	<6.9	6.9	U		100
PCB-037		NotFnd	<9.0	9.0	U		100
PCB-054		NotFnd	<4.0	4.0	U		100
PCB-050/053		15.67	<4.3	4.3	J,R	4.3	100
PCB-045/051		NotFnd	<4.5	4.5	U		100
PCB-046		NotFnd	<5.0	5.0	U		100
PCB-052		16.99	<30	4.5	J,R	30	100
PCB-073		NotFnd	<3.3	3.3	U		100
PCB-043		NotFnd	<5.1	5.1	U		100
PCB-049/069		17.26	8.46	3.8	J		100
PCB-048		17.42	<4.4	4.4	U	4.3	100
PCB-044/047/065		17.55	25.3	4.0	J		100
PCB-059/062/075		NotFnd	<3.3	3.3	U		100
PCB-042		17.86	<5.7	4.6	M,J,R	5.7	100
PCB-040/041/071		18.12	<7.2	4.4	J,R	7.2	100
PCB-064		18.25	<6.5	3.2	M,J,R	6.5	100
PCB-072		NotFnd	<2.8	2.8	U		100
PCB-068		NotFnd	<2.7	2.7	U		100
PCB-057		NotFnd	<3.0	3.0	U		100
PCB-058		NotFnd	<3.0	3.0	U		100
PCB-067		NotFnd	<2.7	2.7	U		100
PCB-063		NotFnd	<2.8	2.8	U		100
PCB-061/070/074/076		19.62	21.7	2.9	J		100
PCB-066		19.80	<7.4	2.8	J,R	7.4	100
PCB-055		NotFnd	<3.1	3.1	U		100
PCB-056		NotFnd	<3.1	3.1	U		100
PCB-060		NotFnd	<3.0	3.0	U		100
PCB-080		NotFnd	<2.6	2.6	U		100
PCB-079		NotFnd	<2.7	2.7	U		100
PCB-078		NotFnd	<2.9	2.9	U		100
PCB-081	0.0003	NotFnd	<3.5	3.5	U		100
PCB-077	0.0001	NotFnd	<3.7	3.7	U		100
PCB-104		NotFnd	<3.0	3.0	U		100
PCB-096		NotFnd	<2.7	2.7	U		100
PCB-103		NotFnd	<4.3	4.3	U		100
PCB-094		NotFnd	<5.1	5.1	U		100
PCB-095		19.13	17.7	4.6	J		100
PCB-093/098/100/102		NotFnd	<4.6	4.6	U		100

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-4	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	REAGENT	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A06
Run Date	09-Sep-20 16:52
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	TEF (WHO 2005)	Ret. Time	Conc. pg	EDL pg	Flags	EMPC pg	LQL
PCB-088/091		NotFnd	<4.7	4.7	U		100
PCB-084		NotFnd	<5.1	5.1	U		100
PCB-089		NotFnd	<4.9	4.9	U		100
PCB-121		NotFnd	<3.5	3.5	U		100
PCB-092		NotFnd	<4.8	4.8	U		100
PCB-090/101/113		20.66	19.1	4.1	M,J		100
PCB-083/099		NotFnd	<4.8	4.8	U		100
PCB-112		NotFnd	<3.4	3.4	U		100
PCB-086/087/097/109/119/125		21.31	<5.3	4.0	J,R	5.3	100
PCB-085/110/115/116/117		21.72	25.0	3.8	M,J		100
PCB-082		NotFnd	<5.4	5.4	U		100
PCB-111		NotFnd	<3.5	3.5	U		100
PCB-120		NotFnd	<3.4	3.4	U		100
PCB-108/124		NotFnd	<3.3	3.3	U		100
PCB-107		NotFnd	<2.9	2.9	U		100
PCB-123	0.00003	NotFnd	<3.8	3.8	U		100
PCB-106		NotFnd	<3.4	3.4	U		100
PCB-118	0.00003	23.28	<12	3.5	J,R	12	100
PCB-122		NotFnd	<3.5	3.5	U		100
PCB-114	0.00003	NotFnd	<3.9	3.9	U		100
PCB-105	0.00003	23.93	<5.6	3.8	M,J,R	5.6	100
PCB-127		NotFnd	<3.2	3.2	U		100
PCB-126	0.1	NotFnd	<3.7	3.7	U		100
PCB-155		NotFnd	<1.4	1.4	U		100
PCB-152		NotFnd	<1.2	1.2	U		100
PCB-150		NotFnd	<1.2	1.2	U		100
PCB-136		NotFnd	<1.2	1.2	U		100
PCB-145		NotFnd	<1.3	1.3	U		100
PCB-148		NotFnd	<1.7	1.7	U		100
PCB-135/151		NotFnd	<1.7	1.7	U		100
PCB-154		NotFnd	<1.3	1.3	U		100
PCB-144		NotFnd	<1.6	1.6	U		100
PCB-147/149		22.67	<10	2.7	J,R	10	100
PCB-134/143		NotFnd	<3.1	3.1	U		100
PCB-139/140		NotFnd	<2.7	2.7	U		100
PCB-131		NotFnd	<3.1	3.1	U		100
PCB-142		NotFnd	<3.2	3.2	U		100
PCB-132		23.36	<6.9	3.2	J,R	6.9	100
PCB-133		NotFnd	<2.9	2.9	U		100
PCB-165		NotFnd	<2.4	2.4	U		100
PCB-146		NotFnd	<2.6	2.6	U		100
PCB-161		NotFnd	<2.1	2.1	U		100
PCB-153/168		24.22	8.84	2.3	M,J		100
PCB-141		NotFnd	<2.7	2.7	U		100
PCB-130		NotFnd	<3.1	3.1	U		100
PCB-137/164		NotFnd	<2.4	2.4	U		100
PCB-129/138/163		24.89	<12	2.7	M,J,R	12	100
PCB-160		NotFnd	<2.2	2.2	U		100
PCB-158		NotFnd	<1.9	1.9	U		100
PCB-128/166		NotFnd	<2.4	2.4	U		100
PCB-159		NotFnd	<2.0	2.0	U		100
PCB-162		NotFnd	<2.1	2.1	U		100
PCB-167	0.00003	NotFnd	<2.2	2.2	U		100
PCB-156/157	0.00003	27.04	<2.8	2.8	U	1.9	200
PCB-169	0.03	NotFnd	<2.2	2.2	U		100
PCB-188		NotFnd	<2.4	2.4	U		100
PCB-179		NotFnd	<2.1	2.1	U		100
PCB-184		NotFnd	<2.0	2.0	U		100
PCB-176		NotFnd	<2.0	2.0	U		100
PCB-186		NotFnd	<2.2	2.2	U		100
PCB-178		NotFnd	<2.7	2.7	U		100
PCB-175		NotFnd	<2.5	2.5	U		100
PCB-187		NotFnd	<2.4	2.4	U		100
PCB-182		NotFnd	<2.4	2.4	U		100
PCB-183		NotFnd	<2.5	2.5	U		100
PCB-185		NotFnd	<2.6	2.6	U		100
PCB-174		NotFnd	<2.4	2.4	U		100
PCB-177		NotFnd	<2.6	2.6	U		100
PCB-181		NotFnd	<2.6	2.6	U		100
PCB-171/173		NotFnd	<2.6	2.6	U		100
PCB-172		NotFnd	<2.7	2.7	U		100

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-4	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	REAGENT	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A06
Run Date	09-Sep-20 16:52
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
PCB-192		NotFnd	<2.2	2.2	U		100
PCB-180/193		27.68	<2.9	2.2	M,J,R	2.9	100
PCB-191		NotFnd	<2.1	2.1	U		100
PCB-170		NotFnd	<2.8	2.8	U		100
PCB-190		NotFnd	<2.0	2.0	U		100
PCB-189	0.00003	NotFnd	<1.5	1.5	U		100
PCB-202		NotFnd	<1.5	1.5	U		100
PCB-201		NotFnd	<1.3	1.3	U		100
PCB-204		NotFnd	<1.4	1.4	U		100
PCB-197		NotFnd	<1.4	1.4	U		100
PCB-200		NotFnd	<1.4	1.4	U		100
PCB-198/199		NotFnd	<1.9	1.9	U		100
PCB-196		NotFnd	<1.9	1.9	U		100
PCB-203		NotFnd	<1.8	1.8	U		100
PCB-195		NotFnd	<1.6	1.6	U		100
PCB-194		NotFnd	<1.5	1.5	U		100
PCB-205		NotFnd	<1.4	1.4	U		100
PCB-208		NotFnd	<3.2	3.2	U		100
PCB-207		NotFnd	<3.6	3.6	U		100
PCB-206		NotFnd	<4.9	4.9	U		100
PCB-209		NotFnd	<1.0	1.0	U		100

Extraction Standards	**pg**	**Time**	**% Rec**	**Limits**	
13C12-PCB-001	4000	8.91	35	5-145	
13C12-PCB-003	4000	10.47	33	5-145	
13C12-PCB-004	4000	10.61	36	5-145	
13C12-PCB-015	4000	14.31	39	5-145	
13C12-PCB-019	4000	12.60	30	5-145	
13C12-PCB-037	4000	18.25	40	5-145	
13C12-PCB-054	4000	14.44	39	5-145	
13C12-PCB-081	4000	21.83	51	10-145	
13C12-PCB-077	4000	22.12	53	10-145	
13C12-PCB-104	4000	17.50	49	10-145	
13C12-PCB-123	4000	23.10	62	10-145	
13C12-PCB-118	4000	23.27	65	10-145	
13C12-PCB-114	4000	23.58	59	10-145	
13C12-PCB-105	4000	23.93	63	10-145	
13C12-PCB-126	4000	25.52	70	10-145	
13C12-PCB-155	4000	20.50	51	10-145	
13C12-PCB-167	4000	26.42	87	10-145	
13C12-PCB-156/157	8000	27.04	87	10-145	
13C12-PCB-169	4000	28.71	99	10-145	R
13C12-PCB-188	4000	23.50	74	10-145	
13C12-PCB-189	4000	29.99	110	10-145	
13C12-PCB-202	4000	26.27	74	10-145	
13C12-PCB-205	4000	31.37	93	10-145	
13C12-PCB-208	4000	29.71	89	10-145	
13C12-PCB-206	4000	32.44	98	10-145	
13C12-PCB-209	4000	33.57	97	10-145	

Field Spike Standards		
13C12-PCB-031	NS	
13C12-PCB-095	NS	
13C12-PCB-153	NS	

Cleanup Standards					
13C12-PCB-028	4000	15.99	41	5-145	
13C12-PCB-111	4000	22.04	63	10-145	
13C12-PCB-178	4000	25.07	83	10-145	

ALS Life Sciences

Laboratory Method Blank Analysis Report

Sample Name	**Method Blank**	Sampling Date	n/a		
ALS Sample ID	WG3389564-4	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	Sample	*S. Jin*
Analysis Type	Blank	Percent Moisture	n/a		--e-signature--
Sample Matrix	REAGENT	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A06
Run Date	09-Sep-20 16:52
Final Volume	25 ul
Dilution Factor	1
Analysis Units	pg
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**TEF (WHO 2005)**	**Ret. Time**	**Conc. pg**	**EDL pg**	**Flags**	**EMPC pg**	**LQL**
Homologue Group Totals							
Total MonoCB			<3.2	3.2	U		400
Total DiCB			37.8	12	J		800
Total TriCB			40.8	5.9	J		800
Total TetraCB			112	2.6	J		1600
Total PentaCB			84.7	2.7	J		1600
Total HexaCB			37.7	1.2	J		1600
Total HeptaCB			2.90	1.5	J		800
Total OctaCB			<1.3	1.3	U		800
Total NonaCB			<3.2	3.2	U		400
DecaCB			<1.0	1.0	U		400
Total PCB			316		J		3200
Toxic Equivalency - (WHO 2005)							
Lower Bound PCB TEQ			0.00				
Mid Point PCB TEQ			0.219				
Upper Bound PCB TEQ			0.438				

EDL	Indicates the Estimated Detection Limit, based on the measured background noise for this target in this sample.
TEF	Indicates the Toxic Equivalency Factor TEQ Indicates the Toxic Equivalency
LQL	Lower Quantification Limit, based on the lowest calibration level corrected for sample size, splits and dilutions.
M	Indicates that a peak has been manually integrated.
U	Indicates that this compound was not detected above the EDL.
J	Indicates that the analyte was positively identifed. The associated numerical result is an estimate.
R	Indicates that the ion abundance ratio for this analyte did not meet the control limit. The reported value represents an estimated concentration.
NS	Indicates that this compound was not added.
EMPC	Estimated Maximum Possible Concentration – elevated detection limit due to interference or positive id criterion failure

ALS Life Sciences

Laboratory Control Sample Analysis Report

Sample Name	**Laboratory Control Sample**	Sampling Date	n/a		
ALS Sample ID	WG3389564-2	Extraction Date	26-Aug-20		Approved:
Analysis Method	EPA 1668C	Sample Size	1	n/a	*S. Jin*
Analysis Type	LCS	Percent Moisture	n/a		--e-signature--
Sample Matrix	QC	Split Ratio	4		11-Sep-2020

Run Information	**Run 1**
Filename	5-200909A03
Run Date	09-Sep-20 14:46
Final Volume	25 ul
Dilution Factor	1
Analysis Units	% Rec
Instrument - Column	HRMS-5 SPBOctyl 251239-05

Target Analytes	**pg**	**Ret. Time**	**% Rec**	**Limits**	**Flags**
PCB-001	2000	8.91	96	60-135	
PCB-003	2000	10.44	92	60-135	
PCB-004	2000	10.59	128	60-135	
PCB-015	2000	14.29	109	60-135	
PCB-019	2000	12.58	124	60-135	
PCB-037	2000	18.23	108	60-135	
PCB-054	2000	14.43	122	60-135	
PCB-081	2000	21.81	98	60-135	
PCB-077	2000	22.11	100	60-135	
PCB-104	2000	17.49	107	60-135	
PCB-123	2000	23.09	105	60-135	
PCB-118	2000	23.26	104	60-135	
PCB-114	2000	23.56	112	60-135	
PCB-105	2000	23.91	108	60-135	
PCB-126	2000	25.51	109	60-135	
PCB-155	2000	20.49	109	60-135	
PCB-167	2000	26.40	103	60-135	
PCB-156/157	4000	27.03	105	60-135	
PCB-169	2000	28.70	106	60-135	
PCB-188	2000	23.49	106	60-135	
PCB-189	2000	29.97	99	60-135	
PCB-202	2000	26.27	117	60-135	
PCB-205	2000	31.37	99	60-135	
PCB-208	2000	29.69	94	60-135	
PCB-206	2000	32.43	90	60-135	
PCB-209	2000	33.57	114	60-135	
Extraction Standards		**Time**	**% Rec**	**Limits**	
13C12-PCB-001	4000	8.90	48	15-145	
13C12-PCB-003	4000	10.44	49	15-145	
13C12-PCB-004	4000	10.58	50	15-145	
13C12-PCB-015	4000	14.28	60	15-145	
13C12-PCB-019	4000	12.57	41	15-145	
13C12-PCB-037	4000	18.22	57	15-145	
13C12-PCB-054	4000	14.43	52	15-145	
13C12-PCB-081	4000	21.80	68	40-145	
13C12-PCB-077	4000	22.09	66	40-145	
13C12-PCB-104	4000	17.49	62	40-145	
13C12-PCB-123	4000	23.08	75	40-145	
13C12-PCB-118	4000	23.25	76	40-145	
13C12-PCB-114	4000	23.55	70	40-145	
13C12-PCB-105	4000	23.90	74	40-145	
13C12-PCB-126	4000	25.50	78	40-145	
13C12-PCB-155	4000	20.48	65	40-145	
13C12-PCB-167	4000	26.39	93	40-145	
13C12-PCB-156/157	8000	27.02	96	40-145	
13C12-PCB-169	4000	28.69	107	40-145	
13C12-PCB-188	4000	23.48	89	40-145	
13C12-PCB-189	4000	29.96	116	40-145	
13C12-PCB-202	4000	26.26	82	40-145	
13C12-PCB-205	4000	31.34	97	40-145	
13C12-PCB-208	4000	29.68	95	40-145	
13C12-PCB-206	4000	32.41	105	40-145	
13C12-PCB-209	4000	33.54	94	40-145	
Field Spike Standards					
13C12-PCB-031		NS			
13C12-PCB-095		NS			
13C12-PCB-153		NS			
Cleanup Standards					
13C12-PCB-028	4000	15.97	58	15-145	
13C12-PCB-111	4000	22.01	76	40-145	
13C12-PCB-178	4000	25.05	93	40-145	

NS Indicates that this compound was not added.

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 6: INTERNAL RECORDS

Including:

- Prep Logs
- Independent calculation checks
- Others as listed below:

8D

Extraction Workup Sheet

Batch ID:	WG3389564
	WG3389564

Analysis:	PUFS - M23/1668A (HR)

Prep Procedure: BU-TM-1110 Overall HR Prep, BU-TP-1101 8270D Prep, BU-TP-2100 PAH Prep Method

Analyst:	Saurin Patel

Date:	26-Aug-20

SUBSAMPLING

Sample I.D.	Client I.D.	Media Prep L#
WG3389564-1	Method Blank	L2472405-21
WG3389564-2	Laboratory Control Sample	L2472405-22
WG3389564-3	Extraction and Injection STD.	—
WG3389564-4	Method Blank(Reagent)	S.S
L2491640-1	SITE 1 - COMPOSITE 2 (AUGUST)	L2472405-7,-9,-12,-20
L2491640-2	SITE 2 - COMPOSITE 2 (AUGUST)	L2472405-15,-16,-10,-13
L2491640-3	SITE 3 - COMPOSITE 2 (AUGUST)	L2472405-4,-7,-2,-3
L2491640-4	SITE 4 - COMPOSITE 2 (AUGUST)	L2472405-16,-14,-5,-19
L2491640-5	SITE 5 - COMPOSITE 2 (AUGUST)	L2472405-1,-6,-8,-18

BATCH TRACKING

	Date/Time/Initials
Client Labels Checked:	26-Aug-20 SP
Media transfer to soxhlet:	SP 26-Aug-20
	—
	—
	—
Soxhlet Start Time:	26-Aug-20 SP 2:30PM
Soxhlets Reflux Properly:	SP
Soxhlet End Time:	27-Aug-20 SP 7:50AM
	—
	—
	—
	—
Rotovap Reduction + verify temp:	MM 3-Sep-2020
Extract split:	MM 3-Sep-2020
Acid Silica Column:	MM 3-Sep-2020
Solvent exchange:	8-Sep-2020 NB
Alumina Column:	8-Sep-2020 NB
Split	8-Sep-2020 NB
Carbon Col.	9-Sep-2020 KS
Micro/Robo Vial:	8-Sep-20 NB 9-Sep-2020 KS
Update to LIMS:	9-Sep-20 KS

@ see comments MM 3-Sep-2020

DXPCB STACK PREP
3-OCt-18 / MSM RS
Page 1 of 9

Batch ID:	WG3389564

DX Extraction Standard:

Sample I.D.	Volume (ul)	Spiked (Checkmark)
WG3389564-1	40	✓
WG3389564-2	40	✓
WG3389564-3	40	✓
WG3389564-4	40	✓
L2491640-1	40	✓
L2491640-2	40	✓
L2491640-3	40	✓
L2491640-4	40	✓
L2491640-5	40	✓
	40	
	40	
	40	

Syringe ID:	320
Standard:	M23-ES#2- 039B
Spike Date:	26 AUG 2020

Spike Witnessing

	Chemist's Initials / Witness's Initials
Chemist:	SP
Witness:	DB
Correct Syringe Obtained:	DB
Correct Standard Obtained:	DB
Correct Technique Followed:	DB

PCB Extraction Standard:

Sample I.D.	Volume (ul)	(Checkmark) Spiked
WG3389564-1	40	✓
WG3389564-2	40	✓
WG3389564-3	40	✓
WG3389564-4	40	✓
L2491640-1	40	✓
L2491640-2	40	✓
L2491640-3	40	✓
L2491640-4	40	✓
L2491640-5	40	✓
	40	
	40	

Syringe ID: 382

Standard: 1668A-ES#2- 063B

Spike Date: 26-AUG-2020

Spike Witnessing

Chemist: Chemist's Initials — SP

Witness: Witness's Initials — [illegible]

Correct Syringe Obtained: Witness's Initials — [illegible]

Correct Standard Obtained: Witness's Initials — [illegible]

Correct Technique Followed: Witness's Initials — [illegible]

Batch ID:	WG3389564

Batch ID:	WG3389564

V = 20 uL

DX Native Standard:

Sample I.D.	Volume (ul)	(Checkmark) Spiked
WG3389564-2	40	✓✓
WG3389564-3	40	✓✓

Syringe ID: 383

Standard: 1613B-NS#3- 028D

Date & Initials: 26 AUG 2020 SP

PCB Native Standard:

Sample I.D.	Volume (ul)	(Checkmark) Spiked
WG3389564-2	40	✓
WG3389564-3	40	✓

Syringe ID: 394

Standard: 1668A-NS#1- 038A

Date & Initials: 26-AUG-2020 SP

DX Cleanup Standard:

Sample I.D.	Volume (ul)	(Checkmark) Spiked
WG3389564-1	20	✓
WG3389564-2	20	✓
WG3389564-3	N/A	N/A
WG3389564-4	20	✓
L2491640-1	20	✓
L2491640-2	20	✓
L2491640-3	20	✓
L2491640-4	20	✓
L2491640-5	20	✓
	20	
	20	

Syringe ID: 357

Standard: M23-CL#1- 036D

Date & Initials: 3-Sep-2020 MM

	Chemist's Initials
Correct Syringe Obtained:	MM
Correct Standard Obtained:	MM
Correct Technique Followed:	MM

PCB Cleanup Standard:

Sample I.D.	Volume (ul)	(Checkmark) Spiked
WG3389564-1	20	✓
WG3389564-2	20	✓
WG3389564-3	N/A	N/A
WG3389564-4	20	✓
L2491640-1	20	✓
L2491640-2	20	✓
L2491640-3	20	✓
L2491640-4	20	✓
L2491640-5	20	✓
	20	
	20	

Syringe ID: 378

Standard: 1668A-CL#2-036I

Date & Initials: 3-Sep-2020 MM

	Chemist's Initials
Correct Syringe Obtained:	MM
Correct Standard Obtained:	MM
Correct Technique Followed:	MM

Batch ID:	WG3389564

DX Injection Standard:

Sample I.D.	Volume (ul)	Spiked (Checkmark)
WG3389564-1	10	✓
WG3389564-2	10	✓
WG3389564-3	10	✓
WG3389564-4	10	✓
L2491640-1	10	✓
L2491640-2	10	✓
L2491640-3	10	✓
L2491640-4	10	✓
L2491640-5	10	✓
	10	
	10	
	10	
	10	
	10	
	10	
	10	

Syringe ID: 392

Standard: 1613B-IS#1- 084H

Date & Initials: 9-Sep-2020 KB

	Chemist's Initials
Correct Syringe Obtained:	KB
Correct Standard Obtained:	KB
Correct Technique Followed:	KB

PCB Injection Standard:

Sample I.D.	Volume (ul)	Spiked (Checkmark)
WG3389564-1	5	✓
WG3389564-2	5	✓
WG3389564-3	5	✓
WG3389564-4	5	✓
L2491640-1	5	✓
L2491640-2	5	✓
L2491640-3	5	✓
L2491640-4	5	✓
L2491640-5	5	✓
	5	✓
	5	
	5	
	5	
	5	
	5	
	5	

Syringe ID: 365

Standard: 1668A-IS#2- 013A

Date & Initials: 8-Sep-2020 NB

	Chemist's Initials
Correct Syringe Obtained:	NB
Correct Standard Obtained:	NB
Correct Technique Followed:	NB

Batch ID:	WG3389564

Reagent Lot Numbers:

Reagent	Lot#	Manufacturer
Acetone	105484	
Hexane	105456	
DCM	105532	
Toluene	~~105532~~ 105355 Exp. 2020	
Nonane	ORG-WAKONON-055	
1:1 DCM:HEX	ORG-DH2- 145	
Sodium Sulphate	ORG-SSU- 2349, 2353	
Acid Silica	ORG-ASI- 9708	
Neutral Silica	ORG-NSI- 2378	
Alumina	ORG-ALU- 473	
1% Deactivated Silica	ORG-2%DAS- —	
Chromacarb	ORG-CC- 277	

Batch ID:	WG3389564

Procedure:

This batchsheet is a guideline only. Please see test procedure for complete set of instructions.
Extraction:
- For MB and LCS you **must** use blank media - if not available see your Team Lead
- Place the XAD in to a precleaned thimble and transfer to soxhlet body
- Spike with Extraction Standard (plus Native for LCS and ENI).
- Soxhlet extract in DCM for 16 hours
Rotovap:
- Rotovap and reduce to ~5mL.
- Transfer to a calibrated c-tube (marked at 1ml, 2ml) with 3x2ml hexane
- Mix well then quantitatively spilt the extract **1/2 DX/PCB 1/2 Archive**

Batch ID:	WG3389564

DX/PCB:
- Perform Acid Silica column
`- Solvent Exchange (reduce to **~50ul**, bulk back up to 1ml Hexane, vortex well.
`- Perform Alumina Column:
- Pre-elute the Alumina Column with 7ml Hexane
- Place F1 c-tube under the column, then load the sample with 3x1ml Hexane rinses
- F1 (Archive) 1mL Hexane
- F2 (DX/PCB) 14mL 1:1 DCM:Hexane
-Split Alumina F2 1/2 PCB 1/2 DX
Micro-Vial:
PCB:
- Blow down to ~1/2ml
- Vortex **very** well.
- Transfer every last drop to a micro-vial (Marked at 20uL with nonane).
- Blow down to the line
- Spike PCB Injection Standard, cap and vortex. **FV=25ul**

DX:
- Solvent Exchange to Hexane (Reduce to Just Dry then bulk back up to 1ml Hexane)
- ChromaCarb: - 4cm of well-packed chroma-carb.
- Pre-elute Carbon with 5ml Hexane
- Transfer with 3x1ml Hexane
- F1 = **10ml** 1:1 DCM:Hexane (Archive)
- After dripping has stopped Invert Column.
- F2 = 14ml Toluene (DX and PCB)
- After the column has stopped dripping reduce the **F2** portion down to ~1/2ml.
- Vortex well, then transfer to a micro-vial without rinses.
- Blow the micro-vial down to just-dry.
- Spike with Injection Standard, Cap the micro-vial, and Vortex. **FV=10ul**

Batch ID:	WG3389564

Comments:

NOTE: Label and Save All Columns including Acid Silica Columns
W2 → water present in flask (~2mL) Roto-vapped down to ~5mL. Put water in separate
c-tube, Rinsed x3 w/ 1mL Hexane. Transferred to W2 c-tube and combined. 3-Sep-2020 MM
↳ Water portion is archived in cupboard, under roto-vaps. 3-Sep-2020 MM

Approval of Deviation from Standard Method

(Batch Writer): _____

☐ Procedure does deviate from Standard Method. **Approved (Supervisor/Manager):** _____

WG3389564			Prep Analyst:		
PUFS - M23/1668A (HR)			Date:		
	Very Good	Meets Method Req	Some Outliers	Very Poor	Comments / Was spl/batch sent for rework? Why?
MB					
LCS					
DUP					
ES rec					

ALS Life Sciences

Sample Calculation Report

Approved: *S. Jin* --e-signature-- 11-Sep-2020

CS3 RRF Check

$$RRF = \frac{\text{Response of PCB-118}}{\text{Response of 13C12-PCB-118}} \times \frac{\text{Concentration of 13C12-PCB-118}}{\text{Concentration of PCB-118}}$$

							Calculated Value	Value from TargetLynx
RRF	**=**	**792506.10** / **1585710.30**	**x**	**100** / **50**		**=**	**1.000**	**1.000**

Calculation of PCB-118 amount in L2491640-4

$$pg = \frac{\text{Response of PCB-118}}{\text{Response of 13C12-PCB-118}} \times \frac{\text{pg of 13C12-PCB-118 spiked}}{\text{Mean RRF} * \text{Sample Size}}$$

pg	**=**	**675333** / **116729**	**x**	**4000** / **1.03**	*****	**1.00**	**=**	**22400**	**22400**

Calculation of 13C12-PCB-118 Recovery in L2491640-4

$$\%\ Recovery = \frac{\text{Response of 13C12-PCB-118}}{\text{Response of 13C12-PCB-101}} \times \frac{\text{pg of 13C12-PCB-101 spiked} * 100}{\text{Mean RRF} * \text{pg 13C12-PCB-118 Spiked}}$$

% Recovery	**=**	**116729** / **348998.1**	**x**	**8000** / **1.48**	*****	**100** / **4000**	**=**	**45**	**45**	**%**

1435 Norjohn Court, Unit 1, Burlington, ON, Canada L7L 0E6

SVOC DATA PACKAGE

SECTION 7: SHIPPING/RECEIVING DOCUMENTS

Including:

- Airbills
- Chain-of-Custody Records
- Sample Log-in Sheet(s) - where applicable
- Others as listed below:

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2482298-COFC

COC Number: 17 - 792164

Page of

Composite WO: L2491640

Report To	Contact and company name below will appear on the final report
Company:	Farallon Consulting LLC
Contact:	Amber Bailey
Phone:	206-910-4320
	Company address below will appear on the final report
Street:	975 5th Ave NW
City/Province:	Issaquah, WA
Postal Code:	98059
Invoice To	Same as Report To [X] YES [ ] NO
	Copy of Invoice with Report [X] YES [ ] NO
Company:	
Contact:	

Report Format / Distribution

Select Report Format: [X] PDF [X] EXCEL [ ] EDD (DIGITAL)

Quality Control (QC) Report with Report [ ] YES [ ] NO

[ ] Compare Results to Criteria on Report - provide details below if box checked

Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax abailey@farallonconsulting.com

Email 2

Email 3

Invoice Distribution

Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX

Email 1 or Fax AP@farallonconsulting.com

Email 2 abailey@farallonconsulting.com

Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)

Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply

PRIORITY (Business Days): 4 day [P4-20%] [ ] | 3 day [P3-25%] [ ] | 2 day [P2-50%] [ ]

EMERGENCY: 1 Business day [E - 100%] [ ] | Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm

For tests that can not be performed according to the service level selected, you will be contacted.

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only): | **ALS Contact:** | **Sampler:**

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	PCBs EPA Method 1668C	Dioxins EPA Method 8290A	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	LZ472405-12-1	7/29/20	0831	Air	1	X	X		
2	LZ472405-11-2		0852		1	X	X		
3	LZ472405-4-3		0919		1	X	X		
4	LZ472405-19-4		0931		1	X	X		
5	LZ472405-1-5		0941		1	X	X		

MA

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? [ ] YES [ ] NO

Are samples for human consumption/ use? [ ] YES [ ] NO

Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)

Please hold samples for monthly composite.

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen [ ] | SIF Observations Yes [ ] No [X]

Ice Packs [X] Ice Cubes [ ] | Custody seal intact Yes [X] No [ ]

Cooling Initiated [X]

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
8.1°C							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	7/29/2020	1530		31-July-2020	11:20			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental
www.alsglobal.com
Canada Toll Free: 1 800 668 9878

L2485375-COFC

COC Number: 17 - 792149

Page 1 of 1

Composite WO: L2491640

Report To	Contact and company name below will appear on the final report	Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Farallon Consulting LLC	Select Report Format:	[X] PDF [X] EXCEL [ ] EDD (DIGITAL)	Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Amber Bailey	Quality Control (QC) Report with Report	[ ] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ] / 3 day [P3-25%] [ ] / 2 day [P2-50%] [ ]
Phone:	206-910-4320	[ ] Compare Results to Criteria on Report - provide details below if box checked		EMERGENCY: 1 Business day [E - 100%] [ ] / Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution:	[X] EMAIL [ ] MAIL [ ] FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:	975 5th Ave NW	Email 1 or Fax	abailey@farallonconsulting.com	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:	Issaquah, WA	Email 2		
Postal Code:	98059	Email 3		
Invoice To	Same as Report To [X] YES [ ] NO	**Invoice Distribution**		
	Copy of Invoice with Report [X] YES [ ] NO	Select Invoice Distribution:	[X] EMAIL [ ] MAIL [ ] FAX	
Company:		Email 1 or Fax	AP@farallonconsulting.com	
Contact:		Email 2	abailey@farallonconsulting.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#:
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):	ALS Contact:	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	PCB's EPA Method 1668B	Dioxins EPA Method 8290A	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	L2472405-20-1	8/4/20	1028	Air	1	X	X		
2	L2472405-13-2	"	1001	"	1	X	X		
3	L2472405-2-3	"	0939	"	1	X	X		
4	L2472405-5-4	"	0926	"	1	X	X		
5	L2472405-16-5	"	0917	"	1	X	X		

MA

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	Please hold samples for monthly composite
Are samples for human consumption/ use? [ ] YES [ ] NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	[ ]	SIF Observations	Yes [ ]	No	[X]
Ice Packs	[X]	Ice Cubes [ ]	Custody seal intact	Yes [X]	No [ ]
Cooling Initiated	[X]				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
15.8°C							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
Mda Cla	8/4/20	1153	AARON BURTON	7-Aug-2020	11:40			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY — JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**

ALS Environmental
www.alsglobal.com

Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878

L2488764-COFC

COC Number: 17 - 792150

Page 1 of 1

Composite WO: L2491640

Report To	Contact and company name below will appear on the final report	Report Format / Distribution	Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)
Company:	Faralon Consulting	Select Report Format: [X] PDF [X] EXCEL [ ] EDD (DIGITAL)	Regular [R] [X] Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Amber Bailey	Quality Control (QC) Report with Report [ ] YES [ ] NO	PRIORITY (Business Days): 4 day [P4-20%] [ ]; 3 day [P3-25%] [ ]; 2 day [P2-50%] [ ]
Phone:	206-910-4320	[ ] Compare Results to Criteria on Report - provide details below if box checked	EMERGENCY: 1 Business day [E - 100%] [ ]; Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] [ ]
	Company address below will appear on the final report	Select Distribution: [X] EMAIL [ ] MAIL [ ] FAX	Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm
Street:	975 5th Ave NW	Email 1 or Fax abailey@faralonconsulting.com	For tests that can not be performed according to the service level selected, you will be contacted.
City/Province:	Issaquah, WA	Email 2	
Postal Code:	98059	Email 3	
Invoice To	Same as Report To [X] YES [ ] NO	**Invoice Distribution**	
	Copy of Invoice with Report [X] YES [ ] NO	Select Invoice Distribution: [X] EMAIL [ ] MAIL [ ] FAX	
Company:		Email 1 or Fax ape@faralonconsulting.com	
Contact:		Email 2 abailey@faralonconsulting.com	

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	

ALS Lab Work Order # (lab use only):	ALS Contact:	Sampler:

Analysis Request — Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	PCBs EPA Method 1668A	Dioxins EPA Method 8290A	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	L2472405-17-1	8/11/20	0901	Air					
2	L2472405-10-2	"	0933	"					
3	L2472405-7-3	"	1001	"					
4	L2472405-16-4	"	1035	"					
5	L2472405-8-5	"	1050	"					

N/A

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? [ ] YES [ ] NO	Please composite all 4 sets of samples from previous weeks
Are samples for human consumption/ use? [ ] YES [ ] NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen	[ ]	SIF Observations	Yes [ ]	No	[X]
Ice Packs	[X] Ice Cubes [ ]	Custody seal intact	Yes [X]	No	[ ]
Cooling Initiated	[X]				

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
25.1°C							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
[illegible]	8/11/20	1217	TARA BARTON	14-Aug-2020	10:40			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION — WHITE - LABORATORY COPY — YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Chain of Custody (COC) / Analytical Request Form

ALS Environmental

www.alsglobal.com

Canada Toll Free: 1 800 668 9878

L2491634-COFC

COC Number: 17 - 792151

Page of

Composite WO: L2491640

Report To	Contact and company name below will appear on the final report	Report Format / Distribution		Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)	
Company:	Farallon Consulting	Select Report Format:	PDF ☒ EXCEL ☐ EDD (DIGITAL)	Regular [R] ☒	Standard TAT if received by 3 pm - business days - no surcharges apply
Contact:	Amber Bailey	Quality Control (QC) Report with Report	YES ☐ NO	PRIORITY (Business Days) 4 day [P4-20%] ☐	EMERGENCY 1 Business day [E - 100%] ☐
Phone:	206 735 6178	☐ Compare Results to Criteria on Report - provide details below if box checked		3 day [P3-25%] ☐	Same Day, Weekend or Statutory holiday [E2 -200% (Laboratory opening fees may apply)] ☐
	Company address below will appear on the final report	Select Distribution:	EMAIL ☒ MAIL ☐ FAX	2 day [P2-50%] ☐	
Street:	975 5th AVE NW	Email 1 or Fax	abailey@farallonconsulting.com	Date and Time Required for all E&P TATs:	dd-mmm-yy hh:mm
City/Province:	Issaquah WA	Email 2		For tests that can not be performed according to the service level selected, you will be contacted.	
Postal Code:	98059	Email 3			

Invoice To		Invoice Distribution	
	Same as Report To ☒ YES ☐ NO	Select Invoice Distribution:	EMAIL ☒ MAIL ☐ FAX
	Copy of Invoice with Report ☒ YES ☐ NO	Email 1 or Fax	AP@farallonconsulting.com
Company:		Email 2	
Contact:			

Project Information		Oil and Gas Required Fields (client use)	
ALS Account # / Quote #:		AFE/Cost Center:	PO#
Job #:		Major/Minor Code:	Routing Code:
PO / AFE:		Requisitioner:	
LSD:		Location:	
ALS Lab Work Order # (lab use only):		ALS Contact:	Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	PCBs EPA method 1668	Dioxins EPA method 8290A	SAMPLES ON HOLD	SUSPECTED HAZARD (see Special Instructions)
1	L2472405-9-1	8/18/20	1047	Air	2	X	X	X	
2	L2472405-15-2		1116		2	X	X	X	
3	L2472405-3-3		1143		2	X	X	X	
4	L2472405-14-4		1152		2	X	X	X	
5	L2472405-18-5		1201		2	X	X	X	

Drinking Water (DW) Samples[1] (client use)	Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)
Are samples taken from a Regulated DW System? ☐ YES ☐ NO	Please hold samples for monthly composite.
Are samples for human consumption/ use? ☐ YES ☐ NO	

SAMPLE CONDITION AS RECEIVED (lab use only)

Frozen ☐	SIF Observations Yes ☐ No ☐	Ice Packs ☒	Ice Cubes ☐	Custody seal intact Yes ☐ No ☐	Cooling Initiated ☒

INITIAL COOLER TEMPERATURES °C				FINAL COOLER TEMPERATURES °C			
5.2°C							

SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)		
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:	Date:	Time:
	8/18/20	1330	ARRAN BURTON	19-Aug-2020	14:45			

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

JUNE 2018 FRONT

1. If any water samples are taken from a **Regulated Drinking Water (DW) System**, please submit using an **Authorized DW COC form**.

Sample Receiving Log

Date/Time Received	Client ID	Number/Description of Containers	Temp. on Receipt*	Condition of Samples, Courier & Tracking Information	Receiver's Initials	Date/Time Login Completed	Submission ID	Sample ID Range
31-July-2020 11:20	FARALLON Consulting	5 x PUFs	8.1°C	Good FedEx 7910 [illegible] 1531	NJ	31-July-2020 11:50	L2482298	-1-5

*Temperatures were recorded using:

☑ VWR Traceable dedicated I.R. gun (model 36934-178 SN 192108143)

☐ Other (specify): _____

Sample Receiving Log

Date/Time Received	Client ID	Number/Description of Containers	Temp. on Receipt*	Condition of Samples, Courier & Tracking Information	Receiver's Initials	Date/Time Login Completed	Submission ID	Sample ID Range
7-Aug-2020 11:40	FARALLON	5 x PUFs	15.8°C	Good Fedex 7910 6540 9775	MJ	7-Aug 2020 13:45	L2485375	-1-5

*Temperatures were recorded using :

☑ VWR Traceable dedicated I.R. gun (model 36934-178 SN 192108143)

☐ Other (specify): _____

BU-FM-0261c v03 Sample Receiving Log

Date Issued: 18-Jul-2019

Page: 1742

Sample Receiving Log

Date/Time Received	Client ID	Number/Description of Containers	Temp. on Receipt*	Condition of Samples, Courier & Tracking Information	Receiver's Initials	Date/Time Login Completed	Submission ID	Sample ID Range
14-Aug-2020 10:40	FARALLON	5 x PUFs	25.1°C	Good FedEx 791068174265	NG	14-Aug-2020 11:45	L2488764	-1-5

*Temperatures were recorded using :

☑ VWR Traceable dedicated I.R. gun (model 36934-178 SN 192108143)

☐ Other (specify): _____

Sample Receiving Log

Date/Time Received	Client ID	Number/Description of Containers	Temp. on Receipt*	Condition of Samples, Courier & Tracking Information	Receiver's Initials	Date/Time Login Completed	Submission ID	Sample ID Range
[redacted]								
19-Aug-2020 14:45	FARALLON	5 x PUFs	5.2°C	Good FedEx 7712 2337 8758	MG	20-Aug-2020 12:00	L2491634	1-5

*Temperatures were recorded using :

☑ VWR Traceable dedicated I.R. gun (model 36934-178 SN 192108143)

☐ Other (specify): _____

BU-FM-0261c v03 Sample Receiving Log

Date issued 18-Jul-2019

Page: 1755