

**SGS**

**AXYS**

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SGS AXYS Client No.: 4972

Client Address: AECOM  
1111 Third Avenue, Suite 1600  
Seattle, WA, US, 98101

The SGS AXYS contact for these data is Sean Campbell.

# BATCH SUMMARY

<b>Batch ID:</b> WG65436	<b>Date:</b> 08-Nov-2018
<b>Analysis Type:</b> Polybrominated Diphenylether	<b>Matrix Type:</b> Tissue
<b>BATCH MAKEUP</b>	
<b>Contract:</b> 4972 <b>Samples:</b>  L30097-13 PDI-TF-SMB064 L30097-14 PDI-TF-SMB013 L30097-15 PDI-TF-SMB061 L30097-16 PDI-TF-SMB004	<b>Blank:</b> WG65436-101  <b>Reference or Spike:</b> WG65436-102  <b>Duplicate:</b> WG65436-103
<p><b>Comments:</b>  <b>Resubmission on 20-Nov-2018:</b> The results for the PCB co-elutions were not reported properly in the previous database submission. This has been corrected and the data is re-submitted. None of the other information has been changed.</p> <ol style="list-style-type: none"> <li>1. Data are considered final.</li> <li>2. Data are not blank corrected. Blank data should be taken into consideration when evaluating sample data.</li> <li>3. Blank data should be evaluated against specifications using the same blank sample size as the size of the client samples.</li> <li>4. The recoveries of <sup>13</sup>C-BDE-153, <sup>13</sup>C-BDE-154 quantification standards and/or <sup>13</sup>C-BDE-139 clean up standard in some samples did not meet the method criteria; these compounds are flagged with a 'V'. As the isotope dilution/internal standard method of quantification produces data that are recovery corrected, the slight variances from the method acceptance criteria are deemed not to affect the quantification of these analytes. Percent surrogate recoveries are used as general method performance indicator only.</li> </ol>	

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February 2017

FQA-006 Rev. 4. 20-Sep-2013

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB064  
Sample Collection:  
11-Sep-2018 09:59

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-13
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.3 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	23-Oct-2018 Time: 15:53:12	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	100	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_246 S: 8
<b>Dilution Factor:</b>	N/A	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1
		<b>% Lipid:</b>	6.19

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		U		1.61 (S)		
2,4'-DiBDE	8	8 + 11	C J	4.87	1.21 (S)	0.55	0.956
2,6-DiBDE	10		U		1.68 (S)		
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C K	41.1	1.08 (S)	1.52	0.970
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15			19.0	0.874 (S)	0.49	1.000
2,2',4-TriBDE	17	17 + 25	C K	185	3.60 (S)	1.01	0.972
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C	429	3.16 (S)	1.02	1.000
2,4,6-TriBDE	30		U		3.70 (S)		
2,4',6-TriBDE	32		U		2.97 (S)		
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		K J	7.95	2.59 (S)	0.59	1.018
3,4,4'-TriBDE	37		J	11.5	2.47 (S)	0.89	1.038
2,2',4,4'-TeBDE	47			19300	0.145 (Q)	0.69	1.000
2,2',4,5'-TeBDE	49			1230	0.145 (Q)	0.69	0.975
2,2',4,6'-TeBDE	51			49.8	0.145 (Q)	0.64	0.966
2,3',4,4'-TeBDE	66			200	0.145 (Q)	0.71	1.021
2,3',4',6-TeBDE	71			39.4	0.145 (Q)	0.73	0.980
2,4,4',6-TeBDE	75			28.8	0.145 (Q)	0.60	0.962
3,3',4,4'-TeBDE	77		U		0.145 (Q)		
3,3',4,5'-TeBDE	79		K	31.2	0.145 (Q)	0.84	1.014
2,2',3,4,4'-PeBDE	85		U		3.33 (S)		
2,2',4,4',5-PeBDE	99			3450	1.95 (S)	1.03	1.000
2,2',4,4',6-PeBDE	100			4050	1.37 (S)	1.03	1.000
2,3,3',4,4'-PeBDE	105		U		4.10 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		U		5.54 (S)		
2,3',4',4',6-PeBDE	119	119 + 120	C	75.1	3.54 (S)	1.07	1.012
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		J	12.3	2.65 (S)	1.07	0.999
2,2',3,3',4,4'-HxBDE	128		K J	4.07	0.483 (S)	0.44	1.089
2,2',3,4,4',5'-HxBDE	138	138 + 166	C J	0.932	0.145 (Q)	0.72	1.043
2,2',3,4,4',6'-HxBDE	140		J	7.16	0.145 (Q)	0.86	1.021
2,2',4,4',5,5'-HxBDE	153			730	0.145 (Q)	0.78	1.000
2,2',4,4',5,6'-HxBDE	154			861	0.145 (Q)	0.76	1.001
2,2',4,4',6,6'-HxBDE	155			140	0.145 (Q)	0.78	0.981
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		K J	0.817	0.145 (Q)	1.74	1.046
2,2',3,4,4',5',6-HpBDE	183		J	6.28	0.145 (Q)	0.92	1.000
2,3,3',4,4',5,6-HpBDE	190		J	0.225	0.145 (Q)	1.15	1.053
2,2',3,4,4',5,5',6-OcBDE	203		K J	1.55	0.145 (Q)	0.55	1.012
2,2',3,3',4,4',5,5',6-NoBDE	206		K J	0.811	0.305 (S)	1.48	1.115
2,2',3,3',4,4',5,6,6'-NoBDE	207		K J	3.07	0.293 (S)	0.41	1.099
2,2',3,3',4,5,5',6,6'-NoBDE	208		K J	2.88	0.344 (S)	14.3	1.091
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		K J	45.2	12.6 (S)	0.66	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16141A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_1614LS\_L30097-13\_Form1A\_BE81\_246S8\_SJ2455662.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 2

## CLIENT SAMPLE NO.

PDI-TF-SMB064

Sample Collection:

11-Sep-2018 09:59

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
 Matrix: TISSUE  
 Sample Receipt Date: 20-Sep-2018  
 Extraction Date: 09-Oct-2018  
 Analysis Date: 23-Oct-2018 Time: 15:53:12  
 Extract Volume (uL): 100  
 Injection Volume (uL): 1.0  
 Dilution Factor: N/A  
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
 BASELINE TISSUE  
 Lab Sample I.D.: L30097-13  
 Sample Size: 10.3 g (wet)  
 Initial Calibration Date: 01-Aug-2018  
 Instrument ID: HR GC/MS  
 GC Column ID: DB5HT  
 Sample Data Filename: BE81\_246 S: 8  
 Blank Data Filename: BE81\_246 S: 5  
 Cal. Ver. Data Filename: BE81\_246 S: 1  
 % Lipid: 6.19

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 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L			2000	843	42.1	0.53	0.666
13C12-2,4,4'-TriBDE	28L			2000	1650	82.7	1.00	0.831
13C12-2,2',4,4'-TeBDE	47L			2000	2060	103	1.59	0.987
13C12-3,3',4,4'-TeBDE	77L			2000	1720	86.0	1.60	1.041
13C12-2,2',4,4',5-PeBDE	99L			2000	1810	90.7	1.07	1.132
13C12-2,2',4,4',6-PeBDE	100L			2000	1900	94.9	1.06	1.099
13C12-3,3',4,4',5-PeBDE	126L			2000	1530	76.4	1.07	1.198
13C12-2,2',4,4',5,5'-HxBDE	153L			2000	2470	124	1.39	0.881
13C12-2,2',4,4',5,6'-HxBDE	154L			2000	2970	148	1.43	0.850
13C12-2,2',3,4,4',5,6-HpBDE	183L			2000	1730	86.6	1.11	0.966
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			2000	1340	67.2	0.82	1.063
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			20000	7870	39.3	1.32	1.081
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L			2000	2530	126	1.43	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB013  
Sample Collection:  
10-Sep-2018 10:55

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-14
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.7 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	23-Oct-2018 Time: 16:51:35	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	100	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_246 S: 9
<b>Dilution Factor:</b>	N/A	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1
		<b>% Lipid:</b>	4.30

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This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		J	4.49	0.780 (S)	0.51	0.926
2,4'-DiBDE	8	8 + 11	C K J	5.41	0.588 (S)	0.40	0.958
2,6-DiBDE	10		U		0.813 (S)		
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C K	18.6	0.522 (S)	1.41	0.971
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15			16.6	0.424 (S)	0.47	1.000
2,2',4-TriBDE	17	17 + 25	C K	175	2.21 (S)	1.02	0.973
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C	477	1.94 (S)	1.01	1.001
2,4,6-TriBDE	30		U		2.27 (S)		
2,4',6-TriBDE	32		U		1.82 (S)		
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		K J	9.69	1.59 (S)	0.57	1.019
3,4,4'-TriBDE	37		J	11.6	1.52 (S)	0.89	1.040
2,2',4,4'-TeBDE	47		E				
2,2',4,5'-TeBDE	49			1270	0.136 (Q)	0.70	0.975
2,2',4,6'-TeBDE	51			53.0	0.136 (Q)	0.68	0.967
2,3',4,4'-TeBDE	66			331	0.136 (Q)	0.70	1.022
2,3',4',6'-TeBDE	71			43.4	0.136 (Q)	0.80	0.980
2,4,4',6'-TeBDE	75			30.8	0.136 (Q)	0.70	0.962
3,3',4,4'-TeBDE	77		U		0.136 (Q)		
3,3',4,5'-TeBDE	79		K	28.5	0.136 (Q)	0.82	1.014
2,2',3,4,4'-PeBDE	85		U		3.99 (S)		
2,2',4,4',5'-PeBDE	99			7040	2.18 (S)	1.02	1.000
2,2',4,4',6'-PeBDE	100			4560	1.64 (S)	1.02	1.000
2,3,3',4,4'-PeBDE	105		U		4.91 (S)		

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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		U		6.64 (S)		
2,3',4',4',6-PeBDE	119	119 + 120	C	117	4.24 (S)	1.07	1.011
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		J	12.2	3.51 (S)	1.03	0.999
2,2',3,3',4,4'-HxBDE	128		K J	4.40	0.831 (S)	1.08	1.089
2,2',3,4,4',5'-HxBDE	138	138 + 166	C J	1.46	0.136 (Q)	0.88	1.045
2,2',3,4,4',6'-HxBDE	140			19.1	0.136 (Q)	0.73	1.021
2,2',4,4',5,5'-HxBDE	153			1420	0.136 (Q)	0.78	1.000
2,2',4,4',5,6'-HxBDE	154			1290	0.136 (Q)	0.76	1.001
2,2',4,4',6,6'-HxBDE	155			114	0.136 (Q)	0.76	0.981
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		U		0.136 (Q)		
2,2',3,4,4',5,6-HpBDE	183		K J	8.38	0.136 (Q)	1.58	1.000
2,3,3',4,4',5,6-HpBDE	190		K J	0.248	0.136 (Q)	2.05	1.053
2,2',3,4,4',5,5',6-OcBDE	203		K J	1.11	0.136 (Q)	0.33	1.012
2,2',3,3',4,4',5,5',6-NoBDE	206		K J	0.818	0.182 (S)	1.54	1.115
2,2',3,3',4,4',5,6,6'-NoBDE	207		K J	2.72	0.174 (S)	7.01	1.099
2,2',3,3',4,5,5',6,6'-NoBDE	208		K J	3.12	0.205 (S)	0.64	1.091
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		K J	16.2	6.15 (S)	0.64	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; E = exceeds calibrated linear range, see dilution data.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

## Form 2

## CLIENT SAMPLE NO.

PDI-TF-SMB013

Sample Collection:

10-Sep-2018 10:55

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
 Matrix: TISSUE  
 Sample Receipt Date: 20-Sep-2018  
 Extraction Date: 09-Oct-2018  
 Analysis Date: 23-Oct-2018 Time: 16:51:35  
 Extract Volume (uL): 100  
 Injection Volume (uL): 1.0  
 Dilution Factor: N/A  
 Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
 BASELINE TISSUE  
 Lab Sample I.D.: L30097-14  
 Sample Size: 10.7 g (wet)  
 Initial Calibration Date: 01-Aug-2018  
 Instrument ID: HR GC/MS  
 GC Column ID: DB5HT  
 Sample Data Filename: BE81\_246 S: 9  
 Blank Data Filename: BE81\_246 S: 5  
 Cal. Ver. Data Filename: BE81\_246 S: 1  
 % Lipid: 4.30

This page is part of a total report that contains information necessary for accreditation compliance.  
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L			2000	1040	51.8	0.53	0.666
13C12-2,4,4'-TriBDE	28L			2000	1960	98.1	1.06	0.831
13C12-2,2',4,4'-TeBDE	47L			2000	2830	142	1.54	0.987
13C12-3,3',4,4'-TeBDE	77L			2000	2120	106	1.52	1.041
13C12-2,2',4,4',5-PeBDE	99L			2000	2640	132	1.08	1.132
13C12-2,2',4,4',6-PeBDE	100L			2000	2490	125	1.02	1.100
13C12-3,3',4,4',5-PeBDE	126L			2000	1770	88.6	1.05	1.199
13C12-2,2',4,4',5,5'-HxBDE	153L		V	2000	3110	155	1.33	0.881
13C12-2,2',4,4',5,6'-HxBDE	154L		V	2000	3460	173	1.35	0.851
13C12-2,2',3,4,4',5,6'-HpBDE	183L			2000	1970	98.6	1.08	0.966
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			2000	1530	76.7	0.93	1.063
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			20000	10400	51.9	1.14	1.082
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L		V	2000	2950	147	1.37	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_



SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB013  
Sample Collection:  
10-Sep-2018 10:55

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-14 W
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.7 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	01-Nov-2018 Time: 18:16:50	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	300	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_259 S: 4
<b>Dilution Factor:</b>	3	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_259 S: 1
		<b>% Lipid:</b>	4.30

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		X				
2,4'-DiBDE	8	8 + 11	C X				
2,6-DiBDE	10		X				
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C X				
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15		X				
2,2',4-TriBDE	17	17 + 25	C X				
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C X				
2,4,6-TriBDE	30		X				
2,4',6-TriBDE	32		X				
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		X				
3,4,4'-TriBDE	37		X				
2,2',4,4'-TeBDE	47		D	23400	0.136 (Q)	0.69	1.001
2,2',4,5'-TeBDE	49		X				
2,2',4,6'-TeBDE	51		X				
2,3',4,4'-TeBDE	66		X				
2,3',4',6'-TeBDE	71		X				
2,4,4',6'-TeBDE	75		X				
3,3',4,4'-TeBDE	77		X				
3,3',4,5'-TeBDE	79		X				
2,2',3,4,4'-PeBDE	85		X				
2,2',4,4',5'-PeBDE	99		X				
2,2',4,4',6'-PeBDE	100		X				
2,3,3',4,4'-PeBDE	105		X				

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		X				
2,3',4,4',6-PeBDE	119	119 + 120	C X				
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		X				
2,2',3,3',4,4'-HxBDE	128		X				
2,2',3,4,4',5'-HxBDE	138	138 + 166	C X				
2,2',3,4,4',6'-HxBDE	140		X				
2,2',4,4',5,5'-HxBDE	153		X				
2,2',4,4',5,6'-HxBDE	154		X				
2,2',4,4',6,6'-HxBDE	155		X				
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		X				
2,2',3,4,4',5',6-HpBDE	183		X				
2,3,3',4,4',5,6-HpBDE	190		X				
2,2',3,4,4',5,5',6-OcBDE	203		X				
2,2',3,3',4,4',5,5',6-NoBDE	206		X				
2,2',3,3',4,4',5,6,6'-NoBDE	207		X				
2,2',3,3',4,5,5',6,6'-NoBDE	208		X				
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		X				

- (1) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.  
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16141A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51;  
Report Filename: 1614\_PBDPE\_1614LS\_L30097-14\_Form1A\_BE81\_259S4\_SJ2459163.html; Workgroup: WG65436; Design ID: 3362 ]

SGS AXYS METHOD MLA-033 Rev 06

Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB013  
Sample Collection:  
10-Sep-2018 10:55

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
Matrix: TISSUE  
Sample Receipt Date: 20-Sep-2018  
Extraction Date: 09-Oct-2018  
Analysis Date: 01-Nov-2018 Time: 18:16:50  
Extract Volume (uL): 300  
Injection Volume (uL): 1.0  
Dilution Factor: 3  
Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
BASELINE TISSUE  
Lab Sample I.D.: L30097-14 W  
Sample Size: 10.7 g (wet)  
Initial Calibration Date: 01-Aug-2018  
Instrument ID: HR GC/MS  
GC Column ID: DB5HT  
Sample Data Filename: BE81\_259 S: 4  
Blank Data Filename: BE81\_246 S: 5  
Cal. Ver. Data Filename: BE81\_259 S: 1  
% Lipid: 4.30

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L		X					
13C12-2,4,4'-TriBDE	28L		X					
13C12-2,2',4,4'-TeBDE	47L		D	2000	2640	132	1.62	0.986
13C12-3,3',4,4'-TeBDE	77L		X					
13C12-2,2',4,4',5-PeBDE	99L		X					
13C12-2,2',4,4',6-PeBDE	100L		X					
13C12-3,3',4,4',5-PeBDE	126L		X					
13C12-2,2',4,4',5,5'-HxBDE	153L		X					
13C12-2,2',4,4',5,6'-HxBDE	154L		X					
13C12-2,2',3,4,4',5,6'-HpBDE	183L		X					
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L		X					
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB061  
Sample Collection:  
11-Sep-2018 12:10

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-15
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.3 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	23-Oct-2018 Time: 17:50:00	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	100	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_246 S: 10
<b>Dilution Factor:</b>	N/A	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1
		<b>% Lipid:</b>	4.42

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		K J	5.53	0.788 (S)	0.62	0.927
2,4'-DiBDE	8	8 + 11	C K J	4.88	0.594 (S)	0.38	0.957
2,6-DiBDE	10		U		0.822 (S)		
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C K	35.7	0.528 (S)	1.50	0.971
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15			16.8	0.429 (S)	0.49	1.001
2,2',4-TriBDE	17	17 + 25	C K	156	2.17 (S)	0.99	0.973
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C	555	1.90 (S)	1.03	1.001
2,4,6-TriBDE	30		U		2.23 (S)		
2,4',6-TriBDE	32		U		1.79 (S)		
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		K J	8.42	1.56 (S)	0.78	1.018
3,4,4'-TriBDE	37		J	10.7	1.49 (S)	1.17	1.039
2,2',4,4'-TeBDE	47		E				
2,2',4,5'-TeBDE	49			967	0.142 (Q)	0.69	0.975
2,2',4,6'-TeBDE	51			49.4	0.142 (Q)	0.72	0.966
2,3',4,4'-TeBDE	66			390	0.142 (Q)	0.72	1.021
2,3',4',6'-TeBDE	71			34.9	0.142 (Q)	0.66	0.980
2,4,4',6'-TeBDE	75			26.5	0.142 (Q)	0.70	0.962
3,3',4,4'-TeBDE	77		U		0.142 (Q)		
3,3',4,5'-TeBDE	79		K	32.1	0.142 (Q)	0.75	1.014
2,2',3,4,4'-PeBDE	85		U		3.33 (S)		
2,2',4,4',5'-PeBDE	99			5830	1.83 (S)	1.03	1.000
2,2',4,4',6'-PeBDE	100			3950	1.35 (S)	1.02	1.000
2,3,3',4,4'-PeBDE	105		U		4.10 (S)		

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		U		5.54 (S)		
2,3',4',4',6-PeBDE	119	119 + 120	C	105	3.54 (S)	1.05	1.011
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4',4',5-PeBDE	126		K J	8.60	2.94 (S)	0.80	0.999
2,2',3,3',4,4'-HxBDE	128		K J	6.43	1.40 (S)	0.77	1.089
2,2',3,4,4',5'-HxBDE	138	138 + 166	C K J	0.639	0.142 (Q)	0.56	1.044
2,2',3,4,4',6'-HxBDE	140		J	12.0	0.142 (Q)	0.83	1.021
2,2',4,4',5,5'-HxBDE	153			1190	0.142 (Q)	0.77	1.000
2,2',4,4',5,6'-HxBDE	154			899	0.142 (Q)	0.79	1.001
2,2',4,4',6,6'-HxBDE	155			90.0	0.142 (Q)	0.77	0.981
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		K J	0.370	0.142 (Q)	3.12	1.046
2,2',3,4,4',5,6-HpBDE	183		J	10.8	0.142 (Q)	0.98	1.000
2,3,3',4,4',5,6-HpBDE	190		K J	0.546	0.142 (Q)	2.61	1.052
2,2',3,4,4',5,5',6-OcBDE	203		K J	2.96	0.142 (Q)	1.13	1.012
2,2',3,3',4,4',5,5',6-NoBDE	206		K J	5.89	0.250 (S)	1.50	1.115
2,2',3,3',4,4',5,6,6'-NoBDE	207		K	17.8	0.240 (S)	0.52	1.099
2,2',3,3',4,5,5',6,6'-NoBDE	208		J MAX	13.7	0.282 (S)	1.06	1.091
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			211	12.4 (S)	0.73	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; E = exceeds calibrated linear range, see dilution data; MAX = concentration is an estimated maximum value.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16141A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_1614LS\_L30097-15\_Form1A\_BE81\_246S10\_SJ2455666.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB061  
Sample Collection:  
11-Sep-2018 12:10

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-15
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.3 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	23-Oct-2018 Time: 17:50:00	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	100	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_246 S: 10
<b>Dilution Factor:</b>	N/A	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg absolute	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1
		<b>% Lipid:</b>	4.42

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L			2000	1110	55.5	0.52	0.666
13C12-2,4,4'-TriBDE	28L			2000	1920	96.1	1.02	0.831
13C12-2,2',4,4'-TeBDE	47L			2000	2500	125	1.55	0.987
13C12-3,3',4,4'-TeBDE	77L			2000	1610	80.5	1.54	1.041
13C12-2,2',4,4',5-PeBDE	99L			2000	2040	102	1.07	1.132
13C12-2,2',4,4',6-PeBDE	100L			2000	1970	98.5	1.08	1.099
13C12-3,3',4,4',5-PeBDE	126L			2000	1430	71.5	1.06	1.198
13C12-2,2',4,4',5,5'-HxBDE	153L			2000	2810	140	1.42	0.881
13C12-2,2',4,4',5,6'-HxBDE	154L			2000	2960	148	1.50	0.850
13C12-2,2',3,4,4',5,6-HpBDE	183L			2000	1910	95.7	1.01	0.966
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			2000	1360	67.8	0.91	1.063
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			20000	7650	38.2	1.15	1.081
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L			2000	2650	132	1.38	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB061  
Sample Collection:  
11-Sep-2018 12:10

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-15 W
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.3 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	01-Nov-2018 Time: 19:15:11	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	300	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_259 S: 5
<b>Dilution Factor:</b>	3	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_259 S: 1
		<b>% Lipid:</b>	4.42

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		X				
2,4'-DiBDE	8	8 + 11	C X				
2,6-DiBDE	10		X				
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C X				
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15		X				
2,2',4-TriBDE	17	17 + 25	C X				
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C X				
2,4,6-TriBDE	30		X				
2,4',6-TriBDE	32		X				
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		X				
3,4,4'-TriBDE	37		X				
2,2',4,4'-TeBDE	47		D	24600	0.142 (Q)	0.70	1.000
2,2',4,5'-TeBDE	49		X				
2,2',4,6'-TeBDE	51		X				
2,3',4,4'-TeBDE	66		X				
2,3',4',6'-TeBDE	71		X				
2,4,4',6'-TeBDE	75		X				
3,3',4,4'-TeBDE	77		X				
3,3',4,5'-TeBDE	79		X				
2,2',3,4,4'-PeBDE	85		X				
2,2',4,4',5'-PeBDE	99		X				
2,2',4,4',6'-PeBDE	100		X				
2,3,3',4,4'-PeBDE	105		X				

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		X				
2,3',4,4',6-PeBDE	119	119 + 120	C X				
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		X				
2,2',3,3',4,4'-HxBDE	128		X				
2,2',3,4,4',5'-HxBDE	138	138 + 166	C X				
2,2',3,4,4',6'-HxBDE	140		X				
2,2',4,4',5,5'-HxBDE	153		X				
2,2',4,4',5,6'-HxBDE	154		X				
2,2',4,4',6,6'-HxBDE	155		X				
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		X				
2,2',3,4,4',5',6-HpBDE	183		X				
2,3,3',4,4',5,6-HpBDE	190		X				
2,2',3,4,4',5,5',6-OcBDE	203		X				
2,2',3,3',4,4',5,5',6-NoBDE	206		X				
2,2',3,3',4,4',5,6,6'-NoBDE	207		X				
2,2',3,3',4,5,5',6,6'-NoBDE	208		X				
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		X				

- (1) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.  
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16141A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51;  
Report Filename: 1614\_PBDPE\_1614LS\_L30097-15\_Form1A\_BE81\_259S5\_SJ2459165.html; Workgroup: WG65436; Design ID: 3362 ]



SGS AXYS METHOD MLA-033 Rev 06

Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB061  
Sample Collection:  
11-Sep-2018 12:10

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
Matrix: TISSUE  
Sample Receipt Date: 20-Sep-2018  
Extraction Date: 09-Oct-2018  
Analysis Date: 01-Nov-2018 Time: 19:15:11  
Extract Volume (uL): 300  
Injection Volume (uL): 1.0  
Dilution Factor: 3  
Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
BASELINE TISSUE  
Lab Sample I.D.: L30097-15 W  
Sample Size: 10.3 g (wet)  
Initial Calibration Date: 01-Aug-2018  
Instrument ID: HR GC/MS  
GC Column ID: DB5HT  
Sample Data Filename: BE81\_259 S: 5  
Blank Data Filename: BE81\_246 S: 5  
Cal. Ver. Data Filename: BE81\_259 S: 1  
% Lipid: 4.42

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L		X					
13C12-2,4,4'-TriBDE	28L		X					
13C12-2,2',4,4'-TeBDE	47L		D	2000	2110	106	1.48	0.986
13C12-3,3',4,4'-TeBDE	77L		X					
13C12-2,2',4,4',5-PeBDE	99L		X					
13C12-2,2',4,4',6-PeBDE	100L		X					
13C12-3,3',4,4',5-PeBDE	126L		X					
13C12-2,2',4,4',5,5'-HxBDE	153L		X					
13C12-2,2',4,4',5,6'-HxBDE	154L		X					
13C12-2,2',3,4,4',5,6'-HpBDE	183L		X					
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L		X					
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

**CLIENT SAMPLE NO.**  
**PDI-TF-SMB004**  
**Sample Collection:**  
**10-Sep-2018 09:25**

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

 2045 MILLS RD., SIDNEY, B.C., CANADA  
 V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-16 (A)
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.9 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	23-Oct-2018 Time: 18:48:19	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	100	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_246 S: 11
<b>Dilution Factor:</b>	N/A	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1
		<b>% Lipid:</b>	5.78

This page is part of a total report that contains information necessary for accreditation compliance.  
 This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		K J	5.93	0.688 (S)	0.59	0.927
2,4'-DiBDE	8	8 + 11	C K J	5.83	0.519 (S)	0.59	0.957
2,6-DiBDE	10		U		0.718 (S)		
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C K	24.9	0.461 (S)	1.53	0.971
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15			20.7	0.374 (S)	0.49	1.000
2,2',4-TriBDE	17	17 + 25	C K	180	2.65 (S)	1.02	0.973
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C	461	2.33 (S)	1.00	1.001
2,4,6-TriBDE	30		U		2.72 (S)		
2,4',6-TriBDE	32		U		2.18 (S)		
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		K J	5.61	1.91 (S)	0.54	1.018
3,4,4'-TriBDE	37		J	8.63	1.82 (S)	0.92	1.039
2,2',4,4'-TeBDE	47		E				
2,2',4,5'-TeBDE	49			1200	0.134 (Q)	0.69	0.976
2,2',4,6'-TeBDE	51			63.6	0.134 (Q)	0.68	0.967
2,3',4,4'-TeBDE	66			235	0.134 (Q)	0.67	1.022
2,3',4',6'-TeBDE	71			43.3	0.134 (Q)	0.72	0.980
2,4,4',6'-TeBDE	75			21.0	0.134 (Q)	0.61	0.962
3,3',4,4'-TeBDE	77		U		0.134 (Q)		
3,3',4,5'-TeBDE	79		K	25.3	0.134 (Q)	0.70	1.014
2,2',3,4,4'-PeBDE	85		U		3.19 (S)		
2,2',4,4',5'-PeBDE	99			3120	2.04 (S)	1.02	1.000
2,2',4,4',6'-PeBDE	100			3400	1.21 (S)	1.03	1.001
2,3,3',4,4'-PeBDE	105		U		3.93 (S)		

This page is part of a total report that contains information necessary for accreditation compliance.  
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COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		U		5.31 (S)		
2,3',4',4',6-PeBDE	119	119 + 120	C	73.8	3.39 (S)	1.08	1.011
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		J	12.0	2.74 (S)	0.97	0.999
2,2',3,3',4,4'-HxBDE	128		K J	3.57	0.313 (S)	0.63	1.090
2,2',3,4,4',5'-HxBDE	138	138 + 166	C K J	1.50	0.134 (Q)	0.57	1.041
2,2',3,4,4',6'-HxBDE	140		J	7.32	0.134 (Q)	0.85	1.021
2,2',4,4',5,5'-HxBDE	153			909	0.134 (Q)	0.78	1.000
2,2',4,4',5,6'-HxBDE	154			818	0.134 (Q)	0.77	1.000
2,2',4,4',6,6'-HxBDE	155			96.3	0.134 (Q)	0.81	0.981
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		U		0.134 (Q)		
2,2',3,4,4',5',6-HpBDE	183		J	5.03	0.134 (Q)	0.94	1.000
2,3,3',4,4',5,6-HpBDE	190		U		0.134 (Q)		
2,2',3,4,4',5,5',6-OcBDE	203		K J	0.438	0.134 (Q)	0.22	1.012
2,2',3,3',4,4',5,5',6-NoBDE	206		K J	2.94	0.240 (S)	0.08	1.114
2,2',3,3',4,4',5,6,6'-NoBDE	207		K J	5.15	0.230 (S)	1.92	1.099
2,2',3,3',4,5,5',6,6'-NoBDE	208		K J	3.64	0.270 (S)	1.24	1.091
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		K J	59.0	12.7 (S)	1.19	1.001

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; E = exceeds calibrated linear range, see dilution data.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB004  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
Matrix: TISSUE  
Sample Receipt Date: 20-Sep-2018  
Extraction Date: 09-Oct-2018  
Analysis Date: 23-Oct-2018 Time: 18:48:19  
Extract Volume (uL): 100  
Injection Volume (uL): 1.0  
Dilution Factor: N/A  
Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
BASELINE TISSUE  
Lab Sample I.D.: L30097-16 (A)  
Sample Size: 10.9 g (wet)  
Initial Calibration Date: 01-Aug-2018  
Instrument ID: HR GC/MS  
GC Column ID: DB5HT  
Sample Data Filename: BE81\_246 S: 11  
Blank Data Filename: BE81\_246 S: 5  
Cal. Ver. Data Filename: BE81\_246 S: 1  
% Lipid: 5.78

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L			2000	990	49.5	0.52	0.666
13C12-2,4,4'-TriBDE	28L			2000	1880	93.8	1.02	0.831
13C12-2,2',4,4'-TeBDE	47L			2000	2370	119	1.55	0.987
13C12-3,3',4,4'-TeBDE	77L			2000	1790	89.3	1.64	1.042
13C12-2,2',4,4',5-PeBDE	99L			2000	2130	107	0.99	1.132
13C12-2,2',4,4',6-PeBDE	100L			2000	2410	120	1.05	1.100
13C12-3,3',4,4',5-PeBDE	126L			2000	1560	77.9	1.03	1.199
13C12-2,2',4,4',5,5'-HxBDE	153L			2000	2970	148	1.37	0.881
13C12-2,2',4,4',5,6'-HxBDE	154L		V	2000	3400	170	1.45	0.851
13C12-2,2',3,4,4',5,6-HpBDE	183L			2000	1980	98.8	1.02	0.966
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			2000	1380	69.2	0.77	1.063
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			20000	7080	35.4	1.10	1.081
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L			2000	2680	134	1.37	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB004  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	L30097-16 W (A)
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.9 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	01-Nov-2018 Time: 20:13:32	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	300	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_259 S: 6
<b>Dilution Factor:</b>	3	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_259 S: 1
		<b>% Lipid:</b>	5.78

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		X				
2,4'-DiBDE	8	8 + 11	C X				
2,6-DiBDE	10		X				
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C X				
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15		X				
2,2',4-TriBDE	17	17 + 25	C X				
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C X				
2,4,6-TriBDE	30		X				
2,4',6-TriBDE	32		X				
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		X				
3,4,4'-TriBDE	37		X				
2,2',4,4'-TeBDE	47		D	20500	0.134 (Q)	0.69	1.001
2,2',4,5'-TeBDE	49		X				
2,2',4,6'-TeBDE	51		X				
2,3',4,4'-TeBDE	66		X				
2,3',4',6'-TeBDE	71		X				
2,4,4',6'-TeBDE	75		X				
3,3',4,4'-TeBDE	77		X				
3,3',4,5'-TeBDE	79		X				
2,2',3,4,4'-PeBDE	85		X				
2,2',4,4',5'-PeBDE	99		X				
2,2',4,4',6'-PeBDE	100		X				
2,3,3',4,4'-PeBDE	105		X				

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		X				
2,3',4,4',6-PeBDE	119	119 + 120	C X				
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		X				
2,2',3,3',4,4'-HxBDE	128		X				
2,2',3,4,4',5'-HxBDE	138	138 + 166	C X				
2,2',3,4,4',6'-HxBDE	140		X				
2,2',4,4',5,5'-HxBDE	153		X				
2,2',4,4',5,6'-HxBDE	154		X				
2,2',4,4',6,6'-HxBDE	155		X				
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		X				
2,2',3,4,4',5',6-HpBDE	183		X				
2,3,3',4,4',5,6-HpBDE	190		X				
2,2',3,4,4',5,5',6-OcBDE	203		X				
2,2',3,3',4,4',5,5',6-NoBDE	206		X				
2,2',3,3',4,4',5,6,6'-NoBDE	207		X				
2,2',3,3',4,5,5',6,6'-NoBDE	208		X				
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		X				

- (1) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.  
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16141A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51;  
Report Filename: 1614\_PBDPE\_1614LS\_L30097-16\_Form1A\_BE81\_259S6\_SJ2459167.html; Workgroup: WG65436; Design ID: 3362 ]

SGS AXYS METHOD MLA-033 Rev 06

Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB004  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
Matrix: TISSUE  
Sample Receipt Date: 20-Sep-2018  
Extraction Date: 09-Oct-2018  
Analysis Date: 01-Nov-2018 Time: 20:13:32  
Extract Volume (uL): 300  
Injection Volume (uL): 1.0  
Dilution Factor: 3  
Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
BASELINE TISSUE  
Lab Sample I.D.: L30097-16 W (A)  
Sample Size: 10.9 g (wet)  
Initial Calibration Date: 01-Aug-2018  
Instrument ID: HR GC/MS  
GC Column ID: DB5HT  
Sample Data Filename: BE81\_259 S: 6  
Blank Data Filename: BE81\_246 S: 5  
Cal. Ver. Data Filename: BE81\_259 S: 1  
% Lipid: 5.78

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L		X					
13C12-2,4,4'-TriBDE	28L		X					
13C12-2,2',4,4'-TeBDE	47L		D	2000	2300	115	1.64	0.985
13C12-3,3',4,4'-TeBDE	77L		X					
13C12-2,2',4,4',5-PeBDE	99L		X					
13C12-2,2',4,4',6-PeBDE	100L		X					
13C12-3,3',4,4',5-PeBDE	126L		X					
13C12-2,2',4,4',5,5'-HxBDE	153L		X					
13C12-2,2',4,4',5,6'-HxBDE	154L		X					
13C12-2,2',3,4,4',5,6'-HpBDE	183L		X					
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L		X					
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB004 (Duplicate)  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Project No.</b>	PORTLAND HARBOR PDI AND BASELINE TISSUE
<b>Matrix:</b>	TISSUE	<b>Lab Sample I.D.:</b>	WG65436-103 (DUP L30097-16)
<b>Sample Receipt Date:</b>	20-Sep-2018	<b>Sample Size:</b>	10.4 g (wet)
<b>Extraction Date:</b>	09-Oct-2018	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Analysis Date:</b>	23-Oct-2018 Time: 19:46:39	<b>Instrument ID:</b>	HR GC/MS
<b>Extract Volume (uL):</b>	100	<b>GC Column ID:</b>	DB5HT
<b>Injection Volume (uL):</b>	1.0	<b>Sample Data Filename:</b>	BE81_246 S: 12
<b>Dilution Factor:</b>	N/A	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Concentration Units:</b>	pg/g (wet weight basis)	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1
		<b>% Lipid:</b>	5.81

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		J	4.62	0.730 (S)	0.46	0.927
2,4'-DiBDE	8	8 + 11	C J	5.57	0.550 (S)	0.56	0.957
2,6-DiBDE	10		U		0.761 (S)		
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C K	23.5	0.489 (S)	1.53	0.971
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15			19.4	0.397 (S)	0.51	1.000
2,2',4-TriBDE	17	17 + 25	C K	181	2.87 (S)	1.00	0.972
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C	491	2.52 (S)	1.03	1.000
2,4,6-TriBDE	30		U		2.95 (S)		
2,4',6-TriBDE	32		U		2.36 (S)		
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		K J	7.64	2.06 (S)	0.76	1.018
3,4,4'-TriBDE	37		K J	11.1	1.97 (S)	1.23	1.038
2,2',4,4'-TeBDE	47		E				
2,2',4,5'-TeBDE	49			1180	0.140 (Q)	0.69	0.975
2,2',4,6'-TeBDE	51			63.2	0.140 (Q)	0.67	0.966
2,3',4,4'-TeBDE	66			251	0.140 (Q)	0.70	1.021
2,3',4',6'-TeBDE	71			36.6	0.140 (Q)	0.68	0.980
2,4,4',6'-TeBDE	75			21.2	0.140 (Q)	0.73	0.962
3,3',4,4'-TeBDE	77		U		0.140 (Q)		
3,3',4,5'-TeBDE	79		K	23.3	0.140 (Q)	0.76	1.014
2,2',3,4,4'-PeBDE	85		U		3.27 (S)		
2,2',4,4',5'-PeBDE	99			3250	2.01 (S)	1.03	1.000
2,2',4,4',6'-PeBDE	100			3480	1.33 (S)	1.02	1.000
2,3,3',4,4'-PeBDE	105		U		4.03 (S)		



This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		U		5.45 (S)		
2,3',4',4',6-PeBDE	119	119 + 120	C	83.5	3.48 (S)	1.03	1.011
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		J	9.25	2.60 (S)	1.01	0.999
2,2',3,3',4,4'-HxBDE	128		K J	2.62	0.565 (S)	0.59	1.089
2,2',3,4,4',5'-HxBDE	138	138 + 166	C K J	0.388	0.140 (Q)	1.38	1.043
2,2',3,4,4',6'-HxBDE	140		J	7.28	0.140 (Q)	0.67	1.021
2,2',4,4',5,5'-HxBDE	153			880	0.140 (Q)	0.76	1.000
2,2',4,4',5,6'-HxBDE	154			850	0.140 (Q)	0.78	1.001
2,2',4,4',6,6'-HxBDE	155			101	0.140 (Q)	0.77	0.981
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		K J	0.671	0.140 (Q)	1.32	1.046
2,2',3,4,4',5',6-HpBDE	183		J	5.97	0.140 (Q)	1.02	1.000
2,3,3',4,4',5,6-HpBDE	190		U		0.140 (Q)		
2,2',3,4,4',5,5',6-OcBDE	203		J	0.730	0.140 (Q)	0.85	1.012
2,2',3,3',4,4',5,5',6-NoBDE	206		K J	1.92	0.230 (S)	0.76	1.115
2,2',3,3',4,4',5,6,6'-NoBDE	207		K J	4.29	0.221 (S)	1.48	1.098
2,2',3,3',4,5,5',6,6'-NoBDE	208		K J	2.55	0.259 (S)	2.71	1.091
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		J	47.8	19.7 (S)	0.89	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener; E = exceeds calibrated linear range, see dilution data.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB004 (Duplicate)  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
Matrix: TISSUE  
Sample Receipt Date: 20-Sep-2018  
Extraction Date: 09-Oct-2018  
Analysis Date: 23-Oct-2018 Time: 19:46:39  
Extract Volume (uL): 100  
Injection Volume (uL): 1.0  
Dilution Factor: N/A  
Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
BASELINE TISSUE  
Lab Sample I.D.: WG65436-103 (DUP L30097-16)  
Sample Size: 10.4 g (wet)  
Initial Calibration Date: 01-Aug-2018  
Instrument ID: HR GC/MS  
GC Column ID: DB5HT  
Sample Data Filename: BE81\_246 S: 12  
Blank Data Filename: BE81\_246 S: 5  
Cal. Ver. Data Filename: BE81\_246 S: 1  
% Lipid: 5.81

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L			2000	993	49.7	0.51	0.666
13C12-2,4,4'-TriBDE	28L			2000	1890	94.3	1.03	0.831
13C12-2,2',4,4'-TeBDE	47L			2000	2500	125	1.52	0.987
13C12-3,3',4,4'-TeBDE	77L			2000	1960	98.2	1.59	1.041
13C12-2,2',4,4',5-PeBDE	99L			2000	2200	110	1.07	1.132
13C12-2,2',4,4',6-PeBDE	100L			2000	2410	120	1.09	1.099
13C12-3,3',4,4',5-PeBDE	126L			2000	1800	90.0	1.07	1.198
13C12-2,2',4,4',5,5'-HxBDE	153L		V	2000	3130	157	1.35	0.881
13C12-2,2',4,4',5,6'-HxBDE	154L		V	2000	3280	164	1.36	0.850
13C12-2,2',3,4,4',5,6-HpBDE	183L			2000	1990	99.5	0.97	0.966
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			2000	1510	75.6	0.81	1.063
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			20000	9670	48.4	1.21	1.081
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L		V	2000	2850	143	1.38	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
PDI-TF-SMB004 (Duplicate)  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Project No.

PORTLAND HARBOR PDI AND  
BASELINE TISSUE

Lab Sample I.D.:

WG65436-103 W (DUP L30097-  
16)

Matrix: TISSUE

Sample Size: 10.4 g (wet)

Sample Receipt Date: 20-Sep-2018

Initial Calibration Date: 01-Aug-2018

Extraction Date: 09-Oct-2018

Instrument ID: HR GC/MS

Analysis Date: 01-Nov-2018 Time: 21:11:51

GC Column ID: DB5HT

Extract Volume (uL): 300

Sample Data Filename: BE81\_259 S: 7

Injection Volume (uL): 1.0

Blank Data Filename: BE81\_246 S: 5

Dilution Factor: 3

Cal. Ver. Data Filename: BE81\_259 S: 1

Concentration Units: pg/g (wet weight basis)

% Lipid: 5.81

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		X				
2,4'-DiBDE	8	8 + 11	C X				
2,6-DiBDE	10		X				
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C X				
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15		X				
2,2',4-TriBDE	17	17 + 25	C X				
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C X				
2,4,6-TriBDE	30		X				
2,4',6-TriBDE	32		X				
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		X				
3,4,4'-TriBDE	37		X				
2,2',4,4'-TeBDE	47		D	20800	0.140 (Q)	0.69	1.001
2,2',4,5'-TeBDE	49		X				
2,2',4,6'-TeBDE	51		X				
2,3',4,4'-TeBDE	66		X				
2,3',4',6'-TeBDE	71		X				
2,4,4',6'-TeBDE	75		X				
3,3',4,4'-TeBDE	77		X				
3,3',4,5'-TeBDE	79		X				
2,2',3,4,4'-PeBDE	85		X				
2,2',4,4',5'-PeBDE	99		X				
2,2',4,4',6'-PeBDE	100		X				
2,3,3',4,4'-PeBDE	105		X				

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		X				
2,3',4,4',6-PeBDE	119	119 + 120	C X				
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		X				
2,2',3,3',4,4'-HxBDE	128		X				
2,2',3,4,4',5'-HxBDE	138	138 + 166	C X				
2,2',3,4,4',6'-HxBDE	140		X				
2,2',4,4',5,5'-HxBDE	153		X				
2,2',4,4',5,6'-HxBDE	154		X				
2,2',4,4',6,6'-HxBDE	155		X				
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		X				
2,2',3,4,4',5',6-HpBDE	183		X				
2,3,3',4,4',5,6-HpBDE	190		X				
2,2',3,4,4',5,5',6-OcBDE	203		X				
2,2',3,3',4,4',5,5',6-NoBDE	206		X				
2,2',3,3',4,4',5,6,6'-NoBDE	207		X				
2,2',3,3',4,5,5',6,6'-NoBDE	208		X				
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		X				

- (1) Where applicable, custom lab flags have been used on this report; D = dilution data; C = co-eluting congener; X = result reported separately.  
(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

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Report Filename: 1614\_PBDPE\_1614LS\_WG65436-103\_Form1A\_BE81\_259S7\_SJ2459169.html; Workgroup: WG65436; Design ID: 3362 ]

SGS AXYS METHOD MLA-033 Rev 06

Form 2

CLIENT SAMPLE NO.  
PDI-TF-SMB004 (Duplicate)  
Sample Collection:  
10-Sep-2018 09:25

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
Matrix: TISSUE  
Sample Receipt Date: 20-Sep-2018  
Extraction Date: 09-Oct-2018  
Analysis Date: 01-Nov-2018 Time: 21:11:51  
Extract Volume (uL): 300  
Injection Volume (uL): 1.0  
Dilution Factor: 3  
Concentration Units: pg absolute

Project No. PORTLAND HARBOR PDI AND  
BASELINE TISSUE  
Lab Sample I.D.: WG65436-103 W (DUP L30097-16)  
Sample Size: 10.4 g (wet)  
Initial Calibration Date: 01-Aug-2018  
Instrument ID: HR GC/MS  
GC Column ID: DB5HT  
Sample Data Filename: BE81\_259 S: 7  
Blank Data Filename: BE81\_246 S: 5  
Cal. Ver. Data Filename: BE81\_259 S: 1  
% Lipid: 5.81

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L		X					
13C12-2,4,4'-TriBDE	28L		X					
13C12-2,2',4,4'-TeBDE	47L		D	2000	2250	113	1.74	0.985
13C12-3,3',4,4'-TeBDE	77L		X					
13C12-2,2',4,4',5-PeBDE	99L		X					
13C12-2,2',4,4',6-PeBDE	100L		X					
13C12-3,3',4,4',5-PeBDE	126L		X					
13C12-2,2',4,4',5,5'-HxBDE	153L		X					
13C12-2,2',4,4',5,6'-HxBDE	154L		X					
13C12-2,2',3,4,4',5,6'-HpBDE	183L		X					
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L		X					
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L		X					
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L		X					

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; D = dilution data; X = result reported separately.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

ANALYSIS REPORT  
RELATIVE PERCENT DIFFERENCE

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Project No.

PORTLAND HARBOR PDI AND  
BASELINE TISSUE

Contract No.: 4972

Client ID: PDI-TF-SMB004

Concentration Units: pg/g (wet weight basis)

COMPOUND	IUPAC NO.	L30097-16 (A)		WG65436-103		MEAN	RELATIVE PERCENT DIFFERENCE
		LAB FLAG <sup>1</sup>	CONC. FOUND	LAB FLAG <sup>1</sup>	CONC. FOUND		
2,4-DiBDE	7	K J	5.93	J	4.62		
2,4'-DiBDE	8	C K J	5.83	C J	5.57		
2,6-DiBDE	10	U		U			
3,3'-DiBDE	11	C8		C8			
3,4-DiBDE	12	C K	24.9	C K	23.5		
3,4'-DiBDE	13	C12		C12			
4,4'-DiBDE	15		20.7		19.4	20.0	6.57
2,2',4-TriBDE	17	C K	180	C K	181		
2,3',4-TriBDE	25	C17		C17			
2,4,4'-TriBDE	28	C	461	C	491	476	6.21
2,4,6-TriBDE	30	U		U			
2,4',6-TriBDE	32	U		U			
2',3,4-TriBDE	33	C28		C28			
3,3',4-TriBDE	35	K J	5.61	K J	7.64		
3,4,4'-TriBDE	37	J	8.63	K J	11.1		
2,2',4,4'-TeBDE	47	D	20500	D	20800	20700	1.37
2,2',4,5'-TeBDE	49		1200		1180	1190	2.44
2,2',4,6'-TeBDE	51		63.6		63.2	63.4	0.681
2,3',4,4'-TeBDE	66		235		251	243	6.38
2,3',4',6-TeBDE	71		43.3		36.6	40.0	16.9
2,4,4',6-TeBDE	75		21.0		21.2	21.1	1.09
3,3',4,4'-TeBDE	77	U		U			
3,3',4,5'-TeBDE	79	K	25.3	K	23.3		
2,2',3,4,4'-PeBDE	85	U		U			
2,2',4,4',5-PeBDE	99		3120		3250	3190	4.13
2,2',4,4',6-PeBDE	100		3400		3480	3440	2.42
2,3,3',4,4'-PeBDE	105	U		U			
2,3,4,5,6-PeBDE	116	U		U			
2,3',4,4',6-PeBDE	119	C	73.8	C	83.5	78.7	12.2
2,3',4,5,5'-PeBDE	120	C119		C119			
3,3',4,4',5-PeBDE	126	J	12.0	J	9.25	10.6	26.1
2,2',3,3',4,4'-HxBDE	128	K J	3.57	K J	2.62		
2,2',3,4,4',5'-HxBDE	138	C K J	1.50	C K J	0.388		
2,2',3,4,4',6'-HxBDE	140	J	7.32	J	7.28	7.30	0.658
2,2',4,4',5,5'-HxBDE	153		909		880	895	3.20
2,2',4,4',5,6'-HxBDE	154		818		850	834	3.77
2,2',4,4',6,6'-HxBDE	155		96.3		101	98.7	4.84
2,3,4,4',5,6-HxBDE	166	C138		C138			
2,2',3,4,4',5,6-HpBDE	181	U		K J	0.671		
2,2',3,4,4',5',6-HpBDE	183	J	5.03	J	5.97	5.50	16.9
2,3,3',4,4',5,6-HpBDE	190	U		U			
2,2',3,4,4',5,5',6-OcBDE	203	K J	0.438	J	0.730		
2,2',3,3',4,4',5,5',6-NoBDE	206	K J	2.94	K J	1.92		
2,2',3,3',4,4',5,6,6'-NoBDE	207	K J	5.15	K J	4.29		
2,2',3,3',4,5,5',6,6'-NoBDE	208	K J	3.64	K J	2.55		
2,2',3,3',4,4',5,5',6,6'-DeBDE	209	K J	59.0	J	47.8		

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; D = dilution data; J = concentration less than lowest calibration equivalent; C = co-eluting congener.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

SGS AXYS METHOD MLA-033 Rev 06

Form 1A

CLIENT SAMPLE NO.  
Lab Blank  
Sample Collection:  
N/A

## BROMINATED DIPHENYLETHER CONGENER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972

Project No.

N/A

Lab Sample I.D.:

WG65436-101

Matrix: CANOLA OIL

Sample Size:

10.0 g

Sample Receipt Date: N/A

Initial Calibration Date:

01-Aug-2018

Extraction Date: 09-Oct-2018

Instrument ID:

HR GC/MS

Analysis Date: 23-Oct-2018 Time: 12:57:59

GC Column ID:

DB5HT

Extract Volume (uL): 100

Sample Data Filename:

BE81\_246 S: 5

Injection Volume (uL): 1.0

Blank Data Filename:

BE81\_246 S: 5

Dilution Factor: N/A

Cal. Ver. Data Filename:

BE81\_246 S: 1

Concentration Units: pg/g

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,4-DiBDE	7		U		0.519 (S)		
2,4'-DiBDE	8	8 + 11	C U		0.391 (S)		
2,6-DiBDE	10		U		0.541 (S)		
3,3'-DiBDE	11	8 + 11	C8				
3,4-DiBDE	12	12 + 13	C U		0.348 (S)		
3,4'-DiBDE	13	12 + 13	C12				
4,4'-DiBDE	15		U		0.282 (S)		
2,2',4-TriBDE	17	17 + 25	C K J	0.403	0.146 (Q)	0.67	0.973
2,3',4-TriBDE	25	17 + 25	C17				
2,4,4'-TriBDE	28	28 + 33	C K J	0.495	0.146 (Q)	0.36	1.001
2,4,6-TriBDE	30		U		0.146 (Q)		
2,4',6-TriBDE	32		U		0.146 (Q)		
2',3,4-TriBDE	33	28 + 33	C28				
3,3',4-TriBDE	35		U		0.146 (Q)		
3,4,4'-TriBDE	37		K J	0.538	0.146 (Q)	0.56	1.036
2,2',4,4'-TeBDE	47		J	6.35	0.146 (Q)	0.73	1.001
2,2',4,5'-TeBDE	49		U		0.146 (Q)		
2,2',4,6'-TeBDE	51		K J	0.174	0.146 (Q)	7.31	0.967
2,3',4,4'-TeBDE	66		J	0.536	0.146 (Q)	0.68	1.020
2,3',4',6'-TeBDE	71		U		0.146 (Q)		
2,4,4',6'-TeBDE	75		U		0.146 (Q)		
3,3',4,4'-TeBDE	77		U		0.146 (Q)		
3,3',4,5'-TeBDE	79		K J	5.87	0.146 (Q)	1.22	1.015
2,2',3,4,4'-PeBDE	85		U		0.146 (Q)		
2,2',4,4',5'-PeBDE	99		J	1.94	0.146 (Q)	0.94	1.000
2,2',4,4',6'-PeBDE	100		J	0.778	0.146 (Q)	1.02	1.000
2,3,3',4,4'-PeBDE	105		U		0.146 (Q)		

This page is part of a total report that contains information necessary for accreditation compliance.  
This test is not NELAP accredited. Sample results relate only to the sample tested.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	CONC. FOUND	REPORTING LIMIT (RL) <sup>2</sup>	ION ABUND. RATIO	RRT
2,3,4,5,6-PeBDE	116		K J	0.168	0.146 (Q)	2.64	1.009
2,3',4,4',6-PeBDE	119	119 + 120	C U		0.146 (Q)		
2,3',4,5,5'-PeBDE	120	119 + 120	C119				
3,3',4,4',5-PeBDE	126		U		0.146 (Q)		
2,2',3,3',4,4'-HxBDE	128		U		0.146 (Q)		
2,2',3,4,4',5'-HxBDE	138	138 + 166	C K J	0.194	0.146 (Q)	0.32	1.043
2,2',3,4,4',6'-HxBDE	140		U		0.146 (Q)		
2,2',4,4',5,5'-HxBDE	153		J	0.338	0.146 (Q)	0.70	1.000
2,2',4,4',5,6'-HxBDE	154		J	0.276	0.146 (Q)	0.86	1.000
2,2',4,4',6'-HxBDE	155		U		0.146 (Q)		
2,3,4,4',5,6-HxBDE	166	138 + 166	C138				
2,2',3,4,4',5,6-HpBDE	181		U		0.146 (Q)		
2,2',3,4,4',5,6-HpBDE	183		U		0.146 (Q)		
2,3,3',4,4',5,6-HpBDE	190		U		0.146 (Q)		
2,2',3,4,4',5,5',6-OcBDE	203		K J	0.337	0.146 (Q)	0.04	1.012
2,2',3,3',4,4',5,5',6-NoBDE	206		K J	2.28	0.282 (S)	0.20	1.114
2,2',3,3',4,4',5,6,6'-NoBDE	207		K J	4.24	0.270 (S)	0.63	1.098
2,2',3,3',4,5,5',6,6'-NoBDE	208		K J	6.75	0.318 (S)	1.24	1.090
2,2',3,3',4,4',5,5',6,6'-DeBDE	209		J	55.9	1.52 (S)	0.92	1.000

(1) Where applicable, custom lab flags have been used on this report; U = not detected at RL; K = peak detected but did not meet quantification criteria, result reported represents the estimated maximum possible concentration; J = concentration less than lowest calibration equivalent; C = co-eluting congener.

(2) Reporting Limit (Code): S = sample detection limit; M = method detection limit; L = lowest calibration level equivalent; Q = minimum reporting level.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

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SGS AXYS METHOD MLA-033 Rev 06

Form 2

CLIENT SAMPLE NO.

Lab Blank

Sample Collection:

N/A

## BROMINATED DIPHENYLETHER ANALYSIS REPORT

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Contract No.: 4972  
 Matrix: CANOLA OIL  
 Sample Receipt Date: N/A  
 Extraction Date: 09-Oct-2018  
 Analysis Date: 23-Oct-2018 Time: 12:57:59  
 Extract Volume (uL): 100  
 Injection Volume (uL): 1.0  
 Dilution Factor: N/A  
 Concentration Units: pg absolute

Project No. N/A  
 Lab Sample I.D.: WG65436-101  
 Sample Size: 10.0 g  
 Initial Calibration Date: 01-Aug-2018  
 Instrument ID: HR GC/MS  
 GC Column ID: DB5HT  
 Sample Data Filename: BE81\_246 S: 5  
 Blank Data Filename: BE81\_246 S: 5  
 Cal. Ver. Data Filename: BE81\_246 S: 1

This page is part of a total report that contains information necessary for accreditation compliance.  
 This test is not NELAP accredited. Sample results relate only to the sample tested.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	SPIKE CONC.	CONC. FOUND	R(%) <sup>3</sup>	ION ABUND. RATIO	RRT
13C12-4,4'-DiBDE	15L			2000	1120	55.8	0.52	0.666
13C12-2,4,4'-TriBDE	28L			2000	1840	91.9	1.07	0.831
13C12-2,2',4,4'-TeBDE	47L			2000	1620	81.0	1.55	0.986
13C12-3,3',4,4'-TeBDE	77L			2000	1720	86.0	1.58	1.041
13C12-2,2',4,4',5-PeBDE	99L			2000	2030	101	1.04	1.131
13C12-2,2',4,4',6-PeBDE	100L			2000	2060	103	1.06	1.099
13C12-3,3',4,4',5-PeBDE	126L			2000	2100	105	1.04	1.197
13C12-2,2',4,4',5,5'-HxBDE	153L			2000	2630	132	1.38	0.881
13C12-2,2',4,4',5,6'-HxBDE	154L		V	2000	3980	199	1.42	0.850
13C12-2,2',3,4,4',5,6-HpBDE	183L			2000	1850	92.6	1.03	0.966
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			2000	1310	65.6	0.86	1.063
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			20000	7270	36.3	1.21	1.082
<b>CLEANUP STANDARD</b>								
13C12-2,2',3,4,4',6-HxBDE	139L			2000	2550	127	1.37	1.012

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; V = surrogate recovery is not within method/contract control limits.

(3) R% = percent recovery of labeled compounds.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

## Form 8A

## BROMINATED DIPHENYLETHER ONGOING PRECISION AND RECOVERY (OPR)

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Lab Sample I.D.:</b>	WG65436-102
<b>Matrix:</b>	CANOLA OIL	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Extraction Date:</b>	09-Oct-2018	<b>Instrument ID:</b>	HR GC/MS
<b>Analysis Date:</b>	23-Oct-2018 Time: 10:02:58	<b>GC Column ID:</b>	DB5HT
<b>Extract Volume (uL):</b>	100	<b>OPR Data Filename:</b>	BE81_246 S: 2
<b>Injection Volume (uL):</b>	1.0	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Dilution Factor:</b>	N/A	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1

## CONCENTRATIONS REPORTED ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS <sup>2</sup> (ng/mL)	% RECOVERY
2,4,4'-TriBDE	28	28 + 33	C	1.03	97.4	107	48.7 - 146	110
2',3,4-TriBDE	33	28 + 33	C28					
2,2',4,4'-TeBDE	47			0.68	50.0	59.2	25.0 - 75.0	118
2,2',4,4',5-PeBDE	99			1.01	50.0	54.0	25.0 - 75.0	108
2,2',4,4',6-PeBDE	100			1.01	50.0	51.4	25.0 - 75.0	103
2,2',4,4',5,5'-HxBDE	153			0.78	50.0	49.8	25.0 - 75.0	99.5
2,2',4,4',5,6'-HxBDE	154			0.76	50.0	52.8	25.0 - 75.0	106
2,2',3,4,4',5',6-HpBDE	183			0.97	50.0	55.4	25.0 - 75.0	111
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			0.89	500	538	250 - 750	108

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Contract-required limits for OPR as specified in Table 6, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 8B

## BROMINATED DIPHENYLETHER ONGOING PRECISION AND RECOVERY (OPR)

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

<b>Contract No.:</b>	4972	<b>Lab Sample I.D.:</b>	WG65436-102
<b>Matrix:</b>	CANOLA OIL	<b>Initial Calibration Date:</b>	01-Aug-2018
<b>Extraction Date:</b>	09-Oct-2018	<b>Instrument ID:</b>	HR GC/MS
<b>Analysis Date:</b>	23-Oct-2018 Time: 10:02:58	<b>GC Column ID:</b>	DB5HT
<b>Extract Volume (uL):</b>	100	<b>OPR Data Filename:</b>	BE81_246 S: 2
<b>Injection Volume (uL):</b>	1.0	<b>Blank Data Filename:</b>	BE81_246 S: 5
<b>Dilution Factor:</b>	N/A	<b>Cal. Ver. Data Filename:</b>	BE81_246 S: 1

CONCENTRATIONS REPORTED ARE CONCENTRATIONS IN EXTRACT, BASED ON A 20 uL EXTRACT VOLUME.

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	ION ABUND. RATIO	SPIKE CONC. (ng/mL)	CONC. FOUND (ng/mL)	OPR CONC. LIMITS <sup>3</sup> (ng/mL)	% RECOVERY
13C12-2,4,4'-TriBDE	28L			1.01	100	82.9	30.0 - 200	82.9
13C12-2,2',4,4'-TeBDE	47L			1.54	100	70.2	30.0 - 200	70.2
13C12-2,2',4,4',5-PeBDE	99L			0.97	100	88.4	30.0 - 200	88.4
13C12-2,2',4,4',6-PeBDE	100L			1.05	100	86.6	30.0 - 200	86.6
13C12-2,2',4,4',5,5'-HxBDE	153L			1.37	100	124	30.0 - 200	124
13C12-2,2',4,4',5,6'-HxBDE	154L			1.51	100	181	30.0 - 200	181
13C12-2,2',3,4,4',5',6-HpBDE	183L			1.00	100	82.6	30.0 - 200	82.6
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			1.08	1000	352	100 - 2000	35.2

## CLEANUP STANDARD

13C12-2,2',3,4,4',6-HxBDE	139L			1.44	100	118	30.0 - 200	118
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- (1) Suffix "L" indicates labeled compound.  
(2) Where applicable, custom lab flags have been used on this report.  
(3) Contract-required limits for OPR as specified in Table 6, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Jason MacKenzie \_\_\_\_\_

These pages are part of a larger report that may contain information necessary for full data evaluation. Results reported relate only to the sample tested.

## SGS AXYS METHOD MLA-033 Rev 06

## Form 3A

## BROMINATED DIPHENYLETHER INITIAL CALIBRATION RELATIVE RESPONSES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

Instrument ID: HR GC/MS

GC Column ID: DB5HT

CS0 Data Filename: N/A

CS1 Data Filename: BE81\_161G S: 3

CS2 Data Filename: BE81\_161G S: 4

CS3 Data Filename: BE81\_161H S: 1

CS4 Data Filename: BE81\_161G S: 6

CS5 Data Filename: BE81\_161G S: 5

CS6 Data Filename: N/A

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RELATIVE RESPONSE (RR)						MEAN RR	CV <sup>2</sup> (%RSD)
				CS0	CS1	CS2	CS3	CS4	CS5		
2,4,4'-TriBDE	28	28 + 33	C		0.95	0.85	0.89	0.95	0.92	0.91	4.49
2',3,4-TriBDE	33	28 + 33	C28								
2,2',4,4'-TeBDE	47				1.26	1.13	1.10	1.21	1.14	1.17	5.69
2,2',4,4',5-PeBDE	99				1.09	1.04	1.04	1.12	1.04	1.07	3.49
2,2',4,4',6-PeBDE	100				1.04	1.05	1.07	1.11	1.06	1.07	2.64
2,2',4,4',5,5'-HxBDE	153				1.02	1.06	1.01	1.10	1.05	1.05	3.36
2,2',4,4',5,6'-HxBDE	154				1.12	1.13	1.08	1.18	1.10	1.12	3.51
2,2',3,4,4',5,6'-HpBDE	183				0.93	0.95	0.98	1.06	1.00	0.98	5.20
2,2',3,3',4,4',5,5',6,6'-DeBDE	209				1.08	1.11	1.10	1.17	1.06	1.10	3.70

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) For contract CV specifications, see Section 10.4.4, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Kristen Bowes\_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 3B

## BROMINATED DIPHENYLETHER INITIAL CALIBRATION RELATIVE RESPONSES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

Instrument ID: HR GC/MS

GC Column ID: DB5HT

CS0 Data Filename: N/A

CS1 Data Filename: BE81\_161G S: 3

CS2 Data Filename: BE81\_161G S: 4

CS3 Data Filename: BE81\_161H S: 1

CS4 Data Filename: BE81\_161G S: 6

CS5 Data Filename: BE81\_161G S: 5

CS6 Data Filename: N/A

COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RELATIVE RESPONSE (RR)						MEAN RR	CV <sup>3</sup> (%RSD)	
				CS0	CS1	CS2	CS3	CS4	CS5			CS6
13C12-2,4,4'-TriBDE	28L				1.69	1.67	1.66	1.77	2.05		1.77	9.34
13C12-2,2',4,4'-TeBDE	47L				0.91	0.91	0.94	0.92	1.09		0.96	8.03
13C12-2,2',4,4',5-PeBDE	99L				1.38	1.31	1.34	1.41	1.71		1.43	11.2
13C12-2,2',4,4',6-PeBDE	100L				1.90	1.91	1.95	2.00	2.31		2.01	8.42
13C12-2,2',4,4',5,5'-HxBDE	153L				1.40	1.51	1.59	1.58	2.01		1.62	14.5
13C12-2,2',4,4',5,6'-HxBDE	154L				2.17	2.13	2.24	2.25	2.71		2.30	10.1
13C12-2,2',3,4,4',5',6-HpBDE	183L				1.51	1.60	1.65	1.70	2.10		1.71	13.3
<b>CLEAN-UP STANDARD</b>												
13C12-2,2',3,4,4',6-HxBDE	139L				1.77	1.86	1.97	1.84	1.98		1.88	4.62

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) For contract CV specifications, see Section 10.5.6, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Kristen Bowes\_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 3C

## BROMINATED DIPHENYLETHER INITIAL CALIBRATION ION ABUNDANCE RATIOS

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

Instrument ID: HR GC/MS

GC Column ID: DB5HT

CS0 Data Filename: N/A

CS1 Data Filename: BE81\_161G S: 3

CS2 Data Filename: BE81\_161G S: 4

CS3 Data Filename: BE81\_161H S: 1

CS4 Data Filename: BE81\_161G S: 6

CS5 Data Filename: BE81\_161G S: 5

CS6 Data Filename: N/A

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	M/Z's FORMING RATIO <sup>2</sup>	ION ABUNDANCE RATIO						QC LIMITS <sup>2</sup>	
					CS0	CS1	CS2	CS3	CS4	CS5		CS6
2,4,4'-TriBDE	28	28 + 33	C	M+2/M+4		1.08	1.02	1.04	1.02	1.02		0.88-1.18
2',3,4-TriBDE	33	28 + 33	C28									
2,2',4,4'-TeBDE	47			M+2/M+4		0.63	0.72	0.69	0.70	0.69		0.60-0.81
2,2',4,4',5-PeBDE	99			M+4/M+6		0.96	1.06	1.02	1.02	1.03		0.88-1.18
2,2',4,4',6-PeBDE	100			M+4/M+6		1.02	1.02	1.03	1.02	1.02		0.88-1.18
2,2',4,4',5,5'-HxBDE	153			M+4/M+6		0.80	0.74	0.77	0.77	0.77		0.65-0.89
2,2',4,4',5,6'-HxBDE	154			M+4/M+6		0.75	0.75	0.77	0.77	0.77		0.65-0.89
2,2',3,4,4',5,6'-HpBDE	183			M+6/M+8		1.13	1.00	1.02	1.02	1.04		0.88-1.18
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			M+8/M+10		0.90	0.86	0.83	0.84	0.84		0.73-0.99

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8 Method 1614 for m/z specifications and ion abundance ratio control limits; QC Limits apply to CS2 to CS5 only.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Kristen Bowes \_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 3D

## BROMINATED DIPHENYLETHER INITIAL CALIBRATION ION ABUNDANCE RATIOS

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
 V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

Instrument ID: HR GC/MS

GC Column ID: DB5HT

CS0 Data Filename: N/A

CS1 Data Filename: BE81\_161G S: 3

CS2 Data Filename: BE81\_161G S: 4

CS3 Data Filename: BE81\_161H S: 1

CS4 Data Filename: BE81\_161G S: 6

CS5 Data Filename: BE81\_161G S: 5

CS6 Data Filename: N/A

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO- ELUTIONS	LAB FLAG <sup>2</sup>	M/Z's FORMING RATIO <sup>3</sup>	ION ABUNDANCE RATIO						QC LIMITS <sup>3</sup>
					CS0	CS1	CS2	CS3	CS4	CS5	
13C12-2,4,4'-TriBDE	28L			M+2/M+4	1.04	1.05	1.04	1.03	1.07		0.88-1.18
13C12-2,2',4,4'-TeBDE	47L			M+4/M+6	1.56	1.57	1.56	1.55	1.56		1.31-1.77
13C12-2,2',4,4',5-PeBDE	99L			M+4/M+6	1.04	1.03	1.04	1.04	1.07		0.88-1.18
13C12-2,2',4,4',6-PeBDE	100L			M+4/M+6	1.04	1.05	1.06	1.04	1.07		0.88-1.18
13C12-2,2',4,4',5,5'-HxBDE	153L			M+6/M+8	1.36	1.41	1.39	1.43	1.44		1.16-1.58
13C12-2,2',4,4',5,6'-HxBDE	154L			M+6/M+8	1.40	1.38	1.36	1.38	1.42		1.16-1.58
13C12-2,2',3,4,4',5',6-HpBDE	183L			M+6/M+8	1.02	1.03	1.05	1.00	1.05		0.88-1.18
<b>CLEAN-UP STANDARD</b>											
13C12-2,2',3,4,4',6-HxBDE	139L			M+6/M+8	1.42	1.42	1.39	1.39	1.35		1.16-1.58

(1) Suffix "L" indicates labeled compound.

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) See Table 8 Method 1614 for m/z specifications and ion abundance ratio control limits.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Kristen Bowes \_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 4A

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_246 S: 1  
Instrument ID: HR GC/MS Analysis Date: 23-Oct-2018  
GC Column ID: DB5HT Analysis Time: 09:04:39

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	MZ's FORMING RATIO <sup>2</sup>	ION ABUND. RATIO	QC LIMITS <sup>3</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>4</sup> (ng/mL)
2,4,4'-TriBDE	28	28 + 33	C	M+2/M+4	1.04	0.88-1.18	104	68.2 - 127
2',3,4-TriBDE	33	28 + 33	C28					
2,2',4,4'-TeBDE	47			M+2/M+4	0.69	0.60-0.81	54.1	35.0 - 65.0
2,2',4,4',5-PeBDE	99			M+4/M+6	1.06	0.88-1.18	53.4	35.0 - 65.0
2,2',4,4',6-PeBDE	100			M+4/M+6	1.03	0.88-1.18	52.2	35.0 - 65.0
2,2',4,4',5,5'-HxBDE	153			M+4/M+6	0.78	0.65-0.89	52.1	35.0 - 65.0
2,2',4,4',5,6'-HxBDE	154			M+4/M+6	0.76	0.65-0.89	51.4	35.0 - 65.0
2,2',3,4,4',5',6-HpBDE	183			M+6/M+8	1.07	0.88-1.18	56.4	35.0 - 65.0
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			M+8/M+10	0.86	0.73-0.99	529	350 - 650

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1614, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

(4) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16684A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_246S1\_\_Form4A\_SJ2455674.html; Workgroup: WG65436; Design ID: 3362 ]



## SGS AXYS METHOD MLA-033 Rev 06

## Form 4B

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_246 S: 1  
Instrument ID: HR GC/MS Analysis Date: 23-Oct-2018  
GC Column ID: DB5HT Analysis Time: 09:04:39

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	MZ's FORMING RATIO <sup>3</sup>	ION ABUND. RATIO	QC LIMITS <sup>4</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>5</sup> (ng/mL)
13C12-2,4,4'-TriBDE	28L			M+2/M+4	1.05	0.88-1.18	134	50.0 - 150
13C12-2,2',4,4'-TeBDE	47L			M+4/M+6	1.55	1.31-1.77	99.6	50.0 - 150
13C12-2,2',4,4',5-PeBDE	99L			M+4/M+6	1.03	0.88-1.18	89.9	50.0 - 150
13C12-2,2',4,4',6-PeBDE	100L			M+4/M+6	1.04	0.88-1.18	90.0	50.0 - 150
13C12-2,2',4,4',5,5'-HxBDE	153L			M+6/M+8	1.37	1.16-1.58	111	50.0 - 150
13C12-2,2',4,4',5,6'-HxBDE	154L			M+6/M+8	1.37	1.16-1.58	130	50.0 - 150
13C12-2,2',3,4,4',5',6-HpBDE	183L			M+6/M+8	1.06	0.88-1.18	104	50.0 - 150

## CLEAN-UP STANDARD

13C12-2,2',3,4,4',6-HxBDE	139L			M+6/M+8	1.38	1.16-1.58	120	50.0 - 150
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- (1) Suffix "L" indicates labeled compound.  
(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.  
(3) See Table 8, Method 1614, for m/z specifications.  
(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.  
(5) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16684B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_246S1\_\_Form4B\_SJ2455674.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 6A

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

VER Data Filename: BE81\_246 S: 1

Instrument ID: HR GC/MS

Analysis Date: 23-Oct-2018

GC Column ID: DB5HT

Analysis Time: 09:04:39

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>2</sup>	RRT	RRT QC LIMITS <sup>3</sup>
2,4,4'-TriBDE	28	28 + 33	C	13C12-2,4,4'-TriBDE	28L	0.9993	0.9985-1.0022
2',3,4-TriBDE	33	28 + 33	C28				
2,2',4,4'-TeBDE	47			13C12-2,2',4,4'-TeBDE	47L	1.0000	0.9988-1.0019
2,2',4,4',5-PeBDE	99			13C12-2,2',4,4',5-PeBDE	99L	1.0005	0.9989-1.0016
2,2',4,4',6-PeBDE	100			13C12-2,2',4,4',6-PeBDE	100L	1.0006	0.9989-1.0017
2,2',4,4',5,5'-HxBDE	153			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0005	0.9990-1.0014
2,2',4,4',5,6'-HxBDE	154			13C12-2,2',4,4',5,6'-HxBDE	154L	1.0000	0.9990-1.0015
2,2',3,4,4',5',6-HpBDE	183			13C12-2,2',3,4,4',5',6-HpBDE	183L	1.0000	0.9991-1.0013
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L	1.0000	0.9993-1.0010

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 6B

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_246 S: 1  
Instrument ID: HR GC/MS Analysis Date: 23-Oct-2018  
GC Column ID: DB5HT Analysis Time: 09:04:39

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>1</sup>	RRT	RRT QC LIMITS <sup>3</sup>
13C12-2,4,4'-TriBDE	28L			13C12-3,3',4,5'-TeBDE	79L	0.8310	0.8218-0.8401
13C12-2,2',4,4'-TeBDE	47L			13C12-3,3',4,5'-TeBDE	79L	0.9866	0.9805-0.9927
13C12-2,2',4,4',5'-PeBDE	99L			13C12-3,3',4,5'-TeBDE	79L	1.1318	1.1226-1.1409
13C12-2,2',4,4',6'-PeBDE	100L			13C12-3,3',4,5'-TeBDE	79L	1.0995	1.0903-1.1086
13C12-2,2',4,4',5,5'-HxBDE	153L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8809	0.8745-0.8872
13C12-2,2',4,4',5,6'-HxBDE	154L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8506	0.8443-0.8570
13C12-2,2',3,4,4',5,6'-HpBDE	183L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.9660	0.9617-0.9702

## CLEANUP STANDARD

13C12-2,2',3,4,4',6'-HxBDE	139L			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0121	1.0072-1.0169
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- (1) Suffix "L" indicates labeled compound  
(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.  
(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axy Internal Use Only [ XSL Template: Form16686B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51;  
Report Filename: 1614\_PBDPE\_BE81\_246S1\_\_Form6B\_SJ2455674.html; Workgroup: WG65436; Design ID: 3362 ]

BROMINATED DIPHENYLETHER INITIAL CALIBRATION RELATIVE RESPONSES,  
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

CAL Data Filename: BE81\_246 S: 1

Instrument ID: HR GC/MS

Analysis Date: 23-Oct-2018

GC Column ID: DB5HT

Analysis Time: 09:04:39

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RRF	MZ's FORMING RATIO <sup>2</sup>	ION ABUND. RATIO	RATIO QC LIMITS <sup>3</sup>	RRT	RRT QC LIMITS
2,4-DiBDE	7			0.56	M/M+2	0.52	0.43-0.59	0.928	0.915 - 0.942
2,4'-DiBDE	8	8 + 11	C	0.74	M/M+2	0.51	0.43-0.59	0.957	0.948 - 0.966
2,6-DiBDE	10			0.53	M/M+2	0.52	0.43-0.59	0.862	0.844 - 0.881
3,3'-DiBDE	11	8 + 11	C8						
3,4-DiBDE	12	12 + 13	C	0.83	M/M+2	0.52	0.43-0.59	0.977	0.968 - 0.986
3,4'-DiBDE	13	12 + 13	C12						
4,4'-DiBDE	15			1.02	M/M+2	0.52	0.43-0.59	1.001	0.998 - 1.003
2,2',4-TriBDE	17	17 + 25	C	0.80	M+2/M+4	1.04	0.88-1.18	0.974	0.967 - 0.982
2,3',4-TriBDE	25	17 + 25	C17						
2,4,6-TriBDE	30			0.78	M+2/M+4	1.00	0.88-1.18	0.894	0.880 - 0.909
2,4',6-TriBDE	32			0.97	M+2/M+4	1.05	0.88-1.18	0.952	0.945 - 0.960
3,3',4-TriBDE	35			1.11	M+2/M+4	1.03	0.88-1.18	1.018	1.011 - 1.026
3,4,4'-TriBDE	37			1.16	M+2/M+4	1.03	0.88-1.18	1.039	1.032 - 1.046
2,2',4,5'-TeBDE	49			0.86	M+2/M+4	0.69	0.60-0.81	0.975	0.969 - 0.981
2,2',4,6'-TeBDE	51			1.30	M+2/M+4	0.70	0.60-0.81	0.967	0.961 - 0.973
2,3',4,4'-TeBDE	66			0.80	M+2/M+4	0.70	0.60-0.81	1.022	1.015 - 1.028
2,3',4',6-TeBDE	71			0.86	M+2/M+4	0.70	0.60-0.81	0.980	0.974 - 0.986
2,4,4',6-TeBDE	75			1.14	M+2/M+4	0.69	0.60-0.81	0.962	0.956 - 0.968
3,3',4,4'-TeBDE	77			1.30	M+2/M+4	0.69	0.60-0.81	1.001	0.999 - 1.002
3,3',4,5'-TeBDE	79			1.08	M+2/M+4	0.67	0.60-0.81	1.014	1.008 - 1.020
2,2',3,4,4'-PeBDE	85			0.62	M+4/M+6	1.03	0.88-1.18	0.992	0.987 - 0.997
2,3,3',4,4'-PeBDE	105			0.51	M+4/M+6	1.04	0.88-1.18	1.008	1.003 - 1.013
2,3,4,5,6-PeBDE	116			0.37	M+4/M+6	1.02	0.88-1.18	1.009	1.003 - 1.014
2,3',4,4',6-PeBDE	119	119 + 120	C	0.59	M+4/M+6	1.03	0.88-1.18	1.011	1.006 - 1.017
2,3',4,5,5'-PeBDE	120	119 + 120	C119						
3,3',4,4',5-PeBDE	126			1.16	M+4/M+6	1.03	0.88-1.18	1.001	0.999 - 1.002
2,2',3,3',4,4'-HxBDE	128			0.67	M+4/M+6	0.76	0.65-0.89	1.089	1.082 - 1.096
2,2',3,4,4',5'-HxBDE	138	138 + 166	C	0.75	M+4/M+6	0.78	0.65-0.89	1.044	1.040 - 1.049
2,2',3,4,4',6'-HxBDE	140			0.90	M+4/M+6	0.79	0.65-0.89	1.021	1.016 - 1.026
2,2',4,4',6,6'-HxBDE	155			1.21	M+4/M+6	0.78	0.65-0.89	0.981	0.976 - 0.986
2,3,4,4',5,6-HxBDE	166	138 + 166	C138						
2,2',3,4,4',5,6-HpBDE	181			0.57	M+6/M+8	1.06	0.88-1.18	1.045	1.041 - 1.050
2,3,3',4,4',5,6-HpBDE	190			0.41	M+6/M+8	1.02	0.88-1.18	1.052	1.047 - 1.056
2,2',3,4,4',5,5',6-OcBDE	203			0.67	M+6/M+8	0.81	0.70-0.94	1.012	1.008 - 1.016
2,3,3',4,4',5,5',6-OcBDE	205			0.30	M+6/M+8	0.85	0.70-0.94	1.032	1.028 - 1.036
2,2',3,3',4,4',5,5',6-NoBDE	206			0.19	M+8/M+10	1.07	0.88-1.18	1.114	1.108 - 1.120
2,2',3,3',4,4',5,6,6'-NoBDE	207			0.20	M+8/M+10	1.02	0.88-1.18	1.098	1.092 - 1.104
2,2',3,3',4,5,5',6,6'-NoBDE	208			0.17	M+8/M+10	1.04	0.88-1.18	1.090	1.084 - 1.096

(1) Where applicable, custom lab flags have been used on this report.

(2) See Table 8, Method 1614, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

## Form 3B

BROMINATED DIPHENYLETHER INITIAL CALIBRATION RELATIVE RESPONSES,  
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

CAL Data Filename: BE81\_246 S: 1

Instrument ID: HR GC/MS

Analysis Date: 23-Oct-2018

GC Column ID: DB5HT

Analysis Time: 09:04:39

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RRF	MZ's FORMING RATIO <sup>3</sup>	ION ABUND. RATIO	RATIO QC LIMITS <sup>4</sup>	RRT	RRT QC LIMITS
13C12-4,4'-DiBDE	15L			4.44	M/M+2	0.52	0.43-0.59	0.665	0.653 - 0.677
13C12-2,4,4'-TriBDE	28L			2.36	M+2/M+4	1.05	0.88-1.18	0.831	0.822 - 0.840
13C12-2,2',4,4'-TeBDE	47L			0.95	M+4/M+6	1.55	1.31-1.77	0.987	0.980 - 0.993
13C12-3,3',4,4'-TeBDE	77L			0.98	M+4/M+6	1.56	1.31-1.77	1.041	1.035 - 1.047
13C12-2,2',4,4',5'-PeBDE	99L			1.29	M+4/M+6	1.03	0.88-1.18	1.132	1.123 - 1.141
13C12-2,2',4,4',6'-PeBDE	100L			1.81	M+4/M+6	1.04	0.88-1.18	1.099	1.090 - 1.109
13C12-3,3',4,4',5'-PeBDE	126L			1.50	M+4/M+6	1.05	0.88-1.18	1.198	1.189 - 1.207
13C12-2,2',4,4',5,5'-HxBDE	153L			1.79	M+6/M+8	1.37	1.16-1.58	0.881	0.874 - 0.887
13C12-2,2',4,4',5,6'-HxBDE	154L			2.99	M+6/M+8	1.37	1.16-1.58	0.851	0.844 - 0.857
13C12-2,2',3,4,4',5',6'-HpBDE	183L			1.78	M+6/M+8	1.06	0.88-1.18	0.966	0.962 - 0.970
13C12-2,2',3,3',4,4',6,6'-OcBDE	197L			1.52	M+6/M+8	0.82	0.70-0.94	1.063	1.057 - 1.069
13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L			0.48	M+10/M+12	1.25	1.05-1.41	1.081	1.076 - 1.087

## ADDITIONAL STANDARD

13C12-2,2',3,4,4',5'-HxBDE	138L			0.69	M+6/M+8	1.39	1.16-1.58	1.043	1.039 - 1.048
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- (1) Suffix "L" indicates labeled compound  
(2) Where applicable, custom lab flags have been used on this report.  
(3) See Table 8, Method 1614, for m/z specifications.  
(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

## Form 4A

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_247 S: 1  
Instrument ID: HR GC/MS Analysis Date: 23-Oct-2018  
GC Column ID: DB5HT Analysis Time: 20:59:37

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	MZ's FORMING RATIO <sup>2</sup>	ION ABUND. RATIO	QC LIMITS <sup>3</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>4</sup> (ng/mL)
2,4,4'-TriBDE	28	28 + 33	C	M+2/M+4	1.05	0.88-1.18	114	68.2 - 127
2',3,4-TriBDE	33	28 + 33	C28					
2,2',4,4'-TeBDE	47			M+2/M+4	0.70	0.60-0.81	52.9	35.0 - 65.0
2,2',4,4',5-PeBDE	99			M+4/M+6	1.04	0.88-1.18	52.9	35.0 - 65.0
2,2',4,4',6-PeBDE	100			M+4/M+6	1.03	0.88-1.18	53.1	35.0 - 65.0
2,2',4,4',5,5'-HxBDE	153			M+4/M+6	0.78	0.65-0.89	52.5	35.0 - 65.0
2,2',4,4',5,6'-HxBDE	154			M+4/M+6	0.78	0.65-0.89	53.1	35.0 - 65.0
2,2',3,4,4',5',6-HpBDE	183			M+6/M+8	1.02	0.88-1.18	55.9	35.0 - 65.0
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			M+8/M+10	0.84	0.73-0.99	515	350 - 650

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1614, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

(4) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16684A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_247S1\_\_Form4A\_SJ2455686.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 4B

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_247 S: 1  
Instrument ID: HR GC/MS Analysis Date: 23-Oct-2018  
GC Column ID: DB5HT Analysis Time: 20:59:37

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	MZ's FORMING RATIO <sup>3</sup>	ION ABUND. RATIO	QC LIMITS <sup>4</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>5</sup> (ng/mL)
13C12-2,4,4'-TriBDE	28L			M+2/M+4	1.02	0.88-1.18	115	50.0 - 150
13C12-2,2',4,4'-TeBDE	47L			M+4/M+6	1.53	1.31-1.77	99.9	50.0 - 150
13C12-2,2',4,4',5-PeBDE	99L			M+4/M+6	1.01	0.88-1.18	85.2	50.0 - 150
13C12-2,2',4,4',6-PeBDE	100L			M+4/M+6	1.04	0.88-1.18	85.7	50.0 - 150
13C12-2,2',4,4',5,5'-HxBDE	153L			M+6/M+8	1.37	1.16-1.58	107	50.0 - 150
13C12-2,2',4,4',5,6'-HxBDE	154L			M+6/M+8	1.35	1.16-1.58	127	50.0 - 150
13C12-2,2',3,4,4',5,6-HpBDE	183L			M+6/M+8	1.02	0.88-1.18	106	50.0 - 150

## CLEAN-UP STANDARD

13C12-2,2',3,4,4',6-HxBDE	139L			M+6/M+8	1.40	1.16-1.58	122	50.0 - 150
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- (1) Suffix "L" indicates labeled compound.  
(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.  
(3) See Table 8, Method 1614, for m/z specifications.  
(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.  
(5) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16684B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_247S1\_\_Form4B\_SJ2455686.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 6A

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

VER Data Filename: BE81\_247 S: 1

Instrument ID: HR GC/MS

Analysis Date: 23-Oct-2018

GC Column ID: DB5HT

Analysis Time: 20:59:37

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>2</sup>	RRT	RRT QC LIMITS <sup>3</sup>
2,4,4'-TriBDE	28	28 + 33	C	13C12-2,4,4'-TriBDE	28L	0.9993	0.9985-1.0022
2',3,4-TriBDE	33	28 + 33	C28				
2,2',4,4'-TeBDE	47			13C12-2,2',4,4'-TeBDE	47L	1.0006	0.9988-1.0019
2,2',4,4',5-PeBDE	99			13C12-2,2',4,4',5-PeBDE	99L	1.0000	0.9989-1.0016
2,2',4,4',6-PeBDE	100			13C12-2,2',4,4',6-PeBDE	100L	1.0000	0.9989-1.0017
2,2',4,4',5,5'-HxBDE	153			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0005	0.9990-1.0015
2,2',4,4',5,6'-HxBDE	154			13C12-2,2',4,4',5,6'-HxBDE	154L	1.0005	0.9990-1.0015
2,2',3,4,4',5,6'-HpBDE	183			13C12-2,2',3,4,4',5,6'-HpBDE	183L	1.0004	0.9991-1.0013
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L	1.0003	0.9993-1.0010

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16686A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_247S1\_\_Form6A\_SJ2455686.html; Workgroup: WG65436; Design ID: 3362 ]



## SGS AXYS METHOD MLA-033 Rev 06

## Form 6B

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_247 S: 1  
Instrument ID: HR GC/MS Analysis Date: 23-Oct-2018  
GC Column ID: DB5HT Analysis Time: 20:59:37

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>1</sup>	RRT	RRT QC LIMITS <sup>3</sup>
13C12-2,4,4'-TriBDE	28L			13C12-3,3',4,5'-TeBDE	79L	0.8309	0.8217-0.8400
13C12-2,2',4,4'-TeBDE	47L			13C12-3,3',4,5'-TeBDE	79L	0.9866	0.9805-0.9927
13C12-2,2',4,4',5'-PeBDE	99L			13C12-3,3',4,5'-TeBDE	79L	1.1325	1.1233-1.1416
13C12-2,2',4,4',6'-PeBDE	100L			13C12-3,3',4,5'-TeBDE	79L	1.1001	1.0910-1.1093
13C12-2,2',4,4',5,5'-HxBDE	153L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8808	0.8744-0.8872
13C12-2,2',4,4',5,6'-HxBDE	154L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8506	0.8442-0.8570
13C12-2,2',3,4,4',5,6'-HpBDE	183L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.9659	0.9617-0.9702

## CLEANUP STANDARD

13C12-2,2',3,4,4',6'-HxBDE	139L			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0121	1.0073-1.0169
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(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16686B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_247S1\_\_Form6B\_SJ2455686.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 4A

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 1  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 15:21:49

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	MZ's FORMING RATIO <sup>2</sup>	ION ABUND. RATIO	QC LIMITS <sup>3</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>4</sup> (ng/mL)
2,4,4'-TriBDE	28	28 + 33	C	M+2/M+4	1.08	0.88-1.18	103	68.2 - 127
2',3,4-TriBDE	33	28 + 33	C28					
2,2',4,4'-TeBDE	47			M+2/M+4	0.69	0.60-0.81	53.1	35.0 - 65.0
2,2',4,4',5-PeBDE	99			M+4/M+6	1.02	0.88-1.18	52.0	35.0 - 65.0
2,2',4,4',6-PeBDE	100			M+4/M+6	1.04	0.88-1.18	53.3	35.0 - 65.0
2,2',4,4',5,5'-HxBDE	153			M+4/M+6	0.78	0.65-0.89	52.6	35.0 - 65.0
2,2',4,4',5,6'-HxBDE	154			M+4/M+6	0.78	0.65-0.89	52.4	35.0 - 65.0
2,2',3,4,4',5,6'-HpBDE	183			M+6/M+8	1.07	0.88-1.18	54.6	35.0 - 65.0
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			M+8/M+10	0.84	0.73-0.99	514	350 - 650

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1614, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

(4) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16684A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_259S1\_\_Form4A\_SJ2459173.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 4B

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 1  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 15:21:49

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	MZ's FORMING RATIO <sup>3</sup>	ION ABUND. RATIO	QC LIMITS <sup>4</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>5</sup> (ng/mL)
13C12-2,4,4'-TriBDE	28L			M+2/M+4	1.03	0.88-1.18	151	50.0 - 150
13C12-2,2',4,4'-TeBDE	47L			M+4/M+6	1.53	1.31-1.77	102	50.0 - 150
13C12-2,2',4,4',5-PeBDE	99L			M+4/M+6	1.05	0.88-1.18	87.1	50.0 - 150
13C12-2,2',4,4',6-PeBDE	100L			M+4/M+6	1.03	0.88-1.18	96.6	50.0 - 150
13C12-2,2',4,4',5,5'-HxBDE	153L			M+6/M+8	1.40	1.16-1.58	140	50.0 - 150
13C12-2,2',4,4',5,6'-HxBDE	154L			M+6/M+8	1.38	1.16-1.58	185	50.0 - 150
13C12-2,2',3,4,4',5,6-HpBDE	183L			M+6/M+8	1.01	0.88-1.18	113	50.0 - 150

## CLEAN-UP STANDARD

13C12-2,2',3,4,4',6-HxBDE	139L			M+6/M+8	1.41	1.16-1.58	150	50.0 - 150
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- (1) Suffix "L" indicates labeled compound.  
(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.  
(3) See Table 8, Method 1614, for m/z specifications.  
(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.  
(5) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16684B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_259S1\_\_Form4B\_SJ2459173.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 6A

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 1  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 15:21:49

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>2</sup>	RRT	RRT QC LIMITS <sup>3</sup>
2,4,4'-TriBDE	28	28 + 33	C	13C12-2,4,4'-TriBDE	28L	1.0000	0.9985-1.0022
2',3,4-TriBDE	33	28 + 33	C28				
2,2',4,4'-TeBDE	47			13C12-2,2',4,4'-TeBDE	47L	1.0006	0.9988-1.0019
2,2',4,4',5-PeBDE	99			13C12-2,2',4,4',5-PeBDE	99L	1.0005	0.9989-1.0016
2,2',4,4',6-PeBDE	100			13C12-2,2',4,4',6-PeBDE	100L	1.0006	0.9989-1.0017
2,2',4,4',5,5'-HxBDE	153			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0005	0.9990-1.0015
2,2',4,4',5,6'-HxBDE	154			13C12-2,2',4,4',5,6'-HxBDE	154L	1.0000	0.9990-1.0015
2,2',3,4,4',5,6'-HpBDE	183			13C12-2,2',3,4,4',5,6'-HpBDE	183L	1.0004	0.9991-1.0013
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L	1.0003	0.9993-1.0010

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

For Axys Internal Use Only [ XSL Template: Form16686A.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51; Report Filename: 1614\_PBDPE\_BE81\_259S1\_\_Form6A\_SJ2459173.html; Workgroup: WG65436; Design ID: 3362 ]

## SGS AXYS METHOD MLA-033 Rev 06

## Form 6B

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 1  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 15:21:49

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>1</sup>	RRT	RRT QC LIMITS <sup>3</sup>
13C12-2,4,4'-TriBDE	28L			13C12-3,3',4,5'-TeBDE	79L	0.8310	0.8218-0.8402
13C12-2,2',4,4'-TeBDE	47L			13C12-3,3',4,5'-TeBDE	79L	0.9865	0.9804-0.9927
13C12-2,2',4,4',5'-PeBDE	99L			13C12-3,3',4,5'-TeBDE	79L	1.1317	1.1225-1.1408
13C12-2,2',4,4',6'-PeBDE	100L			13C12-3,3',4,5'-TeBDE	79L	1.0992	1.0900-1.1084
13C12-2,2',4,4',5,5'-HxBDE	153L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8809	0.8745-0.8873
13C12-2,2',4,4',5,6'-HxBDE	154L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8506	0.8442-0.8570
13C12-2,2',3,4,4',5,6'-HpBDE	183L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.9658	0.9616-0.9701

## CLEANUP STANDARD

13C12-2,2',3,4,4',6'-HxBDE	139L			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0121	1.0073-1.0170
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- (1) Suffix "L" indicates labeled compound  
(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.  
(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axy Internal Use Only [ XSL Template: Form16686B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51;  
Report Filename: 1614\_PBDPE\_BE81\_259S1\_\_Form6B\_SJ2459173.html; Workgroup: WG65436; Design ID: 3362 ]

BROMINATED DIPHENYLETHER INITIAL CALIBRATION RELATIVE RESPONSES,  
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

CAL Data Filename: BE81\_259 S: 1

Instrument ID: HR GC/MS

Analysis Date: 01-Nov-2018

GC Column ID: DB5HT

Analysis Time: 15:21:49

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RRF	MZ's FORMING RATIO <sup>2</sup>	ION ABUND. RATIO	RATIO QC LIMITS <sup>3</sup>	RRT	RRT QC LIMITS
2,4-DiBDE	7			0.60	M/M+2	0.52	0.43-0.59	0.927	0.913 - 0.941
2,4'-DiBDE	8	8 + 11	C	0.78	M/M+2	0.52	0.43-0.59	0.957	0.947 - 0.966
2,6-DiBDE	10			0.61	M/M+2	0.52	0.43-0.59	0.861	0.842 - 0.879
3,3'-DiBDE	11	8 + 11	C8						
3,4-DiBDE	12	12 + 13	C	0.92	M/M+2	0.51	0.43-0.59	0.977	0.968 - 0.986
3,4'-DiBDE	13	12 + 13	C12						
4,4'-DiBDE	15			1.12	M/M+2	0.52	0.43-0.59	1.000	0.998 - 1.003
2,2',4-TriBDE	17	17 + 25	C	0.82	M+2/M+4	1.06	0.88-1.18	0.974	0.967 - 0.982
2,3',4-TriBDE	25	17 + 25	C17						
2,4,6-TriBDE	30			0.81	M+2/M+4	1.03	0.88-1.18	0.894	0.879 - 0.909
2,4',6-TriBDE	32			1.05	M+2/M+4	1.04	0.88-1.18	0.952	0.945 - 0.959
3,3',4-TriBDE	35			1.15	M+2/M+4	1.13	0.88-1.18	1.019	1.012 - 1.027
3,4,4'-TriBDE	37			1.15	M+2/M+4	1.16	0.88-1.18	1.039	1.032 - 1.046
2,2',4,5'-TeBDE	49			0.93	M+2/M+4	0.70	0.60-0.81	0.975	0.969 - 0.981
2,2',4,6'-TeBDE	51			1.64	M+2/M+4	0.70	0.60-0.81	0.967	0.961 - 0.973
2,3',4,4'-TeBDE	66			0.86	M+2/M+4	0.72	0.60-0.81	1.022	1.016 - 1.029
2,3',4',6-TeBDE	71			1.09	M+2/M+4	0.70	0.60-0.81	0.980	0.974 - 0.986
2,4,4',6-TeBDE	75			1.21	M+2/M+4	0.69	0.60-0.81	0.962	0.955 - 0.968
3,3',4,4'-TeBDE	77			1.28	M+2/M+4	0.71	0.60-0.81	1.001	0.999 - 1.002
3,3',4,5'-TeBDE	79			1.12	M+2/M+4	0.69	0.60-0.81	1.014	1.007 - 1.020
2,2',3,4,4'-PeBDE	85			0.59	M+4/M+6	1.03	0.88-1.18	0.992	0.987 - 0.997
2,3,3',4,4'-PeBDE	105			0.47	M+4/M+6	1.02	0.88-1.18	1.009	1.004 - 1.014
2,3,4,5,6-PeBDE	116			0.37	M+4/M+6	1.03	0.88-1.18	1.009	1.003 - 1.014
2,3',4,4',6-PeBDE	119	119 + 120	C	0.62	M+4/M+6	1.03	0.88-1.18	1.011	1.006 - 1.017
2,3',4,5,5'-PeBDE	120	119 + 120	C119						
3,3',4,4',5-PeBDE	126			1.17	M+4/M+6	1.03	0.88-1.18	1.001	0.999 - 1.002
2,2',3,3',4,4'-HxBDE	128			0.56	M+4/M+6	0.74	0.65-0.89	1.089	1.082 - 1.096
2,2',3,4,4',5'-HxBDE	138	138 + 166	C	0.56	M+4/M+6	0.77	0.65-0.89	1.045	1.040 - 1.049
2,2',3,4,4',6'-HxBDE	140			0.89	M+4/M+6	0.77	0.65-0.89	1.021	1.016 - 1.026
2,2',4,4',6,6'-HxBDE	155			1.37	M+4/M+6	0.77	0.65-0.89	0.981	0.976 - 0.986
2,3,4,4',5,6-HxBDE	166	138 + 166	C138						
2,2',3,4,4',5,6-HpBDE	181			0.60	M+6/M+8	1.05	0.88-1.18	1.045	1.041 - 1.050
2,3,3',4,4',5,6-HpBDE	190			0.37	M+6/M+8	0.99	0.88-1.18	1.052	1.047 - 1.056
2,2',3,4,4',5,5',6-OcBDE	203			0.67	M+6/M+8	0.76	0.70-0.94	1.012	1.008 - 1.016
2,3,3',4,4',5,5',6-OcBDE	205			0.37	M+6/M+8	0.83	0.70-0.94	1.033	1.029 - 1.037
2,2',3,3',4,4',5,5',6-NoBDE	206			0.24	M+8/M+10	0.95	0.88-1.18	1.115	1.109 - 1.121
2,2',3,3',4,4',5,6,6'-NoBDE	207			0.25	M+8/M+10	1.04	0.88-1.18	1.099	1.093 - 1.105
2,2',3,3',4,5,5',6,6'-NoBDE	208			0.19	M+8/M+10	0.96	0.88-1.18	1.091	1.085 - 1.097

(1) Where applicable, custom lab flags have been used on this report.

(2) See Table 8, Method 1614, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

## Form 3B

BROMINATED DIPHENYLETHER INITIAL CALIBRATION RELATIVE RESPONSES,  
ION ABUNDANCE RATIOS, AND RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

CAL Data Filename: BE81\_259 S: 1

Instrument ID: HR GC/MS

Analysis Date: 01-Nov-2018

GC Column ID: DB5HT

Analysis Time: 15:21:49

LABELLED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RRF	MZ's FORMING RATIO <sup>3</sup>	ION ABUND. RATIO	RATIO QC LIMITS <sup>4</sup>	RRT	RRT QC LIMITS
	13C12-4,4'-DiBDE	15L		5.41	M/M+2	0.52	0.43-0.59	0.664	0.652 - 0.677
	13C12-2,4,4'-TriBDE	28L		2.67	M+2/M+4	1.03	0.88-1.18	0.831	0.822 - 0.840
	13C12-2,2',4,4'-TeBDE	47L		0.98	M+4/M+6	1.53	1.31-1.77	0.987	0.980 - 0.993
	13C12-3,3',4,4'-TeBDE	77L		0.89	M+4/M+6	1.51	1.31-1.77	1.042	1.036 - 1.048
	13C12-2,2',4,4',5'-PeBDE	99L		1.25	M+4/M+6	1.05	0.88-1.18	1.132	1.122 - 1.141
	13C12-2,2',4,4',6'-PeBDE	100L		1.94	M+4/M+6	1.03	0.88-1.18	1.099	1.090 - 1.108
	13C12-3,3',4,4',5'-PeBDE	126L		1.27	M+4/M+6	1.05	0.88-1.18	1.198	1.189 - 1.207
	13C12-2,2',4,4',5,5'-HxBDE	153L		2.26	M+6/M+8	1.40	1.16-1.58	0.881	0.874 - 0.887
	13C12-2,2',4,4',5,6'-HxBDE	154L		4.24	M+6/M+8	1.38	1.16-1.58	0.851	0.844 - 0.857
	13C12-2,2',3,4,4',5',6'-HpBDE	183L		1.94	M+6/M+8	1.01	0.88-1.18	0.966	0.962 - 0.970
	13C12-2,2',3,3',4,4',6,6'-OcBDE	197L		1.55	M+6/M+8	0.84	0.70-0.94	1.063	1.056 - 1.069
	13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L		0.54	M+10/M+12	1.21	1.05-1.41	1.080	1.075 - 1.085

## ADDITIONAL STANDARD

13C12-2,2',3,4,4',5'-HxBDE	138L			0.47	M+6/M+8	1.37	1.16-1.58	1.043	1.038 - 1.048
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- (1) Suffix "L" indicates labeled compound  
(2) Where applicable, custom lab flags have been used on this report.  
(3) See Table 8, Method 1614, for m/z specifications.  
(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

## SGS AXYS METHOD MLA-033 Rev 06

## Form 4A

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 8  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 22:10:16

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	MZ's FORMING RATIO <sup>2</sup>	ION ABUND. RATIO	QC LIMITS <sup>3</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>4</sup> (ng/mL)
2,4,4'-TriBDE	28	28 + 33	C	M+2/M+4	1.02	0.88-1.18	102	68.2 - 127
2',3,4-TriBDE	33	28 + 33	C28					
2,2',4,4'-TeBDE	47			M+2/M+4	0.69	0.60-0.81	55.6	35.0 - 65.0
2,2',4,4',5-PeBDE	99			M+4/M+6	1.05	0.88-1.18	51.6	35.0 - 65.0
2,2',4,4',6-PeBDE	100			M+4/M+6	1.02	0.88-1.18	53.8	35.0 - 65.0
2,2',4,4',5,5'-HxBDE	153			M+4/M+6	0.79	0.65-0.89	52.1	35.0 - 65.0
2,2',4,4',5,6'-HxBDE	154			M+4/M+6	0.77	0.65-0.89	53.0	35.0 - 65.0
2,2',3,4,4',5',6-HpBDE	183			M+6/M+8	1.01	0.88-1.18	54.0	35.0 - 65.0
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			M+8/M+10	0.84	0.73-0.99	516	350 - 650

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) See Table 8, Method 1614, for m/z specifications.

(3) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.

(4) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 4B

## BROMINATED DIPHENYLETHER CALIBRATION VERIFICATION

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 8  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 22:10:16

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	MZ's FORMING RATIO <sup>3</sup>	ION ABUND. RATIO	QC LIMITS <sup>4</sup>	CONC. FOUND (ng/mL)	CONC. RANGE <sup>5</sup> (ng/mL)
13C12-2,4,4'-TriBDE	28L			M+2/M+4	1.07	0.88-1.18	149	50.0 - 150
13C12-2,2',4,4'-TeBDE	47L			M+4/M+6	1.60	1.31-1.77	97.0	50.0 - 150
13C12-2,2',4,4',5-PeBDE	99L			M+4/M+6	1.04	0.88-1.18	92.0	50.0 - 150
13C12-2,2',4,4',6-PeBDE	100L			M+4/M+6	1.06	0.88-1.18	98.9	50.0 - 150
13C12-2,2',4,4',5,5'-HxBDE	153L			M+6/M+8	1.43	1.16-1.58	142	50.0 - 150
13C12-2,2',4,4',5,6'-HxBDE	154L			M+6/M+8	1.41	1.16-1.58	180	50.0 - 150
13C12-2,2',3,4,4',5,6-HpBDE	183L			M+6/M+8	1.02	0.88-1.18	116	50.0 - 150

## CLEAN-UP STANDARD

13C12-2,2',3,4,4',6-HxBDE	139L			M+6/M+8	1.36	1.16-1.58	142	50.0 - 150
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- (1) Suffix "L" indicates labeled compound.  
(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.  
(3) See Table 8, Method 1614, for m/z specifications.  
(4) Ion Abundance Ratio Control Limits as specified in Table 8, Method 1614.  
(5) Contract-required concentration range as specified in Table 6, Method 1614, under VER.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 6A

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018

VER Data Filename: BE81\_259 S: 8

Instrument ID: HR GC/MS

Analysis Date: 01-Nov-2018

GC Column ID: DB5HT

Analysis Time: 22:10:16

COMPOUND	IUPAC NO.	CO-ELUTIONS	LAB FLAG <sup>1</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>2</sup>	RRT	RRT QC LIMITS <sup>3</sup>
2,4,4'-TriBDE	28	28 + 33	C	13C12-2,4,4'-TriBDE	28L	1.0000	0.9985-1.0022
2',3,4-TriBDE	33	28 + 33	C28				
2,2',4,4'-TeBDE	47			13C12-2,2',4,4'-TeBDE	47L	1.0006	0.9988-1.0019
2,2',4,4',5-PeBDE	99			13C12-2,2',4,4',5-PeBDE	99L	1.0005	0.9989-1.0016
2,2',4,4',6-PeBDE	100			13C12-2,2',4,4',6-PeBDE	100L	1.0006	0.9989-1.0017
2,2',4,4',5,5'-HxBDE	153			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0005	0.9990-1.0015
2,2',4,4',5,6'-HxBDE	154			13C12-2,2',4,4',5,6'-HxBDE	154L	1.0005	0.9990-1.0015
2,2',3,4,4',5,6'-HpBDE	183			13C12-2,2',3,4,4',5,6'-HpBDE	183L	1.0000	0.9991-1.0013
2,2',3,3',4,4',5,5',6,6'-DeBDE	209			13C12-2,2',3,3',4,4',5,5',6,6'-DeBDE	209L	1.0000	0.9993-1.0010

(1) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(2) Suffix "L" indicates labeled compound

(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_Rhonda Stoddard\_\_\_\_\_

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## SGS AXYS METHOD MLA-033 Rev 06

## Form 6B

## BROMINATED DIPHENYLETHER RELATIVE RETENTION TIMES

## SGS AXYS ANALYTICAL SERVICES

2045 MILLS RD., SIDNEY, B.C., CANADA  
V8L 5X2 TEL (250) 655-5800 FAX (250) 655-5811

Initial Calibration Date: 01-Aug-2018 VER Data Filename: BE81\_259 S: 8  
Instrument ID: HR GC/MS Analysis Date: 01-Nov-2018  
GC Column ID: DB5HT Analysis Time: 22:10:16

LABELED COMPOUND	IUPAC NO. <sup>1</sup>	CO-ELUTIONS	LAB FLAG <sup>2</sup>	RETENTION TIME REFERENCE	IUPAC NO. <sup>1</sup>	RRT	RRT QC LIMITS <sup>3</sup>
13C12-2,4,4'-TriBDE	28L			13C12-3,3',4,5'-TeBDE	79L	0.8311	0.8219-0.8403
13C12-2,2',4,4'-TeBDE	47L			13C12-3,3',4,5'-TeBDE	79L	0.9865	0.9804-0.9927
13C12-2,2',4,4',5'-PeBDE	99L			13C12-3,3',4,5'-TeBDE	79L	1.1316	1.1224-1.1408
13C12-2,2',4,4',6'-PeBDE	100L			13C12-3,3',4,5'-TeBDE	79L	1.0991	1.0900-1.1083
13C12-2,2',4,4',5,5'-HxBDE	153L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8805	0.8741-0.8869
13C12-2,2',4,4',5,6'-HxBDE	154L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.8502	0.8438-0.8566
13C12-2,2',3,4,4',5,6'-HpBDE	183L			13C12-2,2',3,4,4',5,5'-HpBDE	180L	0.9659	0.9616-0.9701

## CLEANUP STANDARD

13C12-2,2',3,4,4',6'-HxBDE	139L			13C12-2,2',4,4',5,5'-HxBDE	153L	1.0121	1.0073-1.0170
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(1) Suffix "L" indicates labeled compound

(2) Where applicable, custom lab flags have been used on this report; C = co-eluting congener.

(3) Contract-required limits for Relative Retention Times (RRT) as specified in Table 2, Method 1614.

These data are validated and reported as accurate and in accord with SGS AXYS Analytical Services Ltd. ISO17025 compliant quality assurance processes.

Signed: \_\_\_\_\_ Rhonda Stoddard \_\_\_\_\_

For Axy Internal Use Only [ XSL Template: Form16686B.xsl; Created: 08-Nov-2018 12:49:49; Application: XMLTransformer-1.16.51;  
Report Filename: 1614\_PBDPE\_BE81\_259S8\_\_Form6B\_SJ2459181.html; Workgroup: WG65436; Design ID: 3362 ]









### Accreditation Scope

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum									Tissue	Urine	Water	Water, Non-Potable										
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE					Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH
Anthracene	SGS AXYS MLA-021	MLA-021		Y	Y							Y		Y		Y			Y	Y				Y		
	EPA 1625	MLA-021																	Y		Y			Y		
	EPA 8270	MLA-021			Y			Y	Y		Y	Y														
	SGS AXYS MLA-021	MLA-021		Y	Y							Y														
Benz[a]anthracene	EPA 1625	MLA-021																	Y	Y				Y		
	EPA 8270	MLA-021			Y			Y	Y		Y	Y														
	SGS AXYS MLA-021	MLA-021		Y	Y						Y		Y													
Benzo[a]pyrene	EPA 1625	MLA-021																	Y		Y			Y		
	EPA 8270	MLA-021			Y			Y	Y		Y	Y														
	SGS AXYS MLA-021	MLA-021		Y	Y						Y		Y													
Benzo[b]fluoranthene	EPA 1625	MLA-021																	Y		Y		Y	Y		Y
	EPA 8270	MLA-021			Y			Y	Y		Y	Y														
	SGS AXYS MLA-021	MLA-021		Y	Y						Y		Y								Y				Y	
Benzo[e]pyrene	SGS AXYS MLA-021	MLA-021		Y									Y													Y
Benzo[ghi]perylene	EPA 1625	MLA-021																			Y		Y	Y		Y
	EPA 8270	MLA-021			Y			Y	Y		Y	Y														
	SGS AXYS MLA-021	MLA-021		Y	Y						Y		Y													Y
Benzo[k]fluoranthene	SGS AXYS MLA-021	MLA-021		Y									Y													
EPA 1625	MLA-021																				Y		Y	Y		Y
	EPA 8270	MLA-021			Y			Y	Y		Y	Y														
	SGS AXYS MLA-021	MLA-021			Y						Y															Y
Biphenyl	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Acenaphthenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Benz(a)anthracenes/chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C1-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Benzofluoranthenes/ Benzopyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Biphenyls	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C2-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C3-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C3-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y					
C3-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C3-Fluorenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C3-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C3-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C4-Benz(a)anthracenes/Chrysenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C4-Dibenzothiophene	SGS AXYS MLA-021	MLA-021		Y																	Y					
C4-Fluoranthenes/Pyrenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C4-Naphthalenes	SGS AXYS MLA-021	MLA-021		Y																	Y					
C4-Phenanthrenes/Anthracenes	SGS AXYS MLA-021	MLA-021		Y																	Y					











**Accreditation Scope**

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum		Solids										Tissue		Urine		Water		Water, Non-Potable																	
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **					
PCB 118 2,3',4,4',5-Pentachlorobiphenyl	EPA 1668	MLA-010		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y						
	SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y																						Y						
	SGS AXYS MLA-901	MLA-901		Y																													Y						
	EPA 8270	MLA-007											Y																										
	SGS AXYS MLA-007	MLA-007			Y																													Y					
	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																		Y					
	EPA 8270	MLA-007																																					
	SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y																				Y				
	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																			Y				
	SGS AXYS MLA-010	MLA-010		Y	Y	Y																														Y			
	EPA 8270	MLA-007																																					
	SGS AXYS MLA-010	MLA-010		Y	Y	Y										Y																				Y			
	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																				Y			
	EPA 8270	MLA-007																																					
	SGS AXYS MLA-010	MLA-010		Y	Y	Y																															Y		
	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																					Y		
	EPA 8270	MLA-007																																					
	SGS AXYS MLA-010	MLA-010		Y	Y	Y																																Y	
EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																						Y		
EPA 8270	MLA-007																																						
SGS AXYS MLA-010	MLA-010		Y	Y	Y																																Y		
EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																						Y		
SGS AXYS MLA-007	MLA-007			Y																																		Y	
EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																						Y		
EPA 8270	MLA-007																																						
SGS AXYS MLA-010	MLA-010		Y	Y	Y																																	Y	
EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																							Y	
SGS AXYS MLA-007	MLA-007			Y																																			Y
EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																							Y	
SGS AXYS MLA-010	MLA-010		Y	Y	Y																																		Y
EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																							Y	
SGS AXYS MLA-007	MLA-007			Y																																			Y











**Accreditation Scope**SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum										Tissue				Urine				Water																		
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **						
PCB 184 2,2',3,4,4',6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y																											
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																			Y							
PCB 185 2,2',3,4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																				Y						
PCB 186 2,2',3,4,5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y																											
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																					Y					
PCB 187 2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																						Y				
	SGS AXYS MLA-901	MLA-901	Y																																	Y				
PCB 187/182	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-007	MLA-007		Y																																				
														Y																										
PCB 188 2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																							Y			
PCB 189 2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																							Y			
PCB 192 2,3,3',4,5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																								Y		
PCB 193 2,3,3',4',5,5',6-Heptachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																								Y		
PCB 194 2,2',3,3',4,4',5,5'-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																								Y		
PCB 195 2,2',3,3',4,4',5,6-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	EPA 8270	MLA-007											Y																											
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																								Y		
PCB 196 2,2',3,3',4,4',5,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y	Y	Y																										
	SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y	Y																									Y	
	SGS AXYS MLA-007	MLA-007		Y																																				
PCB 196/203	EPA 8270	MLA-007										Y																												

### Accreditation Scope

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum										Tissue	Urine	Water	Water, Non-Potable																				
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **			
		SGS AXYS MLA-007	MLA-007		Y																																
	PCB 197 2,2',3,3',4,4',6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y												Y	Y	Y	Y	Y	Y		Y	Y					
		EPA 8270	MLA-007									Y																									
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y												Y	Y								Y				
	PCB 198 2,2',3,3',4,5,5',6-Octachlorobiphenyl	SGS AXYS MLA-007	MLA-007			Y									Y																						
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y										Y		Y	Y	Y	Y	Y			Y	Y				
		EPA 8270	MLA-007								Y																										
	PCB 199 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y		Y								Y				
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y	Y				Y	Y			
		EPA 8270	MLA-007								Y																										
	PCB 2 3-Chlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y		Y								Y				
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y													Y	Y	Y	Y	Y				Y	Y			
		EPA 8270	MLA-007								Y																										
	PCB 20 2,3,3'-Trichlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y										Y			
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y													Y	Y	Y	Y	Y					Y	Y		
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y												Y	Y										Y		
	PCB 200 2,2',3,3',4,5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y	Y					Y	Y		
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y	Y										Y		
	PCB 201 2,2',3,3',4,5',6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y	Y					Y	Y		
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y	Y										Y		
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y										Y		Y	Y	Y	Y	Y						Y	Y	
	PCB 202 2,2',3,3',5,5',6'-Octachlorobiphenyl	EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y	Y										Y		
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y										Y		Y	Y	Y	Y	Y						Y	Y	
	PCB 203 2,2',3,4,4',5,5',6-Octachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y											Y	Y	
		EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y	Y												Y	Y	Y	Y	Y						Y	Y	
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y												Y	
	PCB 204 2,2',3,4,4',5,6,6'-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y	Y						Y	Y	
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y												Y	
	PCB 205 2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y							Y	Y	
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y	Y											Y	
		SGS AXYS MLA-007	MLA-007		Y							Y												Y													Y
	PCB 206 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y								Y	Y
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y													Y
		SGS AXYS MLA-007	MLA-007		Y							Y												Y													
	PCB 207 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y								Y	Y
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y													Y
		SGS AXYS MLA-007	MLA-007		Y							Y												Y													
	PCB 208 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y								Y	Y
		EPA 8270	MLA-007								Y																										
		SGS AXYS MLA-010	MLA-010		Y	Y	Y					Y											Y	Y													Y
		SGS AXYS MLA-007	MLA-007		Y							Y												Y													
	PCB 209 Decachlorobiphenyl	EPA 1668	MLA-010				Y	Y	Y	Y	Y	Y											Y		Y	Y	Y	Y								Y	

**Accreditation Scope**

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Accreditation Scope										Serum									Tissue	Urine	Water	Water, Non-Potable														
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **		
		EPA 8270	MLA-007								Y					CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025			California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **		
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y		Y			
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 21 2,3,4-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			
	PCB 22 2,3,4'-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
		EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 23 2,3,5-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	PCB 23/34	EPA 8270	MLA-007								Y																									
	PCB 24 2,3,6-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	PCB 24/27	EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 25 2,3',4-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
		EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 26 2,3',5-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y										Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 27 2,3',6-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PCB 28 2,4,4'-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 29 2,4,5-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PCB 3 4-Chlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PCB 30 2,4,6-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PCB 31 2,4',5-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-007	MLA-007		Y											Y							Y	Y												
	PCB 32 2,4',6-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PCB 33 2,3',4'-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	PCB 33/20/21	EPA 8270	MLA-007								Y																									
		SGS AXYS MLA-007	MLA-007		Y											Y																				
	PCB 34 2,3',5'-Trichlorobiphenyl	EPA 1668	MLA-010			Y	Y	Y	Y	Y	Y	Y	Y	Y									Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-010	MLA-010	Y	Y	Y								Y		Y							Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
		SGS AXYS MLA-007	MLA-007		Y																															

**Accreditation Scope**

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum									Tissue									Water																
				Solids									Water, Non-Potable																									
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **				
PCB 35 3,3',4-Trichlorobiphenyl	EPA 1668	MLA-010																																				
	EPA 8270	MLA-007																																				
PCB 36 3,3',5-Trichlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																			Y			
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 37 3,4,4'-Trichlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																				Y		
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 38 3,4,5-Trichlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																					Y	
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 39 3,4',5-Trichlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						Y
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 4 2,2'-Dichlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						Y
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 40 2,2',3,3'-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						Y
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 41 2,2',3,4-Tetrachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 41/71/64/68	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 42 2,2',3,4'-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 42/59	SGS AXYS MLA-007	MLA-007		Y								Y																										
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 43 2,2',3,5-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 44 2,2',3,5'-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 45 2,2',3,6-Tetrachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 46 2,2',3,6'-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 47 2,2',4,4'-Tetrachlorobiphenyl	SGS AXYS MLA-007	MLA-007		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	EPA 8270	MLA-007										Y																										
PCB 48 2,2',4,5-Tetrachlorobiphenyl	SGS AXYS MLA-010	MLA-010		Y	Y	Y						Y		Y		Y																						
	EPA 1668	MLA-010					Y	Y	Y	Y	Y	Y	Y	Y																								
	SGS AXYS MLA-010	MLA-010										Y		Y		Y																						

<b>Accreditation Scope</b> SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40				Serum									Tissue				Urine		Water		Water, Non-Potable														
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **	
PCB 49 2,2',4,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y																													
	SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y								Y		Y	Y	Y	Y	Y					Y	
PCB 49/43	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-007	MLA-007			Y												Y							Y											
PCB 5 2,3-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y		Y					Y		Y	Y	Y	Y	Y						Y	Y
PCB 50 2,2',4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y		Y					Y		Y	Y	Y	Y	Y						Y	Y
	SGS AXYS MLA-007	MLA-007			Y												Y						Y		Y										
PCB 51 2,2',4,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y								Y	Y	
PCB 52 2,2',5,5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y									Y		Y					Y		Y	Y	Y	Y	Y						Y	Y
PCB 52/73	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-007	MLA-007			Y											Y							Y		Y										
PCB 53 2,2',5,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 54 2,2',6,6'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 55 2,3,3',4-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 56 2,3,3',4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 56/60	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-007	MLA-007			Y											Y							Y												
PCB 57 2,3,3',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 58 2,3,3',5'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 59 2,3,3',6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 6 2,3-Dichlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 60 2,3,4,4'-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 61 2,3,4,5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 62 2,3,4,6-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	SGS AXYS MLA-010	MLA-010		Y	Y	Y								Y		Y						Y		Y	Y	Y	Y	Y						Y	Y
PCB 62/65	EPA 8270	MLA-007										Y																							
PCB 63 2,3,4',5-Tetrachlorobiphenyl	EPA 1668	MLA-010				Y		Y	Y	Y	Y	Y	Y	Y								Y			Y	Y	Y	Y	Y				Y	Y	
	EPA 8270	MLA-007										Y																							













Accreditation Scope				SGS AXYS Analytical Services Ltd.										file ref.: ACC-101 Rev. 40																			
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum										Tissue										Urine									
				Solids			Water, Non-Potable							Solids			Water, Non-Potable							Solids			Water, Non-Potable						
				California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **				
1,2,3,7,8,9-HxCDF	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
1,2,3,7,8-PeCDD	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
1,2,3,7,8-PeCDF	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
2,3,4,6,7,8-HxCDF	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
2,3,4,7,8-PeCDF	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
2,3,7,8-TCDD	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
2,3,7,8-TCDF	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
OCDD	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
OCDF	EPA 1613	MLA-017							Y	Y																							
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017	Y	Y								Y	Y						Y														
Total HpCDD	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total HpCDF	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total HxCDD	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total HxCDF	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total PCDD	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total PCDD+PCDF	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total PCDF	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															
	SGS AXYS MLA-017	MLA-017																															
Total PeCDD	EPA 1613	MLA-017																															
	EPA 8290	MLA-017																															







**Accreditation Scope**

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Serum							Tissue			Urine			Water, Non-Potable																					
				CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **				
	Clonidine	SGS AXYS MLA-075	MLA-075		Y																																	
	Cloxacillin	EPA 1694	MLA-075							Y																									Y			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Cocaine	SGS AXYS MLA-075	MLA-075																																			
		EPA 1694	MLA-075							Y																										Y		
		SGS AXYS MLA-075	MLA-075		Y																																	
	Codeine	EPA 1694	MLA-075													Y																						
		SGS AXYS MLA-075	MLA-075		Y																																	
	Cotinine	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	DEET (N,N-diethyl-m-toluamide)	SGS AXYS MLA-075	MLA-075		Y																																	
	Dehydronifedipine	EPA 1694	MLA-075									Y																									Y	
		SGS AXYS MLA-075	MLA-075		Y																																	
	Demeclocycline	EPA 1694	MLA-075														Y																				Y	
		SGS AXYS MLA-075	MLA-075		Y																																	
	Desmethyldiltiazem	SGS AXYS MLA-075	MLA-075		Y																																	
	Diazepam	SGS AXYS MLA-075	MLA-075		Y																																	
	Digoxigenin	EPA 1694	MLA-075																																			Y
		SGS AXYS MLA-075	MLA-075		Y																																	
	Digoxin	EPA 1694	MLA-075															Y																				
		SGS AXYS MLA-075	MLA-075		Y																																	
	Diltiazem	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Diphenhydramine	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Doxycycline	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Enalapril	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Enrofloxacin	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Erythromycin	SGS AXYS MLA-075	MLA-075		Y																																	
	Erythromycin anhydrate	EPA 1694	MLA-075																																			Y
	Flumequine	EPA 1694	MLA-075																																			Y
		SGS AXYS MLA-075	MLA-075		Y																																	
	Fluocinonide	SGS AXYS MLA-075	MLA-075		Y																																	
	Fluoxetine	EPA 1694	MLA-075																																			Y
		SGS AXYS MLA-075	MLA-075		Y																																	
	Fluticasone propionate	SGS AXYS MLA-075	MLA-075		Y																																	
	Furosemide	SGS AXYS MLA-075	MLA-075		Y																																	
	Gemfibrozil	EPA 1694	MLA-075																																			Y
		SGS AXYS MLA-075	MLA-075		Y																																	
	Glipizide	SGS AXYS MLA-075	MLA-075		Y																																	
	Glyburide	SGS AXYS MLA-075	MLA-075		Y																																	
	Hydrochlorothiazide	SGS AXYS MLA-075	MLA-075		Y																																	
	Hydrocodone	SGS AXYS MLA-075	MLA-075		Y																																	
	Hydrocortisone	SGS AXYS MLA-075	MLA-075		Y																																	
	Ibuprofen	EPA 1694	MLA-075															Y																				Y
		SGS AXYS MLA-075	MLA-075		Y																																	
	Isochlortetracycline (ICTC)	EPA 1694	MLA-075																																			
		SGS AXYS MLA-075	MLA-075		Y																																	
	Lincomycin	EPA 1694	MLA-075																																			





**Accreditation Scope**

SGS AXYS Analytical Services Ltd.  
file ref.: ACC-101 Rev. 40

Accreditation Scope				Serum	Solids	Tissue	Urine	Water	Water, Non-Potable
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA California DPH Florida DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE Maine DOH ANAB ISO 17025 ANAB DoD **	CALA California DOH Minnesota DOH New Jersey DEP Virginia DGS ANAB ISO 17025	CALA	CALA	CALA California DPH Florida DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE * Maine DOH Pennsylvania DEP ANAB ISO 17025 ANAB DoD **
	Sulfamerazine	EPA 1694	MLA-075						Y
	Sulfamerazine	SGS AXYS MLA-075	MLA-075	Y				Y	
	Sulfamethazine	EPA 1694	MLA-075			Y			Y
	Sulfamethazine	SGS AXYS MLA-075	MLA-075	Y				Y	
	Sulfamethizole	EPA 1694	MLA-075			Y			Y
	Sulfamethizole	SGS AXYS MLA-075	MLA-075	Y				Y	
	Sulfamethoxazole	EPA 1694	MLA-075			Y			Y
	Sulfamethoxazole	SGS AXYS MLA-075	MLA-075	Y				Y	
	Sulfanilamide	EPA 1694	MLA-075			Y			Y
	Sulfanilamide	SGS AXYS MLA-075	MLA-075	Y				Y	
	Sulfathiazole	EPA 1694	MLA-075			Y			Y
	Sulfathiazole	SGS AXYS MLA-075	MLA-075	Y				Y	
	Tetracycline (TC)	EPA 1694	MLA-075			Y			Y
	Tetracycline (TC)	SGS AXYS MLA-075	MLA-075	Y				Y	
	Theophylline	SGS AXYS MLA-075	MLA-075	Y				Y	
	Thiabendazole	EPA 1694	MLA-075			Y			Y
	Thiabendazole	SGS AXYS MLA-075	MLA-075	Y				Y	
	Trenbolone	SGS AXYS MLA-075	MLA-075	Y				Y	
	Trenbolone acetate	SGS AXYS MLA-075	MLA-075	Y				Y	
	Triamterene	SGS AXYS MLA-075	MLA-075	Y				Y	
	Triclocarban	EPA 1694	MLA-075			Y			Y
	Triclocarban	SGS AXYS MLA-075	MLA-075	Y				Y	
	Triclosan	EPA 1694	MLA-075			Y			Y
	Triclosan	SGS AXYS MLA-075	MLA-075	Y				Y	
	Trimethoprim	EPA 1694	MLA-075			Y			Y
	Trimethoprim	SGS AXYS MLA-075	MLA-075	Y				Y	
	Tylosin	EPA 1694	MLA-075			Y			Y
	Tylosin	SGS AXYS MLA-075	MLA-075	Y				Y	
	Valsartan	SGS AXYS MLA-075	MLA-075	Y				Y	
	Verapamil	SGS AXYS MLA-075	MLA-075	Y				Y	
	Virginiamycin	EPA 1694	MLA-075			Y			Y
	Virginiamycin	SGS AXYS MLA-075	MLA-075	Y				Y	
	Warfarin	EPA 1694	MLA-075			Y			Y
	Warfarin	SGS AXYS MLA-075	MLA-075	Y				Y	
Targeted Metabolites	11, 14, 17-eicosatrienoic acid (eicosatrienoic acid)	SGS AXYS MLM-001	MLM-001			Y			
	11, 14-eicosadienoic acid	SGS AXYS MLM-001	MLM-001			Y			
	3-hydroxytyrosine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Acetylcarnitine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Acetylmethionine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Alanine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	alpha-Aminoadipic acid	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Arginine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Asparagine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Aspartate	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Asymmetric dimethylarginine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Butenylcarnitine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Butyrylcarnitine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	C22:5 ISOMER 1 (tentatively all-cis-4, 8, 12, 15, 19-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001			Y			
	C22:5 ISOMER 2 (all-cis-7, 10, 13, 16, 19-docosapentaenoic acid (DPA))	SGS AXYS MLM-001	MLM-001			Y			
	C22:5 ISOMER 3 (tentatively all-cis-4, 7, 10, 13, 16-docosapentaenoic acid)	SGS AXYS MLM-001	MLM-001			Y			
	Carnitine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Carnosine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	chenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	cholic acid	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Citrulline	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Creatinine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	Decadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y		Y	Y		
	decanoic acid (capric acid)	SGS AXYS MLM-001	MLM-001			Y			



Accreditation Scope				Serum	Solids	Tissue	Urine	Water	Water, Non-Potable
SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40				CALA	California DPH Florida DOH Minnesota DOH New Jersey DEP New York DOH Virginia DGS Washington DE Maine DOH ANAB ISO 17025 ANAB DoD **	California DOH Minnesota DOH New Jersey DEP Virginia DGS ANAB ISO 17025	CALA	California DPH Florida DOH Minnesota DOH New Jersey DEP Virginia DGS Washington DE * Maine DOH Pennsylvania DEP ANAB ISO 17025 ANAB DoD **	
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	Y			Y		
	lysoPhosphatidylcholine acyl C20:4	SGS AXYS MLM-001	MLM-001	Y			Y		
	lysoPhosphatidylcholine acyl C24:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	lysoPhosphatidylcholine acyl C26:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	lysoPhosphatidylcholine acyl C28:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	lysoPhosphatidylcholine acyl C28:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Methionine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Methioninesulfoxide	SGS AXYS MLM-001	MLM-001	Y			Y		
	Methylglutaryl carnitine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Nitrotyrosine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Nonacylcarnitine	SGS AXYS MLM-001	MLM-001	Y			Y		
	octadecadienoic acid (linoleic acid)	SGS AXYS MLM-001	MLM-001	Y			Y		
	Octadecadienyl carnitine	SGS AXYS MLM-001	MLM-001	Y			Y		
	octadecanoic acid (stearic acid)	SGS AXYS MLM-001	MLM-001	Y			Y		
	Octadecanoyl carnitine	SGS AXYS MLM-001	MLM-001	Y			Y		
	octadecatrienoic acid (γ-linolenic acid)	SGS AXYS MLM-001	MLM-001	Y			Y		
	Octadecenoyl carnitine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Octanoyl carnitine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Ornithine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phenylalanine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phenylethylamine	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C30:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C30:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C30:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C32:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C32:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C34:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C34:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C34:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C34:3	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C36:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C36:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C36:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C36:3	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C36:4	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C36:5	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C38:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C38:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C38:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C38:3	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C38:5	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C38:6	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C40:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C40:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C40:3	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C40:4	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C40:5	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C40:6	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C42:0	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C42:1	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C42:2	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C42:3	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C42:4	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C42:5	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C44:3	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C44:4	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C44:5	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine acyl-alkyl C44:6	SGS AXYS MLM-001	MLM-001	Y			Y		
	Phosphatidylcholine diacyl C24:0	SGS AXYS MLM-001	MLM-001	Y			Y		



<b>Accreditation Scope</b> SGS AXYS Analytical Services Ltd. file ref.: ACC-101 Rev. 40				Serum	Solids										Tissue			Urine		Water		Water, Non-Potable														
Compound Class	Compound	Accredited Method ID	SGS AXYS Method ID	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE	Maine DOH	ANAB ISO 17025	ANAB DoD **	CALA	Florida DOH	Minnesota DOH	New Jersey DEP	Virginia DGS	ANAB ISO 17025	CALA	CALA	CALA	California DPH	Florida DOH	Minnesota DOH	New Jersey DEP	New York DOH	Virginia DGS	Washington DE *	Maine DOH	Pennsylvania DEP	ANAB ISO 17025	ANAB DoD **	
	Taurine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	taurochenodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y																				
	taurocholic acid	SGS AXYS MLM-001	MLM-001	Y												Y																				
	taurodeoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y																				
	tauroolithocholic acid	SGS AXYS MLM-001	MLM-001	Y												Y																				
	taurosodexoxycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Tetradecadienylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	tetradecanoic acid (myristic acid)	SGS AXYS MLM-001	MLM-001													Y																				
	Tetradecanoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Tetradecenoylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Threonine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Tiglylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Total dimethylarginine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Tryptophan	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Tyrosine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	ursodexoycholic acid	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Valerylcarnitine	SGS AXYS MLM-001	MLM-001	Y												Y																				
	Valine	SGS AXYS MLM-001	MLM-001	Y												Y																				
TBBPA	Tetrabromobisphenol A	SGS AXYS MLA-079	MLA-079	Y																																
TOP	Perfluorobutanesulfonate (PFBS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorobutanoate (PFBA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorodecanesulfonate (PFDS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorodecanoate (PFDA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorododecanesulfonate (PFDoS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorododecanoate (PFDoA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluoroheptanesulfonate (PFHpS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluoroheptanoate (PFHpA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorohexanesulfonate (PFHxS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorohexanoate (PFHxA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorononanesulfonate (PFNS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorononanoate (PFNA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorooctanesulfonate (PFOS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorooctanoate (PFOA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluoropentanesulfonate (PFPeS)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluoropentanoate (PFPeA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorotetradecanoate (PFTeDA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluorotridecanoate (PFTrDA)	SGS AXYS MLA-111	MLA-111		Y																				Y											
	Perfluoroundecanoate (PFUnA)	SGS AXYS MLA-111	MLA-111		Y																				Y											

Note \* Analysis of pesticides and PCBs in non-potable water samples by AXYS method MLA-007, with the exception of NPDES or State permitted discharges and Stormwater applications, may fall within the scope of Washington State Department of Ecology solids matrix accreditation, subject to approval of the Ecology Project Manager.

Note \*\* PFAS by LC-MS/MS compliant with US DoD QSM 5.1 table B-15

**Legend**

Y	Accreditation scope
BFR	Brominated flame retardants (non-PBDPE)
BPA and mPE	Bisphenol A and mono-Phthalate Esters
HBCDD	Hexabromocyclododecane
OC Pesticides	Organochlorine Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PBDPE	Polybrominated diphenylethers
PCB	Polychlorinated Biphenyls
PCDDF	Polychlorinated dibenzodioxins/furans
PFAS	Per- and Polyfluoroalkyl Substances
PPCP	Pharmaceutical and Personal Care Products
TBBPA	Tetrabromobisphenol A
TOP	Total Oxidizable Precursors
California DPH	California Department of Public Health, Lab ID 2911
Florida DOH	Florida Department of Health, Lab ID E871007, (NELAC Standard)
Pennsylvania DEP	Pennsylvania Department of Environmental Protection
Minnesota DOH	Minnesota Department of Health, Lab ID 232-999-430, (NELAC Standard)
New Jersey DEP	New Jersey Department of Environmental Protection, Lab ID CANA005, (NELAC Standard)
New York DOH	New York Department of Health, Lab ID 11674, (NELAC Standard)
Washington DE	Washington Department of Ecology, Lab ID C404
Virginia DGS	Virginia Department of General Services, Division of Consolidated Laboratory Services, Lab ID 460224, (NELAC Standard)
Maine DOH	Maine Center for Disease Control and Prevention, Department of Health and Human Services, Lab ID CN00003

ANAB DoD ANSI-ASQ National Accreditation Board, certificate ADE-1861, (US DoD QSM 5.1 Standard)



CALA Canadian Association for Laboratory Accreditation Inc., Lab ID A2637, (ISO/IEC 17025:2005 Standard)



ANAB ISO 17025 ANSI-ASQ National Accreditation Board, certificate ADE-1861.01, (ISO/IEC 17025:2005 Standard)

