

#### Lewis S. Streeter Senior Project Manager

GE Corporate, OneEHS 1 River Road, Bldg 5 – 7W Schenectady, NY 12345

T 518 388 7552 lewis.Streeter@ge.com

January 28, 2019

Joseph Battipaglia United States Environmental Protection Agency, Region II Hudson River Field Office 187 Wolf Road, Suite 303 Albany New York 12205 (electronic copy via email)

David Rosoff Removal Action Branch Emergency and Remedial Response Division United States Environmental Protection Agency, Region II 2890 Woodbridge Avenue Building 205 (MS-211) Edison, New Jersey 08837 (electronic copy via email)

Subject: Mercury and PCB Minimization Program Reports Dewey Loeffel Landfill Superfund Site Removal Order (Index No. CERCLA 02-2012-2005) Nassau, New York

Dear Mr. Battipaglia and Mr. Rosoff:

Attached please find the referenced reports prepared by Arcadis of New York, Inc. on behalf of the General Electric Company and SI Group, Inc., (GE and SI Group are Respondents for the Dewey Loeffel Landfill Superfund Site). The activities described in each report are based on the Mercury and Polychlorinated Biphenyl Minimization Program Plans which were submitted to the United States Environmental Protection Agency (USEPA) on November 12, 2013 and approved by USEPA on November 29, 2013. These Minimization Program Plans were developed in accordance with the substantive requirements issued by the New York State Department of Environmental Conservation and are incorporated into the Design Report/Implementation Plan (DR/IP) for the referenced Site. The activities associated with each minimization program are described in Appendix B of the DR/IP.

Please contact me if you have any questions regarding the attached reports.

Sincerely,

Lewis S. Streeter Senior Project Manager

January 28, 2019 Page 2

Enclosures: 2018 Annual Reports; Mercury Minimization Program and PCB Minimization Program

cc:

Sharon Kivowitz, Esq. New York/Caribbean Superfund Branch Office of Regional Counsel United States Environmental Protection Agency Region II 290 Broadway, 17th Floor New York, New York 10007-1866 (via email)

New York State Department of Environmental Conservation Division of Environmental Remediation Remedial Bureau B 625 Broadway, 12th Floor Albany, New York 12233-7016 Attn: Mr. Michael Komoroske, Janet E. Brown, Kyle Forster (via email)

Derek Thorsland Regional Water Engineer New York State Department of Environmental Conservation 1150 N. Westcott Road Schenectady, New York 12306-2014 (via email)

Juliana Atmadja, Louis Berger (via email) Amy Darpinian, USACoE (via email) Keith Cowan, Clough Harbour (via email) Charles Gardner, SI Group (via email) Eric Merrifield, Esq., GE (via email) Kevin Mooney, GE (via email) Don Sauda, Arcadis (via email) P.J. Hart, Arcadis (via email) Paul Hare, OBG (via email) Jesse Vollick, OBG, (via email) Bill Callen, Behan Communications (via email)



Lewis Streeter Senior Project Manager GE Corporate, OneEHS 1 River Road, Bldg 5 – 7W Schenectady, NY 12345

Subject:

2018 Annual Report Mercury Minimization Program Dewey Loeffel Landfill Superfund Site Nassau, New York

Dear Mr. Streeter:

This 2018 Annual Report has been prepared by Arcadis of New York, Inc. (Arcadis) to summarize activities performed under the Mercury Minimization Program (MMP) that was developed in accordance with the substantive requirements issued by the New York State Department of Environmental Conservation (NYSDEC) and incorporated into the Design Report/ Implementation Plan (DR/IP) for the Dewey Loeffel Landfill Superfund Site (Site) in Nassau, New York. The activities described herein are based on the MMP Plans submitted to the United States Environmental Protection Agency (USEPA) on November 12, 2013, which was approved by USEPA on November 29, 2013.

### BACKGROUND

The treatment system at the Site was started up in December 2013. The influent to the treatment system consists of leachate removed from the existing underground leachate collection tank on the landfill and groundwater from the eight extraction wells (i.e., EW-1 through EW-8) located to the south of the landfill. The treatment system is primarily designed to address volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in the extracted groundwater and landfill leachate prior to discharge to the Valatie Kill. However, treatment of mercury, if present, may occur as particulates are removed by bag filters and via adsorption in two liquid-phase granular activated carbon (GAC) units.

Arcadis of New York, Inc. One Lincoln Center 110 West Fayette Street Suite 300 Syracuse New York 13202 Tel 315 446 9120 www.arcadis.com

Environment

Date: January 28, 2019

Contact: Donald Sauda, P.E.

Phone:

315.447.2612

Email: Donald.sauda@arcadis.com

Our ref: B0031174

### 2018 QUARTERLY SAMPLING AND ANALYTICAL ACTIVITIES

In accordance with the MMP, quarterly sampling was initiated when direct discharge to the Valatie Kill began in December 2014. Grab samples were collected on March 14, May 30, August 8, and November 7, 2018. All samples were collected and analyzed in accordance with USEPA Methods 1669/1631. USEPA Method 1631 is an ultra-sensitive laboratory analytical procedure to detect very low levels of mercury to about 1 nanograms per liter (ng/L), equivalent to parts per trillion (ppt). These grab samples were collected of the combined flow from all operating extraction wells, treatment system influent, and treatment system effluent. These sample locations are shown on Figure 1 in Attachment A. All samples were packed in a cooler with ice for delivery using standard chain-of-custody (COC) procedures to Pace Analytical Services, Inc. (Pace) of Schenectady, New York, who subcontracted the mercury analysis to ALS Environmental, Inc. (ALS) in Rochester, New York. Due to an instrument issue at ALS in Rochester, the analyses were performed at ALS in Middletown, Pennsylvania. The mercury concentrations in ng/L are summarized below.

Sample Description	3/14/18	5/30/18	8/8/18	11/7/18
Landfill Leachate	NS*	NS*	NS*	NS*
Combined Extraction Wells	2.9	19.5	8.9	0.26 J**
Treatment System Influent Tank	85.7	92.2	54.5	121
Treatment System Effluent	<0.5	0.22 J**	0.53	0.22 J**

\*During the March 14, May 30, August 8 and November 7, 2018 sampling events, the landfill leachate sample was not collected due to no flow from the leachate tank.

\*\*J = Denotes an estimated concentration. The concentration result is greater than or equal to the method detection limit (MDL) but less than the practical quantitation limit (PQL).

Analytical results (Form 1s) for the mercury data are included in Attachment B. These data are also included in Monthly Progress Reports and full laboratory reports that are submitted monthly to USEPA.

### 2019 SAMPLING AND ANALYTICAL ACTIVITIES

In accordance with the MMP, quarterly sampling in 2019 will be conducted at the same locations as in 2018. All samples will be collected and analyzed for mercury by USEPA Methods 1669/1631. The 2019 Annual Report will be submitted to USEPA by January 31, 2020.

If you have any questions, please contact me at 315 447 2612.

Mr. Lewis Streeter January 28, 2019

Sincerely,

Arcadis of New York, Inc.

Hordo F. Sano

Donald Sauda, P.E. Vice President

Attachment A Water Sample Locations



CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB/G/STEINBERGER,K/SARTORI LD/G/STEINBERGER PIC:/PM/TM: P.J.HART LYR:ON=\*/OFF=\*REF V:ENVCADISYRACUSEACTINB0031174000400013DWGIREPORT33174P01.dwg LAYOUT: 1 SAVED: 1/20/2016.155 PM ACADVER: 19.18 (LMS TECH

Attachment B Analytical Results





NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2302357 30246169

Lab ID: Sample ID:	2302357001 TS Effluent 031418	8				Date Collected: Date Received:	3/14/2018 07:3 3/15/2018 09:0	30 )1	Matrix: \	Water	
Parameters	neters Results Flag		Flag	Units	RDL	Method	Prepared	Ву	Analyzed	By	Cntr
Mercury, Total	NI	D		ng/L	0.50	EPA 1631E	3/23/18 09:00	AXC	3/23/18 19:54	AXC	A

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Ms. Sarah S Leung Project Coordinator

#### ALS Environmental Laboratory Locations Across North America





NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2302357 30246169

Lab ID: Sample ID:	2302357002 Influent 031418					Date Collected: Date Received:	3/14/2018 08:3 3/15/2018 09:0	30 01	Matrix: N	Water	
Parameters		Results	Flag	Units	RDL	Method	Prepared	Ву	Analyzed	Ву	Cntr
Mercury, Total		85.7		ng/L	1.0	EPA 1631E	3/23/18 09:00	AXC	3/23/18 15:33	AXC	A

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2302357 30246169

Lab ID: Sample ID:	2302357003 Extractions Wells 03141	8			Date Collected: Date Received:	3/14/2018 09:: 3/15/2018 09:0	30 01	Matrix: V	Water	
Parameters	rs Results Flag Units		Units	RDL	Method	Prepared	Ву	Analyzed	By	Cntr
Mercury, Total	2.9		ng/L	0.50	EPA 1631E	3/23/18 09:00	AXC	3/23/18 15:43	AXC	A

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### ANALYTICAL RESULTS

Workorder: 2317704 PNW147|30254374

Lab ID: Sample ID:	2317704001 ID: TS Effluent 053018						Collected: Received:	5/30/20 <sup>2</sup> 5/31/20 <sup>2</sup>	18 07 18 09	:30 N :00	latrix:	NY Non-Pota	able Wa	ter
Parameters		Results	Flag	Units	RDL	MDL		Metho	d	Prepared	l By	Analyzed	Ву	Cntr
Mercury, Total		0.22J	J,1	ng/L	0.50	0.17	EPA	1631E	6/	/6/18 10:00	AXC	6/6/18 15:37	AXC	A

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2317704 PNW147|30254374

Lab ID: Sample ID:	2317704002 Influent 05301	8				Date Date	Collected: Received:	5/30/201 5/31/201	8 08:30 8 09:00	N	latrix:	NY Non-Pota	able Wa	ater
Parameters		Results	Flag	Units	RDL	MDL		Method	l Pre	pared	Ву	Analyzed	Ву	Cntr
Mercury, Total		92.2	1	ng/L	5.0	1.7	EPA	1631E	6/6/18 1	0:00	AXC	6/6/18 15:47	AXC	A

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#### ALS Environmental Laboratory Locations Across North America





NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2317704 PNW147|30254374

Lab ID: Sample ID:	2317704003 Extraction We	2317704003 Extraction Wells 053018						5/30/201 5/31/201	8 09:30 8 09:00	Matrix:	NY Non-Pota	able Wa	ater
Parameters		Results	Flag	Units	RDL	MDL		Method	l Prepa	red By	Analyzed	Ву	Cntr
Mercury, Total		19.5	1	ng/L	2.5	0.84	EPA	1631E	6/6/18 10:	0 AXC	6/6/18 15:57	AXC	A

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#### ALS Environmental Laboratory Locations Across North America





NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2331328 PNW150|30261595

Lab ID: Sample ID:	2331328001 TS Effluent 08	30818				Date Date	Collected: Received:	8/8/2018 8/9/2018	07:30 Matrix: 10:45	Water		
Parameters		Results	Flag	Units	RDL	MDL		Method	Prepared By	Analyzed	Ву	Cntr
Mercury, Total		0.53	1	ng/L	0.50	0.17	EPA	1631E	8/22/18 09:00 AXC	8/22/18 18:23	AXC	A

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#### ALS Environmental Laboratory Locations Across North America





NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2331328 PNW150|30261595

Lab ID: Sample ID:	2331328002 Influent 08081	8				Date Date	Collected: Received:	8/8/2018 8/9/2018	08:30 M 10:45	latrix:	Water		
Parameters		Results	Flag	Units	RDL	MDL		Method	Prepared	Ву	Analyzed	Ву	Cntr
Mercury, Total		54.5	1,2	ng/L	2.5	0.84	EPA	1631E	8/22/18 09:00	AXC	8/22/18 18:33	AXC	A

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#### ALS Environmental Laboratory Locations Across North America





NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01 State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

### ANALYTICAL RESULTS

Workorder: 2331328 PNW150|30261595

Lab ID: Sample ID:	2331328003 Extraction Wells	080818				Date Date	Collected: Received:	8/8/2018 ( 8/9/2018 <sup>-</sup>	09:30 M 10:45	latrix:	Water		
Parameters	R	esults	Flag	Units	RDL	MDL		Method	Prepared	Ву	Analyzed	Ву	Cntr
Mercury, Total	8.	.9	1,2	ng/L	2.5	0.84	EPA	1631E	8/22/18 09:00	AXC	8/23/18 08:17	AXC	A

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#### ALS Environmental Laboratory Locations Across North America





301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

### ANALYTICAL RESULTS

Workorder: 2348769 PNW156|30270722

Lab ID: Sample ID:	2348769001 TS Effluent 11	10718				Date Date	Collected: Received:	11/7/2018 11/8/2018	3 07:30 Matrix: 3 09:13	Water		
Parameters		Results	Flag	Units	RDL	MDL		Method	Prepared By	Analyzed	By	Cntr
Mercury, Total		0.22J	J,1	ng/L	0.50	0.17	EPA	1631E	11/12/18 07:59 MNP	11/9/18 13:56	MNP	A

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#### ALS Environmental Laboratory Locations Across North America





301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

### ANALYTICAL RESULTS

Workorder: 2348769 PNW156|30270722

Lab ID: Sample ID:	2348769002 Influent 110718	3				Date Date	Collected: Received:	11/7/2018 11/8/2018	3 08:30 Matrix: 3 09:13	Water		
Parameters		Results	Flag	Units	RDL	MDL		Method	Prepared By	Analyzed	Ву	Cntr
Mercury, Total		121	1	ng/L	12.5	4.2	EPA	1631E	12/12/18 08:30 MNP	12/12/18 14:10	MNP	A

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#### ALS Environmental Laboratory Locations Across North America





301 Fulling Mill Road - Middletown, PA 17057 - Phone: 717-944-5541 - Fax: 717-944-1430 - www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618 State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

### ANALYTICAL RESULTS

Workorder: 2348769 PNW156|30270722

Lab ID: Sample ID:	2348769003 Extraction Well	s 110718				Date Date	Collected: Received:	11/7/2018 11/8/2018	8 09:30 Matrix: 8 09:13	Water		
Parameters		Results	Flag	Units	RDL	MDL		Method	Prepared By	Analyzed	By	Cntr
Mercury, Total		0.26J	J	ng/L	0.50	0.17	EPA	1631E	11/12/18 07:59 MNP	11/9/18 15:29	MNP	A

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Ms. Sarah S Leung Project Coordinator

#### ALS Environmental Laboratory Locations Across North America



Lewis Streeter Senior Project Manager GE Corporate, OneEHS 1 River Road, Bldg 5 – 7W Schenectady, NY 12345

Subject:

2018 Annual Report PCB Minimization Program Dewey Loeffel Landfill Superfund Site Nassau, New York

Dear Mr. Streeter:

This 2018 Annual Report has been prepared by Arcadis of New York, Inc. (Arcadis) to summarize activities performed under the Polychlorinated Biphenyl (PCB) Minimization Program (PCBMP) that was developed in accordance with the substantive requirements issued by the New York State Department of Environmental Conservation (NYSDEC) and incorporated into the Design Report/Implementation Plan (DR/IP) for the Dewey Loeffel Landfill Superfund Site (Site) in Nassau, New York. The activities described herein are based on the PCBMP Plan submitted to the United States Environmental Protection Agency (USEPA) on November 12, 2013, which was approved by USEPA on November 29, 2013.

### BACKGROUND

The treatment system at the Site was started up in December 2013. The influent to the treatment system consists of leachate removed from the existing underground leachate collection tank on the landfill and groundwater from the eight extraction wells (i.e., EW-1 through EW-8) located to the south of the landfill. The treatment system is primarily designed to address volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) in the extracted groundwater and landfill leachate prior to discharge to the Valatie Kill.

Arcadis of New York, Inc. One Lincoln Center 110 West Fayette Street Suite 300 Syracuse New York 13202 Tel 315 446 9120 www.arcadis.com

Environment

Date: January 28, 2019

Contact: Donald Sauda, P.E.

Phone: 315.447.2612

Email: Donald.Sauda@arcadis.com

Our ref: B0031174

However, treatment of PCBs, if present, occurs as particulates are removed by bag filters and via adsorption in two liquid-phase granular activated carbon (GAC) units.

### 2018 QUARTERLY SAMPLING AND ANALYTICAL ACTIVITIES

In accordance with the PCBMP, quarterly sampling was initiated when direct discharge to the Valatie Kill began in December 2014. Four composite samples were collected on March 14, May 9, August 8, and November 7, 2018. Each sample was collected in three one-liter bottles. The composite samples at each location were comprised of eight 125 milliliter (1/8 liter) grab samples collected in each bottle every 15 minutes. Prior to 2017, samples were submitted for PCBs analyses by the modified Green Bay Mass Balance Method (mGBM); however, the only laboratory that performed this analysis closed in late 2016. Therefore, in accordance with the substantive requirements issued by NYSDEC, samples were analyzed in 2018 using USEPA Method 1668. The composite samples were collected of the combined flow from all operating extraction wells, treatment system influent, and treatment system effluent. These sample locations are shown on Figure 1 in Attachment A. All samples were packed in a cooler with ice for delivery using standard chain-of-custody (COC) procedures to Pace Analytical Services, Inc. (Pace) in Minneapolis, Minnesota. The total PCB concentrations in nanograms per liter (ng/L), equivalent to parts per trillion (ppt), are summarized below.

Sample Description	3/14/18	5/9/18	8/8/18	11/7/18
Landfill Leachate	NS*	NS*	NS*	NS*
Combined Extraction Wells	332	235	117	154
Treatment System Influent	168	77.0	81.0	243
Treatment System Effluent	Not Detected	Not Detected	Not Detected	Not Detected

\*During the March 14, May 9, August 8 and November 7, 2018 sampling events the landfill leachate sample was not collected due to no flow from the leachate tank.

Analytical results (Form 1s) for the data are included in Attachment B. These data are also included in Monthly Progress Reports and full laboratory reports that are submitted monthly to USEPA.

### 2019 SAMPLING AND ANALYTICAL ACTIVITIES

In accordance with the PCBMP, quarterly sampling in 2019 will be conducted at the same locations as in 2018. All samples will be analyzed for PCBs by USEPA Method 1668 that achieves a total PCB reporting limit no greater than 9 ng/L. The 2019 Annual Report will be submitted to USEPA by January 31, 2020.

If you have any questions, please contact me at 315 671 9214.

Mr. Lewis Streeter January 28, 2019

Sincerely,

Arcadis of New York, Inc.

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Donald Sauda, P.E. Vice President

Attachment A Water Sample Locations



CITY:SYRACUSE-NY DIV/GROUP:ENVCAD DB/G/STEINBERGER,K/SARTORI LD/G/STEINBERGER PIC:/PM/TM: P.J.HART LYR:ON=\*/OFF=\*REF V:ENVCADISYRACUSEACTINB0031174000400013DWGIREPORT33174P01.dwg LAYOUT: 1 SAVED: 1/20/2016.155 PM ACADVER: 19.18 (LMS TECH

Attachment B Analytical Results



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 031418 30246167001 P180324B\_10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0 236
2				ND		0.236
3				ND		0.236
4				ND		0.236
5				ND		0.236
6				ND		0.236
7				ND		0.236
8				ND		0.236
9				ND		0.236
10				ND		0.236
11				ND		2.31
12	12/13			ND		0.472
13	12/13			ND		0.472
14				ND		0.236
15				ND		0.312
16				ND		0.236
17				ND		0.236
18	18/30			ND		0.472
19				ND		0.236
20	20/28			ND		1.22
21	21/33			ND		1.28
22				ND		0.897
23				ND		0.236
24				ND		0.236
25				ND		0.236
26	26/29			ND		0.472
27	_00			ND		0.236
28	20/28			ND		1.22
29	26/29			ND		0.472
30	18/30			ND		0.472
31	10,00			ND		1 23
32				ND		0 236
33	21/33			ND		1 28
34	2000			ND		0 236
35				ND		0.236
36				ND		0.236
37				ND		0.501
38				ND		0 236
39				ND		0.236
40	40/41/71			ND		1 42
41	40/41/71			ND		1 42
42				ND		0 472
43	43/73			ND		0 472
44	44/47/65			ND		1 42
45	45/51			ND		0.945
46				ND		0 472
47	44/47/65			ND		1 42
48				ND		0 472
10						0.172

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

This report shall not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc. Report No.....10423732\_1668\_209\_R1\_DIRevision 1

Page 14 of 43 Page 10 of 39



> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 031418 30246167001 P180324B\_10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.945
50	50/53			ND		0.945
51	45/51			ND		0.945
52				ND		1 45
53	50/53			ND		0.945
54	00/00			ND		0 472
55				ND		0.472
56				ND		0.472
57				ND		0.472
58				ND		0.472
59	59/62/75			ND		1 42
60	00/02/10			ND		0 472
61	61/70/74/76					1 80
62	50/62/75					1.03
63	59/02/75					0.472
64						0.472
65	11/17/65					1 4 2
66	44/47/05					0 704
67						0.794
67						0.472
68	40/00			ND		0.472
69	49/09			ND		0.945
70	61/70/74/76			ND		1.89
71	40/41/71			ND		1.42
72	40/70			ND		0.472
73	43/73			ND		0.472
<u>74</u>	61/70/74/76			ND		1.89
75	59/62/75			ND		1.42
76	61/70/74/76			ND		1.89
77				ND		0.472
78				ND		0.472
79				ND		0.472
80				ND		0.472
81				ND		0.472
82				ND		0.472
83				ND		0.472
84				ND		0.472
85	85/116/117			ND		1.42
86	86/87/97/108/119/125			ND		2.83
87	86/87/97/108/119/125			ND		2.83
88	88/91			ND		0.945
89				ND		0.472
90	90/101/113			ND		1.42
91	88/91			ND		0.945
92				ND		0.472
93	93/98/100/102			ND		1.89
94	-			ND		0.472
95				ND		0.897
96				ND		0.472

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 031418 30246167001 P180324B\_10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2 83
98	93/98/100/102			ND		1 89
99	00,00,100,102			ND		0 472
100	93/98/100/102			ND		1 89
100	90/101/113					1 4 2
107	03/08/100/102					1.42
102	93/98/100/102					0.472
103						0.472
104						0.472
105						0.472
100	407/404			ND		0.472
107	107/124			ND		0.945
108	86/87/97/108/119/125			ND		2.83
109				ND		0.472
110	110/115			ND		0.945
111				ND		0.472
112				ND		0.472
113	90/101/113			ND		1.42
114				ND		0.472
115	110/115			ND		0.945
116	85/116/117			ND		1.42
117	85/116/117			ND		1.42
118				ND		0.605
119	86/87/97/108/119/125			ND		2.83
120				ND		0.472
121				ND		0 472
122				ND		0 472
123				ND		0.472
120	107/124			ND		0.472
125	86/87/07/108/110/125					2 83
125	00/07/97/100/119/125					0.472
120						0.472
127	100/166					0.472
120	120/100					0.945
129	129/138/163			ND		1.42
130				ND		0.472
131				ND		0.472
132				ND		0.472
133				ND		0.472
134	134/143			ND		0.945
135	135/151			ND		0.945
136				ND		0.472
137				ND		0.472
138	129/138/163			ND		1.42
139	139/140			ND		0.945
140	139/140			ND		0.945
141				ND		0.472
142				ND		0.472
143	134/143			ND		0.945
144				ND		0 472
144						0.712

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

TS Effluent 031418 30246167001 P180324B\_10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.472
146				ND		0.472
147	147/149			ND		0.945
148	1111110			ND		0 472
140	147/149			ND		0.945
150	1477145					0.343
151	135/151					0.472
151	155/151					0.945
152	152/169					0.472
155	153/106					0.945
154						0.472
155	450/457			ND		0.472
156	156/157			ND		0.945
157	156/157			ND		0.945
158				ND		0.472
159				ND		0.472
160				ND		0.472
161				ND		0.472
162				ND		0.472
163	129/138/163			ND		1.42
164				ND		0.472
165				ND		0.472
166	128/166			ND		0.945
167				ND		0.472
168	153/168			ND		0.945
169				ND		0.472
170				ND		0.472
171	171/173			ND		0.945
172				ND		0 472
173	171/173			ND		0.945
174				ND		0.472
175				ND		0.472
176						0.472
170						0.472
170						0.472
170						0.472
179	100/102					0.472
180	180/193			ND		0.945
181				ND		0.472
182				ND		0.472
183	183/185			ND		0.945
184				ND		0.472
185	183/185			ND		0.945
186				ND		0.472
187				ND		0.472
188				ND		0.472
189				ND		0.472
190				ND		0.472
191				ND		0.472
192				ND		0.472

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 031418 30246167001 P180324B\_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.945
194				ND		0.709
195				ND		0.709
196				ND		0.709
197	197/200			ND		1.42
198	198/199			ND		1.42
199	198/199			ND		1.42
200	197/200			ND		1.42
201				ND		0.709
202				ND		0.709
203				ND		0.709
204				ND		0.709
205				ND		0.709
206				ND		0.709
207				ND		0.709
208				ND		0.709
209				ND		0.709

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	TS Effluent 031418
Lab Sample ID	30246167001
Filename	P180324B_10

Congener Group	Concentration ng/L	
l otal Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	ND	

ND = Not Detected

**REPORT OF LABORATORY ANALYSIS** 



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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

Influent	031418
3024616	57002
P18032	4B 11

$\begin{array}{c c c c c c c c c c c c c c c c c c c $					Concentration	EMPC	EML
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	IUPAC	<b>Co-elutions</b>	RT	Ratio	ng/L	ng/L	ng/L
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1		10.083	3.01	70.2		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2		12,754	3.02	61.0		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3		12 994	2 89	20.1		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4		13 317	1.53	8 68		0.241
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5				ND		0 241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	õ		16 322	1 59	1 000		0 241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7				ND		0.241
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	8		16 850	1 50	3 11		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ğ		15 807	1.55	0 321		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10		13 533	1.00	0.343		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10		10.000	1.03	0.343 ND		2 36
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	12	12/13					0.481
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	12	12/13					0.401
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	13	12/13					0.401
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	14						0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10		20.470	1.00			0.310
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10		20.479	1.00	0.590 B		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17	10/20	19.940	0.97	0.412		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	18	18/30	19.449	1.04	1.22		0.481
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	19	00/00	17.221	1.01	0.494		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20	20/28			ND		1.24
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	21	21/33			ND		1.30
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	22				ND		0.915
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	23				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	24				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	25				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	26	26/29			ND		0.481
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	27				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	28	20/28			ND		1.24
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	29	26/29			ND		0.481
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	30	18/30	19.449	1.04	(1.22)		0.481
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	31				ND		1.25
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	32		21.081	1.02	0.264		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	33	21/33			ND		1.30
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	34				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	35				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	36				ND		0.241
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	37				ND		0.510
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	38				ND		0.241
40   40/41/71     ND    1.44     41   40/41/71     ND    1.44     42     ND    0.481     43   43/73     ND    0.481     44   44/47/65     ND    0.481     45   45/51     ND    0.963     46     ND    0.481     47   44/47/65     ND    0.481     48     ND    0.481	39				ND		0.241
41   40/41/71     ND    1.44     42    ND    0.481     43   43/73    ND    0.481     44   44/47/65    ND    0.481     45   45/51     ND    0.963     46     ND    0.481     47   44/47/65    ND    0.481     48     ND    0.481	40	40/41/71			ND		1.44
42    ND    0.481     43   43/73    ND    0.481     44   44/47/65    ND    0.481     45   45/51    ND    0.481     46    ND    0.963     47   44/47/65    ND    0.481     48    ND    0.481	41	40/41/71			ND		1.44
43   43/73    ND    0.481     44   44/47/65    ND    1.44     45   45/51    ND    0.963     46    ND    0.481     47   44/47/65    ND    0.481     48    ND    0.481	42				ND		0.481
44 44/47/65  ND  1.44   45 45/51  ND  0.963   46  ND  0.481   47 44/47/65  ND  1.44   48  ND  0.481	43	43/73			ND		0.481
45 45/51  ND  0.963   46  ND  0.481   47 44/47/65  ND  1.44   48  ND  0.481	44	44/47/65			ND		1 44
46  ND  0.481   47 44/47/65  ND  1.44   48  ND  0.481	45	45/51			ND		0.963
47 44/47/65 ND 1.44	46				ND		0 481
48 ND 0.481	47	44/47/65			ND		1 44
	48				ND		0.481

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 031418 30246167002 P180324B\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.963
50	50/53			ND		0.963
51	45/51			ND		0.963
52	10/01			ND		1 48
53	50/53					0.963
54	30/33					0.903
55						0.491
55						0.401
50						0.401
57						0.401
50	E0/00/7E					0.401
59	59/62/75			ND		1.44
60	04/20/24/20			ND		0.481
61	61/70/74/76			ND		1.93
62	59/62/75			ND		1.44
63				ND		0.481
64				ND		0.481
65	44/47/65			ND		1.44
66				ND		0.809
67				ND		0.481
68				ND		0.481
69	49/69			ND		0.963
70	61/70/74/76			ND		1.93
71	40/41/71			ND		1.44
72				ND		0.481
73	43/73			ND		0.481
74	61/70/74/76			ND		1.93
75	59/62/75			ND		1 44
76	61/70/74/76			ND		1 93
77				ND		0.481
78				ND		0.481
70						0.481
80						0.481
Q1						0.491
01						0.401
02						0.401
03						0.401
04	05/440/447					0.401
85	85/116/117			ND		1.44
86	86/87/97/108/119/125			ND		2.89
87	86/87/97/108/119/125			ND		2.89
88	88/91			ND		0.963
89				ND		0.481
90	90/101/113			ND		1.44
91	88/91			ND		0.963
92				ND		0.481
93	93/98/100/102			ND		1.93
94				ND		0.481
95				ND		0.915
96				ND		0.481

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 031418 30246167002 P180324B\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2 89
98	93/98/100/102			ND		1.00
99	00/00/100/102			ND		0 481
100	93/98/100/102					1 93
100	90/101/113					1.33
107	03/08/100/102					1.44
102	93/98/100/102					0.491
103						0.401
104						0.401
105						0.401
100	407/404			ND		0.481
107	107/124			ND		0.963
108	86/87/97/108/119/125			ND		2.89
109				ND		0.481
110	110/115			ND		0.963
111				ND		0.481
112				ND		0.481
113	90/101/113			ND		1.44
114				ND		0.481
115	110/115			ND		0.963
116	85/116/117			ND		1.44
117	85/116/117			ND		1.44
118				ND		0.616
119	86/87/97/108/119/125			ND		2.89
120				ND		0.481
121				ND		0.481
122				ND		0.481
122				ND		0.481
120	107/124			ND		0.963
124	96/97/07/109/110/125					2 80
120	00/07/97/100/119/125					0 4 9 1
120						0.401
127	100/166					0.401
120	120/100					0.903
129	129/138/163			ND		1.44
130				ND		0.481
131				ND		0.481
132				ND		0.481
133				ND		0.481
134	134/143			ND		0.963
135	135/151			ND		0.963
136				ND		0.481
137				ND		0.481
138	129/138/163			ND		1.44
139	139/140			ND		0.963
140	139/140			ND		0.963
141				ND		0.481
142				ND		0.481
143	134/143			ND		0.963
144				ND		0.481

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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> Tel: 612-607-1700 Fax: 612- 607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

Influent 031418
30246167002
P180324B_11

				Concentration	EMPC	EML
IUPAC	<b>Co-elutions</b>	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.481
146				ND		0.481
147	147/149			ND		0.963
148				ND		0.481
149	147/149			ND		0.963
150	111110			ND		0 481
151	135/151			ND		0.963
152	100/101			ND		0.000
153	153/168			ND		0.963
154	100/100			ND		0.000
155						0.481
155	156/157					0.401
150	156/157					0.903
157	150/157					0.903
150						0.401
159						0.401
160						0.401
101				ND		0.481
162	400/400/400			ND		0.481
163	129/138/163			ND		1.44
164				ND		0.481
165				ND		0.481
166	128/166			ND		0.963
167				ND		0.481
168	153/168			ND		0.963
169				ND		0.481
170				ND		0.481
171	171/173			ND		0.963
172				ND		0.481
173	171/173			ND		0.963
174				ND		0.481
175				ND		0.481
176				ND		0.481
177				ND		0.481
178				ND		0.481
179				ND		0.481
180	180/193			ND		0.963
181	100/100			ND		0 481
182				ND		0 481
183	183/185			ND		0.963
184	100/100			ND		0.000
185	183/185					0.401
186	103/103					0.303
187						0.401
188						0.401
100						0.401
109						0.401
190						0.401
191						0.481
192				ND		U.48 I

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 031418 30246167002 P180324B\_11

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.963
194				ND		0.722
195				ND		0.722
196				ND		0.722
197	197/200			ND		1.44
198	198/199			ND		1.44
199	198/199			ND		1.44
200	197/200			ND		1.44
201				ND		0.722
202				ND		0.722
203				ND		0.722
204				ND		0.722
205				ND		0.722
206				ND		0.722
207				ND		0.722
208				ND		0.722
209				ND		0.722

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Influent 031418
Lab Sample ID	30246167002
Filename	P180324B_11

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	151	
Total Dichloro Biphenyls	13.5	
Total Trichloro Biphenyls	2.99	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	168	

ND = Not Detected

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#### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 031418 30246167003 P180324B 12

				Concentration	EMPC	EML
IUPAC	<b>Co-elutions</b>	RT	Ratio	ng/L	ng/L	ng/L
1		10.094	3.05	141		0.241
2		12,778	3.00	119		0.241
3		13.006	3.07	39.8		0.241
4		13 329	1.51	16.4		0.241
5		16 706	1.54	0 244		0.241
6		16 322	1.54	1 90		0.241
7		16 023	1.00	0 271		0.241
8		16 849	1.40	5.82		0.241
å		15 810	1.30	0.622		0.241
10		13 545	1.30	0.621		0.241
10		10.040	1.50			2 36
12	10/10					2.30
12	12/13					0.402
13	12/13					0.462
14						0.241
15			1.02			0.318
10		20.492	1.03	1.15 B		0.241
17	10/00	19.952	0.97	0.800		0.241
18	18/30	19.461	1.04	2.29		0.482
19	00/00	17.233	1.09	0.871		0.241
20	20/28			ND		1.24
21	21/33			ND		1.30
22				ND		0.916
23				ND		0.241
24				ND		0.241
25				ND		0.241
26	26/29			ND		0.482
27				ND		0.241
28	20/28			ND		1.24
29	26/29			ND		0.482
30	18/30	19.461	1.04	(2.29)		0.482
31				ND		1.25
32		21.098	1.17	0.465		0.241
33	21/33			ND		1.30
34				ND		0.241
35				ND		0.241
36				ND		0.241
37				ND		0.511
38				ND		0.241
39				ND		0.241
40	40/41/71			ND		1.45
41	40/41/71			ND		1.45
42				ND		0.482
43	43/73			ND		0.482
44	44/47/65			ND		1 45
45	45/51			ND		0.965
46	10/01			ND		0.482
47	44/47/65			ND		1 45
48	0011717					0.482
						0.402

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

### **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 031418 30246167003 P180324B\_12

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.965
50	50/53			ND		0.965
51	45/51			ND		0.965
52				ND		1 49
53	50/53			ND		0.965
54	00,00			ND		0.482
55				ND		0.482
56				ND		0.482
57				ND		0.482
58				ND		0.482
59	59/62/75			ND		1 45
60	00/02/10			ND		0.482
61	61/70/74/76					1 03
62	59/62/75					1.55
63	59/02/75					0.492
64						0.402
65	11/17/65					0.402
66	44/47/05					0.910
67						0.010
07						0.462
00	40/00					0.462
69	49/09			ND		0.965
70	61/70/74/76			ND		1.93
71	40/41/71			ND		1.45
72	40/70			ND		0.482
73	43/73			ND		0.482
<u>74</u>	61/70/74/76			ND		1.93
75	59/62/75			ND		1.45
76	61/70/74/76			ND		1.93
77				ND		0.482
78				ND		0.482
79				ND		0.482
80				ND		0.482
81				ND		0.482
82				ND		0.482
83				ND		0.482
84				ND		0.482
85	85/116/117			ND		1.45
86	86/87/97/108/119/125			ND		2.89
87	86/87/97/108/119/125			ND		2.89
88	88/91			ND		0.965
89				ND		0.482
90	90/101/113			ND		1.45
91	88/91			ND		0.965
92				ND		0.482
93	93/98/100/102			ND		1.93
94				ND		0.482
95				ND		0.916
96				ND		0.482

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 031418 30246167003 P180324B\_12

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2.89
98	93/98/100/102			ND		1.93
99				ND		0.482
100	93/98/100/102			ND		1 93
101	90/101/113			ND		1 45
102	93/98/100/102			ND		1 93
103	00,00,100,102			ND		0.482
100				ND		0.482
105				ND		0.482
106				ND		0.482
100	107/124					0.402
107	86/87/07/108/110/125					2.80
100	00/07/97/100/119/125					0.482
109	110/115					0.402
110	110/115					0.905
112						0.402
112	00/101/112					0.402
113	90/101/113					0.490
114	110/115					0.462
115	110/115			ND		0.965
116	85/116/117			ND		1.45
117	85/116/117			ND		1.45
118	00/07/07/100/1100/100			ND		0.617
119	86/87/97/108/119/125			ND		2.89
120				ND		0.482
121				ND		0.482
122				ND		0.482
123				ND		0.482
124	107/124			ND		0.965
125	86/87/97/108/119/125			ND		2.89
126				ND		0.482
127				ND		0.482
128	128/166			ND		0.965
129	129/138/163			ND		1.45
130				ND		0.482
131				ND		0.482
132				ND		0.482
133				ND		0.482
134	134/143			ND		0.965
135	135/151			ND		0.965
136				ND		0.482
137				ND		0.482
138	129/138/163			ND		1.45
139	139/140			ND		0.965
140	139/140			ND		0.965
141				ND		0.482
142				ND		0.482
143	134/143			ND		0.965
144				ND		0.482

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 031418 30246167003 P180324B\_12

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0 482
146				ND		0.482
147	147/149			ND		0.965
1/18	1477145					0.303
140	147/140					0.402
140	1477149					0.905
150	135/151					0.402
151	135/151					0.905
152	152/169					0.402
155	155/106					0.900
104						0.402
155	150/157					0.462
150	150/157			ND		0.965
157	156/157			ND		0.965
158				ND		0.482
159				ND		0.482
160				ND		0.482
161				ND		0.482
162				ND		0.482
163	129/138/163			ND		1.45
164				ND		0.482
165				ND		0.482
166	128/166			ND		0.965
167				ND		0.482
168	153/168			ND		0.965
169				ND		0.482
170				ND		0.482
171	171/173			ND		0.965
172				ND		0.482
173	171/173			ND		0.965
174				ND		0.482
175				ND		0.482
176				ND		0.482
177				ND		0.482
178				ND		0.482
179				ND		0.482
180	180/193			ND		0.965
181				ND		0.482
182				ND		0.482
183	183/185			ND		0.965
184				ND		0.482
185	183/185			ND		0.965
186				ND		0.482
187				ND		0.482
188				ND		0.482
189				ND		0.482
190				ND		0 482
191				ND		0 482
192				ND		0.482
102						0.402

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 031418 30246167003 P180324B\_12

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.965
194				ND		0.723
195				ND		0.723
196				ND		0.723
197	197/200			ND		1.45
198	198/199			ND		1.45
199	198/199			ND		1.45
200	197/200			ND		1.45
201				ND		0.723
202				ND		0.723
203				ND		0.723
204				ND		0.723
205				ND		0.723
206				ND		0.723
207				ND		0.723
208				ND		0.723
209				ND		0.723

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Extraction Wells 031418
Lab Sample ID	30246167003
Filename	P180324B_12

Concentration ng/L	
300	
25.9	
5.58	
ND	
332	
	Concentration           300           25.9           5.58           ND           ND

ND = Not Detected

**REPORT OF LABORATORY ANALYSIS** 



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 050918 30252201001 P180522A\_06

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0 250
2				ND		0.250
3				ND		0.250
4				ND		0.250
5				ND		0.250
6				ND		0.250
7						0.250
8						0.250
ő						0.250
10						0.250
11						2 45
12	12/13					0.501
12	12/13					0.501
13	12/13					0.301
14						0.250
15						0.330
10				ND		0.250
17	40/20			ND		0.250
18	18/30			ND		0.501
19	0.0 /0.0			ND		0.250
20	20/28			ND		1.29
21	21/33			ND		1.35
22				ND		0.951
23				ND		0.250
24				ND		0.250
25				ND		0.250
26	26/29			ND		0.501
27				ND		0.250
28	20/28			ND		1.29
29	26/29			ND		0.501
30	18/30			ND		0.501
31				ND		1.30
32				ND		0.250
33	21/33			ND		1.35
34				ND		0.250
35				ND		0.250
36				ND		0.250
37				ND		0.531
38				ND		0.250
39				ND		0.250
40	40/41/71			ND		1 50
41	40/41/71			ND		1 50
42				ND		0 501
43	43/73			ND		0.501
44	44/47/65					1 50
45	45/51					1.00
46						0.501
40	11/17/65					1 50
47	+4/47/00					0.501
40				ND		0.501

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 050918 30252201001 P180522A\_06

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		1.00
50	50/53			ND		1.00
51	45/51			ND		1 00
52				ND		1 54
53	50/53			ND		1.04
54	86/86			ND		0 501
55						0.501
55						0.501
57						0.501
59						0.501
50	50/62/75					0.001
59	59/02/75					1.50
60	64/20/24/26					0.501
01	61/70/74/76			ND		2.00
62	59/62/75			ND		1.50
63				ND		0.501
64	= =			ND		0.501
65	44/47/65			ND		1.50
66				ND		0.841
67				ND		0.501
68				ND		0.501
69	49/69			ND		1.00
70	61/70/74/76			ND		2.00
71	40/41/71			ND		1.50
72				ND		0.501
73	43/73			ND		0.501
74	61/70/74/76			ND		2.00
75	59/62/75			ND		1.50
76	61/70/74/76			ND		2 00
77	• • •			ND		0.501
78				ND		0.501
79				ND		0.501
80				ND		0.501
81				ND		0.501
82						0.501
92						0.501
9 <i>1</i>						0.501
04	95/116/117					1 50
00	00/110/11/					1.50
00	00/07/97/100/119/120					3.00
87	80/87/97/108/119/125			ND		3.00
88	88/91			ND		1.00
89	00/40/440			ND		0.501
90	90/101/113			ND		1.50
91	88/91			ND		1.00
92				ND		0.501
93	93/98/100/102			ND		2.00
94				ND		0.501
95				ND		0.951
96				ND		0.501

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 050918 30252201001 P180522A\_06

IUPAC         Co-elutions         RT         Ratio         ng/L         ng/L         ng/L           97         86/87/97/108/119/125           ND          2.00           99           ND          2.00           99          ND          2.00           100         93/98/100/102           ND          2.00           101         90/101/113           ND          2.00           103           ND          0.501           104           ND          0.501           105           ND          0.501           106           ND          0.501           107         107/124           ND          0.501           115         10/115           ND          0.501           114           ND          1.50 </th <th></th> <th></th> <th></th> <th></th> <th>Concentration</th> <th>EMPC</th> <th>EML</th>					Concentration	EMPC	EML
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	97	86/87/97/108/119/125			ND		3.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	98	93/98/100/102			ND		2.00
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	99	00,00,100,102			ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	100	93/98/100/102			ND		2 00
102         03/09/100/102	100	90/101/113			ND		1 50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	107	03/08/100/102					2 00
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	102	33/36/100/102					0.501
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	103						0.501
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	104						0.501
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	105						0.501
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100	107/104					1.00
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	107	107/124					1.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	108	86/87/97/108/119/125					3.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	109				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	110	110/115			ND		1.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	111				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	112				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	113	90/101/113			ND		1.50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	114				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	115	110/115			ND		1.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	116	85/116/117			ND		1.50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	117	85/116/117			ND		1.50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	118				ND		0.641
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	119	86/87/97/108/119/125			ND		3.00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	120				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	121				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	122				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	123				ND		0.501
125       86/87/97/108/119/125         ND        0.501         126         ND        0.501         127         ND        0.501         128       128/166         ND        0.501         129       129/138/163         ND        1.00         130         ND        0.501         133         ND        0.501         133         ND        0.501         134       134/143         ND        0.501         135       135/151         ND        0.501         136         ND        0.501         138       129/138/163         ND        0.501         139       139/140         ND        1.00         142         ND <td< td=""><td>124</td><td>107/124</td><td></td><td></td><td>ND</td><td></td><td>1 00</td></td<>	124	107/124			ND		1 00
126         ND        0.501         127         ND        0.501         128       128/166         ND        1.00         129       129/138/163         ND        1.50         130         ND        0.501         131         ND        0.501         132         ND        0.501         133         ND        0.501         134       134/143         ND        0.501         135       135/151         ND        1.00         136         ND        0.501         138       129/138/163         ND        1.00         140       139/140         ND        1.00         144         ND        0.501 <t< td=""><td>125</td><td>86/87/97/108/119/125</td><td></td><td></td><td>ND</td><td></td><td>3 00</td></t<>	125	86/87/97/108/119/125			ND		3 00
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	126	00/01/100/110/120			ND		0 501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	120				ND		0.501
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	127	128/166					1 00
129       129/130/103         ND        0.501         130         ND        0.501         131         ND        0.501         132         ND        0.501         133         ND        0.501         134       134/143         ND        1.00         135       135/151         ND        1.00         136         ND        0.501         138       129/138/163         ND        1.00         139       139/140         ND        1.00         141         ND        1.00         142         ND        0.501         143       134/143         ND        0.501         144         ND        1.00 <td< td=""><td>120</td><td>120/138/163</td><td></td><td></td><td></td><td></td><td>1.00</td></td<>	120	120/138/163					1.00
130         ND        0.501         131         ND        0.501         132         ND        0.501         133         ND        0.501         134       134/143         ND        0.501         135       135/151         ND        1.00         136         ND        0.501         137         ND        0.501         138       129/138/163         ND        1.00         140       139/140         ND        1.00         141         ND        1.00         142         ND        0.501         143       134/143         ND        1.00         144         ND        0.501	129	129/130/103					0.501
131         ND        0.501         132         ND        0.501         133         ND        0.501         134       134/143        ND        0.501         135       135/151         ND        1.00         136         ND        0.501         137         ND        0.501         138       129/138/163         ND        1.00         140       139/140         ND        1.00         141         ND        1.00         142         ND        0.501         143       134/143         ND        1.00         144         ND        0.501	130						0.501
132         ND        0.501         133         ND        0.501         134       134/143         ND        1.00         135       135/151         ND        1.00         136         ND        0.501         137         ND        0.501         138       129/138/163         ND        1.00         140       139/140         ND        1.00         141         ND        1.00         142         ND        0.501         143       134/143         ND        0.501         144         ND        1.00	131						0.501
133         ND        0.501         134       134/143         ND        1.00         135       135/151         ND        1.00         136         ND        0.501         137         ND        0.501         138       129/138/163         ND        1.00         139       139/140         ND        1.00         140       139/140         ND        1.00         141         ND        0.501         142         ND        0.501         143       134/143         ND        1.00         144         ND        1.00        0.501	132						0.501
134       134/143        ND        1.00         135       135/151         ND        1.00         136         ND        0.501         137         ND        0.501         138       129/138/163         ND        1.00         139       139/140         ND        1.00         140       139/140         ND        1.00         144         ND        0.501         143       134/143         ND        0.501         144         ND        1.00         144         ND        0.501	133	101/110			ND		0.501
135       135/151        ND        1.00         136        ND        0.501         137        ND        0.501         138       129/138/163        ND        0.501         139       139/140        ND        1.00         140       139/140        ND        1.00         141        ND        0.501         142        ND        0.501         143       134/143        ND        1.00         144        ND        0.501	134	134/143			ND		1.00
136        ND        0.501         137        ND        0.501         138       129/138/163        ND        0.501         139       139/140        ND        1.00         140       139/140        ND        1.00         141         ND        0.501         142         ND        0.501         143       134/143         ND        1.00         144         ND        0.501	135	135/151			ND		1.00
137         ND        0.501         138       129/138/163        ND        1.50         139       139/140         ND        1.00         140       139/140         ND        1.00         141         ND        0.501         142         ND        0.501         143       134/143         ND        1.00         144         ND        0.501	136				ND		0.501
138       129/138/163         ND        1.50         139       139/140         ND        1.00         140       139/140         ND        1.00         141         ND        0.501         142         ND        0.501         143       134/143         ND        1.00         144         ND        0.501	137				ND		0.501
139       139/140        ND        1.00         140       139/140        ND        1.00         141         ND        0.501         142         ND        0.501         143       134/143         ND        1.00         144         ND        0.501	138	129/138/163			ND		1.50
140     139/140      ND      1.00       141      ND      0.501       142       ND      0.501       143     134/143       ND      1.00       144       ND      0.501	139	139/140			ND		1.00
141      ND      0.501       142      ND      0.501       143     134/143      ND      1.00       144       ND      0.501	140	139/140			ND		1.00
142      ND      0.501       143     134/143      ND      1.00       144       ND      0.501	141				ND		0.501
143     134/143      ND      1.00       144       ND      0.501	142				ND		0.501
144 ND 0.501	143	134/143			ND		1.00
	144				ND		0.501

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 050918 30252201001 P180522A\_06

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0 501
146				ND		0.501
147	147/149			ND		1 00
148	1477143					0.501
140	147/140					1.00
140	1477149					0.501
151	135/151					1 00
152	155/151					0.501
152	153/169					1.00
155	155/108					0.501
154						0.501
155	156/157					0.501
150	150/157					1.00
157	150/157					1.00
158				ND		0.501
159				ND		0.501
160				ND		0.501
161				ND		0.501
162	100/100/100			ND		0.501
163	129/138/163			ND		1.50
164				ND		0.501
165				ND		0.501
166	128/166			ND		1.00
167				ND		0.501
168	153/168			ND		1.00
169				ND		0.501
170				ND		0.501
171	171/173			ND		1.00
172				ND		0.501
173	171/173			ND		1.00
174				ND		0.501
175				ND		0.501
176				ND		0.501
177				ND		0.501
178				ND		0.501
179				ND		0.501
180	180/193			ND		1.00
181				ND		0.501
182				ND		0.501
183	183/185			ND		1.00
184				ND		0.501
185	183/185			ND		1.00
186				ND		0.501
187				ND		0.501
188				ND		0.501
189				ND		0.501
190				ND		0.501
191				ND		0.501
192				ND		0.501
						0.001

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 050918 30252201001 P180522A\_06

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		1.00
194				ND		0.751
195				ND		0.751
196				ND		0.751
197	197/200			ND		1.50
198	198/199			ND		1.50
199	198/199			ND		1.50
200	197/200			ND		1.50
201				ND		0.751
202				ND		0.751
203				ND		0.751
204				ND		0.751
205				ND		0.751
206				ND		0.751
207				ND		0.751
208				ND		0.751
209				ND		0.751

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, LLC 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	TS Effluent 050918
Lab Sample ID	30252201001
Filename	P180522A_06

I otal Monochloro Biphenyls ND	
Total Dichloro Biphenyls ND	
Total Trichloro Biphenyls ND	
Total Tetrachloro Biphenyls ND	
Total Pentachloro Biphenyls ND	
Total Hexachloro Biphenyls ND	
Total Heptachloro Biphenyls ND	
Total Octachloro Biphenyls ND	
Total Nonachloro Biphenyls ND	
DecachloroBiphenyls ND	
Total PCBs ND	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**

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**Client Sample ID** 

Pace Analytical Services, LLC 1700 Elm Street - Suite 200 Minneapolis, MN 55414

> Tel: 612-607-1700 Fax: 612- 607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Influent 050918

Lab Sam Filename	ple ID	30252201002 P180522A_07				
IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
1		10.143	3.13	32.0		0.248
2		12.827	3.13	24.9		0.248
3		13.067	3.16	10.2		0.248
4		13.378	1.56	5.55		0.248
5				ND		0.248
6		16.396	1.57	0.580		0.248
7				ND		0.248
8		16.924	1.55	1.82		0.248
9				ND		0.248
10				ND		0.248
11				ND		2.43
12	12/13			ND		0.497
13	12/13			ND		0.497
14				ND		0.248
15				ND		0.328
16		20.555	0.98	0.418		0.248
17	40/00	20.003	1.13	0.284		0.248
18	18/30	19.524	1.01	0.848		0.497
19	00/00	17.295	1.08	0.338		0.248
20	20/28			ND		1.28
21	21/33			ND		1.34
22				ND		0.944
23				ND		0.248
24						0.248
20	26/20					0.240
20	20/29					0.497
21	20/20					0.240
20	20/20					1.20
29	18/30	10 524	1.01	(0.848)		0.497
31	10/30	19.524	1.01			1 20
32						0.248
33	21/33			ND		1 34
34	21/00			ND		0 248
35				ND		0.248
36				ND		0.248
37				ND		0.527
38				ND		0.248
39				ND		0.248
40	40/41/71			ND		1 49
41	40/41/71			ND		1.49
42				ND		0.497
43	43/73			ND		0.497
44	44/47/65			ND		1.49
45	45/51			ND		0.994
46				ND		0.497
47	44/47/65			ND		1.49
48				ND		0.497

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 050918 30252201002 P180522A\_07

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.994
50	50/53			ND		0.994
51	45/51			ND		0.994
52				ND		1.53
53	50/53			ND		0.994
54				ND		0.497
55				ND		0.497
56				ND		0.497
57				ND		0.497
58				ND		0.497
59	59/62/75			ND		1.49
60				ND		0.497
61	61/70/74/76			ND		1.99
62	59/62/75			ND		1 49
63	00/02/10			ND		0 497
64				ND		0 497
65	44/47/65			ND		1 49
66	11/1/00			ND		0.835
67				ND		0.497
68				ND		0.497
69	49/69			ND		0.437
70	61/70/74/76					1 00
70	40/41/71					1.55
72	40/41/71					0 407
72	12/72					0.497
73	43/73 61/70/74/76					1 00
74	50/62/75					1.99
75	61/70/74/76					1.49
70	01/70/74/70					1.99
70						0.497
70						0.497
79						0.497
00						0.497
81				ND		0.497
82				ND		0.497
83				ND		0.497
84	05/440/447			ND		0.497
85	85/116/117			ND		1.49
86	86/87/97/108/119/125			ND		2.98
87	86/87/97/108/119/125			ND		2.98
88	88/91			ND		0.994
89	00/101/110			ND		0.497
90	90/101/113			ND		1.49
91	88/91			ND		0.994
92				ND		0.497
93	93/98/100/102			ND		1.99
94				ND		0.497
95				ND		0.944
96				ND		0.497

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 050918 30252201002 P180522A\_07

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/07/108/110/125			ND		2.08
98	93/98/100/102			ND		1 99
90	30/30/100/102			ND		0 497
100	03/08/100/102					1 00
100	00/101/113					1.99
101	03/08/100/102					1.49
102	93/98/100/102					0.407
103						0.497
104						0.497
105						0.497
100	107/101					0.497
107	107/124			ND		0.994
108	86/87/97/108/119/125			ND		2.98
109				ND		0.497
110	110/115			ND		0.994
111				ND		0.497
112				ND		0.497
113	90/101/113			ND		1.49
114				ND		0.497
115	110/115			ND		0.994
116	85/116/117			ND		1.49
117	85/116/117			ND		1.49
118				ND		0.636
119	86/87/97/108/119/125			ND		2.98
120				ND		0.497
121				ND		0.497
122				ND		0.497
123				ND		0.497
124	107/124			ND		0.994
125	86/87/97/108/119/125			ND		2.98
126				ND		0.497
127				ND		0.497
128	128/166			ND		0.994
129	129/138/163			ND		1.49
130				ND		0.497
131				ND		0.497
132				ND		0 497
133				ND		0 497
134	134/143			ND		0 994
135	135/151			ND		0.004
136	100/101			ND		0.004
137						0.497
138	120/138/163			ND		1 40
130	130/140					0 004
140	130/140					0.004
1/1	133/140					0.334
141						0.497
142	124/142					0.497
140	134/143					0.994
144				ND		0.497

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

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R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

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> Tel: 612-607-1700 Fax: 612-607-6444

## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

Influent	050918
3025220	01002
P18052	2A_07

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.497
146				ND		0.497
147	147/149			ND		0.994
148				ND		0 497
149	147/149			ND		0 994
150	111/110			ND		0.497
151	135/151			ND		0.994
152	188/181			ND		0.004
152	153/168					0.437
154	155/100					0.994
154						0.497
155	156/157					0.497
150	100/107					0.994
157	156/157			ND		0.994
158				ND		0.497
159				ND		0.497
160				ND		0.497
161				ND		0.497
162				ND		0.497
163	129/138/163			ND		1.49
164				ND		0.497
165				ND		0.497
166	128/166			ND		0.994
167				ND		0.497
168	153/168			ND		0.994
169				ND		0.497
170				ND		0.497
171	171/173			ND		0.994
172				ND		0 497
173	171/173			ND		0.994
174				ND		0 497
175				ND		0.497
176				ND		0.497
177						0.497
179						0.497
170						0.497
190	190/102					0.497
100	160/193					0.994
101				ND		0.497
182	100/105			ND		0.497
183	183/185			ND		0.994
184	100/105			ND		0.497
185	183/185			ND		0.994
186				ND		0.497
187				ND		0.497
188				ND		0.497
189				ND		0.497
190				ND		0.497
191				ND		0.497
192				ND		0.497
				=		

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Influent	050918
3025220	01002
P18052	2A 07

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.994
194				ND		0.745
195				ND		0.745
196				ND		0.745
197	197/200			ND		1.49
198	198/199			ND		1.49
199	198/199			ND		1.49
200	197/200			ND		1.49
201				ND		0.745
202				ND		0.745
203				ND		0.745
204				ND		0.745
205				ND		0.745
206				ND		0.745
207				ND		0.745
208				ND		0.745
209				ND		0.745

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Influent 050918
Lab Sample ID	30252201002
Filename	P180522A_07

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	67.1	
Total Dichloro Biphenyls	7.95	
Total Trichloro Biphenyls	1.89	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
TotalNonachloroBiphenyls	ND	
DecachloroBiphenyls	ND	
TotalPCBs	77.0	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 050918 30252201003 P180522A 08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	na/L	na/L	na/L
				<b>3</b>	5	<b>J</b>
1		10.131	3.09	95.1		0.242
2		12.815	3.16	80.4		0.242
3		13.055	2.98	30.7		0.242
4		13.366	1.53	15.7		0.242
5				ND		0.242
6		16.385	1.53	1.57		0.242
7				ND		0.242
8		16.924	1.56	5.30		0.242
9		15.881	1.62	0.491		0.242
10		13.582	1.41	0.664		0.242
11				ND		2.37
12	12/13			ND		0.484
13	12/13			ND		0.484
14				ND		0.242
15				ND		0.319
16		20.567	1.07	1.11		0.242
17		20.016	1.15	0.734		0.242
18	18/30	19.524	1.07	2.28		0.484
19		17.283	1.12	0.920		0.242
20	20/28			ND		1.25
21	21/33			ND		1.31
22				ND		0.919
23				ND		0.242
24				ND		0.242
25				ND		0.242
26	26/29			ND		0.484
27				ND		0.242
28	20/28			ND		1.25
29	26/29			ND		0.484
30	18/30	19.524	1.07	(2.28)		0.484
31				ŇĎ		1.26
32		21.164	1.14	0.383		0.242
33	21/33			ND		1.31
34				ND		0.242
35				ND		0.242
36				ND		0.242
37				ND		0.513
38				ND		0.242
39				ND		0.242
40	40/41/71			ND		1.45
41	40/41/71			ND		1.45
42				ND		0.484
43	43/73			ND		0.484
44	44/47/65			ND		1.45
45	45/51			ND		0.967
46				ND		0 484
47	44/47/65			ND		1 45
48				ND		0.484
-				-		· • •

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 050918 30252201003 P180522A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.967
50	50/53			ND		0.967
51	45/51			ND		0.967
52	10/01			ND		1 49
53	50/53					0.967
54	30/33					0.307
55						0.484
55						0.404
50						0.404
57						0.404
50	E0/02/7E					0.464
59	59/62/75			ND		1.45
60				ND		0.484
61	61/70/74/76			ND		1.93
62	59/62/75			ND		1.45
63				ND		0.484
64				ND		0.484
65	44/47/65			ND		1.45
66				ND		0.812
67				ND		0.484
68				ND		0.484
69	49/69			ND		0.967
70	61/70/74/76			ND		1.93
71	40/41/71			ND		1.45
72				ND		0 484
73	43/73			ND		0 484
74	61/70/74/76			ND		1 93
75	50/62/75					1.55
76	61/70/74/76					1.40
70	01/10/14/10					0.484
70						0.404
70						0.404
79				ND		0.484
80				ND		0.484
81				ND		0.484
82				ND		0.484
83				ND		0.484
84				ND		0.484
85	85/116/117			ND		1.45
86	86/87/97/108/119/125			ND		2.90
87	86/87/97/108/119/125			ND		2.90
88	88/91			ND		0.967
89				ND		0.484
90	90/101/113			ND		1.45
91	88/91			ND		0.967
92				ND		0.484
93	93/98/100/102			ND		1.93
94	00,00,100,102					0 484
95						0.404
96						0.010
90				IND.		0.404

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 050918 30252201003 P180522A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2.90
98	93/98/100/102			ND		1.93
99				ND		0 484
100	93/98/100/102			ND		1 93
100	90/101/113			ND		1 45
107	93/98/100/102			ND		1 93
102	33/30/100/102					0.484
103						0.404
104						0.404
105						0.404
100	107/104					0.404
107	107/124					0.907
100	00/07/97/100/119/125					2.90
109	440/445			ND		0.484
110	110/115			ND		0.967
111				ND		0.484
112				ND		0.484
113	90/101/113			ND		1.45
114				ND		0.484
115	110/115			ND		0.967
116	85/116/117			ND		1.45
117	85/116/117			ND		1.45
118				ND		0.619
119	86/87/97/108/119/125			ND		2.90
120				ND		0.484
121				ND		0.484
122				ND		0.484
123				ND		0.484
124	107/124			ND		0.967
125	86/87/97/108/119/125			ND		2.90
126				ND		0.484
127				ND		0 484
128	128/166			ND		0.967
129	129/138/163			ND		1 45
130	120/100/100			ND		0 484
131				ND		0.484
132						0.484
132						0.404
124	124/142					0.404
134	134/143					0.907
135	135/151					0.967
130						0.484
137	100/100/100			ND		0.484
138	129/138/103			ND		1.45
139	139/140			ND		0.967
140	139/140			ND		0.967
141				ND		0.484
142				ND		0.484
143	134/143			ND		0.967
144				ND		0.484

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Extraction Wells 050918
30252201003
P180522A_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.484
146				ND		0.484
147	147/149			ND		0.967
148	111/110			ND		0 484
149	147/149			ND		0.967
150	1477140			ND		0.484
151	135/151					0.404
152	100/101					0.307
152	153/169					0.404
155	155/108					0.907
104						0.404
155	450/457					0.464
150	150/157			ND		0.967
157	156/157			ND		0.967
158				ND		0.484
159				ND		0.484
160				ND		0.484
161				ND		0.484
162				ND		0.484
163	129/138/163			ND		1.45
164				ND		0.484
165				ND		0.484
166	128/166			ND		0.967
167				ND		0.484
168	153/168			ND		0.967
169				ND		0.484
170				ND		0.484
171	171/173			ND		0.967
172				ND		0 484
173	171/173			ND		0.967
174				ND		0 484
175				ND		0.484
176				ND		0.484
177						0.484
179						0.404
170						0.404
100	190/102					0.464
100	160/193					0.907
101						0.404
182	400/405			ND		0.484
183	183/185			ND		0.967
184	100/105			ND		0.484
185	183/185			ND		0.967
186				ND		0.484
187				ND		0.484
188				ND		0.484
189				ND		0.484
190				ND		0.484
191				ND		0.484
192				ND		0.484

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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### Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 050918 30252201003 P180522A\_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.967
194				ND		0.725
195				ND		0.725
196				ND		0.725
197	197/200			ND		1.45
198	198/199			ND		1.45
199	198/199			ND		1.45
200	197/200			ND		1.45
201				ND		0.725
202				ND		0.725
203				ND		0.725
204				ND		0.725
205				ND		0.725
206				ND		0.725
207				ND		0.725
208				ND		0.725
209				ND		0.725

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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## Method 1668A Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Extraction Wells 050918
Lab Sample ID	30252201003
Filename	P180522A_08

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	206	
Total Dichloro Biphenyls	23.8	
Total Trichloro Biphenyls	5.42	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	235	

ND = Not Detected

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 080818 30261592001 P180818A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0.256
2				ND		0.256
3				ND		0.256
4				ND		0.256
5				ND		0.256
6				ND		0.256
7						0.256
8						0.256
å						0.256
10						0.256
11						2 51
12	12/13					0.512
12	12/13					0.512
17	12/13					0.012
14						0.200
10						0.330
17						0.250
10	19/20					0.230
10	16/30					0.012
19	20/29					0.200
20	20/20					1.32
21	21/33					1.30
22				ND		0.973
23				ND		0.256
24				ND		0.256
25	00/00			ND		0.256
26	26/29			ND		0.512
27	0.0 /0.0			ND		0.256
28	20/28			ND		1.32
29	26/29			ND		0.512
30	18/30			ND		0.512
31				ND		1.33
32				ND		0.256
33	21/33			ND		1.38
34				ND		0.256
35				ND		0.256
36				ND		0.256
37				ND		0.543
38				ND		0.256
39				ND		0.256
40	40/41/71			ND		1.54
41	40/41/71			ND		1.54
42				ND		0.512
43	43/73			ND		0.512
44	44/47/65			ND		1.54
45	45/51			ND		1.02
46				ND		0.512
47	44/47/65			ND		1.54
48				ND		0.512

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 080818 30261592001 P180818A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		1.02
50	50/53			ND		1.02
51	45/51			ND		1 02
52				ND		1.58
53	50/53			ND		1 02
54	86/86			ND		0.512
55						0.512
56						0.512
50						0.512
57						0.512
50	E0/62/7E					0.512
59	59/62/75			ND		1.54
60	04/20/24/20			ND		0.512
61	61/70/74/76			ND		2.05
62	59/62/75			ND		1.54
63				ND		0.512
64				ND		0.512
65	44/47/65			ND		1.54
66				ND		0.860
67				ND		0.512
68				ND		0.512
69	49/69			ND		1.02
70	61/70/74/76			ND		2.05
71	40/41/71			ND		1.54
72				ND		0.512
73	43/73			ND		0.512
74	61/70/74/76			ND		2 05
75	59/62/75			ND		1 54
76	61/70/74/76					2 05
70	01/10/14/10					0.512
70						0.512
70						0.512
79						0.512
80				ND		0.512
81				ND		0.512
82				ND		0.512
83				ND		0.512
84				ND		0.512
85	85/116/117			ND		1.54
86	86/87/97/108/119/125			ND		3.07
87	86/87/97/108/119/125			ND		3.07
88	88/91			ND		1.02
89				ND		0.512
90	90/101/113			ND		1.54
91	88/91			ND		1.02
92				ND		0.512
93	93/98/100/102			ND		2.05
94				ND		0.512
95				ND		0.973
96						0.510
90						0.012

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 080818 30261592001 P180818A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		3.07
98	93/98/100/102			ND		2 05
gg	00,00,100,102			ND		0.512
100	93/98/100/102			ND		2 05
100	00/101/113					1 54
101	03/08/100/102					2.05
102	93/96/100/102					2.05
103						0.512
104						0.512
105				ND		0.512
106				ND		0.512
107	107/124			ND		1.02
108	86/87/97/108/119/125			ND		3.07
109				ND		0.512
110	110/115			ND		1.02
111				ND		0.512
112				ND		0.512
113	90/101/113			ND		1.54
114				ND		0.512
115	110/115			ND		1.02
116	85/116/117			ND		1 54
117	85/116/117			ND		1 54
118	00/110/11/					0.655
110	86/87/07/108/110/125					3.07
119	00/07/97/100/119/125					0.510
120						0.512
121						0.512
122				ND		0.512
123				ND		0.512
124	107/124			ND		1.02
125	86/87/97/108/119/125			ND		3.07
126				ND		0.512
127				ND		0.512
128	128/166			ND		1.02
129	129/138/163			ND		1.54
130				ND		0.512
131				ND		0.512
132				ND		0.512
133				ND		0.512
134	134/143			ND		1 02
135	135/151			ND		1 02
136	100/101					0.512
130						0.512
120	120/120/162					1 54
130	129/130/103					1.04
139	139/140					1.02
140	139/140			ND		1.02
141				ND		0.512
142				ND		0.512
143	134/143			ND		1.02
144				ND		0.512

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 080818 30261592001 P180818A\_08

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.512
146				ND		0.512
147	147/149			ND		1.02
148	111/110			ND		0.512
149	147/149			ND		1 02
150	1477148			ND		0.512
150	135/151					1 02
152	155/151					0.512
152	152/169					1.02
155	155/106					0.512
154				ND		0.512
155	450/457			ND		0.512
156	156/157			ND		1.02
157	156/157			ND		1.02
158				ND		0.512
159				ND		0.512
160				ND		0.512
161				ND		0.512
162				ND		0.512
163	129/138/163			ND		1.54
164				ND		0.512
165				ND		0.512
166	128/166			ND		1 02
167	120/100			ND		0.512
168	153/168					1 02
160	155/108					0.512
109						0.512
170	474/470			ND		0.512
171	171/173			ND		1.02
172				ND		0.512
173	171/173			ND		1.02
174				ND		0.512
175				ND		0.512
176				ND		0.512
177				ND		0.512
178				ND		0.512
179				ND		0.512
180	180/193			ND		1.02
181				ND		0.512
182				ND		0.512
183	183/185			ND		1 02
194	105/105					0.512
195	193/195					1 02
100	105/105					0.510
100						0.512
10/						0.512
188				ND		0.512
189				ND		0.512
190				ND		0.512
191				ND		0.512
192				ND		0.512

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 080818 30261592001 P180818A\_08

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		1.02
194				ND		0.768
195				ND		0.768
196				ND		0.768
197	197/200			ND		1.54
198	198/199			ND		1.54
199	198/199			ND		1.54
200	197/200			ND		1.54
201				ND		0.768
202				ND		0.768
203				ND		0.768
204				ND		0.768
205				ND		0.768
206				ND		0.768
207				ND		0.768
208				ND		0.768
209				ND		0.768

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	TS Effluent 080818
Lab Sample ID	30261592001
Filename	P180818A_08

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	ND	
Total Dichloro Biphenyls	ND	
Total Trichloro Biphenyls	ND	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	ND	
	Congener Group Total Monochloro Biphenyls Total Dichloro Biphenyls Total Dichloro Biphenyls Total Trichloro Biphenyls Total Tetrachloro Biphenyls Total Pentachloro Biphenyls Total Heptachloro Biphenyls Total Octachloro Biphenyls Decachloro Biphenyls Total Nonachloro Biphenyls DecachloroBiphenyls	Congener GroupConcentration ng/LTotal Monochloro BiphenylsNDTotal Dichloro BiphenylsNDTotal Trichloro BiphenylsNDTotal Tetrachloro BiphenylsNDTotal Pentachloro BiphenylsNDTotal Hexachloro BiphenylsNDTotal Hexachloro BiphenylsNDTotal Heptachloro BiphenylsNDTotal Octachloro BiphenylsNDTotal Octachloro BiphenylsNDTotal Nonachloro BiphenylsNDTotal Nonachloro BiphenylsNDTotal PCBsND

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**

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## Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Influent	080818
3026159	92002
P18081	8A 09

				Concentration	EMPC	EML
IUPAC	<b>Co-elutions</b>	RT	Ratio	ng/L	ng/L	ng/L
1		9.552	3.27	33.1		0.244
2		12,176	3.16	24.7		0.244
3		12,415	3.17	12.0		0.244
4		12 703	1 51	5.87		0 244
5				ND		0.244
õ		15 684	1 34	0.638		0.244
7				ND		0.244
8		16 211	1 57	2 10		0.244
å		10.211	1.57			0.244
10		12 031	1 35	0.270		0.244
10		12.951	1.55	0.270		0.244
10	10/10					2.39
12	12/13					0.409
13	12/13			ND		0.489
14				ND		0.244
15				ND 0.514		0.323
16		19.794	1.15	0.511		0.244
17	10/00	19.267	0.98	0.334		0.244
18	18/30	18.775	1.03	1.09		0.489
19		16.559	1.03	0.370		0.244
20	20/28			ND		1.26
21	21/33			ND		1.32
22				ND		0.929
23				ND		0.244
24				ND		0.244
25				ND		0.244
26	26/29			ND		0.489
27				ND		0.244
28	20/28			ND		1.26
29	26/29			ND		0.489
30	18/30	18.775	1.03	(1.09)		0.489
31				ND		1.27
32				ND		0 244
33	21/33			ND		1.32
34	21/00			ND		0 244
35				ND		0.244
36				ND		0.244
37				ND		0.518
39						0.010
30						0.244
40	40/41/71					0.244
40	40/41/71					1.47
41	40/41/71					1.47
42	42/72					0.489
43	43/13					0.489
44	44/4//05			ND		1.4/
45	45/51			ND		0.977
46				ND		0.489
47	44/47/65			ND		1.47
48				ND		0.489

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference

ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 080818 30261592002 P180818A\_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.977
50	50/53			ND		0.977
51	45/51			ND		0.977
52				ND		1 51
53	50/53					0 977
54	56/55					0.377
55						0.489
55						0.480
50						0.409
57						0.409
50	E0/62/7E					0.409
59	59/02/75					1.47
60	04/20/24/20			ND		0.489
61	61/70/74/76			ND		1.95
62	59/62/75			ND		1.47
63				ND		0.489
64				ND		0.489
65	44/47/65			ND		1.47
66				ND		0.821
67				ND		0.489
68				ND		0.489
69	49/69			ND		0.977
70	61/70/74/76			ND		1.95
71	40/41/71			ND		1.47
72				ND		0.489
73	43/73			ND		0.489
74	61/70/74/76			ND		1.95
75	59/62/75			ND		1 47
76	61/70/74/76			ND		1 95
77	01110114110					0.489
78						0.489
70						0.480
20						0.409
00						0.409
01						0.469
82				ND		0.489
83				ND		0.489
84	05///07//7			ND		0.489
85	85/116/117			ND		1.47
86	86/87/97/108/119/125			ND		2.93
87	86/87/97/108/119/125			ND		2.93
88	88/91			ND		0.977
89				ND		0.489
90	90/101/113			ND		1.47
91	88/91			ND		0.977
92				ND		0.489
93	93/98/100/102			ND		1.95
94				ND		0.489
95				ND		0.929
96				ND		0.489

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 080818 30261592002 P180818A\_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2.93
98	93/98/100/102			ND		1.95
gg	00,00,100,102			ND		0 489
100	93/98/100/102			ND		1 95
100	90/101/113			ND		1 47
107	03/08/100/102					1.47
102	93/98/100/102					0.480
103						0.489
104						0.469
105						0.409
100	407/404			ND		0.489
107	107/124			ND		0.977
108	86/87/97/108/119/125			ND		2.93
109				ND		0.489
110	110/115			ND		0.977
111				ND		0.489
112				ND		0.489
113	90/101/113			ND		1.47
114				ND		0.489
115	110/115			ND		0.977
116	85/116/117			ND		1.47
117	85/116/117			ND		1.47
118				ND		0.626
119	86/87/97/108/119/125			ND		2.93
120				ND		0.489
121				ND		0.489
122				ND		0.489
123				ND		0.489
120	107/124			ND		0.400
125	86/87/07/108/110/125					2 93
120	00/07/97/100/119/125					0.480
120						0.489
127	100/166					0.469
120	120/100					0.977
129	129/138/163			ND		1.47
130				ND		0.489
131				ND		0.489
132				ND		0.489
133				ND		0.489
134	134/143			ND		0.977
135	135/151			ND		0.977
136				ND		0.489
137				ND		0.489
138	129/138/163			ND		1.47
139	139/140			ND		0.977
140	139/140			ND		0.977
141				ND		0.489
142				ND		0.489
143	134/143			ND		0.977
144	-			ND		0.489

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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## Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

Influent	080818
3026159	92002
P18081	8A_09

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.489
146				ND		0.489
147	147/149			ND		0.977
148				ND		0 489
149	147/149			ND		0 977
150	111/110			ND		0.489
151	135/151					0.400
152	155/151					0.377
152	153/168					0.405
150	155/100					0.377
155						0.409
155	156/157					0.409
150	150/157					0.977
107	150/157					0.977
158				ND		0.489
159				ND		0.489
160				ND		0.489
161				ND		0.489
162				ND		0.489
163	129/138/163			ND		1.47
164				ND		0.489
165				ND		0.489
166	128/166			ND		0.977
167				ND		0.489
168	153/168			ND		0.977
169				ND		0.489
170				ND		0.489
171	171/173			ND		0.977
172				ND		0.489
173	171/173			ND		0.977
174				ND		0.489
175				ND		0.489
176				ND		0.489
177				ND		0 489
178				ND		0 489
179				ND		0 489
180	180/193			ND		0 977
181	100/100			ND		0.489
182						0.405
183	183/185					0.405
103	105/105					0.977
195	192/195					0.409
100	105/105					0.977
100						0.489
107						0.489
100						0.489
189				ND		0.489
190				ND		0.489
191				ND		0.489
192				ND		0.489

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

## **REPORT OF LABORATORY ANALYSIS**

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 080818 30261592002 P180818A\_09

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.977
194				ND		0.733
195				ND		0.733
196				ND		0.733
197	197/200			ND		1.47
198	198/199			ND		1.47
199	198/199			ND		1.47
200	197/200			ND		1.47
201				ND		0.733
202				ND		0.733
203				ND		0.733
204				ND		0.733
205				ND		0.733
206				ND		0.733
207				ND		0.733
208				ND		0.733
209				ND		0.733

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Influent 080818
Lab Sample ID	30261592002
Filename	P180818A_09

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	69.8	
Total Dichloro Biphenyls	8.87	
Total Trichloro Biphenyls	2.30	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
Total PCBs	81.0	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 080818 30261592003 P180818A 10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1		9 552	3 18	48 5		0 245
2		12 176	3 21	38.1		0.245
2		12.170	3.23	14.2		0.245
1		12.415	1 56	8 50		0.245
4		12.715	1.50	0.50		0.245
5		15 694	1 47			0.245
0		15.064	1.47	0.909		0.245
/		16 000	1 50	ND 2.11		0.245
0		10.223	1.52	3.11		0.245
9		10.101	1.03	0.290		0.245
10		12.918	1.53	0.348		0.245
11	40/40			ND		2.40
12	12/13			ND		0.491
13	12/13			ND		0.491
14				ND		0.245
15				ND		0.324
16		19.794	0.99	0.621		0.245
17		19.255	0.98	0.379		0.245
18	18/30	18.776	1.05	1.27		0.491
19		16.559	1.04	0.501		0.245
20	20/28			ND		1.27
21	21/33			ND		1.33
22				ND		0.932
23				ND		0.245
24				ND		0.245
25				ND		0.245
26	26/29			ND		0.491
27				ND		0.245
28	20/28			ND		1.27
29	26/29			ND		0.491
30	18/30	18.776	1.05	(1.27)		0.491
31				ŇĎ		1.28
32				ND		0.245
33	21/33			ND		1.33
34				ND		0.245
35				ND		0.245
36				ND		0.245
37				ND		0.520
38				ND		0.245
39				ND		0.245
40	40/41/71			ND		1 47
41	40/41/71			ND		1 47
42				ND		0 491
43	43/73			ND		0 491
44	44/47/65			ND		1 47
45	45/51			ND		0.981
46	-0.01					0.301
47	44/47/65					1 47
41 18						0.401
40				ND		0.491

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 080818 30261592003 P180818A\_10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0.981
50	50/53			ND		0.981
51	45/51			ND		0.981
52	16/61			ND		1 51
53	50/53					0.981
53	30/33					0.401
54						0.491
55						0.491
50				ND		0.491
57				ND		0.491
58				ND		0.491
59	59/62/75			ND		1.47
60				ND		0.491
61	61/70/74/76			ND		1.96
62	59/62/75			ND		1.47
63				ND		0.491
64				ND		0.491
65	44/47/65			ND		1.47
66				ND		0 824
67				ND		0.491
68				ND		0.491
60	40/60					0.991
70	49/09					1.06
70	01/70/74/70			ND		1.90
71	40/41/71			ND		1.47
72				ND		0.491
73	43/73			ND		0.491
74	61/70/74/76			ND		1.96
75	59/62/75			ND		1.47
76	61/70/74/76			ND		1.96
77				ND		0.491
78				ND		0.491
79				ND		0.491
80				ND		0 491
81				ND		0.491
82				ND		0.491
02						0.401
03						0.491
04	05/440/447			ND		0.491
85	85/116/117			ND		1.47
86	86/87/97/108/119/125			ND		2.94
87	86/87/97/108/119/125			ND		2.94
88	88/91			ND		0.981
89				ND		0.491
90	90/101/113			ND		1.47
91	88/91			ND		0.981
92				ND		0.491
93	93/98/100/102			ND		1.96
94	00.00,100,102			ND		0 491
94				ND		0.437
90						0.332
90				IND.		0.491

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 080818 30261592003 P180818A\_10

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2 94
98	93/98/100/102			ND		1.96
åå	00,00,100,102			ND		0 491
100	93/98/100/102			ND		1 96
100	90/101/113			ND		1 47
107	03/08/100/102					1.96
102	93/90/100/102					0.401
103						0.491
104						0.491
105						0.491
100	107/104					0.491
107	107/124					0.961
108	86/87/97/108/119/125			ND		2.94
109	110/115			ND		0.491
110	110/115			ND		0.981
111				ND		0.491
112				ND		0.491
113	90/101/113			ND		1.47
114				ND		0.491
115	110/115			ND		0.981
116	85/116/117			ND		1.47
117	85/116/117			ND		1.47
118				ND		0.628
119	86/87/97/108/119/125			ND		2.94
120				ND		0.491
121				ND		0.491
122				ND		0.491
123				ND		0.491
124	107/124			ND		0.981
125	86/87/97/108/119/125			ND		2.94
126				ND		0.491
127				ND		0 491
128	128/166			ND		0.981
129	129/138/163			ND		1 47
130	120/100/100			ND		0 491
131				ND		0.401
132				ND		0.491
132						0.491
134	131/113					0.491
104	134/143					0.901
130	135/151					0.901
130						0.491
137	100/100/160					0.491
138	129/138/103			ND		1.47
139	139/140					0.981
140	139/140			ND		0.981
141				ND		0.491
142				ND		0.491
143	134/143			ND		0.981
144				ND		0.491

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Extraction Wells 080818
30261592003
P180818A_10

IUPAC         Co-elutions         RT         Ratio         ng/L         ng/L         ng/L           145           ND          0.491           146           ND          0.491           147         147/149          ND          0.981           149         147/149          ND          0.981           150          ND          0.981           151         135/151          ND          0.981           152           ND          0.981           154           ND          0.491           155           ND          0.491           156         156/157          ND          0.491           158          ND          0.491           160          ND          0.491           161          ND          0.491           162					Concentration	EMPC	EML
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
	145				ND		0.491
	146				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	147	147/149			ND		0.981
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	148				ND		0.491
160	149	147/149			ND		0.981
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	150	111110			ND		0 491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	151	135/151			ND		0.981
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	152				ND		0 491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	153	153/168			ND		0.981
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	154	186/188			ND		0.001
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	155						0.491
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	155	156/157					0.491
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	150	156/157					0.901
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	107	150/157					0.901
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	150						0.491
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	159				ND		0.491
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	160				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	161				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	162				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	163	129/138/163			ND		1.47
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	164				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	165				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	166	128/166			ND		0.981
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	167				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	168	153/168			ND		0.981
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	169				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	170				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	171	171/173			ND		0.981
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	172				ND		0.491
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	173	171/173			ND		0.981
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	174				ND		0.491
176         ND        0.491         177         ND        0.491         178         ND        0.491         179         ND        0.491         180       180/193         ND        0.491         181         ND        0.491         182         ND        0.491         183       183/185         ND        0.491         184         ND        0.491         185       183/185         ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         189         ND        0.491         190         ND	175				ND		0 491
177        ND        0.491         178        ND        0.491         179         ND        0.491         180       180/193         ND        0.491         181         ND        0.491         182         ND        0.491         183       183/185         ND        0.491         184         ND        0.491         185       183/185         ND        0.491         186         ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         190         ND        0.491         191         ND        0.491	176				ND		0 491
178         ND        0.491         179         ND        0.491         180       180/193         ND        0.981         181         ND        0.491         182         ND        0.491         183       183/185         ND        0.491         184         ND        0.491         185       183/185         ND        0.491         185       183/185         ND        0.981         186         ND        0.491         187         ND        0.491         188         ND        0.491         190         ND        0.491         191         ND        0.491         192	177				ND		0 491
179         ND        0.491         180       180/193        ND        0.491         181         ND        0.491         182         ND        0.491         183       183/185         ND        0.491         184         ND        0.491         185       183/185         ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         188         ND        0.491         189         ND        0.491         190         ND        0.491         191         ND        0.491         192         ND	178				ND		0.491
180       180/193         ND        0.491         181         ND        0.491         182         ND        0.491         183       183/185         ND        0.491         184         ND        0.491         185       183/185         ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         189         ND        0.491         189         ND        0.491         190         ND        0.491         191         ND        0.491         192         ND        0.491	170				ND		0.491
180       100/193        100        0.301         181         ND        0.491         182         ND        0.491         183       183/185         ND        0.491         184         ND        0.491         185       183/185         ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         189         ND        0.491         190         ND        0.491         191         ND        0.491         192         ND        0.491	180	180/103					0.981
181         ND        0.491         182         ND        0.491         183       183/185        ND        0.491         184        ND        0.491         185       183/185        ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         188         ND        0.491         189         ND        0.491         190         ND        0.491         191         ND        0.491         192         ND        0.491	100	100/195					0.901
182       ND      0.491       183     183/185       ND      0.491       184       ND      0.491       185     183/185       ND      0.491       186       ND      0.491       187       ND      0.491       188       ND      0.491       189       ND      0.491       190       ND      0.491       191       ND      0.491       192       ND      0.491	101						0.491
183       183/185        ND        0.961         184         ND        0.491         185       183/185         ND        0.491         186         ND        0.491         187         ND        0.491         188         ND        0.491         189         ND        0.491         190         ND        0.491         191         ND        0.491         192         ND        0.491	102	102/105					0.491
184       ND      0.491       185     183/185      ND      0.981       186      ND      0.491       187      ND      0.491       188       ND      0.491       189       ND      0.491       190       ND      0.491       191       ND      0.491       192       ND      0.491	103	103/105					0.961
185     183/185      ND      0.981       186      ND      0.491       187      ND      0.491       188      ND      0.491       189      ND      0.491       190      ND      0.491       191       ND      0.491       192      ND      0.491	184	100/105			ND		0.491
186       ND      0.491       187      ND      0.491       188      ND      0.491       189      ND      0.491       190      ND      0.491       191      ND      0.491       192      ND      0.491	185	183/185			ND		0.981
187       ND      0.491       188      ND      0.491       189      ND      0.491       190      ND      0.491       191      ND      0.491       192      ND      0.491	186				ND		0.491
188      ND      0.491       189      ND      0.491       190      ND      0.491       191       ND      0.491       192      ND      0.491	187				ND		0.491
189       ND      0.491       190      ND      0.491       191      ND      0.491       192      ND      0.491	188				ND		0.491
190      ND      0.491       191      ND      0.491       192      ND      0.491	189				ND		0.491
191      ND      0.491       192      ND      0.491	190				ND		0.491
192 ND 0.491	191				ND		0.491
	192				ND		0.491

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 080818 30261592003 P180818A\_10

IUPAC	Co-elutions	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.981
194				ND		0.736
195				ND		0.736
196				ND		0.736
197	197/200			ND		1.47
198	198/199			ND		1.47
199	198/199			ND		1.47
200	197/200			ND		1.47
201				ND		0.736
202				ND		0.736
203				ND		0.736
204				ND		0.736
205				ND		0.736
206				ND		0.736
207				ND		0.736
208				ND		0.736
209				ND		0.736

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Extraction Wells 080818
Lab Sample ID	30261592003
Filename	P180818A_10

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	101	
Total Dichloro Biphenyls	13.2	
Total Trichloro Biphenyls	2.77	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
TotalNonachloroBiphenyls	ND	
DecachloroBiphenyls	ND	
TotalPCBs	117	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 110718 30270719001 Y181119B\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1				ND		0 239
2				ND		0.239
3				ND		0.239
4						0.239
5						0.230
5						0.239
7						0.239
0						0.239
0						0.239
9						0.239
10						0.239
11	40/40			ND		1.43
12	12/13			ND		0.477
13	12/13			ND		0.477
14				ND		0.239
15				ND		0.239
16				ND		0.239
17				ND		0.239
18	18/30			ND		0.477
19				ND		0.239
20	20/28			ND		0.477
21	21/33			ND		0.477
22				ND		0.239
23				ND		0.239
24				ND		0.239
25				ND		0.239
26	26/29			ND		0.477
27				ND		0.239
28	20/28			ND		0.477
29	26/29			ND		0.477
30	18/30			ND		0.477
31				ND		0.239
32				ND		0.239
33	21/33			ND		0 477
34	2.000			ND		0 239
35				ND		0.239
36				ND		0.239
37						0.239
38						0.230
30						0.239
39	40/41/71					1 4 2
40	40/41/71					1.43
41	40/41/71					0.477
42	42/72					0.477
43	43/13					0.4//
44	44/47/00					1.43
45	45/51			ND		0.954
46	44/47/05			ND		0.4//
47	44/47/65			ND		1.43
48				ND		0.477

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 110718 30270719001 Y181119B\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0 954
50	50/53			ND		0.954
51	45/51			ND		0.004
52	45/51					0.004
52	50/52					0.477
55	50/55					0.934
54						0.477
55				ND		0.477
50				ND		0.477
57				ND		0.477
58				ND		0.477
59	59/62/75			ND		1.43
60				ND		0.477
61	61/70/74/76			ND		1.91
62	59/62/75			ND		1.43
63				ND		0.477
64				ND		0.477
65	44/47/65			ND		1.43
66				ND		0.477
67				ND		0.477
68				ND		0 477
69	49/69			ND		0 954
70	61/70/74/76			ND		1 91
70	40/41/71			ND		1 4 3
72	40/41/71					0 477
72	10/70					0.477
73	43/73					1.01
74	01/10/14/10 F0/02/7F					1.91
75	59/62/75 64/70/74/70			ND		1.43
76	61/70/74/76			ND		1.91
11				ND		0.477
78				ND		0.477
79				ND		0.477
80				ND		0.477
81				ND		0.477
82				ND		0.477
83				ND		0.477
84				ND		0.477
85	85/116/117			ND		1.43
86	86/87/97/108/119/125			ND		2.86
87	86/87/97/108/119/125			ND		2.86
88	88/91			ND		0.954
89				ND		0 477
90	90/101/113			ND		1 4 3
91	88/91			ND		0 954
02	00/01					0.004
92	03/08/100/102					0.477
93	93/90/100/10Z					1.91
94						0.477
95						0.477
96				ND		0.477

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 110718 30270719001 Y181119B\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2.86
98	93/98/100/102			ND		1.91
gg	00,00,100,102			ND		0 477
100	93/98/100/102			ND		1 91
100	90/101/113					1 / 3
101	03/08/100/102					1.45
102	93/98/100/102					0.477
103						0.477
104				ND		0.477
105				ND		0.477
106				ND		0.477
107	107/124			ND		0.954
108	86/87/97/108/119/125			ND		2.86
109				ND		0.477
110	110/115			ND		0.954
111				ND		0.477
112				ND		0.477
113	90/101/113			ND		1.43
114				ND		0.477
115	110/115			ND		0.954
116	85/116/117			ND		1 43
117	85/116/117			ND		1 4 3
110	00/110/11/					0.477
110	96/97/07/109/110/125					0.477
119	00/07/97/100/119/125					2.00
120				ND		0.477
121				ND		0.477
122				ND		0.477
123				ND		0.477
124	107/124			ND		0.954
125	86/87/97/108/119/125			ND		2.86
126				ND		0.477
127				ND		0.477
128	128/166			ND		0.954
129	129/138/163			ND		1.43
130				ND		0.477
131				ND		0.477
132				ND		0 477
133				ND		0.477
134	134/143			ND		0.954
134	135/151					0.954
130	135/151					0.934
130						0.477
137	400/400/400			ND		0.477
138	129/138/163					1.43
139	139/140			ND		0.954
140	139/140			ND		0.954
141				ND		0.477
142				ND		0.477
143	134/143			ND		0.954
144				ND		0.477

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

TS Effluent 110718 30270719001 Y181119B\_11

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0 477
146				ND		0 477
147	147/149			ND		0 954
148	1477148			ND		0.004
140	147/140					0.477
140	1477149					0.477
150	135/151					0.477
151	155/151					0.904
152	152/169					0.477
155	153/100					0.954
154				ND		0.477
155	450/457			ND		0.477
156	156/157			ND		0.954
157	156/157			ND		0.954
158				ND		0.477
159				ND		0.477
160				ND		0.477
161				ND		0.477
162				ND		0.477
163	129/138/163			ND		1.43
164				ND		0.477
165				ND		0.477
166	128/166			ND		0.954
167				ND		0.477
168	153/168			ND		0.954
169				ND		0 477
170				ND		0 477
171	171/173			ND		0 954
172	11 11 10			ND		0 477
173	171/173			ND		0.954
174	11 11 11 10			ND		0.004
175						0.477
176						0.477
170						0.477
170						0.477
170						0.477
179	100/102					0.477
180	180/193			ND		0.954
181				ND		0.477
182	100/105			ND		0.477
183	183/185			ND		0.954
184				ND		0.477
185	183/185			ND		0.954
186				ND		0.477
187				ND		0.477
188				ND		0.477
189				ND		0.477
190				ND		0.477
191				ND		0.477
192				ND		0.477

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename TS Effluent 110718 30270719001 Y181119B\_11

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.954
194				ND		0.716
195				ND		0.716
196				ND		0.716
197	197/200			ND		1.43
198	198/199			ND		1.43
199	198/199			ND		1.43
200	197/200			ND		1.43
201				ND		0.716
202				ND		0.716
203				ND		0.716
204				ND		0.716
205				ND		0.716
206				ND		0.716
207				ND		0.716
208				ND		0.716
209				ND		0.716

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	TS Effluent 110718
Lab Sample ID	30270719001
Filename	Y181119B_11

gener Group	Concentration ng/L	
Monochloro Biphenyls	ND	
Dichloro Biphenyls	ND	
Trichloro Biphenyls	ND	
Tetrachloro Biphenyls	ND	
PentachloroBiphenyls	ND	
Hexachloro Biphenyls	ND	
Heptachloro Biphenyls	ND	
Octachloro Biphenyls	ND	
Nonachloro Biphenyls	ND	
ichloroBiphenyls	ND	
PCBs	ND	
	gener Group Monochloro Biphenyls Dichloro Biphenyls Trichloro Biphenyls Tetrachloro Biphenyls Pentachloro Biphenyls Hexachloro Biphenyls Octachloro Biphenyls Nonachloro Biphenyls achloroBiphenyls	Gener GroupConcentration ng/LMonochloro BiphenylsNDDichloro BiphenylsNDTrichloro BiphenylsNDTetrachloro BiphenylsNDPentachloro BiphenylsNDHexachloro BiphenylsNDOctachloro BiphenylsNDOctachloro BiphenylsNDNonachloro BiphenylsNDNonachloro BiphenylsNDPettachloro BiphenylsNDOctachloro BiphenylsNDNonachloro BiphenylsNDNonachloro BiphenylsNDPCBsND

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Influent	110718
3027071	9002
Y181119	9B 12

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
1		8.553	2.94	112		0.239
2		10.949	2.97	74.9		0.239
3		11,165	3.09	32.1		0.239
4		11 441	1 54	13.8		0 239
5				ND		0.239
6		14 206	1 50	1 17		0.239
7		14.200	1.00	ND		0.239
8		1/ 607	1 50	3 90		0.230
ă		13 751	1.30	0 377		0.230
10		11 644	1.07	0.600		0.239
10		11.044	1.40	0.099		1 4 2
10	10/10					1.43
12	12/13					0.470
13	12/13			ND		0.478
14				ND		0.239
15						0.239
16		18.040	1.09	0.725		0.239
17		17.549	1.13	0.493		0.239
18	18/30	17.105	1.06	1.60		0.478
19		15.009	0.99	0.638		0.239
20	20/28			ND		0.478
21	21/33			ND		0.478
22				ND		0.239
23				ND		0.239
24				ND		0.239
25				ND		0.239
26	26/29			ND		0.478
27				ND		0.239
28	20/28			ND		0.478
29	26/29			ND		0.478
30	18/30	17,105	1.06	(1.60)		0.478
31		21.061	0.98	0.254		0.239
32		18 630	1 07	0.290		0 239
33	21/33			ND		0 478
34	21,00			ND		0 239
35				ND		0.239
36				ND		0.200
37				ND		0.239
38						0.230
30						0.239
40	40/41/71					1 4 2
40	40/41/71					1.43
41	40/41/71					1.43
42	40/70					0.470
43	43/13					U.4/8
44	44/4//00					1.43
45	45/51			ND		0.956
46				ND		0.478
47	44/47/65			ND		1.43
48				ND		0.478

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Influent	110718
3027072	19002
Y18111	9B_12

IUPAC         Co-elutions         RT         Ratio         ng/L         ng/L         ng/L           49         49/69           ND          0.956           50         50/53           ND          0.956           52           ND          0.478           53         50/53           ND          0.478           54           ND          0.478           56           ND          0.478           56           ND          0.478           57           ND          0.478           60           ND          0.478           61         61/70/74/76           ND          0.478           64           ND          0.478           65         44/47/65          ND          0.478					Concentration	EMPC	EML
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
	49	49/69			ND		0.956
51       45/61         ND        0.356         52       50/53         ND        0.478         54         ND        0.478         56         ND        0.478         56         ND        0.478         56         ND        0.478         57         ND        0.478         59       59/62/75         ND        0.478         61       61/70/74/76         ND        1.43         62       59/62/75         ND        0.478         64         ND        0.478         64         ND        0.478         66         ND        0.478         67         ND        0.478         68 <t< td=""><td>50</td><td>50/53</td><td></td><td></td><td>ND</td><td></td><td>0.956</td></t<>	50	50/53			ND		0.956
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	51	45/51			ND		0.956
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	52	10/01			ND		0.478
30         30	53	50/53			ND		0.956
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	54	50/55					0.330
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	55						0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	55						0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	50						0.470
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	57						0.470
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	50	E0/62/7E					0.470
00           ND          0.478           61         61/70/74/76           ND          1.91           62         59/62/75           ND          0.478           63           ND          0.478           64           ND          0.478           65         44/47/65           ND          0.478           66           ND          0.478           68           ND          0.478           69         49/69           ND          0.478           71         40/41/71           ND          0.478           74         61/70/74/76           ND          0.478           74         61/70/74/76           ND          0.478           76         61/70/74/76           ND </td <td>59</td> <td>59/02/75</td> <td></td> <td></td> <td></td> <td></td> <td>1.43</td>	59	59/02/75					1.43
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	60	04/20/24/20			ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	61	61/70/74/76			ND		1.91
	62	59/62/75			ND		1.43
	63				ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	64				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	65	44/47/65			ND		1.43
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	66				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	67				ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	68				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	69	49/69			ND		0.956
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	70	61/70/74/76			ND		1.91
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	71	40/41/71			ND		1.43
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	72				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	73	43/73			ND		0.478
75 $59/62/75$ ND1.4376 $61/70/74/76$ ND1.9177ND0.47878ND0.47879ND0.47880ND0.47881ND0.47882ND0.47883ND0.47884ND0.47885 $85/116/117$ ND86/87/97/108/119/125ND87 $86/87/97/108/119/125$ ND90 $90/101/113$ ND91 $88/91$ ND92ND0.47893 $93/98/100/102$ ND94ND0.47896ND0.478	74	61/70/74/76			ND		1.91
76       61/70/74/76         ND        0.478         77         ND        0.478         78         ND        0.478         79         ND        0.478         80         ND        0.478         81         ND        0.478         82         ND        0.478         83         ND        0.478         84         ND        0.478         85       85/116/117         ND        0.478         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        0.956         89         ND        0.478         90       90/101/113         ND        0.478         91<	75	59/62/75			ND		1 43
77         ND        0.478         78         ND        0.478         79         ND        0.478         80         ND        0.478         81         ND        0.478         82        ND        0.478         83         ND        0.478         84         ND        0.478         85       85/116/117         ND        0.478         84         ND        0.478         85       85/116/117         ND        0.478         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        0.478         90       90/101/113         ND        0.478         91       88/91	76	61/70/74/76			ND		1 91
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	77				ND		0 478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	78						0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	70						0.478
80         ND        0.478         81         ND        0.478         82         ND        0.478         83         ND        0.478         84         ND        0.478         85       85/116/117         ND        0.478         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        2.87         89       90       90/101/113         ND        0.478         90       90/101/113         ND        0.478         91       88/91         ND        0.478         93       93/98/100/102         ND        0.478         95         ND        0.478         96         ND	80						0.478
81         ND        0.478         82         ND        0.478         83         ND        0.478         84         ND        0.478         85       85/116/117        ND        0.478         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        0.956         89         ND        0.478         90       90/101/113         ND        0.478         91       88/91         ND        0.956         92         ND        0.478         93       93/98/100/102        ND        0.478         95         ND        0.478 <t< td=""><td>00</td><td></td><td></td><td></td><td></td><td></td><td>0.478</td></t<>	00						0.478
b2         ND        0.478         83         ND        0.478         84         ND        0.478         85       85/116/117        ND        0.478         86       86/87/97/108/119/125        ND        2.87         87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        0.956         89         ND        0.478         90       90/101/113         ND        0.956         92         ND        0.956         92         ND        0.478         93       93/98/100/102        ND        0.478         95         ND        0.478         96         ND        0.478 <td>01</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0.470</td>	01						0.470
83         ND        0.478         84         ND        0.478         85       85/116/117         ND        1.43         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        2.87         89         ND        2.87         90       90/101/113         ND        0.956         90       90/101/113         ND        0.478         91       88/91         ND        0.478         93       93/98/100/102         ND        0.478         95         ND        0.478         95         ND        0.478         96         ND	02						0.470
84        ND        0.478         85       85/116/117         ND        1.43         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        0.956         89         ND        0.478         90       90/101/113         ND        0.956         92         ND        0.478         93       93/98/100/102         ND        0.478         95         ND        0.478         95         ND        0.478         96         ND        0.478	83				ND		0.478
85       85/116/11/         ND        1.43         86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        0.956         89         ND        0.478         90       90/101/113         ND        0.956         92         ND        0.956         92         ND        0.478         93       93/98/100/102         ND        0.478         95         ND        0.478         95         ND        0.478         96         ND        0.478	84	05/440/447			ND		0.478
86       86/87/97/108/119/125         ND        2.87         87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        0.956         89         ND        0.478         90       90/101/113         ND        0.478         91       88/91         ND        0.956         92        ND        0.956         93       93/98/100/102         ND        0.478         95         ND        0.478         95         ND        0.478         96         ND        0.478	85	85/116/117			ND		1.43
87       86/87/97/108/119/125         ND        2.87         88       88/91         ND        0.956         89         ND        0.478         90       90/101/113         ND        1.43         91       88/91         ND        0.956         92         ND        0.956         92         ND        0.956         93       93/98/100/102         ND        1.91         94         ND        0.478         95         ND        0.478         96         ND        0.478	86	86/87/97/108/119/125			ND		2.87
88       88/91        ND        0.956         89        ND        0.478         90       90/101/113        ND        1.43         91       88/91        ND        0.956         92        ND        0.956         93       93/98/100/102        ND        0.478         94        ND        0.478         95        ND        0.478         96        ND        0.478	87	86/87/97/108/119/125			ND		2.87
89        ND        0.478         90       90/101/113         ND        1.43         91       88/91         ND        0.956         92        ND        0.478         93       93/98/100/102        ND        0.478         94        ND        0.478         95        ND        0.478         96        ND        0.478	88	88/91			ND		0.956
90       90/101/113        ND        1.43         91       88/91        ND        0.956         92        ND        0.478         93       93/98/100/102        ND        1.91         94         ND        0.478         95         ND        0.478         96         ND        0.478	89				ND		0.478
91       88/91        ND        0.956         92        ND        0.478         93       93/98/100/102        ND        1.91         94        ND        0.478         95         ND        0.478         96         ND        0.478	90	90/101/113			ND		1.43
92        ND        0.478         93       93/98/100/102        ND        1.91         94         ND        0.478         95         ND        0.478         96         ND        0.478	91	88/91			ND		0.956
93       93/98/100/102         ND        1.91         94         ND        0.478         95         ND        0.478         96         ND        0.478	92				ND		0.478
94      ND      0.478       95      ND      0.478       96      ND      0.478	93	93/98/100/102			ND		1.91
95          ND          0.478           96          ND          0.478	94				ND		0.478
96 ND 0.478	95				ND		0.478
	96				ND		0.478

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Influent 110718 30270719002 Y181119B\_12

$\begin{array}{c c c c c c c c c c c c c c c c c c c $					Concentration	EMPC	EML
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	97	86/87/97/108/119/125			ND		2 87
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	98	93/98/100/102			ND		1 91
D0         93/98/100/102	90	30/30/100/102			ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100	93/98/100/102					1 01
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100	00/101/113					1.91
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	101	03/08/100/102					1.40
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	102	93/98/100/102					0.479
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	103						0.470
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	104						0.470
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	105				ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100	407/404			ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	107	107/124			ND		0.956
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	108	86/87/97/108/119/125			ND		2.87
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	109				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	110	110/115			ND		0.956
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	111				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	112				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	113	90/101/113			ND		1.43
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	114				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	115	110/115			ND		0.956
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	116	85/116/117			ND		1.43
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	117	85/116/117			ND		1.43
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	118				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	119	86/87/97/108/119/125			ND		2.87
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	120				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	121				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	122				ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	123				ND		0 478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	124	107/124			ND		0.956
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	125	86/87/97/108/119/125			ND		2 87
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	126	00/01/01/100/110/120			ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	120				ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	127	128/166					0.470
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	120	120/138/163					1/3
130         ND        0.478         131         ND        0.478         132         ND        0.478         133         ND        0.478         134       134/143         ND        0.478         135       135/151         ND        0.956         136         ND        0.478         137         ND        0.478         138       129/138/163         ND        0.478         139       139/140         ND        0.956         140       139/140         ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.956         <	120	129/130/103					0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	121						0.478
132         ND        0.478         133         ND        0.478         134       134/143         ND        0.956         135       135/151        ND        0.478         136        ND        0.478         137        ND        0.478         138       129/138/163         ND        0.478         139       139/140         ND        0.956         140       139/140         ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.478         144         ND        0.478	131						0.470
133         ND        0.478         134       134/143         ND        0.956         135       135/151         ND        0.956         136         ND        0.478         137        ND        0.478         138       129/138/163         ND        0.478         139       139/140         ND        0.956         140       139/140         ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.478         144         ND        0.478	132						0.470
134       134/143        ND        0.956         135       135/151        ND        0.956         136        ND        0.478         137        ND        0.478         138       129/138/163        ND        0.478         139       139/140        ND        0.956         140       139/140         ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.478         144         ND        0.478	133	404/440			ND		0.478
135       135/151        ND        0.956         136        ND        0.478         137        ND        0.478         138       129/138/163        ND        0.478         139       139/140        ND        0.956         140       139/140        ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.956         144         ND        0.478	134	134/143			ND		0.956
136         ND        0.478         137         ND        0.478         138       129/138/163        ND        1.43         139       139/140        ND        0.956         140       139/140        ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.956         144         ND        0.478	135	135/151			ND		0.956
137         ND        0.478         138       129/138/163        ND        1.43         139       139/140         ND        0.956         140       139/140         ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.956         144         ND        0.478         143       134/143         ND        0.956         144         ND        0.478	136				ND		0.478
138       129/138/163         ND        1.43         139       139/140         ND        0.956         140       139/140         ND        0.956         141         ND        0.478         142         ND        0.478         143       134/143         ND        0.956         144         ND        0.478	137	100/100/100			ND		0.478
139       139/140        ND        0.956         140       139/140        ND        0.956         141        ND        0.478         142        ND        0.478         143       134/143        ND        0.956         144         ND        0.956	138	129/138/163			ND		1.43
140     139/140      ND      0.956       141      ND      0.478       142      ND      0.478       143     134/143      ND      0.956       144      ND      0.956	139	139/140			ND		0.956
141      ND      0.478       142      ND      0.478       143     134/143      ND      0.956       144       ND      0.478	140	139/140			ND		0.956
142      ND      0.478       143     134/143      ND      0.956       144      ND      0.478	141				ND		0.478
143     134/143      ND      0.956       144       ND      0.478	142				ND		0.478
144 ND 0.478	143	134/143			ND		0.956
	144				ND		0.478

Conc = Concentration

EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

Influent 110718	
30270719002	
Y181119B_12	

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.478
146				ND		0.478
147	147/149			ND		0.956
148				ND		0.478
149	147/149			ND		0.956
150				ND		0.478
151	135/151			ND		0.956
152	100,101			ND		0.478
153	153/168			ND		0.956
154	100,100			ND		0.478
155				ND		0.478
156	156/157			ND		0.956
157	156/157					0.000
158	150/157					0.330
150						0.478
160						0.478
161						0.478
162						0.478
162	120/128/163					0.470
164	129/136/103					0.470
104						0.470
100	100/100					0.476
100	128/100			ND		0.950
107	450/400			ND		0.478
168	153/168			ND		0.956
169				ND		0.478
170	474470			ND		0.478
1/1	1/1/1/3			ND		0.956
1/2				ND		0.478
1/3	171/173			ND		0.956
174				ND		0.478
175				ND		0.478
176				ND		0.478
177				ND		0.478
178				ND		0.478
179				ND		0.478
180	180/193			ND		0.956
181				ND		0.478
182				ND		0.478
183	183/185			ND		0.956
184				ND		0.478
185	183/185			ND		0.956
186				ND		0.478
187				ND		0.478
188				ND		0.478
189				ND		0.478
190				ND		0.478
191				ND		0.478
192				ND		0.478
						-

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**

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> Tel: 612-607-1700 Fax: 612-607-6444

### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename

Influent	110718
302707	19002
Y18111	9B_12

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.956
194				ND		0.717
195				ND		0.717
196				ND		0.717
197	197/200			ND		1.43
198	198/199			ND		1.43
199	198/199			ND		1.43
200	197/200			ND		1.43
201				ND		0.717
202				ND		0.717
203				ND		0.717
204				ND		0.717
205				ND		0.717
206				ND		0.717
207				ND		0.717
208				ND		0.717
209				ND		0.717

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Influent 110718
Lab Sample ID	30270719002
Filename	Y181119B_12

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	219	
Total Dichloro Biphenyls	20.0	
Total Trichloro Biphenyls	4.00	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
TotalPCBs	243	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**



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#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	
Lab Sample ID	
Filename	

Extraction Wells 110718 30270719003 Y181119B 13

$\begin{array}{c c c c c c c c c c c c c c c c c c c $					Concentration	EMPC	EML
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4		0 505	2.01			0.000
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1		8.000	2.91	09.8		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2		10.901	2.98	40.1		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3		11.165	3.18	21.4		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4		11.464	1.53	8.71		0.239
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5				ND		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6		14.205	1.38	1.00		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7				ND		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8		14.709	1.53	3.22		0.239
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	9		13.762	1.47	0.357		0.239
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	10		11.667	1.53	0.379		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	11				ND		1.43
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	12	12/13			ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	13	12/13			ND		0.478
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	14				ND		0.239
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	15				ND		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	16		18.039	1.13	0.526		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17		17.572	1.17	0.379		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	18	18/30	17.117	1.01	1.26		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	19		15.020	1.09	0.446		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20	20/28			ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	21	21/33			ND		0 478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	22	21/00			ND		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	22						0.230
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	23						0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	24						0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20	26/20					0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	20	20/29					0.470
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	27	20/22					0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	28	20/28			ND		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	29	26/29			ND (1.00)		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	30	18/30	17.117	1.01	(1.26)		0.478
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	31				ND		0.239
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	32				ND		0.239
34         ND        0.239         35         ND        0.239         36         ND        0.239         37         ND        0.239         38         ND        0.239         39         ND        0.239         40       40/41/71         ND        0.239         41       40/41/71         ND        0.239         42         ND        0.239         43       43/73         ND        1.43         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.478         47       44/47/65         ND        0.478	33	21/33			ND		0.478
35         ND        0.239         36         ND        0.239         37         ND        0.239         38         ND        0.239         39         ND        0.239         40       40/41/71         ND        0.239         41       40/41/71         ND        0.239         42         ND        0.239         43       43/73         ND        0.478         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.478         47       44/47/65         ND        0.478         48         ND        0.478 <td>34</td> <td></td> <td></td> <td></td> <td>ND</td> <td></td> <td>0.239</td>	34				ND		0.239
36        ND        0.239         37        ND        0.239         38         ND        0.239         39         ND        0.239         40       40/41/71         ND        0.239         41       40/41/71         ND        0.239         42         ND        1.43         42         ND        0.478         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.478         47       44/47/65         ND        0.478         48         ND        0.478	35				ND		0.239
37        ND        0.239         38        ND        0.239         39        ND        0.239         40       40/41/71         ND        0.239         41       40/41/71         ND        1.43         42         ND        0.478         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.478         47       44/47/65         ND        0.478         48         ND        0.478	36				ND		0.239
38         ND        0.239         39        ND        0.239         40       40/41/71        ND        0.239         41       40/41/71         ND        1.43         42         ND        0.478         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.478         46         ND        0.478         47       44/47/65         ND        0.478         48         ND        0.478	37				ND		0.239
39         ND        0.239         40       40/41/71        ND        1.43         41       40/41/71         ND        1.43         42         ND        0.478         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.955         46         ND        0.478         47       44/47/65         ND        0.478         48         ND        0.478	38				ND		0.239
40       40/41/71         ND        1.43         41       40/41/71         ND        1.43         42         ND        0.478         43       43/73         ND        0.478         44       44/47/65         ND        0.478         45       45/51         ND        0.955         46        ND        0.478         47       44/47/65        ND        0.478         48        ND        0.478	39				ND		0.239
41       40/41/71         ND        1.43         42        ND        0.478         43       43/73        ND        0.478         44       44/47/65        ND        0.478         45       45/51         ND        0.955         46         ND        0.478         47       44/47/65         ND        0.478         48         ND        0.478	40	40/41/71			ND		1.43
42         ND        0.478         43       43/73        ND        0.478         44       44/47/65        ND        1.43         45       45/51         ND        0.955         46         ND        0.478         47       44/47/65         ND        1.43         48         ND        0.478	41	40/41/71			ND		1.43
43       43/73        ND        0.478         44       44/47/65        ND        1.43         45       45/51        ND        0.955         46        ND        0.478         47       44/47/65        ND        0.478         48        ND        0.478	42				ND		0.478
44       44/47/65        ND        1.43         45       45/51        ND        0.955         46        ND        0.478         47       44/47/65        ND        1.43         48        ND        0.478	43	43/73			ND		0.478
45     45/51      ND      0.955       46      ND      0.478       47     44/47/65      ND      1.43       48      ND      0.478	44	44/47/65			ND		1.43
46      ND      0.478       47     44/47/65      ND      1.43       48       ND      0.478	45	45/51			ND		0.955
47 44/47/65 ND 1.43 48 ND 0.478	46				ND		0.478
48 ND 0.478	47	44/47/65			ND		1.43
	48				ND		0.478

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



> Tel: 612-607-1700 Fax: 612-607-6444

#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 110718 30270719003 Y181119B\_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
49	49/69			ND		0 955
50	50/53			ND		0.955
51	45/51			ND		0.955
52	16/61			ND		0.478
53	50/53					0.470
53	30/33					0.333
55						0.478
55						0.478
50						0.470
57						0.470
58	50/00/75			ND		0.478
59	59/62/75			ND		1.43
60				ND		0.478
61	61/70/74/76			ND		1.91
62	59/62/75			ND		1.43
63				ND		0.478
64				ND		0.478
65	44/47/65			ND		1.43
66				ND		0.478
67				ND		0.478
68				ND		0.478
69	49/69			ND		0.955
70	61/70/74/76			ND		1.91
71	40/41/71			ND		1 43
72				ND		0 478
73	43/73			ND		0.478
74	61/70/74/76					1 01
75	50/62/75					1.31
75	61/70/74/76					1.45
70	01/10/14/10					1.91
70						0.470
78				ND		0.478
79				ND		0.478
80				ND		0.478
81				ND		0.478
82				ND		0.478
83				ND		0.478
84				ND		0.478
85	85/116/117			ND		1.43
86	86/87/97/108/119/125			ND		2.87
87	86/87/97/108/119/125			ND		2.87
88	88/91			ND		0.955
89				ND		0.478
90	90/101/113			ND		1.43
91	88/91			ND		0.955
92				ND		0.478
93	93/98/100/102			ND		1 01
94	30,00,100,102					0.479
94 05						0.470
90						0.470
90				ND		0.478

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

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ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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> Tel: 612-607-1700 Fax: 612-607-6444

#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 110718 30270719003 Y181119B\_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
97	86/87/97/108/119/125			ND		2 87
98	93/98/100/102			ND		1 91
99	00,00,100,102			ND		0 478
100	93/98/100/102			ND		1 91
100	90/101/113					1 4 3
107	03/08/100/102					1 01
102	93/98/100/102					0.478
103						0.478
104						0.478
105						0.478
100	107/194					0.470
107	107/124					0.900
100	00/07/97/100/119/125					2.07
109	440/445			ND		0.478
110	110/115			ND		0.955
111				ND		0.478
112	00//01///0			ND		0.478
113	90/101/113			ND		1.43
114				ND		0.478
115	110/115			ND		0.955
116	85/116/117			ND		1.43
117	85/116/117			ND		1.43
118				ND		0.478
119	86/87/97/108/119/125			ND		2.87
120				ND		0.478
121				ND		0.478
122				ND		0.478
123				ND		0.478
124	107/124			ND		0.955
125	86/87/97/108/119/125			ND		2.87
126				ND		0.478
127				ND		0.478
128	128/166			ND		0.955
129	129/138/163			ND		1.43
130				ND		0.478
131				ND		0.478
132				ND		0.478
133				ND		0 478
134	134/143			ND		0.955
135	135/151			ND		0.000
136	188/181					0.333
130						0.478
138	120/138/163					1 / 3
130	130/170					0.055
140	130/140					0.955
140	133/140					0.900
141						0.470
142	124/142					U.4/ð
143	134/143					0.955
144				ND		0.478

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

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#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 110718 30270719003 Y181119B\_13

				Concentration	EMPC	EML
IUPAC	Co-elutions	RT	Ratio	ng/L	ng/L	ng/L
145				ND		0.478
146				ND		0.478
147	147/149			ND		0.955
148	111/110			ND		0 478
140	147/149			ND		0.955
150	1477140			ND		0.000
151	135/151					0.955
152	155/151					0.933
152	153/168					0.470
150	133/100					0.333
155						0.478
155	156/157					0.478
150	150/157					0.955
107	150/157					0.955
100						0.470
159				ND		0.478
160				ND		0.478
161				ND		0.478
162	100/100/100			ND		0.478
163	129/138/163			ND		1.43
164				ND		0.478
165				ND		0.478
166	128/166			ND		0.955
167				ND		0.478
168	153/168			ND		0.955
169				ND		0.478
170				ND		0.478
171	171/173			ND		0.955
172				ND		0.478
173	171/173			ND		0.955
174				ND		0.478
175				ND		0.478
176				ND		0.478
177				ND		0.478
178				ND		0.478
179				ND		0.478
180	180/193			ND		0.955
181				ND		0.478
182				ND		0 478
183	183/185			ND		0.955
184	100,100			ND		0.478
185	183/185			ND		0.955
186	100,100			ND		0.478
187				ND		0.478
188						0.478
180						0.479
109						0.470
101						0.470
102						0.470
192						0.470

Conc = Concentration

EML =Method Specified Reporting Limit (1668A)

EMPC = Estimated Maximum Possible Concentration

A = Limit of Detection based on signal to noise

B = Less than 10 times higher than method blank level

R = Recovery outside of Method 1668A control limits

Nn = Value obtained from additional analyses

ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

# **REPORT OF LABORATORY ANALYSIS**



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#### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID Lab Sample ID Filename Extraction Wells 110718 30270719003 Y181119B\_13

IUPAC	<b>Co-elutions</b>	RT	Ratio	Concentration ng/L	EMPC ng/L	EML ng/L
193	180/193			ND		0.955
194				ND		0.717
195				ND		0.717
196				ND		0.717
197	197/200			ND		1.43
198	198/199			ND		1.43
199	198/199			ND		1.43
200	197/200			ND		1.43
201				ND		0.717
202				ND		0.717
203				ND		0.717
204				ND		0.717
205				ND		0.717
206				ND		0.717
207				ND		0.717
208				ND		0.717
209				ND		0.717

Conc = Concentration EML =Method Specified Reporting Limit (1668A) EMPC = Estimated Maximum Possible Concentration A = Limit of Detection based on signal to noise B = Less than 10 times higher than method blank level R = Recovery outside of Method 1668A control limits Nn = Value obtained from additional analyses ND = Not Detected NA = Not Applicable NC = Not Calculated \* = See Discussion X = Outside QC Limits RT = Retention Time I = Interference ng's = Nanograms

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### Method 1668C Polychlorobiphenyl Sample Analysis Results

Client Sample ID	Extraction Wells 110718
Lab Sample ID	30270719003
Filename	Y181119B_13

Congener Group	Concentration ng/L	
Total Monochloro Biphenyls	137	
Total Dichloro Biphenyls	13.7	
Total Trichloro Biphenyls	2.61	
Total Tetrachloro Biphenyls	ND	
Total Pentachloro Biphenyls	ND	
Total Hexachloro Biphenyls	ND	
Total Heptachloro Biphenyls	ND	
Total Octachloro Biphenyls	ND	
Total Nonachloro Biphenyls	ND	
DecachloroBiphenyls	ND	
TotalPCBs	154	

ND = Not Detected

# **REPORT OF LABORATORY ANALYSIS**