

L" T i m e s N e w R o m a n , B o l d I t a l i c " 1 8

CLIENT INFORMATION

LABORATORY INFORMATION

Attention:	Michael Salum	Contact:	Ada Blythe, B.Sc., C.Chem.
Client Name:	Philip Analytical Services Inc	Project:	AN023026
Project:	Misc.	Date Received	17-Sep-2002
Project Desc:		Date Reported	22-Oct-2002
Address:	4418 Pottsville Pike Reading, Pennsylvania 19605	Submission N°	210211
Fax Number:	610 921-9667	Sample No.:	060285-065479
Phone Number:	610 921-8833		

NOTES:

'-' = not analysed '<' = less than Method Detection Limit (MDL) 'NA' = no data available
 LOQ can be determined for all analytes by multiplying the appropriate MDL X 3.33
 Blank correction is only performed on oil and grease, BTEX, total purgeable hydrocarbons
 and VOC analyses when Canadian methods are utilized.
 Solids data is based on dry weight except for biota analyses.
 Organic analyses are not corrected for extraction recovery standards except for isotope
 dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
 The enclosed copy of the Chain of Custody Record may contain information necessary for the
 interpretation of the data.

Methods used by PSC Analytical Services are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', Nineteenth Edition. Other methods are based on the principles of MISA or EPA methodologies. New York State: ELAP Identification Number 10756.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC Analytical Services for a period of three weeks from receipt of data or as per contract.

COMMENTS:

L" T i m e s N e w R o m a n , B o l d I t a l i c " 1 2
 C e r t i

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		R02090957	R02090957	R02090957	R02090957	R02090957	R02090957
<i>Client ID:</i>		01A	02A	03A	04A	05A	06A
<i>Lab No.:</i>		060285 02	060286 02	060287 02	060288 02	060289 02	060290 02
<i>Date Sampled:</i>		12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002
Component	Units						
Total Tetrachlorodibenzofuran	pg	100	270	150	860	160	69
Total Pentachlorodibenzofuran	"	250	97	65	720	77	19
Total Hexachlorodibenzofuran	"	70	32	20	350	33	9.7
Total Heptachlorodibenzofuran	"	13	<20	<15	32	<5.3	<13
Octachlorodibenzofuran	"	17	13	13	41	7.9	6.7
Total Tetrachlorodibenzo-p-di	"	940	310	150	1200	160	89
Total Pentachlorodibenzo-p-d	"	370	130	28	1400	9.6	23
Total Hexachlorodibenzo-p-di	"	110	55	29	670	18	5.1
Total Heptachlorodibenzo-p-d	"	74	66	58	200	59	38
Octachlorodibenzo-p-dioxin	"	290	230	220	550	140	210
Internal Recoveries	%						
2,3,7,8-T4CDF-13C12		86	83	85	87	94	106
2,3,7,8-T4CDD-13C12		91	85	85	91	82	91
1,2,3,7,8-P5CDF-13C12		90	88	90	76	102	119
1,2,3,7,8-P5CDD-13C12		93	92	94	80	99	118
1,2,3,4,7,8-H6CDF-13C12		91	83	90	95	92	98
1,2,3,6,7,8-H6CDD-13C12		96	88	92	93	87	94
1,2,3,4,6,7,8-H7CDF-13C12		85	81	85	86	89	93
1,2,3,4,6,7,8-H7CDD-13C12		88	87	90	93	87	89
OCDD-13C12		93	88	97	100	76	81
2,3,7,8-Cl4-Dibenzofuran (D)	pg	<70	<42	<21	<170	<25	13
2,3,7,8-Cl4-Dibenzo-p-dioxin	"	<2.8	<2.1	<3.2	6.9	<5.1	<3.3
1,2,3,7,8-Cl5-Dibenzofuran	"	<14	<5.9	<3.3	37	<1.5	<5.2
2,3,4,7,8-Cl5-Dibenzofuran	"	<19	9.8	6.9	<68	<1.6	<5.5
1,2,3,7,8-Cl5-Dibenzo-p-diox	"	<4.0	<2.6	<2.6	<17	<1.1	<2.9
1,2,3,4,7,8-Cl6-Dibenzofuran	"	19	10	7.9	83	9.6	5.9
1,2,3,6,7,8-Cl6-Dibenzofuran	"	7.4	<3.5	<3.7	31	<4.6	3.1
2,3,4,6,7,8-Cl6-Dibenzofuran	"	7.0	<4.2	<4.4	30	4.0	<2.5
1,2,3,7,8,9-Cl6-Dibenzofuran	"	<3.5	<4.4	<4.7	3.3	<3.8	<1.9
1,2,3,4,7,8-Cl6-Dibenzo-p-diox	"	<5.2	<4.7	<6.9	9.0	<4.8	<3.5
1,2,3,6,7,8-Cl6-Dibenzo-p-diox	"	<4.7	<4.2	<6.2	17	<3.5	<2.5
1,2,3,7,8,9-Cl6-Dibenzo-p-diox	"	<4.3	<3.8	<5.6	25	<3.8	<2.7
1,2,3,4,6,7,8-Cl7-Dibenzofuran	"	<19	<18	<14	<77	<13	<11
1,2,3,4,7,8,9-Cl7-Dibenzofuran	"	<11	<23	<17	<1.8	<6.2	<1.6
1,2,3,4,6,7,8-Cl7-Dibenzo-p-diox	"	40	34	32	100	<3.3	38
1,2,3,4,6,7,8,9-Cl8-Dibenzofuran	"	17	13	13	41	7.9	6.7
1,2,3,4,6,7,8,9-Cl8-Dibenzo-p-diox	"	290	230	220	550	140	210
2,3,7,8-TCDF (DB225)	pg	10	5.4	4.4	27	<6.1	<4.1
Internal Recoveries	%						
2,3,7,8-TCDF-13C12		97	90	92	100	90	96
TEQ based on Nato Factors		13	10	9.3	55	6.2	6.3

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		R02090957	R02090957	R02090957	R02090957	R02090957	R02090957
Client ID:		07A	08A	09A	10A	11A	12A
Lab No.:		060291 02	060292 02	060293 02	060323 02	060324 02	060325 02
Date Sampled:		12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002
Component	Units						
Total Tetrachlorodibenzofuran	pg	<2.9	88	330	78	33	79
Total Pentachlorodibenzofuran	"	<4.3	38	340	23	25	45
Total Hexachlorodibenzofuran	"	<1.2	15	170	8.6	10	20
Total Heptachlorodibenzofuran	"	<1.8	<13	20	<9.7	<13	<15
Octachlorodibenzofuran	"	<3.8	11	72	9.9	6.9	14
Total Tetrachlorodibenzo-p-di	"	9.9	160	360	120	62	150
Total Pentachlorodibenzo-p-d	"	<3.8	13	370	23	19	31
Total Hexachlorodibenzo-p-di	"	<13	15	440	21	22	43
Total Heptachlorodibenzo-p-d	"	<3.3	60	300	21	34	100
Octachlorodibenzo-p-dioxin	"	16	210	890	47	110	250
Internal Recoveries	%						
2,3,7,8-T4CDF-13C12		83	84	102	93	90	94
2,3,7,8-T4CDD-13C12		74	73	88	87	83	86
1,2,3,7,8-P5CDF-13C12		89	84	101	99	88	104
1,2,3,7,8-P5CDD-13C12		88	83	98	98	87	100
1,2,3,4,7,8-H6CDF-13C12		94	85	97	96	94	97
1,2,3,6,7,8-H6CDD-13C12		85	78	90	92	93	91
1,2,3,4,6,7,8-H7CDF-13C12		86	81	100	91	89	91
1,2,3,4,6,7,8-H7CDD-13C12		78	77	97	93	90	90
OCDD-13C12		68	68	84	87	90	88
2,3,7,8-Cl4-Dibenzofuran (D)	pg	<2.9	<23	<56	<18	<14	<18
2,3,7,8-Cl4-Dibenzo-p-dioxin	"	<4.8	<3.8	<4.7	<2.4	<2.4	<2.0
1,2,3,7,8-Cl5-Dibenzofuran	"	<4.1	<6.8	12	4.8	<4.1	<2.7
2,3,4,7,8-Cl5-Dibenzofuran	"	<4.4	<7.2	32	5.6	<4.2	5.2
1,2,3,7,8-Cl5-Dibenzo-p-diox	"	<3.8	<3.6	<6.0	<2.2	<2.5	<3.2
1,2,3,4,7,8-Cl6-Dibenzofuran	"	<1.2	7.4	51	4.8	4.1	5.9
1,2,3,6,7,8-Cl6-Dibenzofuran	"	<0.99	2.9	20	<2.8	<2.3	3.0
2,3,4,6,7,8-Cl6-Dibenzofuran	"	<1.3	<2.8	<14	<3.3	<2.7	<2.9
1,2,3,7,8,9-Cl6-Dibenzofuran	"	<1.4	<3.1	<4.6	<3.5	<2.9	<3.1
1,2,3,4,7,8-Cl6-Dibenzo-p-diox	"	<4.0	<4.4	<6.1	<3.0	<2.9	<2.8
1,2,3,6,7,8-Cl6-Dibenzo-p-diox	"	<2.9	<3.2	14	<2.7	<2.6	3.2
1,2,3,7,8,9-Cl6-Dibenzo-p-diox	"	<3.1	<3.4	24	<2.4	<2.4	<2.3
1,2,3,4,6,7,8-Cl7-Dibenzofuran	"	<1.6	<12	<89	<8.7	<11	<13
1,2,3,4,7,8,9-Cl7-Dibenzofuran	"	<1.7	<6.6	<2.8	<11	<15	<17
1,2,3,4,6,7,8-Cl7-Dibenzo-p-diox	"	<3.3	35	160	12	18	59
1,2,3,4,6,7,8,9-Cl8-Dibenzofuran	"	<3.8	11	72	9.9	6.9	14
1,2,3,4,6,7,8,9-Cl8-Dibenzo-p-dioxin	"	16	210	890	47	110	250
2,3,7,8-TCDF (DB225)	pg	<4.2	<5.4	12	<3.6	<3.7	<4.3
Internal Recoveries	%						
2,3,7,8-TCDF-13C12		79	79	97	97	93	99
TEQ based on Nato Factors		5.6	7.6	24	6.6	4.8	7.5

R C I i c e n t : P h i l i p A n a l y t i c a l

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		R02090957	R02090957	R02090957	R02090957	R02090957	R02090957
Client ID:		13A	14A	15A	16A	17A	18A
Lab No.:		060326 02	060327 02	060328 02	060329 02	060330 02	060331 02
Date Sampled:		12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002	12-Sep-2002
Component	Units						
Total Tetrachlorodibenzofuran	pg	2.8	17	170	5.9	36	90
Total Pentachlorodibenzofuran	"	<3.5	39	40	<3.9	13	39
Total Hexachlorodibenzofuran	"	<2.6	29	19	<1.2	5.4	20
Total Heptachlorodibenzofuran	"	<10	<18	<20	<1.8	<1.1	<2.0
Octachlorodibenzofuran	"	<4.5	17	16	<3.1	<3.6	12
Total Tetrachlorodibenzo-p-di	"	5.7	83	160	21	30	86
Total Pentachlorodibenzo-p-d	"	<2.0	65	37	5.7	<4.7	38
Total Hexachlorodibenzo-p-di	"	<2.6	69	41	<13	<19	6.0
Total Heptachlorodibenzo-p-d	"	10	50	25	5.4	4.3	80
Octachlorodibenzo-p-dioxin	"	28	110	150	27	28	340
Internal Recoveries	%						
2,3,7,8-T4CDF-13C12		88	98	66	95	111	102
2,3,7,8-T4CDD-13C12		83	88	63	87	74	84
1,2,3,7,8-P5CDF-13C12		94	105	66	93	103	104
1,2,3,7,8-P5CDD-13C12		100	106	65	94	104	106
1,2,3,4,7,8-H6CDF-13C12		99	103	72	92	96	95
1,2,3,6,7,8-H6CDD-13C12		99	98	71	92	96	91
1,2,3,4,6,7,8-H7CDF-13C12		96	96	70	94	93	91
1,2,3,4,6,7,8-H7CDD-13C12		99	94	69	93	92	89
OCDD-13C12		93	96	70	81	81	79
2,3,7,8-Cl4-Dibenzofuran (D)	pg	<2.8	<11	<25	<3.4	11	17
2,3,7,8-Cl4-Dibenzo-p-dioxin	"	<2.3	<2.8	<3.3	<3.6	<4.8	<3.3
1,2,3,7,8-Cl5-Dibenzofuran	"	<3.4	<5.6	<4.6	<3.8	<5.5	<3.6
2,3,4,7,8-Cl5-Dibenzofuran	"	<3.6	<8.4	<4.8	<4.1	<5.8	<4.4
1,2,3,7,8-Cl5-Dibenzo-p-diox	"	<2.0	<3.5	<3.0	<3.7	<4.7	<4.9
1,2,3,4,7,8-Cl6-Dibenzofuran	"	<2.4	9.3	7.9	<1.2	2.1	7.1
1,2,3,6,7,8-Cl6-Dibenzofuran	"	<2.3	<6.1	<4.5	<0.98	<1.4	<2.8
2,3,4,6,7,8-Cl6-Dibenzofuran	"	<2.7	7.0	<5.4	<1.3	<1.8	<3.6
1,2,3,7,8,9-Cl6-Dibenzofuran	"	<2.9	<2.9	<5.7	<1.4	<2.0	<4.0
1,2,3,4,7,8-Cl6-Dibenzo-p-diox	"	<2.9	3.8	<3.2	<3.6	<3.8	<4.4
1,2,3,6,7,8-Cl6-Dibenzo-p-diox	"	<2.6	4.2	<2.9	<2.6	<2.7	<3.3
1,2,3,7,8,9-Cl6-Dibenzo-p-diox	"	<2.4	6.0	<2.6	<2.8	<3.0	<3.5
1,2,3,4,6,7,8-Cl7-Dibenzofuran	"	<9.2	<16	<18	<1.6	<2.1	<15
1,2,3,4,7,8,9-Cl7-Dibenzofuran	"	<12	<20	<22	<2.1	<1.2	<2.3
1,2,3,4,6,7,8-Cl7-Dibenzo-p-diox	"	6.6	28	<23	5.4	4.3	41
1,2,3,4,6,7,8,9-Cl8-Dibenzofuran	"	<4.5	17	16	<3.1	<3.6	12
1,2,3,4,6,7,8,9-Cl8-Dibenzo-p-diox	"	28	110	150	27	28	340
2,3,7,8-TCDF (DB225)	pg	<4.2	<3.1	<8.8	<4.1	<3.8	<3.9
Internal Recoveries	%						
2,3,7,8-TCDF-13C12		94	99	73	102	92	98
TEQ based on Nato Factors		4	8.7	6.6	4.8	6.3	6.9

RCCIICent:PHIIPAnalytical

LDDC "T"i m e s N e w R o m a n , B o l d I t a l i c " 1 4 P A S

<i>Client ID:</i> <i>Lab No.:</i> <i>Date Sampled:</i>		Method Blank 10/08	Method Blank 10/09	Blank Spike	Blank Spike %Recoveries
Component	Units	12-Sep-2002	12-Sep-2002		
Total Tetrachlorodibenzofuran	pg	<4.4	<1.5	1100	-
Total Pentachlorodibenzofuran	"	<10	<1.8	5300	-
Total Hexachlorodibenzofuran	"	5.4	<3.0	9100	-
Total Heptachlorodibenzofuran	"	21	<3.3	5000	-
Octachlorodibenzofuran	"	33	<5.3	4700	-
Total Tetrachlorodibenzo-p-di	"	<6.0	<1.8	1000	-
Total Pentachlorodibenzo-p-d	"	<5.2	<2.5	2700	-
Total Hexachlorodibenzo-p-di	"	<7.4	<2.7	7200	-
Total Heptachlorodibenzo-p-d	"	21	10	2500	-
Octachlorodibenzo-p-dioxin	"	42	30	4800	-
Internal Recoveries	%				
2,3,7,8-T4CDF-13C12		74	86	86	86
2,3,7,8-T4CDD-13C12		77	80	81	81
1,2,3,7,8-P5CDF-13C12		75	86	88	88
1,2,3,7,8-P5CDD-13C12		80	87	90	90
1,2,3,4,7,8-H6CDF-13C12		74	100	93	93
1,2,3,6,7,8-H6CDD-13C12		78	100	95	95
1,2,3,4,6,7,8-H7CDF-13C12		69	98	95	95
1,2,3,4,6,7,8-H7CDD-13C12		80	100	95	95
OCDD-13C12		78	94	86	86
2,3,7,8-Cl4-Dibenzofuran (D)	pg	<4.4	<1.5	1000	104
2,3,7,8-Cl4-Dibenzo-p-dioxin	"	<6.0	<1.8	1000	102
1,2,3,7,8-Cl5-Dibenzofuran	"	<10	<1.8	2600	102
2,3,4,7,8-Cl5-Dibenzofuran	"	<10	<1.9	2700	107
1,2,3,7,8-Cl5-Dibenzo-p-diox	"	<5.2	<2.5	2700	108
1,2,3,4,7,8-Cl6-Dibenzofuran	"	5.2	<2.8	2400	94
1,2,3,6,7,8-Cl6-Dibenzofuran	"	<3.7	<2.6	2200	88
2,3,4,6,7,8-Cl6-Dibenzofuran	"	<4.5	<3.2	2400	95
1,2,3,7,8,9-Cl6-Dibenzofuran	"	<4.7	<3.4	2100	85
1,2,3,4,7,8-Cl6-Dibenzo-p-di	"	<8.2	<3.0	2500	98
1,2,3,6,7,8-Cl6-Dibenzo-p-di	"	<7.4	<2.7	2500	98
1,2,3,7,8,9-Cl6-Dibenzo-p-di	"	<6.7	<2.5	2300	92
1,2,3,4,6,7,8-Cl7-Dibenzofur	"	11	<3.0	2500	100
1,2,3,4,7,8,9-Cl7-Dibenzofur	"	<5.7	<3.8	2500	99
1,2,3,4,6,7,8-Cl7-Dibenzo-p-d	"	21	6.7	2400	97
1,2,3,4,6,7,8,9-Cl8-Dibenzof	"	33	<5.3	4700	95
1,2,3,4,6,7,8,9-Cl8-Dibenzo-j	"	42	30	4800	96
2,3,7,8-TCDF (DB225)	pg	-			
Internal Recoveries	%				
2,3,7,8-TCDF-13C12		-			
TEQ based on Nato Factors		10			

R C I i c e n t : P h i i p A n a l y t i c a l

LDDC"TTimes New Roman, Bold Italic"14PASC -
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Batch Code: 1008HW01 1008HW01 1009NZ01

PCDD/F(DB5)	060285 02	060288 02	060289 02
	060286 02		060290 02
	060287 02		060291 02
			060292 02
			060293 02
			060323 02
			060324 02
			060325 02
			060326 02
			060327 02
			060328 02
			060329 02
			060330 02
			060331 02

Date Analysed	02/10/21	02/10/22	02/10/19
Date Prepared:	02/10/08	02/10/08	02/10/09

Batch Code: 1008HW01 1009NZ01 1009NZ01 1009NZ01

2,3,7,8-TCDF	060285 02	060289 02	060323 02	060329 02
	060286 02	060290 02	060324 02	
	060287 02	060291 02	060325 02	
	060288 02	060292 02	060326 02	
		060293 02	060327 02	
		060330 02	060328 02	
		060331 02		

Date Analysed	02/10/22	02/10/21	02/10/20	02/10/20
Date Prepared:	02/10/08	02/10/09	02/10/09	02/10/09

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