 **Pace Analytical**TM**Method 8290 Blank Analysis Results**

Client - ATC ASSOCIATES

Lab Sample ID	BLANK-1666	Matrix	WIPE
Filename	F20617A_02	Dilution	NA
Total Amount Extracted	1 m2	Extracted	06/12/2002
ICAL Date	05/04/2002	Analyzed	06/17/2002 08:29
CCal Filename(s)	F20616A_15 & F20617A_15	Injected By	MRO

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.0053	A	2,3,7,8-TCDF-13C	2.00	20 P
Total TCDF	ND	----	0.0020		2,3,7,8-TCDD-13C	2.00	17 P
					1,2,3,7,8-PeCDF-13C	2.00	18 P
2,3,7,8-TCDD	ND	----	0.0050	A	2,3,4,7,8-PeCDF-13C	2.00	18 P
Total TCDD	0.025	----	0.0020		1,2,3,7,8-PeCDD-13C	2.00	16 P
					1,2,3,4,7,8-HxCDF-13C	2.00	23 P
1,2,3,7,8-PeCDF	ND	----	0.0100		1,2,3,6,7,8-HxCDF-13C	2.00	29 P
2,3,4,7,8-PeCDF	ND	----	0.0100		2,3,4,6,7,8-HxCDF-13C	2.00	24 P
Total PeCDF	ND	----	0.0100		1,2,3,7,8,9-HxCDF-13C	2.00	24 P
					1,2,3,4,7,8-HxCDD-13C	2.00	21 P
1,2,3,7,8-PeCDD	ND	----	0.0100		1,2,3,6,7,8-HxCDD-13C	2.00	24 P
Total PeCDD	ND	----	0.0100		1,2,3,4,6,7,8-HpCDF-13C	2.00	20 P
					1,2,3,4,7,8,9-HpCDF-13C	2.00	17 P
1,2,3,4,7,8-HxCDF	ND	----	0.0100		1,2,3,4,6,7,8-HpCDD-13C	2.00	17 P
1,2,3,6,7,8-HxCDF	ND	----	0.0100		OCDD-13C	4.00	16 P
2,3,4,6,7,8-HxCDF	ND	----	0.0100				
1,2,3,7,8,9-HxCDF	ND	----	0.0100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.0100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.0100		2,3,7,8-TCDD-37Cl4	0.20	20
1,2,3,6,7,8-HxCDD	ND	----	0.0100				
1,2,3,7,8,9-HxCDD	ND	----	0.0100				
Total HxCDD	ND	----	0.0100				
1,2,3,4,6,7,8-HpCDF	ND	----	0.0100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.0100		Equivalence: 0.00 ng/m2		
Total HpCDF	ND	----	0.0100		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	0.0100				
Total HpCDD	ND	----	0.0100				
OCDF	ND	----	0.0200				
OCDD	ND	----	0.0200				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).

EMPC = Estimated Maximum Possible Concentration

LRL = Lower Reporting Limit

J = Concentration detected is below the calibration range

P = Recovery outside of target range

A = Detection Limit based on signal-to-noise measurement

I = Interference

E = PCDE Interference

ND = Not Detected

NA = Not Applicable

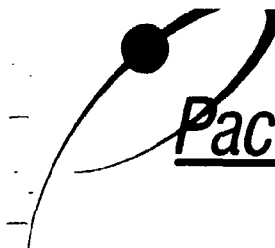
NC = Not Calculated

* = See Discussion

Report No.....02-1058093

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CITY_21MC100_002901384

 **Pace Analytical™**Tel: 612-607-1700
Fax: 612-607-6444**Method 8290 Analysis Results**

Client - ATC ASSOCIATES

Client's Sample ID	ATC-0525-M833-DX1		
Lab Sample ID	103579983		
Filename	F20619A_05		
Injected By	MRO		
Total Amount Extracted	1 m2	Matrix	WIPE
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	05/25/2002
ICAL Date	05/04/2002	Received	05/29/2002
CCal Filename(s)	F20619A_01 & F20619A_14	Extracted	06/12/2002
Method Blank ID	BLANK-1666	Analyzed	06/19/2002 12:08

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	0.0034	A	2,3,7,8-TCDF-13C	2.00	41
Total TCDF	0.018	----	0.0020		2,3,7,8-TCDD-13C	2.00	40
					1,2,3,7,8-PeCDF-13C	2.00	35 IP
2,3,7,8-TCDD	ND	----	0.0029	A	2,3,4,7,8-PeCDF-13C	2.00	38 P
Total TCDD	0.083	----	0.0020	B	1,2,3,7,8-PeCDD-13C	2.00	37 P
					1,2,3,4,7,8-HxCDF-13C	2.00	47
1,2,3,7,8-PeCDF	ND	----	0.0100		1,2,3,6,7,8-HxCDF-13C	2.00	60
2,3,4,7,8-PeCDF	ND	----	0.0100		2,3,4,6,7,8-HxCDF-13C	2.00	53
Total PeCDF	ND	----	0.0100		1,2,3,7,8,9-HxCDF-13C	2.00	50
					1,2,3,4,7,8-HxCDD-13C	2.00	59
1,2,3,7,8-PeCDD	ND	----	0.0100		1,2,3,6,7,8-HxCDD-13C	2.00	53
Total PeCDD	ND	----	0.0100		1,2,3,4,6,7,8-HpCDF-13C	2.00	48
					1,2,3,4,7,8,9-HpCDF-13C	2.00	32 IP
1,2,3,4,7,8-HxCDF	ND	----	0.0100		1,2,3,4,6,7,8-HpCDD-13C	2.00	42
1,2,3,6,7,8-HxCDF	ND	----	0.0100		OCDD-13C	4.00	30 IP
2,3,4,6,7,8-HxCDF	ND	----	0.0100				
1,2,3,7,8,9-HxCDF	ND	----	0.0100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.0100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.0100		2,3,7,8-TCDD-37Cl4	0.20	44
1,2,3,6,7,8-HxCDD	ND	----	0.0100				
1,2,3,7,8,9-HxCDD	ND	----	0.0100				
Total HxCDD	ND	----	0.0100				
1,2,3,4,6,7,8-HpCDF	ND	----	0.0100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.0100		Equivalence: 0.00027 ng/m2		
Total HpCDF	ND	----	0.0100		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	0.015	----	0.0100	J			
Total HpCDD	0.031	----	0.0100	J			
OCDF	ND	----	0.0200				
OCDD	0.120	----	0.0200				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
 EMPC = Estimated Maximum Possible Concentration
 A = Detection Limit based on signal-to-noise measurement
 J = Concentration detected is below the calibration range
 B = Less than 10 times higher than method blank level
 P = Recovery outside of target range
 Nn = Value obtained from additional analysis

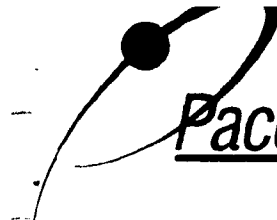
LRL = Lower Reporting Limit
 I = Interference
 E = PCDE Interference
 S = Saturated signal
 ND = Not Detected
 NA = Not Applicable
 NC = Not Calculated
 * = See Discussion

Report No.....02-1058093

REPORT OF LABORATORY ANALYSIS

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CITY_21MC100_002901385


Pace Analytical™

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

Method 8290 Analysis Results

Client - ATC ASSOCIATES

Client's Sample ID	ATC-0525-M833-DX2		
Lab Sample ID	103579991		
Filename	F20617A_07		
Injected By	MRO		
Total Amount Extracted	1 m2	Matrix	WIPE
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	05/25/2002
ICAL Date	05/04/2002	Received	05/29/2002
CCal Filename(s)	F20616A_15 & F20617A_15	Extracted	06/12/2002
Method Blank ID	BLANK-1666	Analyzed	06/17/2002 12:04

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.0026	----	0.0020	J	2,3,7,8-TCDF-13C	2.00	77
Total TCDF	0.0430	----	0.0020		2,3,7,8-TCDD-13C	2.00	66
					1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	ND	----	0.0028	A	2,3,4,7,8-PeCDF-13C	2.00	65
Total TCDD	0.0800	----	0.0020	B	1,2,3,7,8-PeCDD-13C	2.00	59
					1,2,3,4,7,8-HxCDF-13C	2.00	90
1,2,3,7,8-PeCDF	ND	----	0.0100		1,2,3,6,7,8-HxCDF-13C	2.00	106
2,3,4,7,8-PeCDF	ND	----	0.0100		2,3,4,6,7,8-HxCDF-13C	2.00	92
Total PeCDF	ND	----	0.0100		1,2,3,7,8,9-HxCDF-13C	2.00	90
					1,2,3,4,7,8-HxCDD-13C	2.00	85
1,2,3,7,8-PeCDD	ND	----	0.0100		1,2,3,6,7,8-HxCDD-13C	2.00	85
Total PeCDD	ND	----	0.0100		1,2,3,4,6,7,8-HpCDF-13C	2.00	72
					1,2,3,4,7,8,9-HpCDF-13C	2.00	57
1,2,3,4,7,8-HxCDF	ND	----	0.0100		1,2,3,4,6,7,8-HpCDD-13C	2.00	62
1,2,3,6,7,8-HxCDF	ND	----	0.0100		OCDD-13C	4.00	54
2,3,4,6,7,8-HxCDF	ND	----	0.0100				
1,2,3,7,8,9-HxCDF	ND	----	0.0100		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.0100		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.0100		2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	ND	----	0.0100				
1,2,3,7,8,9-HxCDD	ND	----	0.0100				
Total HxCDD	0.0160	----	0.0100	J			
1,2,3,4,6,7,8-HpCDF	ND	----	0.0100		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.0100		Equivalence: 0.00030 ng/m2		
Total HpCDF	ND	----	0.0100		(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	----	0.0100				
Total HpCDD	ND	----	0.0100				
OCDF	ND	----	0.0200				
OCDD	0.0350	----	0.0200	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....02-1058093

REPORT OF LABORATORY ANALYSIS

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CITY_21MC100_002901386



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

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

Method 8290 Analysis Results

Client - ATC ASSOCIATES

Client's Sample ID	ATC-0525-M833-DX3		
Lab Sample ID	103580007		
Filename	F20617A_08		
Injected By	MRO		
Total Amount Extracted	1 m2	Matrix	WIPE
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	05/25/2002
ICAL Date	05/04/2002	Received	05/29/2002
CCal Filename(s)	F20616A_15 & F20617A_15	Extracted	06/12/2002
Method Blank ID	BLANK-1666	Analyzed	06/17/2002 12:53

Native Isomers	Conc ng/m2	EMPC ng/m2	LRL ng/m2	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	0.0020	2,3,7,8-TCDF-13C	2.00	86
Total TCDF	0.0064	-----	0.0020 J	2,3,7,8-TCDD-13C	2.00	72
				1,2,3,7,8-PeCDF-13C	2.00	69
2,3,7,8-TCDD	ND	-----	0.0023 A	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	0.0180	-----	0.0020 B	1,2,3,7,8-PeCDD-13C	2.00	60
				1,2,3,4,7,8-HxCDF-13C	2.00	87
1,2,3,7,8-PeCDF	ND	-----	0.0100	1,2,3,6,7,8-HxCDF-13C	2.00	111
2,3,4,7,8-PeCDF	ND	-----	0.0100	2,3,4,6,7,8-HxCDF-13C	2.00	99
Total PeCDF	ND	-----	0.0100	1,2,3,7,8,9-HxCDF-13C	2.00	92
				1,2,3,4,7,8-HxCDD-13C	2.00	82
1,2,3,7,8-PeCDD	ND	-----	0.0100	1,2,3,6,7,8-HxCDD-13C	2.00	92
Total PeCDD	ND	-----	0.0100	1,2,3,4,6,7,8-HpCDF-13C	2.00	75
				1,2,3,4,7,8,9-HpCDF-13C	2.00	59
1,2,3,4,7,8-HxCDF	ND	-----	0.0100	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
1,2,3,6,7,8-HxCDF	ND	-----	0.0100	OCDD-13C	4.00	58
2,3,4,6,7,8-HxCDF	ND	-----	0.0100			
1,2,3,7,8,9-HxCDF	ND	-----	0.0100	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	0.0100	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	0.0100	2,3,7,8-TCDD-37Cl4	0.20	85
1,2,3,6,7,8-HxCDD	ND	-----	0.0100			
1,2,3,7,8,9-HxCDD	ND	-----	0.0100			
Total HxCDD	ND	-----	0.0100			
1,2,3,4,6,7,8-HpCDF	ND	-----	0.0100	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	0.0100	Equivalence: 0.000075 ng/m2		
Total HpCDF	ND	-----	0.0100	(Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	0.0100			
Total HpCDD	ND	-----	0.0100			
OCDF	ND	-----	0.0200			
OCDD	0.0750	-----	0.0200 J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
A = Detection Limit based on signal-to-noise measurement
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

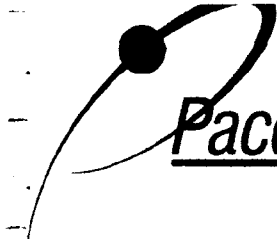
LRL = Lower Reporting Limit
I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated
* = See Discussion

Report No.....02-1058093

REPORT OF LABORATORY ANALYSIS

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CITY_21MC100_002901387


Pace AnalyticalTM

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

Method 8290 Laboratory Control Spike Results

Client - ATC ASSOCIATES

Lab Sample ID	SPIKE-1680	Matrix	WIPE
Filename	F20617A_13	Dilution	NA
Total Amount Extracted	1 m2	Extracted	06/12/2002
ICAL Date	05/04/2002	Analyzed	06/17/2002 17:00
CCal Filename(s)	F20616A_15 & F20617A_15	Injected By	MRO
Method Blank ID	BLANK-1666		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	114	2,3,7,8-TCDF-13C	2.00	76
				2,3,7,8-TCDD-13C	2.00	65
				1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	0.20	0.21	107	2,3,4,7,8-PeCDF-13C	2.00	66
				1,2,3,7,8-PeCDD-13C	2.00	59
				1,2,3,4,7,8-HxCDF-13C	2.00	86
1,2,3,7,8-PeCDF	1.00	1.10	110	1,2,3,6,7,8-HxCDF-13C	2.00	104
2,3,4,7,8-PeCDF	1.00	1.09	109	2,3,4,6,7,8-HxCDF-13C	2.00	88
				1,2,3,7,8,9-HxCDF-13C	2.00	86
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	1.00	1.10	110	1,2,3,6,7,8-HxCDD-13C	2.00	84
				1,2,3,4,6,7,8-HpCDF-13C	2.00	71
				1,2,3,4,7,8,9-HpCDF-13C	2.00	58
1,2,3,4,7,8-HxCDF	1.00	1.13	113	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
1,2,3,6,7,8-HxCDF	1.00	1.02	102	OCDD-13C	4.00	56
2,3,4,6,7,8-HxCDF	1.00	1.07	107			
1,2,3,7,8,9-HxCDF	1.00	1.05	105	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.14	114	2,3,7,8-TCDD-37Cl4	0.20	77
1,2,3,6,7,8-HxCDD	1.00	1.16	116			
1,2,3,7,8,9-HxCDD	1.00	1.17	117			
1,2,3,4,6,7,8-HpCDF	1.00	1.03	103			
1,2,3,4,7,8,9-HpCDF	1.00	1.02	102			
1,2,3,4,6,7,8-HpCDD	1.00	1.12	112			
OCDF	2.00	2.34	117			
OCDD	2.00	2.22	111			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
P = Recovery outside of target range
X = Background subtracted value
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

Report No.....02-1058093

REPORT OF LABORATORY ANALYSIS

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CITY_21MC100_002901388

**Method 8290 Laboratory Control Spike Results**

Client - ATC ASSOCIATES

Lab Sample ID	SPIKE-DUP-1442	Matrix	WIPE
Filename	F20617A_14	Dilution	NA
Total Amount Extracted	1 m2	Extracted	06/12/2002
ICAL Date	05/04/2002	Analyzed	06/17/2002 17:49
CCal Filename(s)	F20616A_15 & F20617A_15	Injected By	MRO
Method Blank ID	BLANK-1666		

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.23	114	2,3,7,8-TCDF-13C	2.00	68
				2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	60
2,3,7,8-TCDD	0.20	0.22	110	2,3,4,7,8-PeCDF-13C	2.00	61
				1,2,3,7,8-PeCDD-13C	2.00	53
				1,2,3,4,7,8-HxCDF-13C	2.00	85
1,2,3,7,8-PeCDF	1.00	1.10	110	1,2,3,6,7,8-HxCDF-13C	2.00	108
2,3,4,7,8-PeCDF	1.00	1.14	114	2,3,4,6,7,8-HxCDF-13C	2.00	94
				1,2,3,7,8,9-HxCDF-13C	2.00	77
				1,2,3,4,7,8-HxCDD-13C	2.00	77
1,2,3,7,8-PeCDD	1.00	1.18	118	1,2,3,6,7,8-HxCDD-13C	2.00	86
				1,2,3,4,6,7,8-HpCDF-13C	2.00	73
				1,2,3,4,7,8,9-HpCDF-13C	2.00	53
1,2,3,4,7,8-HxCDF	1.00	1.06	106	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
1,2,3,6,7,8-HxCDF	1.00	1.10	110	OCDD-13C	4.00	46
2,3,4,6,7,8-HxCDF	1.00	1.12	112			
1,2,3,7,8,9-HxCDF	1.00	1.09	109	1,2,3,4-TCDD-13C	2.00	NA
				1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	1.00	1.15	115	2,3,7,8-TCDD-37Cl4	0.20	69
1,2,3,6,7,8-HxCDD	1.00	1.17	117			
1,2,3,7,8,9-HxCDD	1.00	1.11	111			
1,2,3,4,6,7,8-HpCDF	1.00	1.07	107			
1,2,3,4,7,8,9-HpCDF	1.00	1.04	104			
1,2,3,4,6,7,8-HpCDD	1.00	1.12	112			
OCDF	2.00	2.45	122			
OCDD	2.00	2.33	117			

Qs = Quantity Spiked

Qm = Quantity Measured

Rec. = Recovery (Expressed as Percent)

P = Recovery outside of target range

X = Background subtracted value

Nn = Value obtained from additional analysis

NA = Not Applicable

* = See Discussion

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