Carbon Sampling Results

Note:

- Bay West lab report 5-3567 and Aptus/Triangle Labs project P012744 include carbon sample results from 1993 that are not included in **Table 3-2**. Analytical results from the most-recent carbon sampling event more accurately represent analyte concentrations under current operating conditions.

Bay West

Bay West Inc.
Five Empire Drive
St. Paul, Minnesota
55103-1867

612-291-0456
FAX 291-0099
1-800-279-0456

June 7, 1993

Mr. Maurice McClish
Strebor, Inc.
2305 Superior Avenue
Kalamazoo, MI 49001

RE: Spent Activated Carbon Chemical Analyses

Dear Mr. McClish:

Enclosed is a copy of the analytical report for the spent activated carbon samples collected on April 22, 1993. The Total 2,3,7,8-TCDD Equivalents detected in the sample were approximately 58 parts per billion.

Please call me at 1-800-279-0456 if you have any questions regarding the above.

Sincerely,

Martin W. Wangensteen
Project Manager

enclosure

c: David Cosgriff, Champion (Libby, Montana)
Philip Grashoff, Jr., Honigman Miller Schwartz & Cohn
Melinda Kemp, Champion (Stamford, Connecticut)
Robert Morse, SmithKline Beecham

Bay West Analytical Laboratory

Bay West Inc.
Five Empire Drive
St. Paul, Minnesota
55103-1867

612-291-0456
FAX 291-0099
1-800-279-0456

June 2, 1993

Bay West Environmental Services
5 Empire Drive
St. Paul, MN 55103

Attn: Mr. Martin Wangensteen

Bay West Environmental Services Project No.: **7095**
(COC: SI-287)
Bay West Laboratory Project ID: **5-3567**
Samples Collected: April 22, 1993

The following are results from the samples you submitted for analysis on April 23, 1993. As requested, the 4 samples submitted were composited in equal portions by the laboratory and analyzed.

The data from Bay West Laboratory is reported in Tables 1 through 3, followed by the data from Twin City Testing.

Please contact me if you have any questions or comments.

Sincerely,

Peter Hanson

Peter Hanson
Laboratory Manager

PH/ly

encl.

Bay West Analytical Laboratory

Bay West Inc.
Five Empire Drive
St. Paul, Minnesota
55103-1867

612-291-0456
FAX 291-0099
1-800-279-0456

Table 1

Bay West Environmental Services Project No.: **7095**
Bay West Laboratory Project ID: **5-3567**

Purgeable Halogenated and Non-Halogenated Compounds 8010/8020 Target Compound List

Compound Name	Quantitation Limit mg/Kg	Composite Sample (Items 1-4) (35681) mg/Kg
Benzene	0.050	0.055
Bromodichloromethane	0.050	ND
Bromoform	0.050	ND
Bromomethane	0.050	ND
Carbon Tetrachloride	0.050	ND
Chlorobenzene	0.050	ND
Chloroethane	0.050	ND
Chloroform	0.050	ND
Chloromethane	0.050	ND
Dibromochloromethane	0.050	ND
Dichlorobenzene, 1,2-	0.050	ND
Dichlorobenzene, 1,3-	0.050	ND
Dichlorobenzene, 1,4-	0.050	ND
Dichlorodifluoromethane	0.050	ND
Dichloroethane, 1,1-	0.050	ND
Dichloroethane, 1,2-	0.050	ND
Dichloroethene, 1,1-	0.050	ND
Dichloroethene, t-1,2-	0.050	ND
Dichloropropane, 1,2-	0.050	ND
Dichloropropene, c-1,3-	0.050	ND
Dichloropropene, t-1,3-	0.050	ND
Ethylbenzene	0.050	ND
Methylene Chloride	0.050	ND
Tetrachloroethane, 1,1,2,2-	0.050	ND
Tetrachloroethene	0.050	ND
Trichloroethane, 1,1,1-	0.050	ND
Trichloroethane, 1,1,2-	0.050	ND
Trichloroethene	0.050	ND
Trichlorofluoromethane	0.050	ND
Toluene	0.050	1.2
Vinyl Chloride	0.050	ND
Styrene	0.050	ND
Xylenes	0.050	7.8

Analyzed: May 2 & 3, 1993
Method: EPA 5030/8010/8020 Modified

ND = Not Detected, concentration less than Quantitation Limit.

Bay West Analytical Laboratory

Bay West Inc.
Five Empire Drive
St. Paul, Minnesota
55103-1867

612-291-0456
FAX 291-0099
1-800-279-0456

Table 2

Bay West Environmental Services Project No: **7095**
Bay West Laboratory Project ID: **5-3567**

Pentachlorophenol

Parameter	Quantitation Limit mg/Kg	Composite Sample (Items 1-4) (35683) mg/Kg
Pentachlorophenol	0.033	150
Dilution Factor		100

Date Extracted: May 5, 1993
Date Analyzed: May 11, 1993

Method: EPA 604 Modified

Bay West Analytical Laboratory

Bay West Inc.
Five Empire Drive
St. Paul, Minnesota
55103-1867

612-291-0456
FAX 291-0099
1-800-279-0456

Table 3

Bay West Environmental Services Project No.: **7095**
Bay West Laboratory Project ID: **5-3567**

Phthalates

Parameter	Quantitation Limit mg/Kg	Composite Sample (Items 1-4) (35683) mg/Kg
Di-Methyl Phthalate	0.033	0.044
Di-Ethyl Phthalate	0.033	ND
Di-N-Butyl Phthalate	0.033	ND
Butyl Benzyl Phthalate	0.033	ND
Bis (2-Ethylhexyl) Phthalate	0.033	ND
Di-N-Octyl Phthalate	0.033	1.0

Date Extracted: May 5, 1993
Date Analyzed: May 13, 1993

Method: EPA 606 Modified

ND = Not Detected, concentration less than Quantitation Limit.

twin city testing corporation
662 CROMWELL AVENUE
ST. PAUL, MN 55114
PHONE 612/645-3601

REPORT OF: CHEMICAL ANALYSES

PROJECT: **BAY WEST LABS, 16824, PRJ #3567** **DATE:** May 20, 1993

REPORTED TO: Bay West, Inc.
Attn: Peter Hanson
Five Empire Drive
St. Paul, MN 55103-1867

LABORATORY NO: 4410 93-1556

INTRODUCTION

This report presents the results of the analyses of one sample received on April 26, 1993, from a representative of Bay West, Inc. The scope of our services was limited to the parameters listed in the attached tables.

METHODOLOGY

Analyses are performed according to Twin City Testing Standard Operating Procedures. The procedures are based on the references stated in the analytical results tables.

RESULTS

The results are listed in the attached tables.

DISCUSSION

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample generally ranged from 52-95%, indicating a level of efficiency through the extraction and enrichment steps that is considered typical for this sample matrix type. Since the quantifications of the native 2,3,7,8-substituted isomers are based on isotope dilution, the data are automatically corrected for variations in recovery and accurate values are obtained.

The sample was found to contain high levels of selected isomers from the hexa, hepta, and octa-chlorinated congener classes which saturated the detector signal of the mass spectrometer, even after dilution of the final sample extract. The affected values have been flagged on the results table and should be regarded as minimum possible concentrations.

A laboratory method blank was prepared and analyzed with the PCDD/PCDF sample extraction batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs, with the exceptions of trace background levels of HxCDF (3 picograms) and OCDD (26 picograms). It should be noted that these levels were below the method calibration ranges. The levels reported for these isomers in the actual sample were two or more orders of magnitude higher than the corresponding blank levels, indicating that the sample processing steps did not contribute significantly to the levels reported for the sample.

A laboratory quality control PCDD/PCDF spike sample was also prepared with the sample batch by extracting clean sand that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at levels ranging from 70-100%, indicating a high degree of accuracy for these determinations.

REMARKS

The sample was collected on April 22, 1993. If the sample is not consumed in the analysis, it is held for two months from the date of sample receipt and then disposed, unless written instructions to the contrary are received.

TWIN CITY TESTING CORPORATION

Deneen Walker
Project Manager

Stephanie Kidder
Laboratory Manager

DW/SK/jd

POLYNUCLEAR AROMATIC HYDROCARBON RESULTS
EPA METHOD 8310

(All values are in μg/Kg which is equal to parts-per-billion)

Client ID:	**Blank**	**3567**[1]
TCT ID:		315649

Parameter:			**PQL**
Naphthalene	ND	14,000	360
1-methylnaphthalene	ND	8,900	460
2-methylnaphthalene	ND	9,400	460
Acenaphthylene	ND	4,100	460
Acenaphthene	ND	ND	360
Fluorene	ND	83	42
Phenanthrene	ND	760	130
Anthracene	ND	ND	140
Fluoranthene	ND	ND	42
Pyrene	ND	130	20
Benzo (a) anthracene	ND	ND	2.6
Chrysene	ND	ND	30
Benzo (b) fluoranthene	ND	ND	3.6
Benzo (k) fluoranthene	ND	ND	3.4
Benzo (a) pyrene	ND	ND	4.6
Dibenzo (a,h) anthracene	ND	ND	6.0
Benzo (ghi) perylene	ND	ND	15
Indeno (1,2,3 cd) pyrene	ND	ND	8.8
% Surrogate Recovery	79%	0%[2]	
Date Extracted:	4/28/93	4/28/93	
Date Analyzed:	5/1/93	5/1/93	

All results are reported on a dry weight basis.

PQL = Practical Quantitation Limit
ND = Not Detected

[1] The sample chromatogram contained many unresolved peaks. It is likely that in addition to the listed PAHs, other PAHs or similar compounds were also present. Since the quantitative values reported here represent the total contribution from all compounds which gave a positive response at the column retention time of a particular PAH, the actual levels may be lower than the reported values. Confirmation of the levels of specific PAHs will require an alternative analytical technique which can isolate and quantify the separate components of the mixture.

[2] No surrogate recovered.

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

POLYNUCLEAR AROMATIC HYDROCARBON RESULTS
EPA METHOD 8310

(All values are in μg/Kg which is equal to parts-per-billion)

Client ID: **3567**[1]

TCT ID: 315649 Re-Extraction

Parameter:		**PQL**
Naphthalene	40,000	360
1-methylnaphthalene	24,000	460
2-methylnaphthalene	3,100	460
Acenaphthylene	6,600	460
Acenaphthene	ND	360
Fluorene	280	42
Phenanthrene	1,300	130
Anthracene	ND	140
Fluoranthene	ND	42
Pyrene	460	20
Benzo (a) anthracene	30	2.6
Chrysene	40	30
Benzo (b) fluoranthene	ND	3.6
Benzo (k) fluoranthene	ND	3.4
Benzo (a) pyrene	ND	4.6
Dibenzo (a,h) anthracene	ND	6.0
Benzo (ghi) perylene	ND	15
Indeno (1,2,3 cd) pyrene	ND	8.8
% Surrogate Recovery	0%[2]	
Date Extracted:	5/5/93	
Date Analyzed:	5/6/93	

All results are reported on a dry weight basis.

PQL = Practical Quantitation Limit
ND = Not Detected

[1] The sample chromatogram contained many unresolved peaks. It is likely that in addition to the listed PAHs, other PAHs or similar compounds were also present. Since the quantitative values reported here represent the total contribution from all compounds which gave a positive response at the column retention time of a particular PAH, the actual levels may be lower than the reported values. Confirmation of the levels of specific PAHs will require an alternative analytical technique which can isolate and quantify the separate components of the mixture.

[2] No surrogate recovery caused by matrix effects.

Reference: EPA Test Methods for Evaluating Solid Waste, SW-846, November 1986, 3rd Edition.

****
TWIN CITY TESTING CORPORATION
*METHOD 8290 ANALYSIS RESULTS *
****
Client....BAYWEST

TCT Sample ID.....BLANK-511A
Analysis Date.....5/17/93 16:27
Filename.....V30517E
Injected By.....MCH
Total Amount Extracted...0.0102 kg
% Moisture.....NA %
ICAL Date.....05/01/93
CCAL Filename.....V30517B
Method Blank ID.....NA
Extraction Date.....5/11/93

NATIVE ISOMERS	CONC. ng/kg	LOD ng/kg
2378-TCDF	ND	0.31
TOTAL TCDF	ND	-----
2378-TCDD	ND	0.56
TOTAL TCDD	ND	-----
12378-PeCDF	ND	0.14
23478-PeCDF	ND	0.12
TOTAL PeCDF	ND	-----
12378-PeCDD	ND	0.24
TOTAL PeCDD	ND	-----
123478-HxCDF	ND	0.18
123678-HxCDF	ND	0.14
234678-HxCDF	0.32	-----
123789-HxCDF	ND	0.20
TOTAL HxCDF	0.32	-----
123478-HxCDD	ND	0.31
123678-HxCDD	ND	0.68
123789-HxCDD	ND	0.35
TOTAL HxCDD	ND	-----
1234678-HpCDF	ND	0.27
1234789-HpCDF	ND	0.38
TOTAL HpCDF	ND	-----
1234678-HpCDD	ND	0.73
TOTAL HpCDD	ND	-----
OCDF	ND	0.60
OCDD	2.60	-----

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	90
2378-TCDD-13C....	2.00	71
12378-PeCDF-13C..	2.00	81
23478-PeCDF-13C..	2.00	99
12378-PeCDD-13C..	2.00	76
123478-HxCDF-13C.	2.00	113
123678-HxCDF-13C.	2.00	100
234678-HxCDF-13C.	2.00	99
123789-HxCDF-13C.	2.00	81
123478-HxCDD-13C.	2.00	83
123678-HxCDD-13C.	2.00	76
1234678-HpCDF-13C	2.00	69
1234789-HpCDF-13C	2.00	68
1234678-HpCDD-13C	2.00	46
OCDD-13C.....	4.00	50
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	61

Total 2378-TCDD Equivalence: 0.035 ng/kg
(Using ITE Factors/DB-5 Data)

All values are expressed on a total (as received) weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
LOD = Limit of Detection
ND = Not Detected
NA = Not Applicable

TCT Invoice Number....4410 93-1556

****
TWIN CITY TESTING CORPORATION
*METHOD 8290 ANALYSIS RESULTS *
****
Client....BAYWEST

Client's Sample ID.....3567
TCT Sample ID.....315649
Analysis Date.....5/17/93 20:25
Filename.....V30517I
Injected By.....MCH
Total Amount Extracted...0.0011 kg
% Moisture..... 30.3 %
ICAL Date.....05/01/93
CCAL Filename.....V30517B
Method Blank ID.....BLANK-511A
Extraction Date.....5/11/93

NATIVE ISOMERS	CONC. ng/kg		LOD ng/kg
2378-TCDF	270	*	-----
TOTAL TCDF	4300		-----
2378-TCDD	41		-----
TOTAL TCDD	1700		-----
12378-PeCDF	890		-----
23478-PeCDF	1100		-----
TOTAL PeCDF	12000		-----
12378-PeCDD	1800		-----
TOTAL PeCDD	59000		-----
123478-HxCDF	4700		-----
123678-HxCDF	1900		-----
234678-HxCDF	2000		-----
123789-HxCDF	1500		-----
TOTAL HxCDF	170000		-----
123478-HxCDD	130000		-----
123678-HxCDD	130000		-----
123789-HxCDD	150000		-----
TOTAL HxCDD	1200000	**	-----
1234678-HpCDF	68000		-----
1234789-HpCDF	7500		-----
TOTAL HpCDF	440000	**	-----
1234678-HpCDD	1100000	**	-----
TOTAL HpCDD	2200000	**	-----
OCDF	520000		-----
OCDD	2400000	**	-----

INTERNAL STANDARDS	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	78
2378-TCDD-13C....	2.00	74
12378-PeCDF-13C..	2.00	64
23478-PeCDF-13C..	2.00	83
12378-PeCDD-13C..	2.00	35
123478-HxCDF-13C.	2.00	52
123678-HxCDF-13C.	2.00	95
234678-HxCDF-13C.	2.00	86
123789-HxCDF-13C.	2.00	65
123478-HxCDD-13C.	2.00	81
123678-HxCDD-13C.	2.00	78
1234678-HpCDF-13C	2.00	69
1234789-HpCDF-13C	2.00	66
1234678-HpCDD-13C	2.00	56
OCDD-13C.....	4.00	63
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	69

Total 2378-TCDD Equivalence: 58248 ng/kg
(Using ITE Factors/DB-5 Data)

* Value may include contributions from other TCDF isomers.
**Saturated signal.
All values are expressed on a dry weight basis.

CONC= Concentration (Totals include 2378-substituted isomers.)
LOD = Limit of Detection
ND = Not Detected
NA = Not Applicable

TCT Invoice Number....4410 93-1556

****
TWIN CITY TESTING CORPORATION
* PCDD/PCDF SPIKE RESULTS *
****
Client....BAYWEST

TCT Sample ID.....SPIKE-511A
Analysis Date.....5/18/93 11:20
Filename.....V30518C
Sample Injected By.....CS
Total Amount Extracted.....0.0102 kg
% Moisture.....NA
ICAL Date.....05/01/93
CCAL Filename.....V30518B
Method Blank ID.....BLANK-511A
Extraction Date.....5/11/93

NATIVE ISOMERS	Qs (ng)	Qm (ng)	% REC
2378-TCDF	0.20	0.15	77
TOTAL TCDF	0.20	0.15	77
2378-TCDD	0.20	0.17	85
TOTAL TCDD	0.20	0.17	85
12378-PeCDF	1.00	0.81	81
23478-PeCDF	1.00	0.73	73
TOTAL PeCDF	2.00	1.53	77
12378-PeCDD	1.00	0.81	81
TOTAL PeCDD	1.00	0.81	81
123478-HxCDF	1.00	0.75	75
123678-HxCDF	1.00	0.70	70
234678-HxCDF	1.00	0.74	74
123789-HxCDF	1.00	0.83	83
TOTAL HxCDF	4.00	3.02	75
123478-HxCDD	1.00	0.86	86
123678-HxCDD	1.00	0.86	86
123789-HxCDD	1.00	0.88	88
TOTAL HxCDD	3.00	2.60	87
1234678-HpCDF	1.00	0.72	72
1234789-HpCDF	1.00	0.71	71
TOTAL HpCDF	2.00	1.42	71
1234678-HpCDD	1.00	1.00	100
TOTAL HpCDD	1.00	1.00	100
OCDF	2.00	1.79	90
OCDD	2.00	1.57	79

INTERNAL STANDARD	ng's ADDED	PERCENT RECOVERY
2378-TCDF-13C....	2.00	69
2378-TCDD-13C....	2.00	58
12378-PeCDF-13C..	2.00	62
23478-PeCDF-13C..	2.00	79
12378-PeCDD-13C..	2.00	63
123478-HxCDF-13C.	2.00	86
123678-HxCDF-13C.	2.00	84
234678-HxCDF-13C.	2.00	81
123789-HxCDF-13C.	2.00	73
123478-HxCDD-13C.	2.00	69
123678-HxCDD-13C.	2.00	62
1234678-HpCDF-13C	2.00	56
1234789-HpCDF-13C	2.00	56
1234678-HpCDD-13C	2.00	39
OCDD-13C.....	4.00	40
1234-TCDD-13C....	2.00	NA
123789-HxCDD-13C.	2.00	NA
2378-TCDD-37Cl4..	0.20	46

Qs = Quantity Spiked
Qm = Quantity Measured
REC = Recovery (Expressed as Percent)
NA = Not Applicable

TCT Invoice Number....4410 93-1556

GROUND WATER CHAIN-OF-CUSTODY RECORD FOR STREBOR, INC.

3567 BW-ST: 3/91

Bay West

LAB: Bay West

PROJECT NUMBER 7095-

SEND RESULTS TO: Martin Wangensteen

TURNAROUND REQUEST STANDARD

CHAIN-OF-CUSTODY NO: SI- 287

ITEM NO.	SAMPLE NUMBER (PROJECT NO. - SAMPLE ID)	TIME	MATRIX	NUMBER & TYPE OF CONTAINER	ANALYSIS CODE(S)	COMMENTS/BAR CODE
1	7095 - 1B	11:45 A		2x40ml 3x500ml	15-1	Sample from Box # 1
2	7095 - 2	11:00 A		↓ ↓	15-1	# 41
3	7095 - 3	11:15A		↓ ↓	15-1	# 66
4	7095 - 4	12:30P		2x40mL 2x500mL	15-1	# 52
5	7095 -					
6	7095 -					
7	7095 -					
8	7095 -					
9	7095 -					
10	7095 -					

Packed in polystyrene "peanuts"

ANALYSIS CODES

EPA 601/602 (include Xylenes and Styrene)	01
EPA 604 Phenols	02
EPA 604 Pentachlorophenol	03
Total Suspended Solids	04
EPA 610 PAHs	05
EPA 606 Phthalate Esters	06
EPA 607 Nitrosamines	07
EPA 609 Nitroaromatics and Isophorone	08
EPA 611 Haloethers	09
EPA 612 Chlorinated Hydrocarbons	10
CDDs/CDFs (HiRes GC/MS)	11
Tri-butyl tinoxide (TBTO)	12
PCBs	13
Cd, Cr, Cu, Pb, Ni, Zn, Hg, total CN	14
Other	15

PERSON RESPONSIBLE FOR SAMPLE COLLECTION: Tim LINDGREN

AFFILIATION: BAY WEST

DATE: 4-22-93

TIME: 5:00 pm

TRANS NO.	ITEM NO.	RELINQUISHED BY	ACCEPTED BY	DATE	TIME
1	1→4	Tim Lindgren	J M Faulon	4-23-93	255
2					
3					
4					
5					

ADDITIONAL ANALYSIS (USE BACK OF FRONT SHEET IF NECESSARY)

15-1. Composite samples and ANALYSIS for the following groups of compounds:

~~15-2.~~ → Dioxins and Furans - High Resolution GC/MS - EPA method 8290, specify 2,3,7,8 congeners

~~15-3.~~ → phenols - EPA method 8040

~~15-4.~~ → PAHs - EPA method 8100

~~15-5.~~ → Phthalates - EPA method 8060

→ VOCs - EPA method 8010/8020 + styrene and xylenes

what needs to be done

APTUS ENVIRONMENTAL SVCS.

PCDD/PCDF SUMMARY REPORT

SAMPLE: L9331402-001 (U11803) Spent Carbon

PROJECT ID: NA

SPECIFIC ANALYTES	CONC (PPB)	DL (PPB)	BLANK (PPB)
2,3,7,8-TCDD	ND	3.5	ND
1,2,3,7,8-PeCDD	ND	5.1	ND
1,2,3,4,7,8-HxCDD	ND	5.9	ND
1,2,3,6,7,8-HxCDD	30.9	5.7	ND
1,2,3,7,8,9-HxCDD	ND	5.5	ND
1,2,3,4,6,7,8-HpCDD	2930	7.4	ND
OCDD	27500 –	11	ND
2,3,7,8-TCDF	ND	2.4	ND
1,2,3,7,8-PeCDF	ND	3.2	ND
2,3,4,7,8-PeCDF	ND	3.1	ND
1,2,3,4,7,8-HxCDF	ND	4.2	ND
1,2,3,6,7,8-HxCDF	17.2	3.6	ND
2,3,4,6,7,8-HxCDF	ND	4	ND
1,2,3,7,8,9-HxCDF	ND	4.7	ND
1,2,3,4,6,7,8-HpCDF	ND	5.3	ND
1,2,3,4,7,8,9-HpCDF	21.4	6.8	ND
OCDF	2980	7.9	ND

Definitions:

CONC – The concentration, given in parts per billion (ppb) or parts per trillion (ppt).

DL – The detection limit, given in parts per billion (ppb), parts per trillion (ppt), or in nanograms (ng).

BLANK – The concentration of the method blank.

ND – (Non-Detect) The concentration of the analyte is less than the detection limit.

TOTAL ANALYTES	CONC (PPB)	DL (PPB)	BLANK (PPB)
TOTAL TCDD	ND	3.50	ND
TOTAL PeCDD	ND	5.10	ND
TOTAL HxCDD	46.4 –	5.90	ND
TOTAL HpCDD	3850 –	7.40	ND
TOTAL TCDF	2.5	2.40	ND
TOTAL PeCDF	23.3	3.20	ND
TOTAL HxCDF	291	4.70	ND
TOTAL HpCDF	1950	6.80	ND

TOTAL DIOXINS/FURANS: 36643.2 PPB

TOTAL 2,3,7,8-TCDD TOXICITY (1989 ITEF) EQUIVALENTS: 65 PPB

For information, please reference the following when contacting our Technical Services Department:

TLH Project: P012744
TLH Batch: B000645T
TLH File: MA01291

12823 Park One Drive • Sugar Land, Texas 77478

Phone: (713) 240-5340 • FAX: (713) 240-5341

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

December 19, 2012

Mr. Paul Walz
Bay West, Inc.
5 Empire Drive
St. Paul, MN 55103

RE: Project: J007095/10 Strebor Inc
Pace Project No.: 10214461

Dear Mr. Walz:
Enclosed are the analytical results for sample(s) received by the laboratory on December 06, 2012. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Carolynne Trout

Carolynne Trout

carolynne.trout@pacelabs.com
Project Manager

Enclosures

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: J007095/10 Strebor Inc
Pace Project No.: 10214461

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10214461001	**Spent Carbon**	Solid	12/05/12 11:05	12/06/12 09:20

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

PROJECT NARRATIVE

Project:
Pace Project No.:

Method:
Description:
Client:
Date:

This data package has been reviewed for quality and completeness and is approved for release.

TRIMATRIX LABORATORIES

December 18, 2012

Pace Analytical
Attn: Carolynne Trout
1700 Elm Street Suite 200
Minneapolis, MN 55414

Project: J007095/10 Strebor Inc.

Dear Carolynne Trout,

Enclosed is a copy of the laboratory report for the following work order(s) received by TriMatrix Laboratories:

Work Order	Received	Description
1212156	12/07/2012	10214461

This report relates only to the sample(s) as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) and/or one of the following certification programs:

ACLASS DoD-ELAP/ISO17025 (#ADE-1542); Arkansas DEP (#12-056-0); Florida DEP (#E87622-24); Georgia EPD (#E87622-24); Illinois DEP (#002841); Kansas DPH (#E-10302); Kentucky DEP (#0021); Louisiana DEP (#03068); Michigan DPH (#0034); Minnesota DPH (#367345); New York ELAP (#46503); North Carolina DNRE (#659); Texas CEQ (#T104704495-12-2); Virginia DCLS (#1622); Wisconsin DNR (#999472650); USDA Soil Import Permit (#P330-09-00163).

Any qualification or narration of results, including sample acceptance requirements and test exceptions to the above referenced programs, is presented in the Statement of Data Qualifications section of this report. Estimates of analytical uncertainties and certification documents for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

James D. McFadden
Project Chemist

cc: Carolynne Trout

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Pace Analytical**	Work Order:	**1212156**
Project:	J007095/10 Strebor Inc.	Description:	10214461
Client Sample ID:	**Spent Carbon**	Sampled:	12/05/12 11:05
Lab Sample ID:	**1212156-01**	Sampled By:	Client
Matrix:	Soil	Received:	12/07/12 08:15
Unit:	mg/kg dry	Prepared:	12/13/201: By: JTS
Dilution Factor:	2	Analyzed:	12/14/12 By: DWJ
QC Batch:	1215313	Analytical Batch:	2L17075
Percent Solids:	55		

*Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.060	0.060
208-96-8	Acenaphthylene	<0.060	0.060
98-86-2	Acetophenone	<0.060	0.060
62-53-3	Aniline	<0.24	0.24
120-12-7	Anthracene	<0.060	0.060
1912-24-9	Atrazine	<0.060	0.060
100-52-7	Benzaldehyde	**0.48**	0.12
92-87-5	Benzidine	<2.4	2.4
56-55-3	Benzo(a)anthracene	<0.060	0.060
50-32-8	Benzo(a)pyrene	<0.060	0.060
205-99-2	Benzo(b)fluoranthene	<0.060	0.060
207-08-9	Benzo(k)fluoranthene	<0.060	0.060
191-24-2	Benzo(g,h,i)perylene	<0.12	0.12
65-85-0	Benzoic Acid	<1.2	1.2
100-51-6	Benzyl Alcohol	<0.060	0.060
92-52-4	1,1'-Biphenyl	<0.060	0.060
101-55-3	4-Bromophenyl Phenyl Ether	<0.060	0.060
85-68-7	Butyl Benzyl Phthalate	<0.12	0.12
105-60-2	Caprolactam	<0.12	0.12
86-74-8	Carbazole	<0.60	0.60
59-50-7	4-Chloro-3-methylphenol	<0.060	0.060
95-51-2	2-Chloroaniline	<0.060	0.060
106-47-8	4-Chloroaniline	<0.24	0.24
111-91-1	Bis(2-chloroethoxy)methane	<0.060	0.060
111-44-4	Bis(2-chloroethyl) Ether	<0.060	0.060
108-60-1	Bis(2-chloroisopropyl) Ether	<0.060	0.060
91-58-7	2-Chloronaphthalene	<0.060	0.060
95-57-8	2-Chlorophenol	<0.060	0.060
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.060	0.060
218-01-9	Chrysene	<0.060	0.060
53-70-3	Dibenz(a,h)anthracene	<0.12	0.12

Continued on next page

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Pace Analytical**	Work Order:	**1212156**
Project:	J007095/10 Strebor Inc.	Description:	10214461
Client Sample ID:	**Spent Carbon**	Sampled:	12/05/12 11:05
Lab Sample ID:	**1212156-01**	Sampled By:	Client
Matrix:	Soil	Received:	12/07/12 08:15
Unit:	mg/kg dry	Prepared:	12/13/201: By: JTS
Dilution Factor:	2	Analyzed:	12/14/12 By: DWJ
QC Batch:	1215313	Analytical Batch:	2L17075
Percent Solids:	55		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
132-64-9	Dibenzofuran	<0.060	0.060
84-74-2	Di-n-butyl Phthalate	<0.24	0.24
106-46-7	1,4-Dichlorobenzene	**0.22**	0.060
95-50-1	1,2-Dichlorobenzene	<0.060	0.060
541-73-1	1,3-Dichlorobenzene	<0.060	0.060
91-94-1	3,3´-Dichlorobenzidine	<3.0	3.0
120-83-2	2,4-Dichlorophenol	<0.12	0.12
87-65-0	2,6-Dichlorophenol	<0.12	0.12
84-66-2	Diethyl Phthalate	<0.060	0.060
105-67-9	2,4-Dimethylphenol	<0.60	0.60
131-11-3	Dimethyl Phthalate	<0.060	0.060
534-52-1	4,6-Dinitro-2-methylphenol	<0.60	0.60
51-28-5	2,4-Dinitrophenol	<0.60	0.60
606-20-2	2,6-Dinitrotoluene	<0.060	0.060
121-14-2	2,4-Dinitrotoluene	<0.12	0.12
117-84-0	Di-n-octyl Phthalate	<0.060	0.060
122-66-7	1,2-Diphenylhydrazine	<0.060	0.060
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.68**	0.12
206-44-0	Fluoranthene	<0.060	0.060
86-73-7	Fluorene	<0.12	0.12
118-74-1	Hexachlorobenzene	<0.060	0.060
87-68-3	Hexachlorobutadiene	<0.060	0.060
77-47-4	Hexachlorocyclopentadiene	<0.060	0.060
67-72-1	Hexachloroethane	<0.060	0.060
193-39-5	Indeno(1,2,3-cd)pyrene	<0.12	0.12
78-59-1	Isophorone	<0.060	0.060
91-57-6	2-Methylnaphthalene	<0.060	0.060
90-12-0	1-Methylnaphthalene	<0.060	0.060
106-44-5	4-Methylphenol	<0.060	0.060
108-39-4	3-Methylphenol	<0.12	0.12
95-48-7	2-Methylphenol	<0.060	0.060

Continued on next page

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Pace Analytical**	Work Order:	**1212156**
Project:	J007095/10 Strebor Inc.	Description:	10214461
Client Sample ID:	**Spent Carbon**	Sampled:	12/05/12 11:05
Lab Sample ID:	**1212156-01**	Sampled By:	Client
Matrix:	Soil	Received:	12/07/12 08:15
Unit:	mg/kg dry	Prepared:	12/13/201: By: JTS
Dilution Factor:	2	Analyzed:	12/14/12 By: DWJ
QC Batch:	1215313	Analytical Batch:	2L17075
Percent Solids:	55		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
91-20-3	Naphthalene	**0.094**	0.060
100-01-6	4-Nitroaniline	<0.12	0.12
88-74-4	2-Nitroaniline	<0.060	0.060
99-09-2	3-Nitroaniline	<0.12	0.12
98-95-3	Nitrobenzene	<0.060	0.060
88-75-5	2-Nitrophenol	<0.060	0.060
100-02-7	4-Nitrophenol	<2.4	2.4
62-75-9	N-Nitroso-dimethylamine	<0.12	0.12
86-30-6	N-Nitroso-diphenylamine	<0.060	0.060
621-64-7	N-Nitroso-di-n-propylamine	<0.060	0.060
87-86-5	Pentachlorophenol	**2.0**	0.60
85-01-8	Phenanthrene	<0.060	0.060
108-95-2	Phenol	<0.60	0.60
129-00-0	Pyrene	<0.060	0.060
110-86-1	Pyridine	<0.12	0.12
95-94-3	1,2,4,5-Tetrachlorobenzene	<0.12	0.12
58-90-2	2,3,4,6-Tetrachlorophenol	**0.22**	0.12
120-82-1	1,2,4-Trichlorobenzene	<0.060	0.060
95-95-4	2,4,5-Trichlorophenol	<0.060	0.060
88-06-2	2,4,6-Trichlorophenol	<0.060	0.060

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*49*	*33-113*
Phenol-d6	*49*	*30-115*
Nitrobenzene-d5	*58*	*33-131*

Continued on next page

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Pace Analytical**	Work Order:	**1212156**
Project:	J007095/10 Strebor Inc.	Description:	10214461
Client Sample ID:	**Spent Carbon**	Sampled:	12/05/12 11:05
Lab Sample ID:	**1212156-01**	Sampled By:	Client
Matrix:	Soil	Received:	12/07/12 08:15
Unit:	mg/kg dry	Prepared:	12/13/201: By: JTS
Dilution Factor:	2	Analyzed:	12/14/12 By: DWJ
QC Batch:	1215313	Analytical Batch:	2L17075
Percent Solids:	55		

*Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Surrogates (Continued):	***% Recovery***	***Control Limits***
2-Fluorobiphenyl	*70*	*46-122*
2,4,6-Tribromophenol	*31*	*12-124*
o-Terphenyl	*36*	*20-155*

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Pace Analytical**	Work Order:	**1212156**
Project:	J007095/10 Strebor Inc.	Description:	10214461
Client Sample ID:	**Spent Carbon**	Sampled:	12/05/12 11:05
Lab Sample ID:	**1212156-01**	Sampled By:	Client
Matrix:	Soil	Received:	12/07/12 08:15

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**55**	0.1	%	1	USEPA-3550C	12/11/12 15:45	SKA	1215229

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL

QC Batch: 1215313 3550C Sonication Extraction/USEPA-8270C

Method Blank Analyzed: 12/13/2012 By: DWJ
Unit: mg/kg wet Analytical Batch: 2L17069

Acenaphthene	<0.017			0.017
Acenaphthylene	<0.017			0.017
Acetophenone	<0.017		--	0.017
Aniline	<0.067			0.067
Anthracene	<0.017			0.017
Atrazine	<0.017			0.017
Benzaldehyde	<0.033			0.033
Benzidine	<0.67			0.67
Benzo(a)anthracene	<0.017		--	0.017
Benzo(a)pyrene	<0.017			0.017
Benzo(b)fluoranthene	<0.017			0.017
Benzo(k)fluoranthene	<0.017			0.017
Benzo(g,h,i)perylene	<0.033			0.033
Benzoic Acid	<0.33		--	0.33
Benzyl Alcohol	<0.017		--	0.017
1,1'-Biphenyl	<0.017		--	0.017
4-Bromophenyl Phenyl Ether	<0.017			0.017
Butyl Benzyl Phthalate	<0.033			0.033
Caprolactam	<0.033		--	0.033
Carbazole	<0.17		--	0.17
4-Chloro-3-methylphenol	<0.017		--	0.017
2-Chloroaniline	<0.017			0.017
4-Chloroaniline	<0.067		--	0.067
Bis(2-chloroethoxy)methane	<0.017			0.017
Bis(2-chloroethyl) Ether	<0.017			0.017
Bis(2-chloroisopropyl) Ether	<0.017			0.017
2-Chloronaphthalene	<0.017			0.017
2-Chlorophenol	<0.017		--	0.017
4-Chlorophenyl Phenyl Ether	<0.017			0.017
Dibenz(a,h)anthracene	<0.033			0.033
Dibenzofuran	<0.017			0.017
Di-n-butyl Phthalate	<0.067		--	0.067
1,4-Dichlorobenzene	<0.017		--	0.017
1,2-Dichlorobenzene	<0.017		--	0.017
1,3-Dichlorobenzene	<0.017		--	0.017
3,3´-Dichlorobenzidine	<0.83			0.83

Continued on next page

5560 Corporate Exchange Court SE • Grand Rapids, MI 49512 • 616.975.4500 • Fax 616.942.7463 • www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL

QC Batch: 1215313 (Continued) 3550C Sonication Extraction/USEPA-8270C

Method Blank (Continued) Analyzed: 12/13/2012 By: DWJ
Unit: mg/kg wet Analytical Batch: 2L17069

2,4-Dichlorophenol	<0.033		0.033
2,6-Dichlorophenol	<0.033		0.033
Diethyl Phthalate	<0.017	--	0.017
2,4-Dimethylphenol	<0.17		0.17
Dimethyl Phthalate	<0.017		0.017
4,6-Dinitro-2-methylphenol	<0.17	--	0.17
2,4-Dinitrophenol	<0.17		0.17
2,6-Dinitrotoluene	<0.017	--	0.017
2,4-Dinitrotoluene	<0.033	--	0.033
Di-n-octyl Phthalate	<0.017		0.017
1,2-Diphenylhydrazine	<0.017	--	0.017
Bis(2-ethylhexyl) Phthalate	<0.033	--	0.033
Fluoranthene	<0.017		0.017
Fluorene	<0.033		0.033
Hexachlorobenzene	<0.017		0.017
Hexachlorobutadiene	<0.017		0.017
Hexachlorocyclopentadiene	<0.017		0.017
Hexachloroethane	<0.017		0.017
Indeno(1,2,3-cd)pyrene	<0.033		0.033
Isophorone	<0.017	--	0.017
2-Methylnaphthalene	<0.017		0.017
1-Methylnaphthalene	<0.017		0.017
4-Methylphenol	<0.017		0.017
3-Methylphenol	<0.033		0.033
2-Methylphenol	<0.017		0.017
Naphthalene	<0.017	--	0.017
4-Nitroaniline	<0.033	--	0.033
2-Nitroaniline	<0.017		0.017
3-Nitroaniline	<0.033	--	0.033
Nitrobenzene	<0.017		0.017
2-Nitrophenol	<0.017		0.017
4-Nitrophenol	<0.67	--	0.67
N-Nitroso-dimethylamine	<0.033		0.033
N-Nitroso-diphenylamine	<0.017		0.017
N-Nitroso-di-n-propylamine	<0.017	--	0.017
Pentachlorophenol	<0.17	--	0.17

Continued on next page

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
QC Batch: 1215313 (Continued) 3550C Sonication Extraction/USEPA-8270C								
Method Blank (Continued)						Analyzed:	12/13/2012	By: DWJ
Unit: mg/kg wet						Analytical Batch:	2L17069	
Phenanthrene			<0.017			--	0.017	
Phenol			<0.17			--	0.17	
Pyrene			<0.017				0.017	
Pyridine			<0.033			--	0.033	
1,2,4,5-Tetrachlorobenzene			<0.033				0.033	
2,3,4,6-Tetrachlorophenol			<0.033				0.033	
1,2,4-Trichlorobenzene			<0.017			--	0.017	
2,4,5-Trichlorophenol			<0.017				0.017	
2,4,6-Trichlorophenol			<0.017				0.017	
Surrogates:								
2-Fluorophenol				*70*	*33-113*			
Phenol-d6				*73*	*30-115*			
Nitrobenzene-d5				*68*	*33-131*			
2-Fluorobiphenyl				*79*	*46-122*			
2,4,6-Tribromophenol				*62*	*12-124*			
o-Terphenyl				*79*	*20-155*			
Laboratory Control Sample						Analyzed:	12/14/2012	By: DWJ
Unit: mg/kg wet						Analytical Batch:	2L17069	
Acenaphthene	0.348		**0.247**	71	55-113	--	0.017	
4-Chloro-3-methylphenol	0.348		**0.231**	66	57-124	--	0.017	
2-Chlorophenol	0.348		**0.229**	66	62-118	--	0.017	
1,4-Dichlorobenzene	0.348		**0.237**	68	61-111	--	0.017	
2,4-Dinitrotoluene	0.348		**0.253**	73	51-128	--	0.033	
Naphthalene	0.348		**0.240**	69	52-128	--	0.017	
4-Nitrophenol	0.348		**0.267**	77	36-131	--	0.67	
N-Nitroso-di-n-propylamine	0.348		**0.239**	69	48-127	--	0.017	
Pentachlorophenol	0.348		**0.204**	58	19-117	--	0.17	
Phenol	0.348		**0.214**	61	53-120	--	0.17	
Pyrene	0.348		**0.276**	79	60-132	--	0.017	

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
QC Batch: 1215313 (Continued) 3550C Sonication Extraction/USEPA-8270C								
Laboratory Control Sample (Continued)					Analyzed:		12/14/2012	By: DWJ
Unit: mg/kg wet					Analytical Batch:		2L17069	
1,2,4-Trichlorobenzene	0.348		**0.229**	66	51-110	--		0.017
Surrogates:								
2-Fluorophenol				*66*	*33-113*			
Phenol-d6				*68*	*30-115*			
Nitrobenzene-d5				*62*	*33-131*			
2-Fluorobiphenyl				*72*	*46-122*			
2,4,6-Tribromophenol				*70*	*12-124*			
o-Terphenyl				*75*	*20-155*			
Laboratory Control Sample Duplicate					Analyzed:		12/14/2012	By: DWJ
Unit: mg/kg wet					Analytical Batch:		2L17069	
Acenaphthene	0.348		**0.245**	70	55-113	1	20	0.017
4-Chloro-3-methylphenol	0.348		**0.236**	68	57-124	2	20	0.017
2-Chlorophenol	0.348		**0.231**	66	62-118	0.9	20	0.017
1,4-Dichlorobenzene	0.348		**0.235**	67	61-111	0.7	20	0.017
2,4-Dinitrotoluene	0.348		**0.263**	76	51-128	4	20	0.033
Naphthalene	0.348		**0.239**	69	52-128	0.1	20	0.017
4-Nitrophenol	0.348		**0.268**	77	36-131	0.4	20	0.67
N-Nitroso-di-n-propylamine	0.348		**0.238**	68	48-127	0.7	20	0.017
Pentachlorophenol	0.348		**0.176**	50	19-117	15	20	0.17
Phenol	0.348		**0.216**	62	53-120	0.8	20	0.17
Pyrene	0.348		**0.282**	81	60-132	2	20	0.017
1,2,4-Trichlorobenzene	0.348		**0.227**	65	51-110	0.6	20	0.017
Surrogates:								
2-Fluorophenol				*65*	*33-113*			

Continued on next page

*See Statement of Data Qualifications

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL

QC Batch: 1215313 (Continued) 3550C Sonication Extraction/USEPA-8270C

Laboratory Control Sample Duplicate (Continued) Analyzed: 12/14/2012 By: DWJ

Unit: mg/kg wet Analytical Batch: 2L17069

Surrogates (Continued):		
Phenol-d6	*67*	*30-115*
Nitrobenzene-d5	*61*	*33-131*
2-Fluorobiphenyl	*71*	*46-122*
2,4,6-Tribromophenol	*66*	*12-124*
o-Terphenyl	*72*	*20-155*

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

QUALITY CONTROL REPORT

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
Analyte: **Percent Solids**/USEPA-3550C									
QC Batch: 1215229 (General Inorganic Prep)							Analyzed: 12/11/2012		By: SKA
Method Blank			<0.1	%					0.1

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

PRETREATMENT SUMMARY PAGE

Client: **Pace Analytical**
Project: **J007095/10 Strebor Inc.**

Pretreatment	Lab Sample ID	QC Batch	By	Date & Time Prepared
USEPA-3550C Ultrasonic Extraction	1212156-01	1215313	JTS	12/13/2012 7:56

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

STATEMENT OF DATA QUALIFICATIONS

Semivolatile Organic Compounds by EPA Method 8270C

Qualification: The quality control batch(s), associated with the following samples and analyses, do not contain an MS/MSD or MS/DUP due to insufficient sample volumes. An LCS and LCSD were analyzed as the measure of batch precision and accuracy.

Analysis: USEPA-8270C

Sample: 1212156-01 Spent Carbon

Qualification: Manual integration was required on the analytes listed below. All manual integrations were performed and reviewed in accordance with TriMatrix laboratory policy.

Analysis: USEPA-8270C

Sample/Analyte: 1215313-BS1 Chrysene-d12

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

47-5

Chain of Custody #11095

Pace Analytical
www.pacelabs.com

Workorder: 10214461 Workorder Name: J007095/10 Strebor Inc Results Requested 12/19/2012

Report / Invoice To	Subcontract To
Carolynne Trout Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700 Email: carolynne.trout@pacelabs.com	PO:

Requested Analysis

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers	LAB USE ONLY
1	Spent Carbon	12/5/2012 11:05	10214461001	Solid		01
2						
3						
4						
5						

Transfers	Released By	Date/Time	Received By	Date/Time
1				
2				
3				

Comments

Cooler Temperature on Receipt 5.4 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

5560 Corporate Exchange Court SE • Grand Rapids, MI 49512 • 616.975.4500 • Fax 616.942.7463 • www.trimatrixlabs.com

TRIMATRIX LABORATORIES

SAMPLE RECEIVING / LOG-IN CHECKLIST

TRIMATRIX LABORATORIES

Client: Pace Analytical — Work Order #: 1212156

Report Record Page/Line #: 47-5 — Project Chemist: SDK — Samples:

Received by (Initials/Date): LR 12/7/12

☑ Cooler ☐ Box ☐ Other ____ — Qty Received: 1

Thermometer Used: ☐ IR Gun (#202) ☐ Digital Thermometer (#54) ☐ Other (#____)

☐ See Additional Cooler Information Form

Cooler # / Time	Cooler # / Time	Cooler # / Time	Cooler # / Time
Pace 0855			
Custody Seals:			
☐ None	☐ None	☐ None	☐ None
☐ Present / Intact	☐ Present / Intact	☐ Present / Intact	☐ Present / Intact
☐ Present / Not Intact	☐ Present / Not Intact	☐ Present / Not Intact	☐ Present / Not Intact
Coolant Location:			
Dispersed / (Top) / Middle / Bottom	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom	Dispersed / Top / Middle / Bottom
Coolant/Temperature Taken Via:			
☐ Loose Ice / Avg 2-3 containers	☐ Loose Ice / Avg 2-3 containers	☐ Loose Ice / Avg 2-3 containers	☐ Loose Ice / Avg 2-3 containers
☑ Bagged Ice / Avg 2-3 containers	☐ Bagged Ice / Avg 2-3 containers	☐ Bagged Ice / Avg 2-3 containers	☐ Bagged Ice / Avg 2-3 containers
☐ Blue Ice / Avg 2-3 containers	☐ Blue Ice / Avg 2-3 containers	☐ Blue Ice / Avg 2-3 containers	☐ Blue Ice / Avg 2-3 containers
☐ None / Avg 2-3 containers	☐ None / Avg 2-3 containers	☐ None / Avg 2-3 containers	☐ None / Avg 2-3 containers
Alternate Temperature Taken Via:			
☑ Temperature Blank (TB)	☐ Temperature Blank (TB)	☐ Temperature Blank (TB)	☐ Temperature Blank (TB)
☐ 1 Container	☐ 1 Container	☐ 1 Container	☐ 1 Container
Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C
Temp Blank: 4.5	Temp Blank:	Temp Blank:	Temp Blank:
TB location: (Representative) / Not Representative	TB location: Representative / Not Representative	TB location: Representative / Not Representative	TB location: Representative / Not Representative
1: 5.4 - 5.4	1:	1:	1:
2:	2:	2:	2:
3:	3:	3:	3:
Average °C: 5.4	Average °C:	Average °C:	Average °C:
☐ Cooler ID on COC?	☐ Cooler ID on COC?	☐ Cooler ID on COC?	☐ Cooler ID on COC?
☐ VOC Trip Blank received?	☐ VOC Trip Blank received?	☐ VOC Trip Blank received?	☐ VOC Trip Blank received?

If any shaded areas checked, complete Sample Receiving Non-Conformance and/or Inventory Form

Paperwork Received

Yes	No	
☐	☐	Chain of Custody record(s)? If No, Initiated By ____
☑	☐	Received for Lab Signed/Date/Time?
☐	☐	Shipping document?
☐	☐	Other ____

COC Information

☐ TriMatrix COC ☑ Other ____

COC ID Numbers:

Check Sample Preservation

N/A	Yes	No	
	☑	☐	Average sample temperature ≤6° C?
☑	☐	☐	Was thermal preservation required?
☑	☐		If "No" Project Chemist Approval Initials: ____
☐	☐		If "Yes" Completed "Non Con Cooler - Cont Inventory Form"?
☑	☐		Completed Sample Preservation Verification Form?
☐	☐	☐	Samples chemically preserved correctly?
☑	☐		If "No", added orange tag?
	☐	☑	Received pre-preserved VOC soils?
			☐ MeOH ☐ Na_2SO_4

Check COC for Accuracy

Yes	No	
☐	☐	Analysis Requested?
☑	☐	Sample ID matches COC?
☐	☐	Sample Date and Time matches COC?
☐		Container type completed on COC?
☑	☐	All container types indicated are received?

Check for Short Hold-Time Prep/Analyses

☐ Bacteriology

☐ Air Bags

☐ EnCores / Methanol Pre-Preserved

☐ Formaldehyde/Aldehyde

☐ Green-tagged containers

☐ Yellow/White-tagged 1L ambers (SV Prep-Lab)

AFTER HOURS ONLY: COPIES OF COC TO LAB AREA(S)

☑ NONE REQUIRED

☐ RECEIVED, COCs TO LAB(S)

Sample Condition Summary

N/A	Yes	No	
	☐	☐	Broken container/lids?
	☐	☐	Missing or incomplete labels?
	☐	☐	Illegible information on labels?
	☐	☐	Low volume received?
	☐	☑	Inappropriate or non-TriMatrix containers received?
☐	☐	☐	VOC Vials / TOX containers have headspace?
☐	☐	☐	Extra sample locations / containers not listed on COC?

Notes

☐ Trip Blank received ☐ Trip Blank not listed on COC

Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	48 Hour Goal Met?
12/7/12 0815	12/7/12 0901	(Yes) / No

Log In Forms - Receiving Log-in_Checklist — revision: 3.4

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

1021446

Page: 1 of 1

1582752

Section A Required Client Information:

Company: Bay West Inc.
Address: 5 Empire Drive
St. Paul, MN 55103
Email To: paulw@BayWest.com
Phone: 651-291-3491 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Paul Walz
Copy To:
Purchase Order No.: 36287
Project Name: STrebor Inc
Project Number: T0071095/10

Section C Invoice Information:

Attention: Accounts Payable
Company Name: Bay West Inc.
Address: 5 Empire Drive
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

NPDES | GROUND WATER | DRINKING WATER
UST | RCRA | OTHER

Site Location STATE: MI

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Requested Analysis Filtered (Y/N): Dioxins/Furans		Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Spent Carbon	SL	G			12-5	1105	6C	2	X								X	X			
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Item #1	Michael McClish / Bay West	12-5-12	1500	TN / Pace	12612	920	0.8	Y	Y	Y
Analyze for F027 parameters (list attached)										
CTrant 12/6/12 per Paul Walz										

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Michael E. McClish

SIGNATURE of SAMPLER: Michael McClish DATE Signed (MM/DD/YY): 12-05-12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 13Nov2012 Page 1 of 1
	Document No.: F-MN-L-213-rev.05	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Bay West **Project #:** WO#: 10214461

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 8089 7975 6127

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Optional:** Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ B88A912167504 ☐ 80512447 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.3 **Cooler Temp Corrected (°C):** 0.8 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Date and Initials of Person Examining Contents:** 12/6/12 TN

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)-	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: CTM **Date:** 12/6/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP" or Technology Code
		Pentachlorophenol	87-86-5	0.089	7.4
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP" or Technology Code
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Pentachlorophenol	87-86-5	0.089	7.4
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Wastes Nos. F020, F021, F023, F026, and F027.	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4

67 RL in mg/kg

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Rick VanAllen
Bay West, Inc.
5 Empire Drive
Saint Paul MN 55103

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10214459
Sample Receipt Date: 12/06/2012
Client Project #: J007095/10
Client Sub PO #: 36287
State Cert #: 9909

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

December 19, 2012

Emily Hazelroth, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
emily.hazelroth@pacelabs.com

ACCREDITED IN ACCORDANCE WITH nelac

Report of Laboratory Analysis

The results relate only to the samples included in this report.

Report Prepared Date:
December 19, 2012

Pace Analytical™

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analysis performed on one sample submitted by a representative of BayWest, Inc. The sample was analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were based on signal-to-noise measurements.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extract ranged from 66-104%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In one case, an interfering substance impacted the determination of a PCDD congener; the affected value was flagged "I" due to an incorrect isotope ratio. Concentrations below the calibration range were flagged "J" and should be regarded as estimates. Concentrations above the calibration range were flagged "E" and also should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to contain trace levels of selected congeners. These levels were below the calibration range of the method. The levels reported for the affected congeners in the field sample were higher than the corresponding blank levels by one or more orders of magnitude. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field sample.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 80-110%, indicating a high degree of accuracy for these determinations. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

Pace Analytical™

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

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

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN_00064_200
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New Mexico	MN00064
Colorado	MN00064	New York (NEL	11647
Connecticut	PH-0256	North Carolina	27700
EPA Region 5	WD-15J	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Ohio VAP	CL101 9507
Georgia (DNR)	959	Oklahoma	D9922
Guam	959	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN300001-001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
Iowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	03086	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-Q
Mississippi	MN00064		

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

Report No.....10214459_8290

Page 5 of 11

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical®
www.pacelabs.com

10214459

Page: 1 of 1

1582752

Section A Required Client Information:

Company: Bay West Inc.
Address: 5 Empire Drive
St. Paul, MN 55103
Email To: paulw@BayWest.com
Phone: 651-291-3491 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Paul Walz
Copy To:
Purchase Order No.: 36287
Project Name: STrebor Inc.
Project Number: J007095/10

Section C Invoice Information:

Attention: Accounts Payable
Company Name: Bay West Inc.
Address: 5 Empire Drive
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MI

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Spent Carbon	SL	G			12-5	1105	60	2	X								X	X		
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Item #1	Michael E. McClish / Bay West	12-5-12	1500	TN / Pace	12/12	920	0.8	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Michael E. McClish

SIGNATURE of SAMPLER: Michael E. McClish

DATE Signed (MM/DD/YY): 12-05-12

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical®	Document Name: Sample Condition Upon Receipt Form	Document Revised: 13Nov2012 Page 1 of 1
	Document No.: F-MN-L-213-rev.05	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Bay West

Project #: WO# : 10214459

10214459

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 8009 7975 6127

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ B88A912167504 ☐ 80512447 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 0.3 **Cooler Temp Corrected (°C):** 0.8 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C

Date and Initials of Person Examining Contents: 12/6/12 TN

				Comments:
Chain of Custody Present?	☒ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☒ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☒ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☒ No	☐ N/A	7.
Sufficient Volume?	☒ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☒ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☒ Yes	☐ No	☐ N/A	
Containers Intact?	☒ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☒ Yes	☐ No	☐ N/A	12.
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☒ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☒ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Date: 12/7/12

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

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

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

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	Spent Carbon		
Lab Sample ID	10214459001		
Filename	F121216B_10		
Injected By	BAL		
Total Amount Extracted	1.10 g	Matrix	Solid
% Moisture	44.1	Dilution	NA
Dry Weight Extracted	0.615 g	Collected	12/05/2012 11:05
ICAL ID	F121120	Received	12/06/2012 09:20
CCal Filename(s)	F121216B_08 & F121216B_21	Extracted	12/12/2012 19:30
Method Blank ID	BLANK-34872	Analyzed	12/17/2012 00:59

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	22	---	1.2		2,3,7,8-TCDF-13C	2.00	77
Total TCDF	420	---	1.2		2,3,7,8-TCDD-13C	2.00	92
					1,2,3,7,8-PeCDF-13C	2.00	78
2,3,7,8-TCDD	220	---	1.1		2,3,4,7,8-PeCDF-13C	2.00	81
Total TCDD	23000	---	1.1	E	1,2,3,7,8-PeCDD-13C	2.00	91
					1,2,3,4,7,8-HxCDF-13C	2.00	77
1,2,3,7,8-PeCDF	130	---	2.5		1,2,3,6,7,8-HxCDF-13C	2.00	79
2,3,4,7,8-PeCDF	71	---	2.2	J	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	780	---	2.4		1,2,3,7,8,9-HxCDF-13C	2.00	75
					1,2,3,4,7,8-HxCDD-13C	2.00	85
1,2,3,7,8-PeCDD	1300	---	2.1		1,2,3,6,7,8-HxCDD-13C	2.00	77
Total PeCDD	130000	---	2.1	E	1,2,3,4,6,7,8-HpCDF-13C	2.00	80
					1,2,3,4,7,8,9-HpCDF-13C	2.00	81
1,2,3,4,7,8-HxCDF	270	---	4.2		1,2,3,4,6,7,8-HpCDD-13C	2.00	104
1,2,3,6,7,8-HxCDF	67	---	4.5	J	OCDD-13C	4.00	66
2,3,4,6,7,8-HxCDF	48	---	5.3	J			
1,2,3,7,8,9-HxCDF	58	---	4.3	J	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	3100	---	4.6		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	74000	---	1.3	E	2,3,7,8-TCDD-37Cl4	0.20	85
1,2,3,6,7,8-HxCDD	3000	---	1.3				
1,2,3,7,8,9-HxCDD	1100	---	1.2				
Total HxCDD	150000	---	1.3	E			
1,2,3,4,6,7,8-HpCDF	2300	---	4.1		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	140	---	4.9		Equivalence: 11000 ng/Kg		
Total HpCDF	8100	---	4.5		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	110000	---	2.8	E			
Total HpCDD	150000	---	2.8	E			
OCDF	7600	---	2.1	Y			
OCDD	410000	---	2.8	E			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
E = Exceeds calibration range
Y = Calculated using average of daily RFs

REPORT OF LABORATORY ANALYSIS

Pace Analytical™

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

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

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-34872	Matrix	Solid
Filename	F121215B_05	Dilution	NA
Total Amount Extracted	20.9 g	Extracted	12/12/2012 19:30
ICAL ID	F121120	Analyzed	12/15/2012 20:04
CCal Filename(s)	F121215B_01 & F121215B_18	Injected By	BAL

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.051	---	0.036	J	2,3,7,8-TCDF-13C	2.00	74
Total TCDF	0.097	---	0.036	J	2,3,7,8-TCDD-13C	2.00	89
					1,2,3,7,8-PeCDF-13C	2.00	77
2,3,7,8-TCDD	ND	---	0.037		2,3,4,7,8-PeCDF-13C	2.00	77
Total TCDD	ND	---	0.037		1,2,3,7,8-PeCDD-13C	2.00	86
					1,2,3,4,7,8-HxCDF-13C	2.00	82
1,2,3,7,8-PeCDF	ND	---	0.056		1,2,3,6,7,8-HxCDF-13C	2.00	82
2,3,4,7,8-PeCDF	ND	---	0.035		2,3,4,6,7,8-HxCDF-13C	2.00	84
Total PeCDF	ND	---	0.045		1,2,3,7,8,9-HxCDF-13C	2.00	80
					1,2,3,4,7,8-HxCDD-13C	2.00	88
1,2,3,7,8-PeCDD	ND	---	0.044		1,2,3,6,7,8-HxCDD-13C	2.00	79
Total PeCDD	ND	---	0.044		1,2,3,4,6,7,8-HpCDF-13C	2.00	79
					1,2,3,4,7,8,9-HpCDF-13C	2.00	77
1,2,3,4,7,8-HxCDF	ND	---	0.030		1,2,3,4,6,7,8-HpCDD-13C	2.00	90
1,2,3,6,7,8-HxCDF	ND	---	0.029		OCDD-13C	4.00	60
2,3,4,6,7,8-HxCDF	ND	---	0.026				
1,2,3,7,8,9-HxCDF	ND	---	0.030		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	---	0.029		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	---	0.037		2,3,7,8-TCDD-37Cl4	0.20	81
1,2,3,6,7,8-HxCDD	ND	---	0.047				
1,2,3,7,8,9-HxCDD	ND	---	0.045				
Total HxCDD	ND	---	0.043				
1,2,3,4,6,7,8-HpCDF	ND	---	0.023		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	---	0.027		Equivalence: 0.065 ng/Kg		
Total HpCDF	ND	---	0.025		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	---	0.056	0.037	I			
Total HpCDD	ND	---	0.037				
OCDF	ND	---	0.040				
OCDD	0.230	---	0.070	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Interference present

REPORT OF LABORATORY ANALYSIS

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

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

Pace Analytical™

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-34873		
Filename	F121215B_02	Matrix	Solid
Total Amount Extracted	22.6 g	Dilution	NA
ICAL ID	F121120	Extracted	12/12/2012 19:30
CCal Filename(s)	F121215B_01 & F121215B_18	Analyzed	12/15/2012 17:52
Method Blank ID	BLANK-34872	Injected By	BAL

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	104	2,3,7,8-TCDF-13C	2.0	78
Total TCDF				2,3,7,8-TCDD-13C	2.0	93
				1,2,3,7,8-PeCDF-13C	2.0	78
2,3,7,8-TCDD	0.20	0.16	80	2,3,4,7,8-PeCDF-13C	2.0	79
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	87
				1,2,3,4,7,8-HxCDF-13C	2.0	85
1,2,3,7,8-PeCDF	1.0	1.0	103	1,2,3,6,7,8-HxCDF-13C	2.0	87
2,3,4,7,8-PeCDF	1.0	0.99	99	2,3,4,6,7,8-HxCDF-13C	2.0	86
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	82
				1,2,3,4,7,8-HxCDD-13C	2.0	89
1,2,3,7,8-PeCDD	1.0	0.88	88	1,2,3,6,7,8-HxCDD-13C	2.0	80
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	78
				1,2,3,4,7,8,9-HpCDF-13C	2.0	74
1,2,3,4,7,8-HxCDF	1.0	1.1	105	1,2,3,4,6,7,8-HpCDD-13C	2.0	89
1,2,3,6,7,8-HxCDF	1.0	0.97	97	OCDD-13C	4.0	60
2,3,4,6,7,8-HxCDF	1.0	1.0	100			
1,2,3,7,8,9-HxCDF	1.0	0.99	99	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.99	99	2,3,7,8-TCDD-37Cl4	0.20	84
1,2,3,6,7,8-HxCDD	1.0	1.1	110			
1,2,3,7,8,9-HxCDD	1.0	1.0	105			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.0	104			
1,2,3,4,7,8,9-HpCDF	1.0	0.92	92			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.87	87			
Total HpCDD						
OCDF	2.0	1.8	91			
OCDD	2.0	2.1	106			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Paul Walz
Bay West, Inc.
5 Empire Drive
Saint Paul MN 55103

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

Pace Project #: 10222116
Sample Receipt Date: 03/09/2013
Client Project #: FMC ESD 00439
Client Sub PO #: N/A
State Cert #: N/A

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Scott Unze, your Pace Project Manager.

This report has been reviewed by:

March 27, 2013

Scott Unze, Project Manager
(612) 607-6383
(612) 607-6444 (fax)
scott.unze@pacelabs.com

Report Prepared Date:
March 27, 2013

Report of Laboratory Analysis

The results relate only to the samples included in this report.

Pace Analytical™

Pace Analytical Services, Inc.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on six samples submitted by a representative of BayWest, Inc. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were based on signal-to-noise measurements.

Second column confirmation analyses of 2,3,7,8-TCDF values obtained from the primary (DB5-MS) column are performed only when specifically requested for a project and only when the values are above the concentration of the lowest calibration standard. Typical resolution for this isomer using the DB5-MS column ranges from 25-30%.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 42-97%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

In some cases, interfering substances impacted the determinations of PCDD or PCDF congeners; the affected values were flagged "I" where incorrect isotope ratios were obtained. Concentrations below the calibration range were flagged "J" and should be regarded as estimates. Concentrations above the calibration range were flagged "E" and should also be regarded as estimates. Values obtained from dilutions of the sample extracts were flagged "D". Saturated signals were flagged "S" and should be regarded as minimum possible concentrations.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to contain trace levels of selected congeners. These levels were below the calibration range of the method. The levels reported for the affected congeners in the field samples were higher than the corresponding blank levels by one or more orders of magnitude. These results indicate that the sample processing steps did not contribute significantly to the levels reported for the field samples.

Laboratory spike samples were also prepared with the sample batches using clean sand or water that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 91-121% with relative percent differences of 0.0-6.8%. These results indicate high degrees of accuracy and precision for these determinations. Matrix spikes were prepared with the solid sample batch using sample material from a separate project; results from these analyses will be provided upon request. Matrix spikes were not prepared with the water sample batch.

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

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

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
Alabama	40770	Montana	92
Alaska	MN00064	Nebraska	
Arizona	AZ0014	Nevada	MN_00064_200
Arkansas	88-0680	New Jersey (NE	MN002
California	01155CA	New Mexico	MN00064
Colorado	MN00064	New York (NEL	11647
Connecticut	PH-0256	North Carolina	27700
EPA Region 5	WD-15J	North Dakota	R-036
EPA Region 8	8TMS-Q	Ohio	4150
Florida (NELAP	E87605	Ohio VAP	CL101 9507
Georgia (DNR)	959	Oklahoma	D9922
Guam	959	Oregon (ELAP)	MN200001-005
Hawaii	SLD	Oregon (OREL	MN300001-001
Idaho	MN00064	Pennsylvania	68-00563
Illinois	200012	Saipan	MP0003
Indiana	C-MN-01	South Carolina	74003001
Indiana	C-MN-01	Tennesee	2818
Iowa	368	Tennessee	02818
Kansas	E-10167	Texas	T104704192-08
Kentucky	90062	Utah (NELAP)	PAM
Louisiana	03086	Virginia	00251
Maine	2007029	Washington	C755
Maryland	322	West Virginia	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	027-053-137	Wyoming	8TMS-Q
Mississippi	MN00064		

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

Report No.....10222116_8290

Page 1 of 1

CHAIN OF CUSTODY RECORD

10222116

Project No.:	Laboratory:	Laboratory Contact:
FMC ESD 00439	PACE ANALYTICAL	SCOTT UNZE
P.O. #	Adventus Remediation Tech. Contact (Name/Tel.): EVA JANZEN EXT. 232	

Adventus Remediation Technologies
1345 Fewster Drive
Mississauga, Ontario
Canada L4W 2A5
Tel: (905) 273-5374
Fax: (905) 273-4367

Analytical Laboratory to Complete Submission Number

Date	Time	Type: Composite	Type: Grab	Matrix: Soil	Matrix: Water	Matrix: ACTIVATED CARBON	No. of Containers	Adventus Remediation Tech. Sample Number	VOCs	SVOCs	Pesticides	Total Organic Carbon	Metals	TPH	CP	DIOXINS/FURANS (METHOD 8290)	Remarks	Lab Sample #
MAR. 8/13			X		X		2	531883								X		001
			X		X		2	531884								X		002
			X		X		2	531885								X		003
			X			X	1	531886								X		004
			X			X	1	531887								X		005
			X			X	1	531888								X		006

Sampled by: (print name & initial)	Date	Received by: (signature)	Date
S. OWEN S.O. + E. JANZEN EJ	MAR. 8/13		
Relinquished by: (Signature)	**Date**	**Shipped by:**	**Shipping Bill**
Sandra Owen	MAR. 8/13		
Relinquished by: (Signature)	**Date**	**Received by Laboratory:**	**Date/Time**
			3913 0914

NOTES
Send analytical results to appropriate ART contact person.

Copies: White & Yellow-Laboratory, Pink-Sampler

T= 4.1

Page 5 of 20

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 28Jan2013 Page 1 of 1
	Document No.: F-MN-L-213-rev.06	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: FMC

Project #: WO#: 10222116

10222116

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 7449 2778 4451

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☐ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermom. Used: ☑ B88A912167504 ☐ 80512447 ☐ 72337080 **Type of Ice:** ☑ Wet ☑ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.4 **Cooler Temp Corrected (°C):** 4.1 **Biological Tissue Frozen?** ☐ Yes ☐ No

Temp should be above freezing to 6°C **Correction Factor:** 0.7 **Date and Initials of Person Examining Contents:** 3913

				Comments:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☐ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☑ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT/SL	☐ Yes	☑ No	☐ N/A	12. No ids on 3913 COC put bottles in # order
All containers needing acid/base preservation have been checked? Noncompliances are noted in 13.	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH>12)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, WI-DRO (water)	☐ Yes	☑ No		Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: ids 53183, 53184 53185, 53186, 53187, 53188

Project Manager Review: Date: 03/12/13

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

Pace Analytical™

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

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

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	53183		
Lab Sample ID	10222116001		
Filename	F130318B_06		
Injected By	SMT		
Total Amount Extracted	961 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	03/08/2013
ICAL ID	F130315	Received	03/09/2013 09:14
CCal Filename(s)	F130318A_18 & F130318B_10	Extracted	03/14/2013 16:00
Method Blank ID	BLANK-35740	Analyzed	03/18/2013 21:06

Native Isomers	Conc pg/L	EMPC pg/L	RL pg/L		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	---	1.70		2,3,7,8-TCDF-13C	2.00	53
Total TCDF	ND	---	1.70		2,3,7,8-TCDD-13C	2.00	65
					1,2,3,7,8-PeCDF-13C	2.00	66
2,3,7,8-TCDD	ND	---	1.40		2,3,4,7,8-PeCDF-13C	2.00	71
Total TCDD	ND	---	1.40		1,2,3,7,8-PeCDD-13C	2.00	84
					1,2,3,4,7,8-HxCDF-13C	2.00	67
1,2,3,7,8-PeCDF	ND	---	2.70		1,2,3,6,7,8-HxCDF-13C	2.00	75
2,3,4,7,8-PeCDF	ND	---	1.70		2,3,4,6,7,8-HxCDF-13C	2.00	75
Total PeCDF	2.2	---	2.20	J	1,2,3,7,8,9-HxCDF-13C	2.00	75
					1,2,3,4,7,8-HxCDD-13C	2.00	73
1,2,3,7,8-PeCDD	ND	---	1.20		1,2,3,6,7,8-HxCDD-13C	2.00	74
Total PeCDD	ND	---	1.20		1,2,3,4,6,7,8-HpCDF-13C	2.00	78
					1,2,3,4,7,8,9-HpCDF-13C	2.00	85
1,2,3,4,7,8-HxCDF	ND	---	1.90		1,2,3,4,6,7,8-HpCDD-13C	2.00	88
1,2,3,6,7,8-HxCDF	ND	---	1.90		OCDD-13C	4.00	75
2,3,4,6,7,8-HxCDF	ND	---	1.60				
1,2,3,7,8,9-HxCDF	ND	---	1.10		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	36.0	---	1.60	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	3.2	---	0.88	J	2,3,7,8-TCDD-37Cl4	0.20	62
1,2,3,6,7,8-HxCDD	4.9	---	0.94	J			
1,2,3,7,8,9-HxCDD	ND	---	0.95				
Total HxCDD	9.3	---	0.92	J			
1,2,3,4,6,7,8-HpCDF	140.0	---	1.90		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	6.6	---	2.10	J	Equivalence: 10 pg/L		
Total HpCDF	410.0	---	2.00		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	340.0	---	0.67				
Total HpCDD	500.0	---	0.67				
OCDF	990.0	---	1.90				
OCDD	7600.0	---	1.20				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

J = Estimated value

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	53184		
Lab Sample ID	10222116002		
Filename	F130318B_07		
Injected By	SMT		
Total Amount Extracted	956 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	03/08/2013
ICAL ID	F130315	Received	03/09/2013 09:14
CCal Filename(s)	F130318A_18 & F130318B_10	Extracted	03/14/2013 16:00
Method Blank ID	BLANK-35740	Analyzed	03/18/2013 21:49

Native Isomers	Conc pg/L	EMPC pg/L	RL pg/L		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	---	1.60		2,3,7,8-TCDF-13C	2.00	42
Total TCDF	1.60	---	1.60	J	2,3,7,8-TCDD-13C	2.00	50
					1,2,3,7,8-PeCDF-13C	2.00	53
2,3,7,8-TCDD	ND	---	1.20		2,3,4,7,8-PeCDF-13C	2.00	57
Total TCDD	ND	---	1.20		1,2,3,7,8-PeCDD-13C	2.00	66
					1,2,3,4,7,8-HxCDF-13C	2.00	53
1,2,3,7,8-PeCDF	ND	---	1.40		1,2,3,6,7,8-HxCDF-13C	2.00	61
2,3,4,7,8-PeCDF	ND	---	1.20		2,3,4,6,7,8-HxCDF-13C	2.00	59
Total PeCDF	ND	---	1.30		1,2,3,7,8,9-HxCDF-13C	2.00	59
					1,2,3,4,7,8-HxCDD-13C	2.00	60
1,2,3,7,8-PeCDD	ND	---	1.20		1,2,3,6,7,8-HxCDD-13C	2.00	56
Total PeCDD	ND	---	1.20		1,2,3,4,6,7,8-HpCDF-13C	2.00	60
					1,2,3,4,7,8,9-HpCDF-13C	2.00	66
1,2,3,4,7,8-HxCDF	ND	---	1.00		1,2,3,4,6,7,8-HpCDD-13C	2.00	69
1,2,3,6,7,8-HxCDF	ND	---	1.10		OCDD-13C	4.00	59
2,3,4,6,7,8-HxCDF	ND	---	1.20				
1,2,3,7,8,9-HxCDF	ND	---	1.40		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	---	1.20		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	---	1.2	0.66	I	2,3,7,8-TCDD-37Cl4	0.20	50
1,2,3,6,7,8-HxCDD	---	1.1	0.74	I			
1,2,3,7,8,9-HxCDD	ND	---	0.74				
Total HxCDD	0.87	---	0.71	J			
1,2,3,4,6,7,8-HpCDF	8.60	---	1.00	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	---	1.20		Equivalence: 2.3 pg/L		
Total HpCDF	27.00	---	1.10	J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	26.00	---	1.10	J			
Total HpCDD	41.00	---	1.10	J			
OCDF	52.00	---	1.10	J			
OCDD	480.00	---	1.00				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

J = Estimated value
I = Interference present

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	53185		
Lab Sample ID	10222116003		
Filename	F130318B_08		
Injected By	SMT		
Total Amount Extracted	974 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	03/08/2013
ICAL ID	F130315	Received	03/09/2013 09:14
CCal Filename(s)	F130318A_18 & F130318B_10	Extracted	03/14/2013 16:00
Method Blank ID	BLANK-35740	Analyzed	03/18/2013 22:33

Native Isomers	Conc pg/L	EMPC pg/L	RL pg/L		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	——	1.40		2,3,7,8-TCDF-13C	2.00	43
Total TCDF	ND	——	1.40		2,3,7,8-TCDD-13C	2.00	53
					1,2,3,7,8-PeCDF-13C	2.00	55
2,3,7,8-TCDD	ND	——	0.95		2,3,4,7,8-PeCDF-13C	2.00	60
Total TCDD	ND	——	0.95		1,2,3,7,8-PeCDD-13C	2.00	69
					1,2,3,4,7,8-HxCDF-13C	2.00	55
1,2,3,7,8-PeCDF	ND	——	1.60		1,2,3,6,7,8-HxCDF-13C	2.00	62
2,3,4,7,8-PeCDF	ND	——	1.00		2,3,4,6,7,8-HxCDF-13C	2.00	61
Total PeCDF	ND	——	1.30		1,2,3,7,8,9-HxCDF-13C	2.00	62
					1,2,3,4,7,8-HxCDD-13C	2.00	57
1,2,3,7,8-PeCDD	ND	——	1.00		1,2,3,6,7,8-HxCDD-13C	2.00	62
Total PeCDD	ND	——	1.00		1,2,3,4,6,7,8-HpCDF-13C	2.00	63
					1,2,3,4,7,8,9-HpCDF-13C	2.00	69
1,2,3,4,7,8-HxCDF	ND	——	1.20		1,2,3,4,6,7,8-HpCDD-13C	2.00	72
1,2,3,6,7,8-HxCDF	ND	——	1.30		OCDD-13C	4.00	59
2,3,4,6,7,8-HxCDF	ND	——	1.10				
1,2,3,7,8,9-HxCDF	ND	——	1.00		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	2.8	——	1.20	J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	——	1.10		2,3,7,8-TCDD-37Cl4	0.20	53
1,2,3,6,7,8-HxCDD	ND	——	1.10				
1,2,3,7,8,9-HxCDD	ND	——	0.92				
Total HxCDD	ND	——	1.00				
1,2,3,4,6,7,8-HpCDF	9.7	——	0.90	J	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	——	1.00		Equivalence: 2.1 pg/L		
Total HpCDF	28.0	——	0.96	J	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	24.0	——	1.60	J			
Total HpCDD	37.0	——	1.60	J			
OCDF	43.0	——	1.20	J			
OCDD	400.0	——	1.20				

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

J = Estimated value

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	53186		
Lab Sample ID	10222116004		
Filename	F130320A_13		
Injected By	SMT		
Total Amount Extracted	14.7 g	Matrix	Solid
% Moisture	60.3	Dilution	10
Dry Weight Extracted	5.84 g	Collected	03/08/2013
ICAL ID	F130315	Received	03/09/2013 09:14
CCal Filename(s)	F130320A_03 & F130320A_18	Extracted	03/13/2013 15:30
Method Blank ID	BLANK-35733	Analyzed	03/20/2013 18:43

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	4.7	---	2.50	JD	2,3,7,8-TCDF-13C	2.00	65 D
Total TCDF	120.0	---	2.50	D	2,3,7,8-TCDD-13C	2.00	78 D
					1,2,3,7,8-PeCDF-13C	2.00	71 D
2,3,7,8-TCDD	46.0	---	1.90	D	2,3,4,7,8-PeCDF-13C	2.00	74 D
Total TCDD	3700.0	---	1.90	D	1,2,3,7,8-PeCDD-13C	2.00	86 D
					1,2,3,4,7,8-HxCDF-13C	2.00	63 D
1,2,3,7,8-PeCDF	13.0	---	1.70	JD	1,2,3,6,7,8-HxCDF-13C	2.00	70 D
2,3,4,7,8-PeCDF	25.0	---	2.50	JD	2,3,4,6,7,8-HxCDF-13C	2.00	64 D
Total PeCDF	220.0	---	2.10	D	1,2,3,7,8,9-HxCDF-13C	2.00	63 D
					1,2,3,4,7,8-HxCDD-13C	2.00	70 D
1,2,3,7,8-PeCDD	140.0	---	0.81	D	1,2,3,6,7,8-HxCDD-13C	2.00	70 D
Total PeCDD	20000.0	---	0.81	D	1,2,3,4,6,7,8-HpCDF-13C	2.00	78 D
					1,2,3,4,7,8,9-HpCDF-13C	2.00	73 D
1,2,3,4,7,8-HxCDF	89.0	---	3.90	D	1,2,3,4,6,7,8-HpCDD-13C	2.00	84 D
1,2,3,6,7,8-HxCDF	25.0	---	2.80	JD	OCDD-13C	4.00	67 D
2,3,4,6,7,8-HxCDF	20.0	---	2.90	JD			
1,2,3,7,8,9-HxCDF	16.0	---	4.30	JD	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	920.0	---	3.40	D	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	12000.0	---	6.80	D	2,3,7,8-TCDD-37Cl4	0.20	78 D
1,2,3,6,7,8-HxCDD	1200.0	---	6.10	D			
1,2,3,7,8,9-HxCDD	480.0	---	9.90	D			
Total HxCDD	26000.0	---	7.60	D			
1,2,3,4,6,7,8-HpCDF	850.0	---	0.69	D	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	64.0	---	0.59	JD	Equivalence: 1900 ng/Kg		
Total HpCDF	2800.0	---	0.64	D	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	30000.0	---	0.77	D			
Total HpCDD	42000.0	---	0.77	D			
OCDF	3200.0	---	1.30	D			
OCDD	170000.0	---	1.50	ED			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
E = Exceeds calibration range
D = Result obtained from analysis of diluted sample

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	53187		
Lab Sample ID	10222116005		
Filename	F130320A_15		
Injected By	SMT		
Total Amount Extracted	14.4 g	Matrix	Solid
% Moisture	55.8	Dilution	50
Dry Weight Extracted	6.36 g	Collected	03/08/2013
ICAL ID	F130315	Received	03/09/2013 09:14
CCal Filename(s)	F130320A_03 & F130320A_18	Extracted	03/13/2013 15:30
Method Blank ID	BLANK-35733	Analyzed	03/20/2013 20:09

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	13	---	11.0	JD	2,3,7,8-TCDF-13C	2.00	69 D
Total TCDF	200	---	11.0	D	2,3,7,8-TCDD-13C	2.00	83 D
					1,2,3,7,8-PeCDF-13C	2.00	73 D
2,3,7,8-TCDD	220	---	14.0	D	2,3,4,7,8-PeCDF-13C	2.00	79 D
Total TCDD	16000	---	14.0	D	1,2,3,7,8-PeCDD-13C	2.00	93 D
					1,2,3,4,7,8-HxCDF-13C	2.00	67 D
1,2,3,7,8-PeCDF	140	---	11.0	JD	1,2,3,6,7,8-HxCDF-13C	2.00	74 D
2,3,4,7,8-PeCDF	84	---	11.0	JD	2,3,4,6,7,8-HxCDF-13C	2.00	71 D
Total PeCDF	660	---	11.0	D	1,2,3,7,8,9-HxCDF-13C	2.00	70 D
					1,2,3,4,7,8-HxCDD-13C	2.00	74 D
1,2,3,7,8-PeCDD	770	---	9.2	D	1,2,3,6,7,8-HxCDD-13C	2.00	74 D
Total PeCDD	98000	---	9.2	D	1,2,3,4,6,7,8-HpCDF-13C	2.00	77 D
					1,2,3,4,7,8,9-HpCDF-13C	2.00	83 D
1,2,3,4,7,8-HxCDF	430	---	22.0	D	1,2,3,4,6,7,8-HpCDD-13C	2.00	91 D
1,2,3,6,7,8-HxCDF	110	---	15.0	JD	OCDD-13C	4.00	62 D
2,3,4,6,7,8-HxCDF	61	---	14.0	JD			
1,2,3,7,8,9-HxCDF	67	---	14.0	JD	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	2400	---	16.0	D	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	67000	---	6.2	D	2,3,7,8-TCDD-37Cl4	0.20	92 D
1,2,3,6,7,8-HxCDD	6100	---	6.7	D			
1,2,3,7,8,9-HxCDD	2700	---	6.1	D			
Total HxCDD	140000	---	6.3	D			
1,2,3,4,6,7,8-HpCDF	1800	---	16.0	D	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	200	---	16.0	JD	Equivalence: 11000 ng/Kg		
Total HpCDF	5900	---	16.0	D	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	170000	---	9.3	ED			
Total HpCDD	230000	---	9.3	ED			
OCDF	6700	---	7.4	D			
OCDD	2700000	---	24.0	ESD			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
E = Exceeds calibration range
S = Peak saturated
D = Result obtained from analysis of diluted sample

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Sample Analysis Results

Client - Bay West, Inc.

Client's Sample ID	53188		
Lab Sample ID	10222116006		
Filename	F130320A_14		
Injected By	SMT		
Total Amount Extracted	14.7 g	Matrix	Solid
% Moisture	50.7	Dilution	10
Dry Weight Extracted	7.25 g	Collected	03/08/2013
ICAL ID	F130315	Received	03/09/2013 09:14
CCal Filename(s)	F130320A_03 & F130320A_18	Extracted	03/13/2013 15:30
Method Blank ID	BLANK-35733	Analyzed	03/20/2013 19:26

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	4.8	---	2.50	JD	2,3,7,8-TCDF-13C	2.00	71 D
Total TCDF	83.0	---	2.50	D	2,3,7,8-TCDD-13C	2.00	83 D
					1,2,3,7,8-PeCDF-13C	2.00	75 D
2,3,7,8-TCDD	54.0	---	1.60	D	2,3,4,7,8-PeCDF-13C	2.00	77 D
Total TCDD	3300.0	---	1.60	D	1,2,3,7,8-PeCDD-13C	2.00	91 D
					1,2,3,4,7,8-HxCDF-13C	2.00	65 D
1,2,3,7,8-PeCDF	17.0	---	1.90	JD	1,2,3,6,7,8-HxCDF-13C	2.00	74 D
2,3,4,7,8-PeCDF	22.0	---	1.40	JD	2,3,4,6,7,8-HxCDF-13C	2.00	69 D
Total PeCDF	150.0	---	1.60	D	1,2,3,7,8,9-HxCDF-13C	2.00	69 D
					1,2,3,4,7,8-HxCDD-13C	2.00	73 D
1,2,3,7,8-PeCDD	170.0	---	1.60	D	1,2,3,6,7,8-HxCDD-13C	2.00	71 D
Total PeCDD	17000.0	---	1.60	D	1,2,3,4,6,7,8-HpCDF-13C	2.00	88 D
					1,2,3,4,7,8,9-HpCDF-13C	2.00	86 D
1,2,3,4,7,8-HxCDF	71.0	---	3.70	D	1,2,3,4,6,7,8-HpCDD-13C	2.00	97 D
1,2,3,6,7,8-HxCDF	23.0	---	2.10	JD	OCDD-13C	4.00	91 D
2,3,4,6,7,8-HxCDF	14.0	---	2.50	JD			
1,2,3,7,8,9-HxCDF	14.0	---	1.30	JD	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	580.0	---	2.40	D	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	9900.0	---	1.60	D	2,3,7,8-TCDD-37Cl4	0.20	80 D
1,2,3,6,7,8-HxCDD	1600.0	---	1.20	D			
1,2,3,7,8,9-HxCDD	470.0	---	1.20	D			
Total HxCDD	23000.0	---	1.30	D			
1,2,3,4,6,7,8-HpCDF	470.0	---	1.30	D	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	40.0	---	2.10	JD	Equivalence: 1800 ng/Kg		
Total HpCDF	1500.0	---	1.70	D	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	23000.0	---	1.20	D			
Total HpCDD	30000.0	---	1.20	D			
OCDF	1800.0	---	0.92	D			
OCDD	320000.0	---	1.50	ESD			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit.

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
E = Exceeds calibration range
S = Peak saturated
D = Result obtained from analysis of diluted sample

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-35740	Matrix	Water
Filename	F130318B_05	Dilution	NA
Total Amount Extracted	916 mL	Extracted	03/14/2013 16:00
ICAL ID	F130315	Analyzed	03/18/2013 20:23
CCal Filename(s)	F130318A_18 & F130318B_10	Injected By	SMT

Native Isomers	Conc pg/L	EMPC pg/L	RL pg/L	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	----	1.20	2,3,7,8-TCDF-13C	2.00	44
Total TCDF	ND	----	1.20	2,3,7,8-TCDD-13C	2.00	55
				1,2,3,7,8-PeCDF-13C	2.00	62
2,3,7,8-TCDD	ND	----	1.10	2,3,4,7,8-PeCDF-13C	2.00	69
Total TCDD	ND	----	1.10	1,2,3,7,8-PeCDD-13C	2.00	81
				1,2,3,4,7,8-HxCDF-13C	2.00	65
1,2,3,7,8-PeCDF	ND	----	1.20	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	----	0.81	2,3,4,6,7,8-HxCDF-13C	2.00	74
Total PeCDF	ND	----	1.00	1,2,3,7,8,9-HxCDF-13C	2.00	75
				1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	----	1.00	1,2,3,6,7,8-HxCDD-13C	2.00	73
Total PeCDD	ND	----	1.00	1,2,3,4,6,7,8-HpCDF-13C	2.00	78
				1,2,3,4,7,8,9-HpCDF-13C	2.00	87
1,2,3,4,7,8-HxCDF	ND	----	0.75	1,2,3,4,6,7,8-HpCDD-13C	2.00	89
1,2,3,6,7,8-HxCDF	ND	----	0.52	OCDD-13C	4.00	77
2,3,4,6,7,8-HxCDF	ND	----	0.50			
1,2,3,7,8,9-HxCDF	ND	----	0.56	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	----	0.58	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	----	0.77	2,3,7,8-TCDD-37Cl4	0.20	55
1,2,3,6,7,8-HxCDD	ND	----	0.65			
1,2,3,7,8,9-HxCDD	ND	----	0.68			
Total HxCDD	ND	----	0.70			
1,2,3,4,6,7,8-HpCDF	ND	----	0.60	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	----	0.59	Equivalence: 1.5 pg/L		
Total HpCDF	ND	----	0.60	(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	2.0	----	0.85 J			
Total HpCDD	2.0	----	0.85 J			
OCDF	----	2.0	0.96 I			
OCDD	15.0	----	2.30 J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

J = Estimated value
I = Interference present

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Blank Analysis Results

Lab Sample ID	BLANK-35733	Matrix	Solid
Filename	F130318B_13	Dilution	NA
Total Amount Extracted	20.9 g	Extracted	03/13/2013 15:30
ICAL ID	F130315	Analyzed	03/19/2013 08:15
CCal Filename(s)	F130318B_10 & F130318B_17	Injected By	SMT

Native Isomers	Conc ng/Kg	EMPC ng/Kg	RL ng/Kg		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	---	0.10	0.044	I	2,3,7,8-TCDF-13C	2.00	68
Total TCDF	0.220	---	0.044	J	2,3,7,8-TCDD-13C	2.00	78
					1,2,3,7,8-PeCDF-13C	2.00	71
2,3,7,8-TCDD	ND	---	0.054		2,3,4,7,8-PeCDF-13C	2.00	66
Total TCDD	ND	---	0.054		1,2,3,7,8-PeCDD-13C	2.00	78
					1,2,3,4,7,8-HxCDF-13C	2.00	68
1,2,3,7,8-PeCDF	ND	---	0.060		1,2,3,6,7,8-HxCDF-13C	2.00	72
2,3,4,7,8-PeCDF	ND	---	0.060		2,3,4,6,7,8-HxCDF-13C	2.00	68
Total PeCDF	ND	---	0.060		1,2,3,7,8,9-HxCDF-13C	2.00	67
					1,2,3,4,7,8-HxCDD-13C	2.00	69
1,2,3,7,8-PeCDD	ND	---	0.056		1,2,3,6,7,8-HxCDD-13C	2.00	70
Total PeCDD	ND	---	0.056		1,2,3,4,6,7,8-HpCDF-13C	2.00	69
					1,2,3,4,7,8,9-HpCDF-13C	2.00	69
1,2,3,4,7,8-HxCDF	ND	---	0.063		1,2,3,4,6,7,8-HpCDD-13C	2.00	76
1,2,3,6,7,8-HxCDF	ND	---	0.051		OCDD-13C	4.00	59
2,3,4,6,7,8-HxCDF	ND	---	0.057				
1,2,3,7,8,9-HxCDF	ND	---	0.060		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	---	0.058		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	---	0.070		2,3,7,8-TCDD-37Cl4	0.20	85
1,2,3,6,7,8-HxCDD	ND	---	0.081				
1,2,3,7,8,9-HxCDD	ND	---	0.069				
Total HxCDD	0.095	---	0.073	J			
1,2,3,4,6,7,8-HpCDF	ND	---	0.079		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	---	0.089		Equivalence: 0.091 ng/Kg		
Total HpCDF	ND	---	0.084		(Using 2005 WHO Factors - Using PRL/2 where ND)		
1,2,3,4,6,7,8-HpCDD	---	0.11	0.094	I			
Total HpCDD	ND	---	0.094				
OCDF	ND	---	0.180				
OCDD	0.620	---	0.170	J			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
J = Estimated value
I = Interference present

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-35741		
Filename	F130318B_01	Matrix	Water
Total Amount Extracted	902 mL	Dilution	NA
ICAL ID	F130315	Extracted	03/14/2013 16:00
CCal Filename(s)	F130318A_18 & F130318B_10	Analyzed	03/18/2013 17:31
Method Blank ID	BLANK-35740	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.
2,3,7,8-TCDF	0.20	0.22	111
Total TCDF			
2,3,7,8-TCDD	0.20	0.18	91
Total TCDD			
1,2,3,7,8-PeCDF	1.0	1.2	116
2,3,4,7,8-PeCDF	1.0	1.1	108
Total PeCDF			
1,2,3,7,8-PeCDD	1.0	0.99	99
Total PeCDD			
1,2,3,4,7,8-HxCDF	1.0	1.1	110
1,2,3,6,7,8-HxCDF	1.0	1.1	106
2,3,4,6,7,8-HxCDF	1.0	1.1	108
1,2,3,7,8,9-HxCDF	1.0	1.1	107
Total HxCDF			
1,2,3,4,7,8-HxCDD	1.0	1.1	113
1,2,3,6,7,8-HxCDD	1.0	1.2	119
1,2,3,7,8,9-HxCDD	1.0	1.2	116
Total HxCDD			
1,2,3,4,6,7,8-HpCDF	1.0	1.1	113
1,2,3,4,7,8,9-HpCDF	1.0	1.0	100
Total HpCDF			
1,2,3,4,6,7,8-HpCDD	1.0	0.98	98
Total HpCDD			
OCDF	2.0	2.2	109
OCDD	2.0	2.2	111

Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF-13C	2.0	55
2,3,7,8-TCDD-13C	2.0	66
1,2,3,7,8-PeCDF-13C	2.0	68
2,3,4,7,8-PeCDF-13C	2.0	76
1,2,3,7,8-PeCDD-13C	2.0	86
1,2,3,4,7,8-HxCDF-13C	2.0	75
1,2,3,6,7,8-HxCDF-13C	2.0	82
2,3,4,6,7,8-HxCDF-13C	2.0	78
1,2,3,7,8,9-HxCDF-13C	2.0	79
1,2,3,4,7,8-HxCDD-13C	2.0	74
1,2,3,6,7,8-HxCDD-13C	2.0	78
1,2,3,4,6,7,8-HpCDF-13C	2.0	81
1,2,3,4,7,8,9-HpCDF-13C	2.0	85
1,2,3,4,6,7,8-HpCDD-13C	2.0	90
OCDD-13C	4.0	74
1,2,3,4-TCDD-13C	2.0	NA
1,2,3,7,8,9-HxCDD-13C	2.0	NA
2,3,7,8-TCDD-37Cl4	0.20	66

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-35734		
Filename	F130318B_16	Matrix	Solid
Total Amount Extracted	20.5 g	Dilution	NA
ICAL ID	F130315	Extracted	03/13/2013 15:30
CCal Filename(s)	F130318B_10 & F130318B_17	Analyzed	03/19/2013 10:24
Method Blank ID	BLANK-35733	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.
2,3,7,8-TCDF	0.20	0.24	118
Total TCDF			
2,3,7,8-TCDD	0.20	0.18	92
Total TCDD			
1,2,3,7,8-PeCDF	1.0	1.1	114
2,3,4,7,8-PeCDF	1.0	1.1	108
Total PeCDF			
1,2,3,7,8-PeCDD	1.0	0.97	97
Total PeCDD			
1,2,3,4,7,8-HxCDF	1.0	1.1	113
1,2,3,6,7,8-HxCDF	1.0	1.1	106
2,3,4,6,7,8-HxCDF	1.0	1.1	108
1,2,3,7,8,9-HxCDF	1.0	1.1	105
Total HxCDF			
1,2,3,4,7,8-HxCDD	1.0	1.1	111
1,2,3,6,7,8-HxCDD	1.0	1.2	116
1,2,3,7,8,9-HxCDD	1.0	1.2	116
Total HxCDD			
1,2,3,4,6,7,8-HpCDF	1.0	1.1	113
1,2,3,4,7,8,9-HpCDF	1.0	1.0	101
Total HpCDF			
1,2,3,4,6,7,8-HpCDD	1.0	1.00	100
Total HpCDD			
OCDF	2.0	2.0	102
OCDD	2.0	2.2	112

Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF-13C	2.0	68
2,3,7,8-TCDD-13C	2.0	79
1,2,3,7,8-PeCDF-13C	2.0	70
2,3,4,7,8-PeCDF-13C	2.0	65
1,2,3,7,8-PeCDD-13C	2.0	80
1,2,3,4,7,8-HxCDF-13C	2.0	66
1,2,3,6,7,8-HxCDF-13C	2.0	72
2,3,4,6,7,8-HxCDF-13C	2.0	69
1,2,3,7,8,9-HxCDF-13C	2.0	67
1,2,3,4,7,8-HxCDD-13C	2.0	71
1,2,3,6,7,8-HxCDD-13C	2.0	67
1,2,3,4,6,7,8-HpCDF-13C	2.0	72
1,2,3,4,7,8,9-HpCDF-13C	2.0	71
1,2,3,4,6,7,8-HpCDD-13C	2.0	77
OCDD-13C	4.0	58
1,2,3,4-TCDD-13C	2.0	NA
1,2,3,7,8,9-HxCDD-13C	2.0	NA
2,3,7,8-TCDD-37Cl4	0.20	82

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

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

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

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCSD-35742		
Filename	F130318B_02	Matrix	Water
Total Amount Extracted	914 mL	Dilution	NA
ICAL ID	F130315	Extracted	03/14/2013 16:00
CCal Filename(s)	F130318A_18 & F130318B_10	Analyzed	03/18/2013 18:13
Method Blank ID	BLANK-35740	Injected By	SMT

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.24	118	2,3,7,8-TCDF-13C	2.0	66
Total TCDF				2,3,7,8-TCDD-13C	2.0	75
				1,2,3,7,8-PeCDF-13C	2.0	72
2,3,7,8-TCDD	0.20	0.19	94	2,3,4,7,8-PeCDF-13C	2.0	78
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	89
				1,2,3,4,7,8-HxCDF-13C	2.0	69
1,2,3,7,8-PeCDF	1.0	1.1	114	1,2,3,6,7,8-HxCDF-13C	2.0	78
2,3,4,7,8-PeCDF	1.0	1.1	108	2,3,4,6,7,8-HxCDF-13C	2.0	76
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	77
				1,2,3,4,7,8-HxCDD-13C	2.0	72
1,2,3,7,8-PeCDD	1.0	0.97	97	1,2,3,6,7,8-HxCDD-13C	2.0	78
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	76
				1,2,3,4,7,8,9-HpCDF-13C	2.0	86
1,2,3,4,7,8-HxCDF	1.0	1.2	117	1,2,3,4,6,7,8-HpCDD-13C	2.0	91
1,2,3,6,7,8-HxCDF	1.0	1.1	107	OCDD-13C	4.0	73
2,3,4,6,7,8-HxCDF	1.0	1.1	110			
1,2,3,7,8,9-HxCDF	1.0	1.1	108	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.2	121	2,3,7,8-TCDD-37Cl4	0.20	75
1,2,3,6,7,8-HxCDD	1.0	1.1	113			
1,2,3,7,8,9-HxCDD	1.0	1.2	118			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	1.2	116			
1,2,3,4,7,8,9-HpCDF	1.0	1.0	102			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.98	98			
Total HpCDD						
OCDF	2.0	2.3	113			
OCDD	2.0	2.2	111			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical™

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

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

Method 8290

Spike Recovery Relative Percent Difference (RPD) Results

Client	Bay West, Inc.		
Spike 1 ID	LCS-35741	Spike 2 ID	LCSD-35742
Spike 1 Filename	F130318B_01	Spike 2 Filename	F130318B_02

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDF	111	118	6.1
2,3,7,8-TCDD	91	94	3.2
1,2,3,7,8-PeCDF	116	114	1.7
2,3,4,7,8-PeCDF	108	108	0.0
1,2,3,7,8-PeCDD	99	97	2.0
1,2,3,4,7,8-HxCDF	110	117	6.2
1,2,3,6,7,8-HxCDF	106	107	0.9
2,3,4,6,7,8-HxCDF	108	110	1.8
1,2,3,7,8,9-HxCDF	107	108	0.9
1,2,3,4,7,8-HxCDD	113	121	6.8
1,2,3,6,7,8-HxCDD	119	113	5.2
1,2,3,7,8,9-HxCDD	116	118	1.7
1,2,3,4,6,7,8-HpCDF	113	116	2.6
1,2,3,4,7,8,9-HpCDF	100	102	2.0
1,2,3,4,6,7,8-HpCDD	98	98	0.0
OCDF	109	113	3.6
OCDD	111	111	0.0

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

TRIMATRIX LABORATORIES

March 25, 2013

Bay West
Attn: Mr. Paul Walz
5 Empire Dr.
St. Paul, MN 55103

Project: Bench Scale Test

Dear Mr. Paul Walz,

Enclosed is a copy of the laboratory report for the following work order(s) received by TriMatrix Laboratories:

Work Order	Received	Description
1303154	03/09/2013	FMC ESD 00439

This report relates only to the sample(s) as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) and/or one of the following certification programs:

ACLASS DoD-ELAP/ISO17025 (#ADE-1542); Arkansas DEP (#12-056-0); Florida DEP (#E87622-24); Georgia EPD (#E87622-24); Illinois DEP (#002841); Kansas DPH (#E-10302); Kentucky DEP (#0021); Louisiana DEP (#03068); Michigan DPH (#0034); Minnesota DPH (#367345); New York ELAP (#46503); North Carolina DNRE (#659); Texas CEQ (#T104704495-12-2); Virginia DCLS (#1622); Wisconsin DNR (#999472650); USDA Soil Import Permit (#P330-09-00163).

Any qualification or narration of results, including sample acceptance requirements and test exceptions to the above referenced programs, is presented in the Statement of Data Qualifications section of this report. Estimates of analytical uncertainties and certification documents for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

James D. McFadden
Project Chemist

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53183**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-01**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.50	0.50
208-96-8	Acenaphthylene	<0.50	0.50
98-86-2	Acetophenone	<0.50	0.50
120-12-7	Anthracene	<0.50	0.50
1912-24-9	Atrazine	<0.50	0.50
100-52-7	Benzaldehyde	<0.50	0.50
56-55-3	Benzo(a)anthracene	<0.50	0.50
50-32-8	Benzo(a)pyrene	<0.50	0.50
205-99-2	Benzo(b)fluoranthene	<0.50	0.50
207-08-9	Benzo(k)fluoranthene	<0.50	0.50
191-24-2	Benzo(g,h,i)perylene	<0.50	0.50
92-52-4	1,1'-Biphenyl	<0.50	0.50
101-55-3	4-Bromophenyl Phenyl Ether	<0.50	0.50
85-68-7	Butyl Benzyl Phthalate	<1.0	1.0
105-60-2	Caprolactam	<1.0	1.0
86-74-8	Carbazole	<0.50	0.50
59-50-7	4-Chloro-3-methylphenol	<0.50	0.50
106-47-8	4-Chloroaniline	<1.0	1.0
111-91-1	Bis(2-chloroethoxy)methane	<0.50	0.50
111-44-4	Bis(2-chloroethyl) Ether	<0.50	0.50
108-60-1	Bis(2-chloroisopropyl) Ether	<0.50	0.50
91-58-7	2-Chloronaphthalene	<0.50	0.50
95-57-8	2-Chlorophenol	<0.50	0.50
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.50	0.50
218-01-9	Chrysene	<0.50	0.50
53-70-3	Dibenz(a,h)anthracene	<0.50	0.50
132-64-9	Dibenzofuran	<0.50	0.50
84-74-2	Di-n-butyl Phthalate	**4.9**	1.0
91-94-1	3,3´-Dichlorobenzidine	<10	10
120-83-2	2,4-Dichlorophenol	<0.50	0.50
84-66-2	Diethyl Phthalate	<0.50	0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53183**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-01**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
105-67-9	2,4-Dimethylphenol	<1.0	1.0
131-11-3	Dimethyl Phthalate	<0.50	0.50
534-52-1	4,6-Dinitro-2-methylphenol	<5.0	5.0
51-28-5	2,4-Dinitrophenol	<5.0	5.0
121-14-2	2,4-Dinitrotoluene	<0.50	0.50
606-20-2	2,6-Dinitrotoluene	<0.50	0.50
117-84-0	Di-n-octyl Phthalate	<0.50	0.50
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.55**	0.50
206-44-0	Fluoranthene	<0.50	0.50
86-73-7	Fluorene	<0.50	0.50
118-74-1	Hexachlorobenzene	<0.50	0.50
87-68-3	Hexachlorobutadiene	<0.50	0.50
77-47-4	Hexachlorocyclopentadiene	<0.50	0.50
67-72-1	Hexachloroethane	<0.50	0.50
193-39-5	Indeno(1,2,3-cd)pyrene	<0.50	0.50
78-59-1	Isophorone	<0.50	0.50
91-57-6	2-Methylnaphthalene	<0.50	0.50
95-48-7	2-Methylphenol	<0.50	0.50
106-44-5	4-Methylphenol	<0.50	0.50
91-20-3	Naphthalene	<0.50	0.50
88-74-4	2-Nitroaniline	<0.50	0.50
99-09-2	3-Nitroaniline	<1.0	1.0
100-01-6	4-Nitroaniline	<1.0	1.0
98-95-3	Nitrobenzene	<0.50	0.50
100-02-7	4-Nitrophenol	<5.0	5.0
88-75-5	2-Nitrophenol	<0.50	0.50
86-30-6	N-Nitroso-diphenylamine	<0.50	0.50
621-64-7	N-Nitroso-di-n-propylamine	<0.50	0.50
87-86-5	Pentachlorophenol	<0.50	0.50
85-01-8	Phenanthrene	<0.50	0.50
108-95-2	Phenol	<0.50	0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53183**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-01**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
129-00-0	Pyrene	<0.50	0.50
95-94-3	1,2,4,5-Tetrachlorobenzene	<2.0	2.0
58-90-2	2,3,4,6-Tetrachlorophenol	<5.0	5.0
88-06-2	2,4,6-Trichlorophenol	<0.50	0.50
95-95-4	2,4,5-Trichlorophenol	<0.50	0.50

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*39*	*20-70*
Phenol-d6	*25*	*18-45*
Nitrobenzene-d5	*77*	*31-123*
2-Fluorobiphenyl	*72*	*25-113*
2,4,6-Tribromophenol	*71*	*30-121*
o-Terphenyl	*80*	*42-125*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53184**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-02**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.50	0.50
208-96-8	Acenaphthylene	<0.50	0.50
98-86-2	Acetophenone	<0.50	0.50
120-12-7	Anthracene	<0.50	0.50
1912-24-9	Atrazine	<0.50	0.50
100-52-7	Benzaldehyde	**2.1**	0.50
56-55-3	Benzo(a)anthracene	<0.50	0.50
50-32-8	Benzo(a)pyrene	<0.50	0.50
205-99-2	Benzo(b)fluoranthene	<0.50	0.50
207-08-9	Benzo(k)fluoranthene	<0.50	0.50
191-24-2	Benzo(g,h,i)perylene	<0.50	0.50
92-52-4	1,1'-Biphenyl	<0.50	0.50
101-55-3	4-Bromophenyl Phenyl Ether	<0.50	0.50
85-68-7	Butyl Benzyl Phthalate	<1.0	1.0
105-60-2	Caprolactam	<1.0	1.0
86-74-8	Carbazole	<0.50	0.50
59-50-7	4-Chloro-3-methylphenol	<0.50	0.50
106-47-8	4-Chloroaniline	<1.0	1.0
111-91-1	Bis(2-chloroethoxy)methane	<0.50	0.50
111-44-4	Bis(2-chloroethyl) Ether	<0.50	0.50
108-60-1	Bis(2-chloroisopropyl) Ether	<0.50	0.50
91-58-7	2-Chloronaphthalene	<0.50	0.50
95-57-8	2-Chlorophenol	<0.50	0.50
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.50	0.50
218-01-9	Chrysene	<0.50	0.50
53-70-3	Dibenz(a,h)anthracene	<0.50	0.50
132-64-9	Dibenzofuran	<0.50	0.50
84-74-2	Di-n-butyl Phthalate	**5.7**	1.0
91-94-1	3,3´-Dichlorobenzidine	<10	10
120-83-2	2,4-Dichlorophenol	<0.50	0.50
84-66-2	Diethyl Phthalate	<0.50	0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53184**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-02**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
105-67-9	2,4-Dimethylphenol	<1.0	1.0
131-11-3	Dimethyl Phthalate	<0.50	0.50
534-52-1	4,6-Dinitro-2-methylphenol	<5.0	5.0
51-28-5	2,4-Dinitrophenol	<5.0	5.0
121-14-2	2,4-Dinitrotoluene	<0.50	0.50
606-20-2	2,6-Dinitrotoluene	<0.50	0.50
117-84-0	Di-n-octyl Phthalate	<0.50	0.50
117-81-7	Bis(2-ethylhexyl) Phthalate	**2.3**	0.50
206-44-0	Fluoranthene	<0.50	0.50
86-73-7	Fluorene	<0.50	0.50
118-74-1	Hexachlorobenzene	<0.50	0.50
87-68-3	Hexachlorobutadiene	<0.50	0.50
77-47-4	Hexachlorocyclopentadiene	<0.50	0.50
67-72-1	Hexachloroethane	<0.50	0.50
193-39-5	Indeno(1,2,3-cd)pyrene	<0.50	0.50
78-59-1	Isophorone	<0.50	0.50
91-57-6	2-Methylnaphthalene	<0.50	0.50
95-48-7	2-Methylphenol	<0.50	0.50
106-44-5	4-Methylphenol	<0.50	0.50
91-20-3	Naphthalene	<0.50	0.50
88-74-4	2-Nitroaniline	<0.50	0.50
99-09-2	3-Nitroaniline	<1.0	1.0
100-01-6	4-Nitroaniline	<1.0	1.0
98-95-3	Nitrobenzene	<0.50	0.50
100-02-7	4-Nitrophenol	<5.0	5.0
88-75-5	2-Nitrophenol	<0.50	0.50
86-30-6	N-Nitroso-diphenylamine	<0.50	0.50
621-64-7	N-Nitroso-di-n-propylamine	<0.50	0.50
87-86-5	Pentachlorophenol	**0.87**	0.50
85-01-8	Phenanthrene	<0.50	0.50
108-95-2	Phenol	<0.50	0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53184**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-02**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
129-00-0	Pyrene	<0.50	0.50
95-94-3	1,2,4,5-Tetrachlorobenzene	<2.0	2.0
58-90-2	2,3,4,6-Tetrachlorophenol	<5.0	5.0
88-06-2	2,4,6-Trichlorophenol	<0.50	0.50
95-95-4	2,4,5-Trichlorophenol	<0.50	0.50

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*36*	*20-70*
Phenol-d6	*25*	*18-45*
Nitrobenzene-d5	*50*	*31-123*
2-Fluorobiphenyl	*41*	*25-113*
2,4,6-Tribromophenol	*49*	*30-121*
o-Terphenyl	*53*	*42-125*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53185**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-03**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.50	0.50
208-96-8	Acenaphthylene	<0.50	0.50
98-86-2	Acetophenone	<0.50	0.50
120-12-7	Anthracene	<0.50	0.50
1912-24-9	Atrazine	<0.50	0.50
100-52-7	Benzaldehyde	**4.0**	0.50
56-55-3	Benzo(a)anthracene	<0.50	0.50
50-32-8	Benzo(a)pyrene	<0.50	0.50
205-99-2	Benzo(b)fluoranthene	<0.50	0.50
207-08-9	Benzo(k)fluoranthene	<0.50	0.50
191-24-2	Benzo(g,h,i)perylene	<0.50	0.50
92-52-4	1,1'-Biphenyl	<0.50	0.50
101-55-3	4-Bromophenyl Phenyl Ether	<0.50	0.50
85-68-7	Butyl Benzyl Phthalate	<1.0	1.0
105-60-2	Caprolactam	<1.0	1.0
86-74-8	Carbazole	<0.50	0.50
59-50-7	4-Chloro-3-methylphenol	<0.50	0.50
106-47-8	4-Chloroaniline	<1.0	1.0
111-91-1	Bis(2-chloroethoxy)methane	<0.50	0.50
111-44-4	Bis(2-chloroethyl) Ether	<0.50	0.50
108-60-1	Bis(2-chloroisopropyl) Ether	<0.50	0.50
91-58-7	2-Chloronaphthalene	<0.50	0.50
95-57-8	2-Chlorophenol	<0.50	0.50
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.50	0.50
218-01-9	Chrysene	<0.50	0.50
53-70-3	Dibenz(a,h)anthracene	<0.50	0.50
132-64-9	Dibenzofuran	<0.50	0.50
84-74-2	Di-n-butyl Phthalate	**4.1**	1.0
91-94-1	3,3´-Dichlorobenzidine	<10	10
120-83-2	2,4-Dichlorophenol	<0.50	0.50
84-66-2	Diethyl Phthalate	<0.50	0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53185**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-03**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
105-67-9	2,4-Dimethylphenol	<1.0	1.0
131-11-3	Dimethyl Phthalate	<0.50	0.50
534-52-1	4,6-Dinitro-2-methylphenol	<5.0	5.0
51-28-5	2,4-Dinitrophenol	<5.0	5.0
121-14-2	2,4-Dinitrotoluene	<0.50	0.50
606-20-2	2,6-Dinitrotoluene	<0.50	0.50
117-84-0	Di-n-octyl Phthalate	<0.50	0.50
117-81-7	Bis(2-ethylhexyl) Phthalate	**23**	0.50
206-44-0	Fluoranthene	<0.50	0.50
86-73-7	Fluorene	<0.50	0.50
118-74-1	Hexachlorobenzene	<0.50	0.50
87-68-3	Hexachlorobutadiene	<0.50	0.50
77-47-4	Hexachlorocyclopentadiene	<0.50	0.50
67-72-1	Hexachloroethane	<0.50	0.50
193-39-5	Indeno(1,2,3-cd)pyrene	<0.50	0.50
78-59-1	Isophorone	<0.50	0.50
91-57-6	2-Methylnaphthalene	<0.50	0.50
95-48-7	2-Methylphenol	<0.50	0.50
106-44-5	4-Methylphenol	<0.50	0.50
91-20-3	Naphthalene	<0.50	0.50
88-74-4	2-Nitroaniline	<0.50	0.50
99-09-2	3-Nitroaniline	<1.0	1.0
100-01-6	4-Nitroaniline	<1.0	1.0
98-95-3	Nitrobenzene	<0.50	0.50
100-02-7	4-Nitrophenol	<5.0	5.0
88-75-5	2-Nitrophenol	<0.50	0.50
86-30-6	N-Nitroso-diphenylamine	<0.50	0.50
621-64-7	N-Nitroso-di-n-propylamine	<0.50	0.50
87-86-5	Pentachlorophenol	**0.77**	0.50
85-01-8	Phenanthrene	<0.50	0.50
108-95-2	Phenol	<0.50	0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53185**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-03**	Sampled By:	Client
Matrix:	Water	Received:	03/09/13 09:00
Unit:	ug/L	Prepared:	03/15/13 By: SMS9
Dilution Factor:	1	Analyzed:	03/20/13 By: JLB
QC Batch:	1302297	Analytical Batch:	3C21059

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
129-00-0	Pyrene	<0.50	0.50
95-94-3	1,2,4,5-Tetrachlorobenzene	<2.0	2.0
58-90-2	2,3,4,6-Tetrachlorophenol	<5.0	5.0
88-06-2	2,4,6-Trichlorophenol	<0.50	0.50
95-95-4	2,4,5-Trichlorophenol	<0.50	0.50

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*31*	*20-70*
Phenol-d6	*23*	*18-45*
Nitrobenzene-d5	*52*	*31-123*
2-Fluorobiphenyl	*40*	*25-113*
2,4,6-Tribromophenol	*52*	*30-121*
o-Terphenyl	*52*	*42-125*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53186**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-04**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	2	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	41		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.081	0.081
208-96-8	Acenaphthylene	<0.081	0.081
98-86-2	Acetophenone	<0.081	0.081
120-12-7	Anthracene	<0.081	0.081
1912-24-9	Atrazine	<0.081	0.081
100-52-7	Benzaldehyde	<0.32	0.32
56-55-3	Benzo(a)anthracene	<0.081	0.081
50-32-8	Benzo(a)pyrene	<0.081	0.081
205-99-2	Benzo(b)fluoranthene	<0.081	0.081
207-08-9	Benzo(k)fluoranthene	<0.081	0.081
191-24-2	Benzo(g,h,i)perylene	<0.16	0.16
65-85-0	Benzoic Acid	<3.2	3.2
100-51-6	Benzyl Alcohol	<0.081	0.081
92-52-4	1,1'-Biphenyl	<0.081	0.081
101-55-3	4-Bromophenyl Phenyl Ether	<0.081	0.081
85-68-7	Butyl Benzyl Phthalate	<0.16	0.16
105-60-2	Caprolactam	<0.32	0.32
86-74-8	Carbazole	<0.81	0.81
59-50-7	4-Chloro-3-methylphenol	<0.081	0.081
106-47-8	4-Chloroaniline	<0.32	0.32
111-91-1	Bis(2-chloroethoxy)methane	<0.081	0.081
111-44-4	Bis(2-chloroethyl) Ether	<0.081	0.081
108-60-1	Bis(2-chloroisopropyl) Ether	<0.081	0.081
91-58-7	2-Chloronaphthalene	<0.081	0.081
95-57-8	2-Chlorophenol	<0.081	0.081
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.081	0.081
218-01-9	Chrysene	<0.081	0.081
53-70-3	Dibenz(a,h)anthracene	<0.16	0.16
132-64-9	Dibenzofuran	<0.081	0.081
84-74-2	Di-n-butyl Phthalate	<0.32	0.32
91-94-1	3,3'-Dichlorobenzidine	<4.0	4.0

Continued on next page

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53186**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-04**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	2	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	41		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
120-83-2	2,4-Dichlorophenol	<0.16	0.16
84-66-2	Diethyl Phthalate	<0.081	0.081
105-67-9	2,4-Dimethylphenol	<0.81	0.81
131-11-3	Dimethyl Phthalate	<0.081	0.081
534-52-1	4,6-Dinitro-2-methylphenol	<0.81	0.81
51-28-5	2,4-Dinitrophenol	<0.81	0.81
606-20-2	2,6-Dinitrotoluene	<0.081	0.081
121-14-2	2,4-Dinitrotoluene	<0.16	0.16
117-84-0	Di-n-octyl Phthalate	<0.081	0.081
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.41**	0.16
206-44-0	Fluoranthene	<0.081	0.081
86-73-7	Fluorene	<0.16	0.16
118-74-1	Hexachlorobenzene	<0.081	0.081
87-68-3	Hexachlorobutadiene	<0.081	0.081
77-47-4	Hexachlorocyclopentadiene	<0.081	0.081
67-72-1	Hexachloroethane	<0.081	0.081
193-39-5	Indeno(1,2,3-cd)pyrene	<0.16	0.16
78-59-1	Isophorone	<0.081	0.081
91-57-6	2-Methylnaphthalene	<0.081	0.081
106-44-5	4-Methylphenol	<0.081	0.081
95-48-7	2-Methylphenol	<0.081	0.081
91-20-3	Naphthalene	<0.081	0.081
100-01-6	4-Nitroaniline	<0.16	0.16
88-74-4	2-Nitroaniline	<0.081	0.081
99-09-2	3-Nitroaniline	<0.16	0.16
98-95-3	Nitrobenzene	<0.081	0.081
88-75-5	2-Nitrophenol	<0.081	0.081
100-02-7	4-Nitrophenol	<3.2	3.2
86-30-6	N-Nitroso-diphenylamine	<0.081	0.081
621-64-7	N-Nitroso-di-n-propylamine	<0.081	0.081
87-86-5	Pentachlorophenol	**2.4**	0.81

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53186**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-04**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	2	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	41		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
85-01-8	Phenanthrene	<0.081	0.081
108-95-2	Phenol	<0.81	0.81
129-00-0	Pyrene	<0.081	0.081
95-94-3	1,2,4,5-Tetrachlorobenzene	<0.16	0.16
58-90-2	2,3,4,6-Tetrachlorophenol	<0.16	0.16
120-82-1	1,2,4-Trichlorobenzene	<0.081	0.081
95-95-4	2,4,5-Trichlorophenol	<0.081	0.081
88-06-2	2,4,6-Trichlorophenol	<0.081	0.081

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*71*	*33-113*
Phenol-d6	*72*	*30-115*
Nitrobenzene-d5	*67*	*33-131*
2-Fluorobiphenyl	*74*	*46-122*
2,4,6-Tribromophenol	*70*	*12-124*
o-Terphenyl	*75*	*20-155*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53186**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-04**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**41**	0.1	%	1	USEPA-3550C	03/19/13 11:00	BAR	1302409

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53187**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-05**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	4	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	45		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.15	0.15
208-96-8	Acenaphthylene	<0.15	0.15
98-86-2	Acetophenone	<0.15	0.15
120-12-7	Anthracene	<0.15	0.15
1912-24-9	Atrazine	<0.15	0.15
100-52-7	Benzaldehyde	<0.59	0.59
56-55-3	Benzo(a)anthracene	<0.15	0.15
50-32-8	Benzo(a)pyrene	<0.15	0.15
205-99-2	Benzo(b)fluoranthene	<0.15	0.15
207-08-9	Benzo(k)fluoranthene	<0.15	0.15
191-24-2	Benzo(g,h,i)perylene	<0.29	0.29
65-85-0	Benzoic Acid	<5.9	5.9
100-51-6	Benzyl Alcohol	<0.15	0.15
92-52-4	1,1'-Biphenyl	<0.15	0.15
101-55-3	4-Bromophenyl Phenyl Ether	<0.15	0.15
85-68-7	Butyl Benzyl Phthalate	<0.29	0.29
105-60-2	Caprolactam	<0.59	0.59
86-74-8	Carbazole	<1.5	1.5
59-50-7	4-Chloro-3-methylphenol	<0.15	0.15
106-47-8	4-Chloroaniline	<0.59	0.59
111-91-1	Bis(2-chloroethoxy)methane	<0.15	0.15
111-44-4	Bis(2-chloroethyl) Ether	<0.15	0.15
108-60-1	Bis(2-chloroisopropyl) Ether	<0.15	0.15
91-58-7	2-Chloronaphthalene	<0.15	0.15
95-57-8	2-Chlorophenol	<0.15	0.15
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.15	0.15
218-01-9	Chrysene	<0.15	0.15
53-70-3	Dibenz(a,h)anthracene	<0.29	0.29
132-64-9	Dibenzofuran	<0.15	0.15
84-74-2	Di-n-butyl Phthalate	<0.59	0.59
91-94-1	3,3´-Dichlorobenzidine	<7.3	7.3

Continued on next page

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53187**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-05**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	4	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	45		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
120-83-2	2,4-Dichlorophenol	<0.29	0.29
84-66-2	Diethyl Phthalate	<0.15	0.15
105-67-9	2,4-Dimethylphenol	<1.5	1.5
131-11-3	Dimethyl Phthalate	<0.15	0.15
534-52-1	4,6-Dinitro-2-methylphenol	<1.5	1.5
51-28-5	2,4-Dinitrophenol	<1.5	1.5
606-20-2	2,6-Dinitrotoluene	<0.15	0.15
121-14-2	2,4-Dinitrotoluene	<0.29	0.29
117-84-0	Di-n-octyl Phthalate	<0.15	0.15
117-81-7	Bis(2-ethylhexyl) Phthalate	**2.9**	0.29
206-44-0	Fluoranthene	<0.15	0.15
86-73-7	Fluorene	<0.29	0.29
118-74-1	Hexachlorobenzene	<0.15	0.15
87-68-3	Hexachlorobutadiene	<0.15	0.15
77-47-4	Hexachlorocyclopentadiene	<0.15	0.15
67-72-1	Hexachloroethane	<0.15	0.15
193-39-5	Indeno(1,2,3-cd)pyrene	<0.29	0.29
78-59-1	Isophorone	<0.15	0.15
91-57-6	2-Methylnaphthalene	<0.15	0.15
106-44-5	4-Methylphenol	<0.15	0.15
95-48-7	2-Methylphenol	<0.15	0.15
91-20-3	Naphthalene	<0.15	0.15
100-01-6	4-Nitroaniline	<0.29	0.29
88-74-4	2-Nitroaniline	<0.15	0.15
99-09-2	3-Nitroaniline	<0.29	0.29
98-95-3	Nitrobenzene	<0.15	0.15
88-75-5	2-Nitrophenol	<0.15	0.15
100-02-7	4-Nitrophenol	<5.9	5.9
86-30-6	N-Nitroso-diphenylamine	<0.15	0.15
621-64-7	N-Nitroso-di-n-propylamine	<0.15	0.15
87-86-5	Pentachlorophenol	**3.4**	1.5

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53187**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-05**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	4	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	45		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
85-01-8	Phenanthrene	<0.15	0.15
108-95-2	Phenol	<1.5	1.5
129-00-0	Pyrene	<0.15	0.15
95-94-3	1,2,4,5-Tetrachlorobenzene	<0.29	0.29
58-90-2	2,3,4,6-Tetrachlorophenol	<0.29	0.29
120-82-1	1,2,4-Trichlorobenzene	<0.15	0.15
95-95-4	2,4,5-Trichlorophenol	<0.15	0.15
88-06-2	2,4,6-Trichlorophenol	<0.15	0.15

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*60*	*33-113*
Phenol-d6	*63*	*30-115*
Nitrobenzene-d5	*60*	*33-131*
2-Fluorobiphenyl	*62*	*46-122*
2,4,6-Tribromophenol	*64*	*12-124*
o-Terphenyl	*78*	*20-155*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53187**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-05**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**45**	0.1	%	1	USEPA-3550C	03/19/13 11:00	BAR	1302409

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53188**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-06**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	4	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	52		

Semivolatile Organic Compounds by EPA Method 8270C

CAS Number	Analyte	Analytical Result	RL
83-32-9	Acenaphthene	<0.13	0.13
208-96-8	Acenaphthylene	<0.13	0.13
98-86-2	Acetophenone	<0.13	0.13
120-12-7	Anthracene	<0.13	0.13
1912-24-9	Atrazine	<0.13	0.13
100-52-7	Benzaldehyde	<0.51	0.51
56-55-3	Benzo(a)anthracene	<0.13	0.13
50-32-8	Benzo(a)pyrene	<0.13	0.13
205-99-2	Benzo(b)fluoranthene	<0.13	0.13
207-08-9	Benzo(k)fluoranthene	<0.13	0.13
191-24-2	Benzo(g,h,i)perylene	<0.26	0.26
65-85-0	Benzoic Acid	<5.1	5.1
100-51-6	Benzyl Alcohol	<0.13	0.13
92-52-4	1,1'-Biphenyl	<0.13	0.13
101-55-3	4-Bromophenyl Phenyl Ether	<0.13	0.13
85-68-7	Butyl Benzyl Phthalate	<0.26	0.26
105-60-2	Caprolactam	<0.51	0.51
86-74-8	Carbazole	<1.3	1.3
59-50-7	4-Chloro-3-methylphenol	<0.13	0.13
106-47-8	4-Chloroaniline	<0.51	0.51
111-91-1	Bis(2-chloroethoxy)methane	<0.13	0.13
111-44-4	Bis(2-chloroethyl) Ether	<0.13	0.13
108-60-1	Bis(2-chloroisopropyl) Ether	<0.13	0.13
91-58-7	2-Chloronaphthalene	<0.13	0.13
95-57-8	2-Chlorophenol	<0.13	0.13
7005-72-3	4-Chlorophenyl Phenyl Ether	<0.13	0.13
218-01-9	Chrysene	<0.13	0.13
53-70-3	Dibenz(a,h)anthracene	<0.26	0.26
132-64-9	Dibenzofuran	<0.13	0.13
84-74-2	Di-n-butyl Phthalate	<0.51	0.51
91-94-1	3,3´-Dichlorobenzidine	<6.4	6.4

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53188**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-06**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	4	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	52		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
120-83-2	2,4-Dichlorophenol	<0.26	0.26
84-66-2	Diethyl Phthalate	<0.13	0.13
105-67-9	2,4-Dimethylphenol	<1.3	1.3
131-11-3	Dimethyl Phthalate	<0.13	0.13
534-52-1	4,6-Dinitro-2-methylphenol	<1.3	1.3
51-28-5	2,4-Dinitrophenol	<1.3	1.3
606-20-2	2,6-Dinitrotoluene	<0.13	0.13
121-14-2	2,4-Dinitrotoluene	<0.26	0.26
117-84-0	Di-n-octyl Phthalate	<0.13	0.13
117-81-7	Bis(2-ethylhexyl) Phthalate	**0.84**	0.26
206-44-0	Fluoranthene	<0.13	0.13
86-73-7	Fluorene	<0.26	0.26
118-74-1	Hexachlorobenzene	<0.13	0.13
87-68-3	Hexachlorobutadiene	<0.13	0.13
77-47-4	Hexachlorocyclopentadiene	<0.13	0.13
67-72-1	Hexachloroethane	<0.13	0.13
193-39-5	Indeno(1,2,3-cd)pyrene	<0.26	0.26
78-59-1	Isophorone	<0.13	0.13
91-57-6	2-Methylnaphthalene	<0.13	0.13
106-44-5	4-Methylphenol	<0.13	0.13
95-48-7	2-Methylphenol	<0.13	0.13
91-20-3	Naphthalene	**0.25**	0.13
100-01-6	4-Nitroaniline	<0.26	0.26
88-74-4	2-Nitroaniline	<0.13	0.13
99-09-2	3-Nitroaniline	<0.26	0.26
98-95-3	Nitrobenzene	<0.13	0.13
88-75-5	2-Nitrophenol	<0.13	0.13
100-02-7	4-Nitrophenol	<5.1	5.1
86-30-6	N-Nitroso-diphenylamine	<0.13	0.13
621-64-7	N-Nitroso-di-n-propylamine	<0.13	0.13
87-86-5	Pentachlorophenol	**4.3**	1.3

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53188**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-06**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00
Unit:	mg/kg dry	Prepared:	03/19/13 By: JTS
Dilution Factor:	4	Analyzed:	03/21/13 By: JLB
QC Batch:	1302404	Analytical Batch:	3C21065
Percent Solids:	52		

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

CAS Number	Analyte	Analytical Result	RL
85-01-8	Phenanthrene	<0.13	0.13
108-95-2	Phenol	<1.3	1.3
129-00-0	Pyrene	<0.13	0.13
95-94-3	1,2,4,5-Tetrachlorobenzene	<0.26	0.26
58-90-2	2,3,4,6-Tetrachlorophenol	<0.26	0.26
120-82-1	1,2,4-Trichlorobenzene	<0.13	0.13
95-95-4	2,4,5-Trichlorophenol	<0.13	0.13
88-06-2	2,4,6-Trichlorophenol	<0.13	0.13

Surrogates:	*% Recovery*	*Control Limits*
2-Fluorophenol	*71*	*33-113*
Phenol-d6	*76*	*30-115*
Nitrobenzene-d5	*70*	*33-131*
2-Fluorobiphenyl	*70*	*46-122*
2,4,6-Tribromophenol	*71*	*12-124*
o-Terphenyl	*80*	*20-155*

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

ANALYTICAL REPORT

Client:	**Bay West**	Work Order:	**1303154**
Project:	Bench Scale Test	Description:	FMC ESD 00439
Client Sample ID:	**53188**	Sampled:	03/08/13 12:00
Lab Sample ID:	**1303154-06**	Sampled By:	Dave Poague
Matrix:	Soil	Received:	03/09/13 09:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
Percent Solids	**52**	0.1	%	1	USEPA-3550C	03/19/13 11:00	BAR	1302409

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
QC Batch: 1302297 3510C Liquid-Liquid Extraction/USEPA-8270C								
Method Blank					Analyzed:		03/20/2013	By: JLB
Unit: ug/L					Analytical Batch:		3C21059	
Acenaphthene			<0.50				0.50	
Acenaphthylene			<0.50				0.50	
Acetophenone			<0.50			--	0.50	
Anthracene			<0.50				0.50	
Atrazine			<0.50				0.50	
Benzaldehyde			<0.50			--	0.50	
Benzo(a)anthracene			<0.50			--	0.50	
Benzo(a)pyrene			<0.50			--	0.50	
Benzo(b)fluoranthene			<0.50				0.50	
Benzo(k)fluoranthene			<0.50				0.50	
Benzo(g,h,i)perylene			<0.50				0.50	
1,1'-Biphenyl			<0.50			--	0.50	
4-Bromophenyl Phenyl Ether			<0.50				0.50	
Butyl Benzyl Phthalate			<1.0			--	1.0	
Caprolactam			<1.0				1.0	
Carbazole			<0.50			--	0.50	
4-Chloro-3-methylphenol			<0.50				0.50	
4-Chloroaniline			<1.0				1.0	
Bis(2-chloroethoxy)methane			<0.50				0.50	
Bis(2-chloroethyl) Ether			<0.50				0.50	
Bis(2-chloroisopropyl) Ether			<0.50				0.50	
2-Chloronaphthalene			<0.50				0.50	
2-Chlorophenol			<0.50				0.50	
4-Chlorophenyl Phenyl Ether			<0.50				0.50	
Chrysene			<0.50			--	0.50	
Dibenz(a,h)anthracene			<0.50				0.50	
Dibenzofuran			<0.50				0.50	
Di-n-butyl Phthalate			<1.0			--	1.0	
3,3´-Dichlorobenzidine			<10			--	10	
2,4-Dichlorophenol			<0.50				0.50	
Diethyl Phthalate			<0.50			--	0.50	
2,4-Dimethylphenol			<1.0				1.0	
Dimethyl Phthalate			<0.50				0.50	
4,6-Dinitro-2-methylphenol			<5.0			--	5.0	
2,4-Dinitrophenol			<5.0				5.0	
2,4-Dinitrotoluene			<0.50				0.50	

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL

QC Batch: 1302297 (Continued) 3510C Liquid-Liquid Extraction/USEPA-8270C

Method Blank (Continued) Analyzed: 03/20/2013 By: JLB

Unit: ug/L Analytical Batch: 3C21059

2,6-Dinitrotoluene	<0.50			0.50
Di-n-octyl Phthalate	<0.50		--	0.50
Bis(2-ethylhexyl) Phthalate	<0.50		--	0.50
Fluoranthene	<0.50		--	0.50
Fluorene	<0.50			0.50
Hexachlorobenzene	<0.50		--	0.50
Hexachlorobutadiene	<0.50			0.50
Hexachlorocyclopentadiene	<0.50			0.50
Hexachloroethane	<0.50			0.50
Indeno(1,2,3-cd)pyrene	<0.50			0.50
Isophorone	<0.50		--	0.50
2-Methylnaphthalene	<0.50			0.50
2-Methylphenol	<0.50			0.50
4-Methylphenol	<0.50		--	0.50
Naphthalene	<0.50			0.50
2-Nitroaniline	<0.50			0.50
3-Nitroaniline	<1.0		--	1.0
4-Nitroaniline	<1.0			1.0
Nitrobenzene	<0.50		--	0.50
4-Nitrophenol	<5.0			5.0
2-Nitrophenol	<0.50			0.50
N-Nitroso-diphenylamine	<0.50			0.50
N-Nitroso-di-n-propylamine	<0.50		--	0.50
Pentachlorophenol	<0.50		--	0.50
Phenanthrene	<0.50		--	0.50
Phenol	<0.50		--	0.50
Pyrene	<0.50		--	0.50
1,2,4,5-Tetrachlorobenzene	<2.0			2.0
2,3,4,6-Tetrachlorophenol	<5.0			5.0
2,4,6-Trichlorophenol	<0.50			0.50
2,4,5-Trichlorophenol	<0.50			0.50

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
QC Batch: 1302297 (Continued) 3510C Liquid-Liquid Extraction/USEPA-8270C								
Method Blank (Continued)					Analyzed:		03/20/2013	By: JLB
Unit: ug/L					Analytical Batch:		3C21059	
Surrogates:								
2-Fluorophenol				*54*	*20-70*			
Phenol-d6				*36*	*18-45*			
Nitrobenzene-d5				*90*	*31-123*			
2-Fluorobiphenyl				*94*	*25-113*			
2,4,6-Tribromophenol				*73*	*30-121*			
o-Terphenyl				*101*	*42-125*			
Laboratory Control Sample					Analyzed:		03/20/2013	By: JLB
Unit: ug/L					Analytical Batch:		3C21059	
Acenaphthene		10.0	**10.0**	100	53-126	--	20	0.50
4-Chloro-3-methylphenol		10.0	**9.18**	92	53-120	--	20	0.50
2-Chlorophenol		10.0	**8.58**	86	44-121	--	20	0.50
1,4-Dichlorobenzene		10.0	**8.39**	84	41-124	--	20	0.50
2,4-Dinitrotoluene		10.0	**10.9**	109	55-131	--	20	0.50
Naphthalene		10.0	**9.13**	91	50-127	--	20	0.50
4-Nitrophenol		10.0	**2.48**	25	17-70	--	20	5.0
N-Nitroso-di-n-propylamine		10.0	**8.09**	81	49-125	--	20	0.50
Pentachlorophenol		10.0	**7.95**	80	21-124	--	20	0.50
Phenol		10.0	**4.25**	42	22-60	--	20	0.50
Pyrene		10.0	**10.9**	109	60-134	--	20	0.50
1,2,4-Trichlorobenzene		10.0	**8.54**	85	47-123	--	20	0.50
Surrogates:								
2-Fluorophenol				*51*	*20-70*			
Phenol-d6				*32*	*18-45*			
Nitrobenzene-d5				*89*	*31-123*			
2-Fluorobiphenyl				*92*	*25-113*			
2,4,6-Tribromophenol				*95*	*30-121*			
o-Terphenyl				*96*	*42-125*			

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL

QC Batch: 1302404 3550C Sonication Extraction/USEPA-8270C

Method Blank Analyzed: 03/20/2013 By: JLB

Unit: mg/kg wet Analytical Batch: 3C21061

Acenaphthene	<0.017		0.017
Acenaphthylene	<0.017		0.017
Acetophenone	<0.017		0.017
Anthracene	<0.017		0.017
Atrazine	<0.017		0.017
Benzaldehyde	<0.067	--	0.067
Benzo(a)anthracene	<0.017	--	0.017
Benzo(a)pyrene	<0.017	--	0.017
Benzo(b)fluoranthene	<0.017		0.017
Benzo(k)fluoranthene	<0.017		0.017
Benzo(g,h,i)perylene	<0.033		0.033
Benzoic Acid	<0.67	--	0.67
Benzyl Alcohol	<0.017		0.017
1,1'-Biphenyl	<0.017	--	0.017
4-Bromophenyl Phenyl Ether	<0.017		0.017
Butyl Benzyl Phthalate	<0.033	--	0.033
Caprolactam	<0.067		0.067
Carbazole	<0.17		0.17
4-Chloro-3-methylphenol	<0.017		0.017
4-Chloroaniline	<0.067		0.067
Bis(2-chloroethoxy)methane	<0.017		0.017
Bis(2-chloroethyl) Ether	<0.017		0.017
Bis(2-chloroisopropyl) Ether	<0.017		0.017
2-Chloronaphthalene	<0.017		0.017
2-Chlorophenol	<0.017		0.017
4-Chlorophenyl Phenyl Ether	<0.017		0.017
Chrysene	<0.017	--	0.017
Dibenz(a,h)anthracene	<0.033		0.033
Dibenzofuran	<0.017		0.017
Di-n-butyl Phthalate	<0.067	--	0.067
3,3´-Dichlorobenzidine	<0.83		0.83
2,4-Dichlorophenol	<0.033		0.033
Diethyl Phthalate	<0.017	--	0.017
2,4-Dimethylphenol	<0.17		0.17
Dimethyl Phthalate	<0.017	--	0.017
4,6-Dinitro-2-methylphenol	<0.17	--	0.17

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL

QC Batch: 1302404 (Continued) 3550C Sonication Extraction/USEPA-8270C

Method Blank (Continued) Analyzed: 03/20/2013 By: JLB

Unit: mg/kg wet Analytical Batch: 3C21061

2,4-Dinitrophenol	<0.17		0.17
2,6-Dinitrotoluene	<0.017		0.017
2,4-Dinitrotoluene	<0.033		0.033
Di-n-octyl Phthalate	<0.017	--	0.017
Bis(2-ethylhexyl) Phthalate	<0.033	--	0.033
Fluoranthene	<0.017	--	0.017
Fluorene	<0.033		0.033
Hexachlorobenzene	<0.017		0.017
Hexachlorobutadiene	<0.017		0.017
Hexachlorocyclopentadiene	<0.017		0.017
Hexachloroethane	<0.017	--	0.017
Indeno(1,2,3-cd)pyrene	<0.033		0.033
Isophorone	<0.017		0.017
2-Methylnaphthalene	<0.017		0.017
4-Methylphenol	<0.017	--	0.017
2-Methylphenol	<0.017		0.017
Naphthalene	<0.017		0.017
4-Nitroaniline	<0.033		0.033
2-Nitroaniline	<0.017		0.017
3-Nitroaniline	<0.033		0.033
Nitrobenzene	<0.017	--	0.017
2-Nitrophenol	<0.017		0.017
4-Nitrophenol	<0.67		0.67
N-Nitroso-diphenylamine	<0.017	--	0.017
N-Nitroso-di-n-propylamine	<0.017	--	0.017
Pentachlorophenol	<0.17		0.17
Phenanthrene	<0.017	--	0.017
Phenol	<0.17	--	0.17
Pyrene	<0.017		0.017
1,2,4,5-Tetrachlorobenzene	<0.033		0.033
2,3,4,6-Tetrachlorophenol	<0.033		0.033
1,2,4-Trichlorobenzene	<0.017		0.017
2,4,5-Trichlorophenol	<0.017		0.017
2,4,6-Trichlorophenol	<0.017		0.017

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
QC Batch: 1302404 (Continued) 3550C Sonication Extraction/USEPA-8270C								
Method Blank (Continued)					Analyzed:		03/20/2013	By: JLB
Unit: mg/kg wet					Analytical Batch:		3C21061	
Surrogates:								
2-Fluorophenol				*70*	*33-113*			
Phenol-d6				*71*	*30-115*			
Nitrobenzene-d5				*69*	*33-131*			
2-Fluorobiphenyl				*79*	*46-122*			
2,4,6-Tribromophenol				*61*	*12-124*			
o-Terphenyl				*83*	*20-155*			
Laboratory Control Sample					Analyzed:		03/21/2013	By: JLB
Unit: mg/kg wet					Analytical Batch:		3C22004	
Acenaphthene		0.331	**0.274**	83	55-113	--	20	0.017
4-Chloro-3-methylphenol		0.331	**0.186**	56	34-113	--	20	0.017
2-Chlorophenol		0.331	**0.229**	69	62-118	--	20	0.017
1,4-Dichlorobenzene		0.331	**0.240**	72	61-111	--	20	0.017
2,4-Dinitrotoluene		0.331	**0.273**	82	51-128	--	20	0.033
Naphthalene		0.331	**0.262**	79	52-128	--	20	0.017
4-Nitrophenol		0.331	**0.225**	68	36-131	--	20	0.67
N-Nitroso-di-n-propylamine		0.331	**0.236**	71	48-127	--	20	0.017
Pentachlorophenol		0.331	**0.170**	51	19-117	--	20	0.17
Phenol		0.331	**0.189**	57	53-120	--	20	0.17
Pyrene		0.331	**0.311**	94	60-132	--	20	0.017
1,2,4-Trichlorobenzene		0.331	**0.247**	75	51-110	--	20	0.017
Surrogates:								
2-Fluorophenol				*72*	*33-113*			
Phenol-d6				*58*	*30-115*			
Nitrobenzene-d5				*77*	*33-131*			

Continued on next page

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

QUALITY CONTROL REPORT

Semivolatile Organic Compounds by EPA Method 8270C (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
QC Batch: 1302404 (Continued) 3550C Sonication Extraction/USEPA-8270C								
Laboratory Control Sample (Continued)					Analyzed:		03/21/2013	By: JLB
Unit: mg/kg wet					Analytical Batch:		3C22004	
Surrogates (Continued):								
2-Fluorobiphenyl				*82*	*46-122*			
2,4,6-Tribromophenol				*77*	*12-124*			
o-Terphenyl				*88*	*20-155*			
Laboratory Control Sample Duplicate					Analyzed:		03/20/2013	By: JLB
Unit: mg/kg wet					Analytical Batch:		3C21061	
Acenaphthene	0.325		**0.270**	83	55-113	2	20	0.017
4-Chloro-3-methylphenol	0.325		**0.184**	57	34-113	0.7	20	0.017
2-Chlorophenol	0.325		**0.228**	70	62-118	0.4	20	0.017
1,4-Dichlorobenzene	0.325		**0.240**	74	61-111	0.08	20	0.017
2,4-Dinitrotoluene	0.325		**0.274**	84	51-128	0.6	20	0.033
Naphthalene	0.325		**0.264**	81	52-128	0.8	20	0.017
4-Nitrophenol	0.325		**0.237**	73	36-131	5	20	0.67
N-Nitroso-di-n-propylamine	0.325		**0.228**	70	48-127	4	20	0.017
Pentachlorophenol	0.325		**0.182**	56	19-117	7	20	0.17
Phenol	0.325		**0.185**	57	53-120	2	20	0.17
Pyrene	0.325		**0.294**	91	60-132	6	20	0.017
1,2,4-Trichlorobenzene	0.325		**0.243**	75	51-110	2	20	0.017
Surrogates:								
2-Fluorophenol				*73*	*33-113*			
Phenol-d6				*57*	*30-115*			
Nitrobenzene-d5				*79*	*33-131*			
2-Fluorobiphenyl				*84*	*46-122*			
2,4,6-Tribromophenol				*74*	*12-124*			
o-Terphenyl				*86*	*20-155*			

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

QUALITY CONTROL REPORT

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
Analyte: **Percent Solids**/USEPA-3550C									
QC Batch: 1302409 (Method Specific Preparation)							Analyzed:	03/19/2013	By: BAR
Method Blank			<0.1	%					0.1

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

STATEMENT OF DATA QUALIFICATIONS

All analyses have been validated and comply with our Quality Control Program.
No Qualification is required.

5560 Corporate Exchange Court SE ♦ Grand Rapids, MI 49512 ♦ 616.975.4500 ♦ Fax 616.942.7463 ♦ www.trimatrixlabs.com

TRIMATRIX LABORATORIES

5560 Corporate Exchange Court SE
Grand Rapids, MI 49512
Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No.

Pg. ___ of ___

For Lab Use Only
Cart
VOA Rack/Tray
Receipt Log No. 47-2
Project Chemist
Work Order No.

Client Name: FMC ESD
Address
City, State Zip
Phone/Fax
Email

Project Name
Client Project No. / P.O. No.
Invoice To ☐ Client ☐ Other (comments)
Contact/Report To

Analyses Requested: 1000ml Amber | 125ml. | 125ml Amber bottle | ↓ | SVOC Phenols (method 8270)

Container Type (corresponds to Container Packing List): 2 17 24

PRESERVATIVES
A NONE pH~7
B HNO_3 pH<2
C H_2SO_4 pH<2
D 1+1 HCl pH<2
E NaOH pH>12
F ZnAc/NaOH pH>9
G MeOH
H Other (note below)

	Field Sample ID #	Cooler ID	Sample Date	Sample Time	COMP	GRAB	Matrix	Number of Containers Submitted			Total	Sample Comments
1	53183 Water Control							1		1		
2	53184 Water 10%							1				
3	53185 Water 20%							1				
4	53186 Carbon Control								1			
5	53187 Carbon 10%								1			
6	53188 Carbon 20%								1			
7												
8												
9												
10												

Sampled By (print)
Sampler's Signature
Company

How Shipped? Hand ___ Carrier ___
Tracking No.

Comments

1 Relinquished By | Date | Time
1 Received By | Date | Time
2 Relinquished By | Date | Time
2 Received By | Date | Time
3 Relinquished By | Date | Time
3 Received For Lab By | Date | Time

TRIMATRIX LABORATORIES

SAMPLE RECEIVING / LOG-IN CHECKLIST

TRIMATRIX LABORATORIES

Client: FMC Environmental Solutions
Receipt Record Page/Line #: 47-2
Work Order #: 1303154
New / Add To
Project Chemist: Sample #s

Recorded by (Initials/date): LR 3/9/13

Cooler: ☒ Qty Received: 1
Box
Other

IR Gun (#202)
Thermometer Used: ☐ Digital Thermometer (#54) ☐ Other (#_____)
☐ See Additional Cooler Information Form

Cooler # — Time 0935	Cooler # — Time	Cooler # — Time	Cooler # — Time
Custody Seals: ☒ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact	Custody Seals: ☐ None ☐ Present / Intact ☐ Present / Not Intact
Coolant Location: Sides Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom	Coolant Location: Dispersed / Top / Middle / Bottom
Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☒ Bagged Ice / Avg 2-3 containers ☒ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers	Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers	Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers	Coolant/Temperature Taken Via: ☐ Loose Ice / Avg 2-3 containers ☐ Bagged Ice / Avg 2-3 containers ☐ Blue Ice / Avg 2-3 containers ☐ None / Avg 2-3 containers
Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container	Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container	Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container	Alternate Temperature Taken Via: ☐ Temperature Blank (TB) ☐ 1 Container
Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C	Recorded °C / Correction Factor °C / Actual °C
Temp Blank: 6.1	Temp Blank:	Temp Blank:	Temp Blank:
TB location: Representative / Not Representative	TB location: Representative / Not Representative	TB location: Representative / Not Representative	TB location: Representative / Not Representative
1 5.7 – 5.7	1	1	1
2 7.6 – 7.6	2	2	2
3 7.4 – 7.4	3	3	3
Average °C 6.9	Average °C	Average °C	Average °C
☐ Cooler ID on COC?	☐ Cooler ID on COC?	☐ Cooler ID on COC?	☐ Cooler ID on COC?
☐ VOC Trip Blank received?	☐ VOC Trip Blank received?	☐ VOC Trip Blank received?	☐ VOC Trip Blank received?

If any shaded areas checked, complete Sample Receiving Non-Conformance and/or Inventory Form

Paperwork Received

Yes	No	
☒	☐	Chain of Custody record(s)? If No, Initiated By _____
☒	☐	Received for Lab Signed/Date/Time?
☒	☐	Shipping document?
☐	☒	Other _____

COC Information

☐ TriMatrix COC ☒ Other _____

COC ID Numbers:

Check Sample Preservation

N/A	Yes	No	
	☐	☒	Average sample temperature ≤6° C?
☒	☐	☐	Was thermal preservation required?
☒	☐		If "No", Project Chemist Approval Initials: _____
☒	☐		If "Yes" Completed Non Con Cooler - Cont Inventory Form?
☒	☐		Completed Sample Preservation Verification Form?
☒	☐	☐	Samples chemically preserved correctly?
☒	☐		If "No", added orange tag?
	☐	☒	Received pre-preserved VOC soils?

☐ MeOH ☐ Na_2SO_4

Check COC for Accuracy

Yes	No	
☒	☐	Analysis Requested?
☐	☒	Sample ID matches COC?
☒	☐	Sample Date and Time matches COC?
☒		Container type completed on COC?
☒	☐	All container types indicated are received?

Check for Short Hold-Time Prep/Analyses

☐ Bacteriological
☐ Air Bags
☐ EnCores / Methanol Pre-Preserved
☐ Formaldehyde/Aldehyde
☐ Green-tagged containers
☐ Yellow/White-tagged 1L ambers (SV Prep-Lab)

AFTER HOURS ONLY:
COPIES OF COC TO LAB AREA(S)
☐ NONE RECEIVED
☒ RECEIVED. COCs TO LAB(S)

Sample Condition Summary

N/A	Yes	No	
	☐	☒	Broken containers/lids?
	☐	☒	Missing or incomplete labels?
	☐	☒	Illegible information on labels?
	☐	☒	Low volume received?
	☐	☐	Inappropriate or non-TriMatrix containers received?
☒	☐	☐	VOC vials / TOX containers have headspace?
☒	☐	☐	Extra sample locations / containers not listed on COC?

Notes

☐ Trip Blank received ☐ Trip Blank not listed on COC

Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	≤1 Hour Goal Met?
3/9/13 0900	3/9/13 0935	Yes / No

Log In Forms - Receiving Log-In_Checklist

revision: 3.4

5560 Corporate Exchange Court SE ◆ Grand Rapids, MI 49512 ◆ 616.975.4500 ◆ Fax 616.942.7463 ◆ www.trimatrixlabs.com

47-2

Page 1 of 1 E1303154

CHAIN OF CUSTODY RECORD 11352 Part 3

Project No.:	Laboratory:	Laboratory Contact:
FMC ESD 00439	TRI MATRIX LABORATORIES	PHIL KOMAR
P.O. #	Adventus Remediation Tech. Contact (Name/Tel.): EVA JANZEN EXT 232	

Adventus Remediation Technologies
1345 Fewster Drive
Mississauga, Ontario
Canada L4W 2A5
Tel: (905) 273-5374
Fax: (905) 273-4367

Analytical Laboratory to Complete Submission Number

Date	Time	Type: Composite	Type: Grab	Matrix: Soil	Matrix: Water	Matrix: ACTIVATED CARBON	No. of Containers	Adventus Remediation Tech. Sample Number	VOCs	SVOCs	Pesticides	Total Organic Carbon	Metals	TPH	CP	SVOC: PHENOLS (METHOD 8270)	Remarks	Lab Sample #
MAR 8/13			X		X		2	5 3 1 8 3								X	01 ↓	
			X		X		1	5 3 1 8 4								X		
			X		X		1	5 3 1 8 5								X		
			X			X	1	5 3 1 8 6								X	02 ↓	
			X			X	1	5 3 1 8 7								X		
			X			X	1	5 3 1 8 8								X		

Sampled by: (print name & initial)	Date	Received by: (signature)	Date
S. OWEN S.O + E JANZEN EJ	Mar 8/13		
Relinquished by: (Signature)	**Date**	**Shipped by:**	**Shipping Bill**
Sandra Owen	Mar 8/13		
Relinquished by: (Signature)	**Date**	**Received by Laboratory:**	**Date/Time**
		Tyler Komuves	3/9/13 0900

NOTES
Send analytical results to appropriate ART contact person.

Copies: White & Yellow-Laboratory, Pink-Sampler

6 of 34 2